OWNER:	ISSUE DATE:	VERSION:
ITSM	10/06/2010	2.01

TAXATION AND CUSTOMS UNION DG
ITSM

SUBJECT:

DLV 8.2.2.2.2 - Capacity Plan
Evolutive Maintenance of the Capacity Plan for trans-European IT Services

REF:

ITS-IPLN-SC06-CAP-TES-002-EVOLUTIVE MAINTENANCE

FRAMEWORK CONTRACT # TAXUD/2007/CC/088

SPECIFIC CONTRACT 06

DOCUMENT HISTORY

Edi.	Rev.	Date	Description	Action (*)	Pages
0	01	18/02/2009	Master Document created	I	All
0	02	19/02/2009	Implementation of QC comments	I	All
0	10	20/02/2009	Sent for review to DG Taxation and Customs Union	I	All
0	11	07/04/2009	Processing comments after review meeting with DG Taxation and Customs Union. Sent for internal review to InternalQA.	I	All
0	20	08/04/2009	Processing comments InternalQA. Sent for review to DG Taxation and Customs Union.	I	All
1	00	27/05/2009	Processing comments review. Sent for Acceptance to DG Taxation and Customs Union.	I	All
1	01	25/03/2010	Updated according defined scope "Update with actual available data, and reflect trends & forecasts which impact Capacity."	I	All
1	02	29/03/2010	Implementation of QC comments	I	All
1	10	29/03/2010	Sent for review to DG Taxation and Customs Union	I	All
1	11	28/05/2010	Processed comments after conf call. Submitted for review to InternalQA.	I/R	All

2	00	31/05/2010	Processed comments from Internal QA. Submitted for acceptance to DG TAXUD	I/R	As req.
2	01	10/06/2010	Processed comments from QA & DG TAXUD for re-SFA	I/R	As req.

(*) Action: I = Insert R = Replace

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1. Introduction

This is the deliverable "DLV 8.2.2.2.2 - Capacity Plan" identified in Specific Contract 06 [A3] to Framework Contract TAXUD/2007/CC/C088 [A2], Work Package WP.8.2.2.2 Capacity Management of trans-European IT services.

1.1 Purpose of the Capacity Plan

The Capacity Plan is a key deliverable from the Capacity Management process. It is a mid and long-term plan for ensuring the availability of the right capacity of IT Service production means.

The Capacity Plan provides an inspection of the infrastructure capacity status as today, and - where data is available - an insight of the current capacity in use and past usage trends of the production facilities.

The final aim of the Capacity Plan is to combine this information with Business perspective in the development of Business transactions, into a capacity forecast. Based on this forecast the right amount of capacity for all resources can be put in place on time to prevent capacity shortages.

The Capacity Plan provides input for long term planning and budgeting. According to the Framework Quality Plan (FQP) [R3], the Capacity Plan contains advice on how much IT capacity is needed to match existing and future service needs, with a line of sight of at least three years. Forecasting over a longer period of time is only possible when sufficient history data is available and the long term Business plans are provided. At this moment more data than last year is available, however some re-scoping of which information and statistics are currently really relevant, obsolete, and what is still missing was considered during the update of this Plan and listed in the recommendations.

Forecasting accuracy decreases when a longer period of time is involved. Also when little or no data is available, the prognosis cannot be made accurate. Therefore this plan needs to be reviewed and updated at least on a yearly basis and if needed revised, based upon identified capacity and/or performance issues or unforeseen Business initiatives. A reflection must be made to evaluate the accuracy of any previous forecasts in relation to the actual measured statistics. Possible adjustments to the forecasts must be done

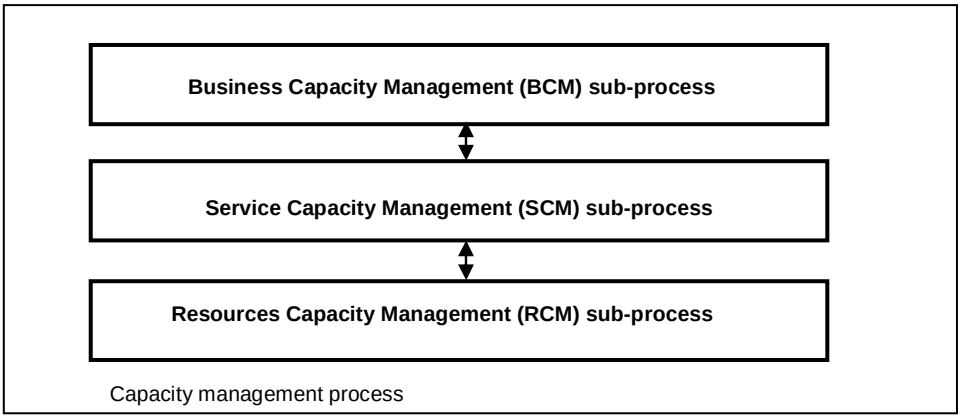
Capacity Management covers everything in the infrastructure that is contained in the Configuration Management Database (CMDB). The scope of Capacity Management is of course limited to the infrastructure which is part of the contract between ITSM and DG Taxation and Customs Union. Despite the potentially huge volume of metrics and measurements that may be required to make effective capacity calculations and predictions, focus must be kept on the three key questions for Capacity Management:

- What is currently available?
- What is needed in the future?
- Will future needs fit in current capacity?

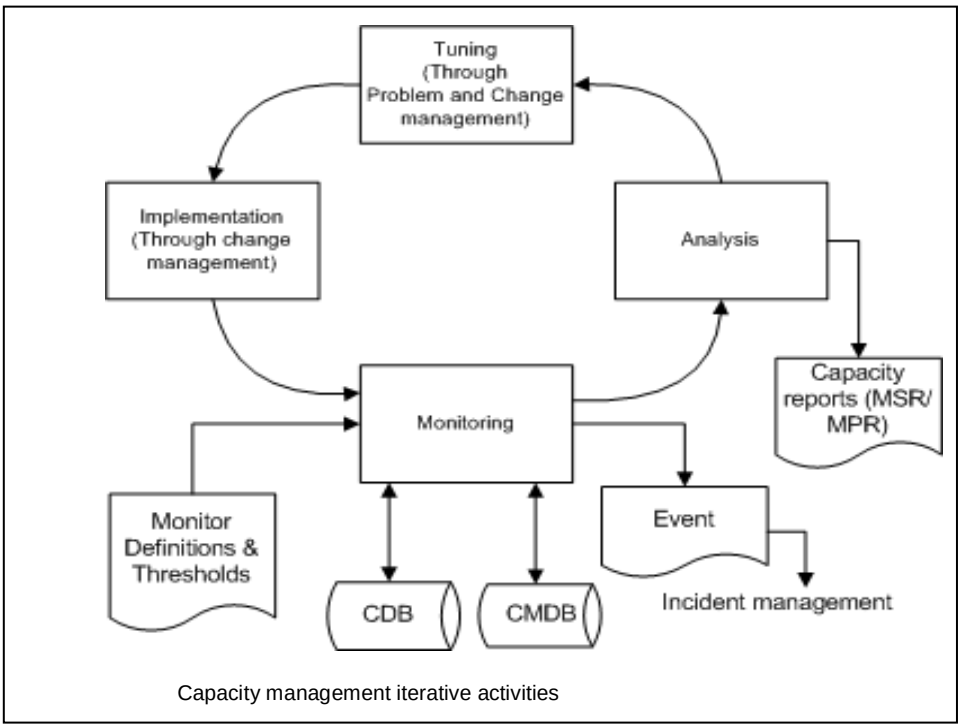
Focusing on these questions, Capacity Management can be achieved.

Capacity Management should balance supply against demand - i.e. making sure that the available supply of system resources matches the demands made for it by the Business, both now and in the future; it may also be necessary to manage or influence the demand for a particular resource.

Capacity Management covers a wide range of services and technologies; thus, it cannot reside in one domain or department in particular. It is useful to consider Capacity Management as taking place at three levels within an organisation: Business scenarios, service capacity, and resource capacity. These sub-processes provide the necessary information to create and/or periodically revise the Capacity Plan. The following figure presents the Capacity Management sub-processes and the iterative activities that it encompasses.



Capacity management process



Capacity management iterative activities

Figure 1: Capacity Management overview

The appropriate amount of utilisation data needs to be collected in the Capacity Database (CDB). Too much data renders the collection overhead unacceptable and file storage is wasted. Too little data makes investigation into incidents and problems difficult and Capacity Plans may be inaccurate.

ITIL [R5] recommends that Capacity Management data will be kept for all components and services, in a (virtual) repository, called the CDB. The CDB is important to Capacity Management, because it is the key source of data for Capacity Planning and modelling.

The Capacity Plan should provide information to DG Taxation and Customs Union about the mid and long term capacity requirements, to ensure that the current services will not suffer from capacity shortages. Based on this information, DG Taxation and Customs Union can budget for capacity expansion and ensure the required capacity resources are in place on time.

In addition to organic growth of system usage, the amount of required capacity resources in the future is mainly driven by changes initiated by the Business. It is of vital importance that a predicted future Business event is properly translated into the impact it will have on the amount of Business transactions for a specific service (i.e. an application or a system). For example: due to a change in legislation, the Business expects an increase of 20% per year in the number of requests (Business transactions) for the coming three years.

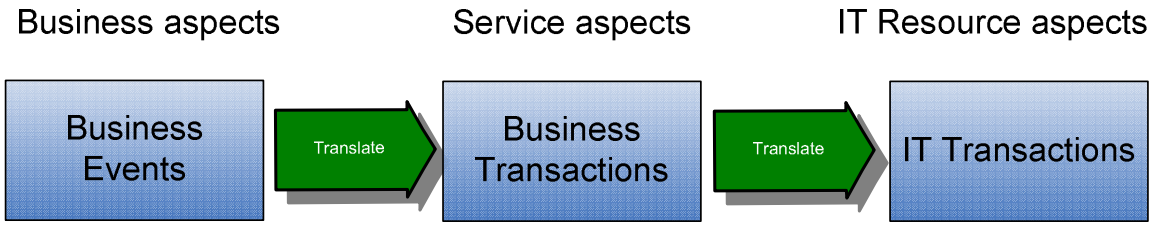


Figure 2: Capacity Aspects

When Business plans have been translated into service aspects, the next step is to translate these service aspects into the impact they will have on existing IT resources. Translation means evaluating the correlation between increased message loads and the related increase of IT resources. For example: 20% more requests (Business transactions) in application A may be translated into five times more CCN messages of an average size of 40kb to be exchanged, 35% increase of disk space required and 10% additional CPU and memory required.

To be able to draw the right conclusions upon future capacity needs, all aspects shown in the picture above should be covered.

The final conclusion of the present Capacity Plan is based on the current available data only. However, as the translation from Business events to Business transactions and from

Business transactions to IT transactions is not fully defined at this stage, the data provided in this plan cannot be accurately interpreted to result in a final overall capacity requirement recommendation (see recommendation B1 in paragraph 8.2).

1.2 Structure of this Document

The first three chapters provide document information:

- Document history;
- Table of contents;
- Lists of tables and figures;
- Introduction (this chapter);
- Reference and applicable documents;
- Terminology.

Chapter 4 provides a management summary and the most important conclusions and recommendations for this Capacity Plan.

Chapter 5 describes the known Business scenarios that generate major changes in the Business environment; they will have an impact on the required IT Infrastructure capacity of potentially all services and should therefore be taken into account when forecasting capacity needs.

Chapter 6 deals with the Service Capacity Management aspects, which entail looking at the capacity aspects of the services delivered from the customer point of view.

Chapter 7 deals with the Resource Capacity Management aspects, which include the analysis of the data, gathered from system management tools that monitor the various components of the technical IT Infrastructure.

Chapter 8 describes all recommendations for improvement on the various areas of Capacity Management as described in chapters 5, 6 and 7. Also an updated status of the recommendations from the previous version of the Capacity Plan is given.

1.3 Scope

1.3.1 Scope description

Capacity Management is responsible for ensuring that the Capacity of IT Services and the IT Infrastructure matches the evolving demands of the Business in the most cost-effective and timely manner such that the current and future agreed service levels can be met and maintained.

Capacity Management considers all resources required to deliver the IT Service and plans for short, medium and long term Business requirements. However, the present Capacity Plan will not address the human resources aspects linked to Capacity Management. The objective of Capacity Management is to ensure that service providers (ITSM Contractor and external parties) have, at all times, sufficient capacity to meet the current and future agreed demands of DG Taxation and Customs Union's Business needs, thereby making optimal use of the capacity resources currently in place.

The Capacity Management process has a broad scope that brings together Business, service, and resource capacity needs, in order to ensure optimal use of the resources needed to achieve the levels of performance agreed upon with the end user or DG Taxation and Customs Union. "Optimal" in this context refers to resource usage at the best place, time and quantity.

From an IT point of view, a trans-European system is a series of software components running in the National Administrations and/or at the European Commission and which communicate with each other via a secure trans-European network, the Common Communication Network (CCN). There are different architectures of trans-European systems, in certain cases National Administrations communicate directly to one another, in other cases they all communicate to a single central application. The principle of the TES is the following: all National Administrations, and the Commission connect to a trans-European Network for exchanging information (Information Exchange, IE) either with one another, either with a central application.

