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Invitation to tender TAXUD/2015/AO-03

IT SERVICE MANAGEMENT
FOR
IT SYSTEMS & INFRASTRUCTURE OPERATION
OF

THE DIRECTORATE-GENERAL FOR TAXATION & CUSTOMS UNION

ITSM3 - Operations

Annex 2b:

Terms of Reference

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Typographic conventions

The following typographic conventions are used in this document:

The following convention indicates a link

Indicates reference information

Draws attention to important information

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1. Acronyms and definitions

In this document, the Directorate-General Taxation and Customs Union of the European Commission, which is the contracting authority, will be further referred to as “the Commission” or "DG TAXUD".

Tenderer is to be understood as an economic operator who has submitted a tender with a view to concluding a contract. In this call for tenders, "Tender" and "Bid" are used as synonyms.

ITSM3 contractor/s refers to the awarded tenderer/s and ITSM2 contractor/s to the incumbent contractor/s. Whereas ITSM contractor/s applies generically to both the ITSM3 or the incumbent ITSM2 contractor.

Acronyms and definitions	
Acronym	**Definition**
ACD	Automated Call Distribution
ACT	Application configuration tool
AES	Automated Export System
AEO	Authorised Economic Operators
AMDB	Availability Management Database
AN	As Needed
APM	Application Portfolio Management
ART	Activity Reporting Tool
ATS	Acceptance Test Specifications
BCP	Business Continuity Plan
BL	Baseline
BMM	Bilateral Monthly Meeting
BPM	Business Process Modelling
BT	Business Thread
BTI	Binding Tariff Information
BTM	Business Thread Manager
CAB	Change Advisory Board
CAP	Capacity Management
CAPS	Customs Applications

Acronyms and definitions	
Acronym	**Definition**
CCN	Common Communications Network
CCN2	Common Communications Network 2
CCN/TC	Common Communications Network / Technical Centre
CCN/CSI	Common Communications Network / Common System Interface
CCN/WAN	Common Communications Network / Wide Area Network provider
CDB	Capacity Management Database
Cfsu	COSMIC FFP functional size unit (ISO 19.761:2003)
CI	Configuration Item
CIA	Classification of Information Assets
CIRCA	Communication and Information Resource Centre Administrator
CIRCABC	Communication and Information Resource Centre for Administrations, Businesses and Citizens
CIS	Customs IT Systems sector
CMDB	Configuration Management Database
CMMI	Capability Maturity Model Integration
CN	Combined Nomenclature
CO^2	Carbon Dioxide
COBIT	Control Objectives for Information and related Technology
COM	European Commission
CONF	Conformance test environment
COPIS	anti-Counterfeit and anti-Piracy system
COTS	Commercial Off-The-Self (software packages)
CPCA	Common Priority Control Area
CPT	Central Project Team
CQP	Contract Quality Plan
CRC	Common Risk Criteria
CS	Central Services
CSF	Critical Success Factor
CSIP	Continuous Service Improvement Programme
CSIPM	Continuous Service Improvement Programme Manager
CSISC	Continuous Service Improvement Steering Committee
CS/RD	Central Services/Reference Data
CT	Conformance test
CUSTDEV3	Development contractor for customs systems 3
DDS	Data Dissemination System
DE	German

Acronyms and definitions	
Acronym	**Definition**
DEV	Development
DG	Directorate General
DG AGRI	European Commission DG Agriculture
DIGIT	Directorate-General for Informatics
DIGIT/DC	Data Centre of the European Commission
DLV	Deliverable
DM	Demand Management
DML	Definitive Media Library
DMZ	Demilitarised Zone
DRP	Disaster Recovery Plan
DSL	Definitive Software Library
DTM	Deliverable Tracking Matrix
EAS	Entreprise IT architecture and Strategy
EBTI	European Binding Tariff Information
EC	European Commission
ECCG	Electronic Customs Co-ordination Group
ECICS	European Customs Inventory of Chemical Substances
ECS	Export Control System
EfA	Estimate for Action
EMCS	Excise Movement and Control System
EMCS-DEV	Development contractor for Excise systems
EN	English
EoF	Exchange of Forms
EORI	Economic Operators' Registration and Identification System
EOS	Economic Operators Systems
EU	European Union
EUROFISC	Network between MSAs supporting administrative cooperation in the field of tax evasion and tax fraud
FAQ	Frequently Asked Questions
FAT	Factory Acceptance Test
FC	Framework Contract
FISCO	Fiscal Compliance Experts' Group
FITSDEV3	Development contractor for Fiscalis systems
FITS-TC	Fiscalis Technical Centre
FP	Fixed Price
FQP	Framework Quality Plan

Acronyms and definitions	
Acronym	**Definition**
FR	French
FS	Functional Specifications
FTE	Full Time Equivalent
GANTT	A chart that depicts progress in relation to time
GLT	Glossary of Terms
GQI	Global Quality Indicator
GTT	Generic Test Tool
GW	Gateway
HO	Handover
HoS	Head of Sector
HoU	Head of Unit
HTTP	HyperText Transfer Protocol
HTTPS	HyperText Transfer Protocol Secure
HW	Hardware
IA	Individual Acceptance
ICS	Import Control System
ICT	Information & Communications Technology
ICT IM	ICT Infrastructure Management (ITIL process)
ID	Individual Delivery
ILIADe	Intra Laboratory Inventory of Analytical Determination
INF	Information Sheets
IP	Internet Protocol
IPR	Intellectual Property Rights
IPSec	Internet Protocol Security
IS	Information Systems
ISD	Infrastructure and Service Delivery sector
ISO/IEC	International Organisation for Standardisation/ International Electrotechnical Commission
ISPP	Information System for Processing Procedures
IT	Information Technology
ITIL	IT Infrastructure Library
ITOP	Weekly operational planning - Installation and Testing Operational Plan
ITSC	IT Steering Committee
ITSCM	ITSM Continuity Management
ITSM	IT Service Management
ITSM2	IT Service Management 2 (ITSM2 Programme)

Acronyms and definitions	
Acronym	**Definition**
ITT	Invitation To Tender
IVR	Interactive Voice Response
IWP	Internal Working Procedures
JIT	Just In Time
J2EE	Java 2 Platform Enterprise Edition
KDB	Knowledge Database
KEL	Known Error List
KPI	Key Performance Indicator
LAN	Local Area Network
LCMS	Local CCN Mail Server
LISO	Information Security Officer
LSYA	Local System Administrator
MOM	Minutes of Meeting
MA	Mutual Agreement
MCC	Modernised Customs Code
MCP	Monthly Consolidated Plan
Mini1SS	Mini-One Stop Shop
MO	Managed Object
MPR	Monthly Progress Report
MRA	Mutual Recognition Agreement
MRN	Movement Reference Number
MS	Member State
MSA	Member State Administration
MSR	Monthly Service Report
MQ	Message Queue
MTTR	Mean Time To Repair
N.A.	Not Applicable
NA	National Administration
NCTS	New Computerised Transit System
NCTS TIR	NCTS part dealing with transit declarations and movements of road transport (Transport International Routier)
NECA	National Export Control Application
NICA	National Import Control Application
NTA	National Transit Application
OD	On Demand services
ODL	Operational Document Library
OECD	Organisation for Economic Co-operation and Development

Acronyms and definitions	
Acronym	**Definition**
OGC	Office of Government Commerce
OIB	Office for infrastructure and logistics in Brussels
OIL	Office for infrastructure and logistics in Luxembourg
OJ	Official Journal
OLA	Operational Level Agreement
OLAF	Office De Lutte Anti-fraude / European Anti-Fraud Office
OPL	Official Price List
OR	On Request
OS	Operating System
PDA	Personal Digital Assistant
P&I	Products & Infrastructure
PERT	Program evaluation and review technique. Also called "critical path method"
PoUS	Proof of Union Status
PQP	Programme Quality Plan
PreCT	Pre-Conformance Test
PSAT (preSAT)	Pre Site Acceptance Test
PS	Project Support sector
QA	Quality Assurance
QC	Quality Control
QoD	Quality of Data
QoS	Quality of Service
QT	Qualification Tests
QTM	Quoted Time and Means
RDP	Remote Desktop Protocol
REX	Registered Exporters
RfA	Request for Action
RfC	Request for Change
RfE	Request for Estimation
RfI	Request for Information
RfO	Request for Offer
RfS	Request for Service
RIF	Risk Information Form
RPO	Recovery Point Objective
RSD	Release Scope Document
RTO	Recovery Time Objective
SA	Self Assessment

Acronyms and definitions	
Acronym	**Definition**
SAT	Site Acceptance Testing
SB	Service Block
SC	Specific Contract
SD	Service Desk
SDLC	System Development Life Cycle
SE	Service
SEAP	Single Electronic Access point
SEED	System for Exchange of Excise Data
SfA	Submit for Acceptance
SfR	Submit for Review
SIEM	Security Information and Event Management
SIPSC	Service Improvement Project Steering Committee
SMT	Service Management Tool
SLA	Service Level Agreement
SLM	Service Level Management
SMM	Service Monthly Meetings per BT
SMS	Specimen Management System
SMT	Service Management Tool
SOA	Scope Of Activities
SPEED	Single Portal for Entry or Exit of Data
SPEEDNET	SPEED Network
SPOC	Single Point of Contact
SQI	Specific Quality Indicator
SRD	System Requirement Definition
SSH	Secure Shell
SSL	Secure Sockets Layer
SSTA	Standard SPEED Test Application
SSTP	Self-Service Testing Portal
SSTWP	Self-Service Testing Web Portal
STTA	Standard Transit Test Application
STEERCO	Steering Committee
SUG	Start Up Guide
SUPCO	Support of Customs Operations
SW	Software
SWOT	Strength, Weakness, Opportunity, Threat
TA	Test Application
T&S	Travel and Subsistence

Acronyms and definitions	
Acronym	**Definition**
TARIC	TARif Intégré Communautaire
TASMAN	Tool for Automated Supply management
TATAF	Tariff Applications Technical Architecture Framework
TATAFng	TATAF new generation
TAX	Taxation Trans-European Systems sector
TAXUD	Directorate-General for Taxation and Customs Union
TC	Technical Centre
TCO	Total cost of ownership
TEDB	Taxes in Europe Database
TEMPO	TAXUD Electronic Management of Projects Online
TES / T€S	Trans-European System
TESM	IT service management for the Trans-European Systems
TIN	Tax Identification Number
TIP	Technical Infrastructure Plan
TIR	Transports Internationaux Routiers
TO	Takeover
ToC	Terms of Collaboration
ToR	Terms of Reference
ToS	Taxation of Savings
TS	Technical Specifications
TSS	Cf SPEED
TTA	Transit Test Application
UAM	User Access Management
UCC	Union Customs Code
UIPE	Uniform Instrument Permitting Enforcement
UNF	Uniform Notification form
UPS	Uninterruptible power supply
USB	Universal Serial Bus
USS	User Satisfaction Survey
VAT	Value Added Tax
VIA	VIES Initial Application
VIES	VAT Information Exchange System
VoW	VIES-on-the-Web
VPN	Virtual Private Network
VREF	VAT Refund
VSS	VIES Statistical application

Acronyms and definitions	
Acronym	**Definition**
VTA	VIES Test Application
VPN	Virtual Private Network
WAN	Wide Area Network
WBS	Work-Breakdown Structure
WIKI	Collaborative Web site
WP	Work package
WS	Workshop
X-DEV	Development contractors (FITSDEV3, CUSTDEV3, CCN2DEV)
XML	Extensible Markup Language

Table 1: List of acronyms

2. Reference documents

In order to facilitate and maximise access to information for tenderers, DG TAXUD provides a baseline of documentation related to every aspect of the incumbent contractor's activities.

The baseline is structured according to the existing ITSM2 Lot1 service blocks. ITSM3 Operations service blocks are similar but there are some differences that should be noted when navigating:

- Service Block 2 – which was named IT Strategy & CSIP in ITSM2 Lot1 is called Service Strategy & Transformations in ITSM3 Operations;
- Application Management – which was Service Block 6 in ITSM2 Lot1 became Service Block 7 in ITSM3 Operations;
- CCN Support – which was Service Block 7 in ITSM2 Lot1 has been renamed Platform Management, covering a larger scope and became Service Block 6 in ITSM3 Operations.

Some key documents specifically referred to within the present Terms of Reference (ToR) can be found in the Baseline, see hereunder a consolidated list of these documents.

N°	Title	Reference	Ver.	Date
[R1]	ITSM2 Lot 1 FQP & Annexes	ITS-1FQP-ITSM2	2.0	31/03/2015
[R2]	Multi Annual Strategic Plan (MASP)	MASP revision 2014	1.2	21/11/2014
[R3]	ITSM3 Operations Technical Annex	1 - ITSM3 Operations Technical Annex v1.00.docx	1	03/11/2015
[R4]	IT systems and applications project fiches	IT systems and applications project fiches.zip		2015
[R5]	TATAFng Vision Document	CD3-TATAFNG-VD.docx	1	24/02/2015
[R6]	TATAFng Project Strategy	CD3-SC03-DLV-028-10-47-1-TATAFNG-Project Strategy-SfA-v1.00.docx	1	19/02/2015
[R7]	TATAFng requirements and proposed Solutions	CD3-SC03-DLV-028-4-47-1-TATAFNG-RPS-SfA-v1.00.docx	1	19/02/2015
[R8]	CCN2 2015 Release management plan	CCN2D-CRMP-SC03-Release Management Plan-20141211v1.00.zip	1	30/01/2015

N°	Title	Reference	Ver.	Date
[R9]	ITSM2 Lot1 Internal Working Procedures (IWP)	ITS-1-OPRC-X		2015
[R10]	CCN from an operational point of view	CCN from an operational point of view v1.02.docx	1	12/06/2015
[R11]	Global Architecture & Concepts - CCN Introduction	CCN-CTRA-HOTR-A01_1.00-EN.ppt	1	13/09/2012
[R12]	CCN Internal Architecture	CCN-CTRA-HOTR-A02_1.00-EN.ppt	1	19/09/2012
[R13]	CCN Tivoli Architecture	CCN-CTRA-HOTR-A04_1.00-EN.ppt	1	24/07/2012
[R14]	Network Monitoring and Issues	CCN-CTRA-HOTR-B02_2.00-EN.ppt	2	22/01/2013
[R15]	SIAP - External User Guide	ITS-1RPT-D.RFA075 3 CCN-CUSG-SIAP External User Guide 1.00 EN.doc	1	
[R16]	BCP/DRP Switch Type A, C, E	CCN-CTRA-HOTR-G01_3.00-EN.ppt, CCN-CTRA-HOTR-G03_2.00-EN.ppt, CCN-CTRA-HOTR-G04_2.00-EN.ppt + corresponding handbooks (.doc)	1	23/04/2014
[R17]	CCN Mail III, Overview, Architecture & Infrastructure	CCN-CTRA-HOTR-A03_2.00-EN.doc	2	18/01/2013
[R18]	Security – SPEED	CCN-CTRA-HOTR-H01-SPEED-SEC_1.00-EN.pptx	1	
[R19]	Application Configuration - ACT	CCN-CTRA-HOTR-F01_2.00-EN.ppt	2	27/02/2013
[R20]	Operation activities - CCN Portal	CCN-CTRA-HOTR-C04_2.00-EN.pptx + corresponding handbook (.doc)	2	
[R21]	SPEED2 – Technical Specifications	SPEED2-TS-SPEED2 Technical Specification-v6.10.docx	6.1	28/09/2015
[R22]	SPEED2-Infrastructure Requirements Document	SPEED2-IRD-SPEED2 Infrastructure Requirements Document-v6.00.pdf	6	28/09/2015

N°	Title	Reference	Ver.	Date
[R23]	SPEED2 – Integration Guide for DG TAXUD	SPEED2-IG-DG-TAXUD-SPEED2 - Integration Guide for DG TAXUD-v4.00.pdf	4	22/09/2015
[R24]	SPEED2 - Vision Document SW-CVED	SPEED2-VIS- SPEED2 Vision Document v6.00.docx	6	28/09/2015
[R25]	Conformance Test Organization Document for SW-CVED	ITS-1CTO-EU SW-CVED-Conformance Test Organisation EN v1.12.docx	1.12	06/10/2014
[R26]	Deployment Report for SW-CVED	ITS-1DER-RfA010-Deployment Report for EU SW-CVED v1.00	1	22/05/2014
[R27]	SW-CVED Conformance Test Report	EU SW-CVED-1CTR-CZ-Conformance-Test-Report v1.00 EN	1	12/12/2014
[R28]	SW-CVED Qualification Report	SW-1QTR-EU SW-CVED v1.1.4 Qualification Report v1.00 EN	1	02/06/2015
[R29]	Exploitation Manual for SW-CVED	SW-CVED_EXPL-v0.50_GO.doc	0.5	14/10/2014
[R30]	SW-CVED Integration Guide for Member States	SW-CVED-IG-MS-Integration Guide for MS v5.00.docx	5	28/05/2015
[R31]	SW-CVED Conformance Test Plan	ESW-CCTP-001-EU-SW-CVED-CTP–ConformanceTestPlan–v8.00.doc	8	27/05/2015
[R32]	SW-CVED Technical Specifications	SW-CVED-TS-EU SW-CVED Technical Specifications-v5.00.docx	5	13/05/2014
[R33]	AEO-MRA over SPEED2 Technical Specification	AEO-MRA-SPEED2-TS-AEO-MRA over SPEED2 Technical Specification v6.00.docx	6	22/09/2015
[R34]	AEO MRA over SPEED2 Infrastructure Requirements Document	CCN2D-MRA-CIRD-AEO-MRA-SPEED2-IRD-v1-0-0.docx	1	17/04/2015
[R35]	SPEED2 Platform AEO MRA Integration Guide for PC FATCA	MRA-CUMN-IG-PC-Integration Guide for PC-v2.00.docx	2	25/09/2015
[R36]	FATCA Pilot Technical Specifications	FTC-CTCS-001-FATCA Pilot Technical Specifications-2.00.docx	2	29/09/2015

N°	Title	Reference	Ver.	Date
[R37]	FATCA Pilot US Integration Guide	FTC-CUIS-001-FATCA Pilot US Integration Guide-v2.00.docx	2	17/09/2015
[R38]	CCN2 Platform System Functional and Non-Functional Requirements	CCN2-CFR_CNFRS-SC02-001-v2_00-SfA.pdf	2	09/01/2015
[R39]	Business and System Process Model CCN2 Platform	CCN2-CBPM-SC04-002-CCN2 Business and System Process Model-v3.00-SfA.pdf	3	09/06/2015
[R40]	CCN2 R1 Platform Functional Specifications	CCN2-CFSS-SC04-004-CCN2 R1-RefApp-FSS-v2.00.pdf	2	29/07/2015
[R41]	CCN2 Platform System Architecture Document	CCN2-CSAD-SC04-003 CCN2 Release 1 IT System Model-v4.00.pdf	4.1	12/08/2015
[R42]	CCN2 Infrastructure Requirements Document	CCN2-CIRD-SC04-001 CCN2 Pilot-IRD-v1_00-SfA.pdf	1	08/01/2015
[R43]	CCN2 Platform Release 1 Master Test Plan	CCN2-CMTP-SC04-004-CCN2 Release 1 Master Test Plan-v1_00-SfA.docx	1	12/06/2015
[R44]	System Architecture Document CCN2 Release 1 Reference Applications	CCN2-CSAD-SC04-004-CCN2 R1-RefApp - IT System Model-v2.00.pdf	2	25/06/2015
[R45]	CCN2 R1 Reference Applications Infrastructure Requirements	CCN2-CIRD-SC04-002-CCN2 Pilot-RefApp-Infrastructure Requirements Document-v1.00.pdf	1	19/12/2014
[R46]	UUM&DS Requirements Analysis Document	UUMDS Requirements Analysis v1.01.docx	1.01	15/11/2013
[R47]	UUM&DS System Process Model	UUMDS-SPM-v1.0.docx	1	05/03/2015
[R48]	UUM&DS Vision Document	UUMDS Vision Document_05.doc	0.5	01/09/2014
[R49]	UUM&DS System Architecture Document	UUMDS-SAD.docx	1	08/05/2015
[R50]	UUM&DS Infrastructure Requirements Analysis	UUMDS Requirements Analysis v1.01.docx	1.01	15/11/2013
[R51]	UUM&DS Master Test Plan	UUMDS_MS-CS_MTP.docx	0.02	11/09/2015
[R52]	UUM&DS Functional System Specifications	UUMDS-FSS_v1.02.docx	1.01	17/06/2015
[R53]	UUM&DS Technical System Specifications	UUMDS-MS_TSS_final 1.0.docx	1.01	17/09/2015

N°	Title	Reference	Ver.	Date
[R54]	UUM&DS User Interface Specifications	UUMDS-UIS_1.01.docx	1.01	17/06/2015
[R55]	Terms of Collaboration (TOC) for DG TAXUD Trans European Systems(TES)	01. ITSM2_LOT2-QTM21-SC02-TOC-eCUST-TES_v4'20-EN-SfA.pdf	4.2	31/07/2015
[R56]	Trans European Systems(TES) SLA documents	02. ITSM2_LOT2-QTM-20-SC02-SLA-eCUST-TES-ACM_v2'20-EN-SfA.pdf 03. ITSM2_LOT2-QTM-20-SC02-SLA-eCUST-SD-v2'20-EN-SfA.pdf	2.2	31/07/2015
[R57]	Interaction model encompassing all stakeholders <D.58>	ITS-1IMS-Interaction model encompassing all stakeholders v1.00 EN.pdf	1	25/03/2014
[R58]	Security Plan	ITS-1PLN-SEC-Lot1 Security Plan v1.00.EN.pdf	1	12/09/2014
[R59]	Security Policy	ITS-1POL-Security policy v1.00 EN.pdf	1	15/09/2014
[R60]	Technical Infrastructure Plan	ITS-TIP-P-031-1-CCNOPS v0.14 EN		2015
[R61]	Technical Infrastructure Plan	ITS-TIP-P-031-2-TAD-Tip Application Dependency Matrix-EN-1.00		2015
[R62]	Technical Infrastructure Plan	ITS-TIP-P-031-3-Network CCNTC v0.14EN		2015
[R63]	Technical Infrastructure Plan	ITS-TIP-P-031-4-Application Dependencies v0.14 EN		2015
[R64]	Technical Infrastructure Plan	ITS-TIP-P-031-5-Database Application users v0.14 EN		2015
[R65]	Technical Infrastructure Plan	ITS-TIP-P-031-6-ITSM Network EN1.00		2015
[R66]	Technical Infrastructure Plan	ITS-TIP-P-031-7-Central Systems EN1.00		2015
[R67]	A5 Annual Activity Report 2014	A5 annual report final-v6.doc	6	28/01/2015
[R68]	C5 Annual Activity Report 2014	C5 Yearly activity report 2014.docx		2015
[R69]	Taxation/Excise Fiches	Fiches - Taxation.zip		2015

Table 2: Reference Documents

The tendering parties are invited to access the baseline at the following URL:

https://circabc.europa.eu/w/browse/dbcf3e52-bf1a-4db7-b321-4b12f889ac7f

The parameters to access the baseline are the following:

User: itsm2lot1baseline
Pass: Wq8:!UB=zj

The ITSM2 Service Provider maintains a list of internal processes applicable to the incumbent contract. A bundle of all-applicable Internal Working Procedures (IWP) available at the time of writing will be available in the Baseline [R9].

Throughout this call for tenders package, references are also made to:

ITIL: IT Infrastructure Library (ITIL) for the implementation of the IT Service Management Processes. In its current form (known as ITIL 2011 edition), ITIL is published as a series of five core volumes, each of which covers a different ITSM lifecycle stage. Since July 2013, ITIL has been owned by AXELOS Ltd, a joint venture between HM Cabinet Office and Capita Plc. Axelos licenses organisations to use the ITIL intellectual property, accredits licensed Examination Institutes, and manages updates to the framework. More information on ITIL is available on: https://www.axelos.com/.

TEMPO: The DG TAXUD methodology to ensure the consistent and efficient management, set-up, development, operation and support of projects and service management. TEMPO methodology is mainly based on ITIL v2. During the lifetime of the ITSM3 Framework contract, TEMPO should evolve to comply with a newer release of ITIL. The tendering parties are invited to access TEMPO at the following URL:

https://circabc.europa.eu/w/browse/397be292-a066-451d-8cf3-988f115f098d

With the following parameters to sign in:

User identifier:	**itsm3tempoguest**
Password:	**Taxud.1t5M3.Guest700**
Domain:	**External**

ISO standards

The following ISO standards are referred as applicable in this document:

- ISO 20000-2:2012 (IT Service Management Part 2 - Code of Practice)
- ISO 27001:2013 (IT Security Techniques – Information security management systems)
- ISO 27002:2013 (IT Security Management - Code of Practice for information security management)

The **ITSM3 Operations** contractor needs to take into account that the baseline reflects the situation applicable at the time of publication of the call for tenders and that it will evolve.

In case of a conflict between the applicable documents, the following order of decreasing precedence shall prevail, unless otherwise stated:

- The **ITSM3 Operations** call for tenders (of which this document is part) and the documents referenced in the call for tenders;
- TEMPO;
- International standard and best practices as ISO 20000-2:2012, ISO 27001:2013, ISO 27002:2013, ITIL;
- The remaining documents included in the call for tenders Baseline.

References to DG TAXUD are based on the organisational structure at the time of writing this call for tenders, and they might evolve.

3. Background information

3.1 IT activities of DG TAXUD

3.1.1 IT in support to policy

DG TAXUD co-ordinates and manages a set of operational activities relying on IT systems in support of the EU policies for customs, taxation and excise duties (cf. the mission statements in the Baseline). Actually, this comprises direct and indirect taxation, tariff strategy, eCustoms, the Union Customs Code (UCC), risk management, safety and security, the fight against counterfeited goods, as well as international policy objectives.

3.1.1.1 UNION CUSTOMS CODE (UCC)

The Union Customs Code provided the legal basis for the completion of the computerisation of customs. The UCC was adopted on 09/10/2013 as Regulation (EU) No 952/2013[1] of the European Parliament and of the Council. The adoption of the new legal provisions accelerated and supported the activities of Member States and the Commission as from 2014.

In order to support the development of the electronic systems, Commission Implementing Decision[2] of 29/04/2014 establishing the Work Programme for the Union Customs Code (UCC WP) was adopted. The UCC WP provides high level descriptions of the projects known as the "UCC Projects and related Electronic Systems". The content of the UCC WP is closely linked to the Multi-Annual Strategic Plan (MASP), which is a management and planning tool drawn up by the European Commission in partnership with Member States, as referred in Article 8(2) of the e-Customs Decision.

3.1.1.2 E-CUSTOMS DECISION

A Communication[3] from the Commission, which followed on from the Council Resolution[4] on the simplification of customs procedures, as well as the Commission Communication[5] on a strategy for the Customs Union and the related Council

[1] Regulation (EU) No 952/2013 of the European Parliament and of the Council of 9 October 2013 laying down the Union Customs Code; *OJ L 269, 10.10.2013, p. 1-101 http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2013:269:0001:0101:EN:PDF*

[2] 2014/255/EU: Commission Implementing Decision of 29 April 2014 establishing the Work Programme for the Union Customs Code; *OJ L 134, 7.5.2014, p. 46-53 http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32014D0255*

[3] Communication from the Commision to the Council, the European Parliament and the European Economic and Social Committee – A simple and paperless environment for Customs and Trade */COM/2003/0452 final/ http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2003:0452:FIN:EN:PDF*

[4] Council Resolution of 25 October 1996 on the simplification and rationalisation of the Community's customs regulations and procedures; *OJ C 332, 7.11.1996, p.1-2 http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:31996Y1107%2801%29*

[5] Communication from the Commission to the Council, the European Parliament and the Economic and Social Committee concerning a strategy for the Customs Union */* COM/2001/0051 final */ http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex:52001DC0051*

Resolution[6], proposed to make procedures and controls more efficient by simplifying Customs legislation and making better use of electronic tools in customs procedures.

3.1.2 CUSTOMS and FISCALIS programmes

DG TAXUD IT systems have a legal basis[7] and receive budgetary support from EU programmes, currently **Customs 2020** and **Fiscalis 2020** for which they represent a significant part (more than 80%) of the expenditure.

3.1.2.1 CUSTOMS 2020 PROGRAMME

The **Customs 2020 Programme**[8] offers Member States a Union framework to develop, facilitate and enhance co-operation between customs authorities, which is more cost-efficient and effective than if each Member State were to set up individual co-operation frameworks on a bi-lateral or multi-lateral basis. The IT capacity building aspect of the Programme covers the development, maintenance, operation and quality control of Union components of the European Information Systems set out in Section A of Annex II of the Customs 2020 Regulation and new European Information Systems established under Union law.

3.1.2.2 FISCALIS 2020 PROGRAMME

The **Fiscalis 2020 Programme**[9] offers Member States a Union framework to develop, facilitate and enhance co-operation between tax authorities, which is more cost-efficient and effective than if each Member State were to set-up individual co-operation frameworks on a bi-lateral or multi-lateral basis. The European Information Systems building aspect of the Programme covers the development, maintenance, operation and quality control of Union components of the European Information Systems set out in point A of the Annex of the Fiscalis 2020 and new European Information Systems established under Union law, with a view to interconnecting tax authorities efficiently.

[6] Council Resolution of 30 May 2001 on a strategy for the Customs Union; *OJ C 171, 15.6.2001, p. 1-3 http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv:OJ.C_.2001.171.01.0001.01.ENG*

[7] For example in 2008 important legal acts for IT systems were the so-called "VAT package", the Modernised Customs Code and the eCustoms decision on a paperless environment for customs and trade. http://europa.eu/rapid/press-release_IP-08-208_en.htm?locale=en

[8] REGULATION (EU) No 1294/2013 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 11 December 2013 establishing an action programme for customs in the European Union for the period 2014-2020 (Customs 2020) and repealing Decision No 624/2007/EC http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2013:347:0209:0220:EN:PDF

[9] REGULATION (EU) No 1286/2013 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 11 December 2013 establishing an action programme to improve the operation of taxation systems in the European Union for the period 2014-2020 (Fiscalis 2020) and repealing Decision No 1482/2007/EC http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2013:347:0025:0032:EN:PDF

3.1.3 IT systems

DG TAXUD's IT systems are a **unique instrument** to sustain the **continuity of operation of a broad range of customs and taxation procedures** within the EU.

The main objectives of the IT systems are to:

- Support the **uniform management of the Customs Union** and to maintain the fluidity of the **flow of goods at the border** of the EU through the availability of customs trans-European systems (**TES**), such as the New Computerised Transit System (NCTS), the Export Control System (ECS) and the Import Control System (ICS). Any unavailability of these systems would have an immediate and highly-visible adverse impact on the economic activity of the EU; such as lorry queues at the borders and ports, loss of containers, expiry of perishable goods, distortion in the application of legislation, increased risk of fraud and loss in revenue collection, etc.

- Contribute to the **fight against fraud:**

  - **In the area of customs:** DG TAXUD's IT systems support the sharing of risk profiles amongst Member States and feed the European Anti-fraud Office (OLAF) with information on sensitive consignments;

  - **In the area of taxation:** IT systems also allow for a rapid exchange of secure information and thus for the efficient fight against different types of tax fraud. This is the case in the areas of:

    - VIES: information in the field of VAT;
    - Taxation on Savings: information about savings income in the form of interest payments;
    - DAC1 : information in the following categories:
      - income from employment;
      - director's fees;
      - life insurance products not covered by other Union legal instruments on exchange of information and other similar measures;
      - pensions;
      - ownership of and income from immovable property.
    - DAC2: information about some categories of revenue that a beneficial owner who is a natural person received in a Member States in which he is not resident;
    - DAC3: information about advance cross-border rulings and advance pricing arrangements;
    - administrative co-operation and mutual assistance;
    - better control movement of excise goods across the EU.

- **Facilitate** the handling of tax and customs procedures **for citizens and economic operators** by enabling the **refund of VAT** from a Member State (in

which an economic operator is not established) and **through the publication of** the most relevant information (including customs tariff, balances of tariff quotas, VAT number identification), contained in the IT systems, on the Commission's Europa website.

Some economic operators have integrated the availability of the information in their daily processes. Therefore, they rely heavily on these services. The success of these services is constantly increasing.

Most of the IT systems of DG TAXUD are trans-European systems spanning all Member States of the EU. The users are the national administrations, the traders' communities and the Commission Services. Other IT systems include systems to manage reference data, test and monitoring applications, and dissemination applications to the wide public (e.g. via the Europa website).

A trans-European system (TES) performs specific business functions in customs or taxation as defined in or in support of Union policies. A trans-European system is a **collection of collaborating systems (orchestrated and choreographed) with responsibilities distributed across the National Administrations and the Commission**. It includes processes, applications, services and infrastructure.

A trans-European system (**TES**) is characterised by:

- Exchanges of information between the National Administrations at EU level (NA<->NA); in this case, the system forms a set of interoperable business systems implemented and operated by the National Administrations, under the overall co-ordination of DG TAXUD; the National Administrations are meant to integrate into their own national systems the business processes agreed at EU level; it is referred to as a distributed **TES**;

- And/or exchanges of information between National Administration and the Commission (NA<->EC); in this case, the system is operated by DG TAXUD; it is referred to as a centralised **TES**.

Exchanges take place on a secured Common Communication Network (CCN), according to agreed protocols and data formats.

The development of a TES constitutes a major project to be run over several years, the full description of which is available from TEMPO Trans-European Systems (**TES**) reference manual. An extract from this documentation is provided here below to introduce the notion of the lifecycle and the respective phases of the trans-European system's development project.

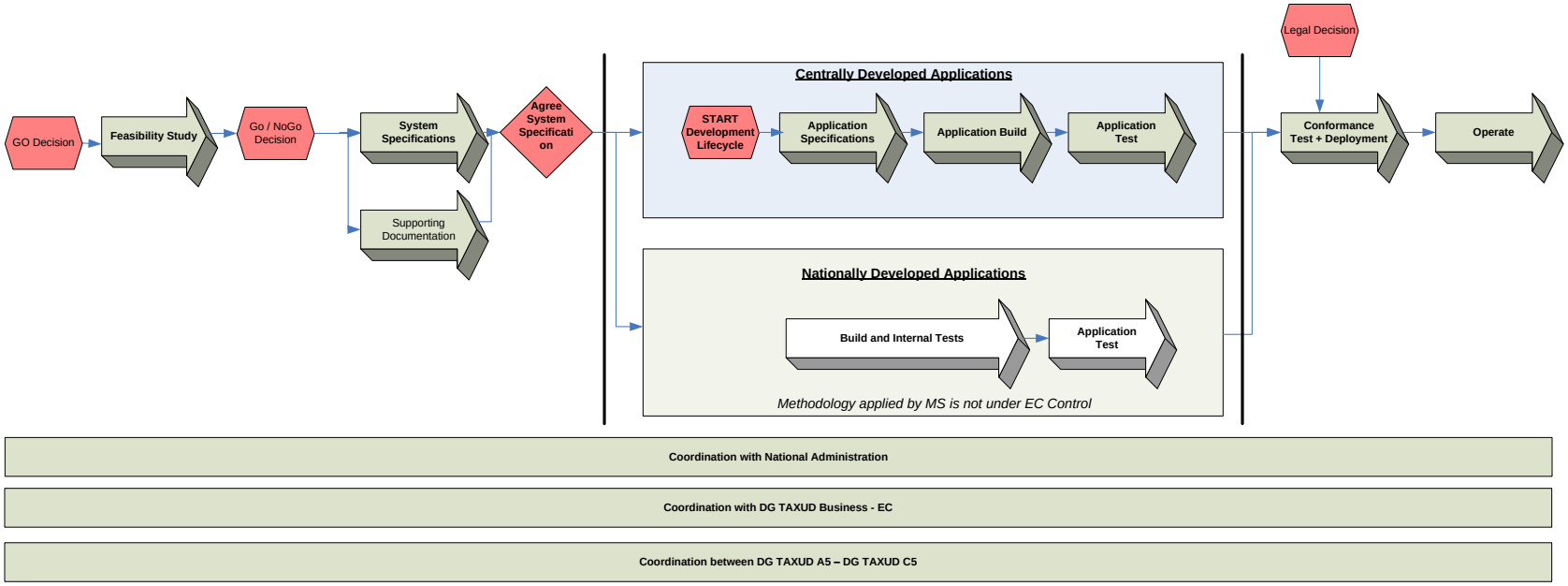

Figure 1: Trans-European System Development Lifecycle

 The tenderer should note that the Software Development Life-Cycle is under revision at DG TAXUD, in order to adapt to the new architecture and technologies required by the IT Strategy and implemented within the on-going projects (CCN2, CDMS, REX, etc.). A description of the foreseen evolutions is provided in section 3.2.1.4

As examples of some IT systems, one can mention:

– **In the field of taxation**: the *VIES network* enables the tax administrations to verify trader's VAT identification numbers and statements of their intra-EU turnover, *the VAT on e-Services System* provides for the management of the VAT revenues in connection with services provided on the Internet by non-EU traders, the *VAT Refund System* enables traders to obtain the refund of VAT from a Member State in which they are not established, the *DAC2 system* enables Member States to exchange information on some categories of revenues paid to individuals resident in other Member States;

– **In the field of customs**: the *Quota System* enables to publish the tariff quotas and tariff ceiling to the trader community, the *New Computerised Transit System (NCTS)* enables the customs offices to automatically track and control the movements of goods in transit throughout the EU, the *Export Control System (ECS)* provides full control on the conclusion of export operations in particular when different Member States are involved, the *Import Control System (ICS)* is devoted to the import operations, the *Surveillance System (SURV)* complements the other customs systems and contributes to the fight against fraud by enabling the surveillance of the movement of goods inside and outside the EU;

– **In the field of excise**: *Excise Movement and Control System (EMCS)* allows for the control of movements of products falling under suspension arrangement of excise duties.

Overall in 2014, the IT activities generated around 2.7 Billion of exchanges of information between the Member States and the Commission amounting for more than 4.3 Terabytes of information. This information exchange grew by 10 times over the last 5 years and has an annual growth factor of approximately 30% (2014 compared to 2013). The previous tendency is still ongoing as for example in June 2015 there were 441 Million exchanges as compared to 354 Million in June 2014 (increase of 25%).

DG TAXUD also makes available, through the Commission's Europa website, a wide range of information and services to the citizens and to the traders; in order to enable them to consult measures relating to tariff, commercial and agricultural legislation, tariff quotas, to query authorised economic operators, to consult the list of transit customs offices, validate VAT numbers, to consult the main taxes in force in the EU Member States or to query excise numbers.

In 2009, and innovative, in the context of customs international activities, an electronic connection was launched with Russia to allow for secure data exchange of TIR movement

data, in order to address lorry congestion at the EU-Russia border. The success of this system led to the development of the more modern SPEED2 platform that ensures the secure data exchange with Third Countries. The TIR-Russia system in SPEED shall be migrated in 2015 to the SPEED2 platform, where already other systems are running (e.g. Single Window (EU SW-CVED), MRA China) or will be deployed in the coming months (e.g. FATCA Pilot, MRA with other countries systems).

All these activities rely on secure and reliable communication between the Member States and with the Commission (CCN/CCN2 read below).

3.1.3.1 MULTI-ANNUAL STRATEGIC PLAN (MASP)

As mentioned in section 3.1.1 an important evolution is on-going at DG TAXUD IT systems which is conducted in the context of the Multi-Annual Strategic Plan (MASP) in implementation of the UCC and e-Customs initiative regulations. The main principles of the IT Strategy as defined in the MASP lead to important changes in the future systems:

- **Service-Oriented Architecture (SOA)**

The future IT systems shall be designed and implemented using a service-oriented architecture; that favours the emergence of flexible, modular, easy to change IT systems that benefit from the re-use of existing functionality in different Member States or in the Commission (as advocated by the European Interoperability Framework[10]).

The adoption of the service-oriented architecture leads to the evolution of TAXUD application architecture framework, from the current Tariff Applications Technical Applications Framework (TATAF) to a new generation (TATAFng). TATAFng is applied to all new IT projects. More information on TATAFng and new IT systems being developed can be found at section 3.2.1.3.2

- **CCN/CCN2 (see below)**
- **Central EIS (European Information Systems)**

  Where appropriate and in view of reduction of the total cost of ownership (TCO) and subject to a positive business case, EIS could be centrally-implemented.

  In order to achieve this objective, DG TAXUD has started creating a high availability IT infrastructure that offers appropriate service levels.

  This drives the need for designing modular systems that, using the service-oriented architecture capability, allow to plug the related functionality into national systems while simultaneously foreseeing specific interfaces for Member States that wish to develop their IT system in full. This hybrid architecture is more complex and time-consuming to design and implement by the Commission (in comparison to a single central functionality) and it is less agile in addressing change.

[10] European Interoperability Framework (EIF) is a governance framework about public service interoperability between the different stakeholders being Businesses/Citizens/National Administrations/EU institutions.

Evolution towards the SOA paradigm together with higher availability requirements resulting by centralisation of trans-European systems has made necessary to review the software development life-cycle (**SDLC**). The actions taken on this context are described in section 3.2.1.4.

- **Collaboration**

  Collaboration between willing customs administrations in the design and (possible) implementation of future systems shall be favoured in order to avoid repetition and to reduce redundancy of effort and total cost of ownership (TCO) in the European Union. Collaboration does not necessarily create identical systems, and the creation of a single Customs system is not under consideration.

- **EU Harmonised Interface & Single Access Point for Trade**

  Future systems should offer a single access point for Trade, thus reducing the number of connections to the Customs Union from 28 to 1. Trade costs could be reduced significantly. Moreover, such interface could also be hosted at the Commission.

  This principle is under implementation through the Uniform User Management & Digital Signature (**UUM&DS**) project.

  The UUM&DS project aims at providing an external unified user management, removing the burden for applications (or application framework) and DG TAXUD to deal with user management. It will federate the national Identity and Access Management (IAM) systems. TATAFng will provide support for applications to integrate with UUM&DS. More information on the UUM&DS project can be found at section 4.6.2.3.

Projects listed in MASP are categorised according to the following four groups:

- Group 1: Customs European information Systems

  The first group contains the project fiches, procedures and projects for which common agreement on the scope and time plan exists so that progress can be made. Group 1 can include project fiches on bilateral international initiatives.

- Group 2: Customs European initiatives needing further study and agreement

  The second group contains projects for which further discussion will be required before they can find a concrete place in the IT plan. Group 2 can include project fiches on bilateral international initiatives.

- Group 3: Customs International Information Systems

  The third group concerns projects managed by international organisations in which the EU and its Member States play an active role, but are not the project organisers or owners.

- Group 4: Customs Co-operation initiatives and technological developments to facilitate Customs EIS

  The fourth group concerns 'Customs Co-operation initiatives', which in the context of MASP fiche grouping bespeaks efforts to strengthen cooperation between Member States. The group also regards initiatives driving progress in the field of technology in order to create new functions in the planned EIS.

The table below summarises the projects foreseen within the Multi-Annual Strategic Plan (MASP), ; more information on these projects can be found at section 3.2.1

MASP Projects	Target date of deployment	S1 2017	S2 2017	S1 2018	S2 2018	S1 2019	S2 2019	S1 2020	S2 2020
1.2 UCC Customs Decisions	02/10/2017								
1.3. UCC Proof of Union Status (PoUS)	02/10/2017								
1.4 UCC Binding Tariff Information System (BTI) Update Phase 1	01/03/2017								
Phase 2	01/10/2018								
1.5 UCC AEO updates	01/03/2018								
1.6 UCC Automated Export System (AES)	01/03/2019								
1.7 UCC New Computerised Transit System (NCTS) update	01/10/2018								
1.11 UCC Registered Exporter System (REX)	01/01/2017								
1.12 COPIS Phase 1	03/10/2016								
Phase 2	01/10/2020								
2.1 UCC Notification of arrival, presentation notification and temporary storage	02/03/2020								
2.5 UCC Guarantee Management	02/03/2020								
2.6 UCC Special Procedures	01/10/2019								
2.6 UCC Information Sheets (INF) for Special Procedures	01/10/2019								
2.7 UCC Surveillance 3	02/10/2018								
2.8 UCC Safety and Security and Risk Management	TBD								
2.9 UCC Classification (CLASS)	01/10/2018								
2.10 Adjustments of the existing import applications under the UCC	01/10/2020								
3.2 EU Implementation of the eATA Carnet Project	01/03/2019								
4.3 Master Data Consolidation	01/10/2019								
4.5 CCN2	01/10/2017								
4.6 Direct trader access to European Information Systems (Uniform user management & digital signature)	02/10/2017								

Table 3: MASP planning (source: UCC WP)

3.1.3.2 CCN/CCN2

All these activities rely on secure and reliable communication between the Member States and with the Commission. This is realised thanks to a private Common Communication Network (**CCN**) that DG TAXUD has developed and operated for more than 15 years across the EU and which transports and exchanges a massive amount of messages and information.

In particular, in the context of EU enlargement, connecting the candidate countries to the network is one of the first IT activities to be started well before the target enlargement date.

CCN, given its central role, is an important component of the whole IT architecture to ensure the security, availability and continuity of the IT services. It has evolved over the years in the biggest network linking the Commission and Member States, in terms of number of application data exchanges and probably among the largest administrative networks worldwide.

In the context of CCN, ITSM2Lot1 contract covered the whole support of infrastructure, platform and application components at a unique fixed price. However in ITSM3 Operations these services are split into Infrastructure, Platform and Application Services:

- The components and responsibilities covered by the infrastructure services (SB5) are referred in section 4.5.1.2.3
- The components and responsibilities covered by the platform services (SB6) are referred in section 4.6.1.1
- The components and responsibilities covered by the application services (SB7) are referred in section 4.7.2

The different components of CCN can be considered to split as indicated in the following table:

Domain	**CI**	**Development & Maintenance**	**CI type**
CCN Test Environments	CCN LAB for (P)SAT, QT, Perf. Tests, ….	ITSM2 Lot1	Infrastructure CI
CCN Training Environments	CCN Training environment (for MS trainings, …)	ITSM2 Lot1	Infrastructure CI
CCN/CSI Site	CCN Gateway CCN Communication devices	ITSM2 Lot1	Infrastructure CI

CCN/CSI Gateway	CCN (Linux) "C code" (RAP, LI…) Audit and stats generation processes (including collector/dispatcher) admin scripts including ldap_aeging, ADM3G, Webldap, RAP management services, message transfer tool, … User Management Services (including AMEU) TIVOLI agents and monitoring tasks BCPTB (BCP Toolbox) Smoke Test bundle	CCN2-DEV	Platform CI
CCN Mail III	CCN Mail	CCN2-DEV	Platform CI
CSI Stacks	C CSI (Unix)	CCN2-DEV	Application CI
	C CSI (Linux)	CCN2-DEV	Application CI
	C CSI (Windows)	CCN2-DEV	Application CI
	JCSI (Unix)	CCN2-DEV	Application CI
	JCSI (Linux)	CCN2-DEV	Application CI
	JCSI (Windows)	CCN2-DEV	Application CI
	NJCSI	CCN2-DEV	Application CI
	Cobol CSI	CCN2-DEV	Application CI
CCN Configuration Tool	ACT	CCN2-DEV	Application CI
CCN Administration Tools	QBrowser	CCN2-DEV	Application CI
CCN Test Tools	HL_TEST	CCN2-DEV	Application CI
	HL_ECHO (C)	CCN2-DEV	Application CI
	HL_ECHO (COBOL)	CCN2-DEV	Application CI

	CSI_TEST	CCN2-DEV	Application CI
	JMETER	CCN2-DEV	Application CI
	PSAT2 Test package	CCN2-DEV	Application CI
SPEED	SPEED Bridge	CCN2-DEV	Platform CI
	SPEED Security Infrastructure	ITSM2 Lot1	Infrastucture CI
CCN Consultation Tool	CCN Portal	CCN2-DEV	Application CI
SIAP	SIAP	ITSM2 Lot1	Infrastructure CI

Table 4: CCN components and CI type

CCN includes two special environments covering several of the above items (infrastructure/platform and application):

- CCN test environment managed by the Platform team and used as a CCN LAB for (P)SAT, qualifications, performance and other specific tests, etc.
- CCN training environment managed by the Platform team and used for the training offered to the Member States administrations.

A new generation of CCN (called CCN2) is being implemented as the interoperability infrastructure that enables the implementation and operation of the new service-oriented architecture. By adopting CCN2, DG TAXUD creates an interoperability infrastructure which offers location-independent access to services as well as services that are backward-compatible with existing customs IT systems.

Domain	**CI**	**Development & Maintenance**	**CI type**
CCN2	CCN2 Platform	CCN2-DEV	Platform CI
CCN2	CCN2 Reference Applications and Test tools	CCN2-DEV	Platform CI

Table 5: CCN2 components and CI type

More information on the CCN2 related CIs can be found in section 4.6.2.2.

