

COVER

<p>REFERENCE DOCUMENT</p> <p>DG TAXUD IT Services environment in relation to the deployment and operations of the Trans-European Systems</p>		

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ACRONYMS AND DEFINITIONS

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

An extensive list of abbreviations and definitions can be found on DG TAXUD webpage in a [print-friendly format \(see link\)](#).

DISCLAIMER

It should be observed that this document is of purely informative nature and does not include any statements bidding for the procurement procedures that will follow. It is produced to inform the economic operators, interested in submitting offer in response to DG TAXUD call for tenders, about the specific DG TAXUD IT environment.

The document aims at delivering to the potential contractor an “abstract” technical and business view of DG TAXUD’s IT system/platforms/applications deployed and maintained by the involved stakeholders.

This document is only periodically updated and might not mirror the latest state of play.

The information included in the published Call for Tenders will always take precedence.

REFERENCES

When Call for Tenders are published, similar documents to this one, are part of the documentation. They constitute Terms of References for the tenderers. Those documents might be more precise and include further references.

In particular, in order to facilitate and maximise access to information for tenderers, DG TAXUD provides:

- BASELINE of documentation related to the incumbent contract’s activities.
- Access to DG TAXUD methodology stored on the platform called TEMPO (This methodology is proposed to ensure the consistent and efficient management, set-up, development, operation, and support of projects and service management).

Access to this documentation is only provided during the tendering period, upon request by the tenders and after signature of Non-Disclosure Agreements.

Indication of these further sources of detailed information is maintained in this document just to indicate to the interested parties, on which points more information might be released during the tendering process.

1 INTRODUCTION

1.1 THE CUSTOMS DOMAIN

In the context of the customs policy of the European Union, the single market requires that the national administrations of EU Member States work in ever closer harmony and apply Union regulations with ever greater consistency in order to ensure a uniform level of protection at the external frontiers, to prevent and combat fraud and to avoid diversion of trade.

Computer processing and electronic communication systems are required to play an ever more important role in this context. The Customs 2013 programme (Decision 624/2007/EC¹ of the European Parliament and of the Council of 23 May 2007 establishing an action programme for customs in the Community (Customs 2013), provides the legal and financial basis for the development, operation, maintenance and improvement of electronic information exchange systems between national administrations and the basis for electronic systems which will allow business to move towards a paperless customs environment. In addition, the e-Customs decision (Decision 70/2008/EC² of the European Parliament and of the Council of 15 January 2008 on a paperless environment for customs and trade) provides for a common denominator under which the customs systems and applications are developed and operated.

DG TAXUD and the Member States are committed to deliver pan-European e-Government services, providing for efficient, effective and interoperable information and communication systems between public administrations, including between their front and back offices, in order to exchange and process public sector information across Europe in a secure manner. As part of this commitment, they have undertaken to set up and operate secure, integrated, interoperable and accessible electronic customs systems in order to facilitate end-to-end supply chain logistics and customs processes for the movement of goods into and out of the European Union, and to reduce the risks of threats to the safety and security of citizens by minimising the remaining differences between Member States' customs processes. The EU electronic customs systems will in general be built according to international standards as regards data sets/models and message formats, thus allowing future interaction with 3rd countries' systems.

1.2 THE TAXATION DOMAIN

The IT systems in the taxation domain is oriented around 4 axes:

1. Indirect Taxation (VAT): the IT systems in the field of VAT aim essentially to fight against tax fraud or reduce the administrative burdens for the economic operators. The IT system in the first category is essentially VIES while these in the second category are the MOSS, the future e-commerce (OSS) and the VAT refund system;

¹ OJ L 154, 14.6.2007, p. 25–31

² OJ L 23, 26.1.2008, p. 21–26

2. Direct Taxation: the IT systems in the field of direct taxation aim essentially to fight against tax fraud and tax evasion or improve the tax transparency. The IT systems in the first category are essentially DAC1 and DAC2 while these in the second category are the DAC3, DAC4 and DAC6;DAC7
3. Recovery of Claims: a unique IT system support this area, the eForm Central Application. It aims at facilitating the mutual assistance between the Member States recovery as regards the recovery of claims relating to taxes, duties and other measures;
4. Excise: the main IT system to support this area is the Excise Movement and Control System (EMCS) for the monitoring of the movement of excise goods under duty suspension in the EU.

1.3 THE ROLE OF THE EUROPEAN COMMISSION

DG TAXUD manages a set of activities in the areas of customs and taxation. These activities target the needs of users in DG TAXUD services as well as those located in the National Administrations³ of the Member States, economic operators and citizens.

The IT systems managed by DG TAXUD itself from an operational viewpoint (meaning software is running on infrastructure under direct responsibility of DG TAXUD) are called **central IT applications**. These applications can serve different user categories, specifically or a combination of them: (1) internal Commission or other EU institution users (2) National Administration users (3) economic operators or (4) the citizen in general terms.

For **distributed** IT systems, DG TAXUD is the guardian of the common functional and technical specifications, it develops and operates the supporting applications and it monitors the systems at overall level. They are managed by the National Administrations. These are, at the time of writing this document, the distributed TAXUD IT systems:

- Customs: the New Customs Transit System (NCTS), the Export Control System (ECS) and the Import Control System (ICS).
- Indirect taxation: the VAT Information Exchange System (VIES), the Mini-One-Stop-Shop(MOSS), the VAT Refund System;
- Direct Taxation:, DAC1, DAC2, DAC3, DAC4 and DAC6;DAC7
- Excise: the Excise Movement and Control System (EMCS).

The distributed IT systems and the central applications providing interfaces to the National Administrations are often referred to as “Trans-European Systems” or “European Information systems”. In order to support these systems, a closed and secure trans-European communication network named CCN/CSI – and its successor, CCN2 has been developed by DG TAXUD and for which it has operational responsibility.

³ Term "National Administration" refers always to Member State National Administration.

2 DG TAXUD ENVIRONMENT

This chapter provides information on the DG TAXUD environment.

2.1 SHORT PRESENTATION OF DIRECTORATE B OF DG TAXUD



Figure 1: Directorate B: “Digital delivery of Customs and Taxation policies”.

2.2 MISSION STATEMENT

The mission of Directorate B is to lead the strategy, planning and design of digital Trans-European Systems for the two policy domains of Customs and Taxation and to deliver on the commitments of DG TAXUD in the design, implementation and operation of such systems. It works in close collaboration with internal and external stakeholders, and it evolves in time to continuously improve and deliver added value in the most effective and efficient manner.

2.3 MANDATE

Directorate B consolidates the Digital/Information Technology (IT) activity in DG TAXUD. Its mandate is the delivery on the commitments of DG TAXUD that depend on Digital implementation of customs and taxation policies and strategies.

Directorate B manages the interface with the other Digital/IT entities and policy aspects, be it inside DG TAXUD, be it with the outside world (e.g. Member States, trade, and other organisations). In this role, the Directorate manages the Multi-Annual Strategic Plan for Customs (MASP-C)⁴ and for Taxation (MASP-T)⁵. It is thus managing the Digital Work Plan of DG TAXUD, in close collaboration with its

⁴https://ec.europa.eu/taxation_customs/general-information-customs/electronic-customs_en#heading_2

⁵ [MASP-T \(europa.eu\)](#)

stakeholders. A key aspect related to this role is the fact that Directorate B has a pivotal role in the implementation of the Union Customs Code (UCC)⁶ Work Plan to deliver the UCC according to the constraints defined in the MASP-C and in the implementation of the IT work plan for taxation.

The Directorate has ownership of managing the IT governance forum of DG TAXUD (the IT Steering Committee or ITSC), ensuring the preparation of the meetings, as well as the appropriate links to the IT Governance forums of the Commission. Directorate B represents DG TAXUD in all forums related to Digital/IT.

Directorate B is responsible for the management of all Digital/IT high-level plans (e.g. MASP-C and MASP-T Taxation-Customs interface), and underlying projects needed for the digital delivery of the TAXUD policies, but not for the management of the programmes themselves. It works in close collaboration with internal and external stakeholders and evolves them in time to continuously improve and deliver added value in the most effective and efficient manner.

Directorate B manages the business process and data models for both the Customs and Taxation domains and the EU Customs Single Window environment (including its legal base) of DG TAXUD, also managing the maintenance and evolution of the Information Systems it produces, alone or in collaboration with other stakeholders. It also coordinates the deployment and maintenance of Trans-European systems (TES) with the Member State administrations concerned.

Directorate B manages operations of IT systems and infrastructure of DG TAXUD, in close coordination with the Member States, to ensure excellence in the operational functioning of DG TAXUD's Trans-European systems as well as the delivery of the Service Levels committed by DG TAXUD. It develops and maintains the IT Architecture of DG TAXUD and assures the architectural alignment of its Information Systems. The Directorate also ensures the interface with DG DIGIT⁷ for the management of the Digital Workplace, which aims at providing an optimal Office Automation environment and support for the end users in DG TAXUD.

TAXUD B outsources the IT services to outside suppliers in a multi-sourcing model that allows it to retain leadership and control.