According to the description of the Work Package in the Technical Annex [R4] the contractor has to perform Capacity Management of trans-European IT services to:

- Monitor the capacity of the Application & ICT Infrastructure under the responsibility of the NA s, using all the information available at reach of the contractor, on a best effort basis, in collaboration with WP.8.3.1.2 ("Periodic survey of each of the National Administrations");
- If applicable, verify that the capacity levels and thresholds agreed in the Terms of Collaboration are complied with;
- Advice the Commission on risk of capacity bottleneck in the NA s.

Specifically the first bullet indicates that the scope of this Capacity Plan for trans-European IT services is limited to the Applications and ICT Infrastructure under the responsibility of the NAs.

From the DG Taxation and Customs Union Information Architecture [R9] document it can be concluded that the statement above matches with the following “Mode of Operation”:

- Nationally Operated;
- Commonly Operated.

Only the Nationally or Commonly Operated Applications will have locally managed components which therefore fall out of scope of the Capacity Plan for Commission IT services. The Applications and ICT Infrastructure which are Centrally Operated are already covered by the Capacity Plan for Commission IT services [R10].

The Capacity Plan is targeted at a large amount of ITSM and customer stakeholders including:

- DG Taxation and Customs Union process representatives of Units A3 and A4;
- DG Taxation and Customs Union Business thread representatives;
- Business Perspective Manager;
- Service Level Manager;
- Availability Manager;
- ICT Infrastructure Manager;
- Application Manager;
- Change Manager;
- IT Service Continuity Manager.

1.3.2 Scope statements

Based on the scope description in the previous paragraph the following statements define the limitation of the scope of the Capacity Plan for trans-European IT services:

1. All DDS applications are accessed through the DDS Portal, which is maintained by DG Taxation and Customs Union and therefore part of the Capacity Plan for Commission IT Services and not of the present document.
2. The Capacity Plan for TES only treats the applications or part of applications which are operated and maintained under the responsibility of the National Administrations.
3. The Conformance test environments, being hosted and operated by DG Taxation and Customs Union or at MS level, are out of the scope of the present plan.
4. Applications which are already foreseen but for which their entry in production is forecasted as from January 2011 are currently not covered by the scope of this document. Further updates of the Capacity Plan for trans-European IT Services will include them as required in the scope.
5. The scope of this document is limited to applications and underlying infrastructure part of SC06 [A3]. This consists of systems and applications part of the Business threads Excise, Customs and Taxation.

6. Only applications which are Nationally or Commonly Operated are in scope of the Capacity Plan for trans-European IT Services.
7. For the local resources which are hosted and maintained by the National Administrations no data is currently available. For the scope of this plan it is also not needed to gather all the resource usage details from all local components. The responsibility for these lies with the National Administration. DG Taxation and Customs Union only needs to be sure that the various National Administrations are performing Capacity Management activities on their local infrastructure and that they are aware of the future capacity requirements for their environment and anticipate on that.

Based on these scope statements and information from the TAXUD Technical Infrastructure Reference [R6] document, it can be concluded that the following applications are therefore in scope of this Capacity Plan:

Applications / Systems in scope of the Capacity Plan for TES		
APPLICATION	**BUSINESS THREAD**	**MODE OF OPERATION**
NCTS	Customs	Locally Operated
ECS	Customs	Locally Operated
ICS	Customs	Locally Operated
EWSE	Excise	Locally Operated
MVS	Excise	Locally Operated
VIES	Taxation	Locally Operated
EoF	Taxation	Locally Operated
ToS	Taxation	Locally Operated
VoeS	Taxation	Locally Operated
VAT refund (*)	Taxation	Locally Operated
Reduction of timeframes (*)	Taxation	Locally Operated

Table 1-1: Applications / Systems in scope of the Capacity Plan for TES

Note: No applications have been identified as being Commonly Operated.

(*) Since these 2 applications were defined as per comment review, more detailed info will be included in next version as to describe those.

1.4 Maintenance of this Document

The Capacity Plan must be kept up-to-date, it must be reviewed periodically and in some occasions revised after capacity incidents or unforeseen Business initiated projects.

In order to proactively achieve the right capacity available to the NA s, the IT Capacity Plan has both short-term and long-term actions defined.

Updates of Capacity Plan find its sources in the following:

- Service Level Target (SLT) not met for an IT Service or Configuration Item (CI);
- Unacceptable levels of service performance;
- Gradual deterioration of performance detected from measurement trends;
- Unexpected capacity growth/decline, not in line with the Capacity Plan prognosis;
- Gradual filling of resources growing towards service outage, detected from measurement trends;
- The Business requires increasing the use of capacity in some unexpected form.

The Capacity Plan is updated by the Capacity Manager. For all information gathered in this document, the source of the information is clearly defined. When the responsibility for delivering all the pieces of data is clear, it is straightforward to update the plan. The Capacity Manager takes the following approach:

- Identify new and/or retired services from the Service Capacity Management chapter;
- Identify new and/or retired components from the Resource Capacity Management chapter;
- Request updates on all pieces of information from the responsible persons/roles;
- Process the received data in a new draft version of the Capacity Plan for trans-European IT Services;
- Provide the NA s with the NA specific Service and Resource Capacity usage information and trends in combination with the questionnaire as defined in the Annex A;
- Process the answers on the questionnaire and additional info received from the NA s in the draft Capacity Plan for trans-European IT Services;
- Based on the information received, interpret the data, draw the conclusions and write the recommendations;
- Write Management Summary;
- Finalise the Capacity Plan for trans-European IT Services.

As the Capacity Management process matures *the plan should evolve to cover* the following:

- New applications forecasted to enter in operation which have been accepted (qualified) at least one month before the start of the review cycle of the present document's revision;
- Actual levels of capacity versus agreed levels of capacity for key IT Services;
- Activities being progressed to address shortfalls in capacity for existing IT Services;
- Details of changing capacity requirements for existing IT Services in the National administrations. The plan should document the options available to meet these changed requirements;
- Details of the capacity requirements for forthcoming new IT Services. The plan should document the options available to meet these new requirements.

1.5 Assumptions and Constraints

It is assumed that the reader of this Capacity Plan has a basic understanding of the Capacity Management process, SLA s and the ITIL framework for Service Management.

1.6 Target Audience

The intended target audience for this document is:

- Business Perspective Managers;
- Service Level Manager;
- Availability Manager;
- Change Manager;
- IT Service Continuity Manager;
- The National Project Managers (NPM);
- The National Operations teams;
- National Administration representatives;
- Sector leaders;
- Members of the Central Project Teams (CPT);
- Other contractors including CCN/TC and QA.

2. Reference and Applicable Documents

This chapter presents two lists of relevant documents. They are divided into reference and applicable documents.

2.1 Reference Documents

Id	Reference	Title	Date	Version
R1	ITIL	ITIL Framework		V2 en V3
R2	Traffic_Projection_2013.xls	Taxation Traffic Projection 2013 sheet	2008	N/A
R3	ITS-IFQP-SC01-001	Framework Quality Plan	07/11/2008	1.00
R4	TAXUD ITSM - TECHNICAL ANNEX	Technical Annex to the Model Framework Contract of ITT TAXUD/2006/AO-007	2006	1.00 – EN
R5	ITIL Best Practice	Service Delivery process “Capacity Management”	2003	Version 2
R6	Technical Infrastructure Reference	TAXUD Technical Infrastructure Reference DLV8.6.1.3.1	2008	V1.01
R7	MPR/MSR	Monthly Service Report	1-12/2009	N/A
R8	2013 IT perspective	2013 IT perspective	2005	4.1
R9	ITS-IRPT-ARD-001	DG Taxation and Customs Union Information Systems Architecture	29/02/2008	1.03
R10	ITS-IPLN-CAP-001	ITSM Capacity Plan for Commission IT Services	11/12/2008	V1.00
R11	EN_eCUST-TOC-Global	Terms of Collaboration for the Customs trans-European systems	16/09/2008	3.00.05-EN
R12	ITS-ITOC-001-ExciseEMCS	Terms of Collaboration for TES EMCS	03/11/2008	0.01-EN
R13	VSS-ISTS-VOW-20xx-12-VoW stats	VSS-ISTS-VOW-20xx-12-VoW stats	2009	V1.00
R14	TMP-REF-TES	TES Reference Manual Tempo	06/05/2008	V1.10
R15	Traffic_matrix_ccn_year_20xx_detail	Traffic_matrix_ccn_year_20xx_detail	2006-2009	
R16	Traffic_matrix_lcms_year-20xx_detail	Traffic_matrix_lcms_year_20xx_detail	2006-2009	

Id	Reference	Title	Date	Version
R17	Taxation Foreseen activities 2009-2011	Taxation Foreseen activities 2009-2011		
R18	MASP Annex 2	MASP Revision Annex 2 E-customs systems	5/09/2008	Rev9
R19	Consolidated High Level Plan-20090305	Consolidated High Level Plan-20090305	20090305	20090305
R20	20xxxxOP.xls (NCTS)	20xxxxOP.xls (NCTS)	2009	NA
R21	20xxxxOP.XLS (ECS)	20xxxxOP.xls (ECS)	2009	NA

Table 2-1: Reference Documents

2.2 Applicable Documents

An applicable document is a document of which the content is binding for the contractor in the context of this document.

Id	Reference	Title	Date	Version
A1	TAXUD/2006/AO-007	ITT for ITSM	25/07/2006	N/A
A2	TAXUD/2007/CC/088	Framework contract	04/05/2007	N/A
A3	TAXUD/2009/DE/128	Specific Contract 06	30/10/2010	N/A
A4	OLA-H-I	Hosted Infrastructure OLA between ITSM and DG Taxation and Customs Union.	14/07/2008	0.06
A5	SCIT68-SLA	Service Level Agreement Taxation	14/03/2008	3.00

Table 2-2: Applicable Documents

3. Terminology

3.1 Abbreviations and Acronyms

A list of abbreviations and acronyms used is provided here for a better understanding of this document.

Abbreviation/ Acronym	Description
BCM	Business Capacity Management
CDB	Capacity Database
CDTA	Centrally Developed Transit Application
CI	Configuration Item
CMDB	Configuration Management Database
CSIP	Continuous Service Improvement Programme
ECS	Export Control System
EFTA	European Free Trade Association
EOS	Economic Operator Systems
EOS-EORI	Economic Operator Systems – Economic Operator's Registration and Identification System
EOS-AEO	Economic Operator Systems - Authorised Economic Operator
FQP	Framework Quality Plan
ICS	Import Control System
ITIL	Information Technology Infrastructure Library
IT/IS	Information Technology/Information Services
ITSM	Information Technology Service Management
NA	National Administration
NCTS	New Computerised Transit System
OLA	Operational Level Agreement
SCOM	System Centre Operations Manager
SLA	Service Level Agreement
SLM	Service Level Management
SLT	Service Level Target
TEMPO	Quality Management System of DG Taxation and Customs Union (DG Taxation and Customs Union Electronic Management of Projects On-line)
TES	Trans-European Systems
TOC	Terms Of Collaboration
V4	Viségrad Group

Table 3-1: Abbreviations and Acronyms

3.2 Definitions

The following definitions are extracted from ITIL.

Term	Definition
Capacity	The maximum Throughput that a Configuration Item or IT Service can deliver whilst meeting agreed Service Level Targets.
Capacity Plan	A Capacity Plan is used to manage the Resources required to deliver IT Services.
Capacity Database	A Capacity Database (CDB) contains information and statistics on the current utilisation of all components to support Capacity Management, as well as other Service Delivery or Service Support processes. The CDB may be part of the Configuration Management Database (CMDB).

Table 3-2: List of Definitions

4. Management Summary

According to the FQP [R3], the Capacity Plan contains advice on how much IT capacity is needed to match existing and future service needs, with a line of sight of at least three years. Forecasting over a longer period of time is only possible when sufficient history data is available and the long term Business plans are provided. At the time of writing this document not all information is available on the various areas covered by this Capacity Plan. Therefore the line of sight for forecasting varies per service area. In some cases no more than one year ahead is forecasted while in other cases a five year forecast is included. The plan will evolve as additional information becomes available and knowledge is gained through analysis of statistics, data and workshops with the Business.

This Capacity Plan provides the full structure required in the future to collect the data required to draw the capacity forecast conclusions upon. In addition to the above, the Business input from the NA s is not yet included in the document. The action to set up this periodic questionnaire in collaboration with Business Perspective Management is in progress.

From the **Service Capacity Management** chapter it can be concluded that:

- Action is required towards France and Belgium for the MVS and EWSE application to ensure sufficient capacity is made available in the near future (one year) to cope with the rapid increase of Business transactions;

- Action is required to ensure sufficient capacity exists at the Member States to support the identified growth of VIES, NCTS and ECS.

From the **Resource Capacity Management** chapter it can be concluded that:

- An analysis is required to determine the required network capacity per MSA in order to support the anticipated growth;
- CCN/TC must evaluate the current utilisation of the production gateways and evaluate what actions, if any, are required to ensure sufficient storage, memory and CPU capacity exists to support the identified growth as a result of the Business plans and the expected increase in messages.

The most important **Recommendations for Improvement** identified are:

- Work with ITSM Business Perspective Management to gain more insight in the long-term Business plans as input for the Capacity Plan. Knowledge to gather and interpret/translate Business plans is being built up within ITSM, however more information exchange is needed
- Work with ITSM Business Perspective Management to periodically send a questionnaire to the NA s to ask them specific Capacity related questions to gain insight in the maturity level of the locally performed Capacity Management activities.