3.1.3.3 DATACENTERS

The TAXUD Datacentres baseline architecture was designed according to the following requirements in mind:

- The capabilities of DG TAXUD's twin data centres need to be fully leveraged, resulting in increased application availability and improved business continuity;
- Data centre consolidation: the architecture needs to be flexible and should offer a common/shared infrastructure for hosting applications from different DG TAXUD silos (ITSM applications, CCN/OPS applications, selective applications that are currently hosted by DIGIT, …). Furthermore, the architecture should also enable the hosting of environments for DG TAXUD partners, like CUSTDEV3;
- The solution has to comply with DG TAXUD's security requirements;
- The architecture should offer the foundation for future evolutions. This includes the introduction of techniques used in cloud-based data centres (automated provisioning, catalogue based services …);
- Input to the design are following overarching guiding principles:
  - The target for application availability is 99,80 %;
  - The Recovery Point Objective (RPO) is "near-zero data loss";
  - The Recovery Time Objective (RTO) is 4 to 24 hours depending on applications criticality.

Infrastructure design principles are:

- All tenants and security zones share a common design;
- To each external network (Internet, MPLS networks like CCN etc) the Data Centre Network provides edge infrastructure (edge firewall, edge switches). The edge is identically designed for each of the external networks;
- One IP subnet per VLAN;
- Servers have their management and data path on several physical and/or virtual interfaces;
- The two data centres are distinct L3 domains. The provider advertises the public IP range(s) from the currently active DC. In case of DC failover, the provider will advertise them from the newly active DC. When the provider's access facilities would fail in the currently active DC, the public IP ranges will be advertised from the 'dormant' DC, while Taxud's inter-DC routing keeps these public IP addresses reachable;
- Upon unavailability of one data centre, it is possible to selectively free-up computing resources in the other data centre, to recover workloads from the failing data centre. Running in disaster/recovery mode is accepted at lower performance;
- Storage can be distributed over the rows in the DC for scalability reasons;
- Servers are generic and polyvalent and obtain their personality by booting a specific image from the Storage Area Network (SAN);
- Wide Area Network (WAN) connectivity is able to failover from one data centre to the other, regardless the failover capabilities of the overlaying services;
- The target end-to-end oversubscription ratio for the storage network will be at maximum 8:1.

Security design principles are:

- The external access to infrastructure, consoles and operating system (OS) requires a site-site (s2s) IPsec VPN tunnel and the signing of a security convention. A client-site (c2s) VPN is allowed as out-of-band connection only;
- Only privileged users have access to the secured zone and its VLANs (admin, management VLANs);
- Privileged users require strong authentication;
- Non-privileged support users follow regular access to applications via data path;
- 'Strength' of authentication is determined by the DG TAXUD User Access Policy;
- Trust boundary for teleworkers is shifted to the third party they belong to.

See 4.5.2 for more information about the evolution of datacentres at TAXUD.

3.1.3.4 DIGIT INFRASTRUCTURE SERVICES

DG TAXUD makes extensive use of DG DIGIT infrastructure services. In fact the majority of TAXUD central critical applications are hosted in DIGIT Data Centers. The intention is actually to gradually move most of these applications to TAXUD DC.

DG DIGIT offers a complete Service Catalogue of services; the corresponding Infrastructure services used by DG TAXUD are summarised below.

The **Application Housing service** is intended for Customers that need to run an application which is not available through IS Hosting services. By using this service, Customers receive a data centre quality platform up to the Operating System (OS) level, compliant with DIGIT rules and standards, which enable them to install, run and maintain their application.
Network infrastructure services are also used by DG TAXUD, in this context it is important to note that all network flows to and from DG DIGIT are governed by Security Conventions that require to be maintained and updated in case of connectivity changes.

3.1.3.5 ARIS

The Specifications phases of any TAXUD project create the foundation documents to be used throughout the development. The ARIS Business Process Management (BPM) tool provides features for modelling of specifications items and cartography of IT systems. It also generates outputs in standard interoperable formats, which facilitates the collaboration with National Administrations of the Member States.
The total amount of models increases every year, reaching 12000 at the beginning of 2015. A bit less than 100 users are modelling with ARIS, and 900 are reviewing the ARIS models (main group being the Member States users).

3.1.3.6 SYNERGIA

Synergia Service Manager (SM) is the DG TAXUD IT Service Management tool to support IT operations. It allows interchange of operational information and assignment of operational tasks related to the DG TAXUD systems, applications and environments that are in scope of ITSM2 Framework contract. Synergia is used by DG TAXUD, the IT support teams of the

various TAXUD subcontractors and other stakeholders (National Administrations). Synergia SM is in production since June 2011. It includes Service Management Tool (SMT) based on HP service Manager, ITSM Portal to interface with Member States National Administrations, SAP Business Objects (BO) as the reporting tool, User Management Tool (UMT) and LDAP for user and access rights management. See 4.3.1.3 for more detailed information.

3.1.4 IT Governance

The management of trans-European IT projects involves different levels of governance, involving the Commission and the National Administrations.

- DG TAXUD is **assisted by Comitology committees**, such as the Customs 2020, Fiscalis 2020 committees, and the Standing Committee on Administrative Co-operation. These groups are each supported by a sub-committee dedicated to IT matters. Each IT sub-committee meets several times a year under DG TAXUD's chairmanship with the participation of heads of IT from National Administrations.

- **Working groups** with the National Administrations to deal with technical-related project matters that meet with a frequency from monthly to quarterly according to the pace of development. Each TES and IT service from the Commission are overseen by such a working group (e.g. Electronic Customs Co-ordination Group, Customs Business Group, Customs EIS Operations Group, IT Systems Development Group, IT Technology and Infrastructure Group, etc.).

- DG TAXUD also needs to ensure that any decision on IT matters is taken in full understanding of the context, challenges, impact and associated risks. For this reason, DG TAXUD applies internally strong IT governance. All the IT systems are managed under the supervision of an **IT Steering Committee**, chaired by the Director General and composed of the board of Directors and the head of the financial and human resource unit. The IT Steering Committee meets regularly (quarterly on average) and takes decisions on IT working plans, priorities and resource allocation upon submission of proposals from the IT units.

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3.1.5 Existing Customs systems

Table 5 below provides the entries of the portfolio of the Customs IT systems and applications at the time of writing the Invitation To Tender. The table has to be read as Configuration Items (CIs) to be managed in a CMDB. These CIs are in line with the CMDB entries managed by the ITSM contractor.
General information on Customs IT systems and applications may be found on the Europa web site:
http://ec.europa.eu/taxation_customs/customs/policy_issues/electronic_customs_initiative/it_projects/index_en.htm

Refer to the IT systems and applications project fiches [R4] for more detailed information. Furthermore, all specifications and documentation for the different IT systems and applications can be found in the Baseline.
The portfolio is organised by families as follows:

Movement systems and supporting applications: includes the distributed movement systems NCTS, ECS and ICS together with its supporting applications operated centrally;

Internal Applications: includes applications that are used by commission staff to manage the publications (e.g. the Combined Nomenclature), the budget and other deliverables;

Risk Analysis and Control Applications: includes applications that are used in the domain of risk analysis and control;

Internet Applications: is mainly represented by the unique application (DDS2) that permits citizens to consult public information retrieved from other systems and applications;

Economic Operators Applications: includes the applications managing information associated with economic operators;

Tariff and Classification: includes the applications managing customs information concerning goods and more specifically tariff and classification information;

TATAF: includes the technical components which are deployed on a more horizontal level and which are part of the Tariff Application Technical Architecture Framework;

SPEED/SPEED2: includes software components constituting the Single Portal for Entry and Exit of Data (SPEED). This is the gateway for 3rd party countries (e.g. United States) to interface with TAXUD IT environment and CCN when needed.

ID	IT system/application (CI)	Acronym	IT system/application family
1	New Computerised Transit System (NCTS)	NCTS	Movement systems and supporting applications
2	Export Control System (ECS)	ECS	Movement systems and supporting applications
3	Import Control System (ICS)	ICS	Movement systems and supporting applications
4	Central System for Reference data (CS/RD)	CS/RD	Movement systems and supporting applications
5	Central System MIS (CS/MIS)	CS/MIS	Movement systems and supporting applications
6	Standard Transit Test Application (STTA)	STTA	Movement systems and supporting applications
7	Transit Test Application (TTA)	TTA	Movement systems and supporting applications
8	ECN TIR for Russia	ECN TIR-RU	Movement systems and supporting applications

9	Standard SPEED Test Application (SSTA)	SSTA	Movement systems and supporting applications
10	Activity Reporting Tool (ART-2)	ART2	Internal
11	Combined Nomenclature (CN)	CN	Internal
12	Suspensions (SUSP)	SUSP	Internal
13	Community Risk Management System (CRMS)	CRMS	Risk Analysis and Control
14	anti-COunterfeit and anti-Piracy Information System (COPIS)	COPIS	Risk Analysis and Control
15	Specimen Management System (SMS)	SMS	Risk Analysis and Control
16	DDS2-CM	DDS2-CM	Internet
17	DDS2-COL	DDS2-COL	Internet
18	DDS2-EBTI	DDS2-EBTI	Internet
19	DDS2-EOS	DDS2-EOS	Internet
19	DDS2-ECICS	DDS2-ECICS	Internet
20	DDS2-EXPORT	DDS2-EXPORT	Internet
21	DDS2-SEED	DDS2-SEED	Internet
22	DDS2-SURV	DDS2-SURV	Internet
23	DDS2-SUSP	DDS2-SUSP	Internet
24	DDS2-TARIC	DDS2-TARIC	Internet
25	DDS2-TRANSIT	DDS2-TRANSIT	Internet
27	Economic Operators System (EOS)	EOS	Economic Operators
28	Economic Operators System (EOS-MRA)	EOS MRA	Economic Operators
29	Regular Shipping Service (RSS)	RSS	Economic Operators
30	European Binding Tariff Information (EBTI-3)	EBTI3	Tariff and Classification
31	European Customs Inventory of Chemical Substances (ECICS-2)	ECICS2	Tariff and Classification
32	Information System for Processing Procedures (ISPP)	ISPP	Tariff and Classification
33	Quota Management (Quota-2)	Quota2	Tariff and Classification
34	Surveillance management and monitoring (Surveillance-2)	SURV2	Tariff and Classification
35	TARif Intégré Communautaire (TARIC-3)	TARIC3	Tariff and Classification
36	CSI Bridge	CSI Bridge	TATAF
37	HTTP Bridge	HTTP Bridge	TATAF
38	User management (UM)	UM	TATAF
39	SPEED2	SPEED2	SPEED2

Table 6: Portfolio of customs IT systems and applications

3.1.5.1.1 NCTS

3.1.5.1.1.1 BUSINESS DESCRIPTION

The NCTS is the New Computerised Transit System, based upon electronic declaration and processing, and designed to provide better management and control of Community and Common Transit. It involves all EU Member States, the EFTA countries, Andorra, San Marino, Croatia and Turkey. More countries will be joining in the future.

NCTS has most likely made the largest contribution to trade facilitation by simplifying and speeding up the transit procedure for both traders and administrations. NCTS allows traders to submit their declarations before departure, so waiting time at the borders is considerably reduced. In addition, the use of electronic messages instead of paper documents enables an earlier end and discharge of the operations. This leads directly to the faster release of the guarantee lodged. Further time gains are achieved when considering physical controls on goods. As customs will have decided well in advance whether or not the goods need to be subject to a control, waiting time at the office of destination is shortened. Finally, as NCTS creates an electronic environment capable of directly managing all the movements of goods, formalities for Authorised Consignors and Consignees have become much less cumbersome. Also, any discrepancies can be sorted out more quickly in the electronic enquiry procedure. All these features lead to an overall reduction of (administrative) costs and burdens for businesses.

The customs authorities of the Member States control each year **10 million trucks** carrying non-EU goods transiting via the Union in real-time customs control (from departure to arrival and clearance) through almost **50 million electronic information exchanges** sent through the New Computerised Transit System (NCTS).
Since 1 July 2009 NCTS includes the electronic handling of transit declarations under the security amendment Regulation 648/2005 which requires additional information to be included in transit declarations for safety and security purposes. The features implemented on 1 July 2009 allow to:

- upgrade the enquiry procedure which can be initiated when either the time allotted for receipt of transit movement arrival at destination, or the time for receipt of the control results from the Office of Destination has expired;
- introduce the recovery procedure which usually starts as a follow up to the Enquiry Procedure but it can also be initiated in any state after the movement release in specific cases like when a Customs Officer in the Competent Authority suspects that a fraud or another abnormal incident took place;
- transmit information on movements of sensitive goods to OLAF (Anti-Fraud Transit Information System – ATIS) (including the National transit).

Since 1 September 2011 all Community transit declarations are also duplicated and sent to OLAF (also for Common transit declarations, except for Switzerland, Croatia and Turkey).

The NCTS was continuously expanding from a geographical point of view, with Croatia and Turkey becoming members of the Common Transit Convention in 2012. The NCTS operations started with Croatia on 01 July 2012 and with Turkey on 01 December 2012.
In 2015, NCTS is expected to become operational in the former Yugoslav Republic of Macedonia (on 01/06) and in Serbia (01/10), both dates to be confirmed.

On 01/01/2009, an electronic connection was launched with Russia to allow for secure data exchange of TIR movement data, in order to address lorry congestion at the EU-Russia border (currently 3,500 movements supported daily). This connection has been established through the SPEED platform (using CCN/CSI) on which SPEED-ECN application is running in order to transfer NCTS message to SPEED message. This is the system called ECN TIR-RU (see 3.2.1.1.8).

3.1.5.1.1.2 OPERATIONAL INFORMATION

Currently, there are 35 countries participating in NCTS, which supports on average 210,000 movements and 950.000 messages per week. The number of released international movements (IE001) recorded for NCTS by the end of December 2014 (since 2001) reached the level of 100 millions. During most of the year 2014, the quality of operations in NCTS was excellent, but a technical issue identified in Belgium during the summer slightly impacted the average error rate (number of error messages on the total of messages exchanged) that reached 0.23% in 2014. The business monitoring is performed by ITSM contractor, and after analysis of the messages, actions are regularly assigned to the National Project Teams to fix their application.

Some key NCTS indicators from 2001 to 2014 are shown below.

Information per year	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
#Movements (IE001)	4.931	117.894	1.103.057	5.507.064	7.582.264	8.353.265	8.657.387	8.773.105	8.882.371	9.836.609
#Errors (IE906+IE907)	1.417	15.026	77.821	323.627	244.232	208.746	131.024	118.680	317.064	157.140
# Total Messages	32.889	892.025	6.808.563	27.620.279	40.223.343	40.655.411	41.887.717	42.635.005	42.726.462	46.499.304
Error rate (%All messages)	4,31%	1,68%	1,14%	1,17%	0,61%	0,51%	0,31%	0,28%	0,74%	0,34%
Average per Business Day	19	453	4.243	21.181	29.163	32.128	33.298	33.743	35.248	38.053
Information per year	2011	2012	2013	2014	2015	2016	2017	2018	2019	Since 2001
#Movements (IE001)	10.285.405	10.131.170	11.088.225	10.920.609						101.243.356
#Errors (IE906+IE907)	142.238	81.002	84.226	113.109						2.015.352
# Total Messages	48.572.796	47.788.994	48.692.434	48.961.655						483.996.877
Error rate (%All messages)	0,29%	0,17%	0,17%	0,23%						0,42%
Average per Business Day	39.789	39.192	39.596	39.655						

Table 7: NCTS - Key indicators per year

In addition, the volume of movements and errors for the same period (2001 – 2012) is shown in the following figure.

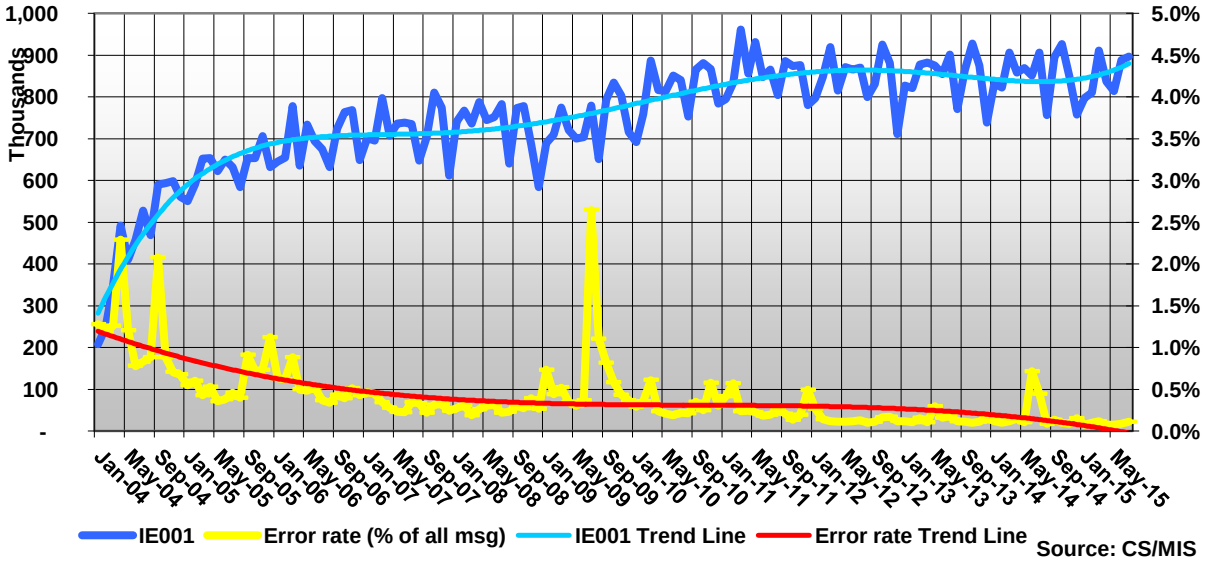

Figure 2: NCTS - Evolution of the movements initiated and error rate since 2004

The availability of the National Transit Applications and the central Applications are monitored. For the year 2014, the global average availability was above the limits (99% during business hours and 97% outside business hours).

3.1.5.1.2 ECS

3.1.5.1.2.1 BUSINESS DESCRIPTION

The Export Control System (ECS) is an electronic system that relates to handling of export and exit of goods from the EU customs territory enabling Customs Administrations in all Member States of the EU to electronically handle Exit Summary Declarations (EXS) and to risk analyse the EXS declarations in advance of the goods exiting the Community. ECS manages electronically some aspects of the export procedure; it will evolve towards the full Automated Export System (AES).
ECS strictly includes what is needed to implement Regulation 648/2005 ("security amendment" to the Community Customs Code) and its Implementing Provisions (Regulation 1875/2006).

3.1.5.1.2.2 OPERATIONAL INFORMATION

Currently, there are 28 countries (national administrations) interacting with ECS, which supports on average 270,000 movements and 750,000 messages per week. The number of released movements recorded in ECS for 2014 was 14.8 mio (including about 1.6 mio direct export movements, diverted to another MS).
Some key ECS indicators from the years 2007 to 2014 are shown below.

Information per year	2007	2008	2009	2010	2011	2012	2013	2014	Total
#Movement released	1.949.501	4.708.554	7.204.526	10.894.003	13.235.704	14.205.020	14.829.948	14.863.956	81.891.212
#Error messages (IE906 + IE917)	131.862	161.369	532.783	307.456	264.123	163.230	148.938	98.124	1.807.885
# Total Messages	5.034.482	13.211.442	21.093.477	30.006.271	33.291.791	34.476.532	36.974.303	36.802.428	210.890.726
Error messages (% of all Messages)	2,26%	1,22%	2,53%	1,02%	0,79%	0,47%	0,40%	0,27%	1,12%
Average number of Mvt per business day	7.498	18.110	27.710	41.900	46.473	49.369	51.504	51.833	

Table 8: ECS - Key indicators per year

In 2014, the volume of messages was stable compared to 2013, and the quality of operations was significantly improved.

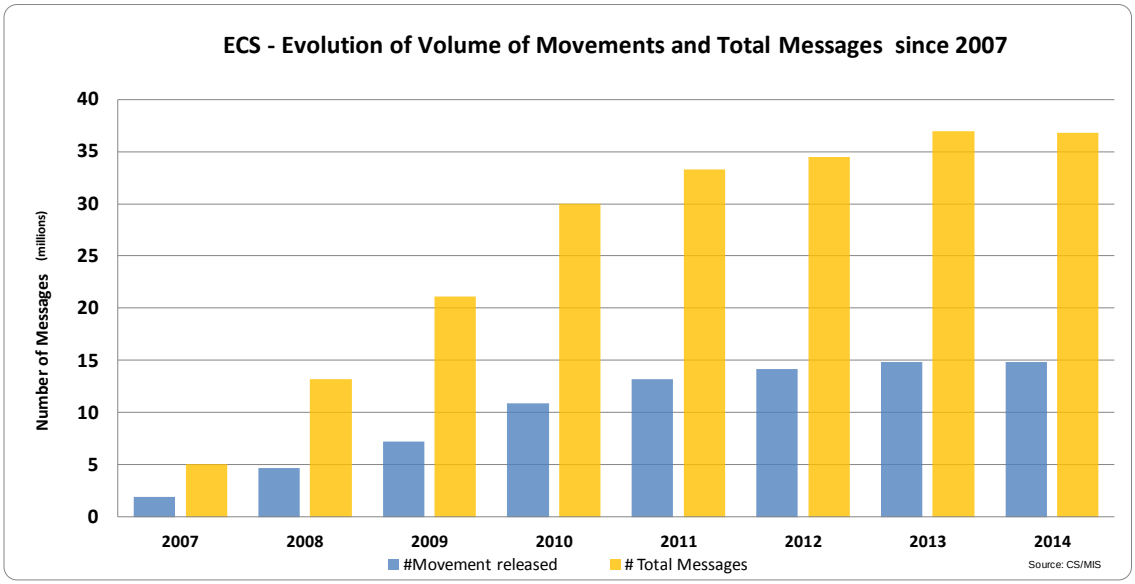

Figure 3: ECS - Evolution of operations

3.1.5.1.3 ICS

3.1.5.1.3.1 BUSINESS DESCRIPTION

The Import Control System (ICS) is an electronic system enabling Customs Administrations in all Member States of the EU to electronically handle Entry Summary Declarations (ENS) and to risk analyse the ENS declarations in advance of the goods arriving into the Community. ICS manages electronically some aspects of the import procedure; it will evolve towards the full Automated Import System (AIS).
The current ICS is the result of AIS phase 1, and as such is the first step towards the implementation of the full-blown AIS (Automated Import System). ICS strictly includes what is needed to implement Regulation 648/2005 and its Implementing Provisions (Regulation 1875/2006), and provides a solution to the processing of the Entry Summary Declaration (ENS) at:

- the Office of Lodgement,
- the Office of First Entry (including international diversion), and
- any Office of Subsequent Entry, whether or not declared in the ENS.

3.1.5.1.3.2 OPERATIONAL INFORMATION

The main operational data of this system is summarised below.

Information per year	2011	2012	2013	2014	Total
#Messages (Common Domain)	1.300.287	5.252.624	6.027.104	6.281.634	18.861.649
#IE906+IE917	171.216	108.482	18.826	8.167	306.691
#Total Number of ENS	33.979.545	39.419.053	41.279.509	41.451.074	156.129.181
#Error rate	12,65%	2,07%	0,32%	0,14%	3,79%

Table 9: ICS: Messages and errors per year

The quality of operations was further improved during the year 2014, with an average error rate at 0.14%. The business monitoring is performed by ITSM contractor.

3.1.5.1.4 CS/RD

3.1.5.1.4.1 BUSINESS DESCRIPTION

CS/RD is a supporting application to the movement systems managed by DG TAXUD. This application supports the trans-European systems already in place between the National Administrations. It offers a central repository for reference data. Reference data means the common reference data (e.g. Country code list, Document type Codelist), but also the Customs Offices and the Sharing Authorities.
Each National Administration is responsible for providing and maintaining its Customs Office List in this central database. The CS/RD data are covering various domains: NCTS, ECS, ICS, EOS, COPIS.

3.1.5.1.5 CS/MIS

3.1.5.1.5.1 BUSINESS DESCRIPTION

A Central Application which collects the traces of the messages exchanged on the Common Domain, generates statistics and reports, collects the business statistics and the availability details of the National Applications for NCTS, ECS, ICS and ECN TIR Russia.
The CS/MIS application is used by the Commission and National Administrations and provides them with the facilities needed to monitor and report on the operations of the Central and National NCTS, ECS, ICS and SPEED systems. This is done by collecting and distributing business statistics, technical statistics and information on the availability of NCTS, ECS, ICS and SPEED and/or National Systems.

3.1.5.1.5.2 OPERATIONAL INFORMATION

Number of users (Approx) : about 200
Number of messages/Year (Approx) : About 13 million (99.95 % are audits & stats files)
Order of magnitude of DB Size : 500GB

3.1.5.1.6 STTA

3.1.5.1.6.1 BUSINESS DESCRIPTION

STTA is an application developed by DG TAXUD and used locally by the National Administrations to perform Mode 1 tests before they perform Conformance Testing (mode 2). Mode 1 tests insure the compliance of messages sent/received by National Application with the NCTS, ECS, ICS specifications (for the interfaces with the Common Domain and the External Domain).

3.1.5.1.6.2 OPERATIONAL INFORMATION

Once validated, STTA is published on the CIRCA (CIRCABC) platform. From that moment National Administrations are free to download and install it on their side. No control is done neither on the number of execution nor on the number of messages processed by the installed instances of STTA.
Usually two releases in December and June are provided to the National Administrations for performing the Conformance Testing.
Approximately 100 National Administrations use the application, though they are not all active at the same time.

Number of Users: Unknown (can be downloaded and installed by all National Administrations)
Number of Hits: Not Applicable // communications channels are CCN/CSI queues and files

3.1.5.1.7 TTA

3.1.5.1.7.1 BUSINESS DESCRIPTION

TTA (Transit Test Application) is a central testing application that must be used by the National Administrations for performing Conformance Testing (mode 2). TTA provides a means to test a National Application (National Transit Application, National Export Control

Application, National Import Control Application) by using scenarios in order to check common domain electronic message exchanges through CCN/CSI gateways.

3.1.5.1.7.2 OPERATIONAL INFORMATION

Number of Users: up to 35 National Administrations for NCTS (and 28 for ECS and ICS) + ITSM
Number of Hits: Not Available

Two releases are provided annually in December and June in order for to the National Administrations to perform conformance tests.

TTA must be able to process all scenarios included in the three test scenarios databases to test both three domains: NCTS 271 scenarios exchanging 40 different messages, ECS 114 scenarios exchanging 17 different messages, and ICS 97 scenarios exchanging 6 different messages.

3.1.5.1.8 ECN TIR-RU

3.1.5.1.8.1 BUSINESS DESCRIPTION

ECN TIR-RU is a SPEED component that ensures the secured exchange of messages between the Commission (14 Member States participating) and Russia with which the EU has on-going international cooperation. The ECN TIR-RU component called SPEED-ECN currently only supports the exchanges of pre-arrival customs NCTS-TIR information.
The need for information exchange is coming either from operational difficulties to perform customs controls in a time frame which responds to expectations from economic operators; or from requirements to achieve secure and safe trade lanes. Indeed the Regulation 1875/2006 introduces such measures from 01/07/2009 onwards in the EU and several of our trading partners have similar measures or plan to introduce such measures.
SPEED-ECN is converting the EDIFACT messages IE012 received from the Member States' application, to produce an XML message (IES01) sent to the Russia application via CCN/CSI.

3.1.5.1.8.2 OPERATIONAL INFORMATION

Number of Users: 14 MS sending messages to RU via DG TAXUD.
Number of Messages processed: In 2014, only **1.5 mio messages IE012** were sent to SPEED and converted to IES01 sent to RU. It's a reduction of **-35%** compared to 2013.

Some statistics on traffic:

Information per year	2009	2010	2011	2012	2013	2014	Total
Nr of Movements (IE012)	565.699	1.923.968	2.183.597	2.380.872	2.312.742	1.510.236	10.877.114
Nr Error messages (IE906 + IE917)	6.477	2.177	261	359	5.561	375	15.210
Error messages (% of all Messages)	0,57%	0,06%	0,01%	0,01%	0,12%	0,01%	0,07%
Average number of Mvt per business day	0	3.721	4.210	4.606	4.473	2.921	

Table 10: NCTS-RU: Messages and movements volumes per year since start in 2009

The quality of operations was good with very few rejections by the Commission and by the Russian Customs Administration. The volume is strongly reduced, as Russia applied some restrictions on the use of the TIR carnet.

3.1.5.1.9 SSTA

3.1.5.1.9.1 BUSINESS DESCRIPTION

The Standard SPEED Test Application (SSTA) is a centrally developed test application that supports NCTS and SPEED.
SSTA offers the NA a light PC application to execute, in a cost effective manner, the mandatory National (Mode 1) Tests before applying for conformance Testing(Mode 2). Mode 1 tests assure the compliance of the NTA with the SPEED specifications for the interface with the Common Domain and the External Domain.

3.1.5.1.10 ART2

3.1.5.1.10.1 BUSINESS DESCRIPTION

The Activity Reporting Tool (ART2) supports the management of the large number of joint action activities under the Customs 2020 and Fiscalis 2020 Programmes (the Programmes) supporting the functioning of the Customs Union and taxation systems in Europe.

ART2 enables the decentralised implementation of the Programmes, where the stakeholders of the programme, national customs and tax administrations, implement the Programmes managed and led by the Commission. The application covers the full lifecycle of programme management from proposal management and action/event management up to participant management, monitoring and evaluation. ART2 accommodates the specific implementation structures of the Programmes and serves as a single point of reference for all stakeholders situated in the Commission and in the Member States.

Each activity under the Programmes needs to be initiated via ART2. Stakeholders can follow the approval procedure through ART and may be consulted when appropriate. All event (meeting) and participant information is connected to the approved activities. The action fiche describes the background and context, the set objectives and expected results as well as the link to the Annual Work Programme. It also identifies the specific area within customs and taxation to which the activity relates. The programme managers in Member States manage their participation in the different programme events through ART2 and register participants for events through ART2.

Member States also use the system to enter financial data related to the costs reimbursed to participants or for the organisation of programme events. The on-time availability of financial data allows the Commission to assess the financial state-of-play at any given time. ART2 is used as the official reporting tool on expenditures carried out by the Member States and is recognised as the means of providing financial information for the annual closure of pre-financing assigned to the Member States in the form of grants. The validation rules provide the Commission with the power of budgetary and management control.

The data in ART are essential for the monitoring and evaluation of the Programmes and their impact. The system provides search functions and preset queries that support the filtering of information according to the specific/targeted needs.

3.1.5.1.10.2 OPERATIONAL INFORMATION

The current size of the ART2 database is 10 GB. There are approximately 1000 events per year and 15000 participants per year.

Number of users: about 150 external users and 120 internal users.

3.1.5.1.11 CN

3.1.5.1.11.1 BUSINESS DESCRIPTION

CN is a system to draw up and publish the Combined Nomenclature for tariff classification and statistical purposes.
In order to monitor the flow of goods into and out of the European Union, the goods are identified with reference to a nomenclature for tariff and statistical purposes, the Combined Nomenclature. The CN consists of a table of goods descriptions with related codes together with rules and notes for its interpretation.
In the past, the CN regulation and the CN Explanatory Notes (CNENs) were prepared manually on paper, i.e. without any kind of electronic support (+/- 1000 pages in each official language for the CN). The CN management system supports the publication process of the CN regulation from 2005 onwards (for the publication applicable on 1/1/2006) and solves potential inconsistencies between linguistic versions.
As it is possible to provide the Publications Office with the manuscript in electronic form, the system also helps reducing delays in the publication process.

3.1.5.1.11.2 OPERATIONAL INFORMATION

Number of users: approximately 3 DG TAXUD internal users (internal application).
The size of the database is about 7GB.

3.1.5.1.12 SUSPENSION

3.1.5.1.12.1 BUSINESS DESCRIPTION

Suspensions allows the creation of a dossier on the suspension of import duties for certain goods and constitutes a back-up to the publication of suspension regulations in the Official Journal.
The suspensions system supports the legislative work for regulations covering the following measures:

- temporarily suspending the autonomous Common Customs Tariff duties on certain industrial, agricultural and fishery products;
- temporarily suspending the autonomous Common Customs Tariff duties on a number of products intended for the construction, maintenance and repair of aircraft;
- autonomous Community Tariff quotas for certain agricultural and industrial products.

For the autonomous suspensions and quotas there are usually 2 publication cycles or rounds started per year, although this is not a fixed rule.

3.1.5.1.12.2 OPERATIONAL INFORMATION

TAXUD manages about 1.200 suspension dossiers and about 100 quota dossiers.

Regulations are published twice a year after a proposal/decision cycle which takes about 9 months.

Number of users: ca. 3 DG TAXUD internal users (internal application).

The size of the database is about 80 GB.

3.1.5.1.13 CRMS

3.1.5.1.13.1 BUSINESS DESCRIPTION

The latest amendments to the Community Customs Code (Council Regulation 648/05, CCC) and its Implementing Provisions (Commission Regulation 1875/06, CCIP) introduced a legal basis for the establishment of the Community Risk Management Framework which shall be implemented through an electronic Community (Customs) Risk Management System (CRMS). CRMS includes three essential elements for which an electronic solution has to be or has already been developed:

- Exchange of risk information (RIF system already operational);
- Community (Customs) Priority Control Areas and Common Risk Criteria (in operation since September 2009);
- Comprehensive set of security risk rules to be used for continuous screening of electronic entry and exit summary declarations for the security and safety purpose (not yet developed).

3.1.5.1.13.2 OPERATIONAL INFORMATION

More than 5000 users are connected to CRMS. The number of RIFs created per year is approximately 2.000. The database contains currently more than 7.000 RIFs.

3.1.5.1.14 COPIS

3.1.5.1.14.1 BUSINESS DESCRIPTION

COPIS is a system to exchange Applications for Action to protect goods subject to intellectual property rights against counterfeiting and piracy.
The purpose of the anti-COunterfeit and anti-Piracy Information System (COPIS) is to protect the Intellectual Property Rights (IPR) as set down in the Council Regulation (EC) No 1383/2003 and Commission Regulation (EC) No 1891/2004. To protect themselves from counterfeiting and piracy, right holders can ask the intervention of Customs in order to take measures against goods infringing certain intellectual property rights at the border. COPIS will simplify and reduce the work in MS and COM and improve the cooperation in the area of IPR protection.

3.1.5.1.14.2 OPERATIONAL INFORMATION

The COPIS system is operational since 1/04/2013.

- Number of AFAs[11] = 10 000 per year;

[11] AFA – Application For Action

- Number of INFs[12] = 70 000 per year;
- Increase in database size = 1TB per year.

3.1.5.1.15 SMS

3.1.5.1.15.1 BUSINESS DESCRIPTION

SMS is a system to collect and disseminate the specimens of stamps, seals and certificates used for goods presented at the Community border for importation or transit; the Member States may then perform probes of the shipments and documents.
The issuing bodies of the stamps, seals and certificates in the various countries must provide the Commission with the specimen information. The Commission is responsible for the dissemination of it.
When goods are presented at the Community border, for importation or transit, they are accompanied by documents and/or authentication attributes such as stamps, seals, signatures, etc. These may be subject to forgery, usually with the aim of obtaining a more advantageous tariff regime. In order to fight fraud, the Commission co-operates with the competent government authorities in partner and third countries. Partner countries are those which are closely involved in implementing the co-operation procedure.

3.1.5.1.15.2 OPERATIONAL INFORMATION

The database contains more than 2.300 specimen definitions. Every attachment can contain further details in terms of stamps, signatures, etc.

On average, the system registers about 300 data-capture actions per year.

3.1.5.1.16 DDS2

The DDS2 system is a collection of various applications composed of one common module and applications disseminating information for a given information domain.

3.1.5.1.16.1 DDS2-CM

The DDS2-CM is a restricted domain used for translation and statistics purposes. It permits to:

- Consult/Browse the data imports following transfer for the production applications (TARIC3, CS/MIS, EBTI3, CS/RD, etc.);
- Get statistics over the number of requests done following several criteria (year, month, week; application; functions, etc.);
- Manage translations in all official languages related to the screens of this domain.

3.1.5.1.16.2 DDS2-COL

The DDS2-COL domain covers/disseminates public information with the following services:

- Queries/displays information concerning the Customs Offices involved in Transit/Export/Import/Excise/EOS/RSS: name, address, phone number, opening hours, holidays, etc.;

[12] INF - Infringement

- Allows downloading of the XML files;
- Manages the translations in all official languages related to the screens of this domain through a specific restricted access URL.

3.1.5.1.16.3DDS2-EBTI

The DDS2-EBTI domain covers/disseminates public information coming from the EBTI3 application with the following services:

- Queries/displays all non-confidential European Binding Tariff Information (with images);
- Manages the translations in all official languages related to the screens of this domain through a specific restricted access URL.

3.1.5.1.16.4DDS2-EOS

The DDS2-EOS domain covers/disseminates public information coming from the EOS application with the following services:

- Permits to validate AEO certificates;
- Obtains detailed information about authorised economic operators (when given prior agreement);
- Obtains detailed information about sharing authorities;
- Obtains detailed information about registering authorities (see DDS2-COL);
- Obtains detailed information about competent customs authorities (see DDS2-COL);
- Manages the translations in all official languages related to the screens of this domain through a specific restricted access URL.

3.1.5.1.16.5DDS2-ECICS

The DDS2-ECICS domain covers/disseminates public information coming from the ECICS application with the following services:

- Queries/Displays a repository of 300.000 chemical substances in all Community languages along with their tariff classification in the Combined Nomenclature;
- Manages the translations in all official languages related to the screens of this domain through a specific restricted access URL.

3.1.5.1.16.6DDS2-EXPORT

The DDS2-EXPORT domain covers/disseminates public information coming from the CS/MIS application with the following services:

- Allows retrieval of the status of an Export movement based on its Movement Reference Number (MRN);
- Manages the translations in all official languages related to the screens of this domain through a specific restricted access URL.

3.1.5.1.16.7DDS2-SEED

The DDS2-SEED domain covers/disseminates public information coming from the SEED application with the following services:

- Allows the internet user to verify online the Excise Number and if the response is positive, the system also permits to know which kind of excise product the Economic Operator is permitted to handle;
- Manages the translations in all official languages related to the screens of this domain through a specific restricted access URL.

3.1.5.1.16.8DDS2-SURV

The DDS2-Surveillance domain covers/disseminates information coming from the Surveillance application with the following services:

- Allows to consult the public surveillance information based on the origin and/or surveillance types;
- Manages the translations in all official languages related to the screens of this domain through a specific restricted access URL.

3.1.5.1.16.9DDS2-SUSP

The DDS2-Suspensions domain covers/disseminates public information coming from the Suspensions application with the following services:

- Publishes public information on autonomous tariff suspensions, in preparation or in force;
- Manages the translations in all official languages related to the screens of this domain through a specific restricted access URL.

3.1.5.1.16.10 DDS2-TARIC

The DDS2-TARIC domain covers/disseminates public information coming from the TARIC3 application with the following services:

- Allows to browse the nomenclature in all Community languages and all Community measures relating to imports and exports;
- Allows search for geographical areas;
- Allows search for regulations;
- Provides the facility to retrieve/get reports on relevant information such as duty rates and regulations;
- Includes Quota information;
- Manages the translations in all official languages related to the screens of this domain through a specific restricted access URL.

3.1.5.1.16.11 DDS2-TRANSIT-MRN

The DDS2-TRANSIT domain covers/disseminates public information coming from the CS/MIS application with the following services:

- Allows retrieval of the status of a Transit movement based on its Movement Reference Number (MRN);
- Provides the EMAP (Transit Movements Electronic Map);
- Manages the translations in all official languages related to the screens of this domain

through a specific restricted access URL.

3.1.5.1.16.12 DDS2 OPERATIONAL INFORMATION

The following table details the number of hits per DDS2 domain for a period of 12 months between 01/09/2014 and 31/08/2015:

DDS2- Domain	Hits for the period between 01/09/2014 and 31/08/2015
DDS2-COL	2.5M
DDS2-EBTI	38.5M
DDS2-ECICS	2.6M
DDS2-EXPORT	38k
DDS2-EOS	5.3M
DDS2-SEED	22.4M
DDS2-SURV	567k
DDS2-SUSP	198k
DDS2-TARIC (incl. DDS2-QUOTA)	14.8M
DDS2-TRANSIT	40k

Table 11: DDS2 operational figures for 01/09/2014- 31/08/2015 period

3.1.5.1.17 EOS

3.1.5.1.17.1 BUSINESS DESCRIPTION

EOS business purpose is to support a safer and more secure end-to-end supply chain while facilitating legitimate trade. The Community Customs Code requires that traders provide the customs authorities with information on goods prior to import and export to/from the European Union.

The EOS IT system is a central repository of all Economic Operators Registration and Identification system (EORI) records and all Authorised Economic Operators (AEO) applications and certificates of the EU. Member State can check in real time the EORI and AEO data with the objective to process properly the customs declarations.

EOS stores information on more than 4.5 million legal entities registered in the 28 EU Member States that come into contact with customs administrations. Sharing this information between MS avoids the need for economic operators to register in each member state to perform customs operations, significantly reducing red tape and the costs for doing business.

3.1.5.1.17.2 OPERATIONAL INFORMATION

Active number of registered Economic Operators: **4.543.647**

Active issued AEO certificates grouped by type:

AEOC (applicable for simplified procedures)	**5669**
AEOS (applicable to security)	**470**
AEOF (applicable to both simplified procedures and security)	**6721**

3.1.5.1.18 AEO-MRA

3.1.5.1.18.1 BUSINESS DESCRIPTION

The Authorised Economic Operator Mutual Recognition project aims to provide a system to exchange AEO data between the EU and its partner countries (i.e. Japan, USA, Norway, Switzerland, China, Russia, Australia, etc.).

AEO MR objectives:

- Customs processes facilitation and harmonisation through computerisation of declarations and data exchanged. Access to the AEO data will be made more widely and easily available;
- Trade facilitation granting benefits to partner country's AEO;
- Recognition of AEO status in a larger number of non-EU partner countries.

AEO MR benefits:

- control and facilitate the movement of goods into and out of the internal market through efficient import and export procedures;
- increase the competitiveness of European trade through a reduction of compliance and administrative costs and an improvement in clearance times;
- facilitate legitimate trade through a coordinated approach relating to the control of goods;
- improve the safety and security of citizens with regard to dangerous and illicit goods.

There are for the moment Mutual Recognition Agreements with Japan, Switzerland, Norway, and with USA. Discussions have started with China and Canada.

AEO Mutual recognition with Japan

MRA with Japan is being implemented following the interface control document that has been agreed by both parties. Conformance will start at the latest on 1/12/2015.

AEO Mutual recognition with USA

The MRA data-exchanges with the USA are fully operational.

AEO Mutual recognition with Switzerland

The MRA data-exchanges with Switzerland are fully operational.

AEO Mutual recognition with Norway

TAXUD is awaiting the confirmation to proceed with the interface control definition document and that NO is ready to start the IT implementation project.
Once the approval is obtained, the IT activities at TAXUD side can be contractually planned. The first phase of the IT implementation concerns the production of the Interface Control Document. When there is a formal agreement on this interface document, the subsequent IT activities can be contractually planned and started.

AEO Mutual recognition with Canada

Template ICD has been sent to Canada. The conformance testing are expected to start 6 months after the ICD has been signed.

AEO Mutual recognition with China

The conformance testing is starting on 16/09. China will be operational by 1/10/2015.

3.1.5.1.18.2 OPERATIONAL INFORMATION

The number of EU Economic Operators with an AEO certificate that have given their consent to provide the relevant information to third countries: **7115**

3.1.5.1.19 RSS

3.1.5.1.19.1 BUSINESS DESCRIPTION

Goods carried on a ship sailing from an EU port for another EU port in the Customs territory of the Union normally leave the Customs territory to enter it again when the ship arrives at the other port. This means in general terms that the Customs status of all goods has to be proven to the Customs (as if the ship entered the Community from a third country). This includes those goods that were in free circulation until they left the port of departure since union goods lose their status when they are removed from the Customs territory of the Community.
For this reason, all goods that are carried by sea are deemed to have non-union status at the time of introduction into the Customs territory of the Union.
However, shipping services that operate exclusively between two or more EU ports can apply for the status of an authorised 'Regular Shipping Service' (RSS). Once this status is granted, the Customs authorities consider that the goods carried on those services do not leave the Union Customs territory and the status of union goods does not need to be proven. Such services can operate as bridges between two or more points in the Customs territory of the Union where there are no Customs checks on either end of the bridge. However, non-union goods carried by these services must be placed under the Customs transit procedure.
RSS is, thus, a simplification offered for vessels that ply only between ports situated in the customs territory of the Union and may not come from, go to or call at any points outside that territory or in a free zone of control type I within the meaning of Article 799 IP of a port in that territory (Article 313a IP). The goods that are carried by these vessels are presumed to be union goods and are not subject to customs formalities.
It is subject to prior authorisation by the customs authorities (Article 313b IP). The application must be submitted to the customs authorities of the Member State in whose territory that company is established or, failing this, in whose territory it has a regional office.

The authorising customs authority seeks the agreement of the customs authorities of the other MS concerned.
Such companies must, inter alia:

- determine the vessel(s) to be used for the RSS and specify the ports of call once the authorisation is issued;

- undertake that on the routes of RSS, no calls will be made at any port in a territory outside the customs territory of the Union or at any free zone of control type I in a port in the customs territory of the Union, and that no transhipments of goods will be made at sea;

- undertake to register the names of the vessels assigned to regular shipping services and the ports of call with the authorising customs authority.

In 2010, the authorisations for Regular Shipping Services (RSS) were updated, as established by Commission Regulation (EC) No 177/2010 of 2 March 2010 (OJ L 52, 3.3.2010, p. 28), which stated that RSS authorisations must be stored and processed in the 'electronic information and communication system referred to in Article 14x of Regulation (EEC) No 2454/93'. The RSS application is a centrally developed centrally operated IT system (light client) which consolidates all RSS applications and authorisations in a single repository accessible by all MS in order to satisfy this legislation. The RSS light client allows customs officers to retrieve all information pertaining to RSS applications and RSS authorisations. It also provides a facility for the consultations between the National Administrations, ensuring that the same procedure is universally and correctly applied for all.

3.1.5.1.19.2 OPERATIONAL INFORMATION

Most Member States have very few authorisations (less than 20), with even the more frequent users having less than 100 authorisations. The system is not heavily used on a daily basis as new applications are not submitted frequently and changes are of a light nature, e.g. vessel names and ports. Most Member States have one or two users accessing the system..

3.1.5.1.20 EBTI3

3.1.5.1.20.1 BUSINESS DESCRIPTION

EBTI is a system for exchanging and consulting Member States' goods classification decisions and, therefore, their tariff treatment and application of trade policy measures.
The Commission has a procedure in place for information on the tariff classification of goods, provided by the European customs authorities, in order to achieve the following objectives:

- to ensure the uniform application of the tariff classification rules within the European Union;
- to eliminate the differences in the application of tariff classification rules amongst different traders within the Community;
- to ensure the equality and the legal protection of the operator in terms of decisions taken by the different customs authorities.

In order to assure effective management of the procedure, a computerised system has been created to hold all BTI-related information. This system, named EBTI (European Binding Tariff Information), has the following business requirements:

- to ensure the transparency of customs information and to provide a guarantee of equality of treatment for the operators of the Union;
- to allow customs authorities to verify, when they have to classify specific goods, whether a classification decision has already been taken for similar goods by another European customs authority;
- to facilitate the classification of goods by allowing investigation of whether there are any classifications for goods with a similar designation;
- to allow the services of the Commission to ensure coherence of classification by the different national authorities, by searching for divergent or incorrect classifications;
- to look for attempted fraudulent practice and misuse of the procedure by operators (e.g. multiple requests by the same operator);
- to follow the effective application of the invalidation of BTIs.

3.1.5.1.20.2 OPERATIONAL INFORMATION

Total number of BTIs in database	820.298
Total number of active BTIs in database	252.814
Number of BTIs created in 2011	51.536
Number of BTIs created in 2012	51.928
Number of BTIs created in 2013	50.969
Number of BTIs created in 2014	50.306

3.1.5.1.21 ECICS2

3.1.5.1.21.1 BUSINESS DESCRIPTION

The ECICS2 system is a tool for all parties concerned with chemicals in international trade (legislators, economic operators, customs, tax or statistical authorities), as well as specialists (chemists, translators and scientific editors) and the general public all over the world (via the DDS-2 on the Europa Web portal).