Directorate B manages the Electronic Customs Contact Group (ECCG) and the IT Steering committee (ITSC) meetings, and the Director participates in the Customs Policy Group (CPG) and High-Level Project Group (HLPG) meetings. These tools allow the Directorate to ensure a Stakeholder and Customer Relationship Management (CRM) function for Customs.

Directorate B ensures a role of technology watch, looking for opportunities where Innovation can bring benefit to the business of DG TAXUD and the European Union. The Directorate also provides IT security advisory and awareness to DG TAXUD.

⁶ https://ec.europa.eu/taxation_customs/customs-4/union-customs-code_en

⁷ The Directorate-General for Informatics (DIGIT) is a Commission department responsible for providing digital services that support other Commission departments and services.

Finally, yet importantly, the Director of DG TAXUD B ensures the direct sponsorship of the Import Control System (ICS2) project and its dedicated ICS2 Project Team. The ICS2 Project Team Leader reports directly to the Director of DG TAXUD B. The Team Leader manages the implementation and deployment of the ICS2 system, as well as the Customs Risk Management System (CRMS2), leading the dedicated ICS2 Project Team that works on both projects.

THE UNITS IN DIRECTORATE B

2.4 UNIT B1 - PROCESSES AND DATA, CUSTOMER RELATIONSHIP AND PLANNING

2.4.1 Mission statement:

The mission of unit B1 is to ensure the high-level project management (planning with the Member States and follow-up role) and the translation of the legally defined business processes and data requirements in digital solutions in the domain of Customs. At present, this entails the activities in relation to the implementation of the Union Customs Code and the EU Single Window environment for Customs. The unit oversees the creation and maintenance of business process and data models and business/functional analysis and specifications. It also organises the regular meetings and contacts between the various stakeholders in charge of ensuring a coordinated planning of the developments and a proper functioning of the Trans-European Systems, including progress reporting (Stakeholder and Customer Relationship Management role). The Unit is as well responsible for Customs Data Integration and Harmonisation.

2.4.2 Main responsibilities:

- The high-level project management tasks necessary for the implementation of the Union Customs Code, EU Single Window environment for Customs and other policies and the preparation of the related systems, including the activities for project initiation, coordination and business implementation support towards the Member States and other external stakeholders;
- The portfolio also entails activities with a legal nature such as the provisions for the EU Single Window environment for Customs, technical arrangements and transition for the UCC systems, the work programme, data requirements (including formats and codes), etc. through the appropriate committees and expert groups;
- The management of the European Union Customs Data Model (EUCDM), the data integration and harmonisation tasks, understood as legal tasks;
- The business related tasks of managing the legal/business/IT link, and notably the elaboration of business process and data models. The business management tasks of interfacing with the Member States and economic operators and managing the strategic and operational planning through the MASP-C (planning and follow-up role). In time, it shall lead to a structured Stakeholder and Customer Relationship Management function, for the Customs domain;

- The management of the Electronic Customs Contact Group (ECCG) and Customs Business Group (CBG).

2.5 UNIT B2 - ARCHITECTURE AND DIGITAL OPERATIONS

2.5.1 Mission statement:

The mission of unit B2 is to assure the service continuity and security of the IT infrastructure (alias the business-agnostic part of DG TAXUD IT) which underpins the Trans-European Systems used in customs and fiscal policies. DG TAXUD B2 operates, develops and maintains the IT Architecture of DG TAXUD in collaboration with the other IT units assuring its tactical and strategic alignment with the DG TAXUD policy expectations and the alignment of DG TAXUD Information Systems. It strives to improve continuously the Quality of Service delivered by the DG TAXUD Data Centres to be ready to host the existing and new systems in operation. The unit is also in charge of office automation and the coordination of IT infrastructure with other DGs and seeks to maximize the synergy between DG TAXUD and other entities (e.g. DIGIT) and to foster the resilience of DG TAXUD IT delivery, while minimising risk exposure.

2.5.2 Main responsibilities:

- The unit is in charge of the IT Enterprise Architecture of DG TAXUD, which is coherent with the European Interoperability Framework (EIF) and Corporate IT Enterprise Architecture Framework (CEAF), managed by DG DIGIT;
- Ensures the operations, development and management of infrastructure components (e.g. UUM&DS, CCN, CCN2, SPEED2)⁸ and that of the systems linking with Member States, candidate countries and third parties for data exchange and service management;
- Takes responsibility for the IT Business Continuity Management System (BCMS) of DG TAXUD. The system needs to evolve to a fully-fledged IT BCMS (Business Continuity Management Plan), inspired by the ISO22301:2019 standard;
- Works hand-in-hand with DG TAXUD B1 to ensure together the link between business needs and their implementation, and notably the elaboration of the EU Customs Single Window – in line with the MASP-C, the UCC Work Plan and the Work Plan of DG TAXUD;
- Works hand-in-hand with DG TAXUD B3 to ensure together a smooth integration of applications into operation that is undertaken by the ITSM3 Ops contractor;
- Is in charge of managing the two Data Centres of DG TAXUD and the entire related infrastructure;
- To look and implement synergies with other entities for the provision of IT business-agnostic services. Once business-agnostic parts of the DG TAXUD's

⁸ Uniform User Management and Digital Signatures (UUM&DS), Common Communications Network (CCN).

IT stack are transferred to other entities, Directorate B maintains the responsibility for its good functioning as owner of the new Service(s) – managing also the relationship with the then new supplier(s).

2.6 UNIT B3 - CUSTOMS SYSTEMS

2.6.1 Mission statement:

The mission of unit B3 is to support the implementation of customs policy by developing and maintaining European Customs Information Systems. The unit ensures the continuity and security of the services delivered by these applications and systems to the economic operators, the Member States, 3rd Countries and colleagues in the European Institutions. The main objectives for the years to come are the implementation of the Multi-Annual Strategic Plan (notably all of the Union Customs Code projects and of the exchanges of information with 3rd countries). The activities of B3 are mainly supported by the ITSM3 TES (Trans European System) contractor.

2.6.2 Main responsibilities:

- Focuses on European Customs Information Systems design, development, testing, deployment and operation, playing the leading role in the implementation of the IT systems for the UCC;
- Works hand-in-hand with DG TAXUD B1 to ensure together the link between business needs and their implementation, and notably the elaboration of business process models and the project management of the IT agenda – in line with the MASP, the UCC Work Plan and the Work Plan of DG TAXUD;
- Works hand-in-hand and uses the infrastructure made available by unit B2;

2.7 UNIT B4 – TAXATION SYSTEMS AND DIGITAL GOVERNANCE

2.7.1 Mission statement:

The mission of unit B4 is twofold. Firstly, it supports tax policy by deploying and operating the Trans-European Information Systems in the domain of Taxation, in line with the MASP-T. Secondly, it provides several horizontal services to DG TAXUD B and its other units, in view of ensuring good governance of the IT ecosystem and its compliance, by coordinating budget activities and managing all IT contracts and by managing IT governance forum of DG TAXUD, the IT Steering Committee (ITSC).

2.7.2 Main responsibilities:

- Focuses on European Taxation Information Systems design, development, testing, deployment and operation;
- Manages the MASP-T with the Member States fiscal administrations;
- Works hand-in-hand and uses the infrastructure made available by unit B2;
- Ensures the execution of several horizontal functions, notably management of the ITSC, contract management, cross directorate budget coordination and

management, inventory. The unit fosters synergies that result from such horizontal functions;

- Assesses the use of new technologies in the taxation and potentially customs areas, with a primary focus on Blockchain and Data analytics.

THE BUSINESS ENVIRONMENT

2.8 POLICY UNITS

DG TAXUD's **policy units** are responsible for the policy management and related business process models. They are the main “Customers” of Directorate B IT Units services. The policy units may also be “users” of specific systems needed to fulfil their mandate (e.g. Tariff Applications).

The organisation chart of DG TAXUD is available on the EUROPA website. This organisation chart is subject to change:

https://ec.europa.eu/taxation_customs/about/organisation-chart_en

2.9 NATIONAL ADMINISTRATIONS

The **National Administrations (NAs)**, national project and operation teams, are responsible for the deployment and operation of the national components (national Configuration Items including national applications) of the Trans-European Systems. The term “National Administrations” encompasses all National Administrations having IT obligations in order to fulfil EU customs and taxation policies, in all Member States, Candidate and Accession Countries and in third countries, arising from EU customs and taxation policies.

2.10 MANAGEMENT COMMITTEES

The **Management Committees** are set up by legal bases and are composed of the DG TAXUD and of delegates from the National Administrations, EFTA countries, neighbouring countries (e.g. Ukraine), Candidate countries and other third countries (China, Russia, etc.), as appropriate.

2.11 WORKING GROUPS / PARTIES AND ECONOMIC OPERATORS

The Working Groups/Parties or Technical Sub-Committees are set up by the Management Committees as needed, with specific mandates. The Working Groups/Parties or the Technical Sub-Committees report to their respective Management Committees. On the other side, **Economic Operators** are a fast increasing user/consumer basis of the IT services provided by DG TAXUD via its presence on the EUROPA site. They are also users of the National Administrations interconnected via Trans-European systems (TES).