5. Business Scenarios

5.1 Introduction

One of the disciplines of Capacity Management is Business Capacity Management (BCM). The primary objective of the BCM sub-process is to ensure that the future Business requirements for IT Services are considered and understood, and that sufficient capacity to support the services is planned and implemented within an appropriate timescale. Therefore sector leaders from DG Taxation and Customs Union as well as sector leaders and system owners from the National Administrations need to be consulted about their Business plans frequently.

On a regular basis, the long-term strategy of an organisation is encapsulated in an update of the Business plans. The Business plans are developed from the organisation's understanding of the external factors such as the Council directives, changes in regulation, and its internal capability in terms of manpower, delivery capability etc.

The organisation's Business strategy and plans dictate the specific Information Technology/Information Services (IT/IS) strategy and IT/IS Business plans, the contents of which Capacity Management needs to be familiar with, and to which Capacity Management needs to have had a large input. In the IT/IS specific Business plans, particular technologies, hardware and software are identified, together with some indication of the timescale in which they are to be implemented.

In the case of DG Taxation and Customs Union, long term strategic vision means for example taking into account accession of new countries, which in theory may have impact on the capacity of all systems, due to the increased number of exchanged messages. Other examples are changes into legislations, a recession, political changes or entry in force of new rules that may affect the number of messages and/or users.

In the case of a National Administration, long term strategic vision means for example a political decision to start handling all customs transactions electronically instead of via paperwork.

Capacity Management needs to understand the long-term strategy of the Businesses while providing information on the latest ideas, trends and technologies being developed by the suppliers of computing hardware and software.

This chapter describes the major changes in the Business environment which are planned for the years to come. Business changes may trigger changes in an existing service, the initiation of a new service or the retirement of an old service.

The right conclusions about future capacity needs can be drawn based on the information provided in this chapter combined with the information provided in chapter 6 and 7.

5.2 Business Plans

This paragraph gives an overview of the Business plans, initiatives and events for the coming years. For each Business plan there needs to be a minimum amount of information available in order to be able to draw IT conclusions on the Business information.

By its nature, most (if not all) of the trans European systems related Business Plans are initiated by the European Commission and are provided by the Business Perspective Management department.

As the Business plans stated in the Capacity Plan for Commission IT services may have impact on the components of the Services and Resources which are maintained under the responsibility of the National Administrations, these should be considered as well in order to be able to draw a conclusion upon future capacity needs.

For completeness, the National Administrations will have to be asked for their Business plans which then should be stated in this chapter using the provided template used in chapter 5.2. This information should be gathered in collaboration with WP.8.3.1.2 “Periodic survey of each of the NA s”. See also the recommendations made in paragraphs 8.2: Recommendations from Previous Capacity Plan and 8.3: New Business Scenarios Recommendations.

Business forecasts include such items as future staffing levels, new products, new investments, Business growth projections. E.g. when laws and regulations are changed, this may result in a rapid increase of usage of a specific Business application.

Therefore the Business metrics will need to be translated to IT indicators and service level targets driving capacity usage and expected service level to achieve.

Please note that this dialog between Business Perspective Management and DG Taxation and Customs Union should be held periodically (e.g. every three months) to ensure the two parties stay connected.

One of the disciplines of Capacity Management is Business Capacity Management (BCM).

The primary objective of the BCM sub-process is to ensure that the future Business requirements for IT Services are considered and understood, and that sufficient capacity to support the services is planned and implemented on an appropriate timescale.

Therefore Business managers from DG Taxation and Customs Union need to be consulted about their Business plans.

On a regular basis, the long-term strategy of an organisation is encapsulated in an update of the Business plans. The Business plans are developed from the organisation's understanding of the external factors such as the competitive market-place, economic outlook and legislation, and its internal capability in terms of manpower, delivery capability etc.

The organisation's Business strategy and plans dictate the specific Information Technology/Information Services (IT/IS) strategy and IT/IS Business plans, the contents of which Capacity Management needs to be familiar with, and to which Capacity Management needs to have had a large input. In the IT/IS specific Business plans, particular technologies, hardware and software are identified, together with some indication of the timescale in which they are to be implemented.

In the case of DG Taxation and Customs Union, long term strategic vision means for example taking into account accession of new countries, which in theory may have impact on the capacity of all systems, due to the increased number of exchanged messages. Other examples are changes into legislations, a recession, political changes or entry in force of new rules that may affect the number of messages and/or users.

Capacity Management needs to understand the long-term strategy of the Business while providing information on the latest ideas, trends and technologies being developed by the suppliers of computing hardware and software.

This chapter describes the major changes in the Business environment which are planned for the years to come.

Business changes may trigger changes in an existing service, the initiation of a new service or the retirement of an old service.

Business plans are delivered by the Business Perspective Management department and can be retrieved from the project portfolio, Programme Management Office, event calendar, operational schedules (of projected workload for coming periods), National Administrations (NA s), working group meetings, monthly consolidated planning, etc. The following Business plans have been derived from source: Consolidated High Level Plan-20090305.

5.2.1 Business plans Customs

Business Plan NCTS Phase-4	
DESCRIPTION OF BUSINESS PLAN/INITIATIVE/EVENT	NCTS will incorporate additional features arising from the security amendment of the Customs Code, as well as those resulting from the implementing provisions. The ATIS amendment will enable the system to forward a copy of transit movements to DG OLAF for movements including sensitive goods.
DESCRIPTION OF BUSINESS DEMAND IMPACT (VOLUMES; NUMBER OF LOCATIONS, USERS, TRANSACTIONS, ANTICIPATED WORKLOADS, ...)	All Member States
PLANNED START DATE OF BUSINESS PLAN	01/01/2009
PLANNED GO LIVE DATE OF BUSINESS PLAN (KEY DATES FOR CRITICAL CAPACITY AND PERFORMANCE)	3/7/2009
SERVICE LEVEL REQUIREMENTS RELATED TO CAPACITY	Undetermined at this stage
ADDITIONAL INFORMATION THAT SHOULD BE CONSIDERED FOR CAPACITY FORECASTING	NCTS - Safety and Security – operational on one January 2009 in first MS and in all MS by 1st of July 2009; NCTS – Enquiry/Recovery aiming at the upgrade of the enquiry procedure and the introduction of the recovery procedure to be fully operational within all Member States by 1st of July 2009.

Table 5-1: Business Plan - NCTS Phase-4

Business Plan ECS Phase-2	
DESCRIPTION OF BUSINESS PLAN/INITIATIVE/EVENT	The objective of this phase is to provide for the electronic handling of export declarations/exit summary declarations under the security amendment, and will, inter alia, require additional information to be included in export declarations, for safety and security purposes. It also offers the possibility to refer to the EMCS system.
DESCRIPTION OF BUSINESS DEMAND IMPACT (VOLUMES; NUMBER OF LOCATIONS, USERS, TRANSACTIONS, ANTICIPATED WORKLOADS, ...)	All Member States
PLANNED START DATE OF BUSINESS PLAN	30/06/2006
PLANNED GO LIVE DATE OF BUSINESS PLAN (KEY DATES FOR CRITICAL CAPACITY AND PERFORMANCE)	6/7/2009
SERVICE LEVEL REQUIREMENTS RELATED TO CAPACITY	Undetermined at this stage
ADDITIONAL INFORMATION THAT SHOULD BE CONSIDERED FOR CAPACITY FORECASTING	National Administrations start to use, in operations, ECS Phase- 2 declarations (export)

Table 5-2: Business Plan - ECS Phase-2

Business Plan ICS Phase-1 (Safety & Security)	
DESCRIPTION OF BUSINESS PLAN/INITIATIVE/EVENT	The objective of this phase is to provide for the handling of entry summary declarations and the link of the information with risk analysis on the data submitted.
DESCRIPTION OF BUSINESS DEMAND IMPACT (VOLUMES; NUMBER OF LOCATIONS, USERS, TRANSACTIONS, ANTICIPATED WORKLOADS, ...)	All Member States
PLANNED START DATE OF BUSINESS PLAN	8/9/2006
PLANNED GO LIVE DATE OF BUSINESS PLAN (KEY DATES FOR CRITICAL CAPACITY AND PERFORMANCE)	3/7/2009
SERVICE LEVEL REQUIREMENTS RELATED TO CAPACITY	Undetermined at this stage
ADDITIONAL INFORMATION THAT SHOULD BE CONSIDERED FOR CAPACITY FORECASTING	For reasons of convenience and the need to take account of different legal bases, the development of this project has been divided into two phases: a. ICS – reflecting the requirements of safety and security controls at import ("entry summary declarations") linked to Regulation (EC) No 648/2005 and Reg. 1875/2006– date of operation one January 2009 in first MS with full operation in all MS on one July 2009; a. AIS – full deployment by 2013.

Table 5-3: Business Plan - ICS Phase-1

Business Plan Economic Operators' Registration and Identification System (EORI)	
DESCRIPTION OF BUSINESS PLAN/INITIATIVE/EVENT	The objective of the Economic Operators' Registration and Identification System (EORI) is to establish a unique EU-wide system of identification for economic operators. The system will also allow the recognition of all the authorisations granted to the economic operators. Thus, it was proposed to create an integrated Economic Operators' database covering all EORI and Authorised Economic Operator functions. This will offer maximum integration of the processes and avoid data duplication at the central level
DESCRIPTION OF BUSINESS DEMAND IMPACT (VOLUMES; NUMBER OF LOCATIONS, USERS, TRANSACTIONS, ANTICIPATED WORKLOADS, ...)	All Member States
PLANNED START DATE OF BUSINESS PLAN	25/4/2006
PLANNED GO LIVE DATE OF BUSINESS PLAN (KEY DATES FOR CRITICAL CAPACITY AND PERFORMANCE)	3/7/2009
SERVICE LEVEL REQUIREMENTS RELATED TO CAPACITY	Undetermined at this stage
ADDITIONAL INFORMATION THAT SHOULD BE CONSIDERED FOR CAPACITY FORECASTING	None

Table 5-4: Business Plan - EORI

Business Plan Authorised Economic Operators Full System (AEO Full System)	
DESCRIPTION OF BUSINESS PLAN/INITIATIVE/EVENT	An integrated Economic Operators' database covering all AEO and EORI functions. This will offer maximum integration of the processes and avoid data duplication at the central level. The system is made available centrally for updates and download by MS, and in order to provide access to the 'master file' (trusted source of info). MS are expected to keep some info in their national systems, such as the AEO Certificate numbers, for use in the declaration processing system – a 24 hour interval for updating the information from the master file is expected. No on-line queries will be launched for any verification of an AEO (to be done on national level).
DESCRIPTION OF BUSINESS DEMAND IMPACT (VOLUMES; NUMBER OF LOCATIONS, USERS, TRANSACTIONS, ANTICIPATED WORKLOADS, ...)	All Member States
PLANNED START DATE OF BUSINESS PLAN	1/1/2007
PLANNED GO LIVE DATE OF BUSINESS PLAN (KEY DATES FOR CRITICAL CAPACITY AND PERFORMANCE)	7/7/2009
SERVICE LEVEL REQUIREMENTS RELATED TO CAPACITY	Undetermined at this stage
ADDITIONAL INFORMATION THAT SHOULD BE CONSIDERED FOR CAPACITY FORECASTING	To accommodate the certification process as of that date, a phased approach has been agreed for establishing the IT system: a. AEO Phase 1 provides basic functions as of one January 2008; b. AEO Full System will be

Business Plan Authorised Economic Operators Full System (AEO Full System)	
	extended to integrate workflow and/or collaborative functions as of one July 2009.

Table 5-5: Business Plan - AEO Full System

5.2.2 Business plans Excise

Business Plan SEED V1	
DESCRIPTION OF BUSINESS PLAN/INITIATIVE/EVENT	The SEED application (System for Exchange of Excise Data) provides the core of the SEEDv1 platform and offers services for managing, storing and consulting information on the Economic Operators register. The role of this module is to provide a scalable and efficient platform to facilitate the efficient exchange of SEED data between MSAs. The SEED focuses on offering stable persistence mechanisms and a robust communications model for exchanging information between users. In all cases, MSAs remain the owners and maintainers of any business data stored by SEED – the SEED application is the mechanism for storing and propagating information between interested parties. Member State Administrations exchange registers of authorised warehouse keepers and registered traders, and premises authorised as tax warehouses.

DESCRIPTION OF BUSINESS DEMAND IMPACT (VOLUMES; NUMBER OF LOCATIONS, USERS, TRANSACTIONS, ANTICIPATED WORKLOADS, ...)	All Member States
PLANNED START DATE OF BUSINESS PLAN	07/07/2006 (intially V0)
PLANNED GO LIVE DATE OF BUSINESS PLAN (KEY DATES FOR CRITICAL CAPACITY AND PERFORMANCE)	30/01/2009
SERVICE LEVEL REQUIREMENTS RELATED TO CAPACITY	*Remains to be completed*
ADDITIONAL INFORMATION THAT SHOULD BE CONSIDERED FOR CAPACITY FORECASTING	*Remains to be completed*

Table 5-6: Business Plan - SEED V1

5.2.3 Business plans Taxation

Only Business plans relevant to 2009 and 2010 have been included in this plan. All other plans will be included as part of the maintenance version of this plan.