It makes it possible to identify internationally marketed chemicals in an unambiguous manner for customs, legal and statistical purposes. It contains about 35 400 names for approximately 28 600 chemicals in the European Union (EU) official languages, with their Combined Nomenclature (CN) customs classification, the industry-standard CAS Registry Number (CAS RN) and the Customs Union and Statistics Number (CUS) assigned by DG TAXUD.
The chemical names are internationally recognised names and they are the simplest and the most systematic ones such as the ISO, INN (International Non-proprietary Names for Pharmaceutical Substances), and IUPAC nomenclature names.
Moreover, ECICS2 has an IUPAC name translation module in 9 languages of the EU-27 which is unique in the world. The ECICS2 system helps to avoid divergences and fraud, and consequently assists in the smooth operation of the internal market. For example, some

information is available but classified as confidential, such as synonyms of chemical names commonly used by smugglers or other dishonest operators to avoid detection by the customs authorities.

ECICS2 now also includes the ILIADe application which is a shared directory of the analytical methods, developed by the Italian Customs Agency. The Italian administration is not able to continue to maintain and support the ILIADe application. Therefore the Customs Laboratories Steering Group requested DG TAXUD to take over this application in order to secure its maintenance and operational continuity.

3.1.5.1.21.2 OPERATIONAL INFORMATION

The database contains information about 120.000 chemical substances. It is planned to extend this database up to 300.000 chemical substances.

At the moment the database is quite small but it is expected that the size of the database will grow rapidly because of the large amount of attachments which will be included in the database.

ECICS2 has currently about 250 users.

3.1.5.1.22 ISPP

3.1.5.1.22.1 BUSINESS DESCRIPTION

ISPP (IPR) is a system currently used to manage information on inward processing authorisations.
The inward processing arrangements allow Community operators to be relieved from import duties for components imported from third countries with a view to being processed in the Community and subsequently re-exported. Inward processing is categorised as a customs procedure with economic impact. Therefore the use of this regime is conditional upon granting an authorisation by the customs authorities. This authorisation contains all particulars and conditions in relation to the use of the procedure.
The main objective of the application is to manage information concerning the IPR (Inward Processing Relief) authorisations. The system facilities allow registering applications for import with a view to being processed and re-exported (inward processing) and decisions regarding granting, rejection, annulment, revocation.

3.1.5.1.22.2 OPERATIONAL INFORMATION

20.956 cases are registered in the database
Number of cases produced per year since 2013 are:
- 2013: 1519
- 2014: 1427

3.1.5.1.23 QUOTA2

3.1.5.1.23.1 BUSINESS DESCRIPTION

Quota-2 is a system allowing the direct communication between Member States concerning tariff quotas.
The Quota-2 system is an evolution of the TQS for the management of tariff quotas.
For a number of products, a reduction of the customs duty payable is allowed for limited quantities of imports. This limitation takes the form of tariff quotas. Tariff quotas may apply to imports of a specified origin, normally within the framework of preferential tariff arrangements, or to imports of all origins.
As the Community is a customs union, tariff quotas are managed centrally by the Commission. The Taxation and Customs Union DG performs this management in the name of the Commission via the Quota-2 database (except in the case of tariff quotas managed by import licence, where the management is normally the responsibility of the Agriculture DG).

3.1.5.1.23.2 OPERATIONAL INFORMATION

quotas active in 2013	941
quotas active in 2014	970
drawing requests in 2013	272.103
drawing requests in 2014	197.970
returns received in 2013	2.619
returns received in 2014	1.950
number of allocations in 2013	227
number of allocations in 2014	217

3.1.5.1.24 SURV2

3.1.5.1.24.1 BUSINESS DESCRIPTION

Surveillance of both imported and exported quantities for economic or anti-fraud reasons.
This application satisfies the requirement for the surveillance of the movement of goods inside and outside the Community. These requirements are motivated by the fight against fraud or the need for urgent data in connection with the possible application of tariff safeguard clauses. Free-trade arrangements concluded since 2000 between the EC and certain third countries (e.g. Mexico) include a requirement for the Community to monitor the quantities of Community goods for which proof of origin is issued with a view to obtaining the benefit of a tariff quota in that third country.

3.1.5.1.24.2 OPERATIONAL INFORMATION

The database contains more than 1.1 billion surveillance data records and approximately 1,992 different report-definitions have been established.

Number of surveillance numbers	2.235

SDRs received in 2013	195M
SDRs received in 2014	205M
Total number of SDRs	1.115M

3.1.5.1.25 TARIC3

3.1.5.1.25.1 BUSINESS DESCRIPTION

On the basis of the Combined Nomenclature, TARIC sets the relevant rates of duty, other Community levies and other specific Community measures for each type of goods.
The aim of the TARIC is to be a compilation of the community tariff, commercial and agricultural legislation, codified in a unique and consistent way. It is implemented by a central database managed by DG Taxation and Customs Union.
By integrating and coding these measures, the TARIC secures their uniform application and gives all economic operators a clear view of all measures to be undertaken when importing or exporting goods. It also makes it possible to collect Community-wide statistics for the measures concerned.
It should be noted that the TARIC contains tariff measures (third country duty, suspension of duties, tariff quotas and tariff preferences), agricultural measures (agricultural components, additional duties on sugar and flour contents, countervailing charges and refunds for export of basic agricultural goods), commercial measures (antidumping measures, countervailing duties, safeguard measures, retaliation measures), measures relating to restriction of movements (import and export prohibitions, import and export restrictions and quantitative limits) and measures for gathering of statistical data (import and export surveillances).
All **tariff rates and associated trade policy measures** and information (quotas, anti-dumping duties, etc.) are controlled via a central database managed by the Commission. Some **500 000** changes annually have to be made to this database. Member States replicate this database via daily updates into their national systems so that customs officers can use this information for customs treatment of goods entering and leaving the union, which is much more efficient than every Member State building their own database. The central database prevents delays in applying tariff measures and potential discrepancies between different countries related to encoding errors and interpretation of the legislation. Equal treatment of traders and trade facilitation is also reinforced. Since 2007 the Customs Programme has spent 3.7 million euro on the tariff database, avoiding the need for every Member State duplicate this effort.

3.1.5.1.25.2 OPERATIONAL INFORMATION

Statistics concerning the TARIC database are as follows:

- 19.309 active regulations;
- 23.383 active nomenclature codes;
- 112.988 active measures.

More than 71,000 data-capture actions for measures per year

All changes are extracted from the system every day and transmitted to the Member States in order to update the tariff systems at national level.

It should be noted that the TARIC system has been operational since September 1994, implying several millions of historical rows contained in the database.

3.1.5.1.26 TATAF: TARIFF APPLICATION TECHNICAL ARCHITECTURE FRAMEWORK

In 2001, DG TAXUD started to develop most of its applications following a new technical framework based on the J2EE standards.

The following figure gives an overview of the various components of the architecture:

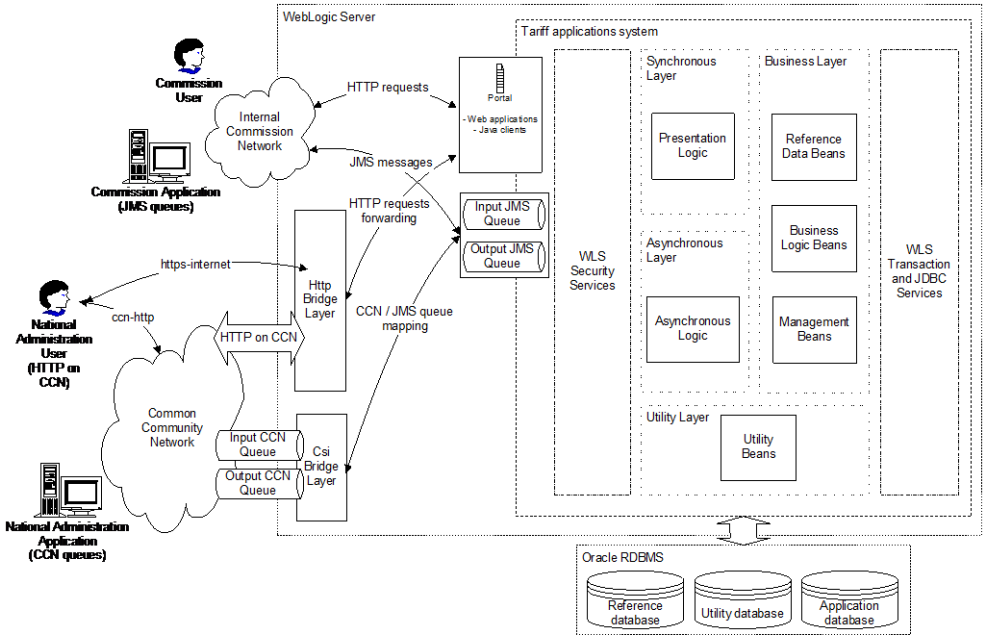

Figure 4: Overview of the TARIFF Application Technical Architecture

The BEA WebLogic Server (WLS) application server supports the whole system. WLS is an implementation of Java 2 Enterprise Edition (J2EE). Notably, the system relies on WLS for deployment, security, and transaction management.

The applications have as a common requirement to keep information in a persistent storage. All persistent data is stored in the Oracle RDBMS. Note that the different databases depicted in the figure only represent logical data separation. It does not suppose physical separation of data in different database instances.

Whenever messages have to be exchanged asynchronously, the Java Messaging Service (JMS) queuing mechanism provided by WLS is used. Two important properties of those queues are the following:

- They can participate in transactions. This means messages can be put into or removed from such queues within a transaction and the operation will be committed or rolled back according to the results of other operations in the same transaction.

- A message can be automatically removed from such a queue if it cannot be read or processed for any reason. This message is then put into an exception queue that can be managed by an administrator.

There are two types of usage of the systems by the national administrations. The national administration can access the Commission systems from system-to-system, meaning direct communication between server applications without the direct intervention of an end user. System-to-system usage communicates through CCN queues. The CsiBridge layer maps CCN concepts on WLS concepts. As a result, the other layers do not depend on CCN.

The second type of usage uses the HTTP protocol to connect interactive end users to the Commission systems. In this type of usage, the interactive user has to connect to the CCN network in order to authenticate himself. Once the user is authenticated, he has the option to continue using the CCN network or to redirect to a HTTPS connection over the public Internet (please note that this last option is not operational anymore but is still part of the framework) . The HttpBridge layer handles all HTTP communications originating from national administrations.

The 'tariff applications system' is subdivided into several logical layers that interact with each other.

The business layer hosts all the application logic. This includes the implementation of the business logic specific to each tariff application, and the implementation of some management services (e.g. statistical inquiries, etc). This layer also provides services to manage the reference data.

The tariff applications system provides two different access paths. The first is a portal, which is actually the entry point for each tariff application. This portal provides links to the different interactive applications. The second access path is a JMS queue, which is actually the entry point for system-to-system asynchronous applications.

The synchronous layer supports the interactive applications. It is mainly composed of presentation logic. The asynchronous layer supports the system-to-system interface. Both layers interact with the business layer to process the messages coming from the users.

The utility layer provides a set of common services shared by the applications and by the different layers (e.g. document storage).

Finally, as explained above, the CsiBridge and HttpBridge layer are responsible for the mapping between the CCN system and the WLS system.

3.1.6 New Customs systems

The implementation of the UCC takes place through the Multi-Annual Strategic Plan, the MASP.

In IT terms the MASP takes the form of a multi-project strategic plan of unprecedented complexity in the history of TAXUD. The different implementation projects are interdependent and, in addition, the planned time allowed for implementation is very tight.
The complexity of this challenge is increased by the fact that the resulting systems are a combination of centrally developed, centrally operated systems and national developments.

As a result the MASP projects require a very significant amount of coordination at all levels – internally in TAXUD, across developpers, within the support organisations etc. Of particular importance is the integration of different components within a project, of different projects, and of central and national interacting systems. All of these elements need to be certified to work together impeccably to deploy and operate the MASP systems.

3.1.6.1.1 UCC CUSTOMS DECISIONS (MASP 1.2)

Three different IT sub-projects have been identified:

- Trader Portal (TP) sub-project
- Customs Decisions Management System (CDMS) sub-project
- Customer Reference Services (CRS) sub-project

Initially a purely centralised architecture was proposed for all the functions of the system with only the resulting data to be replicated to the MS for local use. Some MS indicated that they wished to proceed with national developments because they needed to provide their traders with a single IT system for all decisions taken by the administration, extending the Customs decisions to other areas, such as Excise. Most Member States indicated a preference for a hybrid solution which would support both MS wanting their own developments and those wanting to rely on a common EU solution. In accordance with the hybrid approach, the Customs Decisions project considers both national domain and common domain solutions for economic operators and customs officers as depicted in the picture below. Final Customs authorisations will be available through the CRS.

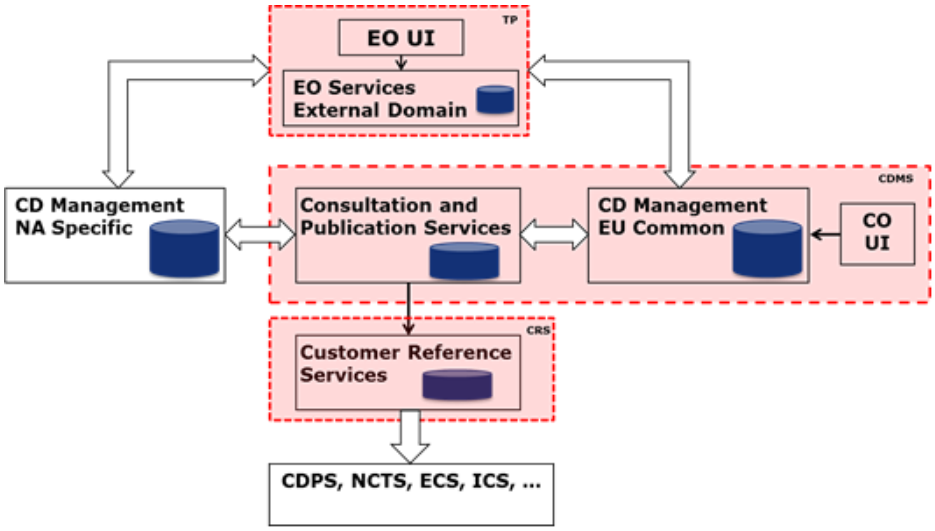

Figure 5: Hybrid Approach – Interactions

The central IT system will allow MS who have no national systems to consolidate all Customs Decisions applications and authorisations in an electronic format and through publication in CRS make them available to all involved MS. MS that implement national systems can also publish information related to decisions processed in their national systems and must do so for all Customs Decisions involving more than one MS . The SOA approach will be followed for centrally developed systems. The SOA approach is not mandatory for MS, although the interaction of the MS systems with the central system will be through services.

CUSTOMS DECISIONS SUB-PROJECTS IN A NUTSHELL

The **Trader Portal (TP) sub-project** develops an EU Common access point. It will define a harmonised user interface for traders' interactions with customs authorities .

The objective of the Trader Portal sub-project is to develop a portal that allow users to:

- draft and submit applications to the appropriate customs authorities
- manage applications and responses to requests by the customs authorities
- view and print applications and authorisations

Identification, authentication, and authorisation of users will be done through the Uniform User Management developed by the UUM & DS Project.

The **Customs Decisions Management System sub-project** develops a system for the creation and management of Customs Decisions.

According to the EU Customs Business Process Modelling Policy the UCC Customs Decisions Business Processes have been mapped to a four level Business Process model with the fourth level (L4) also specifying the required functional and non-functional elements of the system.

The objective of the CDMS project is to

- make these L4 processes "executable" in the centrally developed system
- provide a user interface for customs officers using the centrally developed system
- provide a system-to-system data service to allow MS using the centrally developed system to retrieve data from their CDMS
- ensure the smooth interaction i.e. consultation with MS Customs Decisions systems for decisions impacting more than one MS
- consolidate Customs Decisions data for publication through CRS

The **Customs Reference Services (CRS) sub-project** develops a system providing a consistent view of customer data in the context of Customs.

The objective of the CRS sub-project is to develop a system to:

- make information available by acting as a layer between systems generating and managing information e.g. EOS, REX, CDMS and systems consuming information e.g. CDPS, NCTS, ECS, ICS

- consolidate all data that is relevant to constitute a full picture of a 'Customer' from the Customs point of view:

- core details on the customer e.g. name, address, and VAT

- additional information regarding a customer's attributes e.g. authorisations and guarantees

- provide data replication services

3.1.6.1.2 UCC PROOF OF UNION STATUS (MASP 1.3)

The PoUS system aims at the implementation of a new business process related to the issuing and presentation of T2L/T2LF document replacing its paper form by electronic means. Automation of these business processes includes the setup of an EIS for the exchange of data between Customs Authorities across MS. The EIS is essentially a system to be developed and maintained to store and retrieve the PoUS document with the following considerations:

- Availability of PoUS data between customs authorities, across MS. This allows relevant customs authorities to consult PoUS data. MS will need to access the information data from the EIS at the customs office where the goods are presented (Presentation office);
- Reduction of paper-based transactions: A Master Reference Number will be made available. Therefore, the trader at the Presentation office does not have to provide all PoUS data, but just the Master Reference Number across MS.
- Streamlining of processes around management of PoUS: The PoUS data will be highly available and immediate access to this data will be widely and easily possible across MS by means of an indication of Master Reference Number.

An additional functionality of the system will be implemented in order to provide the possibility for traders to submit the PoUS data via an EU harmonised trader interface. This functionality is under discussion and pending agreement in the context of the business case.

3.1.6.1.3 UCC BTI (MASP 1.4)

While currently the BTI is binding only for the customs authorities, under the Union Customs Code (UCC) it will also become binding for the holder. As a result BTI holders will be obliged to include the BTI reference in their customs declaration and the customs authorities will have to control this obligation.
In addition, the Court of Auditors requested to control the BTI usage in the context of its Special Report No 2/2008 concerning BTI.

This BTI usage control will be performed based on the declaration data on the one hand and the BTI data on the other. It will therefore require modifications to both the existing Surveillance2 system (declaration data) and to the existing EBTI-3 system (BTI data).

The UCC will also require further BTI changes:
- use and validation of the EORI number to identify the BTI holder;
- alignment of the EBTI-3 system to the UCC requirements such as the standard process for Customs Decisions as will be defined in the UCC DA&IA;
- the possibility for traders to submit the BTI application and receive the BTI decision electronically via an EU harmonised trader interface.

The implementation of the UCC requirements for BTI will be split into 2 phases, due to the dependency on other projects.

Phase 1 will focus on BTI usage control and alignment of the EBTI-3 system to the standard process for Customs Decisions as will be defined in the UCC DA&IA.

This phase will therefore require modifications to the existing EBTI-3 and Surveillance2 central systems, as well as to the existing interfaces of these systems with the Member States. The Member States will send all relevant data elements from the declaration to Surveillance2 where they will be stored centrally. Processing will occur on a sub-set of those data elements determined by BTI priority needs.

In phase 2 some additional functionality will be implemented:
- More data analysis possibilities as processing will occur on all (52) surveillance data elements as determined by all BTI needs and other Commission stakeholders' needs;
- Traders will have the possibility to submit their BTI applications and receive the BTI decisions electronically via an EU harmonised trader interface.

Information System Perspective:
The UCC BTI project consists of the modification and evolution of 2 existing systems, EBTI-3 and Surveillance2.
The existing links of both EBTI-3 and Surveillance2 with the TARIC3 system for validation of reference data remain applicable. Additionally both systems will use the EOS-EORI system for the validation of the EORI number identifying the economic operator, holder of the BTI.
The existing links of both EBTI-3 and Surveillance2 with DDS for publication remain applicable.

DG TAXUD Units A3 and A4 are the systems and business owners of this application.

UCC BTI Phase 1 is expected to become operational on 01/03/2017.

3.1.6.1.4 UCC AEO AND IMPACTS ON MRA (MASP 1.5)

EOS-AEO is an existing and operational system. Changes or improvements are required to come either from internal EU legislation or from international (MR) agreements.

The project 'AEO Mutual Recognition (AEO MR) adaptations prior to UCC implementation' (MASP 2013 Rev. 12) has been successfully completed in 2013 with the development and deployment of a standard interface for AEO data exchange with partner countries, the update of the EOS system-to-system interface to allow the AEO data received from partner countries to be disseminated to the EU MS and the validation of the partner countries' AEO status in the EU transaction systems, based on the adopted user requirements (doc. AEO data exchange with partner countries). Any further IT implementation of new international agreements regarding the AEO MR does not require national developments and has no impact on the EOS CDCO Application.
However with every new partner country (e.g. China, Japan, Canada, New Zealand, Norway) some additional development is expected and ITSM contractor needs to perform and monitor internal testing and more importantly conformance testing with the partner country (see above).

3.1.6.1.5 UCC AUTOMATED EXPORT SYSTEM (AES) (MASP 1.6)

Currently, the Export and Exit formalities including the safety and security features are covered by the functionality of the Export Control System Phase 2 (ECSP2) as described in the Community Customs Code (CCC) and its Implementing Provisions.
However, the current CCC and its Implementing Provisions are to be replaced by the Union Customs Code (UCC) and its Implementing and Delegated Acts (IA/DA) aiming at improving and simplifying Customs business through more efficient Customs transactions and by automating the completion of the Export procedures and Exit formalities covering the common, national and external domains.
One part of the UCC requirements are already fulfilled and have been implemented by ECSP2, the current Export procedures and Exit formalities, while the other part introduces new processes, new data elements, changes to the existing processes and changes to existing data elements.
The upgraded system that fulfils and meets the UCC requirements as a whole will be the Automated Export System (AES) constituting an evolution of the currently operating ECSP2.
The current ECSP2 already covers the handling of export movements and exit summary declarations, and enables electronic lodgement of the declarations, but in order to be aligned to the new UCC requirements it needs to be further developed to become the full AES that will have all required functionalities and cover the necessary interfaces to the supporting systems.
So, the Automated Export System (AES) being an evolution of the currently operating Export Control System Phase 2 (ECSP2) will follow the same ECSP2 principles being a distributed system whose specifications for the common and external domains are produced by DG TAXUD and developed by each and every National Customs Administration separately.
The analysis of the available requirements and specifications shows that major changes to the existing ECSP2 architecture shouldn't be expected. However, interface changes at national level shouldn't be excluded. The impact analysis will further be enriched during the project elaboration phase where analysis of the functional and technical specifications will reach the required level of granularity.
The project has links and dependencies to other MASP projects and/or central systems whose planning progress will closely be followed up so that the UCC AES project can be implemented successfully.

The project belongs to the Customs 2020 programme and its operational plan will comply with the timeframes of the UCC Working Programme. AES is planned to go in operation on 01/10/2019.

3.1.6.1.6 UCC TRANSIT SYSTEMS INCLUDING NCTS (MASP 1.7)

The scope of the project consist of two components:

- Adaptation of the NCTS to the new requirements of the UCC;
- Implementation of the processes related to the use of an electronic transport document as a transit declaration.

Component 1

NCTS automates the common and community transit procedure as well as control of the movements covered under the TIR procedure within the EU. The current NCTS Phase 4 also covers processing of safety and security data at entry and at exit (transit declaration with safety & security data).

The scope of the development is as follows:

- Alignment to the requirement to incorporate the transit declaration with the reduced data set;
- Alignment of the information exchanges to the data requirements of the UCC DA and IA;
- Alignment to the new requirements related to the transit guarantees (e.g. implementation of monitoring of guarantee reference amount on the mandatory basis);
- Alignment to the new legal requirements related to the registration of en route events (a new process and additional customs office role will be introduced);
- Development of the necessary interfaces with the new supporting systems;
- Alignment to the new requirements related to the expected strengthened safety and security and AEO MR;
- Development of a harmonised interface with AES in case such requirements will be defined at the AES level.

Component 2

Under the current legislation simplified transit prodedures are in use for goods carried by rail, air, maritime transport and pipeline.

In the UCC IA/DA these simplified procedures are to be replaced by use of simplifications and the UCC forsees an electronic transport document as transit declaration in Article 233 (4) e.

The scope of the development is to implement under the legally defined conditions processes for the use of electronic transport documents as transit declaration. A further description of the business analysis will be provided in the BCs as part of the BPM package developed for this domain.

For both components, the requirements for the envisaged system(s) will also include an analysis of possible new technological or modernised ways of data capturing (i.e. automatic reading of electronic-seal numbers, attachment of documentation/images) and of possible new means of adding/verifying and securing data en route by operators/customs, etc.

3.1.6.1.7 REGISTERED EXPERTER SYSTEM REX (MASP 1.11)

At present, in the framework of GSP, the authorities of beneficiary countries certify the origin of products. Where the declared origin proves to be incorrect but no fraud was committed by Trade, importers frequently do not have to pay the full import duty because they acted in good faith. As a result, there is a loss to the EU's own resources and it is ultimately the EU taxpayer who bears the burden. Since exporters are in the best position to know the origin of their products, it is appropriate to require that exporters directly and under their responsibility provide their customers with statements on origin.
Exporters should be registered with the competent authorities of the beneficiary countries in order to be entitled to make out statements on origin if the total value of originating products in a consignment exceeds EUR 6.000. In addition, the registration of exporters will facilitate targeted ex-post controls. In order to register exporters, each beneficiary country should use the REX established by the COM. Through the system, put in place for the benefit of administrations and EOs in the EU and in beneficiary countries, the EOs should be able to check – before declaring goods for release for free circulation – that their supplier is a registered exporter in the concerned beneficiary country. Similarly, EU EOs should be registered with the competent authorities in the MS for the purpose of bilateral cumulation of origin and splitting of consigments to be sent to Norway, Switzerland or Turkey.

The main purpose of the system is to replace the current paper-based certification process by an IT-supported self-certification process. A central database will contain the registered exporters. Therefore the REX will also offer the opportunity to MS to enhance their national systems for CDs with an automated verification of the REX number from the declarations against that central database. It is expected to cover exporters from more than 80 GSP countries and exporters from 25 OCT (Overseas Countries and Territories) countries.
The first release of the REX system will support the management of registered exporters of the BCs for the EU, CH and NO; the management of applications of EU traders and will put in place the necessary interoperability features for the collaboration with CH and NO.
The integration of Turkey into the GSP schema, the implementation of self-certification for OCT's and FTA (Free Trade Agreements) are out of scope for the first release.

3.1.6.1.7.1 'BUSINESS PERIMETER' OF THE REGISTERED EXPORTER (REX) SYSTEM

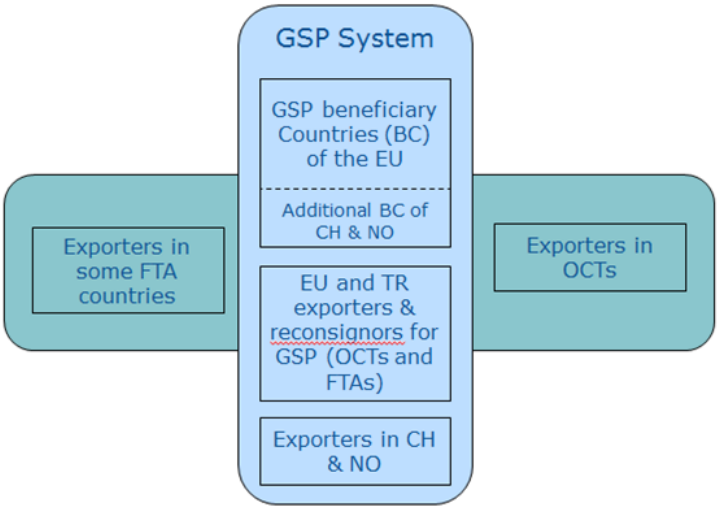

Figure 6: The business perimeter of the REX System

The basic principle of the REX System is the self-certification of origin by exporters and re-consignors of goods. The economic operators are only allowed to do so if they are registered by the applicable Competent Authority. The data elements applicable to the registrations are accessible by various IT services.
The REX System will cover, vertically, the GSP system of EU and the agreement that EU is having in that domain with CH, NO (and TR in the future).

3.1.6.1.7.2 THE REX IT PROJECT

Based on the Feasibility study carried out in Q1 2014 by DG TAXUD and on subsequent negotiations with CH and NO, the specified full collaboration option on the REX System was agreed by the 3 entities. This full collaboration can be summarised as:

- One common application form, one common REX number for the EU, CH and NO;
- Use a single system for the management of all the BCs (same management rules, same IT application) for EU, CH and NO;
- Each entity to use its own system for its own exporters (as it will be linked to the existing management of the economic operators, e.g.: the EU application will reuse EOS data for the economic operator during the application process where basic information about the economic operator is managed);
- Integrate the 4 systems through a service layer for the use of REX numbers by the Customs Declaration Processing Systems.

The REX IT project, first phase, includes all the necessary activities to be able to deliver the first release of the REX System (REX v1.0) (release to enter into operation on 1/1/2017).
The following elements of the business perimeter will be covered:

- GSP Beneficiary Countries (BC) of the EU
- GSP Beneficiary Countries (BC) of CH / NO

- EU exporters for GSP plus re-consignors to EU, CH and NO for GSP
- Integration with CH/NO exporters and re-consignors to EU, CH and NO for GSP.

Phases	Task/milestone	Start Date	End date
Elaboration	Architecture	05/11/2014	31/08/2015
	Specifications (functional/technical)	05/11/2014	31/08/2015
	◊ Application & Service Specifications for Stakeholders	05/11/2014	
	First package: Integration for validation through CRS webservice		**19/12/2014**
	Second package: Integration for data upload		**15/04/2015**
	Design	05/11/2014	31/08/2015
Construction	Build of the system	01/08/2015	30/06/2016
	Development of system interfaces	01/10/2015	30/06/2016
	Integration	01/03/2016	30/06/2016
Transition	Internal functional testing	01/05/2016	31/07/2016
	◊ Start of Conformance Testing with Stakeholders		**01/08/2016**
	Conformance Testing with Stakeholders (acceptance environment)	01/08/2017	20/12/2016
	Training (training environment)	01/09/2016	20/12/2016
Operations	**◊ Deployment in Operations**		**01/01/2017**
	Start of the use of the system (for encoding traders)	01/01/2017	

Table : REX IT Project Outline

The IT analysis, architecture definition and design include the detailed description of the functional components of the REX System which are depicted as follows:

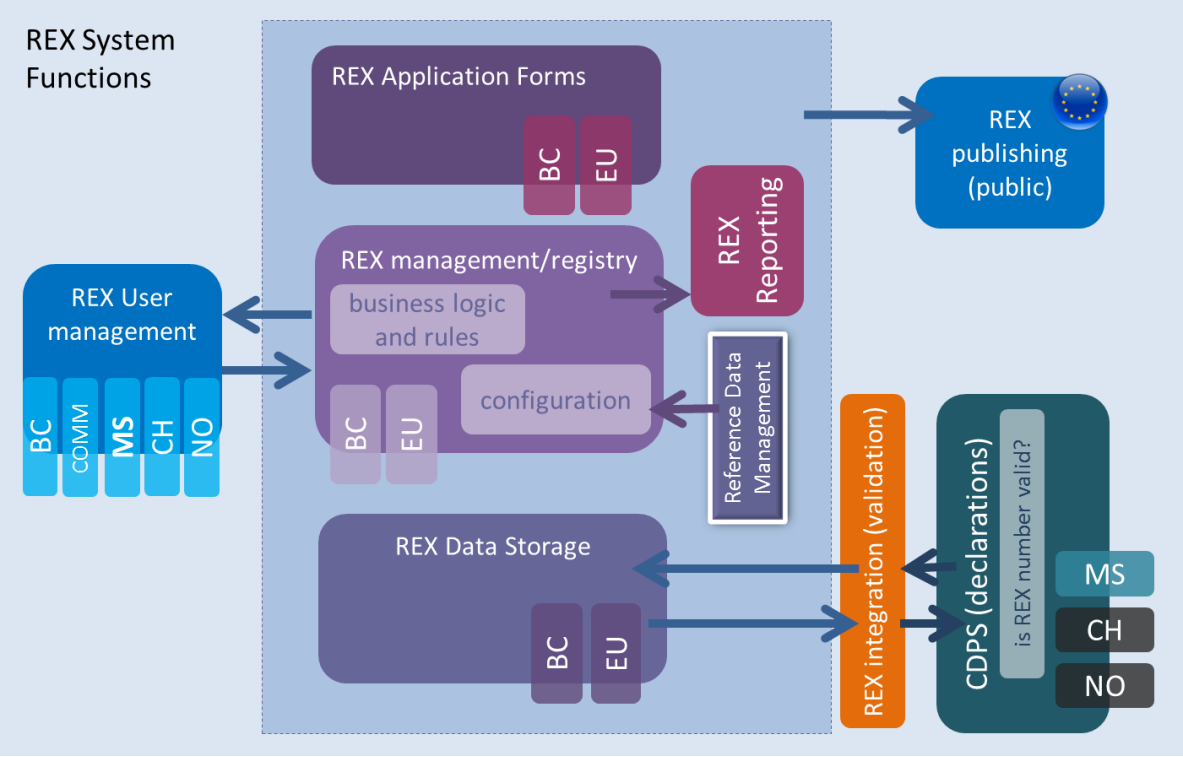

Figure 7: REX v1.0 Functional View

3.1.6.1.8 UCC SPECIAL PROCEDURES (MASP 2.6)

This project intends to provide IT support to accelerate and facilitate the Special Procedures. The project excludes the Transit procedure, which is subject to different projects and the Free-Zone, for which no IT development is envisaged because of its nature.

The practical implementation of the UCC Special Procedures project is considered in two aspects:

- UCC Special Procedures Harmonisation: national IT developments for the harmonisation of the special procedures and alignment to the legal provisions defined in the UCC IA/DA;
- UCC Information Sheets (UCC INF) for Special Procedures**:** central services provided for the management of the standardised information.

The UCC INF ensures the administrative cooperation and the standardised exchange of information between customs authorities across MS during customs procedures of inward and outward processing and usual forms of handling.

The main business processes that are to be supported by the INF IT system are as follows:

- Management of INF for Outward Processing (EX/IM and IM/EX);
- Management of INF for Inward Processing (IM/EX and EX/IM).

The automation of the INF business processes includes the set up of a central EC (DG TAXUD) database that will allow INF data to be available online, which enables easy access to information, better traceability and transparency.

The centralised INF system will provide functionalities for:

- Creating and editing INF data;
- Validating INF data, including links with EORI, AEO and Customs Decisions central repositories;
- Automated electronic validation of INF data and quantities;
- Automatic generation of INF Reference Number;
- Requesting and retrieving INF data from the central database;
- Update of INF data and quantities in the database.

The expected benefits of the implementation of the INF IT System are an improvement of the cooperation between MS, increased efficiency of the Special Procedures monitoring and control and a reduction of paper-based transactions. For some MS the electronic INF procedure would be of high importance as currently it is a heavy manual procedure.

3.1.6.1.9 SURVEILLANCE3 (MASP 2.7)

The Surveillance system monitors the import and export of specific goods into/from the Union's common market in term of volumes and/or value. Currently, all imported goods and specific exported goods are monitored by the Surveillance system. The current surveillance

system called Surveillance2 is operational since November 2006 and is operated by DG TAXUD.

The primary sources of the Surveillance system are the import and export customs declarations managed by the National Customs Declarations Processing Systems (NCDPS). The customs declarations are based on the single administrative document (SAD). The Member States provide the Surveillance system with the agreed data elements following a given frequency. The exact list of data elements is not voted yet.

The Surveillance system will receive and manage more data elements. A short term evolution of the existing Surveillance2 system (named Surveillance2+; see UCC BTI) to enter into operation by early 2017 will cover the data scope of additional data elements of the customs declaration but will not provide reporting functionality on all these data elements.

The number of stakeholders and needs in terms of analysis and reporting will increase with the increased data scope. The current system has limited capabilities for data discovery and analysis, reports creation, viewing and distribution to various users at the Commission and in the Member States.

A new generation, referred to as the Surveillance3 system, should be able to communicate to other reference data systems and provide data for further analysis and use by risk management systems (RIF, CRMF, etc.) via predefined and ad hoc reports. This new system needs to provide advanced functionalities in terms of business intelligence, performance, extensibility, treatment of multiple data sources, etc.

The Surveillance3 system consists of a Surveillance3 Reception IT application and a Surveillance3 Data Warehouse IT application. The Surveillance3 Reception IT Application is responsible for the collection of Surveillance Declaration Records (SDRs), while the Surveillance3 Data Warehouse IT Application is responsible for consolidating SDRs and relevant information from other systems, i.e. EBTI-3, TARIC3 and QUOTA2, as well as transforming them into information that can be used for reporting and analytics.

The Surveillance3 project will re-use the Surveillance2+ application for the Surveillance3 Reception IT application for receiving and validating the SDRs from Member State applications. All the functions that do not require a (near) real-time processing will be cut off from the Surveillance2+ application and will be migrated to the Surveillance3 Data Warehouse IT application. The Surveillance3 Reception IT Application will interoperate with the Surveillance3 Data Warehouse IT Application which will be based on SAS for ETL (Extract Transform and Load) and Business Intelligence.

The Surveillance3 Data Warehouse IT application will play multiple roles:

- The role of ‘hub-and-spoke’ within the Surveillance3 system where data from different systems (Surveillance3 Reception IT application, TARIC3, EBTI-3) will be integrated and linked and be made available for report & analytics as well as the central place from which other systems will be fed with the correct information (TARIC3, EBTI-3 and DDS2).

• The role of reporting environment offering all the required reporting, data analysis & discovery and – for future extension – data mining functionality. The reporting scope of the Surveillance3 system consists of 3 report families:
o Surveillance reporting;
o BTI reporting;
o CDC reporting.
Stakeholders interacting with this application are all the stakeholders interested in reporting and analysing data from one or multiple of the 3 report families of the Surveillance system.

DG TAXUD Units A3 and A4 are the systems and business owners of this application.

Surveillance3 is expected to become operational on 01/10/2018.

3.1.6.1.10 CLASS (MASP 2.9)

The European Union's customs legislation has established a procedure for solving cases of divergent classification so as to ensure the uniform classification of a product within the European Union. In case of divergent interpretation of the nomenclature, the Customs Code Committee (CCC) either adopts a classification regulation, an explanatory note to the Combined nomenclature or expresses an opinion through a so-called classification statement.
The Court of Justice of the European Union also delivers rulings which are crucial to the classification of a specific product and directly applicable in the Union.
These different kinds of classification information are published in different places, by different means. Currently customs officers and traders seeking for all the relevant information for the correct classification of a product have to search in several places (OJEU, comitology register, ECJ rulings). It is especially difficult to find the classification statements of the CCC rapidly.
This constitutes a considerable burden, in particular for individual SMEs, which ranked tariff classification of goods as No 12 in a public consultation carried out at the end of 2012 on the most burdensome legislative acts.
In order to provide a single platform where all the classification information (regardless of its nature) is published, DG TAXUD would like to create a database that would hold all classification-related information.
The system would offer considerable benefits to the different stakeholders involved, such as:
• reducing substantially the administrative burden for economic operators in general, and more in particular for SMEs, when looking for the correct tariff classification of the products they want to import or export (the system would function as a "one-stop-shop");
• helping the customs administrations of the Member States to cope with the high workload of the staff dealing with tariff classification issues, which have often been reduced as a result of austerity measures, by limiting the time required to find and share the relevant information;
• improving the functioning of the customs union and of the internal market. By making all tariff classification information more accessible through a single platform, classification divergencies should decline and equal treatment of economic operators will be better guaranteed;
• better securing the own resources of the EU, by ensuring the correct classification of goods throughout the EU and thus the collection of customs duties that are legally due.

The development is divided into three phases, which are:

- Phase 1 (minimum requirements implementation):
  Design and implementation of the core CLASS database
  Implementation of a link to TARIC nomenclatures
  Upload of Classification Regulations to the system
  Upload of Combined Nomenclature Explanatory Notes to the system
  Upload of Classification Statements to the system
  Upload of European Court of Justice rulings
- Phase 2 (extended requirements implementation):
  Implementation of a link to the EBTI system
  Implementation of a link to ECICS
- Phase 3 (linking external sources of classification information):
  Incorporation of WCO HS explanatory notes
  Incorporation of WCO HS classification decisions
  Incorporation of WCO HS classification statements
  Link to the REACH database (managed by the European Chemicals Agency)
  Inclusion of ADR data

In addition to the development of the CLASS system, the CLASS project will also include the development of the TARIC3 and CN services required to consult the TARIC3 and CN data.

The system will be built on the DIGIT SEARCH engine, a solution implemented by DIGIT on top of the HP IDOL product. The update of DIGIT SEARCH will be a sub-project managed by DIGIT. For the search engine functionality the SEARCH application of DIGIT will be used. An SLA will be put in place to minimise the risks associated to this dependency.

DG TAXUD Units A3 and A4 are the systems and business owners of this application.

CLASS Phase 1 is expected to become operational on 01/10/2018.

3.1.6.1.11 CUSTOMS UNION PERFORMANCE (CUP-MIS) (MASP 2.11)

The main objective of the project is to set up a Management Information System (MIS) that will support the Customs Union Performance (CUP) Project, which was established to manage and further develop a performance measurement system for the EU Customs Union. The Customs Union Performance Management Information System (CUP-MIS) will support improvement of the functioning of the EU Customs Union.
The main goal of the CUP-MIS is to measure and assess how customs activities and operations lead to/support achieving strategic objectives in terms of effectiveness, efficiency and uniformity. The CUP-MIS represents an important management/steering tool to enhance strategic decision making for the further development of the EU Customs Union. Its findings will also be used to raise awareness about the EU Customs Union and to show the amount and results of the Customs' work to main stakeholders.
The IT system specific objective is to support the governance/management and the practical implementation of the CUP-MIS processes consisting of the collection, storage, processing and reporting functionalities for the CUP-MIS Project.
The IT system technical objectives are to strengthen and improve the value and quality of data and processes covering the key functionalities (collection, storage, procession and reporting); to streamline the existing data sources and their use; to facilitate the data analysis and enhance

the reporting mechanisms towards policy-making; to reduce inconsistencies and human errors in data, analysis and reporting; to decrease the burden at the level of the MS and the COM.

Link to other projects:

- Inputs need to be ensured from several projects/systems: Business Statistics of NCTS, ECS, and ICS; EOS (EORI and AEO), COPIS, CRMS, Surveillance 2 and ART 2;
- Inputs are also foreseen from EUROSTAT and DG BUDGET (the OWNRES system and the Annual Activity Reporting for the ACOR Committee);
- Inputs from National Customs IT systems as defined in the CUP project.

DG TAXUD Unit A1 (Customs Policy) is the systems and business owner of this application.

3.1.6.1.12 CS/RD2 (CURRENTLY MASP 4.8)

The implementation of the Union Customs Code (UCC) requires new IT Systems with increased reference data demands. Also, the UCC promotes design to be aligned with principles of application centralisation, interoperability and collaboration. The main goal of this project is to develop reference data services that will be able to satisfy the currently known needs for such data of all planned UCC projects, without requiring any further implementation or downtime.

The purpose of the CS/RD2 application is to store, maintain and distribute reference data in the form of Code Lists and Authorities. The reference data is used by both National Administrations (NAs) systems, as well as by DG TAXUD Customs Information Systems (CIS).

CS/RD2 will replace the current CS/RD application. It will continue to provide the same functionalities and interfaces of CS/RD and will ensure backward compatibility with the integrated NAs and DG TAXUD systems. Retaining the CS/RD functionalities will allow NAs to plan the migration to the new functionalities and interfaces in order to benefit of the new features. The deprecated functionality (e.g. EDIFACT format) shall be supported during a transitional period agreed with the relevant stakeholders.

3.1.6.1.13 ICS2.0 (SECURITY AND SAFETY MASP 2.8)

The ICS2.0 project is in its Inception phase: at the time of writing of this document the Vision document of ICS2.0 is being finalised.

The ICS2.0 Trans-European System is to provide a solution for Member States' customs administrations and the European Commission (DG TAXUD) in order to perform tasks legally assigned by the UCC with regard to customs formalities and risk management (security and safety) for the entry of goods into the customs territory of the Union.

ICS2.0 will be a trans-european system and will be composed of 3 projects:

- **ICS2.0 Basis**: Common Specifications for the ICS2.0 Trans-European System, and the Common Repository component. The Common Repository will be mandatory to

use by all Member States, providing facilities to store and manage the life-cycle of all submitted ENS declarations.

- **Opt-In 1**: The Shared Trader Interface, aimed at providing a functionally and technically harmonised interface for Economic Operators to submit and receive ENS related information, for Member States choosing to opt-in.
- **Opt-In 2**: The e-Screening and Risk Management Support for Member States choosing to opt-in.

The ICS2.0 Trans-European System will need to support complex processing and collaboration among its participating sub-systems for the entry of goods throughout the ENS+ Lifecycle of a consignment. This includes, among others:

- receiving and linking (or unlinking) of ENS submissions,
- performing collaborative security and safety risk management (e.g. e-Screening) and supporting the manual risk mitigation actions,
- facilitating the risk analysis and assignment of controls advises among customs authorities,
- receiving controls results coming from customs authorities,
- receiving, processing and correlating arrival notifications and presentation of goods notifications with the respective consignments (linked ENSs).

The complete scope of the ICS2.0 trans-european project contains system components provided under the responsibility of the MS (national components in the National Domain) and central components provided by the Commission in the Common Domain. CCN2 in the Common domain will provide the interoperability layer. The overall schema is the following:

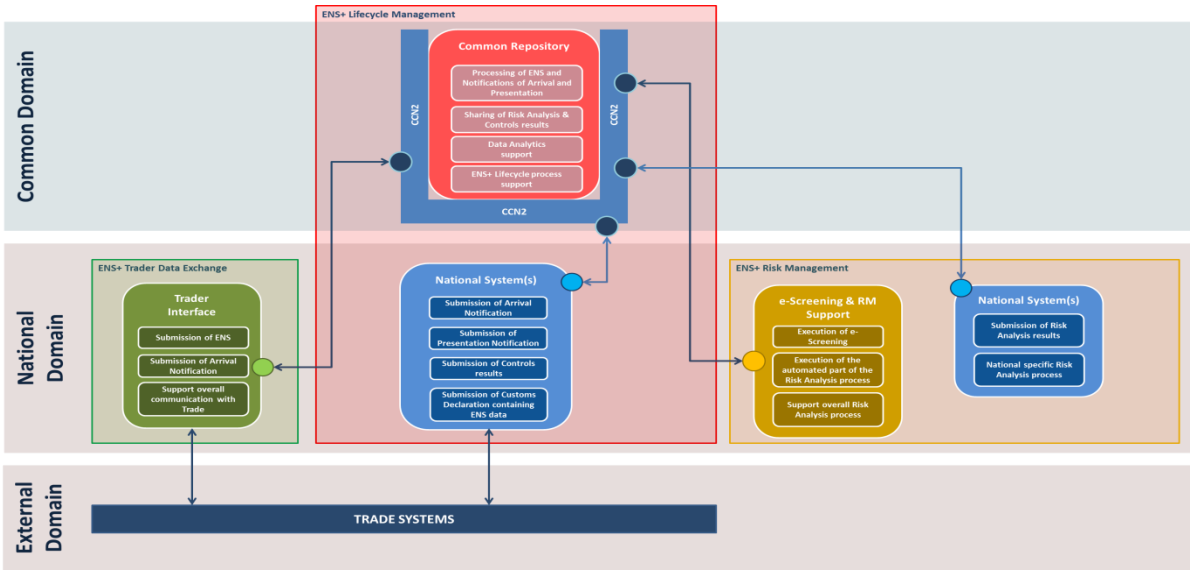

Figure 8: ICS2.0 system components

The following synergies have been identified:

- UUM&DS – will be used for the Identity and Access Management of
    - the traders connected to the Shared Trader Interface and
    - the Commission users
- CCN2 – will be used as message exchange platform for ENS data and related messages, and for authentication and authorisation for Member States users / systems.
- Projects related to systems that provide Economic Operators data (EOS, AES).
- Projects related to systems that provide reference data (CS/RD2, TARIC).
- TATAFng – will serve as baseline for technical architecture. ICS2.0 will be compliant with the technical architecture, and utilize services to the extent that they are relevant and available.
- SDLC (Dev), SDLC (Ops) – will provide the methodological framework for the project phases.