2.12 INTERACTIONS WITH NAs, BUSINESS UNITS AND OTHER PARTIES IN THE EUROPEAN COMMISSION

DG TAXUD Units B2/B3/B4 are responsible for the overall coordination with the MS and the business Units for business and matters related to architecture, strategy and customs IT systems and applications, while Unit B1 is responsible for any matter related to the customs business processes.

CURRENT⁹ ITSM-TES CONTRACT

The services provided by the current framework contract are related to the provision of support services to DG TAXUD for the coordination of implementation of the Taxation and Customs Trans-European IT Systems (TES) in Members States, the central applications of the Commission and the Trans-European Service Management tools (TESM) in terms of:

- **The management of the deployment and operations¹⁰** of TES and IT Services of the Commission from a business perspective, for National Authorities (NAs), traders communities and other economic operators as follows:
 - Participation to the Development Lifecycle, involving:
 - Coordination between development and service management,
 - Quality Control of artefacts from TES and IT Services development;
 - Deployment of the TES involving:
 - Coordination of the NAs, the Commission and other contractors of the TES,
 - Functional and Technical Support of the NAs,
 - Conformance Testing,
 - Additional services related to the Conformance Testing Application (CTA) support,
 - After-Care;
 - Deployment of IT Services and TESM tools involving:
 - Coordination of the NAs, the Commission and other contractor on IT Services,
 - Factory Acceptance Testing (FAT) support,
 - PreSAT – Preliminary Service Acceptance Testing,
 - SAT - Service Acceptance Testing,
 - FT – Functional Testing;
 - Configuration Management;

⁹ The successive Framework Contracts (as far as the scope provides for a broad continuity) are differentiated by a number, therefore through time ITSM1-TES; ITSM2-TES, etc. existed. The same applies for other Framework Contracts (QA; TIMEA; etc., see further below.)

¹⁰ Please note that **ITSM-OPS** contractor (another Framework Contract) is responsible for the Infrastructure, the Platform and the Application Management of the applications delivering the IT Services from the Commission. The NAs have the same responsibilities for their own national IT systems and services.

- Change and Release Management;
- Business Operations of the TES and IT Services involving:
 - Event Management,
 - Update Operational Production Data,
 - Business monitoring, statistics and reporting;
- Service Support of the TES involving:
 - 2nd level Service Desk,
 - 2nd level Incident management,
 - Problem Management,
 - Service Request Management,
 - Access rights Management,
 - Technical support for TES;
- Ad-hoc services:
 - Conference calls/Virtual meetings,
 - Web mastering the portals for each TES system community,
 - Specimen Management System support,
 - Processing of statistical information coming from the Member States.
- **Assistance to DG TAXUD** in several areas such as:
 - Support to IT Governance;
 - Project management support;
 - IT Collaboration with the NAs;
 - Project & Service Management Support;
 - Working groups, Workshops, meetings and trainings (with all stakeholders including National administrations).

The incumbent contractor performs also the hand-over of all services and deliverables at the end of the Framework Contract

THE IT VALUE CHAIN

The IT value chain of DG TAXUD is depicted below:

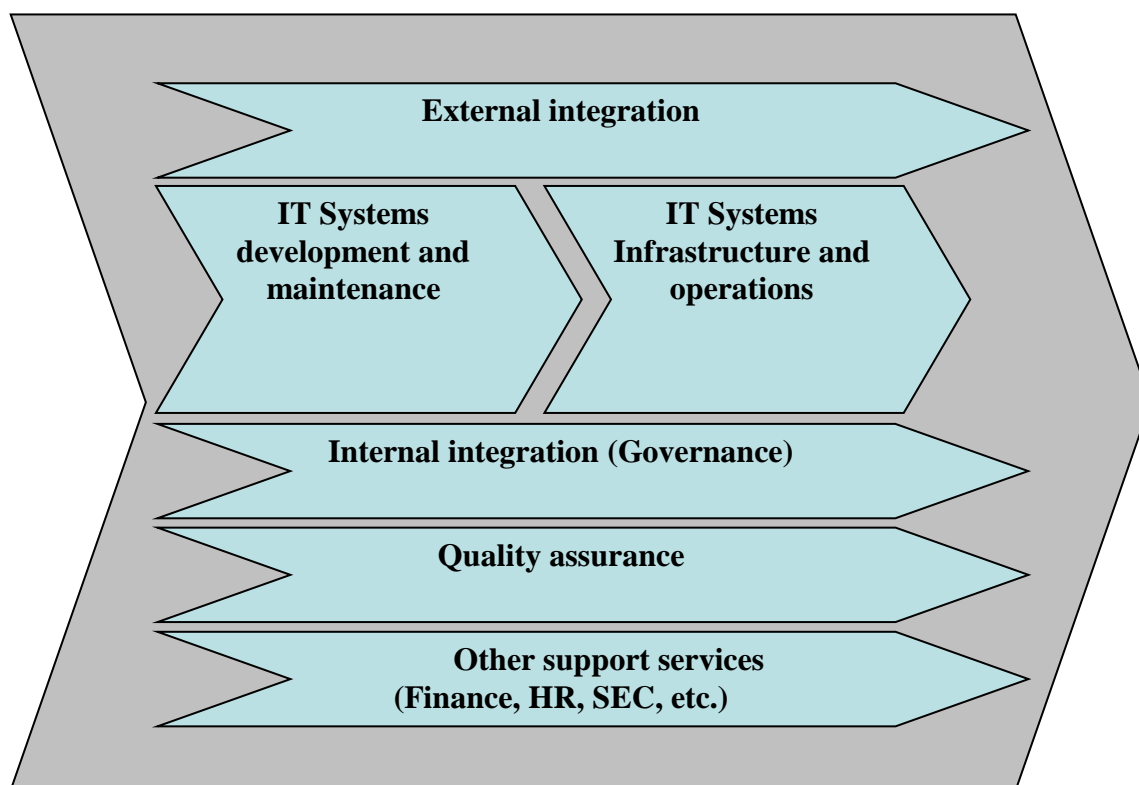


Figure 2: DG TAXUD IT Value Chain

External Integration is defined as the set of activities that are needed to integrate DG TAXUD's IT systems with those of the NAs to deliver the expected business solutions. These comprise the management of the deployment and operations of TES and IT Services from a business perspective and the assistance to DG TAXUD concerning specifications of the TES and IT services, IT collaboration amongst National Authorities, project and service level management and support of working groups, workshops, meetings and trainings.

IT systems development and maintenance is one of the two main production activities of the IT Units of DG TAXUD. It includes the multitude of development and maintenance activities for all Customs, Taxation and Excise systems, as well as for the business agnostic platforms.

IT systems infrastructure operation is the second main production activity of the IT Units of DG TAXUD, providing:

- The operations of all central applications and IT services developed by DG TAXUD;
- A stable, documented, managed and secure ICT infrastructure (including CCN and DG TAXUD Data Centres);
- The set-up and maintenance of harmonised processes and service management tools.

Internal integration is the set of activities that DG TAXUD performs internally to streamline and harmonise its architecture and services delivery. Much of this process is supported by **TEMPO**¹¹, internal governance arrangements, planning, reporting etc.

Quality Assurance and other support services (FIN, HR, SEC, etc.) are activities and processes that are shared between the IT Units of DG TAXUD.

External contractors

DG TAXUD outsources the bulk of its IT activities to external service providers, which are contracted through public procurement procedures in compliance with the Financial Regulation. The products and services supplied are all subject to a systematic quality control and testing as part of the acceptance procedures.

TAXUD relies on several **external contractors** to perform their duties (refer to figure below for a graphical representation of the current Contracts):

- Development contractors (**SOFTDEV** for customs and taxation; **CCN-Evolution** for CCN, CCN2-ng; **SPEED2** platforms and related business flows);
- Three IT service management contractors (**ITSM-OPS**, **ITSM-TES** and **ITSM-INT**);
- One common network provider (**CCN/WAN**);
- One quality assurance/control contractor (**QA**);
- One contractor for intra-muros consultancy (**TIMEA**);
- Several consulting contractors to perform strategic studies and analysis;
- Occasionally, other Commission contracts.

¹¹ **TEMPO** is a quality system developed by DG TAXUD. More information in section: 3.19.