Business Plan Quality of Data	
DESCRIPTION OF BUSINESS PLAN/INITIATIVE/EVENT	1. Reduction of time frame 2. HVAT
FOR WHICH BUSINESS THREAD?	
DESCRIPTION OF BUSINESS DEMAND IMPACT (VOLUMES; NUMBER OF LOCATIONS, USERS, TRANSACTIONS, ANTICIPATED WORKLOADS, ...)	All Member States
PLANNED START DATE OF BUSINESS PLAN	1. 11/06/2009 2. 10/24/2007
PLANNED GO LIVE DATE OF BUSINESS PLAN (KEY DATES FOR CRITICAL CAPACITY AND PERFORMANCE)	1. 12/30/2010 2. 01/01/2010
SERVICE LEVEL REQUIREMENTS RELATED TO CAPACITY	Undetermined at this stage
ADDITIONAL INFORMATION THAT SHOULD BE CONSIDERED FOR CAPACITY FORECASTING	None

Table 5-7: Business Plan - Quality of Data

Business Plan 3rd MS	
DESCRIPTION OF BUSINESS PLAN/INITIATIVE/EVENT	3rd Member States
DESCRIPTION OF BUSINESS DEMAND IMPACT (VOLUMES; NUMBER OF LOCATIONS, USERS, TRANSACTIONS, ANTICIPATED WORKLOADS, ...)	All Member States
PLANNED START DATE OF BUSINESS PLAN	02/01/2008
PLANNED GO LIVE DATE OF BUSINESS PLAN (KEY DATES FOR CRITICAL CAPACITY AND	01/01/2010

PERFORMANCE)	
SERVICE LEVEL REQUIREMENTS RELATED TO CAPACITY	Undetermined at this stage
ADDITIONAL INFORMATION THAT SHOULD BE CONSIDERED FOR CAPACITY FORECASTING	None

Table 5-8: Business Plan - 3rd MS

Business Plan Croatia enlargement	
DESCRIPTION OF BUSINESS PLAN/INITIATIVE/EVENT	Enlargement (Croatia)
DESCRIPTION OF BUSINESS DEMAND IMPACT (VOLUMES; NUMBER OF LOCATIONS, USERS, TRANSACTIONS, ANTICIPATED WORKLOADS, ...)	All Member States
PLANNED START DATE OF BUSINESS PLAN	01/07/2009
PLANNED GO LIVE DATE OF BUSINESS PLAN (KEY DATES FOR CRITICAL CAPACITY AND PERFORMANCE)	12/30/2010
SERVICE LEVEL REQUIREMENTS RELATED TO CAPACITY	Undetermined at this stage
ADDITIONAL INFORMATION THAT SHOULD BE CONSIDERED FOR CAPACITY FORECASTING	None

Table 5-9: Business Plan - Croatia enlargement

Business Plan VIES 2 Exchange of Forms	
DESCRIPTION OF BUSINESS PLAN/INITIATIVE/EVENT	The usage of new forms (WORD XML), the integration of the SMTP servers into the national Mail systems and the regionalisation of the VAT administrative cooperation and its implications on the development of CCN Mail2 (multiple e-Mail addresses per Member State, central directory, security impact,…).
DESCRIPTION OF BUSINESS DEMAND IMPACT (VOLUMES; NUMBER OF LOCATIONS, USERS, TRANSACTIONS, ANTICIPATED WORKLOADS, ...)	All Member States
PLANNED START DATE OF BUSINESS PLAN	01/05/2009
PLANNED GO LIVE DATE OF BUSINESS PLAN (KEY DATES FOR CRITICAL CAPACITY AND PERFORMANCE)	01/01/2010
SERVICE LEVEL REQUIREMENTS RELATED TO CAPACITY	Undetermined at this stage

Business Plan VIES 2 Exchange of Forms	
ADDITIONAL INFORMATION THAT SHOULD BE CONSIDERED FOR CAPACITY FORECASTING	None

Table 5-10: Business Plan VIES 2 - Exchange of Forms

Business Plan VAT Package	
DESCRIPTION OF BUSINESS PLAN/INITIATIVE/EVENT	1. VAT Refund 2. B2B Services
DESCRIPTION OF BUSINESS DEMAND IMPACT (VOLUMES; NUMBER OF LOCATIONS, USERS, TRANSACTIONS, ANTICIPATED WORKLOADS, ...)	All Member States
PLANNED START DATE OF BUSINESS PLAN	1. 08/17/2007 2. 07/15/2005
PLANNED GO LIVE DATE OF BUSINESS PLAN (KEY DATES FOR CRITICAL CAPACITY AND PERFORMANCE)	1. 01/01/2010 2. 01/01/2010
SERVICE LEVEL REQUIREMENTS RELATED TO CONTINUITY, PERFORMANCE AND CAPACITY	Undetermined at this stage
ADDITIONAL INFORMATION THAT SHOULD BE CONSIDERED FOR CAPACITY FORECASTING	None

Table 5-11: Business Plan VAT Package – VAT Refund

Business Plan Direct Taxation	
DESCRIPTION OF BUSINESS PLAN/INITIATIVE/EVENT	Mutual Assistance EoF
DESCRIPTION OF BUSINESS DEMAND IMPACT (VOLUMES; NUMBER OF LOCATIONS, USERS, TRANSACTIONS, ANTICIPATED WORKLOADS, ...)	All Member States
PLANNED START DATE OF BUSINESS PLAN	07/01/2008
PLANNED GO LIVE DATE OF BUSINESS PLAN (KEY DATES FOR CRITICAL CAPACITY AND PERFORMANCE)	03/15/2010
SERVICE LEVEL REQUIREMENTS RELATED TO CAPACITY	Undetermined at this stage
ADDITIONAL INFORMATION THAT SHOULD BE CONSIDERED FOR CAPACITY FORECASTING	None

Table 5-12: Business Plan Direct Taxation – Mutual Assistance

5.2.4 Conclusion:

The Business plans clearly indicate changes in Capacity requirements which must be taken into account and analysed further. The current Capacity plan takes all Business plans with a start of operation in 2009 and 2010 into account if feasible. However, due to missing metrics

and lack of an in depth understanding of the changes from an IT perspective at this time, not all capacity implications are addressed.

Based on the current incorporated Business plans, capacity forecasting with a line of sight of one to five years is done for some service areas. The Business information, where possible, is combined with growth information either derived from available statistics and/or Business forecasts. The result is a best guess estimate of required capacity for the years to come which can be used to plan future purchases of new resources to ensure the required capacity is in place at the right time to support demand.

6. Service Capacity Management

6.1 Introduction

Service Capacity Management is about identifying and understanding the characteristics (e.g. working patterns) of each of the Business services and IT services and the demands that the users and transactions have on the underlying infrastructure including the forecast how these vary over time and might be impacted by the Business changes.

The focus of Service Capacity Management is aimed at the capacity aspects of the delivered services from the Customer point of view. Service Capacity Management is responsible for ensuring that the performance of all services, as detailed in the SLA s, are monitored, measured, analysed and reported on and that preventive actions are being taken to anticipate any service disruption to ensure the services do meet their SLA Targets. One of the purposes of Capacity Management is to inform Service Level Management (SLM) of any SLA breaches or threats.

This chapter provides an overview of the new or changed requirements related to capacity as defined in service level agreements and underpinning contracts. This includes the projected requirements based upon project and/or Business plans for new or modified IT services. Aspects like end-to-end monitoring, experienced performance, number of registered users, number of Business transactions, etc. are important in this context. The goal of this chapter is to provide the NA s with specific information concerning the service aspects relevant to local components hosted and supported by NA s.

The trans-European IT Services are often referred to as Systems and/or Applications. This chapter provides an overview of trans-European IT Services which are in scope of this document (see paragraph 1.3). For readability the services are clustered per Business thread. For each service described in this chapter the available statistics are presented with a NA specific view and where possible a short conclusion is drawn.

Where data is available, the data is provided and forecasting is done. In some cases is referred to the MPR/MSR [R7] or other sources where actual statistics are reported. The data for the MPR/MSR are provided by the Business Monitoring department. Where data is not available but required, a recommendation in chapter 8 is made.

6.2 Excise Services

The flagship of this thread will be EMCS. EMCS is currently under development and planned to be put in production in 2010. At this moment there are a set of small- and medium-size systems already in operation (EWSE, MVS, SEED). Specifically the EWSE and MVS applications have components which are operated in the NA s under their own local responsibility. Therefore these two applications are in scope of this Capacity Plan for trans-European IT Services.

The EMCS Computerisation Project aims to set up the Excise Movement and Control System (EMCS). ECP specifies, deploys, and supports the operation of the EMCS across all the MSAs. The EMCS is being introduced in "1+3" phases from 2003 to 2012.

6.2.1 Early Warning System for Excise (EWSE)

Excise Generic Information	
HOSTED AT/ MANAGED BY	MSA
CAPACITY METRICS COLLECTED BY	CPU usage – Not applicable Memory usage – Not applicable HD space usage – Not applicable DB table space usage - Not applicable NW/bandwidth usage - CCN/TC Business Monitoring - undetermined E2E Monitoring - undetermined
CAPACITY RELATED SLA AGREEMENTS IN PLACE	No known agreements upon performance/response times

Table 6-1: Excise – EWSE generic Information

Generic information

Early Warning System for Excise (EWSE) enables central liaison offices in Member States to exchange information or warning messages as soon as they are in possession of the Administrative Accompanying Document (AAD) information, and at the latest when the products are dispatched. As part of this exchange of information, a risk analysis based on the AAD information is carried out before a message is sent.

Assumptions and restrictions

The following assumptions and restrictions apply to the conclusions, statistics and forecasts in this section:

- CCN traffic matrix LCMS statistics for 2004 and 2005 are not available and are therefore permanently excluded from the Capacity plan;

- CCN traffic matrix LCMS statistics for all months covering 2006, 2007, 2008 and 2009 are available and are included in this plan;
- Business forecast and metrics are currently not available and therefore not taken into account;
- Impact due to Business plans have not been analysed at this stage due to missing metrics and are therefore currently not included in this version of the plan.

Statistics

Problems regarding performance/capacity issues

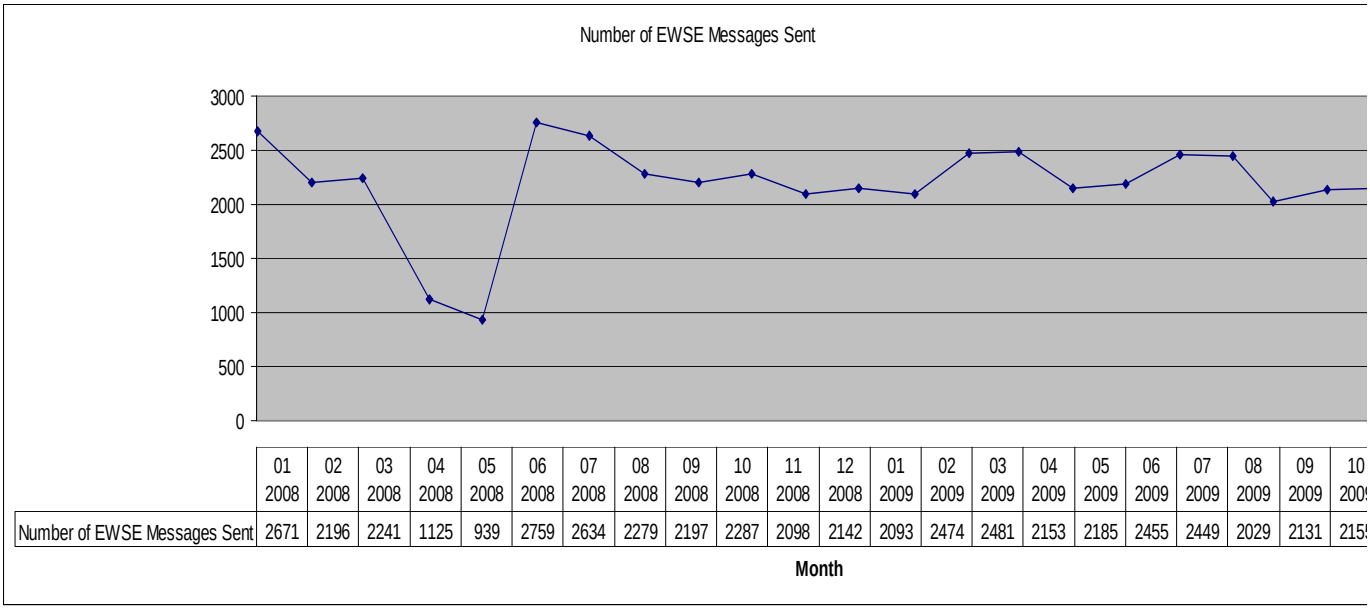
From source: Problem Management Annex to the MSR [R7] the following problem overview is created:

Capacity related Problems			
PROBLEM ID	REGISTRATION	TITLE	CATEGORY
-	-	-	-

Table 6-2: EWSE – Capacity related Problems

Business Transactions

EWSE provides e-forms for creation, validation and sending of EWSE Information/Warning messages and replying to them with EWSE Feedback messages. The exchange of information between administrations of the Member States takes place through the CCN-Mail2 system (SMTP over CCN). The Business usage of EWSE is indicated by the total number of e-mail messages exchanged. From the MSR [R7], the following messages statistics have been retrieved.



	01 2008	02 2008	03 2008	04 2008	05 2008	06 2008	07 2008	08 2008	09 2008	10 2008	11 2008	12 2008	01 2009	02 2009	03 2009	04 2009	05 2009	06 2009	07 2009	08 2009	09 2009	10 200
Number of EWSE Messages Sent	2671	2196	2241	1125	939	2759	2634	2279	2197	2287	2098	2142	2093	2474	2481	2153	2185	2455	2449	2029	2131	215

Figure 3: EWSE Messages Sent

Business Forecast

No Business forecast information from DG Taxation and Customs Union about this service has been obtained and processed in this document at this stage.