The main **architectural principles** of ICS2.0 are the following:

AP1. ICS2.0 will be aligned with the SOA architectural decisions in the MASP strategy and will follow the architectural guidelines of TATAFng where applicable;

AP2. ICS2.0 will be accessible via services exposed via SOAP-based web services for system-to-system interfaces (both synchronous and asynchronous) and Web Interfaces for users (Customs Administration users and Economic Operators);

AP3. CCN2 will be used as the transport network between different system components in Common Domain and National Domain. ICS2.0 will also use the service registry of CCN2 to expose its services to required parties. Finally, ICS2.0 will use the relevant services of CCN2 for the authentication and authorisation of related MS Customs Administrations' IT systems and users;

AP4. UUM&DS will be used for authentication and authorisation of economic operators;

AP5. National and Shared/Common system components must be implemented based on common specifications, provide the same interfaces, and participate in the overall choreography in the same manner;

AP6. Considering that CRC1 requires EU-level ENS historical data, a real-time adapted database (e.g. dimensional) with required ENS+ history data will be used for such CRC execution;

AP7. Segregated databases will be used for Risk Management related data required for CRC Category 2 execution;

AP8. Archiving mechanisms should be provided.

AP9. ICS2.0 design must comply with the following Confidetiality/Integrity/ Availablity requirements and Security classification:

Confidentiality level	LIMITED HIGH
Integrity level	CRITICAL
Availability level	STRATEGIC
Security classification	SPECIFIC

Table 12: ICS2.0 security classification

AP10. Quality requirements are as defined in the bullet points below:

- **Availability:**

The availability requirements for ICS2.0 are 24 hours per day, 365 days per year (24x365) with a very high availability.
All maintenance activities will be planned and announced well in advance. Downtime during maintenance activities and the deployment of a new application version should be limited and take place in service window. Based on the analysis of weekly ENS submission distribution for ICS1.0 and taking into account estimated change in load, a service window is defined for maximum of 1 hour per week on Mondays between 2:30 AM and 3:30 AM.

- **Deployment in operations:**

In order to accomplish this future IT system, it must follow the principle of "Continuous Availability" for next-generation CDCO applications following the SOA paradigm. This will allow the system to have near-zero RTO (Recovery Time Objective) and RPO (Recover Point Objective). Technical implementation of this principle can be achieved by using twin Active-Active clusters running on two distinct Data Centres (DC) with Global Load Balancer.
For the high availability calculations, the following assumptions have been made, based on usual practice:

- RTO: 3 hours (defined)
- RPO 0 hours (required)

As indicated above, the "Continuous Availability" principle with an Active-Active architecture should guarantee continuous activity. The RTO becomes relevant only when recovering from a complete shutdown in both Data Centers which is improbable. Note that reducing RTO will have impact on costs.The following table shows the targed availability for EU infrastructure components for 2020.

Component	Target Availability %
Platform (COTS middleware)	99,950%
Operating System	99,970%
Network	99,980%
Building & Facilities	99,995%
Combined	**99,895%**
Max. downtime (per month) - hours	**0 hr 45 min**

Table 13: target availability for EU infrastructure components in 2020

Because the architecture of ICS2.0 is hybrid having central applications (Common Repository), shared optional central applications (Shared e-Screening and Shared Trader Interface) and nationally implemented components (National Risk Management, National Import Control Application), we shall make distinction between availability for each. We put as a requirement the availability for centrally running software components reaching 99,97% (12 min downtime per month) and 99,95% (22 min downtime per month) for nationally running software components.

- **Scalability:**

ICS2.0 must be architected to horizontally scale, including increased number of users and increased transaction and data volume without changing technical architecture.

- **Volumetrics:**

The system will need to cope with the volume of ENS submissions (complete and/or partial) that are expected to be received from trade during the ENS+ Lifecycle process. Expected number of ENS submissions per year is 326.8 million.

- **Performance requirements:**

The following parameters are used as input for assessing the performance requirements:

- Estimated number of filers (e.g. EOs): 45000;
- Estimated number of users from MS Customs Authorities: 3000;
- Maximum number of concurrent users from MS Customs Authorities per second: 150

Using the ENS submission distribution graph we have calculated that ICS2.0 must perform in a reasonable time frame for 96 peak ENS submissions per second from filers. In addition ICS2.0 will be used by MS Customs Authorities users to perform various actions regarding consultation and risk mitigation. The system also supports system-to-system interface to exchange required ENS data with MS. As a result there is high concurrency on the central component. Total number of concurrent users (including system-to-system interactions) can be estimated as 96 (filers) + 150 (MS Customs officers) + 28*5 (MS systems) = 386 concurrent users.

- **Installation:**

The common and shared applications will be installed in the DG TAXUD Data Centers in an Active / Active deployment distributed over two data centers to address the high availability requirements.

The following environments are envisaged per application:

Environment	Count	Comment

Production	2	One environment per data center, with clusters per layer.
Conformance Test	2	Similar to production, but with reduced processing capacity.
Site Acceptance Test	1	preSAT/SAT
Test	1	Performance Test / FAT
MS Test	1	Member state testing; prior to conformance testing.
Development	1	

Table 14: ICS2.0 environments per application

Helpdesk: a trans-european helpdesk will need to be provided during the operations of ICS2.0. For the Shared Trader Interface project (that will manage system-to-system messaging directly with trade systems in the external domain), a first line helpdesk will be organised in the MS, and 2nd and 3rd line support will need to be ensured centrally by DG TAXUD. And also, as the Common Repository is a mandatory repository for all MS, the appropriate level of support is to be provided to the MS (between common and national domains).

3.1.6.2 APPLICATION ARCHITECTURE: TATAFNG

Current applications on production in TAXUD have been developed following TATAF architecture model (see 3.2.1.1.26).
New MASP applications currently under development are following a new SOA approach as defined in TATAFng architecture, guidelines and recommendations.

[R5] - TATAFng Vision Document (CD3-TATAFNG-VD.docx 1.00)
[R6] - TATAFng Project Strategy (CD3-SC03-DLV-028-10-47-1-TATAFNG-Project Strategy-SfA-v1.00.docx)
[R7] - TATAFng requirements and proposed Solutions (CD3-SC03-DLV-028-4-47-1-TATAFNG-RPS-SfA-v1.00.docx)

The aim of TATAFng project is the definition of the SOA application architecture for TAXUD new developments.

Scope and objectives

- ✓ TATAFng must enable both application designers and developers to **focus on business functionalities**, by tackling once the transversal functional (e.g. drafting) and non-functional (e.g. robustness) requirements and providing with support (e.g. tools, guidelines) easing the development process.
- ✓ TATAFng must also allow **consistently improving the quality of applications**: security, robustness, availability, maintainability, testability, user interface.

- ✓ TATAFng must allow **decoupling applications from other elements of the IT landscape** such as the communication network (CCN, CCN2, SPEED2, Internal Communication Network), or the identity providers (UUM&DS, ECAS, T-REX, the identities provided by CCN and CCN2).

The following figure presents a high level overview of the technical architecture of the application platform and the external parties that interact with the platform.

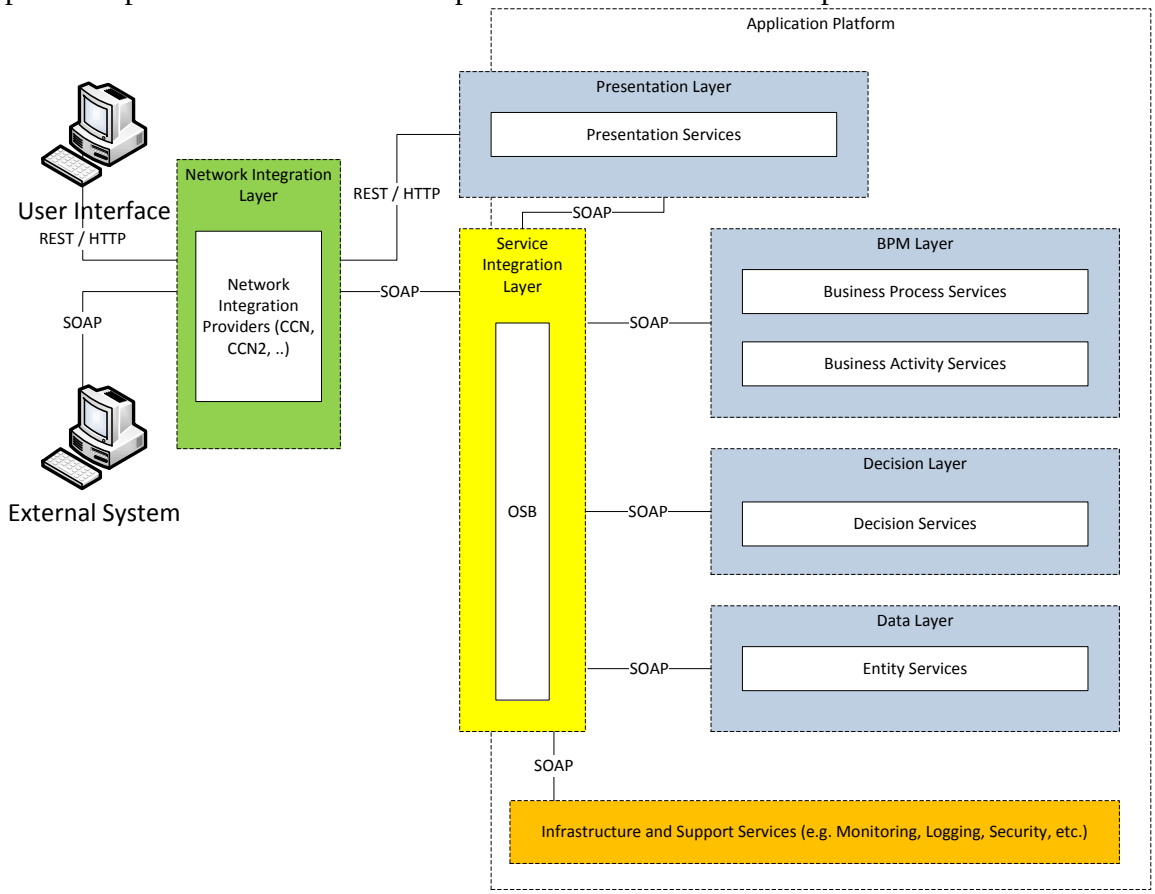

Figure 9: Reference Architecture Overview

The application platform is following a service oriented architecture approach, in which software components offer services to other components via service contracts. Each service is representing a self-contained unit of functionality. The communication protocol used for communication between services is SOAP.

The application platform is based on the Oracle Fusion Middleware product suite. It uses the Oracle Service Bus (OSB) as Service Integration Layer. All service communications are done through the OSB using SOAP. The only exceptions are presentation services which directly offer REST services over HTTP.

Clients of the application platform are either users that are connecting to the application platform using a user interface such as a browser or other systems that directly communicate with the required services using SOAP. The Clients are connected to the application platform through one of several network integration providers (e.g. CCN, CCN2, etc.).

The services hosted on the central application platform can be split into several categories:

- Presentation Services – They implement the user interface related logic;
- Business Process Services – They provide access to business processes that are running in the Oracle BPM engine provided by the Oracle Fusion Middleware;
- Business Activity Services – These services provide functionality that abstract atomic business logic and often represent a single activity in a business process;
- Decision Services – They encapsulate decision logic and expose it to other services;
- Entity Services – They expose services to perform changes and provide access to business data;
- Utility Services – These services expose functionality which is not directly related to performing business operations.

The elaboration project has been divided into two phases and a a number of micro-projects, and it is currently under execution.
Phase I is being delivered in 2015; phase II is scheduled to be delivered in Q1 2016.

The paragraphs below gives a brief description of each of the microprojects.

Service Oriented Architecture (repository,registry, lifecycle, fault management, robustness)

The goal is to provide a manageable and robust reference high-level architecture for building BPM/SOA applications.

Entity Services

The goal is to provide support for efficiently storing and retrieving data.

Efficient Consumption of Remote Data (Caching)

The goal is to provide mechanism for efficiently consuming reference data that are made available remotely, especially when an intensive use of them is required (e.g.: CSR/RD 2).

Document File Storage

The goal is to allow services to efficiently work with potentially large files (it include both file transfer and storage).

Application Architecture

The goal is to provide reference architecture and designs for the different kind of reference components (web application, etc.).

Data Lifecycle

The goal is to support the life cycle of data handled by the application, including drafting, versioning, lifetime, as well as data multilingualism.

Replication

The goal is to provide a common approach for doing efficient and robust data replication between components.

Integration with CCN2

The goal is to build a JAAS plugin authenticating HTTP requests coming from CCN2.

Security Contexts

The goal is to define and support security contexts of web applications, services, business processes, batches, and databases as well as propagation between them.

Integrating IAM of CCN

The goal is to build a JAAS plugin authenticating HTTP requests coming from CCN.

Integration with CCN (exposing services over HTTP)

The goal is to provide support to applications needing to expose services over CCN.

Integrating ECAS

The goal is to integrate the ECAS plugin that initialise the web application security context for requests authenticated by ECAS.

Integrating T-REX

The goal is to integrate the ECAS plugin that initialise the web application security context for requests authenticated by T-REX.

BPM (HT, Unit of Work, Large Message)

The goal is to provide guidelines and patterns to implement solutions based on BPM (Unit of Work pattern identified in the context of Customs Decision, implementation of Human Tasks, ability for process to deal efficiently with larges messages).

Logging

The goal is to provide logging facilities allowing distributed components (services, process, web applications, etc.) to log events in the order they actually happened.

Scheduled Tasks

The goal is to provide support for executing scheduled tasks in a way that uses the computational resources in an efficient way.

Integration of UUM&DS

The goal is to either build a JAAS plugin initialising the security context for requests authenticated on UUM&DS, or integrate the plugin provided by the UUM&DS project, if there is one.

Interfacing with IAMs

The goal is to allow applications to retrieve information about authenticated users in a transparent way.

Scalability / High-availability

The goal is to provide reference architecture, as well as rules for building components, that make resulting application scalable.

Extended BPM support

The goal is to build business functionalities that are not provided out-of-the-box by the Oracle Business Process Engine (e.g. extended timer support).

Web User Interface

The goal is to provide reference architecture as well as re-usable components to make the development of user interface more consistent and faster (based on REST and Kendo UI).

Internationalisation

Internationalisation is about translating static data such as labels in user interfaces, report templates, mail templates, notifications, etc. (it must not be confused with data language).

Data Presentation

The goal is to allow users generate predefined reports from their data.

Data Auditing

The goal is to make sure that all changes done on the data are traceable and auditable.

Activity Auditing

The goal is to make sure that the activities performed by the users are traceable and auditable (this is different from data auditing in the sense that not all activities modify the data).

Querying and multiple-field search

The goal is to allow users to build customs queries in web applications.

Process Management

The goal is to provide support to operators to get information about processes and manage their lifecycle, by taking appropriate actions when required (recovering faulted process, etc.).

The output of the TATAFng project is:

- Reference Architecture Document
- Reference Application
- Development and testing guidelines
- Technical Artefacts: Plugins, Interceptors, Services

3.1.6.3 SDLC

As a consequence of the IT Strategy defined within the MASP for the implementation of the UCC DG TAXUD will need to upgrade considerably the level of IT services that it offers to the Customs Policy activity. This is partly due to a higher dependency form National Administration systems on central services under the responsibility of TAXUD and partly due to more new business requirements that demand a more robust and flexible IT capabilities.

Among other things, to address the above there is a clear need to revisit the System Development Life Cycle (SDLC) methods and tools in order not only to increase efficiency, quality and control capabilities but also to adapt to new technologies and more demanding requirements. These improvements must be implemented most specially for the new applications and platforms requiring high availability (from 2017 according to the MASP) but also may need to be applied to all systems in order to ensure the maintainability of a rapidly increasing number of IT assets.

In order to cope with the mentioned issues, two closely coordinated lines of action have been proposed:

- One to deal with the Inception, Elaboration and Construction phases dealing globally with Architecture and BPM to SOA development methods and
- Another to cover the Transition aspects of the lifecycle: delivery, deployment, testing and entry into operation.

SDLC & SOA Development

The main objective of the SDLC activity is to fill the gap between the current development lifecycle (described in TEMPO and mainly used for the TAXUD customs IT applications) and the one to be used when implementing BPM/SOA IT projects. As it was not the intention

to develop a complete new methodology, several enablers at Commission level have been used as input to adapt the existing methodology.

A reference manual is under construction which is considered a high level starting point for the defintion of the development phases of the life cycle (Inception, Elaboration and Construction).

At the moment of writing, an action has been launched for the assesment of tools and methods for the implementation of the reference manual, for ongoing or to be started projects. This is based on the use of a common repository for modeling the architecture and specifications of the developed systems.

SDLC & Transition to Operations

In the context of the transition phase of the life cycle towards the entry into operation a study was made which resulted in a proposal that is today under assessment by the affected stakeholders (DG TAXUD and contractors) before launching the implementation.

The implementation solution envisaged covers the following:

Common Asset Repository:

To introduce the use of a common repository where the developer would upload the deliverables according to a certain structure (source, binaries, test assets, documentation, etc.).

This repository and the content would be TAXUD owned and the responsibility of its maintenance would be to the ITSM3 Operations contractor.

Automated Deployment:

Producing automated procedures for the deployment of the different software releases delivered by TAXUD contractors (platforms, applications and services). These automated procedures would be executed and tested in a controlled FAT environment (similar to that of SAT, CON and Production) and would be part of the acceptance of the software.

The automated procedures would then be reused with different parameterisations and with addition of sanity checks and other operational assets deployment as required in the subsequent environments.

Automated Testing

Producing, during development, automated procedures for the execution of the test plan(s) of the different software releases delivered by TAXUD contractors (platforms, applications and services). This is done using a central cooperative platform that allows the follow up of all testing activities (from design to execution) by providing to all involved parties visibility and the opportunity to interact more closely. This facilitates the creation and maintenance of Test plans and allows stakeholders to make a better judgement on which tests to execute for a given change. Each stakeholder can then focus its efforts on what is deemed needed for him.

These automated tests would be executed and tested themselves in a controlled FAT environment (similar to that of SAT, CON and Production) and would be part of the acceptance of the software.

The automated procedures would then be reused with different parameterisations and with addition of operational, security and other non-functional test scenarios as required for validating the entry into operation.

Release Management Automation

Adding capabilities to automate the integration of the release Management process as a workflow where the different steps from software delivery planning till deployment in operation are managed.

Environment Provisioning

Adding capabilities to define, maintain and provision the developer's standard IT environments with the adequate OS and middleware versions that facilitate the overall automation of releases.

In summary the proposal is to launch a gradual implementation for which the first step would target the set-up of a common asset repository or DSL and implementation of automated deployment for some or all TAXUD systems and platforms. This would end with a re-assessment of the options before targeting more complex and ambitious options like automated testing, automation of release management process or automation of environment provisioning.

It is expected that automated testing is by far the most complex and risky of the options and may be constitute a program in itself. Its implementation needs to be integrated with the development side of the SDLC, most specially at governance level but also on its implementation model.

3.1.7 Direct and Indirect Taxation, Recovery of Claims and Excise systems

For more information about existing Taxation/Excise systems, please refer to the Baseline, and more specifically to the Taxation/Excise Fiches [R69]

The scope of this section provides an overview of provisional IT activities foreseen in the Taxation and Excise areas in the next years. This strategy is aligned with the strategy of the business units and aims to tackle the tax-related inefficiencies and obstacles to cross-border economic activity in the Internal Market.
Assumptions: the start of several activities is conditioned by a "go decision" date which relies on the result of negotiations with Member States, for example in Tax Committees or Council. When the "go decision" date has not been fixed yet, the planning assumes the most suitable date in order to spread the workload of the different projects over time.
For the coming years, the IT activities to be achieved in Taxation are articulated around the following main axes:

1. **Indirect Taxation Related projects**. In the field of VAT, all proposals and new projects are aiming at addressing the significant increase of VAT requests on Europa increasing the efficiency of the internal market and to safeguard the tax base and national tax revenue. They are grouped in following main categories of projects:
    a. VAT eForms evolutive maintenance, Multilateral Cooperation (EUROFISC) Invoicing Rules and VAT Rates Exchanges (both under TIC project);

b. VAT Refund (operations and evolutive maintenance) and Mini-One-Stop-Shop (MOSS). It is likely that after MOSS goes live, it will evolve into a full One-Stop-Shop system (it is however not expected to have a legal based adopted before 2018);
c. VIES Maintenance: it consists in several projects aiming at improving VIES;
d. Vies-on-the-Web Maintenance;
e. The introduction of an EU VAT Portal, including a clear and binding list of goods and services not covered by MS standard rates;

f. The Self-Service Testing System (SSTS) supporting conformanct testing;

g. The Taxation Information and Communication (TIC);

h. The Taxation Statistics System (TSS);

i. The SCAC Statistics eForms.

2. **Recovery of Claims**:
   a. As the need for recovery assistance is increasing, it is absolutely necessary to reform the functioning of the mutual recovery assistance. To boost the recovery ratio, it is necessary to change the conditions for assistance requests and to develop a system of spontaneous information exchange. The Recovery Committee did request to update these forms to make them more easy to use and efficient;
   b. Recovery eForms will be extended to non-EU MS, pending a suitable legal base for this (see 4.b) ;
   a. Given the increased number of notification assistance requests, and the need to ensure data protection when notifying tax documents abroad, it has been suggested to develop an EU electronic notification blackboard for notification of tax documents ("Portal for Official Registration of Tax Orders (PORTO)-notifications");
   b. CAR information exchange. The development of automatic exchange of information with regard to vehicle registrations, with the EUCARIS system used as a basis.

3. **Direct Taxation related projects**. The activities are articulated around three main axes:
   a. Taxation of Savings (Council Directive 2003/48/EC). Support to the operations of system and identification of means and tools allowing a better quality of data such as improvements of TIN-on-the-Web;
   b. Administrative Cooperation (Council Directive 2011/16/EU repealing Directive 77/799/EEC). The first main activity consists in setting in place and maintaining electronic eForms to improve the mutual assistance between the Member States (eFDT eForms). The second main activity consists in setting in place an automatic exchange of information regarding five categories of information (DAC1). Additional amendments to this directive introduce additional categories of financial information to be exchanged (DAC2 CRS) and the exchanges of Rulings information (DAC3 Rulings). Above activities include a strong cooperation with OECD as they are leading a similar project. The extension of the CCN/Mail services to non-EU countries is also part of

this axe (see 3.g). Last developments in the context of the Foreign Account Tax Compliance Act (FATCA) enforced by the USA show that most of the Member States have implemented the format proposed by the USA regarding their information exchange for what concerns their bilateral agreements with the US fiscal administration. In parallel, the OECD has developed the Common Reporting Standard (CRS) which will comprise an electronic format along with an agreement model that will be used by its member countries in their bilateral agreements. The OECD is now currentmy working on setting in place a CommonTransmission System which will be a worldwide platform for the exchange of information under the CRS, which opens an opportunity for the Commission to propose an interface with the 3rd Countries that would fit the need for rationalisation of IT tools as mentioned in the Commission communication COM(2012) 722 final. Possible EU interconnectivity project with 3rd Countries (CRS), with US (FATCA) and between 3rd Countries (CRA);

c. CCN/Mail services extension to OECD;
d. TAXUD to act as 24/6 help desk for international exchanges of +-150 countries in the scope of OECD, and related business and applications management support;
e. Standard Audit File for Taxation (SAF-T);
f. Creation of an EU Tax Identification Number (TIN): TAXUD/D2 and C5 launched a feasibility study that will end in Q3/2015;
g. Cross-border Withholding Tax Relief at source: FISCO and its equivalent at the OECD, the TRACE (Treaty Relief and Compliance Enhancement) project.

4. **Other Taxation related projects**:
   a. The Taxes in Europe Database application (TEDBv2), aiming at providing the citizens with access to the information on the taxes, has been redeveloped including TAXREF, which is a project aiming at tracking the evolution of some taxes. Currently, a study is on-going to review the tax forms published on the website (TEDv3);
   b. An eForm Central Application project has been launched and will aim at reducing Member States deployment costs and efforts by centrally providing the eForms currently used in the VAT, Direct Taxation and Recovery areas. This will also ensure homogeneity of the versions used by the MS. Extension of eForms to OECD Countries;
   c. In 2014 the Benelux countries have conducted a pilot project named Social Networking Analysis (SNA), whereby existing data from different sources (mainly data available within the Eurofisc network completed with static VIES data, and also with other international and national data) are combined and analysed to detect possible VAT fraud at an early stage. The results were very impressive, with a high detection rate and very few false alerts. TAXUD is now called to examine whether this system can be extended EU wide;
   d. Taxation Web Portal (TWP), after EU VAT Portal project;
   e. Financial Tax Transactions (FTT);
   f. ORBIS –Central Server;
   g. Effective Tax rates.

5. **Excise**: The next maintenance release that will be launched is Phase 3.2 in 2016, then a provisional planning keeps the milestones already defined for Phase 3.3 (2018) and introduces a new release planning for each Excise Domain presented as an independent e-Excise project. Future changes need to be timed to align forthcoming legislative changes (possible revisions of Directive 2008/118/EC in 2016, possible changes to Council Regulation (EU) No. 389/2012 in 2017, and the implementation of the Union Customs Code from 2016 to 2020).
   To achieve a higher level of uniformity between legal provisions and IT implementation, and improved effectiveness and efficiency, excise makes use of the Business Process Modelling methodology, thus identifying automated and non-automated Excise Business Domains and the gaps between the automated business processes and their translation into functional requirements.
   The Business Domains and related future potential projects are listed below:

   - Currently automated Excise Business Domains and related activities:
     - EMCS Core business, consisting of Core business and Interfaces with Customs systems.
       a. Implementation of bar code for the ARC on printout;
       b. Definition of a uniform fallback document layout;
       c. Definition of 'journey time';
       d. Need for standard procedural simplifications for trusted traders, based on Article 31 of Directive 2008/118/EC;
       e. Handling of exceptions, 'time limit' issues;
       f. Establishing automated links between EMCS, the Export Control System (ECS) and national import system.
     - Administrative Cooperation;
       a. Alignment of the data items and messages for administrative cooperation requests for duty paid and duty suspended goods;
       b. Clarification of the gaps and the relationship between claims, guarantee management and the Recovery Directive;
     - Registration and Authorisation Data management - EMCS Economic Operator registration and reference data (SEED);
     - Customs Office List management and Reference Data management-CS/RD;
     - Statistics management and Availability management - Central Services/Management Information System for EMCS (CS/MISE);
     - EMCS Test Application (TA, M);
     - EMCS Converter (M).

   - Excise Business Domains, Candidates for Automation:
     - Duty Paid Business to Business;
     - Duty Paid Distance Selling;
     - Risk Management System;
     - Exemption management.

   - Excise Business Domains, the automation of which is currently not part of central planning (national or possible collaborative development projects):

- Guarantee management;
- User access management (except for Common Domain applications);
- Business continuity management (except for Common Domain applications).

➢ Other possible functionalities supporting non-automated Excise business domains or non-excise requirements
- Support for carrying of Agricultural compliance information;
- Tobacco track and trace.

6. **Common projects**. With Communications COM(2012) 722 final, the Commission presented an action plan and set out how it is possible to improve tax compliance and reduce fraud and evasion, through better use of existing instruments and the adoption of pending Commission proposals. It also emphasised the rationalisation of the IT tools with the aim to reduce IT costs for the Member States. Moreover, other projects are foreseen to improve the IT collaboration of Member States Administrations on delivering their national projects or to de-silo taxation domains.
   The main projects foreseen in the next years are the following:

   a. Housing of FITSDEV3 development environment;
   b. Housing of MS development environment for IT collaboration projects;
   c. Conformance Test Application (CTA).

3.1.8 Evolutions related to Infrastructure

The infrastructure evolutions are driven by the High Availability (HA) Programme which deals mostly with the consolidation of DG TAXUD's datacentres and the provision of infrastructure with sufficient capacity enabling high availability, security and SOA capabilities for DG TAXUD IT systems.

This programme is enabling the on-going severe transformations on DG TAXUD IT environment. DG TAXUD's datacentres will host the three key new systems that will transform the technological blueprint of EU Customs: CDMS; UUM&DS and CCN2. It will also open the possibility to new schemas and paradigms of systems requiring specific and flexible levels of security and accessibility not possible in the current infrastructure.

DIGIT infrastructure services will still be used by the majority of DG TAXUD's applications, however those that are more demanding, in terms of capacity, processing power or operational issues; will eventually be migrated to DG TAXUD datacentres.

One of the major drivers for the set-up of DG TAXUD datacentres is the provision of highly available infrastructure capabilities.

This driver is two-fold: on one hand and most importantly it is an enabler for highly available new applications and services as required in the MASP; and on the other hand it will improve implicitly the availability of existing applications.

However, it is essential to understand that highly available infrastructure does not make highly available IT systems. In order to ensure high availability for an IT system, it not only has to be carefully and specially designed with this purpose but also the proper service

management processes and automating tools must be introduced to allow continuous monitoring, swift deployment and fast reliable testing of patches and releases.

This is why the objective for 99.8% availability of the infrastructure does not mean that same availability level for the systems running on this infrastructure; in fact, the target of availability for those systems can only be lower and is estimated in between 99.5% and 99.7% - depending on the robustness of their design and on possible external dependencies.

A very similar reflection is to be done with the disaster recovery capabilities. For example, the time to recover (TTR) the infrastructure services from a disaster comes on top of the time to recover (TTR) the applications running on it, either by starting or redeploying them at a new site.

The datacentre infrastructure is being implemented according to an architecture designed according to DG TAXUD's requirements. This architecture must be the reference and be respected for IT systems' implementation. This means the architecture being documented and shared with all stakeholders via Hosting Guidelines and Infrastructure Service Catalogues.

Although the datacentre infrastructure was designed to host legacy systems, some were designed before the datacentre architecture was set up and will require specific measures (mainly SPEED2, CCN and CCN2).

The following is a list of actions foreseen in the mid- and long-term in the context of the HA Programme:

- Feed the service catalogue services;
- Improve/adapt the hosting guidelines;
- Adapt the baseline architecture with future requirements;
- Host new customers in the datacentres;
- Setup a third row in the datacentres;
- Improve security measures/procedures;
- Adapt the BCP/DRP procedures' process in the data centres and launch a periodic fail-over test between the data centres;
- Set up a back-up Internet service provider in the datacentre – improvement of the availability;
- Plan a staging environment accessible remotely by the management team;
- Host new applications in the data centre (HA/DR mode) RTO < 2h;
- Implement SIEM services;
- Host FITSDEVx contractors;
- Migrate the whole CCN2-DEV development environment from CCN2-DEV Datacentre to TAXUD Datacentre
- Stabilisation of the existing applications/services;
- Improvement of the procedures (DRP) – automation of process;
- Improvement of the security (Antivirus/SIEM);

- Improvement of the Monitoring;
- Optimisation of the "power per rack"/servers – consolidation;
- Self-deployment of Virtual Machine for X-Devs;
- New Iteration of the Architecture with new requirements (including view of 2020 applications).

3.1.9 Evolutions related to Operations

The key major evolutions of Operations services are related to monitoring. The core monitoring tool used in DG TAXUD is currently TIVOLI; however for the management and monitoring of the Oracle SOA platforms deployed at TAXUD the intention is to use the OEM tool, which is to be integrated as much as possible with TIVOLI.

TIVOLI related evolutions

The current Tivoli environment is used by ITSM2 Lot1 to monitor the infrastructure and applications of DG TAXUD. Part of the set-up is still today in the ITSM "bubble", created in the Luxembourg Datacentres for the relocation of the former ITSM Datacentre. Another part is available in the target environment, for the monitoring of the CCN environment. The systems monitored from within the bubble are both in the bubble and outside the bubble.

ITSM2Lot1 intends to move the Tivoli monitoring system from the bubble to the target environment in the coming months.

This takes into account:

- The monitoring of both Datacentres (One instance of Tivoli must be able to monitor devices in both Datacentres);
- The Tivoli set-up for continuous monitoring of all resources (One instance of Tivoli must be able to monitor all devices);;
- The most economic set-up in a high-availability/Disaster Recovery context (the least number of components to cope with HA and DR);
- A rationalising of the ITSM clusters (consolidate the ITSM and CCN clusters on the least possible components);
- Consolidation of the whole information in one Data Warehouse.

The following picture might be seen as input for the high-level design of the target environment.

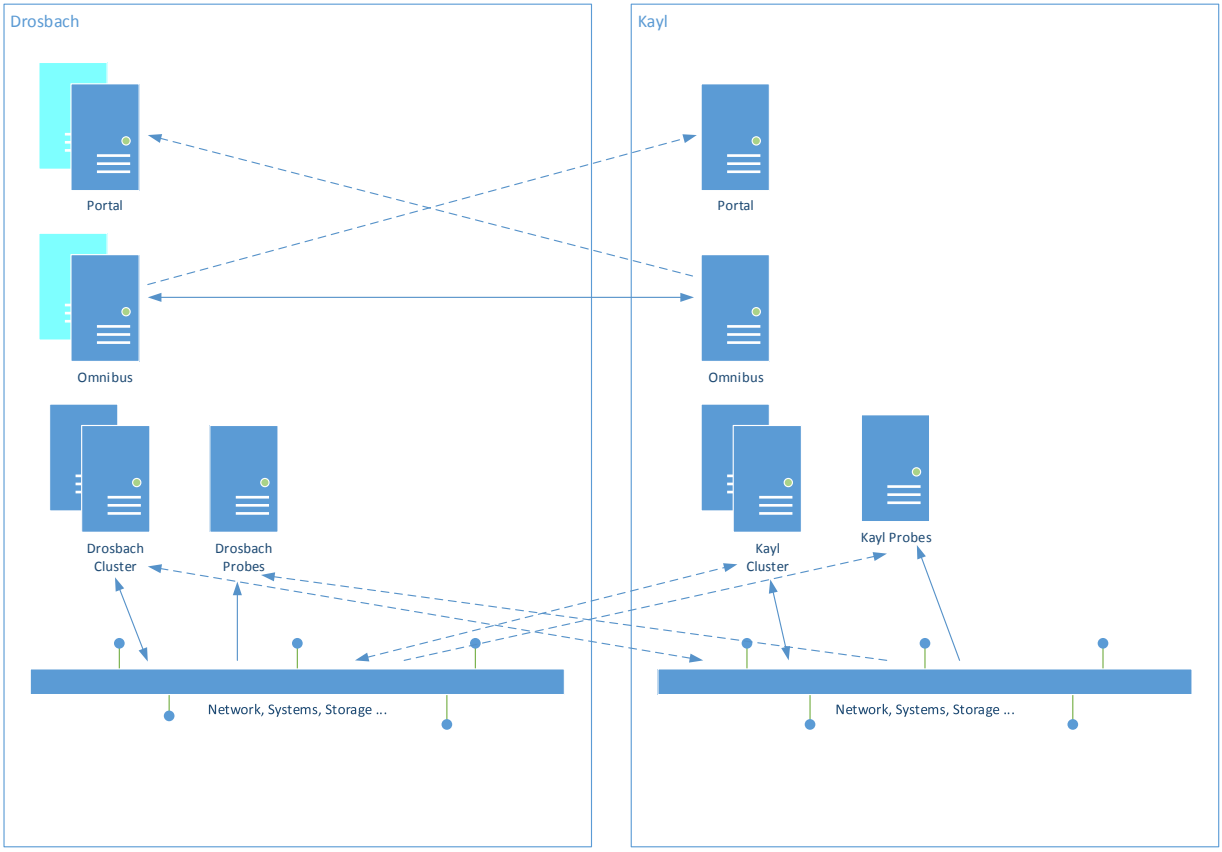

Figure 10: Target Monitoring environment

The scope does not only take into account the Tivoli monitoring components, it considers all Tivoli components deployed for the management of the DG TAXUD infrastructure. This includes, but is not restricted to Tivoli Netcool, Tivoli ITM, Tivoli TADDm, Tivoli EM, etc.

Following this project, there will be two other actions in the longer term related to the Tivoli environment:

1. The set-up of Tivoli in a HA/DR context
2. The consolidation of the ITSM and CCN monitoring environments

Oracle Enterprise Manager related evolutions

Within ITSM part of TAXUD IT environment, many services relay on Oracle technology stack. That technology stack is present on existing projects – mostly on SPEED2 platform, but it is also planned for future deployments on platforms that aren't in production yet (e.g. CCN2, TATAFng).

From both a management and business perspective, there is a strong need to centralize monitoring and management of all Oracle products. Oracle Enterprise Manager (OEM) is proven to fulfil this requirement.

As of today, there is one existing OEM instance used for the management and monitoring of the SPEED2 platform. On the one hand the intention is to set up a centralised highly available OEM instance to manage both SPEED2 and the SOA platform implementing the TATAFng application architecture. CCN2 platform, on the other hand, will keep its own OEM instance for management and monitoring; this is done to ensure self-containment and independence of the CCN2 platform from the surrounding infrastructure.

The OEM instances will be integrated as much as possible with TIVOLI, which is considered the main underlying monitoring platform.

3.1.10 Evolutions related to Service Management

The Service Management Programme managed by TAXUD involves the analysis and continuous improvement of ITSM processes, the introduction or evolution of tools (e.g. SMT, Service Catalogue), the measurement of quality indicators and levels of service and the maintenance of the Framework Quality Plan.
It is the implementation of the service strategy transformations (Service Block 2) in alignment with the Service Management programme that marks the evolution of the Service Block 9 services.
Among others, the main tactic evolutions currently defined within this Programme are:

- Ensure definition, maintenance and coherence of all SLAs, OLAs, MoUs of stakeholders and contractors that relate to services under the responsibility of TAXUD and promote their convergence;
- Follow up the quality of services delivered by service providers and their compliance with contractual or other agreements (SLAs, OLA, MoUs);
- Ensure the maintenance of FQPs and validate periodically their alignment with reality and launch the necessary CSIP projects to improve the services;
- Ensure that IT Service Management Processes, tools, documentation and implementation are adequate for the future systems, based on SOA and high availability;
- Define and implement Knowledge Management processes, tools and best practices necessary for the best continuity and efficiency of TAXUD IT Service Management processes.

3.1.11 Evolutions related to CCN Operations

Please refer to section 4.6.2.1 for details about CCN Operations.

The scope of CCN2 Release 1 does not include any interface with legacy CCN/CSI middleware. During a certain period between CCN2 Release 1 and CCN2 Release 2 both CCN/CSI and CCN2 will be used.

The scope of the so called CCN2 Release 2 includes the legacy CCN/CSI interfaces and the migration of the legacy CCN traffic from the existing CCN/CSI infrastructure to the new CCN2 Platform infrastructure. After migration, the CCN/CSI infrastructure will not be used any more. The legacy CCN/CSI traffic and new CCN2 (SOA) traffic will be supported by CCN2 middleware only.

The scope of so called CCN2 Release 3 includes all remaining features of CCN2, among all Master Data Management.

Further details related to CCN2 project can be found in section 4.6.2.2.

3.1.11.1 RESIDUAL (POST CUT-OVER) RISKS ON CCN/CSI CONTINUITY

Considering the almost simultaneous change of CCN development and operations support contractors during 2013, there were a number of risks that could impact the CCN/CSI business continuity. These main risks considered in 2013 were:

- The change of contractors for the 2 CCN-related framework contracts but also for other application development and quality contractors – resulting in a significant loss of knowledge of the DG TAXUD business and technical backgrounds by most contractors providing and consuming CCN/CSI services;
- The complexity of the CCN/CSI ecosystem induced by the high and continuously increasing number of CSI applications/stakeholders – imposing an extremely structured and cautious approach in the testing and deployment of CCN/CSI patches and releases that is complicated and time consuming. Furthermore, specific areas in operations support are proven to be complex for both the ITSM2 Lot1 contractor and for CCN2-DEV contractor who need to support them;
- The variety of – partially outdated – skills required to maintain the CCN (legacy integration of various COTS) and CSI (legacy development in C/Cobol/Java) software – makes it difficult to recompose a team with all necessary skills;
- The fact that many COTS used, especially in the CCN/CSI Gateway Software, have reached their end of life or end of support reduces the durability of CCN/CSI. This also impacts its security and robustness aspects as well since servers will not be able to be patched because of certain COTS being obsolete and thus failing to be compliant to the Patching Policy of DG TAXUD;
- The take-over of the CCN portal, including the CCN statistics operation that was not in the scope of the hand-over to-date.

3.1.11.2 PROPOSED APPROACH TO RISK MITIGATION

DG TAXUD and CCN2-DEV agreed on the following list of "Petites manoeuvres & Grandes Manoeuvres (PM/GM) " to mitigate the risks mentioned above. These actions were performed during 2015.

The activities groups are listed hereunder:

- GM1 – New release of the CCN/CSI Gateway Software (7.3.0 (for Linux only) and including many COTS updates of most of the COTS used (except Apache and LDAP))
- GM2 – Update of Support Tools (mainly a set of automated scritpts to help the work of the ITSM2 Lot1 operational contractor)

- GM3 – Improvement of SDLC (mainly focusing on the nightly build and automated testing of some new releases e.g. CCN/CSI GW, Stacks and new CCN portal)
- GM4 – Improvement of COBOL stack documentation and missions to MS to upgrade the COBOL stack to the latest applicable version
- PM1 – Elaboration of an Operations Manual for the ITSM2 L1 operational contractor
- PM2 – Improvement of ClearCase documentation
- PM3 – Partial replacement of CCN Portal (based on a subset of the existing CCN/TC Portal of the operational contractor)
- PM4 – Feasibility Study on Apache upgrade
- PM5 – New release of ACT
- PM6 – Replace ForeFront in CCN Mail III
- PM7 – C CSI Stack 5.5.5

It must be noted that all these new releases will have to be deployed (including (P)SAT and Conformance testing) by the operational contractor during 2016 and 2017. Furthermore the CCN2-DEV contractor maintains yearly a Release management plan covering all planned releases for the next year for the CCN2-DEV related CIs. The 2015 Release management plan is under review at the writing of the present document, see [Ref8] CCN2D-CRMP-SC03-Release Management Plan-20141211v1.00.zip

4. Services provided by the incumbent contractor

Disclaimer:

Volumetrics provided in this section give an overview of the existing and foreseen deliverables. Future estimates are made for sizing of the contract. These volumetrics are provided **for information only**, they are neither exhaustive nor binding, as the current environment constantly evolves and does not take into account the eventual transformations that will occur during the lifetime of the **ITSM3 Operations** contract.

This chapter provides an inventory of services provided by the current ITSM2 Lot1 contractor to be taken over under the subject of this call for tenders. The description of these services is the baseline of services that need to be provided; this baseline is completed by:

- The service requirements and specifications of **ITSM3 Operations** described in the Technical Annex which are in some aspects different from the current services of ITSM2 Lot1.
- The on-going evolutions that transform the current services provided by ITSM2 Lot1.

It should be noted that certain building blocks shall change in scope or in service requirements and that Service Blocks 06 and 07 have switched numbering from ITSM2 to ITSM3.

The structure in the chapters below follows the **ITSM3 Operations** ITT structure of Service Blocks. Each section covers the following:

- Overall Description of the services provided by the incumbent contractor in the context of the service block (extracted from the FQP).
- On-going and future evolutions foreseen in the context of the Service Block (based on TAXUD program managers input).
- Volumetrics of these services of the incumbent contractor as provided during the ITSM2 contract and those expected for the duration of the ITSM3 contract (extracted from monthly and annual service reports presented according to Price list and extrapolation to the future presented according to Price list).

Service blocks in ITSM2 Lot1 are what ITIL calls a function meaning the carrying out of one or more processes or activities. Even while these service blocks provide different services and consist of people with different knowledge and experience, they execute the common processes across the ITSM2 Lot1 organisation.

The ITSM2 Lot1 organisation consists of 12 service blocks and 19 formal processes as shown in the following figure:

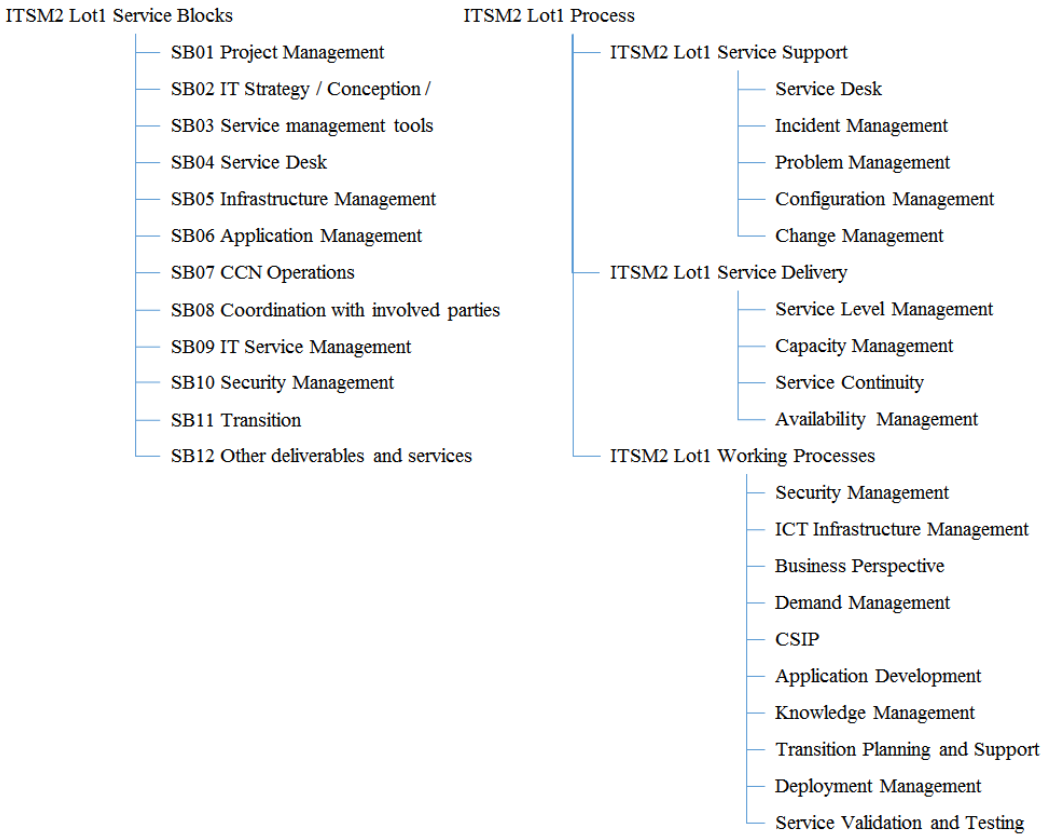

Figure 11: Overview of the service blocks and the processes

ITSM3 Operations has also 12 service blocks though SB06 & SB07 change places and *ITSM2 SB07-CCN Operations* becomes *ITSM3 SB06 - Interoperability and Application platform management* to incorporate the support to new platforms not explicitly covered by ITSM2 SB6 (such as CCN2, SPEED2, UUM&DS, TATAFng, etc.).

The following table represents the main changes in ITSM3 Operations in relation to ITSM2 Lot1 Service Blocks:

ITSM2 Lot1	ITSM3 Operations
SB01 Project Management	**SB01 Project Management Office** Minus Portfolio Management
SB02 4.2 IT Strategy/Conception/Evaluation	**SB02 Service Strategy & Transformations** Plus Service Strategy, Service Change

	Request, Processes Documentation, Portfolio Management and other service improvements.
SB03 Tools Supporting the Service Management	**SB03 Tools Supporting the Service Management** Addition and evolution of tools to be developed or maintained. Support of new and evolved processes
SB04 Service Desk	**SB04 Service Desk** Improvement of Service Desk instruments
SB05 Infrastructure Management	**SB05 Infrastructure Management** Coverage of CCN infrastructure and larger coverage of all infrastructure (network, security, etc.) Applicaiotn servers to be covered in SB06 as part of Platform management Addition of Asset Management Vendor technical support
SB06 Application Management	**SB07 Application Management** With addition and evolution of applications to be supported and Vendor technical support
SB07 CCN Support	**SB06 Interoperability and Applications Platforms** Evolving from CCN support to support of all platforms and exscluding CCN infrastructure which is covered in SB05 Vendor technical support
SB08 Co-ordination with involved parties	**SB08 Co-ordination with involved parties**
SB09 IT Service Management	**SB09 IT Service Management** Addition os processes and improvement of

	existing processes.
SB10 Security Management	**SB10 Security Management** Major improvements
SB11 Hand Over / Take Over	**SB11 Hand Over / Take Over** Including SB02 services in support of in flight projects and initiation of transformations design
SB12 Other deliverables and services	**SB12 Other deliverables and services**

In the following table are listed the different *ITSM2 Framework Quality Plan* annexes and documents covering the description of the ITSM2 Lot1 processes, the processes are documented with one illustration per activity, the RACI and a text description of the different tasks that need to be performed.