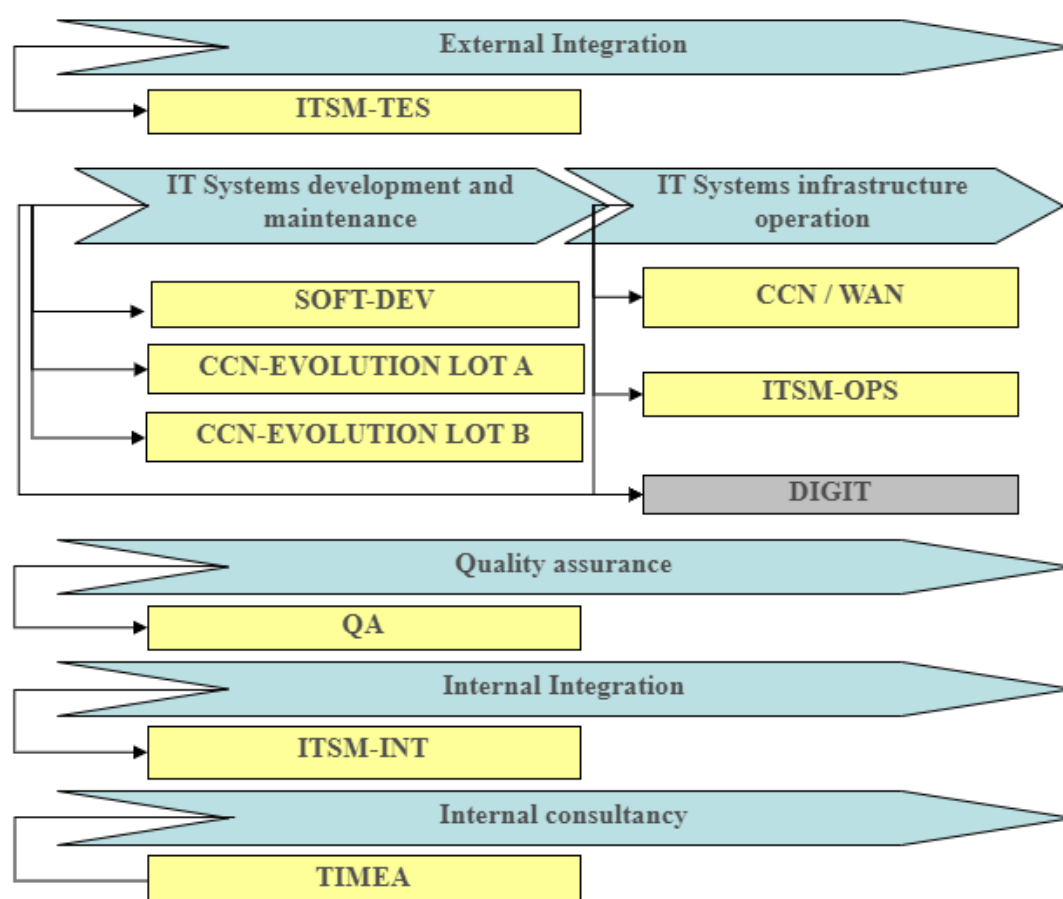


Figure 3: DG TAXUD IT Value Chain and supporting contracts

DIGIT is the Informatics Directorate-General of DG TAXUD. It is responsible for DG TAXUD's Data Centre (DIGIT/DC) hosting some of DG TAXUD IT systems. DG DIGIT also provides development and support for certain systems with a corporate connotation and has a close collaboration with DG TAXUD for several projects and services (e.g. authentication systems). DG TAXUD makes extensive use of DG DIGIT's infrastructure services. Some DG TAXUD central applications are hosted in the DG DIGIT Data Centres.

The **ITSM-TES** provides support services to DG TAXUD for the coordination of implementation of the Taxation and Customs Trans-European IT Systems (TES) in Members States, the central applications of the Commission and the Trans-European Service Management tools (TESM).

The **ITSM-OPS contractor** is the current provider of IT Service Management on behalf of **DG TAXUD** for excise, taxation and customs business threads, including all CIs and platforms managed by the **CCN Evolution contractors**. The contract also includes maintenance of 'service management-related tools'.

The **CCN/WAN contractor** provides the private secured IP network services of CCN₂ including their maintenance.

SOFT-DEV is a development and maintenance contract, which consolidates all customs, taxation and excise systems related development. The **SOFT-DEV contractor** provides specifications, development, maintenance and support services for all customs IT systems.

The **CCN Evolution contractors** provides specifications, development and maintenance services for the CCN/CSI, SPEED2 and CCN2 platforms.

The **ITSM-INT contractor** provides operations integration and control, including application architecture board, advice on architecture and products, overall change management and benchmarking.

The **QA contractor** is the provider, amongst others, of **TEMPO** maintenance, security and quality audits, quality assurance and quality control of the IT services and deliverables produced by the other IT contractors of **DG TAXUD**.

The **TIMEA contractors** provide Intra-muros consultancy and Proximity Quoted Time and Means services for European Union IT systems and applications in the customs, excise and taxation areas.

3 IT BACKGROUND OF DG TAXUD

IT IN SUPPORT TO POLICY

DG TAXUD is responsible for the customs and taxation policies of the EU. DG TAXUD is also a key player in the preparation of enlargements, in particular concerning Turkey (for the customs transit regime), Serbia, Montenegro, Albania, and the Republic of North Macedonia. In addition, due to the international nature of customs activities, a number of agreements with third countries (such as the USA, Japan, China and Russia) exist and are being developed to support international trade. To facilitate exchanges with these countries, DG TAXUD operates the Single Portal for the Entry and Exit of Data (SPEED2) and its new generation SPEED2ng that allows secure data exchange with these partners. It already supports - or will do so in the future - all external message flows (single window, transit, mutual recognition, international exchanges for taxation, etc.).

DG TAXUD also collaborates with OLAF, EUIPO¹², ESTAT¹³, Norway, Switzerland and others to allow the use of its Common Communications Network (CCN) and its new generation CCN2ng infrastructure, either for customs and taxation related matters or, for ESTAT, in the course of a pilot project connecting national statistical offices. Close collaboration exists with several other DGs and Services of DG TAXUD (e.g. in the EU single window environment for Customs).

3.1 E-CUSTOMS DECISION

DG TAXUD Communication¹⁴ on a simple and paperless environment for customs and trade (which followed on from the Council Resolution¹⁵ on the simplification of customs procedures), as well as DG TAXUD Communication¹⁶ on a strategy for the Customs Union and the related Council Resolution¹⁷ propose to make procedures and controls more efficient by simplifying customs legislation and making better use of electronic tools in customs procedures.

¹² European Union Intellectual Property Office ([see webpage](#)).

¹³ [Home - Eurostat \(europa.eu\)](#)

¹⁴ Communication from the Commission 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>

¹⁵ Council Resolution of 25 October 1996 on the simplification and rationalization 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/PDF/?uri=OJ:C:1996:332:FULL&from=EN>

¹⁶ 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*/ 08.02.2001
<http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52001DC0051&from=EN>

¹⁷ 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/PDF/?uri=CELEX:32001G0615\(01\)&from=EN](http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32001G0615(01)&from=EN)

3.2 UNION CUSTOMS CODE (UCC)

The Union Customs Code provided the legal basis for the completion of the computerisation of customs. Adopted on 09/10/2013 as Regulation (EU) No 952/2013¹⁸ of the European Parliament and of the Council, these new legal provisions accelerated and supported the activities of Member States and DG TAXUD as from 2014.

In order to support the development of the electronic systems, DG TAXUD Implementing Decision¹⁹ of 29/04/2014 establishing the Work Programme for the Union Customs Code was adopted. The UCC Work Programme 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 for Customs (MASP-C), which is a management and planning tool drawn up by the European Commission in partnership with Member States, as referred to in Article 8(2) of the e-Customs Decision.

CUSTOMS AND FISCALIS PROGRAMMES

DG TAXUD IT systems have legal basis and receive budgetary support from EU programmes, **Customs 2027**²⁰ and **Fiscalis 2027**²¹, for which they represent a significant part (more than 80%) of the expenditure.

Continued funding of these programmes will help the EU to progress in offering businesses unfettered and easy access to the EU’s Single Market so that trade can flourish, protect citizens from dangerous goods entering the Union at our external borders and ensure that Member States are equipped to fight tax avoidance and tax evasion.

3.3 CUSTOMS PROGRAMME

The **Customs 2027 Programme** 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 bilateral or multilateral 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, with a view to interconnecting customs authorities efficiently.

¹⁸ Regulation (EU) No 952/2013 of the European Parliament and of the Council of 9 October 2013 laying down the Union Customs Code (recast); 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>

¹⁹ 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/PDF/?uri=OJ:L:2014:134:FULL&from=EN>

²⁰ [Customs programme \(europa.eu\)](http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2014:134:FULL&from=EN)

²¹ [Fiscalis Programme \(europa.eu\)](http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2014:134:FULL&from=EN)

3.4 FISCALIS PROGRAMME

The **Fiscalis 2027 Programme** 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 bilateral or multilateral 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, with a view to interconnecting tax authorities efficiently.

MULTI-ANNUAL STRATEGIC PLAN FOR CUSTOMS MASP-C)²²

The e-Customs Decision (Decision No 70/2008/EC) calls upon DG TAXUD to draw up, in close cooperation with the Member States, a Multi-Annual Strategic Plan for Customs (MASP-C) for creating a coherent and interoperable electronic customs environment for the EU Customs Union and requires yearly updates of the MASP-C. Unit B1 is in charge of the MASP-C preparation and coordination in TAXUD. The MASP-C is maintained annually.

The main principles of the IT Strategy as defined in the MASP-C lead to important changes in the future systems.

3.5 SERVICE-ORIENTED ARCHITECTURE (SOA)

The new IT systems are 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 DG TAXUD (as advocated by the European Interoperability Framework²³).