Conclusion

Based on the statistics reported above the conclusion is:

- From the line chart can be seen that the number of messages sent is fairly stable. Based on the problem records, no operational issues with this service currently exist.
- From a service point of view, no actions are required to ensure sufficient capacity in the future for this service.

6.2.2 Movement Verification System (MVS)

Excise Generic Information	
HOSTED AT/ MANAGED BY	MSA
CAPACITY METRICS COLLECTED BY	CPU usage – Not applicable Memory usage – Not applicable HD space usage – Not applicable DB table space usage - Not applicable NW/bandwidth usage - CCN/TC Business Monitoring - undetermined E2E Monitoring - undetermined
CAPACITY RELATED SLA AGREEMENTS IN PLACE	No known agreements upon performance/response times

Table 6-3: Excise – MVS generic Information

Generic information

The Movement Verification System (MVS) is one of the components of administrative assistance between Member States (MS) in the excise field. MVS allows the services responsible for monitoring movements to verify individual movements of goods in the framework of duty suspension procedure. MVS is applied after goods have been consigned and involves simple exchanges of information based on specific queries for the verification of the movements. The information necessary to carry out spot checks under MVS is exchanged by means of a uniform control document.

Assumptions and restrictions

The following assumptions and restrictions apply to the conclusions, statistics and forecasts in this section:

- CCN traffic matrix LCMS statistics for 2004 and 2005 are not available and thus not included in the analysis;
- CCN traffic matrix LCMS statistics for all months covering 2006, 2007, 2008 and 2009 are available and are included in this plan;
- Business forecast and metrics currently not available;
- Impact due to Business plans have not been analysed at this stage due to missing metrics and are therefore currently not included in this version of the plan.

Statistics

Problems regarding performance/capacity issues

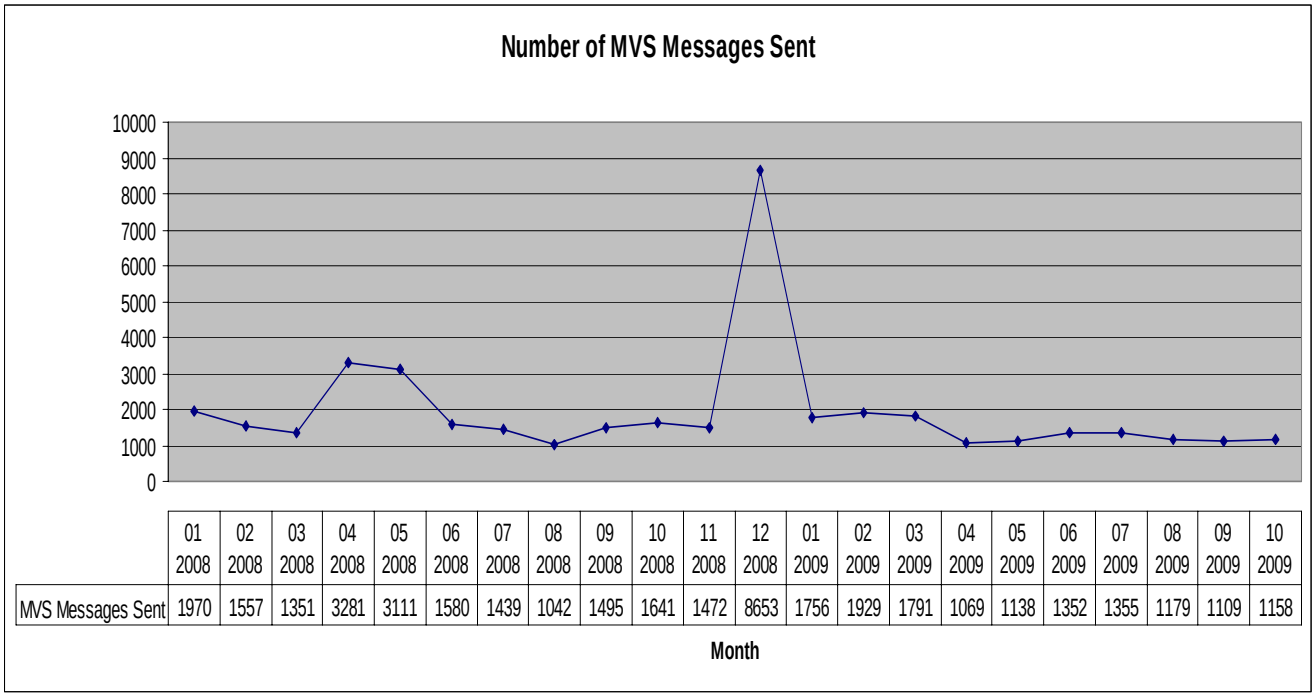
From source: Problem Management Annex to the MSR [R7] the following problem overview is created:

Capacity related Problems			
PROBLEM ID	REGISTRATION	TITLE	CATEGORY
-	-	-	-

Table 6-4: MVS – Capacity related Problems

Business Transactions

The exchange of information between administrations of the Member States takes place through the CCN-Mail2 system (SMTP over CCN). The Business usage of MVS is indicated by the total number of e-mail messages exchanged. From the MSR [R7], the following messages statistics have been retrieved.



	01 2008	02 2008	03 2008	04 2008	05 2008	06 2008	07 2008	08 2008	09 2008	10 2008	11 2008	12 2008	01 2009	02 2009	03 2009	04 2009	05 2009	06 2009	07 2009	08 2009	09 2009	10 2009
MVS Messages Sent	1970	1557	1351	3281	3111	1580	1439	1042	1495	1641	1472	8653	1756	1929	1791	1069	1138	1352	1355	1179	1109	1158

Figure 4: MVS messages sent

Business Forecast

No Business forecast information from DG Taxation and Customs Union about this service has been obtained and processed in this document at this stage.

Conclusion

Based on the statistics reported above the conclusion is:

- From the line chart it can be seen that the number of messages sent is quite stable over the last year;
- Based on the problem records, no operational issues with this service currently exist;
- From a service point of view, no actions are required to ensure sufficient capacity in the future for this service.

6.3 Customs Services

The Customs Business Thread constitutes several applications and systems. In this context a system is comprised of a set of interacting applications supporting Business processes which could span different domains of responsibility, making use of communication channels.

For Customs there are three main systems identified which are Nationally Operated and therefore have components which are managed and supported by the MSA s. The New Computerised Transit System (NCTS) and the Export Control System (ECS) are currently in production. The Import Control System (ICS) is currently in production for some MSA s, the other MSA s will follow.

6.3.1 NCTS

New Computerised Transit System

NCTS Generic Information	
HOSTED AT/ MANAGED BY	MSA
CAPACITY METRICS COLLECTED BY	CPU usage - Not applicable Memory usage - Not applicable HD space usage - Not applicable DB table space usage - Not applicable NW/bandwidth usage - CCN/TC Business Monitoring - CS/MIS & CCN/TC E2E Monitoring undetermined
CAPACITY RELATED SLA AGREEMENTS IN PLACE	No known agreements upon performance/response times

Table 6-5: NCTS – Generic Information

Generic information

NCTS was put in production in 2003. The New Computerised Transit System (NCTS) is a European wide system, based upon electronic declaration and processing and designed to provide better management and control of Community and Common Transit. NCTS is a distributed trans-European system with CCN as the backbone. It involves all EU Member States, the EFTA and V4 countries. Several subsystems are part of NCTS supporting different groups of processes which make the NCTS system itself. The core Business subsystem consists of “core NCTS agent applications” acting on behalf of NA s.

Assumptions and restrictions

The following assumptions and restrictions apply to the conclusions, statistics and forecasts in this section:

- Average CCN message growth trend of 6% has lowered to 4%;
- Five year forecast of CCN messages based on expected average message growth of 4%;;
- Forecasted messages based on average growth trend of 2005-2006-2007-2008-2009;
- For the movements, the average growth over the last 3 years is stable (2%) and is extrapolated over 2010-2011-2012-2013-2014;
- Impact of Business plan NCTS phase-4, including national project plans to determine progressive impact not analysed and thus not taken into account at this stage;
- Business forecasts not provided and therefore not included in the current analysis and predictions;
- One message of type CD001 O from file 20xxxxOP.xls (NCTS) [R20] equals one international movement;
- CCN traffic matrix statistics for 2004 and 2005 are not available and thus not included in the analysis;
- Forecast CCN traffic volume based on projected movements of 2010 until 2014;
- Unable to distinguish between # national and international movements;
- Only the traffic in production is taken into account. Backup/test/development mode is not taken into account.

Statistics

Problems regarding performance/capacity issues

From source: Problem Management Annex to the MSR [R7] the following problem overview is created:

Capacity related Problems			
PROBLEM ID	REGISTRATION	TITLE	CATEGORY
-	-	-	-

Table 6-6: NCTS – Capacity Related Problems

Business transactions

From source CCN traffic matrix for the period 2006 until 2009 statistics were retrieved, consolidated and formatted into the chart below. It presents the actual evolution of NCTS messages for all MSA over a four year period. By the end of 2009 more than 140Mio messages had been processed. The presented evolution indicates an average growth of four percent per annum.

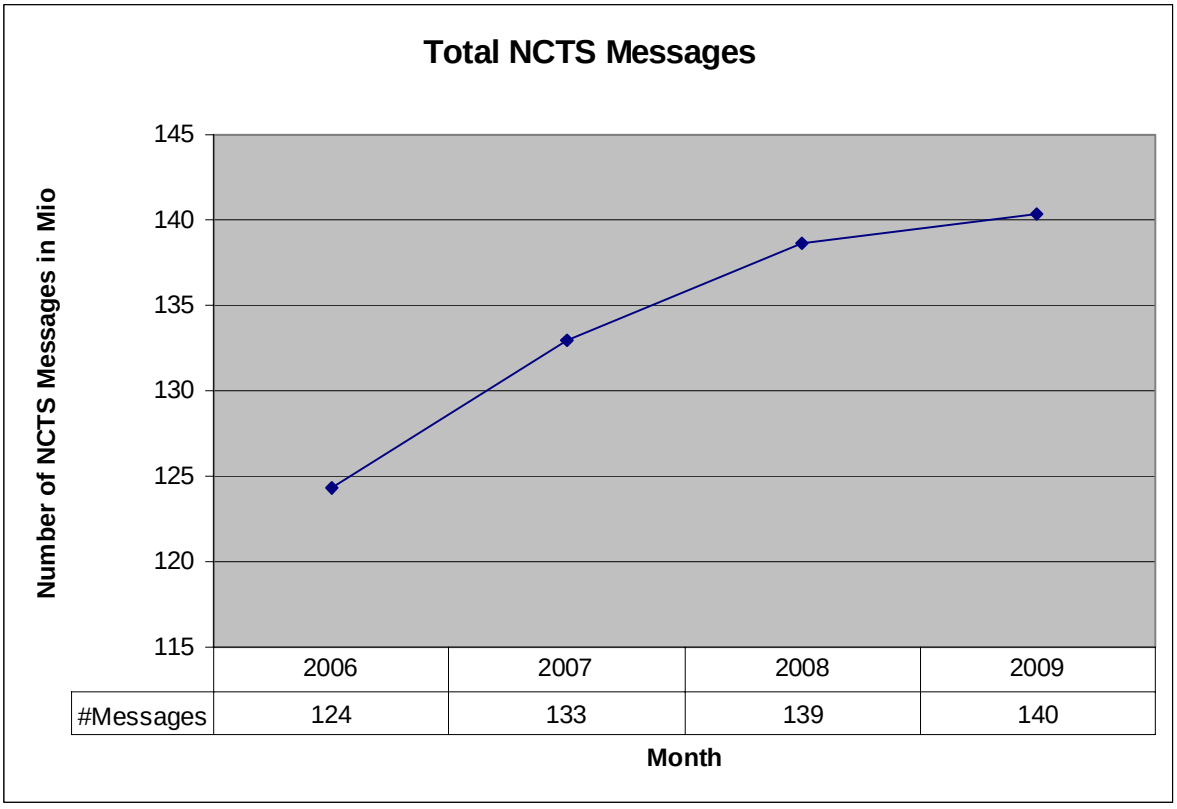


Figure 5: Yearly evolution of NCTS messages 2006 - 2009

From source 20xxxxOP.xls (NCTS) [R20] for the period 2004 until 2009 the number of transit movements were retrieved, consolidated and formatted into the chart below. It presents the actual evolution of the total amount of movements covering all MSA over a five year period. Over the last three years, the number of movements is fairly stable, it equals an average annual growth of 2%. This number is taken into account for the forecast. .