Service Support Processes	
FQP - Annex 11	Service Desk
FQP - Annex 12	Incident Management
FQP - Annex 13	Problem Management
FQP - Annex 14	Configuration Management
FQP - Annex 15	Change Management
FQP - Annex 16	Release Management
Service Delivery Processes	
FQP - Annex 17	Service Level Management
FQP - Annex 18	Capacity Management
FQP - Annex 19	Service Continuity Management
FQP - Annex 20	Availability Management
ITSM Work Processes	
FQP - Annex 21	Security Management
FQP - Annex 24	ICT Infrastructure Management
FQP - Annex 25	Business Perspective
FQP - Annex 26	Demand Management
FQP - Annex 28	Application Development
FQP - Annex 30	Knowledge Management
FQP – Annex 31	Transition Planning and Support
FQP – Annex 32	Deployment Management
FQP – Annex 33	Service Validation and Testing
Other related documents	
D16. Updated documentation related to processes, policies and procedures and agreements including missing parts ITS-1FQP-CSIP Process ITS-1FQP-QA and QC Processes ITS-1FQP-Risk Management Process	
D22. Updated External processes & procedures documentation covering all taken over BTH (incl. CCN)	

Table 15: The different processes and their corresponding annex

4.1 Project Management – (Service Block 1)

4.1.1 Description

Within ITSM2 Lot1 this service block is responsible for the following processes and activities:

- The governance of the ITSM2 Lot1 project;
- Relationship management via Steering Committee Meeting, Bilateral Monthly Meeting and Operational Monthly Meeting;
- Contract management (response to Request For Offer, Request For Estimate, Request For Action);
- Demand management;
- Contractual reporting (MPR);
- Internal quality assurance / Quality control / Internal audits & self-assessment / Cooperation during external audits & pricing benchmarks;
- Risk management.

The service block consists of:

- Project Management
  - Governance;
  - Relationship management.
- Business Office
  - Acts as the primary interface for DG TAXUD's contract administration;
  - Oversees administration of the contract, financials and new requests for services;
  - Oversees the process for any required contract changes or amendments, working with ITSM2 Lot1 internal contract administration and legal organisation);
  - Coordinates the invoicing;
  - Business office is the owner of the demand management process and has additional activities being contract management and supplier management.
- Quality and risk management office
  - Performing the Internal QAC activities;
  - Risk management activities.

Formal processes owned by this service block:

- Demand management process.

Additional activities in this service block:

Contract management

The Framework Contract is executed via Specific Contracts (SC) for two types of services:

- Continuous services, covering Management, Operations and Support services and Maintenance services);
- On Demand services linked to specific activities not covered above.

The Contract Management process ensures that qualitative proposals are created as a response to a request from DG TAXUD to provide services and deliverables in the context of the Framework Contract. Contract management is closely related to demand management.

Requests for proposal are triggered by:

- Requests for Offer (RfO) for SC;
- Requests for Estimate (RfE).

Acceptance of the proposal leads to DG TAXUD launching respectively a SC or Request for Action (RfA). Signature of the SC or RfA triggers the start of the activities. Though, smaller units of work or optional components within RfA's can be requested via an "e-trigger". Herewith, DG TAXUD authorizes ITSM2 Lot1, in electronic form, to proceed with the requested activity.

Key roles in the process include the following:

- The ITSM2 Lot1 Business Thread Leader(s)
- ITSM2 Lot1 Business Office Manager together with the ITSM2 Lot1 Demand Manager have the overall view of all Proposal Requests and their status.

Contract Management activities are reported in the MPR.

Demand management

Services are ordered in accordance with the following:

- The Framework Contract (FC) identifies the services available and offers a price catalogue: services with a unit price, services to be quoted in man / days together with the unit price of the profiles available, rules for reimbursement of travel expenses;
- Following the FC, Specific Contracts (SC) can then be signed. They specify the list of services concerned and the way these will be ordered:
  - The "**Fixed Price**" services: are the services (of any type) which may start with the signature of the SC;
  - The "**On-Demand**" services: are the services with a unit price, which may be ordered by means of a "**Request for Action – RfA**". Once a RfA has been issued by DG TAXUD, quantity of the corresponding services becomes available for consumption; these services are then "triggered" by DG TAXUD according to the needs. Once completed, the service is accepted normally via the acceptance of the monthly progress report where the related deliverables are listed. Accepted quantities may then be invoiced. This mechanism enables DG TAXUD to better align the services (and budget) with the needs; it implies that a proper "demand management" process is put in place to closely follow the quantities available, services consumption and related ordering, and quantities formally accepted ready for invoicing;
  - The "**Quoted-Time-and-Means**" services: are the services to be quoted in man / days which may be ordered by means of a "**Request for Action - RfA**" following an acceptable offer received from the contractor. The offer is meant to answer to a "**Request for Estimate - RfE**" to be issued by DG TAXUD;
  - The "**Infrastructure**" services: the hardware and software licenses, which may be ordered by means of RfEs and RfAs.

The SC may as well foresee a budget provision for travels, based on the travels needed for the estimated services. **Travels** are ordered by means of RfAs either individually or in a pool. A careful monitoring of the travel budget consumption is required by both the contractor and DG TAXUD in order to keep overall travel costs within the budget provision.

If, during the course of the SC, a budget provision becomes insufficient to cover the real needs, the SC may be amended either by revising the distribution of the overall budget between the different budget provisions (On-Demand, Quoted Times and Means, Infrastructure, Travels) or by adding additional budget where needed (the pre-condition for this alternative is that external budget still remains available from the operational budget lines of DG TAXUD).

The tenderers should refer to the **Price Table** ITSM3 Operations annexed to the call for tenders to get the pricing strategy to be used.

Quality Management:

Responsible for all quality assurance and quality control related activities.

Risk Management

Risk Management exists to identify risks associated with the activities of ITSM2 Lot1 and to make measured, appropriate responses to mitigate, ignore, avoid or transfer those risks in line with the desired level of risk tolerance.

The different tasks are to:

- Identify and register new risks with the initial details
  - Project team member identifies the risk and submits it to the SB Owner. The SB Owner performs an initial analysis and inserts the risk into the register.
- Analyse and evaluate
  - The risk owner evaluates the properties of a risk to determine the expected impact and probability of the risk's occurrence, as well as the likely time frame during which the risk can be expected to occur.
- Treatment and Mitigation actions
  - Action owner takes actions, and plan for actions, to lower the overall project risk exposure.
- Monitoring
  - The risk is revisited periodically to see if there are changes, if the actions implemented proved to be efficient, think of other actions if not efficient.
- Management review of risks
  - The risks that need management attention are reviewed weekly in a meeting between Project Executives, Quality manager, Risk Manager. The Risk Manager communicates to Risk owners the conclusions and updates the risk records accordingly
- Respond to risk occurrence
  - Risk Owner and SB Owner analyse the actual impact of a risk occurrence, evaluating actual damage and loss to the project.
- Close risks
  - Closing risks deals with the final resolution of a risk that either has occurred or is no longer considered to be a significant threat to the project.
- Reporting risks
  - The risks that impact DG TAXUD are raised twice a month in the Bi-monthly Multilateral Meeting and each month in the Monthly Project Report

 Within SB1 the procurement and invoicing of software & hardware, its maintenance and renewal must be covered by ITSM3 Operations.

4.1.2 Evolutions

Service Block 01 of ITSM2 Lot1 described in the previous section is essentially covered in the same manner by the Service Block 01 of **ITSM3 Operations** with the exception of the **Portfolio Management** services which shall be covered by **ITSM3 Operations** in the context of **Service Block 02**.

Main evolutions expected in the services provided under **ITSM3 Operations** Servcie Block 01 are:

- All contractual information must be available to DG TAXUD via a restricted area of a project portal to be provided by the **ITSM3 Operations** contractor;
- The **ITSM3 Operations** tenderer shall during the course of the contract propose and implement improvements to the Demand Management process in order to make it more efficient and integrated with the Service Catalogue;
- The **ITSM3 Operations** tenderer shall continuously adapt and improve the structure of the service statistics so that different blocks can easily be reviewed by the responsible DG TAXUD teams;
- The **ITSM3 Operations** contractor will be responsible for assessing and improving the maturity level of the tasks and services to be provided in the context of this service block.

4.1.3 Volumetrics: Present and Future

The following table presents the Requests for Estimates and Requests for Actions managed by the Demand Management process.

Year	Request(s) for Estimate received	Request(s) for Action received
2013	28	62
2014	25	43
2015	57	36
2016	50	48
2017	60	58
2018	70	68
2019	65	63
2020	67	65
2021	69	67

2022	71	69
2023	71	69
2024	72	70

Table 16: Request for Estimate (RfE) / Request for Actions (RfA)

The following table presents the Service Requests opened per Business thread for the Demand Management process, using the Synergia SMT tool.

Sv Req	**open**					
BT	**Customs**	**Taxation**	**Excise**	**ITSM**	**CCN**	**∑ of Open**
2013	156	67	29	16	27	295
2014	138	99	23	18	3	281
2015	156	75	15	6	9	261
2016	180	80	15	15	15	305
2017	200	85	17	30	20	352
2018	200	87	18	31	30	366
2019	210	89	20	34	31	384
2020	215	90	21	35	33	394
2021	230	92	23	37	35	417
2022	225	93	24	39	38	419
2023	228	95	26	39	40	428
2024	230	96	28	40	42	436

Table 17: Opened Service Requests

The following table shows the estimated number of internal quality control actions realised by ITSM operational contractor.

Year	Quality control on documents	Quality controls on incidents in status "open"	Quality controls on incidents in status "closed"	Quality controls on operational changes	Quality controls on problems
2013	903	4751	4875	368	234
2014	988	2699	3590	450	350
2015	1113	2493	2172	453	216
2016	1150	2500	2300	500	250
2017	1400	2700	2500	650	280
2018	1450	2800	2600	700	320
2019	1400	2700	2500	650	300
2020	1450	2800	2600	700	300
2021	1550	2950	2700	750	350
2022	1500	2900	2600	700	300
2023	1500	2900	2600	700	300
2024	1500	2900	2600	700	300

Table 18: Quality controls performed by ITSM operational contractor

The following table shows the estimated number of risks associated to the operational activities of ITSM.

Year	Managed Risks	Closed Risks
2013	32	12
2014	34	7
2015	26	4
2016	35	9
2017	40	15
2018	30	10
2019	30	7
2020	35	10
2021	40	15
2022	35	15

2023	30	7
2024	30	7

Table 19: Risk Management

The following table indicates work items that are considered quite stable during the course of the ITSM3 Operations contract.

Work item	Volume Estimates per year
Steering committees	4
Bi-lateral Monthly Meetings	12
Quarterly activity reports	4
Yearly activity reports	1
Specific Contracts	3
Requests for Action	50
External Audits	4
Benchmarks	1 (max)
Docs sent for review and uploaded into CIRCABC	422
Docs sent for Information and uploaded into CIRCABC	873
Docs reviewed	998 (ITSM2Lot1 not being the initiator)
Monthly Progress Reports (MPR)	12
Process Maturity Self-Assessment	1
Yearly Satisfaction Survey	1

Table 20: Stable Work items

4.2 IT Strategy/Conception/Evaluation – (Service Block 2)

4.2.1 Description

This service block is responsible for the following processes and activities:

- Maintenance of the FQP;
- Continuous service improvement (CSIP);
- Production and maintenance of external processes;
- Service catalogue management;
- SLA, ToC, OLA definition and maintenance;

Formal processes owned by this service block:

- CSIP (described in [R1] FQP Annex "D16 Updated documentation related to processes, policies and procedures and agreements including missing parts"):
  - Assess the current situation to obtain an accurate, unbiased snapshot of where the organisation is right now;
  - Verify that the process measurements are in place and that process compliance is high;
  - Understand and agree on the priorities for improvement;
  - Maintenance of the CSI register.

Additional activities in this service block:

Production and maintenance of external processes:

Collaboration between the different service providers can be divided into the following service provider interfaces:

- Transactional interfaces (requesting actions and activities/tasks to be executed by other parties); for example: ITSM assigns an incident or request to an external party;
- Data and document exchange interfaces (sharing knowledge and documentation, publishing reports and data according to predefined templates and timelines); for example: provide availability and capacity data to ITSM on a periodic basis;
- Alert and notification interfaces (general information/communication channels for informing the involved parties of specific events); inform ITSM in case of scheduled unavailability;
- Quality management interfaces; defining the interfaces between ITSM and the QA Contractor; for example: participation in audits and maturity assessments.

Results:

This activity ensures that ITSM2 Lot1 is able to co-operate on a daily basis with the contractors contracted by the DG TAXUD (like xDevs, Lot2, Lot3, QA3, CCN WAN, DIGIT/DC and NA operations).

This results in well handled

- Interactions;
- Incidents;
- Service requests (including access requests);
- Requests for Change (RfC) or Change Request;

- Problems (e.g. tasks to investigate and resolve problems).

Verification:

- There are no specific verifications linked to this activity as the control is included in each process.

Annexes:

- [R1] FQP Annex "D22 Updated External processes & procedures documentation covering all taken over BTH (incl. CCN)"

Service Catalogue Management

The Service Catalogue has been designed according to the Service Blocks and for each Service Block an initial set of services has been determined.

Service Block 1: Project Management related services	• Request for Service to Prepare a RFE Answer • Request for Service to Prepare a RFO Answer • Support during Quality, process and security audit order and follow-up • Cooperation during audits and Organisational / Pricing benchmarks • Deliverable review • Quality Assurance and Control
Service Block 2: IT Strategy / Conception / Evaluation	• Order Evolutive version of the contractual documents • Continual Service Improvement
Service Block 3: Tools supporting the Service Management	• ITSM Tools Services – new implementations • ITSM Tools Services maintenance
Service Block 4: Service Desk	• Conference Calls / Virtual meetings organisation • Consolidation of feedback • Notification of user groups about events • Web Mastering • User Management
Service Block 5: ICT Infrastructure Management	• HW & OS & COTS Services • Backup & Restore • Evolutive Maintenance of the IT Infrastructure Management related documents • Capacity Plan • Feasibility Studies linked to Infrastructure
Service Block 6: Application Management	• Deployment in PSAT/SAT environment • Deployment in CONF/CONF2 environment • Deployment in PROD environment • Perform preliminary testing in PSAT • Intake of a new low complexity application • Intake of a new medium complexity application • Intake of a new high complexity application • Perform fast user acceptance testing for patches and hotfixes (QUAL) • Perform user acceptance testing in SAT • Manage Conformance Campaign • Feasibility Studies linked to Application
Service Block 7:	• Deployment of a new CCN Site

CCN Operations	• Move of CCN Site • Shipment of CCN IT Equipment • Execute a Switch • Installation of an additional Gateway
Service Block 8: Coordination with Involved Parties	• Mission participation • Yearly Satisfaction Survey
Service Block 9: IT Service Management	• Benchmark of a process maturity • Creation of a Post Incident Report • Application & Business Monitoring (e.g. TARIC files), Statistics & Reporting • Ad-hoc Business Analysis and Reporting
Service Block 10: Security Management	• Evolutive version of the Security Plan • Production & Maintenance of BCP and DRP Plans including their testing
Service Block 12: Other Deliverables & Services	• Training Delivery

Table 21: Service Catalogue structure

4.2.2 Evolutions

The service block 2 has been deeply reinforced in the ITSM3 Operations contract, in order to ensure a simple and efficient mechanism for supporting the consequent transformations activities driven by the increase of the expected availability and the opening of some applications to the economic operators.

Here are the main evolutions, compared with incumbent ITSM2 Lot1 (for details, see Technical Annex [R3]):

- Document all processes and services of ITSM3 Operations contract (see list of deliverables under 4.2.3 Volumetrics;
- Design and implement the strategic and tactical evolutions of all processes, services and tools provided by ITSM3 Operations contract;
    - Provide Service Strategy & CSIP services and produce and manage the related process and related deliverables (Business Cases, Requests for Change, High Level designs);
    - Manage the Service Change management process and related deliverables (Service Change registry, Impact analysis);
    - Manage Portfolio management process and deliverables for all transformations (Master plan of transformations, global planning);
- Implement the related transformations projects, including projects deliverables (Inception reports, Technical annexes, Bills of material, Detailed designs, Implementation reports) ;
- Provide a continuous service with necessary skills and resources to cover all above activities and support the activities under other service blocks.

An important evolution from ITSM2 Lot1 to **ITSM3 Operations** is that as part of Service Block #02 the **ITSM3 Operations** contractor must ensure the management of the portfolio of programs and projects either related to transformations identified and launched in the context of Service Strategy and Service Change Management (SB02) or involving the operational planning necessary to assimilate business or other external projects.

The objective of the portfolio activities is to provide extramural Portfolio and Programme consultancy services both for internal and for TAXUD A5 ISD projects. This includes:

- Follow up of the portfolio of programs and projects under the responsibility of ISD sector at TAXUD and being conducted by ITSM3 **Operations**. Maintaining an overall planning and reporting file.
- Build and maintain the roadmap of the portfolio and each of the programs.
- Ensure consistency and coherence in the definition and realisation of the projects avoiding overlaps and managing interdependencies.
- Identify and manage risks, issues and changes at portfolio and program levels.
- Ensure TAXUD and ITSM3 **Operations** are capable to anticipate new projects and activities, maintain a complete and exhaustive planning and mobilize the necessary contractual actions and resources.

The above activities are to be done in close coordination with TAXUD with at least monthly portfolio assessments and periodic reporting (weekly, monthly & quarterly).

4.2.3 Volumetrics: Present and Future

The portfolio of transformations contains about 150 projects today, with a repartition by size as follows: 10% are major, 30% medium and 60% minor/simple projects or inception activities (pre-Build activities, like e.g. technical design).
65% of these projects are executed by ITSM2 Lot1, the remaining being sourced by DIGIT contracts (acquisitions of equipment or licenses) or the CCN/WAN contracts (CCN network services).

The following table presents the estimated number of transformations, and the delivery/updates for the founding documents.

Work item	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Deliver set of existing deliverables (*)	0	0	0	0	1	0	0	0	0	0	0	0
Update set of existing deliverables	1	1	1	1	0	1	1	1	1	1	1	1
Deliver set of new deliverables (**)	0	0	0	0	1	0	0	0	0	0	0	0
Update set of new deliverables	0	0	0	0	0	1	1	1	1	1	1	1
minor transformations	13	54	58	50	30	30	20	20	30	20	20	20
simple transformations	7	27	29	25	15	15	10	10	15	10	10	10
medium transformations	3	13	14	15	10	10	5	5	10	5	5	5
major transformations	1	6	7	6	4	4	2	2	4	2	2	2

Work item	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024

	(*) set of existing deliverables includes (already provided by ITSM2 Lot1): • Service Catalogue • FQP and Annexes • Internal Working Procedures • SLA/OLA per business thread and user community • Service Level Agreements Compendium • IT Service Continuity plan • Availability Plan for IT Commission Services • External processes & procedures documentation • ICT architecture for the Commission IT services • Capacity Plan for IT Commission Services • Application Architecture & Framework	(**) set of new deliverables includes (new for ITSM3 Operations): • Service Strategy & Vision • Service Strategy & CSIP process • Service Change Management process • ITSM Processes Documentation

Table 22: Transformations and deliverables

The following table indicates meeting requirements, which are considered quite stable during the course of the ITSM3 Operations contract

Meeting type	Volume Estimates per year
Infrastructure and service delivery Board	6
Portfolio Management	12
CSIP	12

Table 23: Service Block 2 meeting table

4.3 Tools supporting the Service Management – (Service Block 3)

4.3.1 Description

For further details, please refer to the Baseline, and more specifically the following document:
[R1] FQP - Annex 28 Application Development

Service Management related tools (applications and/or configured software products) are tools essential for the provision of the automated part of the ITSM and CCN services to its customers and users. They also include tools to support the management and report about the provision of those services.

Services in this Service Block are directed to Service Management related tools only and are delivered throughout the Application Development lifecycle, including delivery of the related artefacts.

This service block is responsible for the following processes and activities:

- Maintenance of the different tools supporting the service management
- Including all application development phases: defining requirements, transition, programme & project management, design, development, operations (3rd level support), corrective maintenance, evolutive maintenance, training and portfolio.

ITSM tools are Service Management-related tools that are developed by the ITSM contractor under this Service Block.

ITSM tools are supported by the ITSM contract as any other application delivered by an X-DEV. However, here ITSM is considered X-DEV and Application Development is performed by the ITSM contractor. Those ITSM tools are categorised under the ITSM Business Thread.

The Design & Specification of ITSM Service Management related tools are compliant with the DG TAXUD TEMPO methodology and DG DIGIT hosting guidelines and product list.

Formal processes owned by this service block:

- Application development

4.3.1.1 APPLICATION DEVELOPMENT

Application Development is responsible for - and restricted to - the development and support of ITSM Tools (Synergia SMT, ITSM Portal and SAP Business Objects).

It covers:

- The production of specification deliverables for the ITSM Tools and their evolutive maintenance;
- The identification and management of requirements;
- The design, build and deployment support for new ITSM Tools and their evolutive maintenance;
- The set up and maintenance of test data sets;

- Support of AD;
- The corrective maintenance of current ITSM Tools.

The developed ITSM Tools must be compatible with ITIL, TEMPO and the ITSM2 Lot1 processes.

4.3.1.2 SERVICE MANAGEMENT PROGRAMME

Under the current Service Management (SM) Programme, DG TAXUD has all the evolutive and corrective maintenance of the SM supporting tools (Synergia CIs):

- LDAP and User Management Tool (UMT).
- ITSM Portal
- Service Management Tool (SMT): evolutive and corrective releases.
- SAP Business Objects (BO) reporting tool
- Support and evolution of the TAXUD Unit A.4 Case handling system – Calisto

This set of IT tools supports more than 3 000 end users (National Administrations, DG TAXUD, its IT contractors, other Commission services and EU agencies);

Under this Service Management programme CSIP, Knowledge Management, Configuration Management, Service Level Management, Operational Change Management, Service Desk and the whole update and documentation exercise related to the Framework Quality Plan is carried out.

4.3.1.3 SYNERGIA CIS

4.3.1.3.1 LDAP AND UMT

User Management and Access right tools managing accesses (partially) to the Central systems located in the DG TAXUD Data Centre (CS/RD and CS/MIS), to the ITSM Portal, the SAP Business Objects (BO) reporting tool, Calisto and the SMT. User management is performed for Member States, DG TAXUD but also all other stakeholders. The UMT Access DB has a direct link to some Central Systems to create/update user rights, but for other operations the user management needs to be done within those tools.

The tools are located in the DG TAXUD Data Centre. The ITSM2 Lot1 Service Desk is the user of these tools. These tools are stable, no releases usually ordered, except new applications are linked to the LDAP and/or the UMT.

4.3.1.3.2 ITSM PORTAL

ITSM Portal mainly allows Member States National Administrations to view their assigned calls via the Call Centre. Incidents and Problems/Known errors are visible. Currently also changes related to Customs are available.

It is linked to the LDAP and the SMT. The data is extracted via a bridge from SMT. Single Sign on exists for the SMT ESS. This functionality allows end user at the MS to open interactions directly to the ITSM2 Lot1 Service Desk, to follow-up, to update and to close them.
Other features of the ITSM Portal: to share knowledge and to exchange information via the "Publishing Platform", the "FAQ" and the "forum" tabs; access to historical calls (under "useful links" tab), and access to the reports published (under "Call Centre" tab).

The tools are located in the DG TAXUD Data Centre. The ITSM2 Lot1 is the content manager of the tool (web mastering) and is also doing development, test and support. E-learnings explaining the use of the ITSM Portal exist.

The ITSM Portal is based on a Jahia Platform (v.7), with some other plugins. Some modules of the Jahia Platform are not activated. The tool has been upgraded to Oracle 11 database, with a MS Windows Server 2012R2 64-bit OS, and Apache Tomcat 7 Webserver. The e-learnings have been created with Adobe Captivate.

Currently, the ITSM Portal is in phase-out. It is expected to be integrated with the Synergia Service Catalogue, under development, by the end of 2016.

4.3.1.3.3 SMT

4.3.1.3.3.1 DESCRIPTION AND USAGE

HP Service Manager is the DG TAXUD IT tool to support Service Management processes. Currently incident, problem, change management (operational, functional for certain CIs – e.g. ARIS), configuration management, request fulfilment, Service level management (incident and problem resolution calculation) and known errors management are supported in the tool. Also, the CT campaigns preparation and execution incidents are logged in the tool.

It keeps all operational information from Conformance and Production environments that are in scope of ITSM2 Framework contract.

The tool is used via the Full web client by DG TAXUD, ITSM2 contractors (Lot1, Lot2, Lot3), xDEV contractors (Custdev3, Fitsdev3, CCN2Dev) and QA3.

The tool is also used for all communication with Member States on their calls, and on feedback on draft change requests. Member States get information via Email/notifications, or through logging in to the ITSM Portal (see above) to get a view on incidents, known errors and to follow up the open interactions.

The different types of users, the necessary workflows, in function of the different actors, are defined according to the needs of DG TAXUD. More details on the functionality and technical design can be found in the Functional Specifications [SYN-1FRS-SC03-P-011-9-SMT Q1-2015 NR Functional Specifications v1.00 EN] Technical Specifications [SYN-1TCS-SC03-P-011-9-SMT Q1-2015 NR Technical Specifications v1.00 EN] and in the user manual [SYN-1UM-SC03-P-011-9-SMT Q1-2015 NR User Manual v1.00 EN].

4.3.1.3.3.2 TECHNICAL OVERVIEW

The current version is HP Service Manager 9.33 [9.40 foreseen in H2/2015]. The installed components are running in Microsoft Windows Server 2008 R2 64-bit edition operating system with Sun_JDK-7u45 as Java Runtime Environment. The SMT Web application uses Apache Tomcat 7.0.26 as underlying application server. The DBMS, used to store data related to SMT, is Oracle 11g release 2 v.11.2.0.3. The reverse proxy is implemented using the Apache 2.2.3 web server.
The application HP service Manager is already at the latest available patching level for the application (9.33 in June 2015).
The LDAP for some central ITSM applications is used to authenticate the SMT users. The LDAP server is used for user information storage, authentication and user profiles (group membership).
More details can be found in the "Application Architecture and Infrastructure Requirements" [SYN-1ARD-SC03-P-011-9-SMT Q4-2014 NR Upd. Appl. Arch. and Infra Req. v1.00 EN] and in the Installation and Administration Manual [SYN-1ADG-SC03-P-011-9-SMT Q1-2015 NR -Updated Install. & Admin Manual v1.00 EN] in order to setting up a new instance of Synergia SMT.

4.3.1.3.3.3 SMT RELEASE MANAGEMENT

The ITSM2 Lot1 contractor continues, under the Service Management Program, developing the Synergia roadmap. The main objective is to support the evolution of the DG TAXUD (and stakeholders) organisation and the consequent business needs.

Currently, there is a Quarterly SMT release. These releases are considered On-Demand services. It implements evolutive and corrective changes issued by the different stakeholders[13], after Impact analysis carried out by the different teams and the approval in the Operational CAB (where Synergia CAB takes place when there are Synergia related changes to be presented for approval). Upgrades of the tool (e.g. from 9.33 to 9.40) are also part of these releases. The grade of the customisation is high in relation to the Out of the Box functionalities.

Certain upgrades of different technical components (e.g. Connect-It) are part of continuous services as well as Synergia related infrastructure upgrades (e.g. migration from Windows server 2003 to 2008).

4.3.1.3.4 SAP BO

Currently, SAP Business Objects (BO) is the EC reporting tool solution. It has been adopted by DG TAXUD in 2012 and the incumbent contractor took over in 2013.

The application uses the SMT database as a source and has also its own data warehouse tables in a separate Oracle database. The ETL process reads all the records from the Synergia-SMT-Production environment each night. The Synergia-SMT production database needs to be accessible with Read-only access to the dedicated data warehouse views; this data warehouse database needs to be accessible by the user having full access to create/drop tables and other database elements.

[13] Changes issued by the incumbent contractor in order to adapt the tool for its internal needs must be approved by DG TAXUD, but they are done without extra cost for DG TAXUD.

The universe with production data needs to be accessible by end users through the Web Intelligence interface.

Currently DG TAXUD is using the SAP BO version 4.0SP10 (14.0.10).

4.3.1.3.4.1 SAP BO RELEASE MANAGEMENT

During 2014 there were three releases implementing evolutive and corrective changes issued by the different stakeholders[14], after Impact analysis carried out by the different teams and the approval in the Operational CAB (where Synergia CAB takes place when there are Synergia related changes to be presented for approval). Upgrades of the tool are part of continuous services.
A single release is foreseen for 2015.

4.3.1.3.5 CALISTO

This case handling system is a DG TAXUD business application. These cases are meant to regulate and discuss cases on Agriculture, Chemistry and Textiles sectors in the DG TAXUD "Combined Nomenclature, Tariff classification, TARIC and integration of trade measures" Unit (A4).

All standard functionalities (system login, views, favourites, dashboards, e-mail possibility, etc…) of the tool have been inherited from the Synergia SMT tool. The Calisto access works similar to the complete Synergia SMT accesses. Separate profiles make sure that data is segregated. More information can be found in the SMT User Manual ["SYN-1UM-SC03-P-011-9-SMT Q1-2015 NR User Manual v1.00 EN"], in the SMT TDS and e-learning modules.

Calisto came into production in December 2013. Since then, a release per year is foreseen with corrective and evolutive changes as per business requests.

4.3.1.4 OTHER SOLUTIONS IMPLEMENTED BY ITSM2 LOT1

During the course of 2013 through 2014, multiple solutions have been implemented by ITSM2 Lot1. Below you will find the list of solutions which have been rolled-out and how they are bringing benefits to ITSM and DG TAXUD.

 The tools described below have been already introduced during the ITSM2 contract; **ITSM3 Operations** will take over these tools and their use for the provision of services. Although they do not involve development they require technical maintenance, configuration and eventual customisations.

To the list below it must be added the evolutions as described in section 4.3.2.

Any change on these will be proposed in the context of SB02 – Service Strategy according to the Service Change Management process.

[14] Changes issued by the incumbent contractor in order to adapt the tool for its internal needs must be approved by DG TAXUD, but they are done without extra cost for DG TAXUD.

4.3.1.4.1 RATIONAL ASSET MANAGER (RAM)

The deployment of RAM brings the following capabilities to ITSM: enablement of the Definitive Software Library for cataloguing, maintaining, and governing, DG TAXUD Business and software assets across the different business threads.
The tool is providing support to the Knowledge Management Process, especially for all knowledge assets coming from the X-DEVs.

4.3.1.4.2 RATIONAL TEAM CONCERT (RTC)

Rational Team Concert enhances the capability to provide project governance throughout ITSM2 Lot1. It enables team collaboration and activity governance for the different portfolio programs, application management and the service desk, infrastructure and operations teams. RTC is also used for reporting to DG TAXUD on portfolio programs planning and status.

4.3.1.4.3 EVENT MANAGEMENT AND MONITORING (EMM)

With the implementation of event management and monitoring, ITSM2 Lot1 now has a homogenous and consistent toolset for Systems Management which helps them improve recovery time with visualisation and dynamic analytics to avoid incidents. EMM collects data to help with performance of future bottlenecks increasing efficiency in operational activities (monitoring, troubleshooting, performance analysis) and obtain substantial support in maintaining the required level of uptime and responsiveness.
Event Management and Monitoring is based on the following products: IBM Tivoli Monitoring
, IBM Tivoli Netcool/OMNIbus, IBM Tivoli Network Manager.

4.3.1.4.4 ENDPOINT MANAGEMENT

With IBM Endpoint Management ITSM2 Lot1 implemented an automated, simplified patching process which can be administered from a single console covering Solaris, AIX, VMWare and Windows. Next to this, ITSM2 Lot1 implemented security and compliance which will help DG TAXUD enhance endpoint security.
Endpoint Management is based on the following products: IBM Endpoint Manager – Patch Management, IBM Endpoint Manager – Security and Compliance.

4.3.1.4.5 APPLICATION DEPENDENCY AND DISCOVERY MANAGEMENT

The implementation of Tivoli Application Dependency and Discovery Manager automates agentless discovery of assets and their application dependencies within DG TAXUD infratsructure. It provides the details of configuration items (CIs) and a top-down view of applications.
Application dependency and discovery management is based on the following product: IBM Tivoli Application Dependency and Discovery Manager.

4.3.1.4.6 AUTOMATED BATCH MANAGEMENT

This solution provides centralised control and management of batches across the DG TAXUD infrastructure with a single global view of workload dependencies across multiple platforms and applications.
Automated Batch Management is based on the following product: IBM Tivoli Workload Scheduler.

4.3.2 Evolutions

Service Block 3 under **ITSM3 Operations** won't require much evolutions in relation to the activities described in the previous section. Future changes mostly involve the addition and evolution of the tools to be developed and maintained.

The following describes the targeted new and improved capabilities of the Service Management tools at the end of 2016, taking into account the main transformation projects planned in 2015 and 2016.

4.3.2.1 SERVICE REQUEST MANAGEMENT

End 2016 a centralised, customer facing, browsable and actionable service catalogue will be in place, containing an overview of all services provided by TAXUD IT and its contractors and aimed towards both internal and external Business and IT users.
Main new capabilities:

- Self-service portal where Business and IT users can consult and request services, as well as follow-up the approval and fulfillment status;
- Tailored & streamlined fulfilment workflows for services fulfilled through SMT in order to improve service delivery times and reduce change of errors due to manual intervention;
- Automated approval rules and in-tool approvals to drastically shorten the approval effort/time;
- Fully integrated with incident/problem/change reporting towards NAs (replaces ESS and ITSM Portal Call Centre);
- Centralised tracking and reporting across all service requests.

4.3.2.2 UCMDB & TADDM INTEGRATION

End 2016, Synergia SMT will be integrated with a dedicated CMDB product (HP Universal CMDB) and the existing application discovery tools (IBM TADDM) in order to improve the maturity of the Configuration Management process and tooling, evolve the CMDB into the single/definitive source of reliable CI data for all stakeholders and better support incident, problem and change impact assessments and root cause analysis.
Main new capabilities:

- CMDB data regularly and (semi-)automatically reconciled with data collection sources;
- CMDB UI and data structures tailored to TAXUD & ITSM use cases;
- Full process integration, allowing:
    - Pro-active identification of potential single points of failure;
    - Real-time reliable incident impact assessment with capabilities to quickly drill up/down from/to impacted components;
    - Improved problem root cause analysis capabilities, trend analysis on incidents and CIs, identification of CI hotspots, etc;
    - Better understanding of the impact of complex changes to the environment, better forecast and planning of changes to avoid collisions;
    - Cross-checking authorised and actually implemented infrastructure changes;
- CMDB as “one version of the truth” in support of designing major transformations and to support a streamlined ITSM contractor handover/takeover.

4.3.2.3 EVENT MANAGEMENT

End 2016, Synergia SMT will be integrated with the Tivoli Monitoring tools to (semi)automatically register incidents/downtimes with the aim of reducing escalation delays and potential mistakes due to manual intervention.
Main new capabilities *(note: exact scope still to be finalised):*

- (Semi-)automatic SMT ticket logging upon monitoring alerts (Tivoli) related to unscheduled unavailabilities. Relevant ticket information automatically extracted from the event;
- Generation and assignment of certificate expiry reminder tasks through SMT;
- Generation and assignment of password expiry reminder tasks through SMT;
- CI operational status (CMDB) automatically synchronised with monitored status (Tivoli).

4.3.2.4 ITSM PORTAL MIGRATION/PHASE-OUT

End 2016, the current ITSM Portal will have been completely phased out and its functionality and content will have been migrated to other existing platforms (SMT, Service Catalogue, PICS,…) with the objective of consolidating platforms, reducing dependency on custom code and reducing licensing costs. The service catalogue will become the new central ITSM portal for NAs. It will integrate seamlessly with the other target platforms of the ITSM Portal migration (see SSO project below).

4.3.2.5 SERVICE MANAGEMENT TOOLS SINGLE-SIGN-ON

End 2015, all ITSM2 Service Management Tools, including SMT/ESS, Service Catalogue BusinessObjects, RAM, RTC and the target platforms of the ITSM Portal migration (such as PICS) will support (ECAS based) single-sign-on.

4.3.2.6 FITSDEV3 INTEGRATION

As of Q2 2015, FITSDEV3 (as well as CUSTDEV3 and CCN2DEV) will be capable of automating the synchronisation of incident and problem tickets between SMT and their in-house ticketing tool (Jira/RTC) through Web Service integration with the objective of reducing overhead, decreasing ticket resolution times and reducing the change of errors due to manual data replication.

4.3.2.7 SDLC RELATED EVOLUTIONS

The SDLC actions are directly related to IT processes; mainly Release, Change and Operations management of applications and services which are part of Trans European systems.

These actions are mostly of methodological or procedural nature, however they foresee the implementation of tools to support and facilitate the implementation of the new methods and processes. The following type of tools are foreseen:

- An Enterprise Architecture Management Suite (EAMS) tool, that will become the IT projects common central architecture repository.
- A common development environment tools that could be connected to the EAMS, testing and deployment tools.
- A testing toolset enabling the automation of functional and non-functional testing.
- A deployment toolset enabling the automation of systems deployment.

4.3.3 Volumetrics: Present and Future

The elaboration of the future situation is based on the following assumption:

- The estimated number of releases/changes will be confined to the commercial releases of the tools being used.

The following table shows the number of Requests for Change opened for the existing Service Management Tools.

Year	# RfC open SMT	# RfC open Calisto	# RfC open SAP BO	# RfC open ITSM Portal	# RfC open Service Catalog
2013	39	n/a	9	9	N/A
2014	76	4	19	9	N/A
2015	78	4	9	2	N/A
2016	60	4	9	2	N/A
2017	60	4	9	N/A	20
2018	60	4	9	N/A	15
2019	60	4	9	N/A	10
2020	60	4	9	N/A	10
2021	60	4	9	N/A	10
2022	60	4	9	N/A	10
2023	60	4	9	N/A	10
2024	60	4	9	N/A	10

Table 24: RfCs for service Management Tools

The following table shows the number of Application releases estimated for the existing Service Management tools.

Synergia Release Calandar	SMT	Business Objects	ITSM Portal	A4 Calisto	Service Catalogue
2013	1 Major	N/A	1 Normal	1 Normal	N/A
2014	3 Major 1 Normal	1 Major	0 Major 0 Normal		N/A

		1 Minor	1 Minor	2 Minor	
2015	1 Major 2 Normal 2 Minor	QW9	1 Normal 1 Minor QW9	1 Minor	N/A
2016	1 Major 1 Normal 2 Minor	1 Minor	N/A	1 Minor	N/A
2017	1 Major 1 Normal 1 Minor	1 Normal 1 Minor	N/A	1 Minor	2 Major 1 Normal 1 Minor
2018	2 Major 2 Normal	1 Major 1 Minor	N/A	1 Minor	2 Major 1 Normal 1 Minor
2019	1 Major 1 Normal 1 Minor	1 Normal	N/A	1 Minor	2 Major 1 Normal 1 Minor
2020	1 Major 1 Normal 1 Minor	1 Normal	N/A	1 Minor	2 Major 1 Normal 1 Minor
2021	1 Major 1 Normal 1 Minor	1 Normal	N/A	1 Minor	1 Major 1 Normal 1 Minor
2022	1 Major 1 Normal 1 Minor	1 Normal	N/A	1 Minor	1 Major 1 Normal 1 Minor
2023	1 Major 1 Normal 1 Minor	1 Normal	N/A	1 Minor	1 Major 1 Normal 1 Minor

2024	1 Major 1 Normal 1 Minor	1 Normal	N/A	1 Minor	1 Major 1 Normal 1 Minor

Table 25: Application Releases for Service Management Tools

The following table indicates meeting requirements, which are considered quite stable during the course of the ITSM3 Operations contract.

Meeting type	Volume Estimates per year
Synergia Monthly	12
Synergia Problem Management	24
Synergia CABs	8
Synergia DEV with Third Parties (HP)	12
Tivoli Monitoring meetings	20

Table 26: Service Block 3 meeting table

4.4 Service Desk – (Service Block 4)

4.4.1 Description

The ITSM2 Lot1 Service Desk acts as a Single Point of Contact (SPOC) for all users, stakeholders and authorised 3rd parties.

The ITSM2 Lot1 Service Desk function is not restricted to IT related matters only, neither to the specific ITSM2 Lot1 services. ITSM2 Lot1 SD logs any interaction from any registered user or any entity that provides his request via a registered user[15]. In general ITSM2 Lot1 Service Desk performs its function as intermediary between resolver and issuer.

The ITSM2 Lot1 SD is on service from 7:00 to 20:00 CET Monday to Sunday throughout the whole calendar year.

ITSM2 Lot1 SD provides the following communication channels for all users:

- user self-service portal called Synergia ESS
- e-mail address
- toll free number
- caller paid number
- fax

The ITSM2 Lot1 Service Desk is available in:

- English;
- French;
- German.

Issuers can submit their requests in any of these three languages.

ITSM2 Lot1 SD provides support for the following stakeholders and 3rd parties authorised by DG TAXUD:

- Member States Administrations users and National Project Managers;
- Trade Associations;
- Accessing countries' users and IT managers;
- DG TAXUD users;
- Development teams;
- Any other 3rd party to DG TAXUD (e.g DG TAXUD contractors, other DGs);
- Members of the different ITSM2 Teams;
- DIGIT.

The breakdown of the service desk structure as implemented by ITSM2 Lot1 is as follows:

- The staff is fully operational and updates all incidents across all threads;
- There are four shifts running throughout the day:
- 7 AM – 3 PM (morning shift)
- 8 AM – 4 PM (middle shift)

[15] user access requests are rejected if not submitted by an already registered primary contact

- 10 AM – 6 PM (middle shift)
- 12 PM – 8 PM (evening shift)

There are following roles performed among the Service Desk team:

- The Shift leaders who oversee SDO activities and act as an escalation point for other staff members;
- The Staff members focused on the handling of User Management calls.
- The Acknowledger responsible for opening of calls
- The Dispatcher;
- The Service Desk Operators responsible for operational activities, eg. updating calls, phone-calls, event management.

For setting up the ITSM2 Lot1 Service Desk, the ITSM2 Lot1 contractor has set up a dedicated, secured office space. Access to the office space is restricted using controlled access with badge-reader.

All desks are configured with PCs, monitors and VPN connectivity to the ITSM2 secure network.

Moreover, a meeting room adequate to accommodate more than 15 persons, with teleconferencing and phone access, is made available to the ITSM2 Lot1 Service Desk staff. There are also two additional meeting rooms with 4 persons capacity on the secured premises.

The ITSM2 Lot1 SD is equipped with a suitable set of applications for SDO to use in handling their day to day activities:

- HP Service Manager *Synergia;
- HP Service Manager *DIGIT;
- VPN Software for connecting to the ITSM Network to access:
- The ITSM Support Mailbox (MS Exchange)
- CCN Mass Mailing Tool
- Synergia User Management Tool

In addition, the standard equipment for each PC is:

- Adobe Acrobat Reader;
- Cute PDF Writer;
- 7-Zip;
- Lotus Symphony;
- Microsoft Office ;
- Mozilla Firefox;
- Internet Explorer;
- VPN Client.

Each time a new SDO member joins the ITSM2 Lot1 Service Desk, access to these applications is requested and granted via the [R9] ITS-1PRC-107 User Registration EN procedure, which covers the access for ITSM2 Lot1 staff. The ITSM2 Lot1 members who leave the project are off-boarded according to the ITSM2 User Access Management Procedure.

Continuous Quality Control[16] is performed by Internal QAC. The Internal QAC provides checks on:

- a daily basis: on a sample of ten calls with priority high (P2) and critical (P1);
- a weekly basis: on a sample of one hundred closed calls;
- a daily basis: on all mass mails sent the day before

For more details please refer to the document [R9] ITS-1PRC-010-Quality Control on services EN. The findings are sent to the ITSM2 Lot1 SD for review and feedback and implemented/corrected accordingly.

Additionally, the ITSM2 Lot1 Service Desk has two quality advocates who perform on a proactive level, specific quality checks on trouble areas as identified by the Internal QAC Team through the feedback on their daily and weekly checks.

Ongoing education to staff is also provided based on the feedback from the quality checks. This is done through training sessions, case study assessments, SD quizzes.

An internal knowledge base is provided to the Service Desk staff which contains important information such as How to instructions for incident handling, DG TAXUD acronyms and specific information related to environments such as CCN infrastructure.

4.4.1.1 MISSION AND RESPONSIBILITIES OF THE SERVICE DESK

The mission of the ITSM2 Lot1 SD is to ensure that users receive appropriate help in a timely manner; to provide a helpful and friendly first point of contact for the end-users. The main goal is to communicate effectively and efficiently with each user about statuses of the incidents, disruptive or potential disruptive impact in services.

Responsibilities:

- Registration and classification of the calls in the SMT tool:

ITSM2 Lot1 SD records in the SMT Tool all calls which were requested by all registered users or any entity that requests support via a registered user and provided to the ITSM2 Lot1 SD via the aforementioned communication channels;

- The escalation of an interaction to an incident should be done within a half an hour timeframe in accordance with the contractual SQIs.
- Creation of the communication channel between the issuer and resolver:
- Dispatching, updating and closing the calls (internally and externally) in the SMT Tool;
- Performing the function as intermediary between resolver and issuer.
- Create and manageITSM incidents in DIGIT SMT (HP7.11) for assignments to DIGIT.
- Event notification:

[16] Internal quality control services are prt of Service Block 01; they are however mentioned here to illustrate the importance of close iteraction of the internal quality with the services provision and how it is currently done by the incumbent contractor ITSM2 Lot1.

ITSM2 Lot1 Service Desk disseminates the notifications for the events related to the unavailabilities (planned or not) of CIs under the responsibility of ITSM Lot1 and Lot2, for example Member States applications, or Central Applications. These notifications are sent in agreed form (based on mass mail templates) or after additional communication text approval, and can be triggered by ITSM2 Lot1, ITSM2 Lot2 (for CIs under their responsibility), Member States and DG TAXUD.

Event notifications are being sent (via email) to predefined distribution lists according to the CIs concerned by each event. These distribution lists can be defined per CI and per Member state and can also contain the related mailboxes of ITSM Lots and DG TAXUD. The Distribution Lists are used by the ITSM2 SD Lot1 team only for notifications (Mass Mails) purposes. Distribution Lists can be created or modified by ITSM2 SD Lot1 upon request by a Member State, by TAXUD or by the ITSM Lots according to evolving business needs and organisational changes. ITSM2 SD Lot1 must ensure that the Distribution lists contain valid recipient emails and take the necessary actions to maintain them up-to-date.

- Event Monitoring:

ITSM2 Lot1 Service Desk receives the automated e-mails from some Central Systems, as CS/MIS and CS/MISE that informs about the events (un-availability, availability) of NA applications. The ITSM2 Lot1 Service Desk monitors these notifications, analyses the information received and applies the appropriate procedure to handle the event. .

4.4.1.2 SERVICES IN THE SERVICE CATALOGUE DEFINED FOR THE ITSM2 LOT1 SERVICE DESK:

- Service Requests

Complex Requests for Services for such activities as Member State Training, application qualifications, are handled under the Demand Management procedure ([R9] ITS-1PRC-016 Demand Management). The Service Desk assigns those requests to the ITSM2 Lot1 Demand Management. The category used for such calls is Request for Service.

- Conference calls /Virtual meeting organisation

The ITSM2 Lot1 Service Desk facilitates the provision of conference call numbers to issuers and host conference calls for Lot1 CIs only. For conference calls referring to Lot2 CIs, the call is immediately dispatched to Lot2 Support. The category used for such calls is Request for Service Conference call. Requests for services for such activities are handled under the Conf Call procedure.

- Consolidation of Member State Feedback

ITSM2 (both Lots) makes requests to Member States for feedback on various topics such as Yearly Satisfaction surveys, inventory and availability information. The ITSM2 Lot1 Service Desk distributes the requests to the Member States via an SMT call of category Request for Service Survey and then collects and consolidates the feedback via a separate call (provision of information) which is then linked back to the main call.

- Web mastering of the Portals

The ITSM2 Lot1 Service Desk is responsible for uploading/ publishing Lot1 artefacts to the various DG TAXUD Portals (ie ITSM Portal, CIRCABC on behalf of authorised users). The ITSM2 Lot1 Service Desk receives requests for publication from DG TAUXD and ITSM2 Lot1 Teams. The category used for these service requests are: Request for Service Publication.

- User Management

  The ITSM2 Lot1 Service Desk is responsible for the management of the overall process to handle User and Access Requests for all DG TAXUD applications.

- Complaints

  If a user is not satisfied with the service provided, a complaint can be registered by the ITSM2 Lot1 SD and assigned to the ITSM2 Lot1 Service Level Manager. Once the complaint is registered, it is then up to DG TAXUD to indicate if additional complaints are to be registered after analysis of the information. The decision is taken during the BMM meeting. During the BMM meeting it is up to DG TAXUD to highlight if they consider the raised complaints as valid ones. The ITSM2 Lot1 Contractor has to ensure the complaint is based on evidence.