The adoption of the service-oriented architecture has led to the evolution of TAXUD application architecture framework, from the former Tariff Applications Technical Architecture Framework (TATAF) to a new generation (TATAFng).

3.6 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.

Experiences with the *Customs Decisions* system show that this approach is increasingly endorsed by Member States. In the initial phase of the Customs Decisions system, the majority of Member States intended to build their national, decentralised

²² https://ec.europa.eu/taxation_customs/general-information-customs/electronic-customs_en

²³ European Interoperability Framework (EIF) is a governance framework about public service interoperability between the different stakeholders being Businesses/Citizens/National Administrations/EU institutions.

solution. Near the launch into production, however, 26 out of 27 Member States have decided to use the centrally provided solution instead.

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 DG TAXUD (in comparison to a single central functionality) and is less agile in addressing change.

Evolution towards the SOA paradigm together with higher availability requirements resulting by centralisation of Trans-European systems has made it necessary to revise the software development life-cycle (**SDLC**)

3.7 COLLABORATION

Collaboration between participating 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.

3.8 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 27 to 1. Trade costs could be reduced significantly. Moreover, such interface could also be hosted at DG TAXUD.

The Uniform User Management & Digital Signature (**UUM&DS**) project contributes to the above, as it aims to provide an external unified user management, removing the burden for applications (or application framework) and DG TAXUD to deal with user management. It federates the national Identity and Access Management (IAM) systems.

The UUM&DS system (at time of writing) handles User-to-System authentication and user management.

The TATAFng framework is providing support for applications to integrate with UUM&DS.

MULTI-ANNUAL STRATEGIC PLAN FOR TAXATION (MASP-T)²⁴

The MASP-T aims at creating a coherent and interoperable electronic environment for taxation in the European Union to ensure coherence and coordination of IT capacity building actions. It offers an effective and coherent management tool of the IT applications and systems portfolio in the field of taxation by setting down both a strategic framework and milestones. It is endorsed by the Member States in the Tax Administration EU Summit (TADEUS) based on expert advice provided by the Expert Group and Committees competent in their respective areas²⁵.

The MASP-T is considered as a necessary instrument to justify budgetary requests made by national administrations, as well as to ensure overall governance of legal, business and IT-technical aspects of new IT projects in the area of taxation. By being instrumental to these objectives, it enables a smoother and more coordinated implementation cycle. Most importantly, the MASP-T aims at ensuring that agreements are reached for the IT projects identified in Annex 2 and are reflected in the detailed planning of Annex 1. Stakeholders are required to take the necessary measures and make commitments to deliver accordingly.

IT SYSTEMS

TES definitions and lifecycle

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 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:**

²⁴ MASP-T document is in baseline

²⁵ For indirect taxes (VAT), the SCAC (Standing Committee on Administrative Cooperation), its associated Expert Group SCAC-EG and its sub-committee the SCIT (IT matters), for direct taxes, the CACT (Committee on Administrative Cooperation for Taxation), the WGACDT (Working Group on Administrative Cooperation in Direct Taxes) associated to it, as well as its associated Expert Group the CACT-EG, for recovery of claims, the Recovery Committee and its associated Expert Group the Recovery-EG, for excise duty, the CED (Committee on Excise Duty) and possibly the ECWP (EMCS Computerisation Working Party, where IT matters are discussed).

- 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: **DG TAXUD**'s IT systems also allow for a rapid exchange of secure information and thus for the efficient fight against different types of tax fraud.
- **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 and VAT number identification), contained in the IT systems, on DG TAXUD's Europa website. Some Economic Operators have integrated the availability of the information in their daily processes. Therefore, they heavily rely on these services. The use of these services is constantly increasing.

Most of the IT systems of **DG TAXUD** are **Trans-European Systems (TES)** spanning all Member States of the EU. The users are the National Administrations, the economic operators' communities and DG TAXUD. Other IT systems include systems to manage reference data, test and monitoring applications as well as dissemination applications to the wide public (e.g. via the Europa website).

A TES is a collection of collaborating (orchestrated and choreographed) systems with responsibilities distributed across the National Administrations and DG TAXUD. The concept of TES includes processes, applications, services and infrastructure. There are two main architectural patterns of TES:

- **Distributed TES**: exchanges of information and IT services take place directly between the National Administrations at EU level (NA \leftrightarrow NA). In this case, the system forms a set of interoperable business systems implemented and operated by the National Administrations; the National Administrations are meant to integrate it into their own national systems according to the business processes agreed at EU level;

and/or

- **Centralised TES** (or 'Hub and Spoke' model): exchanges of information or IT Services take place between National Administrations and DG TAXUD (NA \leftrightarrow EC); business processes being orchestrated by a Central Application operated by DG TAXUD.

Exchanges of information and IT services take place on a secured Common Communications Network (CCN or CCN2), according to agreed systems specifications (defining protocols and data formats) and Terms of Collaboration (ToC or SLAs) to comply with legal bases and meet policy objectives (e.g. export control, transit, excise control, VAT information exchange etc.). Each IT service, should it be under NA or Contracting Authority responsibility, is connected to the CCN/CSI network via an asynchronous queue, a mailbox, a web service or a synchronous service.

The development of a TES constitutes a major project running over several years, the full description of which is available from **TEMPO**.

A TES is composed of three domains of responsibility:

1. The Common Domain: all interactions between the National Administrations and DG TAXUD. This Domain is under the responsibility of DG TAXUD;
2. The National Domain: all interactions within a national Administration, e.g. across its Customs Officers, Customs Offices. This Domain is under the exclusive responsibility of the NA. Each NA has to comply with the applicable EU legal basis;
3. The External Domain: all interaction between the National Administrations and their Economic operators. This Domain is under the exclusive responsibility of the National Administration.

However, DG TAXUD provides recommended specifications for the National and External Domain to the National Administrations as to foster their convergence and ultimately their harmonization.

TAXUD manages a set of TES at various stages of their lifecycle:

- In operation and in the process of being aligned with the UCC, with a in depth re-engineering: ICS1 to ICS2, ECSP2 to AES-P1, NCTS-P5 to NCTS-P6;
- New Trans-European Systems being developed: CCI²⁶, CBAM²⁷ etc.;
- Functional Extension to TES: Security Agreements, CH Border Ticket, eTIR;
- Geographical extension of NCTS.

Each of these TES and side projects have their own history and culture, however, they all share the same high-level TES lifecycle and therefore deliverables:

1. Inception activities;
2. Business Modelling and Functional Specifications;
3. IT System Design and Technical System Specifications;
4. National and Central Development and Integration;
5. Availability of all Central Services in operation, including the Conformance Test Environment to certify the compliance of the national systems with the Technical Specifications;
6. Performance of the Conformance Test by the National Administrations, against the reference Central Test Applications (CT Mode 2) and with other National Administrations (CT mode 3);
7. Progressive entry in operation of the National Administrations as soon as they are certified by the Conformance Test. This “To Be” operation supports a transition protocol ensuring the interoperability between the “Legacy” and “To Be” National Administrations;

²⁶ CCI – Centralised Clearance for Import aims to allow for goods to be placed under import customs procedure using centralised clearance involving different Member States.

²⁷ CBAM is Carbon Border Adjustment Mechanism.

8. When all National Administration are in operation, phase out of any “Legacy” operations and switch to the final “To Be” systems;
9. From a TES operation perspective, UCC provisions for deployment windows and progressive deployment ensures seamless migration and minimizes the risk on business continuity.

DG TAXUD also makes available, through DG TAXUD’s Europa website, a wide range of information and services to the citizens and to the economic operators 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.

As examples of some IT systems, we can mention:

- In the field of Customs: 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/ICS2) is devoted to the entry formalities, the Quota System enables to publish the tariff quotas and tariff ceiling to the economic operators community, 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;
- In the field of taxation: the VIES network enables the tax administrations to verify economic operators VAT identification numbers and statements of their intra-EU turnover, the VAT on e-Services system provides information for the management of the VAT revenues in connection with services provided on the internet by non-EU economic operators, the VAT refund system enables economic operators to obtain the refund of VAT from a Member State in which they are not established, the Taxation on savings system enables Member States to exchange information on interest payments by paying agents established in their territories to individuals resident in other Member States.

Baseline documentation for information about the portfolio of existing Customs IT systems and applications is available to potential tenderers during the Call for Tender process.

IT INFRASTRUCTURE

3.9 CCN& CCN2-NG - COMMON COMMUNICATIONS NETWORK

All activities described above rely on secure and reliable communications between the Member States and with DG TAXUD. This is realised thanks to a private interoperability infrastructure, the **Common Communications Network (CCN)** that **DG TAXUD** has developed and operated for about 20 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 interoperability system connecting DG TAXUD and Member States, in terms of number of application data exchanges, and probably among the largest administrative networks worldwide.

A new generation of CCN (called CCN2-ng) was implemented as the interoperability infrastructure that enables the implementation and operation of the new service-oriented architecture (SOA). By adopting CCN2-ng, **DG TAXUD** created an interoperability infrastructure, which offers location-independent access to services. More information is available in the baseline documentation.