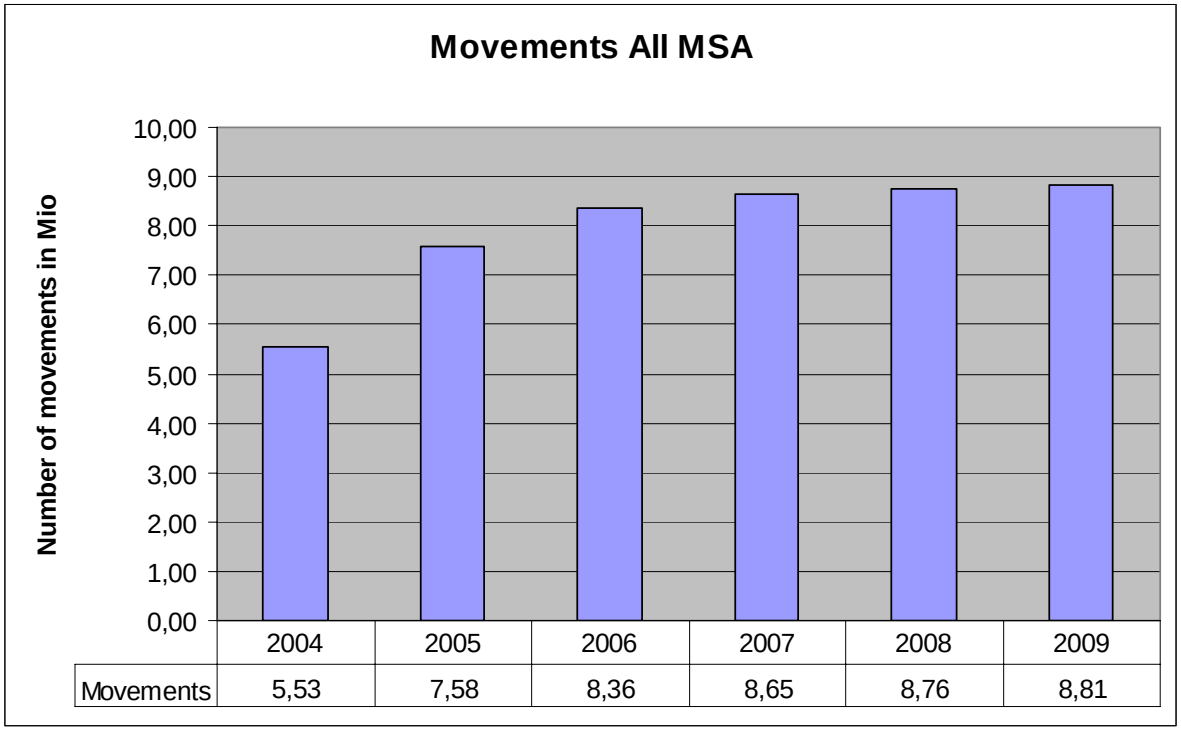


Figure 6: Yearly evolution of NCTS transit movements (IE01) 2004 - 2009

Business Forecast

Currently there are two versions of the NCTS system operational (phase v3.1 and phase v4). In each version new messages are added which increases the total volume of NCTS messages.

A forecast has been produced in order to serve as a starting point to built upon and evolve during the next iteration of the plan. The following charts have been produced on the basis of the previous trends and average annual growth calculated as a result of the trends. The charts include a forecast for the total amount of transit movements which was used as input to project the expected amount of messages.

The chart below has been produced on the basis of a 2% average annual growth (average growth of the last three years) in transit movements. It does not take into account any Business forecasts on transit movements at this stage, as mentioned previously.

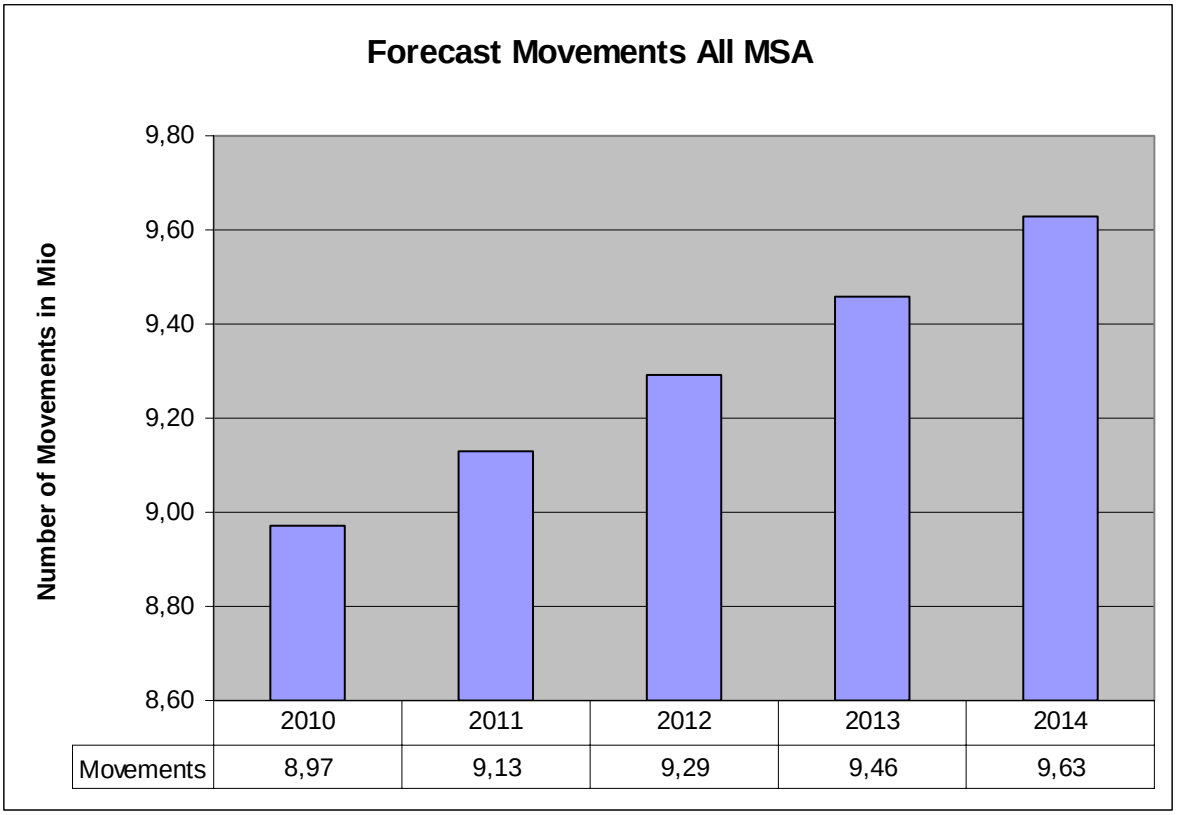


Figure 7: Projected yearly evolution of transit movements (IE01 message) 2010 - 2014

The below chart depicts the expected growth in messages as a result of the average growth of the last three years (4%). It does not include, as mentioned previously, the impact as a result of the Business plans nor does it take into account Business projected transit movements.

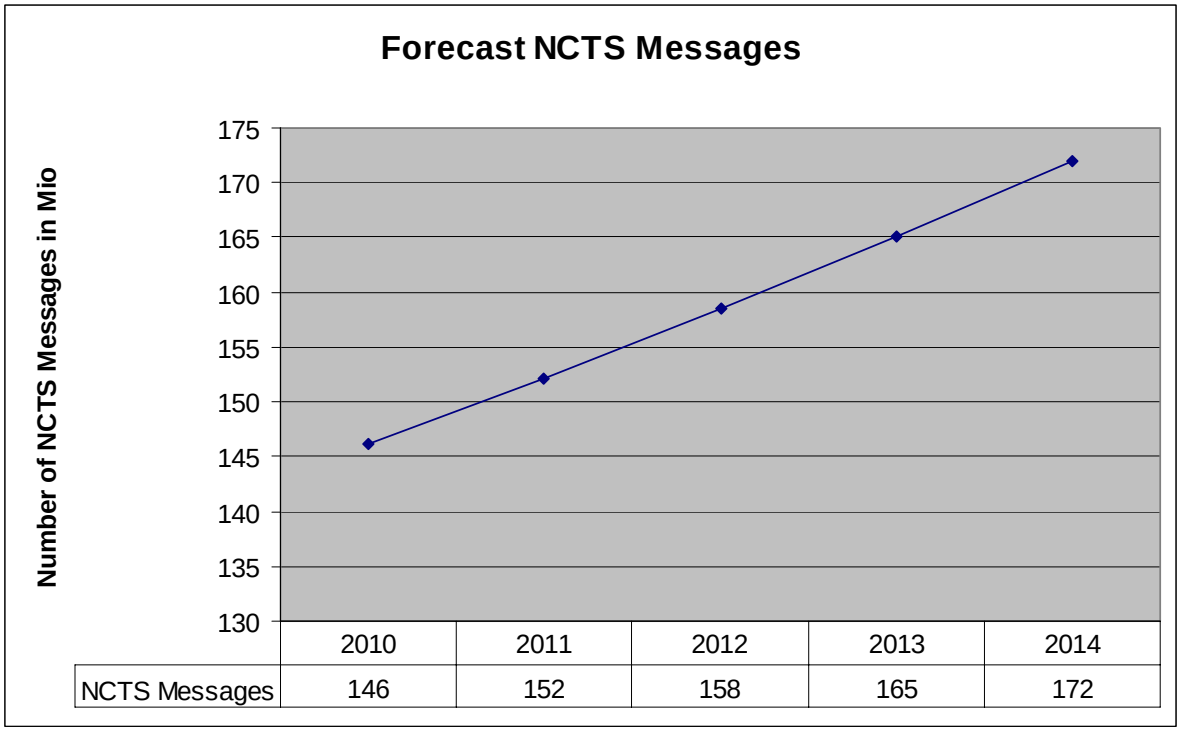


Figure 8: Projected yearly evolution of NCTS messages 2010 - 2014

Conclusion

Based on the statistics reported above in combination with the Business forecasts for this service, the conclusions are:

- The number of NCTS messages appears to grow at a rate of 4% per year. This growth excludes any influences and/or impact caused by Business changes and will most likely be stable;
- The national project plans must be analysed and the progressive impact on CCN determined;
- A Business forecast covering the expected transit movements for the coming years must be included in the analysis in order to determine the capacity requirements;
- Statistics covering 2004 and 2005, if available, must be included in the analysis in order to conduct more predictions. The current analysis is somewhat limited in accuracy and concreteness due to these missing statistics;

- The evolution of NCTS will have an impact on the capacity of CSMIS and possibly CSRD. This must be analysed and taken into account as part of the Capacity plan for Commission IT Services.

6.3.2 Export Control System (ECS)

ECS Generic Information	
HOSTED AT/ MANAGED BY	MSA
CAPACITY METRICS COLLECTED BY	CPU usage - Not applicable Memory usage - Not applicable HD space usage - Not applicable DB table space usage - Not applicable NW/bandwidth usage - CCN/TC Business Monitoring - CCN/TC E2E Monitoring - undetermined
CAPACITY RELATED SLA AGREEMENTS IN PLACE	No known agreements upon performance/response times

Table 6-7: ECS – Generic Information

Generic information

The Export Control System allows the exchange of information in electronic form from the office of exportation to the office of exit and vice-versa. The office of export can then send this information to inform the economic operator and other government services that the goods have left the customs territory. ECS was put in production in 2007. The Export Control System (ECS) is part of the Automated Export System (AES). It includes the exchange of electronic messages related to the different stages of the operations amongst the various actors (customs, traders and other governmental administrations). The ECS uses the existing NCTS Common Domain for the transfer of data electronically between customs offices. The data required for the messages are captured, processed and transmitted by the Member State's own systems. The ECS messages and processing have been added to NCTS, while CDTA Central Services are enhanced where necessary to include reference data specifically related to ECS.

Assumptions and restrictions

The following assumptions and restrictions apply to the conclusions and forecasts in this section.

- Available ECS statistics cover the years 2007, 2008 and 2009 only;
- Average annual growth 2007-2008 is 60%; for the forecast done in 2009 20% growth factor was applied ; this is reduced to 11% for the forecast done in this capacity plan;
- The Business movement forecast is based on information collected from the National Administrations in 2007;
- Only the traffic in production is taken into account. Backup/test/development mode is not taken into account;
- National project plans have not been taken into account. The progressive impact therefore has not been analysed and remains to be completed.

Statistics

Problems regarding performance/capacity issues

From source: Problem Management Annex to the MSR [R7] the following problem overview is created:

Capacity related Problems			
PROBLEM ID	REGISTRATION	TITLE	CATEGORY
-	-	-	-

Table 6-8: ECS – Capacity Related Problems

No ECS problems regarding performance/capacity issues have been registered in the last year.

Business Transactions

ECS uses EDI messages to facilitate the exchange of e-messages between customs administrations, and between traders and customs administrations. The exchange of electronic messages and information among the National Administrations is supported by CCN/CSI. The following charts have been produced with message statistics retrieved from sources: 20xxxxOP.XLS (ECS) [R21] and traffic_matrix_ccn_year_200x_detail.xls [R15].