The following Internal Working Procedures are related to the current process and may be used for further information; they can be consulted in the Baseline:

- [R9] ITS-1PRC-105-Service Desk EN
- [R9] ITS-1PRC-010-Quality Control on services EN
- [R9] ITS-1PRC-107 User Registration EN
- [R9] ITS-1PRC-021 Incident Management EN
- [R9] ITS-1PRC-106-Content maintenance for ITSM Portal and CIRCABC EN
- [R9] ITS-1PRC-032-Yearly Satisfaction Survey v0.10-EN
- [R9] ITS-1PRC-016 Demand Management EN
- [R9] ITS-1PRC-147 Service Desk L1 Manual for handling of Conference Call

4.4.2 Evolutions

Service Block 4 under **ITSM3 Operations** won't require much evolutions in relation to the activities described in the previous section. Changes mostly involve the addition and evolution of the instruments available to the Service Desk for the fulfilment of their service.

ITSM2Lot1 is starting a project with the final objective of improving the end-user community management. The main aspects covered are:

- Creation of a central repository to federate User Management information from different sources:
  - Know who has access to which applications, system, Distribution List (DL), Assignment Group (AG), etc.
  - Easy follow-up on what accesses need to be revoked when user changes role/department
- Evaluate the possibility of automation for current manual processes
- Facilitate user re-validation, in line with User Access Management (UAM) Tempo procedure
- Evaluate the introduction of a Portal to access and manage the central repository
- Approach/roadmap to implement the User Management solution in phases

This will initiate the central view on all TAXUD IT systems and services users, as a baseline for future implementation of more advanced solutions/tools for User Management.

4.4.3 Volumetrics: Present and Future

The future situation is based on the assumption that the number of users will grow at an average rate of 15%, with peaks in 2017 and 2021 (based on the number of new IT systems going to operations):

Year	Service Desk Registered Users	Service Desk Active Users
2013	2815	NA
2014	3450	2558
2015	4016	3073
2016	4500	3500
2017	6000	5000
2018	7000	6000
2019	7500	6500
2020	8000	7000
2021	9500	8500
2022	10500	9500
2023	11000	10000
2024	11500	10500

Table 27: Number of Service desk registered/active users

The following table shows the number of interactions per type with the service desk.

Year	Incident	request for information	request for service	Other	Total
2013	13479	6413	7835	1008	28735

2014	16652	5193	10326	1023	33194
2015	21171	6171	10746	750	38838
2016	23000	6704	11674	815	42193
2017	26000	7579	13197	921	47697
2018	29000	8453	14720	1027	53200
2019	31500	9182	15989	1116	57786
2020	34000	9910	17258	1204	62373
2021	38500	11222	19542	1364	70628
2022	43000	12534	21826	1523	78883
2023	44000	12825	22334	1559	80718
2024	45000	13117	22841	1594	82552

Table 28: Volume of Interactions with Service Desk per type

The following table shows the number of interactions per organisation with the service desk.

Year	DG TAXUD	ITSM Operations	ITSM T€S	CCN/CCN2	NAs	XDEVs	Other	Total
2013	1787	13313	2563	1260	7023	451	2339	28735
2014	1955	12764	9486	538	7598	543	310	33194
2015	2259	15885	9243	351	9939	786	375	38838
2016	2454	17257	10042	381	10798	854	407	42193
2017	2774	19508	11351	500	12206	965	392	47697
2018	3094	21759	12661	600	13614	1077	394	53200
2019	3361	23635	13753	652	14788	1169	428	57786
2020	3628	25511	14844	703	15962	1262	462	62373
2021	4108	28887	16809	797	18074	1429	524	70628
2022	4588	32264	18773	890	20187	1596	585	78883
2023	4695	33014	19210	910	20656	1634	599	80718

2024	4802	33764	19646	931	21126	1671	612	82552

Table 29: Volume of Interactions with Service Desk per organisation

The following table indicates meeting requirements, which are considered quite stable during the course of the ITSM3 Operations contract

Meeting type	Volume Estimates per year
Service Desk Monthly	12
Service Desk Weekly	45
Service Desk Ad-hoc (e.g. follow up CCN calls)	50
ITSM2Lot1-Lot2 Service Desk coordination	20

Table 30: Service Block 4 meeting table

4.5 ICT Infrastructure Management – (Service Block 5)

4.5.1 Description

For further details, please refer to the Baseline, and more specifically the following document:
[R1] FQP - Annex 24 -Infrastructure Management

This service block is responsible for the following activities:

- Planning, designing, testing and operating the infrastructure and associated software as defined within the scope of ITSM2 Lot1 contracts. All aspects of the ICT Infrastructure Management are covered by the specific contracts.
- Continually improving the ICT Infrastructure and aligning the environment to the changing business demands. Building the current and future state of ICT architecture provides a firm fundamental understanding of where the organisation is today, and where it wants to be in the future.
- Wherever infrastructure environment is mentioned it covers following setups:
  - TAXUD Infrastructure operating in DIGIT premises;
  - Infrastructure operating at DC Drosbach/Kayl (TAXUD Data Centres);
  - Infrastructure operating within CCN/CSI premises.

The infrastructure management consist of two main elements:

- Monitoring – the 1st level of support
  - The monitoring team supports actively Service Management functions by providing 24x7 monitoring of infrastructure, platforms and applications. The monitoring covers several areas such as performance, capacity & availability of services.
- Infrastructure team – split by 2nd and 3rd level of support
  - The responsibility of ICT Infrastructure Management is to design, implement, administer and operate the Data Centres, Networking, Server & Storage services, Operating environments and IT management Tools up to the level that the IT Services can be delivered by the other Service Blocks.

The formal process is defined in ITSM2 at three levels:

1. Design, Plan, Deployment of Infrastructure and Software
2. Operations on ITSM2 ICT Infrastructure
3. Maintenance of the Technical Knowledge

4.5.1.1 DESIGN, PLAN, DEPLOYMENT OF INFRASTRUCTURE AND SOFTWARE

The Level1 of ICT Infrastructure management is focused on four sub-processes covering following areas:

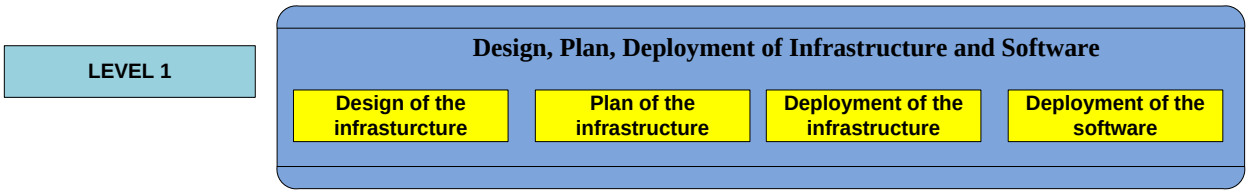

Figure 12: Level 1 sub-processes

The sub-processes are covering following areas:

- Design of the infrastructure
  Covering ICT architecture and standards
- Plan of infrastructure
  Covering creation of infrastructure plans and project proposals
- Deployment of infrastructure
  Covering detailed design, build, test & acceptance, roll-out and hand-over operations.
- Deployment of software
  Installation of software packages provided by application management.

4.5.1.2 OPERATIONS ON ITSM2 ICT INFRASTRUCTURE

Level 2 Operations on ITSM2 ICT Infrastructure covers operational process of ITSM2 support:

- Operate Hosted Infrastructure
- Operate DIGIT Infrastructure
- Operate CCN Infrastructure

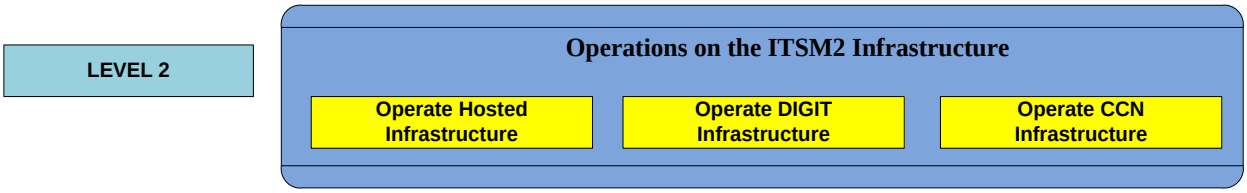

Figure 13: Level 2 sub-processes

4.5.1.2.1 OPERATE HOSTED INFRASTRUCTURE

The Operations process for the Hosted Infrastructure contains all activities and measures necessary to enable and/or maintain the intended use of ICT services and infrastructure in order to meet Service Level Agreements and business targets. The chapter covers operations that are performed within ITSM2 and CCN support.

4.5.1.2.2 OPERATE DIGIT INFRASTRUCTURE

Operations for DIGIT Infrastructure only cover the subset of the operations activities related to event management (alerts treated within the Incident Management but also information on disk space for Capacity Management). The event notification comes through mails sent from BMC patrol and also through SD (tickets assigned from DIGIT to the TAXUD AG). Events received from DIGIT are logged and investigated. The status and resolution of events is monitored. In case of exceptions, an incident is raised to further diagnose and resolve the issue.

4.5.1.2.3 OPERATE CCN INFRASTRUCTURE

CCN site

The CCN/CSI infrastructure can be split into 2 domains:

- The "European" domain infrastructure is owned by DG TAXUD and operated by ITSM2Lot1. Inside this domain, the CCN backbone and access equipment are provided by the network provider (CCNWAN).
- The "national" or "local" domain components which are hosted by the National Administrations.

ITSM2Lot1 remains the sole responsible for the operation of CCN/CSI infrastructure deployed in each National Administration or at DG TAXUD premises.

In addition to the CCN sites installed in National Administrations, there are also sites located centrally. These are located in the DG TAXUD Data Centre, in the European Anti-Fraud Office (OLAF), in the Office for the Harmonisation of the Internal Market (OHIM) and in DG ESTAT; these central sites provide CCN access to centralised information systems. The remaining sites are located within ITSM Data Centre.

The infrastructure components of a CCN site are:

- The CCN Gateway is a hardware equipment which is deployed on every CCN site and acts as an access point to the CCN backbone. It allows the National Administrations to interact with each other, using the common communication network between the gateways, and the common system interface with the NA applications. A CCN Gateway relies on the Linux operating system.
- CCN Communication equipment is a set of CCN encryption devices (SSG), CCN switches, Network routers, and private CCN leased lines. It is provided and maintained by the CCN/WAN contractor. However, the configuration of switches and encryption devices (filtering encryption) are managed and under the responsibility of the ITSM2Lot1.

A CCN/CSI site infrastructure is depicted in the figure below:

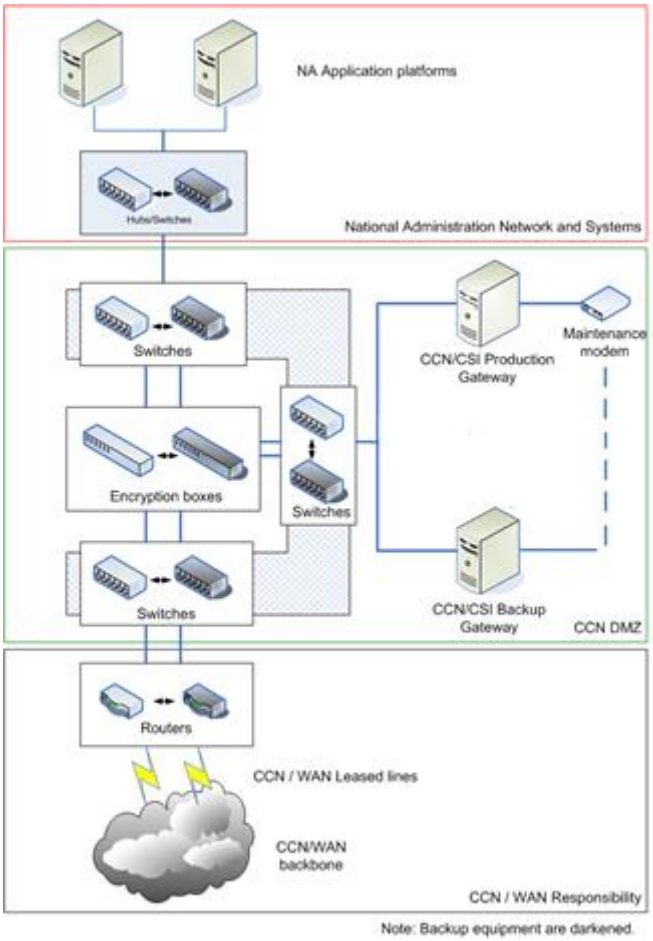

Figure 14: CCN/CSI site

CCN Infrastructure Operations Scope

You can find below the operational responsibilities of the ITSM contractor (marked with a star *) related to CCN components:

Business Continuity and Disaster Recovery

- BCP/DRP Exercise*

Communication and coordination:

- Coordinate with CCN/WAN, xDEV and DG TAXUD*
- Communication and coordination with MS*

Documentation

- Create operational documentation (deployment guide, migration guide, working procedures, security policy & procedures, external notes)*
- Maintain documentation up to date*

Maintenance:

- Maintain and upgrade hardware*
- Maintain software licenses*

Management:

- Project Management (contractual and operational)
- Incident Management
- Service Level Management
- Infrastructure Availability Management*
- Trend analysis and Capacity Management*
- Consultancy/Advisory Role*
- Reporting*

Monitoring

- Monitor in real-time*
- Respond to alerts*
- Monitor and report on traffic

Operations:

- Deploy and configure hardware*
- Repatriate obsolete hardware*
- Install and configure new versions of software
- Backup management*
- End to end statistics management
- Publication of software and documentation

Security:

- Management of security devices*
- Management of security software*
- Management of security protocols*

Support:

- Provide 1st and 2nd level support*
- Interact with 3rd level support
- Notify service interruptions
- Participate in workshops and seminars
- Provide documentation

Testing:

- Testing campaign of a release: PSAT, SAT, Conformance
- Testing campaign of a patch: PSAT, SAT
- Qualification of a patch

Training:

- Organise and provide training for CCN gateway administration

- Maintain training material

4.5.1.3 MAINTENANCE OF THE TECHNICAL KNOWLEDGE

Technical Support is concerned with the development of knowledge for the evaluation, support and proofing of all current and future ICT Infrastructure solutions.

Figure 15: Level 3 sub-processes

Technical support is responsible for knowledge acquisition to ensure that all technical information and operational procedures are available and up-to-date to support ICT staff to manage and operate the ICT Infrastructure. Technical support maintains the ODL (Operational Document Library) containing documents such as training materials, product guides and manuals from vendors, operational procedures and work instructions.

4.5.2 Evolutions

Service Blocks coverage

The coverage of responsibilities related to infrastructure shall evolve from ITSM2Lot1 to ITSM3 Operations due to the restructuration of the service blocks 2, 5, 6 and 7.

Although the design planning and implementation of transformations are to be managed by ITSM3 Operations in the context of Service Block 02, the deployment and operational support of the infrastructure elements or any other technical or operational actions (even if as part of the implementation of a transformation) is covered under Service Block 05. Nevertheless the deployment of certain infrastructure software (COTS) may fall within Service Block 06 – Platform support or Service Block 07 – Application Management whenever those COTS are considered intrinsic part of either a platform or an application.

In the same manner as described above for the transformations, the operations are also covered by SB06 or SB07 for those software components and/or COTS defined as part of a platform instance or an application.

Evolutions on Infrastructure Program

The infrastructure program deals mostly with the consolidation of TAXUD data centres and the provision of infrastructure with sufficient capacity enabling high availability, security and SOA capabilities for DG TAXUD systems. See also 3.2.3 on that topic.

4.5.3 Volumetrics: Present and Future

The elaboration of the future situation is based on the following assumptions:

- The number of Customs/Taxation logical servers & databases at DIGIT Data Centres may practically remain stable over the term of the contract.

- The number of Customs/Taxation logical servers & databases at TAXUD Data Centres will increase over the term of the contract, based on the introduction of new central Applications and the increasing demand on existing (legacy) Applications.
- Capacity may increase due to implementation of new Platforms and development of new Customs/Taxations Applications. The number of assets may increase by 20% from the current asset list maintained by ITSM2 at the start of the contract and then will increase by 10% per year.
- Hosting of the X-DEV (CUSTDEV3, FITSDEV3, CCN2DEV) Infrastructure Services (SDLC, Development and test environments) and the possible inclusion of testing environment for Member States' National Administrations may require an increase in the capacity of the current environment.
- Increased use of infrastructure services for set up of FAT environments potentially mitigated by the use of provisioning methods (virtual environments and cloud-like infrastructure and/or platform services) may total an estimated increase of 10% yearly.
- A relatively high but punctual consumption of infrastructure resources (CPU, Memory, etc.) is expected for the execution of performance and/or robustness testing in a shared environment.
- The introduction of tooling and methods for the rationalisation of the software development life-cycle should not increase the infrastructure capacity requirements but it will improve the agility for the management of infrastructure environments.
- Environments and infrastructure services for CCN2DEV development or FAT environments are not expected to be required, at least for the first two years. This figure may change if the strategy of hosting these environments in DG TAXUD Data Centres is applied for the next CCNDEV framework contract.
- In the case of DIGIT, the amount of infrastructure service to be provided for development environments to their teams is expected to stay relatively stable over the course of the ITSM3 contract.
- There will be demand for High Availability requirements due to the development and deployment of new central Applications being accessed in real-time by critical national systems (Customs movement systems). The introduction of new systems will increase the infrastructure capacity requirements by 100%.
- Maintenance of existing environments may increase by a factor of 15% per year overall. This relates to the capacity of the infrastructure to handle the Applications, Platforms, etc.

4.5.3.1 SERVERS

The following table shows the number of operated servers, hosted in TAXUD DC or in DIGIT DC.

	Logical servers		Database servers (*)		Application servers (*)	
	@TAXUD DC	@DIGIT DC	@TAXUD DC	@DIGIT DC	@TAXUD DC	@DIGIT DC
2013	408	22	36	52	55	53
2014	569	25	36	69	69	54
2015	623	26	24	57	63	54
2016	650	28	32	64	70	56

2017	700	30	40	70	78	58
2018	720	30	42	70	82	60
2019	730	32	45	70	85	62
2020	740	34	48	70	87	64
2021	850	35	60	70	110	64
2022	880	35	70	70	120	64
2023	900	35	75	70	125	64
2024	910	35	78	70	130	64

(*): doesn't cover DB and application servers delivered as part of an application or platform and hence already covered in other service blocks (SB6 and SB7).

Table 31: Number of operated servers

The following table shows the filesystems usage statistics.

Year	DIGIT Filesystems Usage Stats		ITSM Filesystems Usage Stats		CCN GTW Filesystems Usage Stats	
	Total GB	% Usage	Total GB	% Usage	Total GB	% Usage
2013	2698	41%	10318	64%	N/A	
2014	3023	43%	44655	34%	13235	31%
2015	3058	45%	13388	63%	12675	35%
2016	3079	45%	30000	40%	13000	35%
2017	3100	45%	45000	40%	13500	40%
2018	3255	50%	50000	40%	13770	40%
2019	3418	50%	55000	50%	14045	40%
2020	3589	50%	60000	50%	14326	40%
2021	3768	50%	90000	50%	14613	40%
2022	3956	50%	100000	50%	14905	40%
2023	4154	50%	110000	50%	15203	40%
2024	4362	50%	120000	50%	15507	40%

Table 32: filesystems usage statistics

The following table shows the Tablespaces Usage Statistics.

Year	DIGIT Tablespaces Usage Stats		ITSM Tablespaces Usage Stats		CCN Tablespaces Usage Stats	
	Total GB	% Usage	Total GB	% Usage	Total GB	% Usage
2013	5841	49%	2185	67%	N/A	N/A
2014	17806	24%	3254	78%	414	89%
2015	18116	34%	4455	82%	N/A	N/A

2016	18560	34%	4478	82%	432	89%
2017	19000	34%	6000	70%	450	89%
2018	19950	40%	7000	60%	473	80%
2019	20948	50%	7500	50%	496	70%
2020	21995	50%	8000	50%	521	70%
2021	23095	50%	9500	50%	547	70%
2022	24249	50%	10000	50%	574	70%
2023	25462	50%	11000	50%	603	70%
2024	26735	50%	12000	50%	633	70%

Table 33: Tablespaces Usage Statistics

The following table shows the number of network subnets in TAXUD DC and CCN sites.

	TAXUD DC Subnets	CCN Subnets
2015	83	150 (3 per CCN site)
2024	100	3 per CCN site

Table 34: Number of network subnets

The following table indicates meeting requirements, which are considered quite stable during the course of the ITSM3 Operations contract.

Meeting type	Volume Estimates per year
Infra Management	22
Problem Management	24
Multilateral (with contractors)	10
CRM with DIGIT	8
Capacity Management	12
Availability Management	12
Data Centre technical and coordination	100

Table 35: Service Block 5 meeting table

4.6 Interoperability & Applications Platforms Management – (Service Block 6)

4.6.1 Description

4.6.1.1 CCN

For further details, please refer to the Baseline, and more specifically the following documents:
[R10] - CCN from an operational point of view v1.02.docx
[R11] - Global Architecture & Concepts - CCN Introduction (CCN-CTRA-HOTR-A01_1.00-EN.ppt)
[R12] - CCN Internal Architecture (CCN-CTRA-HOTR-A02_1.00-EN.ppt)
[R13] - CCN Tivoli Architecture (CCN-CTRA-HOTR-A04_1.00-EN.ppt)
[R14] - Network Monitoring and Issues (CCN-CTRA-HOTR-B02_2.00-EN.ppt)
[R15] - SIAP - External User Guide (ITS-1RPT-D.RFA075 3 CCN-CUSG-SIAP External User Guide 1.00 EN.doc)
[R16] - BCP/DRP Switch Type A, C, E (CCN-CTRA-HOTR-G01_3.00-EN.ppt, CCN-CTRA-HOTR-G03_2.00-EN.ppt, CCN-CTRA-HOTR-G04_2.00-EN.ppt + corresponding handbooks (.doc))
[R17] - CCN Mail III, Overview, Architecture & Infrastructure (CCN-CTRA-HOTR-A03_1.00-EN.ppt)
[R18] - Security – SPEED (CCN-CTRA-HOTR-H01-SPEED-SEC_1.00-EN.pptx)
[R19] - Application Configuration - ACT (CCN-CTRA-HOTR-F01_2.00-EN.ppt)
[R20] - Operation activities - CCN Portal (CCN-CTRA-HOTR-C04_2.00-EN.pptx + corresponding handbook (.doc))

4.6.1.1.1 GENERAL DESCRIPTION OF CCN/CSI

The Common Communications Network / Common Systems Interface (CCN/CSI) is a value-added network operated by DG TAXUD. The mission of CCN today and in the future is to provide common services to exchange taxation, excise and customs information at reasonable cost, with high agility, high security and continuity. CCN was designed between 1993 and 1995 and is operational since 1999. Today, the CCN/CSI relies on:

- The Common Communications Network (CCN), which is composed of a series of physical Gateways located either in the National Administrations or on the Commission premises. These Gateways are interconnected in a secure way through communication services and locally connected to the application platforms provided by the local site.

- The Common Systems Interface (CSI), which is a set of protocols and application programming interfaces allowing the above-described application platforms to exchange information through the CCN backbone. It ensures the interoperability between the relevant heterogeneous systems in the National Administrations.

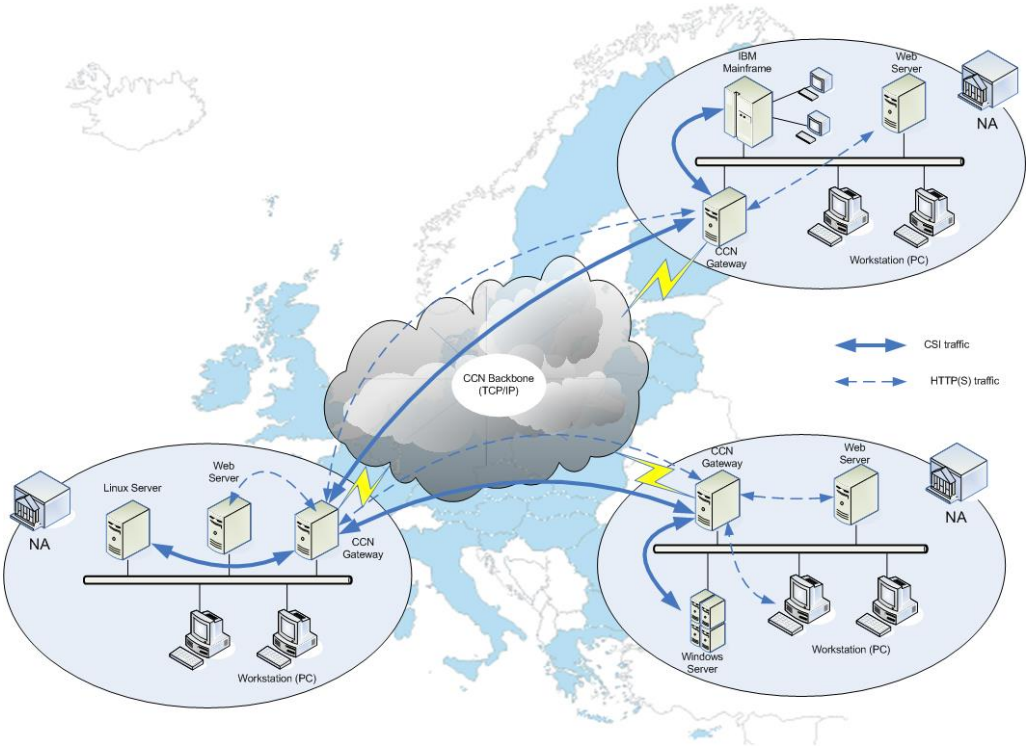

Figure 16: CCN/CSI topology overview

CCN is the largest e-communications platform among customs and taxation administrations worldwide, and delivers a variety of specific services to support various policies. CCN and CSI are managed and developed by DG TAXUD in conjunction with the Member-State administrations concerned.

CCN/CSI serves all of the EU Members States and the EFTA members Norway and Switzerland. It also extends to third countries, including Russia for example, via a separate system named SPEED. The provision of services may extend to Candidate Countries and to other countries according to the evolution of the taxation and customs policies.

OLAF relies on the CCN infrastructure to carry out anti-fraud campaigns in collaboration with the EU Member States**.**

The CCN/CSI provides a network which is:

- Secure:
    - CCN/CSI runs on a dedicated private hardware infrastructure;
    - All data transmitted over the network is encrypted;
    - Access to the network is controlled by strong user authentication and authorisation.
- Accessible:
    - The network has access points (CCN Gateways) in every Taxation and Customs administration;

- The CSI software ensures that heterogeneous computer systems can access the network.

- Reliable:

  - Data exchanges over the network have guarantees of delivery ;

  - All hardware and software elements of the network are constantly monitored.

The CCN/CSI infrastructure can be split into 2 domains:

- The "European" domain infrastructure is owned by DG TAXUD and operated by the service providers. Inside this domain, the CCN backbone and access equipment are provided by the network provider. The operation supplier remains the sole responsible for the operation of CCN/CSI infrastructure deployed in each National Administration or at DG TAXUD premises.

- The "national" or "local" domain components which are under the full responsibility of the National Administrations.

Of over **50** central applications and **18** distributed systems relying on CCN/CSI, the most used are VIES (VAT Information Exchange System), NCTS (New Computerised Transit System), EMCS (Excise Movement and Control System), ICS (Import Control System) and AFIS (Anti-Fraud Information System). These applications cover the collection of taxes and duties, the security of trade, the control of fraud and illicit trade, VAT information and more.

In addition to the CCN sites installed in National Administrations, there are also sites located centrally. These are located in the DG TAXUD Data Centres, and in the European Anti-Fraud Office (OLAF) and provide CCN access to centralised information systems. The remaining sites are located at ITSM Data Centre.

The subsequent sections are describing the functionalities provided by CCN/CSI, its components and the overall architecture.

The TCP/IP backbone consisting of leased lines and network components is managed by a separate contract (CCN/WAN).

4.6.1.1.2 CCN PLATFORM INSTANCE

The software deployed in a CCN Gateway within a given CCN site corresponds to the components of a CCN Platform Instance. They implement the CCN/CSI functions which ensure the services offered to the Applications of the NAs. It relies on the following software products:

- The CCN/CSI Gateway Software;

- The Tuxedo TP monitor;

- The IBM WebSphere MQ queue manager;

- The Apache HTTP server;

- The Tomcat "pure Java" HTTP server (Servlet container);
- The Java Virtual Machine;
- SunOne Directory Server;
- The Linux Operating System (managed by infrastructure SB05);
- The Tivoli monitoring agents (managed by infrastructure SB05);
- The PostgreSQL database used to consolidate the statistics about the CCN Gateway traffic;
- The Perl interpreter.

4.6.1.1.3 CCN OPERATIONS SCOPE

You can find below the operational responsibilities of the ITSM contractor (marked with a star *) related to CCN components:

- **Business Continuity and Disaster Recovery**
  - BCP/DRP Exercise*
- **Communication and coordination:**
  - Coordinate with CCN/WAN, xDEV and DG TAXUD*
  - Communication and coordination with MS*
- **Documentation**
  - Create operational documentation (deployment guide, migration guide, working procedures, security policy & procedures, external notes)*
  - Maintain documentation up to date*
- **Maintenance**:
  - Maintain and upgrade hardware
  - Maintain software licenses*
- **Management**:
  - Project Management (contractual and operational)
  - Incident Management*
  - Service Level Management*
  - Infrastructure Availability Management
  - Trend analysis and Capacity Management*

- Consultancy/Advisory Role*
- Reporting*

- **Monitoring**
  - Monitor in real-time*
  - Respond to alerts*
  - Monitor and report on traffic*

- **Operations**:
  - Deploy and configure hardware
  - Repatriate obsolete hardware
  - Install and configure new versions of software*
  - Backup management*
  - End to end statistics management*
  - Publication of software and documentation*

- **Security:**
  - Management of security devices
  - Management of security software
  - Management of security protocols

- **Support**:
  - Provide 1st and 2nd level support*
  - Interact with 3rd level support*
  - Notify service interruptions*
  - Participate in workshops and seminars*
  - Provide documentation*

- **Testing:**
  - Testing campaign of a release: PSAT, SAT, Conformance*
  - Testing campaign of a patch: PSAT, SAT*
  - Qualification of a patch*

- **Training:**
  - Organise and provide training for CCN gateway administration*
  - Maintain training material*

The table below gives an overview of the main CCN related operations mapped to the CCN related CIs and components

	CCN GW	CCN/CSI Software	CCN Comm.	CCN Portal	CCN ACT	CCN QBrowser	CCN Stacks	CCN Test tools	CCN Mail 3	Speed Bridge	CCN Test Environments
Business Continuity/ Disaster Recovery	X	X	X						X		X
Communication and Coordination	X		X	X	X				X		
Documentation	X	X	X	X	X				X	X	X
Maintenance	X	X	X	X	X				X	X	X
Management	X	X	X	X	X			X	X	X	X
Management - Reporting	X	X		X	X				X		
Monitoring	X	X	X	X					X	X	X
Operations - Deployment	X	X	X	X	X			X	X	X	X
Operations - Backup	X	X		X	X				X	X	X
Operations - Configuration	X	X	X	X	X			X	X	X	X
Operations - End to end statistics generation	X	X		X					X	X	X
Operations - Publication							X				
Security	X	X	X	X	X				X	X	X
Support	X	X	X	X	X	X	X	X	X	X	
Tests	X	X		X	X			X	X	X	X

Trainings	X	X	X	X	X				X	X	

Table 36: Operations view per CCN Components

4.6.1.1.4 MAJOR CCN RELATED ACTIVITIES DURING LAST 12 MONTHS

The following table lists the major activities carried out during the last 12 months (status as of August 2015):

- Initiation of the path to migrate all the AIX CCN Gateways to Linux Gateways in order to reduce the footprint of CCN. The milestones of this major architecture transformation completed so far are:
  - The definition of the new reference architecture for Linux Gateway;
  - The alignment of 21 sites which were using the multi-mode configuration to the standard mono-mode configuration;
  - The implementation, testing and roll-out of a new version of the CCN software (7.2.0) which will facilitate the migration to Linux.
- Tested BCP/DRP scenarios and CCN Gateway failover exercises with NAs;
- Network connectivity tests for CSI over Secure Internet Access Point (SIAP) have been completed;
- Implementation of a new release of NJCSI (3.1.2);
- Relocation of all CCN equipment to DG TAXUD Data Centres in Luxembourg;
- Relocation of National Administration CCN sites (Turkey, Luxembourg, Latvia, France, Finland, Germany)
- Porting of new CCN/CSI stack on various application platforms;
- Deployment of new CCN sites (ESTAT, Serbia, Former Yugoslav Republic of Macedonia).

4.6.1.2 CCN TEST ENVIRONMENTS

The Test environments aim at mimicking the operational environment at a best effort basis. Depending on the needs they may evolve: changes in system topology, functional changes,…

Main purposes are:

- reproducing issues;
- testing installation procedures;

doing exercises, e.g. installation or deleting of a gateway.

4.6.1.3 CCN MAIL 3

CCN Mail III represents a centralised and fully monitored solution based on the messaging standard product Microsoft Exchange 2010.

The main features of the CCN Mail III are:

- Centralised solution
- High-availability with fail-over (redundancy) in order to insure continuity and disaster recovery
- Security (anti-virus & anti-spasms, DOS detection, password policies, backups)
- Monitoring (alerts & statistics)
- Multi-domains (each NA has its own domain with the possibility to have one sub-domain dedicated to a relay)
- Main figures: Validated for up to 1000 mailboxes, Mailbox quotas: 500 MB, Mails up to 20 MB, 1000 mails per hour for a size of 1 GB (actual situation)

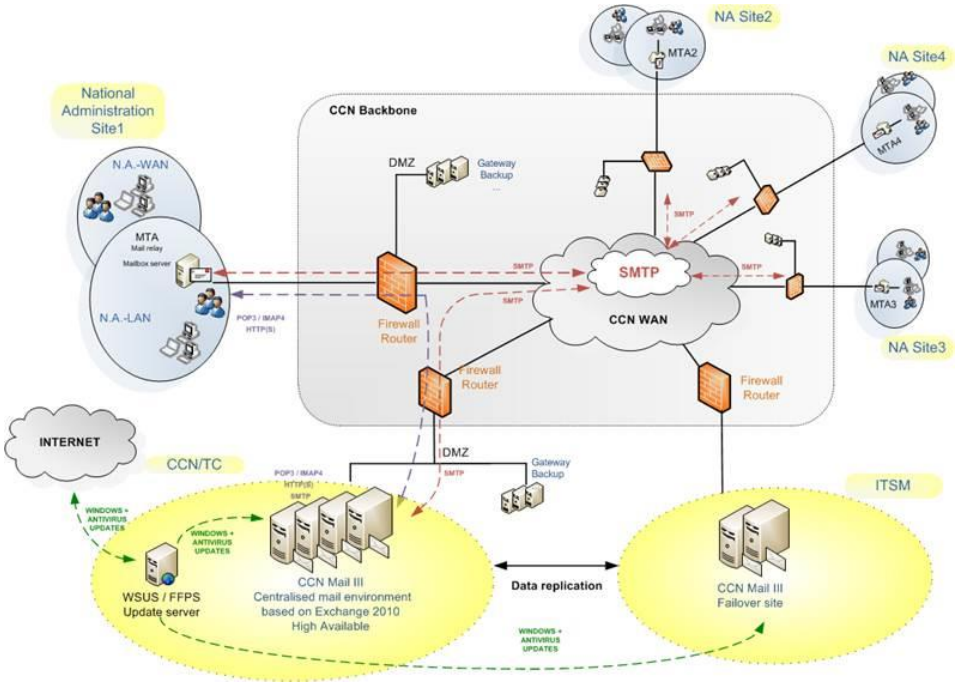

Figure 17: CCN Mail 3 architecture

It provides:

- Integration with the Central CCN Directory (used for statistics);
- Integration with the Central Statistics database and CCN portal;
- Integration with the central Tivoli monitoring systems;
- Integration with the CCN proxy technology: National Administration access CCN Mail III web interface through their proxy on CCN gateway;

Custom commands for Account management and Sanity checks.

4.6.1.4 SPEED

SPEED (Single Portal for Entry or Exit Data) is the reliable and secure path to be used for enabling the exchange of Customs Transit information between the EU and the Third Countries (TC) SPEED partners. i.e. the TC National Customs Administrations (NCAs).

The interoperability between two partners is based upon message exchange between the EU Front-End (i.e. the SPEED-Bridge) and one TC Front-End. In SPEED, a Front-End is a high-reliability and secure interface for the transmission of messages between the EU SPEED and its TC SPEED partners.

SPEED has four components in operations: SPEED-ECN, SPEED-Bridge, SPEED Security Infrastructure, SPEED-Net.

SPEED-ECN and SPEED-Bridge might be phased out and replaced by a SPEED2-based message flow (see hereunder) at the time of ITSM3 take-over but this is not planned yet at the time of writing this ToR.

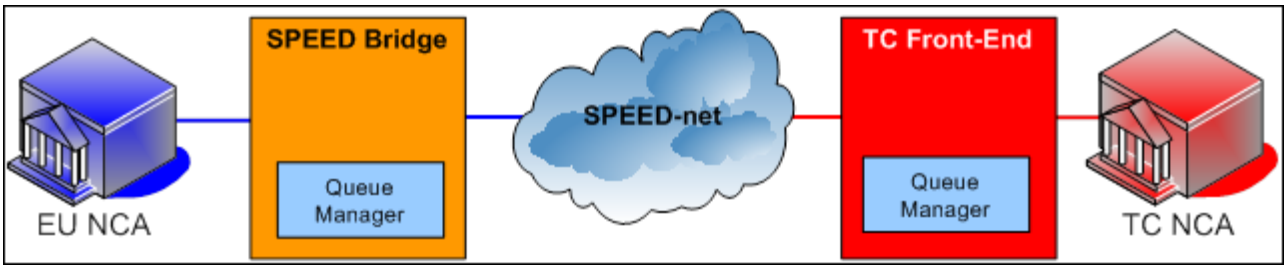

Figure 18: Speed Bridge

4.6.1.5 SPEED2 AND BUSINESS FLOWS

For further details, please refer to the Baseline, and more specifically the following documents:
[R21] – SPEED2 – Technical Specifications
[R22] – SPEED2-Infrastructure Requirements Document
[R23] – SPEED2 – Integration Guide for DG TAXUD
[R24] – SPEED2 - Vision Document SW-CVED
[R25] - ITS-1CTO-EU SW-CVED-Conformance Test Organisation EN v1.12.docx
[R26] - ITS-1DER-RfA010-Deployment Report for EU SW-CVED v1.00
[R27] - EU SW-CVED-1CTR-CZ-Conformance-Test-Report v1.00 EN
[R28] - SW-1QTR-EU SW-CVED v1.1.4 Qualification Report v1.00 EN

[R29] - SW-CVED_EXPL-v0.50_GO.doc
[R30] - SW-CVED-IG-MS-Integration Guide for MS v5.00.docx
[R31] - ESW-CCTP-001-EU-SW-CVED-CTP–ConformanceTestPlan–v8.00.doc
[R32] - SW-CVED-TS-EU SW-CVED Technical Specifications-v5.00.docx
[R33] – AEO-MRA over SPEED2 Technical Specification
[R34] – AEO MRA over SPEED2 Infrastructure Requirements Document
[R35] – SPEED2 Platform AEO MRA Integration Guide for PC FATCA
[R36] – CCN2D-FTC-CTCS-001 FATCA-Pilot-TS
[R37] – FTC-CUIS-001-FATCA Pilot US Integration Guide

4.6.1.5.1 BACKGROUND INFORMATION

Since the establishment of the European Union-Russia Common Spaces in 2003 as well as the establishment of the European Neighbourhood and Partnership Instrument in 2007, the EU Member States and some (non-EU) Third Countries (TC) shared the objective of creating a common economic space intended to remove the barriers to trade and investment and promote reforms and competitiveness, based on the principles of non-discrimination, transparency, and good governance.

At the cornerstone of the business opportunity is the actual capacity to facilitate trade (in particular to accelerate the border crossing) and to improve the quality and tracking of the exported and imported goods. This is why the Single Portal for Entry or Exit Data Generation 2 was initiated by the European Commission in 2007.

The objective of the SPEED2 platform is to allow the automated and secure transmission of customs information exchange between the European Union (EU) and the Third Countries (TC) National Administrations (NAs) by the mean of a single platform acting as a communication gateway for all electronic exchanges of structured information (mainly Customs-based).

Below is a list of all Business Flows that use SPEED2 and plans

- NCTS TIR RU – migration to SPEED2 NCTS TIR is planned for 2016
- MRA (Generic, China, Japan) - new MRA flows for additional countries (Canada, Norway, US, etc.) are planned for 2016
- SW-CVED – new release of the SW-CVED is planned for 2016
- FATCA Pilot – FATCA project is planned for 2016

Each of the business flows should be considered as a separate Configuration Item. Each of the flows is built following separate SDLC cycle with individual documentation, monitoring and operation procedures.

Domain	CI	Development & Maintenance	CI type
SPEED2 and Business Flows	SPEED2 Platform	CCN2-DEV	Platform CI
SPEED2 and Business Flows	NCTS TIR RU	CCN2-DEV	Application CI

SPEED2 and Business Flows	EU SW-CVED	CCN2-DEV	Application CI
SPEED2 and Business Flows	MRA (Generic)	CCN2-DEV	Application CI
SPEED2 and Business Flows	MRA China	CCN2-DEV	Application CI
SPEED2 and Business Flows	MRA Japan	CCN2-DEV	Application CI
SPEED2 and Business Flows	FATCA	CCN2-DEV	Application CI
SPEED2 and Business Flows	STS	CCN2-DEV	Application CI

Table 37: SPEED2 components and CI type

4.6.1.5.2 GLOBAL ARCHITECTURE

The SPEED2 platform has been designed based on the Oracle Fusion Middleware 11g's hot-pluggable architecture, which allows making the most out of the current investments in applications and technology, while also taking the advantage of modern hardware and software architectures.

The SPEED2 platform is deployed on Oracles's SPARC T5-2 servers. Three servers are used in order to guarantee a HA/DR (High availability and Disaster Recovery) and additional servers for the monitoring, using Oracle OEM.

The SPEED2 platform has been designed to support multiple business processes and data interchange between other European Commission's DGs and EU NAs. It ensures a reliable and secure transmission of messages exchanged between the EU/EFTA (European Free Trade Association) National Administrations and Third Countries.

The SPEED2 Platform is technically bi-directional. It can transfer the messages in both directions:

- From the EU/EFTA side to the Third Country side;
- From the Third Country side to the EU/EFTA side.

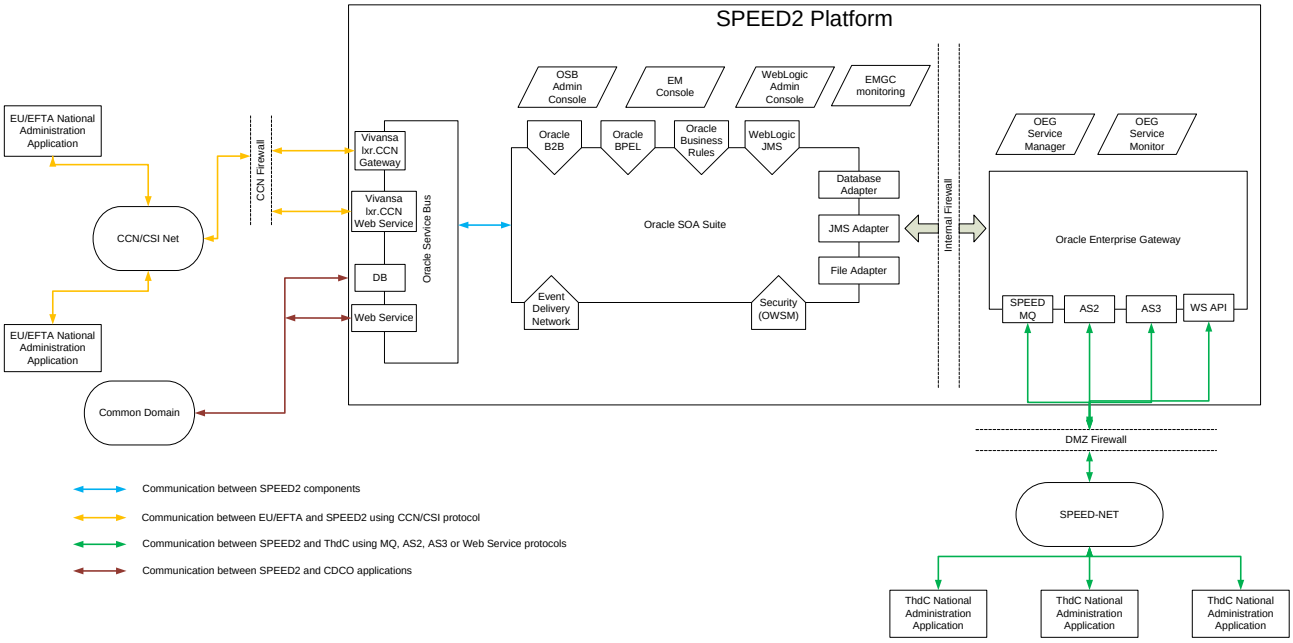

Figure 19: Overview of the SPEED2 platform Architecture

4.6.1.5.3 MONITORING

The SPEED2 Platform is monitored from a business and technical perspective. The monitoring is performed using the following two products:

- Oracle Enterprise Manager (mainly for the business flows and the SPEED2 components)
- IBM Tivoli (mainly for the OS and alerts from Oracle Enterprise Manager)

OEM agents are deployed all over the different SPEED2 components, these agents monitor the SPEED2 Platform and the results are published in Tivoli.

Monthly reports are automatically generated and sent to a predefined list of people.

4.6.1.5.4 SPEED2 OPERATIONS SCOPE

Prepare the Infrastructure

- Installation and configuration of the servers
- Creation and configuration of the Logical servers
- Creation and configuration of the Logical domains
- Network configuration (connection to DIGIT DC, X-Devs DC if required, CCN backbone, Internet, VPNs setup…)
- Maintain and upgrade HW and SW
- Backup & restore Management

Maintenance

- Monitor vendor's new releases
- Perform impact assessment
- Maintain and upgrade Hardware and Software

Deployment of the components

- Deployment of the SPEED2 components (SOA, OEG, MQ, Vivanza,…) on the different environments (Testing, Conformance and Production)
- Configuration of the SPEED2 components (SOA, OEG, MQ, Vivanza,…) on the different environments (Testing, Conformance and Production)
- Deployment of the Business Flows (NCTS TIR-RU, EU SW-CVED, MRA CN, FATCA…) on the different environments (Testing, Conformance and Production)

Testing

- Conducting testing campaigns (PSAT & SAT)
- Conducting and performing patch validations
- Perform connectivity testing

Security

- Management of security devices
- Management of security software
- Management of security protocols

Support

- Provide 2nd and 3rd level support
- Notify service interruptions
- Participate in workshops and seminars
- Provide documentation

Monitoring

- Perform Technical and Business Monitoring
- Availability Management (SPEED2 Platform and Business Flows)
- Respond to alerts
- Monitor and report on traffic

4.6.1.6 APPLICATION PLATFORMS SUPPORT

Application servers are maintained in the context of Service Block 5 in ITSM2Lot1. However, in ITSM3 Operations they will be covered either as part of a platform in Service Block 6 (e.g. OSB or WebLogic server in TATAFng platform), or as part of an application in Service Block 7 (e.g. application server used by the ARIS application).

4.6.2 Evolutions

Service Block 06 in **ITSM3 Operations** is an evolution of the Service Block 07 of ITSM2 Lot1, which only covered CCN support, to add the coverage of all Interoperability and Application platforms managed by DG TAXUD.

This is in fact the major evolution form ITSM2 Lot1 to **ITSM3 Operations** where the concept of Platfrom is for the first time introduced and the management of its components is detached from the infrastructure and applications components; indeed the CCN infrastructure and applications were covered in ITSM2 Lot1 service Block 07 where this is not anymore the case in the replacing **ITSM3 Operations** Service Block 06.

ITSM3 Operations Service Block 06 has a similar structure of services as **ITSM3 Operations** Service Block 07 dealing with Application Management and both are on themselves similar in nature to the services provided in ITSM2 Lot1 Service Blcok 6 (also for Application Management).

The following sections provide an insight of the initial platforms that are being defined to be supported by this **ITSM3 Operations** service block 06 and thei expected evolutions.