3.10 UNIFIED USER MANAGEMENT/DIGITAL SIGNATURE (UUM&DS)

UUM&DS enables secure authorised economic operators access to central Customs European Information Systems (EIS) over Internet by federating existing Member States Identity and Access Management (IAM) Systems. The project makes maximum use of national existing IAM systems and previously made investments to reduce the impact on EU's budget.

DG TAXUD, in collaboration with the Directorate-General for Informatics (DG DIGIT) and Directorate-General for Communications Networks, Content and Technology (DG CNECT), is implementing the UUM&DS system based on STORK technology and ECAS (EU Login).

The following figure presents a high level overview of the components and communication protocols being part of UUM&DS system.

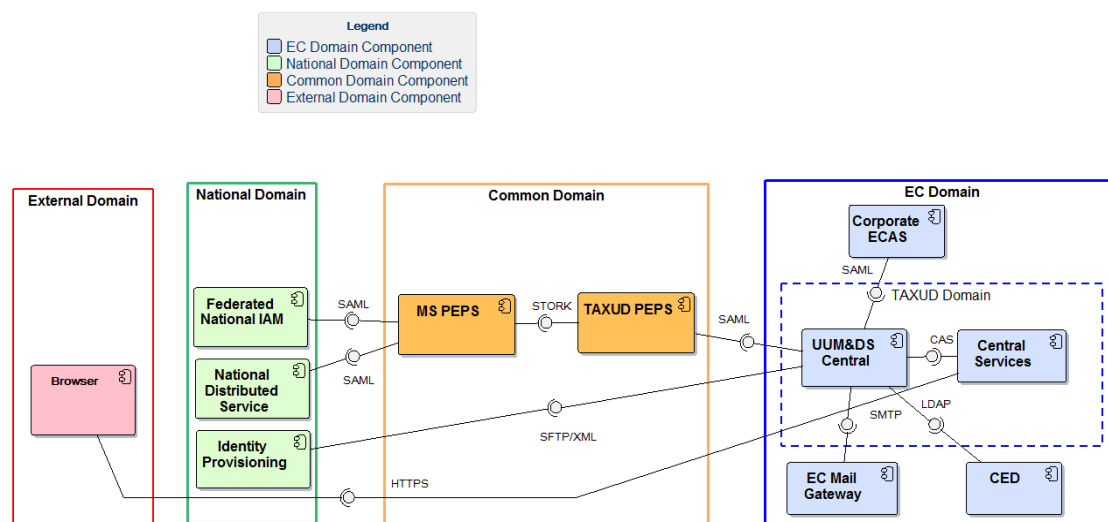


Figure 4 - Component and communication protocols in the UUM&DS ecosystem

3.11 DG TAXUD DATA CENTRES

DG TAXUD adopted in June 2010 a sourcing strategy guiding in the consolidation of its computer infrastructures and operations to progress towards operational excellence. In view of this objective, **DG TAXUD** has set up two Tier IV level Data Centres in Luxembourg, which allowed creating the IT infrastructure necessary to migrate its IT operational environments previously scattered among three locations. The development infrastructure is also gradually moved to **DG TAXUD**'s own Data Centres. This will favour a smoother transition from development to acceptance and production. The infrastructure is operated by the **ITSM-OPS** contractor.

The **DG TAXUD** Data Centres' baseline architecture was designed according to the following requirements:

- 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**, etc.). Furthermore, the architecture should also enable the hosting of environments for **DG TAXUD** partners, like **SOFT-DEV**, **CCN EVO**;
- 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, etc.).

3.12 DIGIT INFRASTRUCTURE SERVICES

DG TAXUD makes extensive use of **DIGIT**'s infrastructure services. Some **DG TAXUD** central applications are hosted in the **DIGIT** Data Centres.

At strategical level, **DG TAXUD** and **DIGIT** are exploring synergies between both Directorate-Generals in all potential areas, including data centres, infrastructure, platforms, applications and service levels.

DIGIT offers a complete service catalogue. The corresponding infrastructure services used by **DG TAXUD** are summarised below:

- The **application housing service** is intended for Contracting Authorities that need to run an application that is not available through IS hosting services. By using this service, Contracting Authorities receive a Data Centre quality platform, up to the Operating System (OS) level and compliant with **DIGIT** rules and standards, which enables 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 **DIGIT** are governed by security conventions that require to be maintained and updated in case of connectivity changes.
- **DG TAXUD** may also use the cloud services of **DIGIT** for some non-critical systems.

Synergies between both Directorate-Generals may lead to evolutions that are likely to have far-reaching consequences on all external contractors in the IT Value Chain (see further below).

3.13 DG TAXUD APPLICATION AVAILABILITY LEVELS

DG TAXUD has established standardised High Availability (HA) capabilities that can be mapped to predefined service levels. As a result, all hosted applications can be assigned according to their criticality classification, appropriate HA characteristics. Four distinct HA service levels are defined: **Best Effort**, **Bronze**, **Silver** and **Gold**.

- **Best Effort** service level for unclassified applications or information systems;
- **Bronze** service level is the default offering;
- **Silver** service level reflects the enhanced capability. The service is available for ordering, should an application require it;
- **Gold** service level is applied for certain selected systems since 2022.

The following table shows the objectives for each individual Information System²⁸ in terms of HA according to the planned availability levels (Best Effort/Bronze/Silver/Gold) as state of play in 1st Q 2023.

	4 th Q 2015	4 th Q 2015	4 th Q 2017	4 th Q 2022
High Availability objective²⁹	98,0% ³⁰	99.4%	99.6%	99.8%
Service Level	Best Effort (applicable to necessary and unclassified IS) ³¹	Bronze (applicable to essential and necessary IS)	Silver (applicable to critical and essential IS)	Gold (only applicable to critical IS)
Max. unplanned downtime³² (per 3 months)	44 hours	13 h	9 h	4h 30m
RPO for Disasters without impact on the integrity of data (Loss of cooling, technical problem or failure etc.) RPO - Recovery Point Objective	≤ 1 hour	≤ 1 hour	≤ 1 hour	≤ 1 hour
RPO for Disasters impacting data integrity (data corruption, cyber-attack, loss of data centre etc.) RPO - Recovery Point Objective	≤ 1 day	≤ 1 day	≤ 1 day	≤ 1 day
RTO for Disasters RTO - Recovery Time Objective	> 1 week Best Effort	≤ 1 week	48 hours	24 hours

Figure 5 - Application availability levels

²⁸ The HA objectives are set for independent systems. Should multiple systems be necessary for the good functioning of a single application, the High Availability objective of the information system will be the product of the availability objective of the individual systems (i.e. the HA objective of CDMS is: (CDMS * CCN2 * UUMDS * ...). As the final value is dependent on the specific design of the application, the HA target of the application is specified in the application's fiche, based upon the grid below.

²⁹ Refers to central IT services hosted at TAXUD DC's (considered as benchmark for any other hosting).

³⁰ Best Effort service level has no commitments, yet the documented target thresholds are pursued.

³¹ The European Commission has classified a number of information systems according to three categories: Critical, Essential, and Necessary.

³² Refers to unplanned downtime due to IT incidents (per rolling 3 months). Planned downtime (maintenance) is excluded from this threshold.

IT SUPPORTING TOOLS

3.14 CIRCABC

CIRCABC (Communication and Information Resource Centre for Administrations, Businesses and Citizens) is a web-based utility used by DG TAXUD to distribute and manage documents in any format, several languages and with version control³³.

3.15 ARIS

The specifications phases of any **DG TAXUD** project create the foundation documents to be used throughout the development. The ARIS Business Process Management (BPM) tool³⁴ 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 the National Administrations of the Member States.

3.16 SYNERGIA

The Synergia service manager is amongst others, the **DG TAXUD** IT Service Management Tool (SMT) to support IT operations. It allows interchange of operational information and assignment of operational calls/tasks related to the **DG TAXUD** systems, platforms, applications and environments that are in scope of ITSM framework contracts. Synergia is used by **DG TAXUD**, the IT support teams of the various **DG TAXUD** contractors and other stakeholders (National Administrations). Synergia SMT has been in production since June 2011. It includes a Service Management Tool (SMT) based on Microfocus Service Manager, an ITSM Portal to interface with Member States National Administrations, SAP Business Objects (BO) as the reporting tool, a User Management Tool (UMT) and LDAP for user and access rights management.

3.17 CONFLUENCE

DG TAXUD uses also Confluence: a set of collaborative tools for project knowledge management, wiki-like rich content documentation, risk management, planning, specifications and deliverable provision. The platform will support software analysis, mockup and prototyping activities and will be integrated with the issue tracker. (Atlassian Confluence).

3.18 JIRA

As part of the application lifecycle management DG TAXUD uses also Jira: a request, issue and task management and tracking tool, including Agile product backlog management, release planning, roadmap and portfolio overview. The issue tracker will be linked to the incident tracking tool used by the ITSM contractor's Service Desk in order to avoid manual copy-paste of overlapping content. (Atlassian Jira).