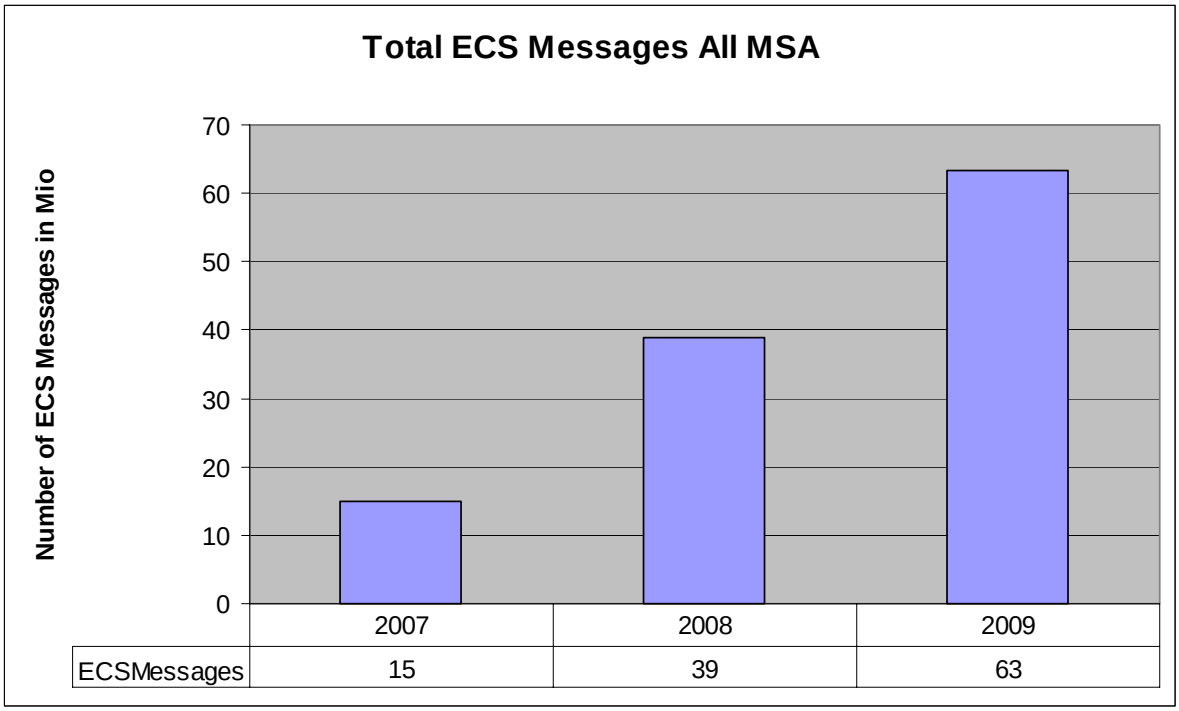


Figure 9: Total ECS messages 2007-2009

The following chart presents the total amount of messages exchanged during 2007, 2008 and 2009 per MSA. The chart indicates Germany, as being the main contributor to the total amount followed by Austria and the Netherlands.

Remark : AT and others are working with loopback

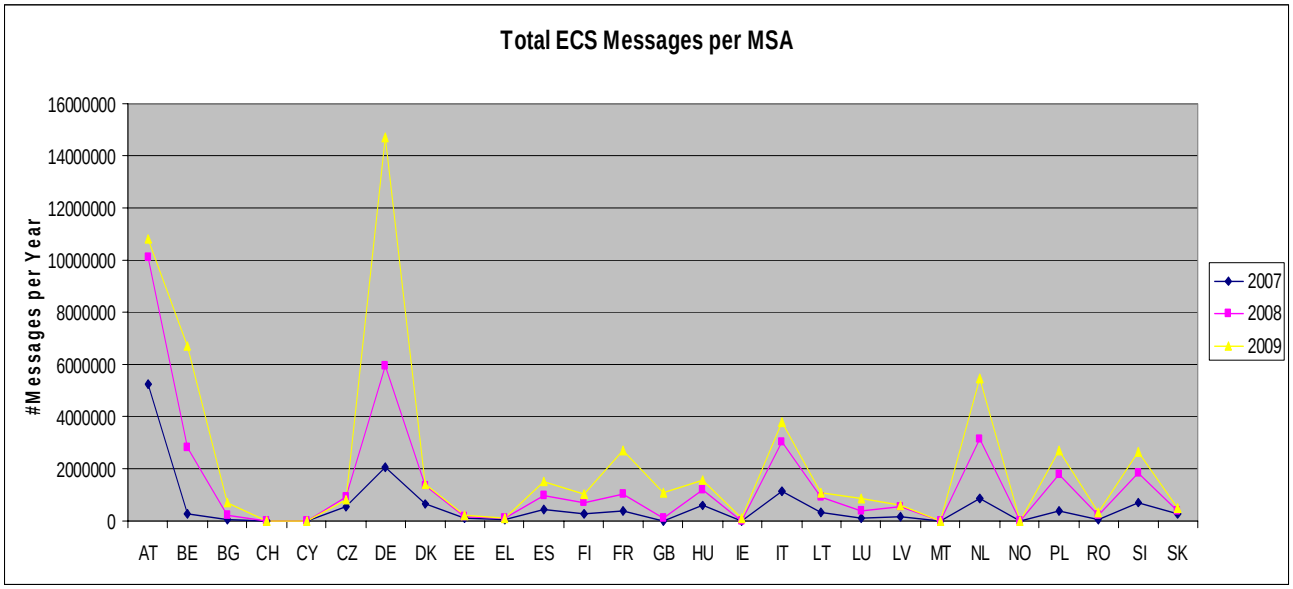


Figure 10: Total ECS messages per MSA 2007-2009

The below table provides an overview of the total messages per MSA covering 2007, 2008 and 2009 including the annual growth.

Country	2007	2008	2009		Growth rate (2008-2007)/2007	Growth rate (2009-2008)/2008
AT	5.261.552	10.102.284	10.794.279		192%	107%
BE	271.258	2.826.193	6.706.260		1042%	237%
BG	76.046	241.773	713.838		318%	295%
CY	539	1.401	4.553		260%	325%
CZ	523.047	942.062	827.327		180%	88%
DE	2.029.777	5.968.240	14.677.346		294%	246%
DK	649.614	1.363.595	1.382.350		210%	101%
EE	87.202	165.790	197.222		190%	119%
EL	44.437	119.651	134.319		269%	112%
ES	423.103	970.001	1.496.714		229%	154%
FI	244.894	698.029	1.016.195		285%	146%
FR	404.104	1.025.984	2.723.486		254%	265%
GB	5.573	85.870	1.055.183		1541%	1229%
HU	588.650	1.167.028	1.545.143		198%	132%

Country	2007	2008	2009		Growth rate (2008-2007)/2007	Growth rate (2009-2008)/2008
IE	2.695	8.908	134.835		331%	1514%
IT	1.159.835	3.031.818	3.771.393		261%	124%
LT	309.002	905.651	1.069.981		293%	118%
LU	93.020	353.169	874.023		380%	247%
LV	147.114	554.263	605.311		377%	109%
MT	378	3.077	14.218		814%	462%
NL	889.870	3.155.187	5.477.873		355%	174%
PL	396.444	1.779.112	2.687.843		449%	151%
RO	79.090	225.614	305.461		285%	135%
SI	704.233	1.817.731	2.655.685		258%	146%
SK	258.040	397.447	491.087		154%	124%
TOTAL	14.649.517	37.909.878	61.361.925		259%	162%

Table 6-9: ECS – Annual Growth

Business Forecast

The following Business forecast has been provided by DG Taxation and Customs Union about this service. From 01/07/2009 onwards the below estimated annual number of movements (based on information from NA s, collected in 2007) has been estimated. These figures should be further analysed and correlated to the national project plans in order to establish the impact on CCN and possibly applications like CS/MIS.

Country	ECS Minimum (indirect only)	ECS Maximum (Direct and indirect)
AT	450.000	1.550.000
BE	480.000	3.200.000
BG	300.000	330.000
CY	3.000	30.000
CZ	516.000	700.000
DE	5.000.000	14.100.000
DK	475.000	1.600.000
EE	100.000	100.000
ES	265.000	4.200.000
FI	140.000	700.000
FR	2.640.000	5.640.000
GB	1.230.000	4.980.000
GR	68.000	310.000
HU	718.000	1.153.000
IE	300.000	300.000
IT	4.500.000	4.555.000
LT	400.000	550.000
LU	70.000	100.000
LV	12.000	70.000

Country	ECS Minimum (indirect only)	ECS Maximum (Direct and indirect)
MT	5.000	20.000
NL	1.100.000	2.500.000
PL	120.000	800.000
PT	75.000	300.000
RO	135.000	135.000
SE	150.000	1.000.000
SI	24.000	300.000
SK	62.000	150.000
Total	**19.338.000**	**49.373.000**

Table 6-10: ECS – Forecast

Based on the average growth of 255% , the following five year message forecast has been produced. The forecast excludes any impact due to the Business plans, these remain to be further analysed and taken into account.

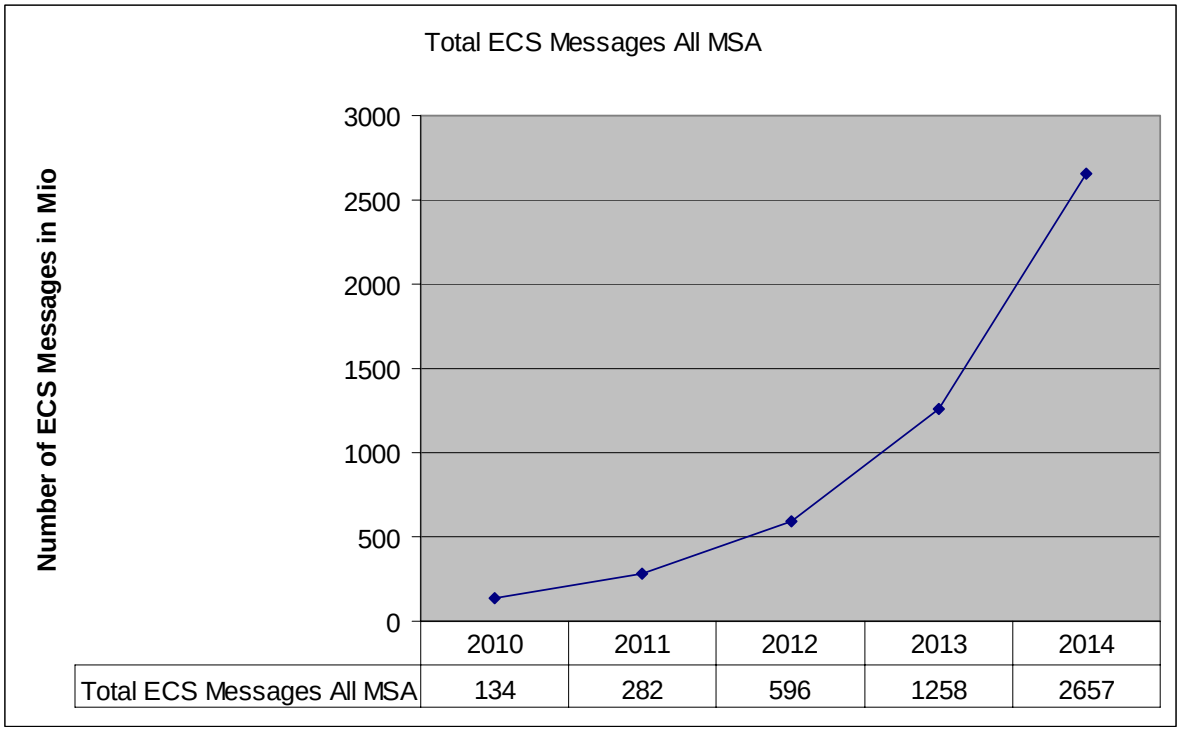


Figure 11: Five year forecast total ECS messages

Conclusion

Based on the statistics reported above in combination with the Business forecasts for this service, the conclusions are:

- The number of ECS messages will increase significantly.

- Any influences and/or impact caused by Business changes are currently not included in the analysis and will most likely either increase the number of messages or the volume;
- The impact due to the Business plans must be analysed and the projected growth expectations adjusted accordingly based on the outcome of the analysis;
- The national project plans must be analysed and the progressive impact on CCN determined;
- The limitations of statistical reporting capabilities in terms of national vs international movements must be analysed further in order to determine the possibility of incorporating statistics for each separately and thereby enabling the possibility of making more precise predictions and monitoring Business forecasts in comparison to actual ones.

➢ REMARK : as per comment review, this very important remark was made due to the fact that the new system is now fully operational for all MS as of 1 July 2009, the increase noticed is not likely to continue in 2010. Therefore no linear forecast may be taken based on the average growth rate of 2008-2009 which is 255%, expectations would be 10-15%. An evaluation of this remark will be made when reviewing this forecast in next version.

6.3.3 Import Control System (ICS)

ECS Generic Information	
HOSTED AT/ MANAGED BY	MSA
CAPACITY METRICS COLLECTED BY	CPU usage - Not applicable Memory usage - Not applicable HD space usage - Not applicable DB table space usage - Not applicable NW/bandwidth usage - CCN/TC Business Monitoring - CCN/TC E2E Monitoring - undetermined
CAPACITY RELATED SLA AGREEMENTS IN PLACE	No known agreements upon performance/response times

Table 6-11: ICS – Generic Information

Generic information

The Import Control System allows the exchange of information in electronic form from the office of import to the office of Entrance and vice-versa. The office of import can then send this information to inform the economic operator and other government services that goods have entered in the customs territory. The Import Control System (ICS) is a part of Automated Import System (AIS). The objective of the AIS is to ensure that import operations starting in one MS can be completed in another MS without re-submission of the same information. This includes the exchange of electronic messages related to the different stages of the operations amongst the various actors (customs, traders and other governmental administrations).

Assumptions and restrictions

The following assumptions and restrictions apply to the conclusions, statistics and forecasts in this section:

- ICS is currently in production only in a few MSA s, therefore little or no historical statistics exist on the number of movements and relevant data on Business transactions such as number of messages or messages volumes;
- The Business plans currently available remain to be worked out into concrete usable metrics and assumptions enabling the impact to be translated and conclusions with regards to required service capacity to be drawn. The information available, both from a Business perspective and IT perspective, to accomplish this is currently limited; therefore this is currently excluded from the present plan but expected to be included once the appropriate information has been obtained. .