4.6.2.1 CCN

CCN/CSI will continue to expand, both in terms of the countries connected (Candidate Countries and other EU economic partners) and of the administration domains using it. Non-exhaustive list of tasks being under consideration follows:

- Replacement of all AIX Gateways with new Linux Platform (Q3 2015 to Q3 2016);
- The Secured Internet Access Point (SIAP) project, which currently can be used to grant access to a user from non-customs/non-taxation NA to central applications using HTTP over existing sTESTA or Internet lines, will be extended to support CSI communications. This service will therefore also become a fallback solution if the connection between the existing CCN/CSI site in one of the National Administrations and CCN Backbone is down. Or if a National Administration needs to be provided with the mid-term solution that allows for accessing CCN resources before the fully operational site is created in NA premises.
- Roll-out of the new release of the CCN/CSI Software 7.3.0;
- Wider use of the Web Service technologies may be considered by new applications/services (or existing) using today's CCN/CSI HTTP capacities;
- As the result of the tighter integration of the Taxation, Customs and Excise policies among MS new business applications/services may be developed. Those will use CCN/CSI network as the middleware solution if CCN2 is not available yet.

4.6.2.2 CCN2

For further details, please refer to the Baseline, and more specifically the following documents:
[R38] - CCN2 Platform System Functional and Non-Functional Requirements
[R39] - Business and System Process Model CCN2 Platform
[R40] - CCN2 R1 Platform Functional Specifications
[R41] - CCN2 Platform System Architecture Document

[R42] - CCN2 Infrastructure Requirements Document
[R43] - CCN2 Platform Release 1 Master Test Plan
[R44] - System Architecture Document CCN2 Release 1 Reference Applications
[R45] - CCN2 R1 Reference Applications Infrastructure Requirements
(The documents above are the latest versions available at the time of writing, which is subject to change as the result of on-going development of the CCN2 Release 1)

4.6.2.2.1 PURPOSE OF THE SYSTEM

The CCN2 Platform Release 1 is under development with the major goal of providing:

- **Managed interoperability** between CCN2 Partners in the Common Domain. This includes the technical capabilities, agnostic to any specific business domain, needed to enable any-to-any, secure, reliable, scalable, manageable and high-performance communication across Trans-European Systems (TES) in a technologically heterogeneous environment.

  Interactions between CCN2 Partners through the CCN2 Platform can occur:

  - Between systems when exchanges are automated and are executed without human intervention;
  - Between humans and systems when users of web applications rely on their web browser to access the related capabilities.

- **Security Enforcement** ensuring the controlled access to resources across the Common Domain. It prevents unauthorised access to the CCN2 Platform and to the exposed resources, and shall guarantee integrity and confidentiality of the exchanged data.

- **Federated governance facilities** to support the development, the deployment and the operations of trans-European Systems (TES) in the Common Domain, according to the CCN2 Platform governance model.

  For all types of interactions, the communicating parties (i.e. both humans and systems) and the exposed resources (e.g. services or web applications) have to be identified in the CCN2 Platform. This relates to the application of the CCN2 Security Governance and Service Governance process

- **A set of common services** highly reusable, reducing redundant development across the CCN2 ecosystem. They provide business-agnostic and crosscutting capabilities. Some of them are directly exposed to CCN2 Partners for consumption at run-time whilst others are composed by CCN2 Service Connectivity Services as defined at deployment-time.

CCN2 Partners can integrate those CCN2 features during two major steps in the TES development lifecycle:

- Implementation of the service logic that must interface the CCN2 Platform according to the specified protocols;
- Deployment of the service implementation and publishing of the exposed interface through CCN2.

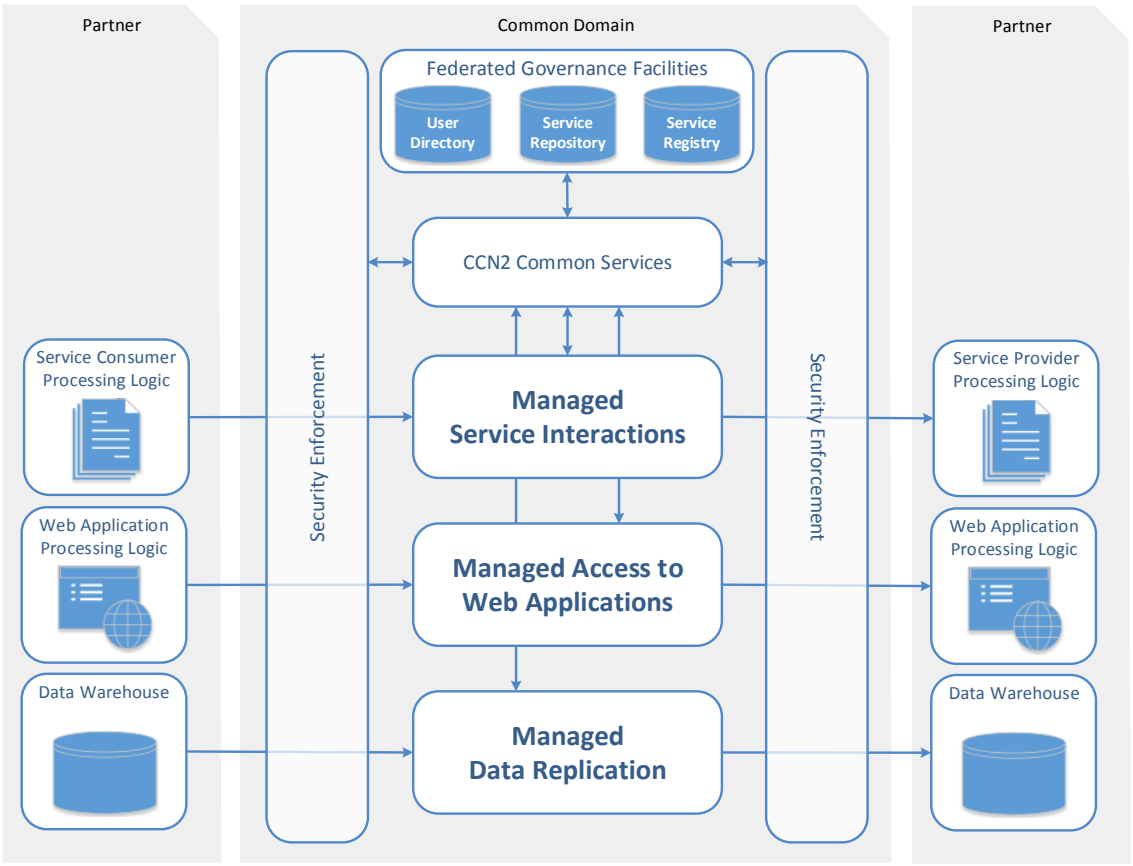

Figure 20: CCN2 Functional Capabilities

4.6.2.2.2 CCN2 REFERENCE APPLICATIONS

Reference Applications are a set of sample implementations of Partner Applications that connect to the CCN2 Platform and simulates CCN2 Partners business process using CCN2 Platform. Partner Applications can play 2 roles:

- Service Consumer: In this role the Application communicates with the CCN2 Platform by consuming a service;
- Service Provider: In this role the Application communicates with the CCN2 Platform by offering services;
- A Service Consumer and Service Provider at once (e.g. in the Request/Callback interaction).

As per CCN2 design principles the Reference Applications solely connect to the Access Points of the CCN2 Platform. They do not connect to the CCN2 Main Hub.

The Reference Applications implement both the User-To-System and System-To-System interaction.

The Reference Applications solely focus on the interaction with the CCN2 Platform. They do not provide any further implementation details on complex flows that are necessary for fully implemented business applications.

4.6.2.2.3 CCN2 ROADMAP

The scope of the CCN2 Platform is defined in the [R38] - CCN2 Platform System Functional and Non-Functional Requirements. At the time of writing there are three major CCN2 Releases foreseen

(with potential intermediate Release) and CCN2 Pilot

R1 Pilot (2015):

- core functional capabilities of the Release 1
- main focus on the external interfaces
- Playground System environment: mid Q2-Q4 2015

Release 1 (2016/2017)

- Implementation of the CCN2 SOA (web service) functionality of CCN2 platform (Pilot) + non-functional requirements (R1)
- Production: Q3 2017

Release 2 (2018+):

- CCN/CSI integration
- CCN/CSI migration (long migration expected)
- additional transformations (e.g. EDIFACT <-> XML)
- Managed File Transfer

Release 3 + (2019+):

- Master Data Management
- Remaining scope of CCN2 Call for Tender
- Additional extensions to CCN2 platform

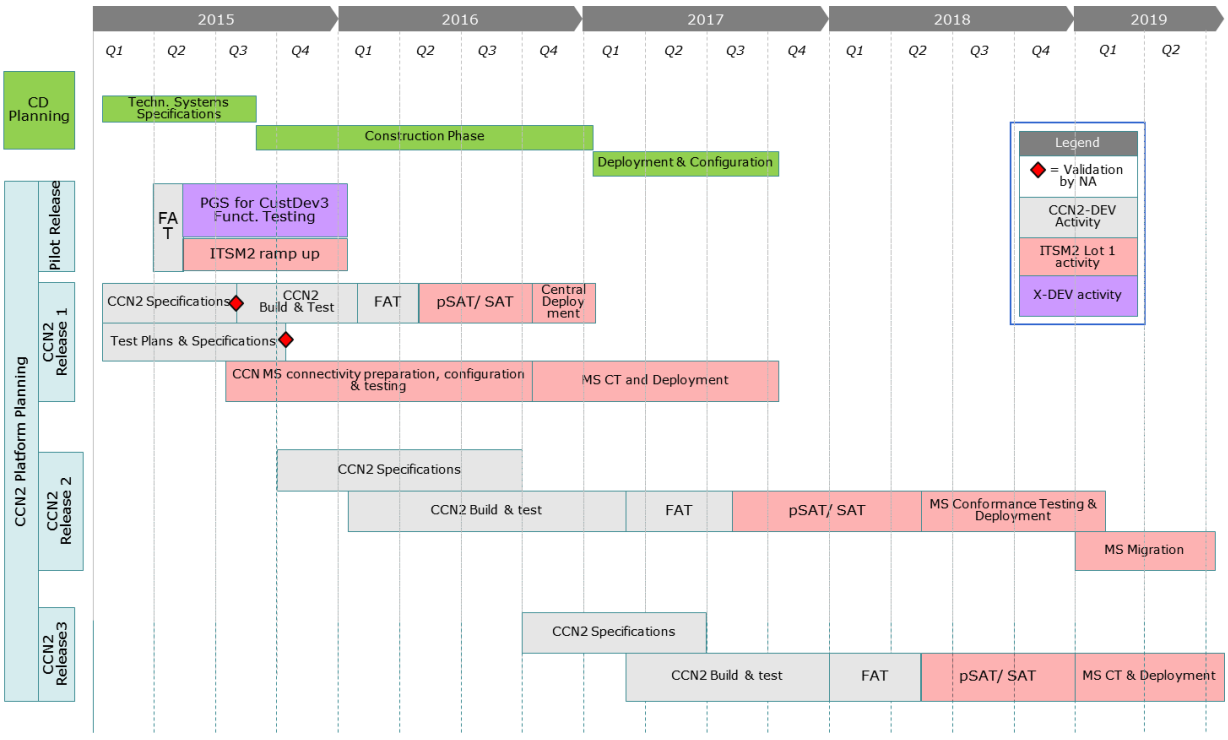

Figure 21: CCN2 Roadmap

4.6.2.2.4 CCN2 OPERATIONS SCOPE

The CCN2 platform is using the similar Oracle software SOA stack as SPEED2 therefore the operations defined for SPEED2 are applicable for CCN2.

The additional service related to the use of Oracle Super Cluster and Evidian IAM and WAM components needs to be foreseen.

Furthermore, CCN2 operations are scoped by CCN2 Platform features as well as specific CCN2 operations and specific roles and responsibilities of TAXUD/MS/ITSM as detailed in [R40] CCN2 R1 Platform Functional Specifications. Those includes:

- Deployment of Services and Service artefacts
    - Deployment Services
    - Data Management Services
    - Policy Management Services
- Deployment of Platform components
- Account Management
    - Account Provisioning Services
- Role, Permission and Policy Management
    - Authorisation management services
    - Policy Management Services
- Monitoring
    - Business Activity monitoring
    - Service monitoring
    - System monitoring
- Backup, Archiving and Purging
    - Backup Service
    - Archiving Service
    - Purging Service
- Investigation of Incidents: Logging, Error handling and Auditing
    - Logging
    - Error handling
    - Auditing Service

The details of operations are not fully defined at the time of writing this Call for Tenders. The specific operation procedures will be defined in the CCN2 Administration document.

4.6.2.3 UNIFIED USER MANAGEMENT/DIGITAL SIGNATURE (UUM&DS)

For further details, please refer to the Baseline, and more specifically the following documents:
[R46] - UUM&DS Requirements Analysis Document
[R47] - UUM&DS System Process Model
[R48] - UUM&DS Vision Document
[R49] - UUM&DS System Architecture Document
[R50] - UUM&DS Infrastructure Requirements Document
[R51] - UUM&DS Master Test Plan

[R52] - UUM&DS Functional System Specifications
[R53] - UUM&DS Technical System Specifications
[R54] - UUM&DS User Interface Specifications

The UUM&DS project aims at implementing a federated platform with MS Identity and Access Management (MS IAM) Systems for Economic Operators (EO), with corporate ECAS for EU officials and with t-REX for other external partners, in order to enable secure authorised access to EU Customs Information Systems. TATAFng will provide support for applications to integrate with UUM&DS.
The potential to federate with CCN2 IAM will be evaluated for the subsequent releases of UUM&DS.

4.6.2.3.1 UUM&DS OVERVIEW

The UUM&DS system will be implemented in phases. The scope of the first phase covers the implementation of User-to-System (U2S) connectivity for Economic Operators and EU officials to Customs EIS. This first phase is being implemented in UUM&DS Release 1, which is planned to enter operations on 01/10/2017.
Within the time frame of ITSM3 Operations, UUM&DS shall also address System-to-System (S2S) connectivity for Economic Operators to Customs EIS, Digital Signatures services and Cross-Border Identification of Economic Operators for National Customs Systems.
UUM&DS Project implementation, based on STORK technology, enables secure authorised trader access to central Customs EIS over Internet by federating existing MS Identity and Access Management (IAM) Systems. The project will make maximum use of national existing IAM systems and previously made investments to reduce the impact on EU's budget.

DG TAXUD, in collaboration with DG DIGIT[17] and DG CNECT, shall implement the UUM&DS system based on STORK technology and ECAS. The outcome of the UUM&DS Project shall be incorporated in STORK and ECAS future evolutions and be reused by other EC services.

DG TAXUD and DG DIGIT have established a strategic collaboration for the UUM&DS implementation, as defined in a Memorandum of Understanding (MoU).

UUM&DS shall be governed and managed according to the MASP governance provisions as all Customs Trans-European Systems (TES), in line with TAXUD sourcing and IT service management strategy and its standard method to coordinate with MS for the development and roll out of TES.

4.6.2.3.2 UUM&DS ARCHITECTURE

The high-level UUM&DS design model can be summarised in the following logical view:

[17] DIGIT has the role of the "X-DEV" development contractor, in charge of architecture, specifications, development, tests until end of FAT, support to SAT, CT and operations, etc.

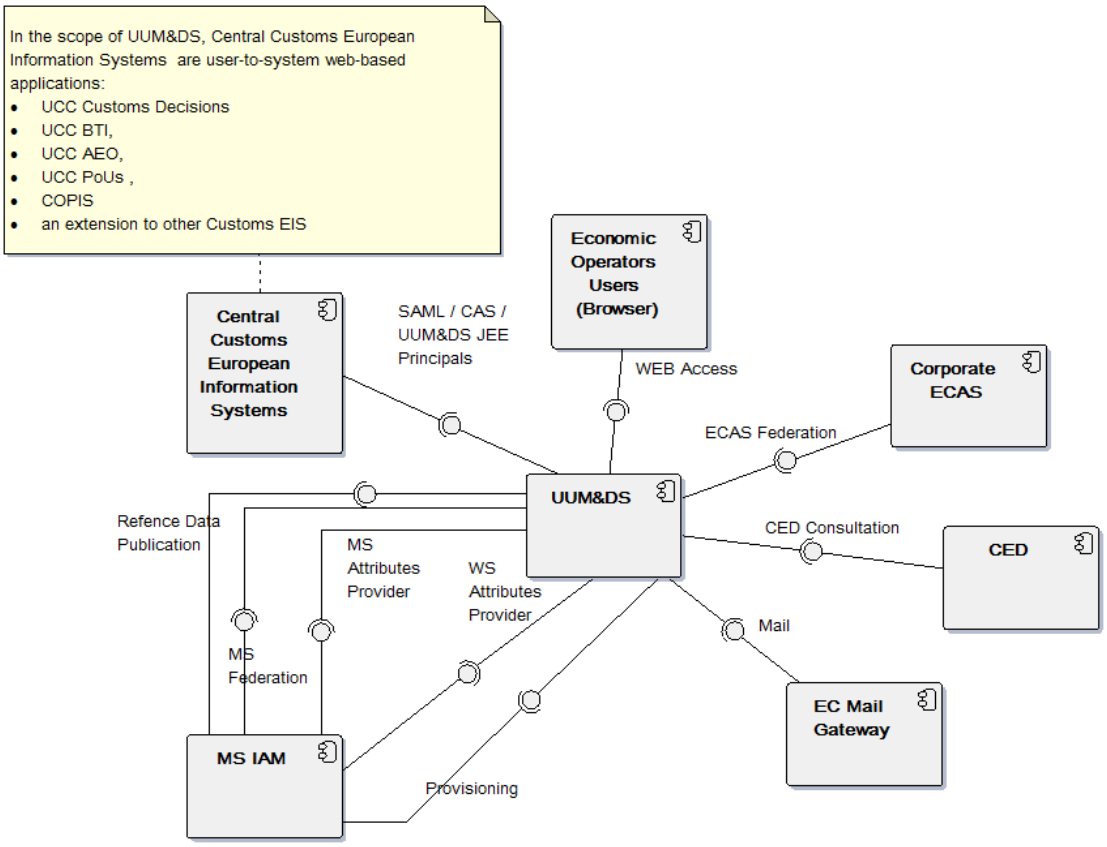

Figure 22: Architecture overview

The following services and communication protocols are involved in the larger UUM&DS ecosystem:

- User's browser (HTTPS)
- MS/National IAM (SAML)
- MS Identity Provisioning (SFTP/XML)
- MS PEPS (SAML, STORK)
- TAXUD PEPS (SAML, STORK)
- UUM&DS Central (SAML, CAS, LDAP, SMTP)
- Central Services (CAS)
- EC Corporate ECAS (SAML)
- EC CED directory (LDAP)
- EC Mail Gateway (SMTP)

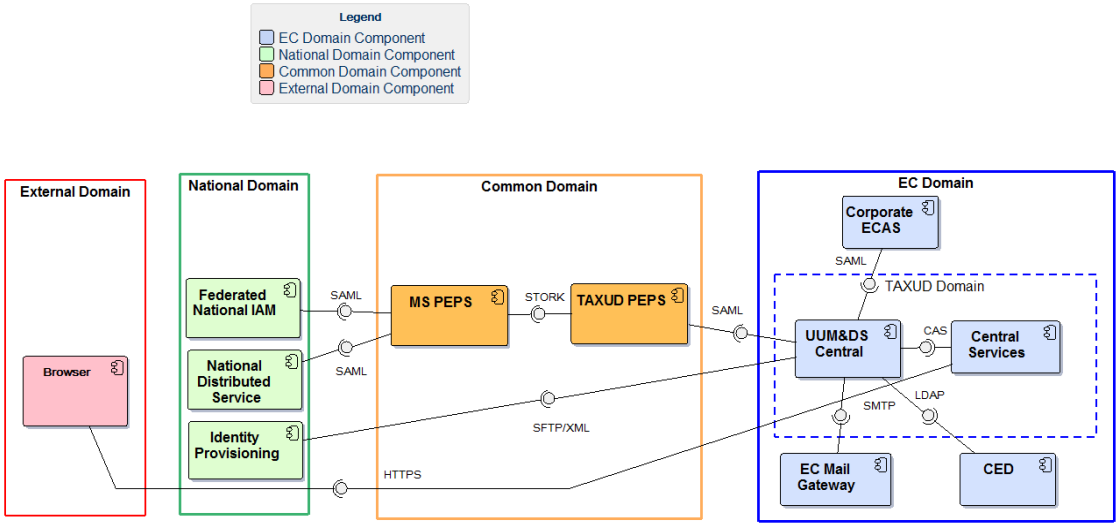

Figure 23: Components and communication protocols in the UUM&DS ecosystem

The communication protocol channels depicted above constitute candidate service endpoints to be exercised during integration testing sessions or specific conformance testing sessions.

For more details please consult the UUM&DS Logical components section in the [R49] UUMDS SAD document.

The UUM&DS system External Services that are provided either by the UUM&DS system or a Partner's system are the following:

External services provided by the UUM&DS System:

ID	Title
SRV_U_RDC	Reference Data Consultation Service
SRV_U_PRV	Provisioning Service
SRV_U_DLG	Delegation Service
SRV_U_TCA	TAXUD CAS Authentication Service
SRV_U_AVM	Access Validation Management Service
SRV_U_NTF	Notification Service

Table 38: External Services provided by the UUM&DS System

External Services provided by a Partner's system

ID	Title
SRV_P_FDA	MS Federation for Authentication Service – MS IAM Type A
SRV_P_FDB	MS Federation for Authentication Service – MS IAM Type B
SRV_P_FDC	MS Federation for Authentication Service – MS IAM Type C
SRV_P_ATB	MS Attributes Providing Service – MS IAM Type B
SRV_P_FDE	Corporate ECAS Federation for Authentication Service

SRV_P_CED	CED Consultation Service
SRV_P_SAM	SAML Translation Service

Table 39: External Services provided by a Partner's system

In the EC Domain the UUM&DS system provides a set of functionalities at central level:

- A central and common authentication portal based on the ECAS solution (ECAS);
- A system of delegation of roles and its management with notification (e.g. by e-mail (EC Mail Gateway, etc.));
- A system (UUM&DS Central) to manage and enforce authorisation policies, acting as coarse grained authorisation for central services (Central Services);
- A system to provision user's identity and roles. This system can be used by MS that didn't implement their local IAM solution yet).

The UUM&DS system is a key infrastructure project that shall be deployed and managed in line with CCN/CSI operational practice, SLA and IT services by ITSM3 Operations. The central components of the system shall be deployed in DG TAXUD Data Centres as all other components of CCN/CSI, SPEED2 and future CCN2.

4.6.2.3.3 UUM&DS PLAN

The UUM&DS Project plan is aligned with DG TAXUD Multi-Annual Strategic Plan (MASP) and UCC Work Programme. The figure below presents the planning of the main activities for UUM&DS Release1 :

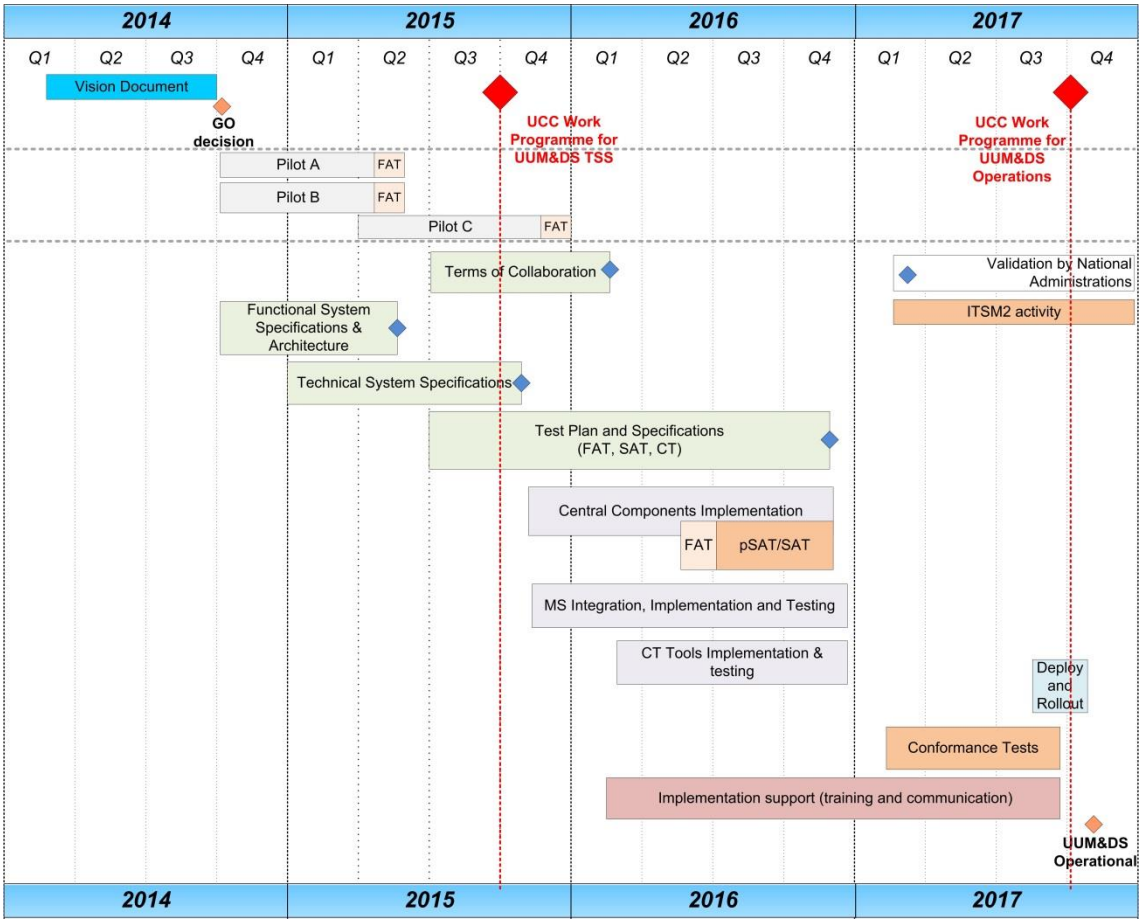

Figure 24: UUM&DS Plan

4.6.2.3.4 UUM&DS OPERATIONS SCOPE

The operational model framework of the UUM&DS system and the roles and responsibilities of the involved stakeholders is presented in Chapter 10 (Operational View) of the [R49] UUM&DS System Architecture Document. DG TAXUD has defined support processes for IT systems in operation such as incident, problem, change, configuration and release management, disaster-recovery, fail over and monitoring supported by tools. SLAs for these services and roles and responsibilities for the involved stakeholders for the new Customs European Information Systems(EIS) including UUM&DS shall be detailed in the revised [R55] Terms of Collaboration (TOC) for DG TAXUD Trans European Systems(TES) document and [R56] SLA documents. In addition [R51] UUM&DS Master Test Plan details Planning, Organisation and Roles and Responsibilities for the involved parties regarding testing activities.

The main stakeholders involved in the UUM&DS operations are the following:

- Member States
- ITSM2/3
- DIGIT
- DG TAXUD

Their responsibilities are defined depending on the operational phase they are involved into.

The table below gives an overview of R&R of these stakeholders.

#	Stakeholder	Responsibilities
1	Member States	• Define and set up the environments at national level • Operate the MS system components in the MS premises • Provide reports on operations (performance, capacity, etc.) to DG TAXUD • Provide Level 1 support in case of issues to MS users • Provide incident reports and information in cases of forensic investigations.
2	ITSM2/ITSM3	• Define and set up the operational environment for the UUM&DS system(Prepare the Infrastructure) o Installation and configuration of the servers o Creation and configuration of the Logical servers o Creation and configuration of the Logical domains o Network configuration o Maintain and upgrade HW and SW o Backup & restore Management • Deployment of UUM&DS components, Release management and change management • Operate the UUM&DS system in DG TAXUD premises including performing activities needed to assume this responsibility and also coordinate o Incident Management o Problem Management o Change Management • Perform Testing activities o Conducting testing campaigns (PSAT & SAT) and test cases execution on the Business Flows and Qualification Testing o Conducting and performing patch validations (security & service patches including sanity checks) o Perform connectivity testing • Ensure availability of the UUM&DS system • Ensure that performance and scalability requirements are addressed • Ensure that security requirements are addressed in the system infrastructure design and system operations o Management of security devices o Management of security software o Management of security protocols • Ensure that monitoring and auditing requirements are addressed

		Monitoring o Perform Technical and Business Monitoring o Availability Management o Respond to alerts o Monitor and report on traffic Monitoring Interactions o UUM&DS Business Activity monitoring o UUM&DS Service monitoring o UUM&DS Infrastructure Monitoring o UUM&DS System monitoring (including DB monitoring) • Provide Support and the Service Desk o Define service desk procedures o Implement service desk procedures Support o Provide 2nd and 3rd level support o Notify service interruptions o Participate in workshops and seminars o Provide documentation ▪ Create operational documentation (Monitoring guide, Infrastructure Requirement Document, working procedures…) ▪ Maintain documentation up to date Governance interactions o Service Lifecycle Interactions o Identity Management Interactions o Policy Management Interactions o Encryption and decryption interactions o Authentication and authorisation (User-to-system) o Management of security roles and policies The details of operations are not fully defined at the time of writing this Call for Tenders. The specific operation procedures will be defined in the UUM&DS Administration document.
3	DIGIT	• Provide Level 3 support in case of issues on UUM&DS software and its components (PEPS, ECAS, etc.) • Provide new releases and software fixes (if required) for UUM&DS components in general, and for the PEPS implementation in particular so as to comply with the legal provisions and the corresponding amendments of the STORK protocol (eIDentification DSI as part of the CEF Work Programme).

4	TAXUD	• Manages change requests, proposes the release plan and implements required adaptations in the system design and specifications. • Manage and publish UUM&DS Reference Data • Provides a reference PEPS implementation compliant with the STORK protocol to the MS in the course of the UUM&DS project implementation. • Coordinate communications with MS • Coordinate in incident investigations • Be SPOC towards MS

Table 40: UUM&DS Stakeholders Roles & Responsibilities

4.6.2.4 TATAFNG APPLICATION PLATFORM DESIGN

The logical and physical implementation of a SOA application platform, according to the requirements, is currently ongoing.

The purpose of the platform is to provide a sound foundation with focus on high-availability, scalability, ease of management. The solution will be built with respect towards the DG TAXUD HLD Baseline Datacentre Architecture, the requirements of the TATAFng framework as defined by CustDev3 and DG TAXUD CIS.

The platform will be build via a layered approach starting from the ground layer, being the required physical systems, the Oracle RAC 12c database layer and the Oracle Fusion Middleware Layer 12c.

Where appropriate the VMWARE VSphere X86 virtualisation will be used to host the different layers of the TATAFng SOA Platform. Red Hat Linux has been chosen as Operating System for the project. The Oracle RAC 12C solution was chosen as high-available clustered database solution.

Database Layer Architecture

The solution is built on an **Active-Passive setup** between the 2 Data Centres with one local and one remote standby database. The architecture is based on the Oracle Maximum Availability Architecture (MAA) recommendations.

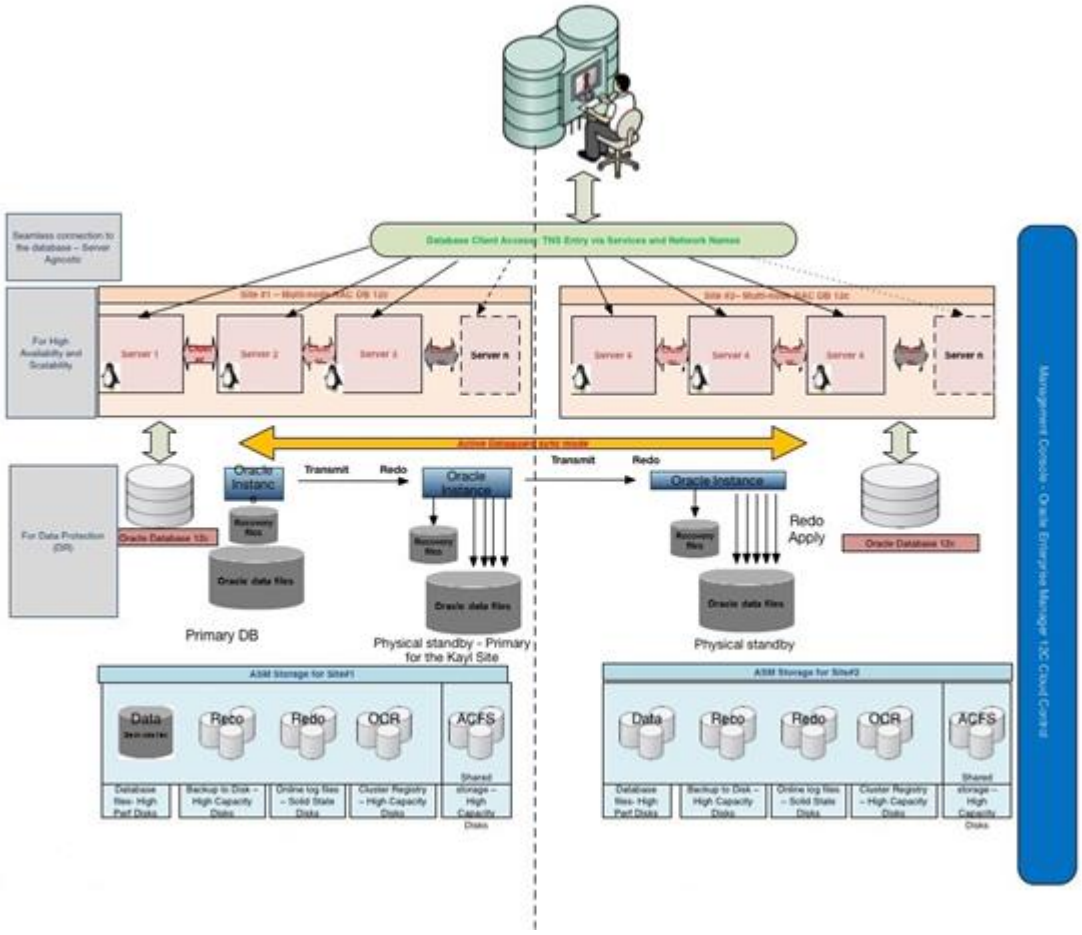

Figure 25: Oracle RAC Design

The local standby databases will be configured with the **"Maximum Protection"** mode for critical systems where zero data loss is required, "**Maximum Availability**" otherwise.
For all "remote standby databases" (hosted on the other site of the primary database), the target is "Maximum Availability" if bandwidth is sufficient, "Maximum Performance" otherwise.

Middleware Layer Architecture

The TAXUD project management has requested a high availability middleware architecture that utilizes two Data Centres. The solution has, where possible, been configured to be clustered across the two Data Centres, so providing an Active-Active disaster recovery solution that allows a minimal downtime during the loss of one Data Centre.

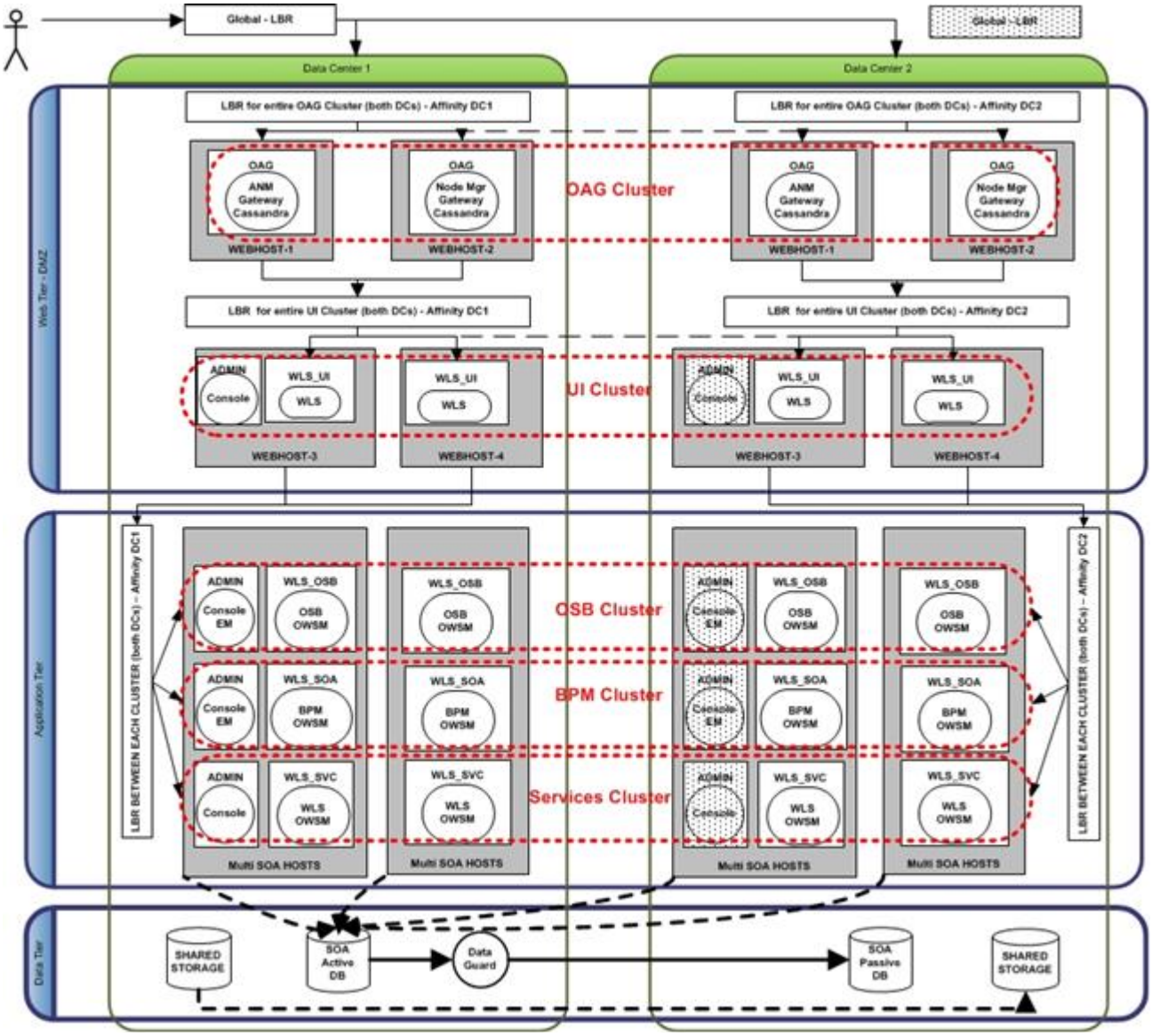

Figure 26: TATAFng Oracle Fusion Middleware Global Design

The figure above shows each running product instance as a single white box running on a host machine. To simplify the Figure 4-27, the host machines for the SOA components have not been all represented The following Oracle products are part of the platform:

- OAG - Oracle API Gateway
- WLS_UI – Oracle WebLogic Server - Hosting TAXUD TATAFng UI Web Applications
- WLS_OSB – Oracle Service Bus
- WLS_SOA – Oracle SOA Suite – Business Process Management (BPM)
- WLS_SVC – Oracle WebLogic Server – Hosting TAXUD TATAFng Web Services

4.6.2.5 T-REX

DG DIGIT will provide an IAM (named T-REX) that is built on top of ECAS and will support the decentralised management of authorisation of beneficiary country users. As ECAS, T-REX will provide information about groups. In addition to ECAS, it will bring support for defining *roles*.

4.6.3 Volumetrics: Present and Future

The elaboration of the future situation is based on the following assumptions:

- New platforms will be introduced; specifically CCN2, UUM&DS and TATAFng. The effect of these may be reflected in an increases of instances (low, medium and high complexity) in the Complexity Model. However, this increase will not be as important in numbers as it will in technical and operational complexity resulting from more centralised platforms services.
- "Old" Platforms such as CCN will be upgraded to latest technology to reduce costs and improve support. The changes, however, are not expected to show up before the third or fourth year of the ITSM3 Operations contract. Once starting, they will involve an evolution towards more virtualised and centralised CCN instances (sites). The local CCN gateway equipment will be centralised and virtual sites will be created, most probably during the last 4 years of the contract. This will represent a shift of various instances from low to medium to high complexity in the Complexity Model.
- Other legacy platforms, such as TATAF, will remain stable. SPEED2 will continue providing the existing services with potential increase in activity in the event that the agreement with USA is reached and FATCA is formalised and implemented.

The introduction of the analytics platforms (Live Data & Data Warehouse Platforms) will result in the addition of at least 2 medium complexity additional platform instances (from new Surveillance3 and a Taxation-related project) as of 2017 and 1 additional High Complexity, High Availability instance (resulting from the highly ambitious ICS2 project) as of 2020.

The following table is based on the hypothesis of a gradual transfer of traffic from CCN to CCN2 along the whole period. However, a decision could be taken to transfer the residual traffic during any given year after 2018.

	Number of CCN sites	Number of CCN gateways	Number of CCN messages/ year
2013	46	103	2527 Millions
2014	50	106	2733 Millions
2015	52	108	3000 Millions
2016	53	109	3200 Millions
2017	55	110	3400 Millions
2018	55	110	3600 Millions
2019	55	110	3000 Millions
2020	55	110	2500 Millions
2021	55	110	2000 Millions
2022	55	110	1500 Millions
2023	55	110	1000 Millions
2024	55	110	500 Millions

Table 41: Volumetric Data CCN

	Number of CCN2 Access Points	Number of CCN2 messages/ year
2013	Initially 2 Access Points, possibly increasing up to 5	NA
2014		NA
2015		NA
2016		NA
2017		NA
2018		1192 Millions
2019		1700 Millions
2020		2200 Millions
2021		3700 Millions
2022		5200 Millions
2023		6000 Millions
2024		6500 Millions

Table 42: Volumetric Data CCN2

	Number of instances of TATAFng platforms	Number of instances of SPEED2 platforms	Number of Instances of UUM&DS platforms
2013	NA	NA	NA
2014	NA	1	NA
2015	NA		NA
2016	1 to 3 estimated instances	1 central platform instance, no additional instances are foreseen	NA
2017			1 central platform instance + 10 estimated Pan-European Proxy Service (for Member States)
2018			
2019			
2020			
2021	2 to 5 estimated instances		
2022			
2023			
2024			

Table 43: Number of platform instances

The following table indicates meeting requirements, which are considered quite stable during the course of the ITSM3 Operations contract.

Meeting type	Volume Estimates per year
CCN coordination	50
CCN2 coordination	12
UUM&DS coordination	12

Table 44: Service Block 6 meeting table

4.7 Application Management – (Service Block 7)

4.7.1 Description

This service block is responsible for the following processes and activities:

- The application support in scope of ITSM2 Lot1.

The incumbent contractor organised the service in two two main parts:

- Deployment centre which focuses on the Intake, Test and Deployment activities. The teams are organised based on their technical capabilities.
- The competence centre, which focuses on Application Ownership and Knowledge Management and which covers all phases of the application lifecycle. The competence centre provides expertise as 2nd level application support and coordinates the level 3 incidents and problems resolution with the X-Dev organisations.
    - The competence centre is organised per business thread with an application SPOC for a group of applications. The competence centre acts in the processes incident, problem, change and configuration management.

Formal processes owned by this service block:

- Transition Planning and Support (part of working processes)
- Deployment Management (part of working processes)
- Service Validation and Testing (part of working processes)

4.7.1.1 TRANSITION PLANNING AND SUPPORT

For further details, please refer to the Baseline, and more specifically the following documents: [R1] - ITS-1FQP-Annex 31- Transition Planning and Support v1.01 EN.docx

The goal of the Operational Planning process is to ensure that all testing and deployment activities performed by ITSM2 Lot1 are planned and communicated to all DG TAXUD stakeholders and all DG TAXUD contracting parties.

The Operational Planning aims to maintain an up-to-date operational plan of all testing and deployment activities that is agreed with all stakeholders. This plan includes the central applications CI's as well as Trans-European Systems CI's.

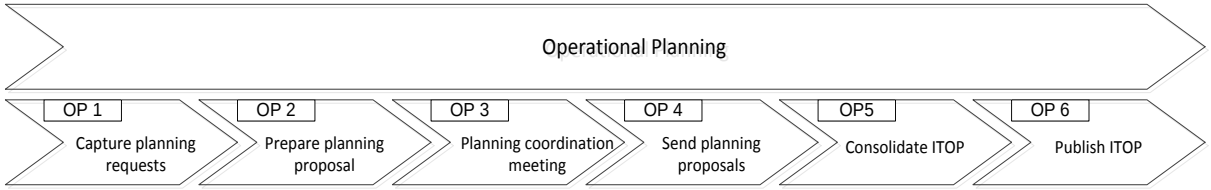

Figure 27: Operational Planning Diagram

4.7.1.2 DEPLOYMENT PROCESS

For further details, please refer to:
[R1] - ITS-1FQP-Annex 32 - Deployment Management v1.00 EN.docx

The goal of the Deployment Management process is to ensure that all the installations are performed according to the Consolidated Operational Plan (ITOP). ITSM2 Lot1 performs all deployment activities previously agreed with DG TAXUD through the Change Management Process.

Three main activities can be depicted within the Deployment process.

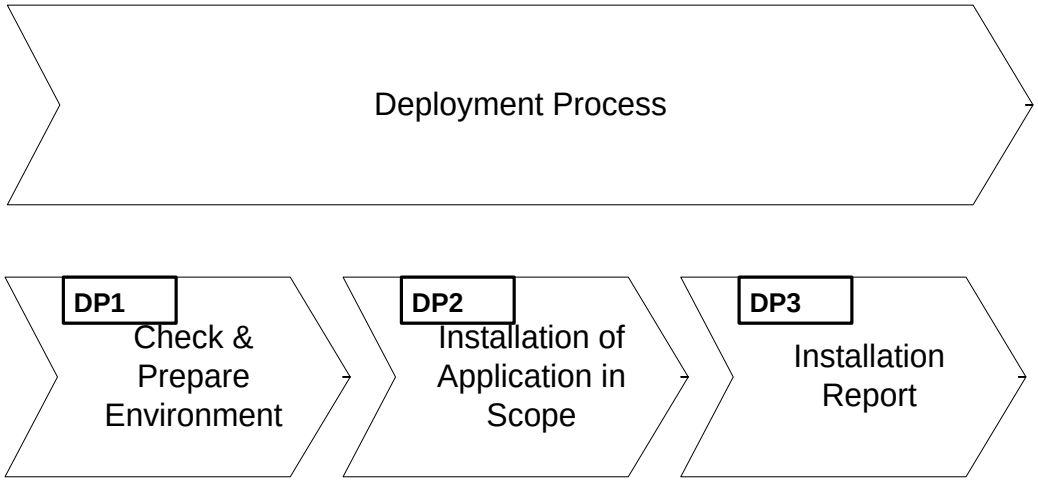

Figure 28: Deployment Management Diagram

4.7.1.3 SERVICE VALIDATION AND TESTING

For further details, please refer to:
[R1] - ITS-1FQP-Annex 33 - Service Validation and Testing v1.01 EN.docx

The service validation and testing process consists of the following activities:

- SVT1 – Create Acceptance Test Plan (ATP) – where the ITSM2 Lot1 ATP is created and documented, depicting the specific approach and scope of testing (functional and non-functional) for PreSAT and SAT;
- SVT2 – Participate in FAT mission – where the involvement of ITSM2 Lot1 within the FAT cycle is described;
- SVT3 – Verify test environment – in which the environment for Qualification, PreSAT or SAT is prepared for the testing activities;
- SVT4 – Organize kick off meeting – is describing how the kick off meeting for a PreSAT and SAT campaign is organised and what are the outputs; this is done on for PreSAT/ SAT test cycles;
- SVT5 – Qualification – Start notification – is defining how stakeholders are informed that a Qualification test cycle has started; this is done only for qualification test cycles;

- SVT6 – Perform tests from the ATP – is describing the execution of the planned test cases/scenarios. The tests will be of functional nature and non-functional nature such as performance, security;
- SVT7 – Evaluate exit criteria – is explaining how the results of executing the test activities are compared to the expected results in order to prepare a recommendation about the production readiness of the release;
- SVT8 – Organize closure meeting – in which the results of executing the test campaigns are presented and the recommendation regarding the production readiness of the release is analysed by DG TAXUD; this is done on for PreSAT/ SAT test cycles;
- SVT9 – Qualification – End notification – is detailing how stakeholders are informed that a Qualification test cycle has ended; this is done only for qualification test cycles;
- SVT10 – Test clean up and closure – where the final test report is put together and the environment is cleaned up for future testing campaigns.