³³ More information on CIRCABC is available on https://circabc.europa.eu/html/docs/CIRCABC_User_Guide.pdf

³⁴ More information on the ARIS tool is available on <http://www.ariscommunity.com/aris-express>

METHODOLOGIES USED IN DG TAXUD

The sections below depict a non-exhaustive list of common methodologies used in DG TAXUD in order to ensure the consistent and efficient management, set-up, development, operation and support of projects and service management.

3.19 TEMPO AND SDLC

In addition to technological infrastructure and systems, DG TAXUD has developed over the years a quality system, **TEMPO**. This quality system prescribes the functioning of all IT processes and the related contract management processes. This quality system allows the functioning of the IT organisation of DG TAXUD in a repeatable and trusted manner.

TEMPO is mainly based on ITIL v3 for service management processes. **TEMPO** also describes project management processes. **TEMPO** should evolve to comply with a newer release of ITIL **and towards PM²**, the internal project management methodology of DG TAXUD³⁵.

More information for this point is included in the TEMPO documentation and in the documentation baseline.

DG TAXUD Quality Management System (TEMPO) comprises a set of policies and standards, processes, procedures, templates, techniques and tools required for the planning, specification, development, deployment, and operation of DG TAXUD IT central & Trans-European systems and applications.

In addition to having a quality system, **DG TAXUD** also has a Software Development Life Cycle (**SDLC**) (more information in the baseline documentation). The SDLC project started in 2014 with the intention to create a new application development reference lifecycle for DG TAXUD. The SDLC project is using several enablers available at Commission level (e.g. corporate TEMPO methodology and guidelines, **PM²**, RUP@EC, SMP@EC, Agile@EC, DevSecOps@EC) to avoid re-inventing existing references.

Both **TEMPO** and **SDLC** are being updated, among other things to the **Agile methodology, PM², PM² Agile** and it is the intention of **DG TAXUD** to refer as much as possible to **DG DIGIT** methodologies and/or other methodologies that are standard.

3.20 CoRA METHODOLOGY

Since the process of preparation and development of an IT system should be documented in such a way that the necessary information is available in an integrated way from the beginning to the end in all the project material, DG TAXUD envisages the application of the CoRA methodology for new IT-projects. This methodology will also allow for optimising the management of the system in operation. The different

³⁵ https://pm2.europa.eu/index_en

elements will be traceable and it will be possible that the results of the work in one-step can be re-used in the further process.

CoRA is a corporate defined methodology for software development. It is a continuation of the methodology improvements started with the SDLC definition and its implementation in 2014-15. There is a version of the ARIS tool available that is designed for the implementation of the CoRA methodology in the SDLC.

3.21 IFPUG AND SNAP

The IFPUG functional size measurement method is used to determine the functional size of IT projects when possible. The resulting number of function points are the basis to determine the overall cost of a given IT project.

Function Point Analysis (FPA) is a technique that quantifies the functions contained within software in terms that are meaningful to the software users. The measure relates directly to the business requirements that the software is intended to address. It can therefore be readily applied across a wide range of development environments and throughout the life of a development project, from early requirements definition to full operational use. Other business measures, such as the productivity of the development process and the cost per unit to support the software, can also be readily derived. The function point measure itself is derived in a number of stages. Using a standardised set of basic criteria, each of the business functions is a numeric index according to its type and complexity. The sum of these indices gives an initial measure of size which is then normalised by incorporating a number of factors relating to the software as a whole. The end result is a single number called the Function Point index which measures the size and complexity of the software product.

In summary, the FPA technique provides an objective, comparative measure that assists in the evaluation, planning, management and control of software production.

The SNAP (Software Non-functional Assessment Process) sizing process is very similar to the function point sizing process. Within the application boundary, non-functional requirements are associated with relevant categories and their sub-categories. Using a standardized set of basic criteria, each of the sub-categories is then sized according to its type and complexity; the size of such a requirement is the sum of the sizes of its sub-categories. These sizes are then totalled to give the measure of non-functional size of the software application.

Guidelines for performing function point and SNAP counting of DG TAXUD applications are available in the baseline documentation.

The role of ITSM-TES is to review/challenge the IFPUG counting provided by a contractor to validate the software complexity reported. This is done by verifying the counting, using the referenced documentation as base of information.

Baseline counting (IFPUG/SNAP): In this context, ITSM-TES performs by themselves the IFPUG/SNAP assessment of the complexity of the software and provides the counting to DG TAXUD. DG TAXUD provides/validates the baseline documentation that is used as a source of information for the calculation.

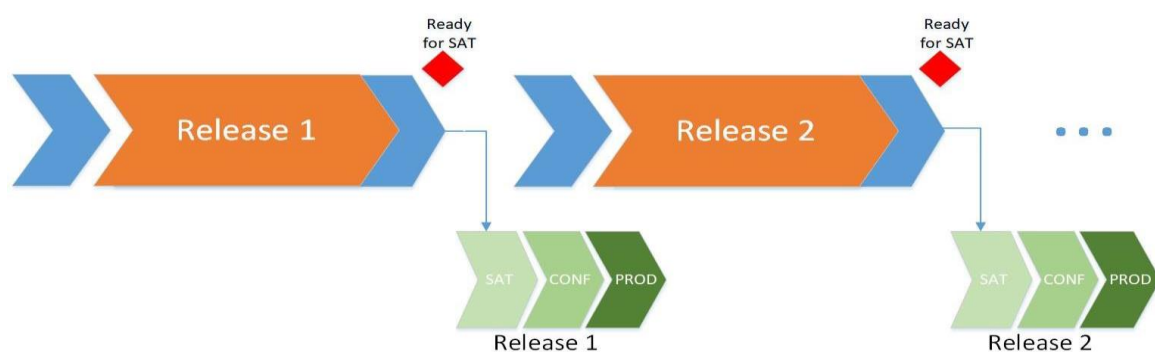
3.21.1 Agile Methodology

Software development projects are carried out using Agile methodology, adapted from PM2 Agile, the corporate methodology promoted by the European Commission, to the specificities of DG TAXUD development environment

The methodology consists in producing deliverables in an iterative and incremental way.

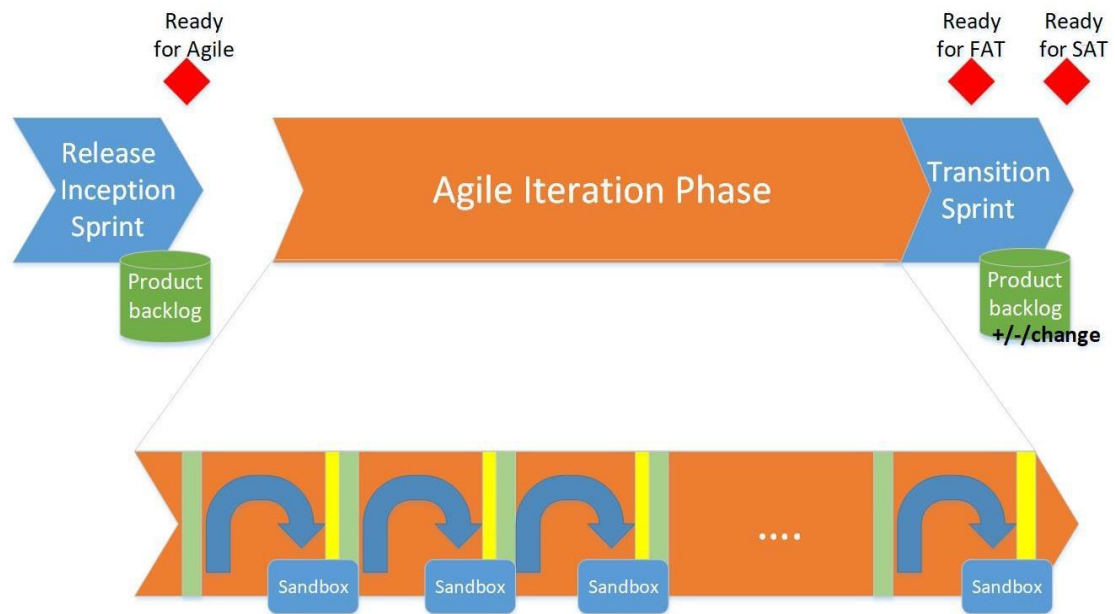
The objective of a system or application built in iterations is to produce full software releases and supporting documentation that are ready for Site Acceptance Test (SAT).

The process described below typically starts after the standard project prerequisites such as the drafting of the vision document have been completed. An application is built through the development of various releases, following the standard pattern of release development, Factory Acceptance Test (FAT), SAT, conformance test and deployment into production, illustrated in the following figure of the “releases pattern”.



The analysis and development process of an individual release occurs in three phases, as illustrated in the figure below (phase process), resulting in a software release made “ready for SAT”.

- Release Inception Sprint
- Agile Iteration Phase
- Transition Sprint



The deliverables (“release”) go to the review cycle (SfR-SfA, Factory Acceptance Test) at the end of the Transition Sprint. Alternatively, the release plan can include up-front intermediate deliveries to be passed on to the SAT, therefore including corresponding intermediate Transition Sprints. Likewise, the release plan can include intermediate deliveries of functional and technical documents, consolidated and submitted to a SfR-SfA review cycle.

3.21.2 DevSecOps

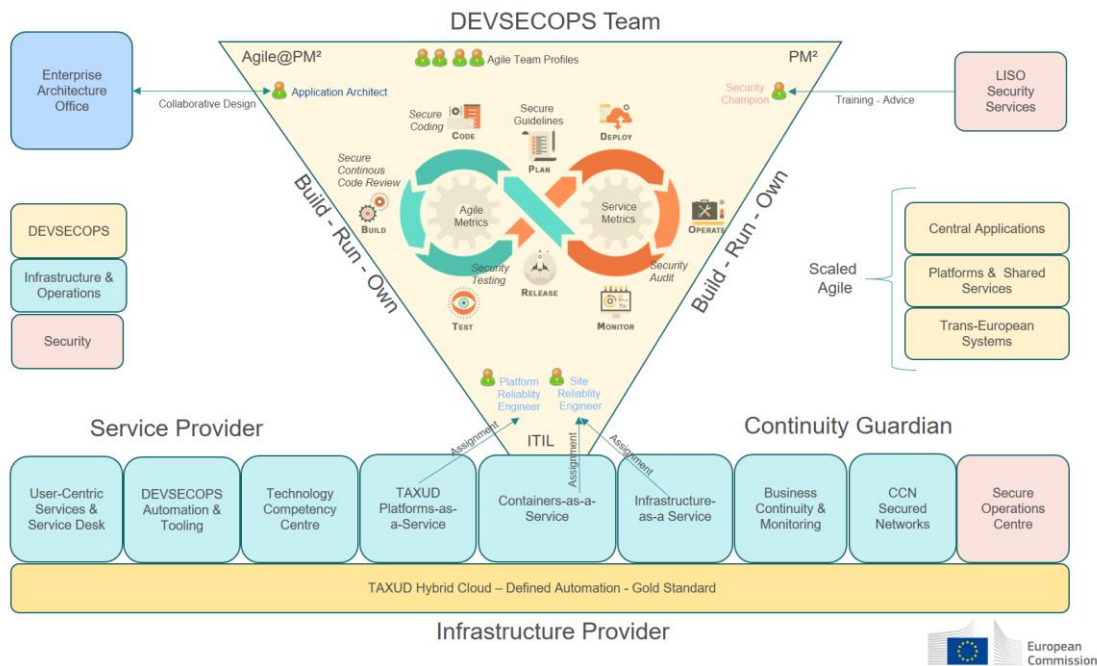
DevSecOps is a set of practices that encompass Software Development (Dev), Security (Sec) and IT operations (Ops). It shortens the system development life cycle and provides continuous delivery of high quality and secure software on an automated and high-available infrastructure. Despite the technical enablers, DevSecOps is a lot about culture change and a journey – removing silos in favour of collaboration. DevSecOps is complementary with ‘Agile@PM²’ software development best practises and the Agile@PM² mind-set.

DG TAXUD will adapt older/legacy systems successively with a view to enabling DevSecOps. Both the traditional ‘waterfall’ approach and DevSecOps@TAXUD will therefore co-exist until the transformation is completed. The installation and configuration of the necessary DevSecOps infrastructure is progressing well on track. From an organisation point of view, this means:

- The ‘**Development**’ in **DevSecOps** is the TAXUD development contractor. They are building, running and owning their product until including production environment. That may also include responsibility for the software stack running within the container. Today, these contractors are SOFT-DEV and CCN-EVOLUTION;
- The ‘**Security**’ in **DevSecOps** is/are the TAXUD LISO, the EC CISO and security teams/experts from contracts/memoranda of understandings. They ensure security by design as well as secure operations;
- The ‘**Operations**’ in **DevSecOps** is the TAXUD operations contractor, collaborating and contributing much earlier in the software development lifecycle, also providing the infrastructure, tooling/automation and technology competency centres which support and enable DevSecOps. Today, these contractors are ITSM Operations and ITSM-TES;
- Architecture and Quality Assurance/Quality Control services, subscribing fully to the TAXUD DevSecOps vision. Today, these are ITSM Integration and ITSM-TES.

Automation, Containerisation and Infrastructure as Code capabilities are key for DevSecOps@TAXUD in the TAXUD Hybrid Cloud, as are the set of DevSecOps capabilities that TAXUD has implemented from 2021 through the TAXUD modernisation programme.

An overview of DevSecOps application are describing below:



IT GOVERNANCE

The management of trans-European IT projects involves different levels of governance among DG TAXUD and the National Administrations.

DG TAXUD is assisted by **Committees**, such as the Customs Committee, the Fiscalis Committee, and the Standing Committee on Administrative Co-operation (SCAC). Each of these committees is supported by a sub-committee dedicated to IT matters. Each IT sub-committee meets several times a year under DG TAXUD's chair with the participation of heads of IT from National Administrations.

Working groups with the National Administrations deal with technical-related project matters and meet with a frequency from monthly to quarterly according to the pace of development. Each TES and IT service from DG TAXUD is 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 strong internal IT governance. All IT systems are managed under the supervision of an **IT Steering Committee (ITSC)**, chaired by the Director-General, and composed of the board of Directors and selected Heads of 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.

IT COLLABORATION

Reducing tax gaps, providing better services to the public and improving the effectiveness of their administration are on the top of the NAs' agendas. As a result, international coordination and cooperation is growing between the EU Member States. To face the on-going changes in the field of customs, VAT, direct taxation, recovery and excise, substantial enhancements and new developments in the area of IT are unavoidable. Taking also into account the budget constraints faced by public administrations, EU Member States agreed that the traditional way of developing similar functionalities 27 times is not an efficient use of public funds. Furthermore, such an approach will not cope with the challenging further developments of existing taxation IT systems in a synchronised manner.

A managed IT collaboration increases the number of shared IT activities between the Member States and the number of reusable components across the taxation silos. This reduces the costs for IT implementation, deployment and operation in the Member States while offering increased agility in responding to the EU policy expectation.

DG TAXUD is supporting the NAs in the organisation of IT collaboration, sharing and reusing of Member States' resources and knowledge for a common objective by

facilitating and speeding up the development of working arrangements between Member States interested in IT collaboration. Providing experience-based best practices can serve Member States as a starting point and create a common understanding of the scope and expectations.

Most of the IT collaboration activities are managed through IT collaboration project groups.

STRATEGY FOR QUALITY MANAGEMENT

“Quality management” is a method for ensuring that all the activities necessary to design, develop and implement a product or service are effective and efficient with respect to the system and its performance. In the context of DG TAXUD IT activities, quality management also includes activities related to the IT service management, once a product/service is operational.

Quality management is composed of two complementary sub-layers:

- The Quality Assurance (QA) sub-layer which defines the quality framework in which the project takes place;
- The Quality Control (QC) sub-layer performs the verification and validation of the quality of the deliverables produced by the contractors during the project within the quality framework defined by the QA sub-layer.

In order to produce deliverables of acceptable quality (documents, software, services, etc.) it is necessary to implement both quality sub-layers. The QA must be followed and reflected by the QC in order to be effective. The QC is almost impossible without the QA defining the QC scope and objectives but also the means to reach them. This implies that the QA and QC functions are mutually dependent.

Quality Assurance is described in **TEMPO**. Additional specific elements may be defined in the quality plans.

Key Performance Indicators (KPI), Specific Quality Indicators (SQI) and the Global Quality Indicator (GQI) are the quality measurements used to evaluate performance of the contractor and the quality of the services delivered by the contractors in the context of an SC and/or RFA³⁶. A complete description of the KPI, SQI and GQI process is available in TEMPO’s “Service Level Agreement guide”.

The applicable KPIs and/or SQIs which are to be used for measuring contractor’s performance and quality of services in a Specific Contract (SC) are defined in the Technical Annex attached to the concerned SC. However, they can be selected from the Technical Annex of the Framework Contract (FWC) and used directly in the context of an RFA.

³⁶ SC and RFA are ordering mechanisms used to trigger the execution of the Framework Contracts. They allow to request certain specific quantities of services from the contractors. SC stands for Specific Contracts; RFA for Request for Action.

In addition to the contractual quality indicators, contractors may propose a set of compliant metrics and associated thresholds in their quality plans.

Upon request from DG TAXUD, a quality and/or security audit of a contractor may be performed by the QA contractor. Such audits are performed in the context of the applicable framework contract, specific contract and quality plans. All contractors are subject to the same audit process. This process is summarised in the TEMPO audit fact sheet.

Quality Control is described in TEMPO. Additional specific elements may be defined in the quality plans.

The QC of deliverables and developed software implies the successful performance of testing activities. This results in the production of test reports. The QC of the document deliverables implies a formalised review cycle for the review of deliverables.

QA contractor helps with the monitoring and the assurance that the projects conform to the quality principles defined and applied in the pertinent SLA/OLA and quality plans based on the TEMPO methodology. The QA contractor performs dedicated QA, QC or other quality-oriented tasks.

FURTHER BACKGROUND INFORMATION

Further information on contracts and on IT systems are available on the Europa web site and in the baseline documentation provided with the call for tender documents.