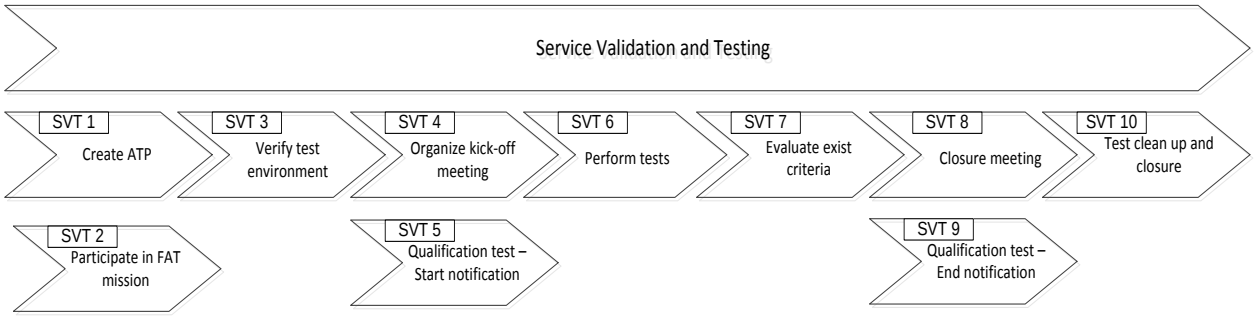

Figure 29: Service Validation and Testing Diagram

The validation and testing process is part of the overall transition phase.
Testing supports all of the deployment management steps within service transition. Deployment management is responsible for ensuring that appropriate testing takes place, but the actual testing is carried out as part of the service validation and testing process.
The output of service validation and testing is a key input to change evaluation, and must be provided at an appropriate time and in a suitable format to enable changes to be evaluated in time for change management decision-making.
The service validation and testing process interfaces with other process or activities by:

- Working with the development contractor to ensure that designs are inherently testable and providing positive support in achieving this;
- Working closely with CSI to feed failure information and improvement ideas resulting from testing exercises.

The typical test types performed during SVT are:

- System to System testing (both for PSAT and SAT);
- User interface testing (SAT);
- Functional testing (SAT);
- End to end testing (SAT);
- Non-functional testing (CONF or CONF2)

4.7.1.4 BUSINESS USER VALIDATION SUPPORT

The ITSM2Lot1 contractor provides an additional service to support the business users during the validation of the new releases, by means of a Business Validation Package.

This includes two lines of action, one related to Release Management and another to support the validation by the business users of the release of an application.

Release Management Services

The purpose of this service is to update the business users with the upcoming functional release and to receive a feedback on the implemented changes.

The following activities are an exhaustive list of activities that are performed by ITSM2 Lot1 as part of this service:

- Prepare the Business Validation Package. This package is built based on CAB material and FAT findings. It represents:
  - New functionalities in business language;
  - Corrected defects in business language;
  - Known FAT results and progress in business language.
- Present the planning for transition and when the business users are expected to validate the functional release;
- Send mass mail via Service Desk in ENG to MSs and Business users informing of the new release in PROD and the link to CIRCABC where they can find the documentation (Business Validation Package).

Support during Business User Validation

The purpose of this service is to provide expert support during business user validation.

The following activities are an exhaustive list of activities that will be performed by ITSM2 Lot1 as part of this service:

- Manage the business user validation, in the same way as a conformance test campaign with a kick-off call and a closure call including the analysis of raised incidents;
- Incident logging and classification with the correct priority (same as during conformance testing);
- Incident investigation and documentation;
- Incident follow up to problem management;
- Liaise with 3rd parties during incident management.

4.7.2 Evolutions

4.7.2.1 OVERALL EVOLUTIONS

ITSM Operations Service Block 07 corresponds to ITSM2 Lot1 Service Block 06. The nature of services required is similar in structure though higher in demand (with the addition of the High Availability) and requiring a review of the services due to the introduction of the SOA paradigm in TAXUD applications.

Various projects are currently on-going or planned, in both customs and taxation areas. In addition, the existing IT systems are being upgraded for various reasons (such as technology upgrades, new requirements, etc.).

In the customs area, major projects are included in the Multi-Annual Strategic Plan (MASP) [R2]. Some individual projects worth mentioning are :

- Customs Decisions (CD)
- Registered Exporters (REX)
- Import Control System 2 (ICS2)

In addition, there are a number of internal initiatives to improve the development and facilitate the roll-out of numerous IT systems planned for the coming years. Of particular importance :

- The Software Development Life-Cycle (SDLC)
- TATAFng application reference architecture
- Development Environments (for both DG TAXUD's contractors, DIGIT and the Member States)
- Support of PreFAT environments for Business Users

In the area of taxation, the major evolutions refer to the consolidation/upgrade of the existing IT systems.

4.7.2.2 CCN RELATED APPLICATIONS

Certain support software components of the CCN network are to be supported by the ITSM3 Operations in the context of application management:

CCN Portal

The CCN/TC Portal is a dynamic web portal application. It provides a set of services improving the various CCN/CSI related partners' relationships (DG TAXUD central teams, CCN/CSI users). Such facility provides an added value for the organisational issues by improving the communication between the implied parties and by offering interfaces in a more formal way than just phone and email exchanges. Moreover, the on-line paradigm of the web offers other options in terms of service. More information and system interfaces can be published and addressed easily by the users.

The aim of this application is to federate all features concerned by the management of CCN/CSI resources (RAP, statistics and availability):

- The On-Line RAP Management that must provide an interface allowing users to browse and control RAP.
- The Statistics Dashboard that must provide an on-line and dynamic access to the CCN/CSI related statistical information.
- The Availability Dashboard that must provide an on-line and dynamic access to the CCN/CSI related availability information.
- The Party Management to manage the users and their permissions for the CCN Portal and Application Configuration Tool.
- The User Reporting.

CCN ACT

The ACT, or Application Configuration Tool, allows National Administrations to submit configuration requests in a guided manner. This web-based tool allows the NAs to manage all of their configuration requests in a centralised manner. It identifies any omissions or mistakes in the configurations and help fixing them. In this way, implementation is faster, and allows the users to track all of the requests in real time.

CCN QBrowser

The CCN Queue Browser application can be used on the production or development network for browsing and managing queues.

According to granted rights, the user can access the queues of one or more application domains, for its local site or for all CCN sites.

A set of operations are made available for each queue such as editing queue attributes, browsing messages, purging queues, and saving messages into files.

The CCN Queue Browser application is built upon the CSI High Level API. This means that the CSI stack must be installed on the application platform before the CCN Queue Browser can be used. Because security is very important for such an application, each user is thoroughly identified and exchanged data is always encrypted.

CCN Stacks

Due to the variety of the application platforms, the CCN/CSI applications, regardless of their role and the exchange mode they rely on, can be:

- Controlled by a Transaction Processing (TP) monitor.
- Run in a batch environment.
- Run by an operator or a user.

The National Network between the Application Platform and the CCN Gateway relies on the TCP/IP protocol for all interactions. If the whole CSI stack functionality was to be implemented on every Application Platform, a dedicated CSI stack would have to be designed and implemented for each application platform supported by the CCN/CSI software.

CCN Test Tools

The HL_test tool is used to exchange predefined messages in all the CSI communication paradigms available within CCN/CSI (synchronous blocking and non-blocking, asynchronous) in order to rapidly evaluate the correctness, efficiency and performance of the CCN/CSI system when submitted to different load and/or crash conditions. Moreover, this tool shall be highly configurable to exchange messages of different lengths and at different speeds.

This Application is available in the C language for UNIX platform as well as for Windows systems.

4.7.3 Volumetrics: Present and Future

The elaboration of the future situation is based on the following assumptions:

- Addition of new Application CIs (of diverse complexity) with the development and deployment of new Applications as per MASP planning, as well as other Customs and Taxation Applications.
- The potential impact of legacy Application maintenance services may be more demanding on infrastructure (SDLC, SOA and Security Requirements). There may be a major impact from 2020, when High Availability and National Administrations' deployments of the new Applications will be finalised.

The following table shows the number of supported applications per complexity/QoS/Service window.

Service	2013 (**)	2014 (**)	2015 (**)	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total number of applications with a complexity "**Low**" (by default QoS of N-**5/13** - **Normal** Quality of Service, 5d–13h Service Window) (*)	36	42	46	48	50	53	56	57	61	64	67	70
Total number of applications with a complexity "**Medium**" (by default QoS of N-**5/13** - **Normal** Quality of Service, 5d–13h Service Window) (*)	35	43	46	47	48	50	52	53	56	57	58	60
Total number of applications with a complexity "**High**" (by default QoS of N-**5/13** - **Norma**l Quality of Service, 5d–13h Service Window) (*)	16	12	12	12	15	15	16	16	18	18	18	19
Number of applications from the Total above, requiring Service Window upgrade to 7/13	6	6	7	7	9	11	13	14	16	18	20	22
Number of applications from the Total above, requiring Service Window upgrade to 7/24	30	33	34	37	41	41	42	42	45	47	48	50
Number of applications from the Total above, requiring Service upgrade to Extended availability mode	25	26	25	28	32	35	38	38	42	44	46	48
Number of applications from the Total above, requiring Service upgrade to High availability mode	0	0	0	0	3	5	7	7	11	11	12	12

(*) Including updates, hotfixes, patches, data patches, monitoring, decommissioning, BCP/DRP exercises

gray background means that figures represent volumetric estimates, which are made for global sizing of the contract, and are not binding

(**) figures are available monthly, showed result is averaged over the entire year

Table 45: Supported Applications per complexity/QoS/Service window

The following table shows the number of environments per application domain.

Application Domain	Environment	2013 (*)	2014	2015 (*)	2016	2017	2018	2019	2020	2021	2022	2023	2024
Customs	PSAT	27	35	24	26	29	32	35	39	43	47	51	57
	SAT	71	118	141	155	171	188	206	227	250	275	302	332
	CONF	89	149	150	165	182	200	220	242	266	292	322	354
	PROD	76	118	84	92	102	112	123	135	149	164	180	198
Excise	PSAT	7	2	6	4	8	4	4	8	8	8	10	10
	SAT	15	12	6	8	16	8	8	16	16	16	20	20
	CONF	12	6	6	8	16	8	8	16	16	16	20	20
	PROD	5	12	6	4	8	4	4	8	8	8	10	10
Taxation	PSAT	9	25	12	15	15	18	18	25	25	25	30	30
	SAT	29	78	57	55	55	60	60	65	65	65	70	70
	CONF	21	69	30	40	40	45	45	50	50	50	55	55
	PROD	11	31	18	20	20	25	25	30	30	30	35	35
ITSM	PSAT	0	0	0	0	0	0	0	0	0	0	0	0
	SAT	0	6	6	6	7	7	7	8	8	8	9	9
	CONF	0	0	15	16	17	17	18	19	20	21	22	23
	PROD	0	10	18	19	20	21	22	23	24	25	27	28
CCN	PSAT	0	0	0	0	0	0	0	0	0	0	0	0
	SAT	3	1	3	3	4	4	0	0	0	0	0	0
	CONF	0	0	0	0	0	0	0	0	0	0	0	0
	PROD	0	7	7	8	8	9	0	0	0	0	0	0

(*) figures are not available for every month of the year, showed result is extrapolated over the entire year

gray background means that figures represent volumetric estimates, which are made for global sizing of the contract, and are not binding

Table 46: Number of environments per application domain

The following table indicates meeting requirements, which are considered quite stable during the course of the ITSM3 Operations contract

Meeting type	Volume Estimates per year
SPOC meeting per CI (only for Customs domain)	Weekly per CI

Table 47: Service Block 7 meeting table

4.8 Co-ordination with involved parties– (Service Block 8)

4.8.1 Description

For further details, please refer to the Baseline, and more specifically the following documents::
[R1] - ITS-1FQP-Annex 29-Interaction Model v0.10 EN.vsd
[R57] - D58 ITS-1IMS-Interaction model encompassing all stakeholders

This service block is responsible for the following processes and activities:

- Interaction model encompassing all stakeholders (these are DG TAXUD, xDevs, Lot2, Lot3, QA Contractor, DIGIT/DC and NA operations);
- Business perspective activities including business monitoring, yearly satisfaction surveys and all BTL activities;
- Application SPOC's;
- Client satisfaction measurements.

ITSM2 Lot1 is interfacing with many stakeholders to ensure the applications can be managed successfully, not just within its own organisation, but across the different stakeholder organisations.

The business thread leader role is organised by business thread and is the main contact point for stakeholders external to ITSM2 Lot1.

They consist of:

- Business Thread Liaison Customs;
- Business Thread Liaison Direct Taxation;
- Business Thread Liaison Indirect Taxation;
- Business Thread Liaison Recovery of Claims;
- Business Thread Liaison Excise;
- Business Thread Liaison CCN.

Formal processes owned by this service block:

- Business perspective.

4.8.1.1 INTERACTION MODEL ENCOMPASSING ALL STAKEHOLDERS

The high-level relationships of the ITSM2 Lot1 contractor with the stakeholders are shown in the below figure:

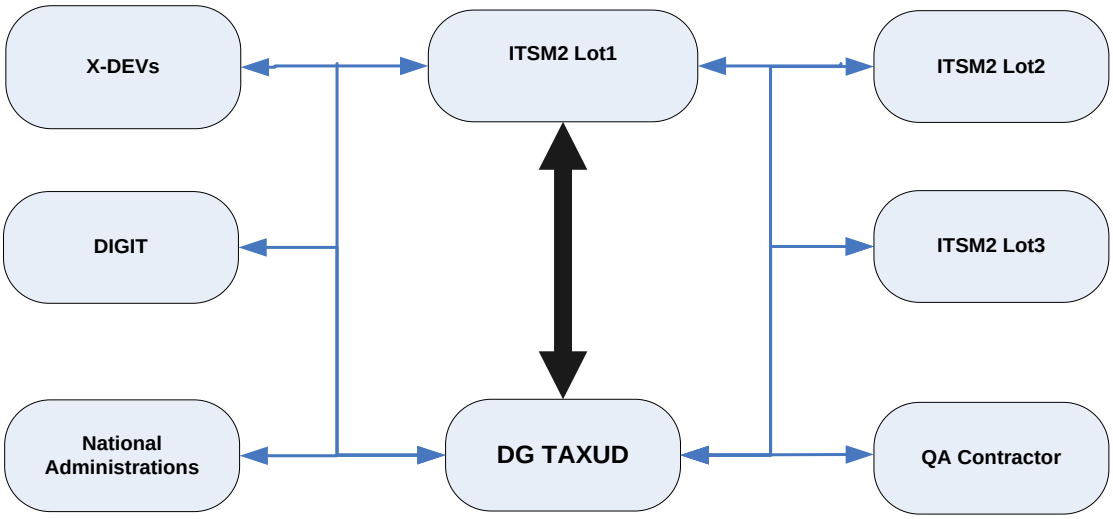

Figure 30: Interaction model ITSM2

The internal communication activities of ITSM2 Lot1 are detailed in the internal working procedures.

4.8.1.2 COMMUNICATION MODEL

ITSM2 Lot1 aims to standardize as much as possible the communication channels. One of the focus points of ITSM2 Lot1 is to capture all valuable information in the knowledge management system (implementation of knowledge management in IBM Rational Asset Manager is on-going). Access to this knowledge management system for other parties than ITSM2 Lot1 needs to be discussed and agreed with DG TAXUD. ITSM2 Lot1 encourages the use of common tools by all DG TAXUD contractors.

The communication channels mainly consist in the following:

- HP SMT (in incident, problem, change, knowledge management and other Service Management functions/ processes)
- Meetings (via conference calls, on-site meetings)
- E-mail
- Onsite interviews performed by QA Contractor during the test sessions

4.8.1.3 DESCRIPTION OF EACH STAKEHOLDER AND THE INTERACTIONS

4.8.1.3.1 INTERACTIONS WITH DG TAXUD

The interactions with DG TAXUD are mainly with the sectors within units A5, C5 and with the LISO.

The key roles in the interactions are the Project Executive, ITSM2 Lot1 SPOCs, Business Thread Liaisons, Application manager, Security manager and Demand manager.

In general, the interactions with DG TAXUD are across different services and processes.

4.8.1.3.2 INTERACTIONS WITH X-DEVS

The X-DEVs are the Development Contractors of DG TAXUD.

The interactions with X-DEVs can be divided as follows:

- Interaction with CUSTDEV
- Interaction with CCNDEV
- Interaction with FITSDEV

4.8.1.3.3 INTERACTIONS WITH DIGIT

DG DIGIT operates the Data Centre of the Commission and hosts multiple applications of DG TAXUD. At an operational level ITSM2 Lot1 interfaces with DG DIGIT via the Delivery Manager, the Infrastructure Team Leaders and the Data Centre Consolidation team.

4.8.1.3.4 INTERACTIONS WITH THE NATIONAL ADMINISTRATIONS

The National Administrations are the local offices of the EU's member states.

4.8.1.3.5 INTERACTIONS WITH ITSM2 LOT2 AND ITSM2 LOT3

DG TAXUD has defined a separation of duties between the three parts of the ITSM2 (Lot1, Lot2 and Lot3).

Lot2: Trans-European Systems management (TES) provides support services for co-ordination of the implementation of Trans-European Systems in the Member States. The Lot2 contractor is responsible for the external integration.

Lot3: Operations integration and control, including application architecture board, architecture choice, product choice, overall change management across different Lots and benchmarking. The Lot3 contractor is mainly responsible for the ITSM2 programme internal integration.

4.8.1.3.6 INTERACTIONS WITH THE QA CONTRACTOR

The QA Contractor is responsible for the provision of services in the area of quality assurance and quality control of the IT services and deliverables supplied to DG TAXUD.

4.8.2 Evolutions

This service block covers essentially the same services as it did in ITSM2 Lot1.

At the moment of writing, ongoing actions are focusing on the following objectives:

- Horizontal actions to increase maturity on processes implementing the underlying services;
- Consolidate all the operational management activities definition, as part of the Framework Quality Plan;
- Improve the inter-process relationship, at high level, between the different ITSM2Lot1 processes.

Examples of specific actions according to the above objectives are:

- Definition and Implementation of the event management process;
- Implementation of the request fulfilment process that manages the life cycle of Service requests;
- Implementation of knowledge management initiatives in order to improve operational support (e.g. improving the Exploitation Manual as core vehicle for transfer of application specific knowledge).

4.8.3 Volumetrics: Present and Future

The following table indicates meeting requirements, which are considered quite stable during the course of the ITSM3 Operations contract.

Meetings	Volume Estimates per year
Ad-hoc co-ordination with other contractors	50
Business Thread Leaders bi-weekly	24 (only for Customs domain)
Service Monthly	12 (Direct and Indirect Taxation together)
Technical follow up	24 (12 for Direct Taxation and 12 for Indirect Taxation business sectors)

Table 48: Service Block 8 meeting table

4.9 IT Service Management – (Service Block 9)

4.9.1 Description

This service block is responsible for the following activities:

- Management of the owned processes;
- Coordinate day-to-day execution of the processes;
- Identify and implement process improvements, as prioritised by Continual service Improvement (CSIP);
- Ensure that the standards and policies are being followed.

Formal processes owned by this service block:

- Incident management
- Problem management
- Configuration & Asset management
- Change management
- Service Level management
- Capacity management
- Availability management
- Knowledge management

4.9.1.1 INCIDENT MANAGEMENT

The Incident Management Process consists of six main activities:

1. Log and Classify Incident
2. Provide Initial Support
3. Investigate and Diagnose Incident
4. Resolve Incident and Recover Service
5. Close Incident
6. Monitor and Report Incidents

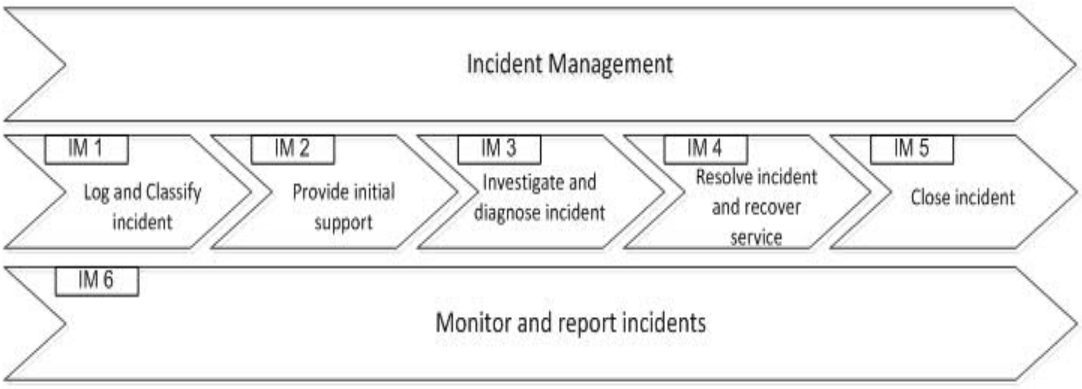

Figure 31: Process Diagram

4.9.1.2 PROBLEM MANAGEMENT

Problem Management includes the activities required to diagnose the root causes of incidents by assigning problems to the proper resolver groups and to determine the resolution to those problems. It is also responsible for ensuring that the resolution is implemented through the appropriate control procedures, especially Change Management.

Problem Management will also maintain information about problems and the appropriate workarounds and resolutions, so that the organisation is able to reduce the number and impact of incidents over time.

Problem Management split between ITSM2 Lot1 and ITSM2 Lot2 is based on the Configuration Items (CI).

ITSM2 Lot1 has in scope:

- all Customs CIs problems related to business and technical issues;
- all Excise and Taxation CIs problems for technical issues;

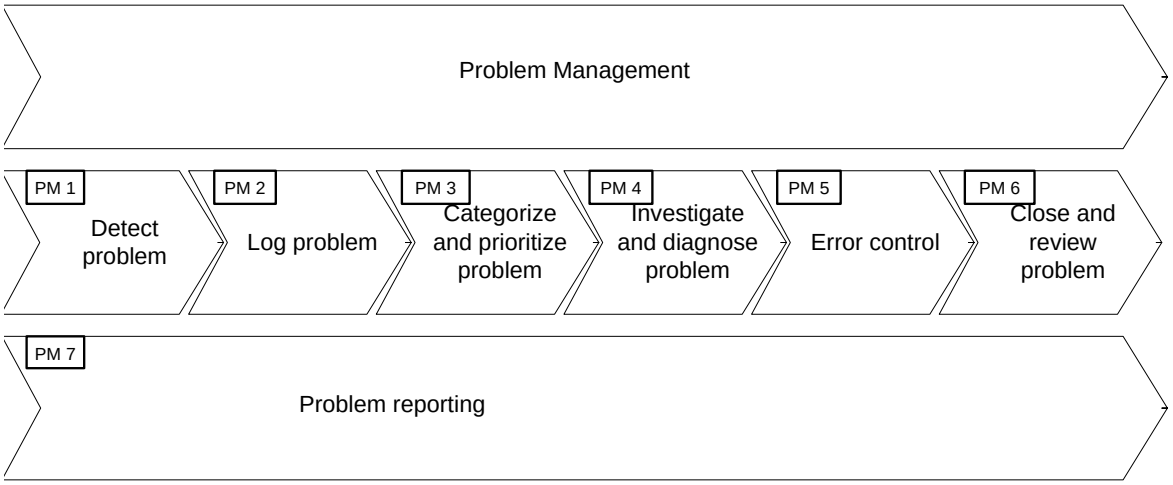

Figure 32: Problem Management Diagram

4.9.1.3 CONFIGURATION MANAGEMENT

Configuration Management is a process that tracks all individual Configuration Items (CI) in a system. The prime tool of Configuration Management is the Configuration Management Database (CMDB). The CMDB currently in use by ITSM2 Lot1 is embedded in the SMT tool. Configuration Items (CI) information can consist of the CIs and their attributes and relationships. CIs are managed and/or created by the Configuration Management Team only.

The Configuration Management provides a logical model of the organisation's infrastructure by being responsible for five activities: Identification, Maintenance, Control, Report and Audit.

The purpose of the CMDB is to support the other processes implemented in the organisation:

- Service Desk by providing a way to categorize the requests by business service;
- Incident Management by providing a way to categorize the incidents by business service/affected CIs and by providing support for investigating the cause of incident;
- Problem Management by providing a way to categorize the problems by business service/affected CIs and by providing support for executing the root cause analysis;
- Change Management by providing a way to categorize the changes by business service/affected CIs and by providing support for executing the impact analysis;
- All processes by providing information about the services provided by the organisation, about the software/hardware/infrastructure used in the organisation and the relationships between these.

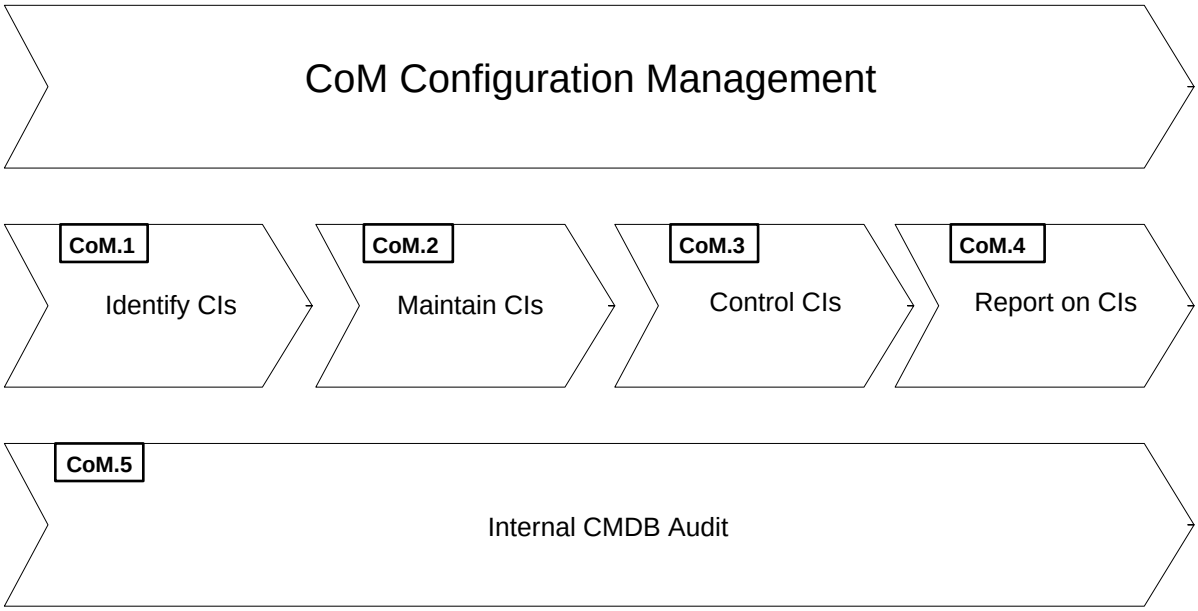

Figure 33: Configuration Management sub-processes

4.9.1.4 CHANGE MANAGEMENT

The goal of the change management process is to ensure that standardised methods and procedures are used for efficient and prompt handling of all changes, in order to minimize the impact of change-related incidents upon service quality, and consequently improve the day-to-day operations of the organisation.
There are 2 major process threads involved in the ITSM2 Lot1 Change Management:

- Operational Change Management; (described in 6.2.1)
- Synergia Change Management (described in 6.2.2)

4.9.1.4.1 OPERATIONAL CHANGE MANAGEMENT

The ITSM2 Lot1 Operational Change Management process integrates change requests that are related to DG TAXUD Central Applications (Customs, Excise and Taxation), Infrastructure and CCN, managed by ITSM2, including application releases being installed in Conformance and Production environments.

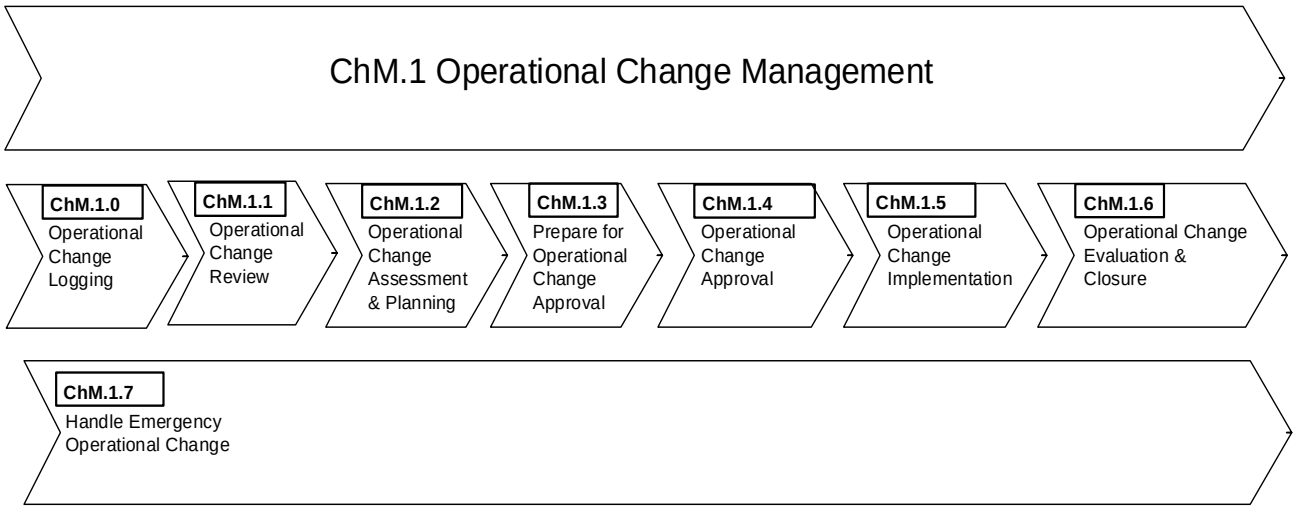

Figure 34: ChM.1 Operational Change Management

The change requests are related to operations and maintenance (so-called "Operational" changes).

There are 3 types of RfCs defined under ITSM2 Lot1 Operational Change Management:

- Normal RfCs – represent changes that adhere to the full change management flow, with CAB submission.
- Standard RfCs – represent low risk, repetitive (weekly/monthly implementation) RfCs that have DG TAXUD's pre-approval for implementation.
- Emergency RfCs - main characteristic of emergency RfCs is the short time period that is available for evaluating the impact, planning, testing, and deployment of the RfC.

4.9.1.4.2 SYNERGIA CHANGE MANAGEMENT

Change requests related to ITSM2 Services (so-called "Synergia Changes"), which may request a change in processes/procedures, templates, tools, contract, or all.
These follow a specific Synergia Change Management process managed by the ITSM2 Lot1 Synergia Change Manager. The process is very similar to the ITSM2 Operational Change Management process but with the addition of a specific CAB (Synergia CAB), an increased level of assessment (including DG TAXUD A5), and involvement of ITSM2 management entities (ITSM2 Business Thread Lead (Lot1 and Lot2) for contract changes, ITSM2 Process Owners (Lot1 and Lot2) for processes/procedure changes and ITSM2 Application Development for Tool changes).

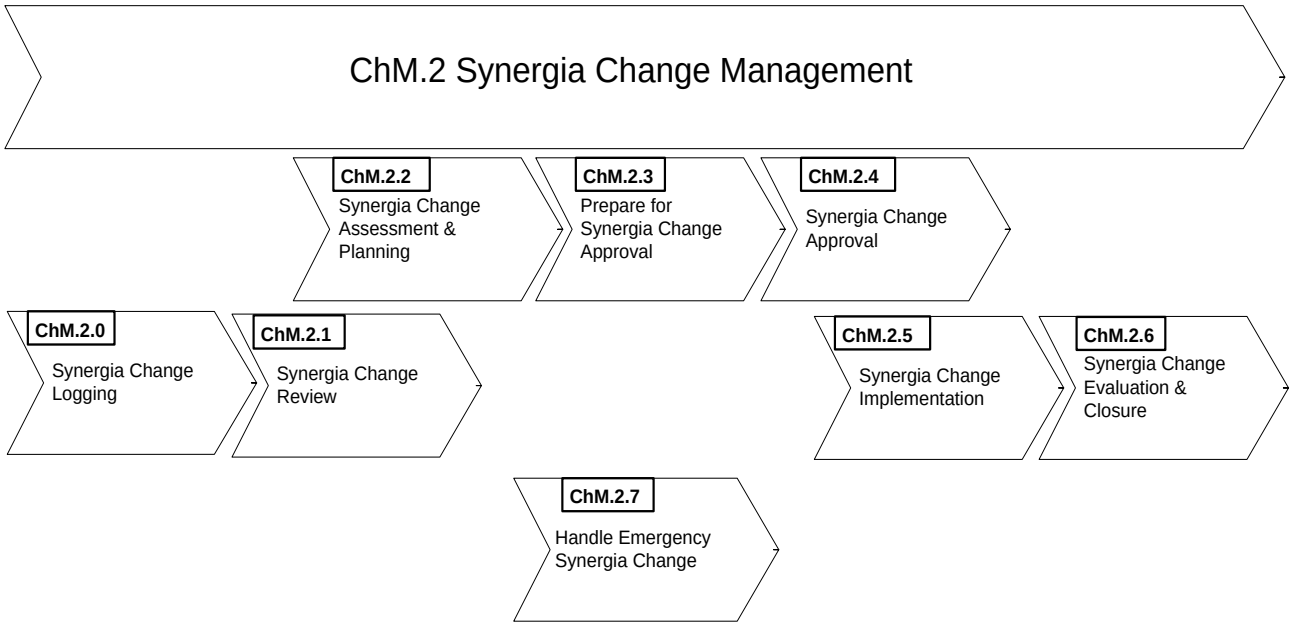

Figure 35: ChM.2 Synergia Change Management

There are 3 type of RfCs defined under ITSM2 Lot1 Synergia Change Management:

- Normal RfCs – represent changes that adhere to the full change management flow, with CAB submission.
- Standard RfCs – represent low risk, repetitive (weekly/monthly implementation) RfCs that have DG TAXUD's pre-approval for implementation.
- Emergency RfCs - main characteristic of emergency RfCs is the short time period that is available for evaluating the impact, planning, testing, and deployment of the RfC.

4.9.2 Evolutions

This service block covers essentially the same services as it did in ITSM2 Lot1 however major addition and improvement of processes are ongoing or planned for the medium or long term.

4.9.2.1 CONFIGURATION MANAGEMENT

A number of improvements were analysed and are planned for the near future in what concerns the Configuration Management process:

- The audit information will be kept in the service management tool for each CI; this will allow the selection of the most relevant subset of CIs for auditing.
- New reporting capabilities will be introduced in what concerns CMDB data; this will allow increasing the periodicity of the audit and control activities.
- Information about the creating change (change unique identifier) will be available at the CI level; this will increase the level of control over the CMDB.
- New internal KPIs will be introduced to measure data quality in the CMDB and the CMDB control process.

4.9.2.2 ASSET MANAGEMENT

A number of improvements were analysed and are planned for the near future in what concerns the Asset Management process:

- Information from the Asset Database and relationships between Assets will be added in SMT.
- After implementing the Tivoli monitoring, the Asset Database will be changed and it will become more automatic.

Please note that these evolutions shall be covered by ITSM2 Lot1; however for **ITSM3 Operations** a much more ambitious and far reaching Asset Management process should be implemented though in the context of Service Block 05 Infrastructure Management.

4.9.3 Volumetrics: Present and Future

The elaboration of the future situation is based on the following assumptions:

- Service Management (change/problem/incident/release/etc.) may involve a slight increase, due increase in number of CIs and possible introduction of new technology.
- Figures may also change due to the introduction of new Platforms and CIs (UUM&DS and CCN2).

The following table shows the estimated number of open problems.

	Critical	High	Medium	Low	Grand Total
2013	116	135	436	133	820

2014	103	127	676	332	1238
2015	111	168	567	276	1122
2016	117	176	595	290	1178
2017	122	185	625	304	1237
2018	128	194	656	320	1299
2019	135	204	689	335	1364
2020	142	214	724	352	1432
2021	149	225	760	370	1504
2022	156	236	798	388	1579
2023	164	248	838	408	1658
2024	172	261	880	428	1741

Table 49: Number of open problems

The following table shows the estimated number of operational changes.

Year	Operational Changes
2013	811
2014	1659
2015	1800
2016	1900
2017	2000
2018	2200
2019	2200
2020	2300
2021	2300
2022	2500
2023	2500
2024	2600

Table 50: Number of operational changes

The following table shows the estimated number of published documents.

year	Documents published RAM*	Documents published CIRCABC
2013	0	2798
2014	1961	2446
2015	2556	2220
2016	2575	2270
2017	2600	2300
2018	2860	2530
2019	3146	2783
2020	3461	3061
2021	3807	3367
2022	4187	3704
2023	4606	4075
2024	5067	4482

Table 51: Number of published documents

(*) Rational Asset Manager is used as the knowledge management repository

The following table shows the estimated Document Management activities.

Document Management activities - CIRCABC	upload document	delete document	edit document	update document	download content
2013	2798	314	3028	150	7372
2014	2446	53	3692	366	7311
2015	2220	33	3987	642	5409
2016	2270	42	3990	647	5700
2017	2300	50	4000	650	6000
2018	2530	55	4400	715	6600
2019	2783	61	4840	787	7260
2020	3061	67	5324	865	7986

2021	3367	73	5856	952	8785
2022	3704	81	6442	1047	9663
2023	4075	89	7086	1152	10629
2024	4482	97	7795	1267	11692

Table 52: Document Management activities

The following table indicates meeting requirements, which are considered quite stable during the course of the ITSM3 Operations contract.

Meetings	Volume Estimates per year
Operational CAB	50
Service Level Management	12
Incident Management – calls follow up	Ad-hoc per Business Thread
Configuration Management	10

Table 53: Service Block 9 meeting table

4.10 Security Management – (Service Block 10)

For further details, please refer to the Baseline, some key documents are:
[R1] - ITS-1FQP-ITSM2 Lot1 Framework Quality Plan v2.00 EN – Chapter 10
[R1] - ITS-1FQP-Annex 21-Security-Management-v1.00 EN.docx
[R1] - ITS-1FQP-Annex 19- ITSCM process v0.10 EN.doc
[R58] - ITS-1PLN-SEC-Lot1 Security Plan
[R59] - ITS-1POL-Security policy

4.10.1 Description

This service block is responsible for the following activities:

- All security and service continuity related activities.

Formal processes owned by this service block:

- Security management
- Service continuity management

Security governance is an activity that is part of the security management process and creates the security plan ([R58]- ITS-1PLN-SEC-Lot1 Security Plan). The security plan defines the security needs and requirements of the ITSM2 Lot1 Services provided to DG TAXUD.
Linked to the security plan, the security policy ([R59]- ITS-1POL-Security policy) describes the roles and responsibilities for each security control to be implemented.
The security plan and policy are structured according to ISO/IEC 27002:2013. This is the Code of practice for information security controls.

4.10.2 Security Management

The Security Management process describes the structured fitting of security in the management organisation.

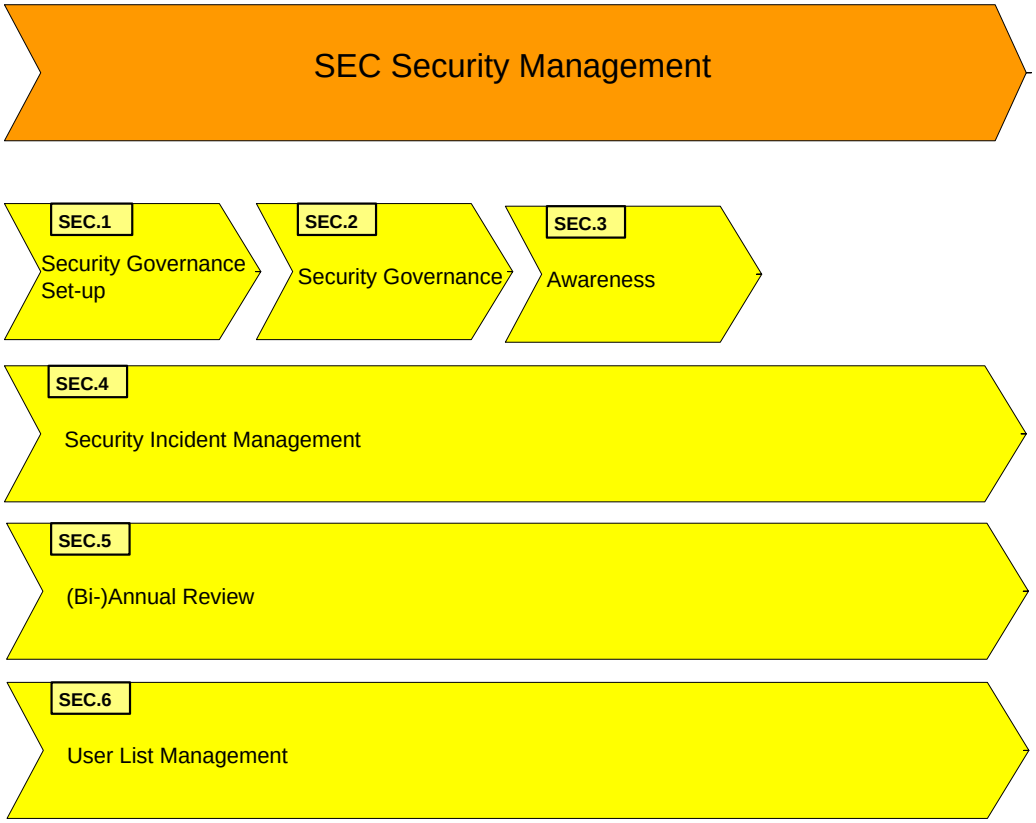

Figure 36: ITSM2 Lot1 Process Model

ITSM2 Lot1 coordinates bi-annual reviews for all accounts for which it has operational responsibility. For each resource, the credential service provider of user list (i.e., those who can provide the list of subscribers to a resource), and the authoritative source (i.e., those who are competent to decide which access rights shall be allowed or revoked) are maintained.

4.10.3 IT Service Continuity Management

ITSCM supports the overall Business Continuity Management (BCM) by ensuring that required IT infrastructure and IT services – including support and the Service Desk – can be restored within the maximum tolerable period of disruption. ITSCM focuses on handling those events that are considered a disaster i.e. which lead to an exceedance of the maximum tolerable period of disruption. Less significant events are dealt with as part of the Incident Management process. Changes in business objectives can impact Business Continuity and may require an update of the ITSCM system itself.

4.10.4 Evolutions

Due to evolving business requirements, the maturity of security management will have to increase during the course of the contract. Necessary process transformations will take place, through activities within scope of Service Block 2 (Service Strategy and Transformations), including the implementation of adequate security tooling.

A specialised IT security quick reaction team might be created in the future (independent from ITSM3 Operations), and will need to liaise with **ITSM3 Operations**, as to monitor the configurations of the systems and to investigate and coordinate actions in case of security incidents.

4.10.5 Volumetrics: Present and Future

The elaboration of the future situation is based on the following assumption: security needs will increase, in line with the number of assets/CIs per criticality, and number of users.

	RSA tokens contractors (1)	Security convention updates (2)	Security plan Updates (3)	Security Audits (4)	Risks raised by audits (5)
2013	21	0	1	1	4
2014	21	5	1	7	4
2015	48	3	1	10	6
2016	60	4	1	10	5
2017	80	7	1	10	5
2018	70	6	1	10	5
2019	60	5	1	10	5
2020	50	5	1	10	5
2021	60	6	1	10	5
2022	50	5	1	10	5
2023	50	5	1	10	5
2024	50	5	1	10	5

Table 54: Security Management Table

(1) RSA tokens contractors: number of tokens distributed and managed (per year) by ITSM2Lot1 to contractors performing remote administration tasks.
(2) Security convention updates: number of yearly updates of the binding convention(s) between ITSM2Lot1 and DIGIT/Security Directorate, governing the access to TAXUD systems through the DIGIT infrastructure.
(3) Security plan updates: number of yearly updates of the detailed security plan, setting out the security needs and requirements for the ITSM2Lot1 services provided to TAXUD. Changes in business objectives could lead to additional updates of the plan.
(4) Security Audits: number of yearly security audits performed by an independent team on the IT systems in the scope of ITSM2Lot1
(5) Risks raised by audits: number of significant risks identified during Security audits

The following table indicates meeting requirements, which are considered quite stable during the course of the ITSM3 Operations contract.

Meetings	Volume Estimates per year
Security Audit follow up	24
Operational security management	24

Table 55: Service Block 10 meeting table

4.11 Hand Over / Take Over – (Service Block 11)

4.11.1 Lessons learned

A Hand Over/Take Over (HO/TO) exercise in TAXUD is a very complex activity that requires, among other things, thorough planning, intensive coordination and communication, effective risk management and detailed follow up and control.

The HO/TO of ITSM services is especially delicate because we are transferring the responsibility on very critical and complex operational activities.

Here are the major lessons learnt from previous HO/TO of ITSM services at TAXUD:

- A kick off meeting is to be held at the start with all stakeholders to align on common plans, approach, roles and responsibilities, reporting activities and criteria for the acceptance of the HO/TO;
- First version of the HO plan should be ready before the new contractor starts to create its TO plan; enough time should be granted for the new contractor to produce its TO plan;
- Access to applications, tools and documentation should be provided to the new contractor at the earliest stage of the HO/TO; smooth transition requires a lot of work shadowing and knowledge transfer;
- An online collaboration platform, such as SharePoint, will provide a more effective collaboration between all Stakeholders;
- Security conventions creation and approval process need to be started at the beginning of HO/TO. The security requirements for accessing the different systems and applications must be documented and understood by all stakeholders;
- Frequent multilateral meetings must be held as of the beginning of the HO/TO phase to closely follow up on gaps, risks, issues, progress, etc.; knowledge sharing sessions held between people who attended the incumbent contractor's trainings proved to be efficient;
- New contractor's Service Desk should have read access to the live data as early as possible prior to the cutover; working procedures must be created and/or aligned well in advance before cutover; escalation path must be provided on time before cutover; assistance from incumbent contractor's experienced people is essential to keep adequate response time after cutover;
- FAT (Acceptance Testing of the HO/TO) scope and planning must be provided early in the process;

4.11.2 Evolutions

This Service Block 11 stays essentially unchanged as dedicated to Take Over and Hand Over. However, a new approach is being applied to ITSM3 Operations consisting on initiating the inception and design of later transformations in the course of the Take Over.

Indeed, **during the Takeover phase**, the continuous activities of SB02 will already be activated in order to support the inflight projects but also to elaborate the strategy & vision for the improvements already identified to be implemented along the duration of the contract.

For very specific transformations, also certain projects may be launched for the detailed design of solutions though no actual implementations will be launched during the Take Over.

4.12 Other Deliverables & Services – (Service Block 12)

4.12.1 Description

This Service Group covers the following service(s):

- Translations
- Trainings & Workshops & demonstrations
- Building/Hosting of trainings & e-learning facilities
- Other Deliverables & Services

4.12.1.1 TRANSLATIONS

The contractor has to manage and deliver translations, on request from the Commission, from one source language to one or two other languages, amongst DE, FR and EN (any combination could happen).

For EN, it is the British English language and spelling (not US).

Planning for the delivery of translations is mutually agreed between DG TAXUD and the ITSM contractor.

4.12.1.2 TRAININGS & WORKSHOPS & DEMONSTRATIONS

The **training and workshops** could be attended by **10 to 40 delegates** from the NAs, suppliers from DG TAXUD or from any 3rd party designated by DG TAXUD. A training/workshop session could have a duration of **1 to 3 days**. The training/workshops takes place at a **location** specified by DG TAXUD, which can also be in the ITSM2 contractor's premises.

The **demonstration** could be attended by any party invited by DG TAXUD. The attendance may range **from 1 to 100** participants. A demonstration lasts for **½ to 1 day.**

2 training sessions are organised on a yearly basis, each session is organised to cover **5 topics** in the area of CCN system administration and development. NAs are invited to register to the training sessions published in the ITSM2 Lot1 catalogue.

4.12.1.3 BUILDING/HOSTING OF TRAININGS & E-LEARNING FACILITIES

The ITSM contractor will, if requested to, provide Hosting Facilities and infrastructure for the training/workshop.

This includes:

- Meeting room at the ITSM contractor’s premises (**up to 40 persons**);
- Training rooms (**up to 40 persons**);

- Workstation (minimum one per two participants);
- Beamer.

4.12.1.4 OTHER DELIVERABLES & SERVICES

This covers all activities in the scope of the contract but not specified elsewhere. These activities will be defined and ordered via RfE/RfA and ordered on a case-by-case basis via the SC / RfA procedure initiated by DG TAXUD.

4.12.2 Volumetrics: Present and Future

The following table shows the estimated quantities for the services delivered in the context of this service block.

YEAR	TRANSLATIONS (in pages)	TRAINING SESSIONS (in units)	TRAINING HOSTING (in units)
2013	2500	75	111
2014	0	86	81
2015	0	84	84
2016	2000	90	90
2017	2000	100	100
2018	2000	90	90
2019	2000	90	90
2020	2000	90	90
2021	2000	100	100
2022	2000	90	90
2023	2000	90	90
2024	2000	90	90

Table 56: Estimated Services To Be Provided

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