Statistics

Problems regarding performance/capacity issues

From source: Problem Management Annex to the MSR [R7] the following problem overview is created:

Capacity related Problems			
PROBLEM ID	REGISTRATION	TITLE	CATEGORY
-	-	-	-

Table 6-12: ICS – Capacity Related Problems

Business Transactions

The Business transactions monitored are the number of messages exchanged and the volume of these messages.

The following charts have been produced with message statistics retrieved from traffic_matrix_ccn_year_200x_detail.xls.

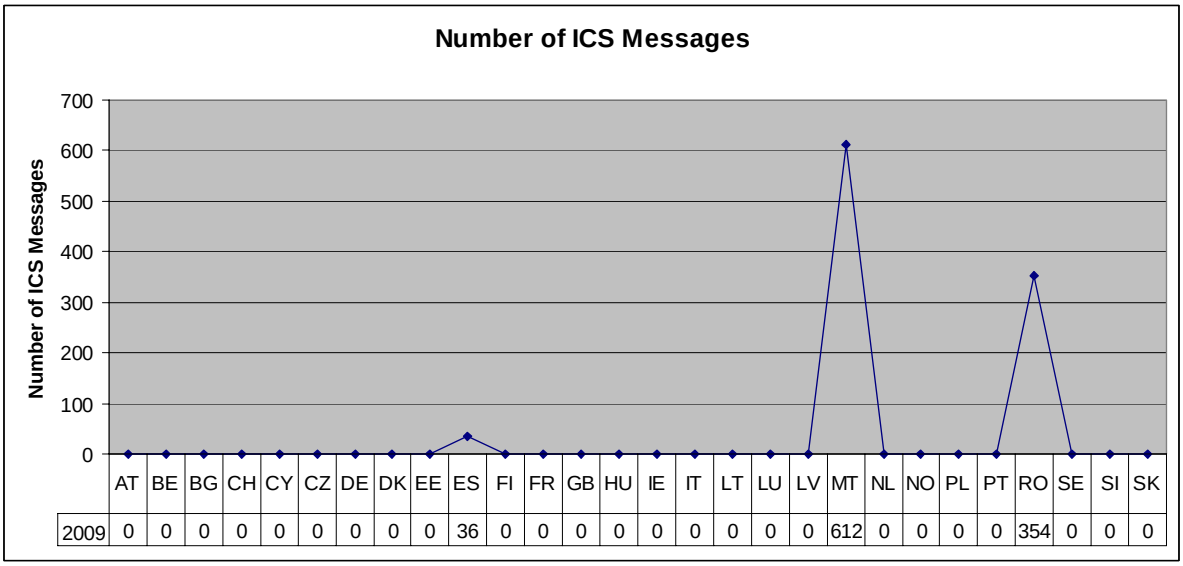


Figure 12: Number of ICS Messages 2009

Business Forecast

During 2010 ICS will be put in production for other MSA s. The planning received from ITSM Application Management is as follows:

Country	Start
AT	1/09/2009
BE	20/12/2012
BG	20/12/2012
CY	20/12/2012
CZ	1/07/2009
DE	20/12/2012
DK	20/12/2012
EE	1/07/2009
ES	2/07/2009
FI	20/12/2012
FR	20/12/2012
GB	20/12/2012
HU	1/10/2009
IE	1/01/2010
IT	20/12/2012
LT	1/01/2010
LU	20/12/2012
LV	1/07/2009
MT	3/08/2009
NL	20/12/2012
PL	20/12/2012
PT	2/07/2009
RO	1/10/2009
SE	20/12/2012
SI	20/12/2012
SK	1/07/2009

Table 6-13: ICS – Production planning

Conclusion

Based on the statistics reported above in combination with the Business forecasts for this service, the conclusions are:

- As ICS is put in production for more MSA s, the amount of messages exchanged will increase. .
- No forecast can be made, as only a few months of historical statistic data is already available. .

6.4 Taxation Services

The following sources have been used to collect and consolidate the Taxation Business Thread statistics in this document:

- Traffic projection 2013 ([R2]);
- Traffic_matrix_ccn_year_20xx_detail.xls ([R15]);
- Traffic_matrix_lcms_year-20xx_detail.xls ([R16]);
- Taxation Foreseen activities 2009-2011.mpp ([R17]).

6.4.1 VAT Information Exchange System (VIES)

VIES Generic Information	
HOSTED AT/ MANAGED BY	MSA
CAPACITY METRICS COLLECTED BY	CPU usage - Not applicable Memory usage - Not applicable HD space usage - Not applicable DB table space usage - Not applicable NW/bandwidth usage - CCN/TC Business Monitoring System and CCN/TC - VIES Statistics E2E Monitoring - VIES Monitoring
CAPACITY RELATED SLA AGREEMENTS IN PLACE	SCIT68-SLA (see [A5])

Table 6-14: VIES – Generic Information

Generic Information

The core of VIES system (VAT Information Exchange System) constitute national VIES applications and databases. Each Member State is obliged to maintain an electronic database which should contain the VAT identification numbers of its traders; such information would extend to the name, address and, where appropriate, the date of cessation of validity of the number. This information should be available "without delay" for tax administrations and other authorised users (e.g. AEO CDCO or VIES-on-the-WEB). This provides the facility to make an immediate check on the validity of a VAT identification number in another Member State. In addition, Member States must ensure that traders themselves are given the facility to confirm the VAT status of their intra-Community customers. Database maintained by Member State should also enable each Member State to obtain "directly and without

delay from each (other) Member State" access to information in the form of a quarterly list of the VAT identification numbers of all intra-Community purchasers in that Member State, together with the associated net total turnover value in relation to each of these VAT numbers. On request, the values given can then be further broken down into the individual amounts declared by each supplier in the Member State that collected the data. This information can then be used by the Member State receiving it to compare with the value of intra-Community acquisitions declared on the VAT periodic returns, and ultimately checked against the purchasers' accounting records.

In respect to requirements placed upon Member States information exchanged between National VIES applications can be divided into two main categories:

- Identification data enabling a Member State to verify that a particular VAT number from another Member State is valid, or has been valid (VAT and Historical VAT information);
- Turnover data information submitted by traders in every Member State. .

Assumptions and restrictions

=> Old assumptions listed in previous plan, which could not be verified were removed.

- B2B = half of VIES. Source: DG TAXUD.;
- Acquisitions Recapitulative Statements - similar to TOD (data+file, no O_MCTL). Source: DG TAXUD;
- Acquisitions Recapitulative Statements - Starts in 2010. Source: DG TAXUD.;

=> Reflection on the above 3 assumptions : This is still valid

- Acquisitions Recapitulative Statements - First year at 50% of normal production volume. Source: DG TAXUD.;

=> The estimated volume needs to be verified after a full years production.

- 3rd MS goes into production on 1/1/2010 for all MS. Source: FITSDEV-SC10-3rdMSRequest, v1.02.;

=> Production started indeed on 01/01/2010

- 3rd MS - some MS can go into production as of 1/7/2009 => first year 20%.

=> Production started on 01/01/2010 with 3 Member States

- The total number of 3MS-TOD requests for all MS is 4000 per quarter. Source: FITSDEV-SC10-3rdMSRequest, v1.02 & FITS/TC.;.

=> Reflection on the above assumption :

There were 1,602 in 2010/Q1; it is now around 500 requests per month. So still below the estimated level.

Statistics

Problems regarding performance/capacity issues

From source: Problem Management Annex to the MSR [R7] the following problem overview is created:

Capacity related Problems			
PROBLEM ID	REGISTRATION	TITLE	CATEGORY
-	-	-	-

Table 6-15: VIES – Capacity related Problems

No VIES problems regarding performance/capacity issues have been registered in the last year.

Business Transactions

Detailed statistics concerning the usage of VIES are available because of the specific tools "VIES Monitoring" and "Vies Statistics System". The overall usage of the VIES system is indicated by the number of request messages and the number of reply messages (transactions) processed. The VIES system basically handles the following messages:

- A message to request for VAT registration information;
- A reply message to provide the VAT registration information;
- A message to request for turnover information;
- A reply message to provide the turnover information.

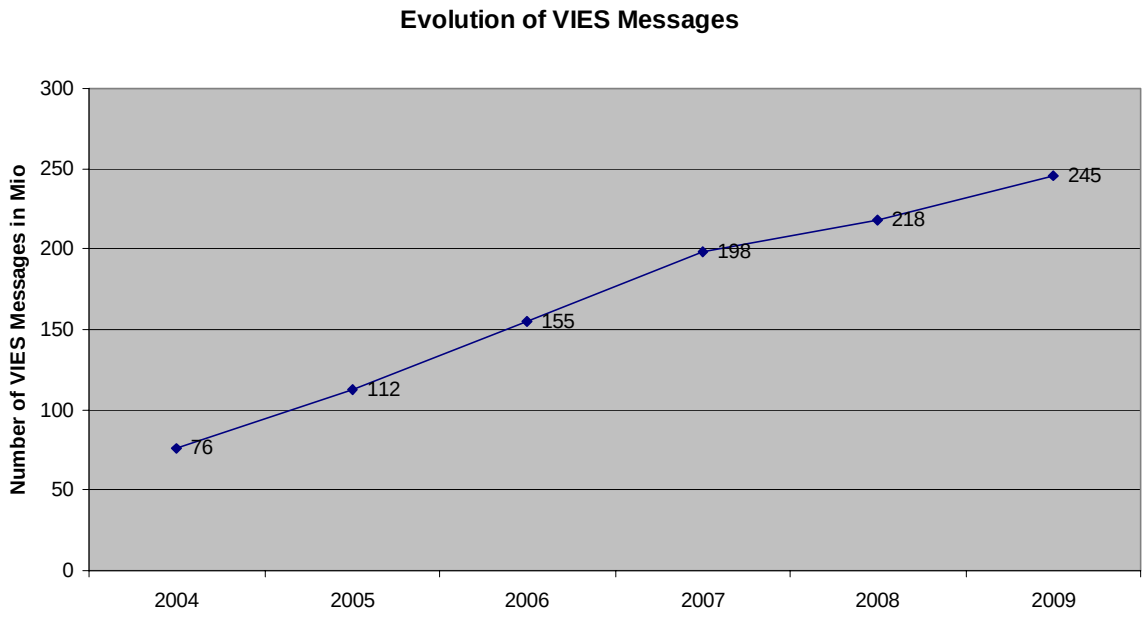
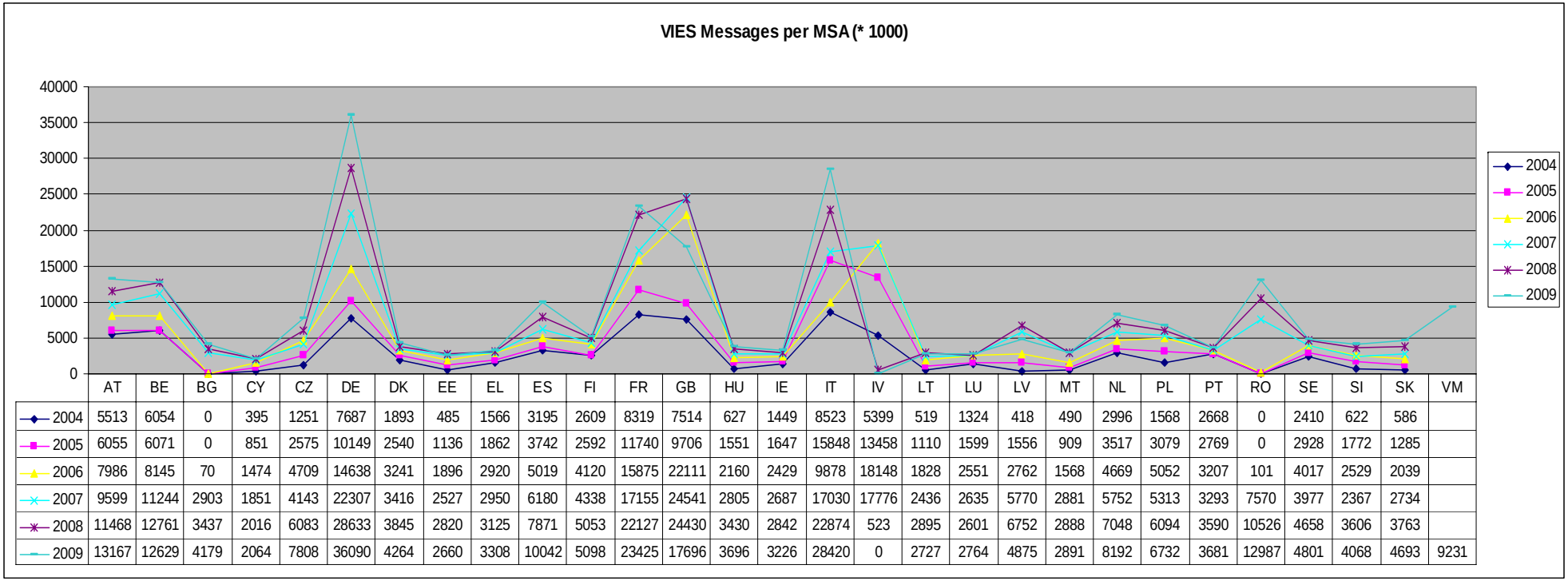


Figure 13: Evolution of VIES messages 2004 - 2009

The chart above provides an overview of the total amount of VIES messages exchanged between 2004 and 2009. In total more than 1005Mio messages have been exchanged during a period of six years.

The following chart gives a good indication of the major contributors to the total messages exchanged during the past six years.



	AT	BE	BG	CY	CZ	DE	DK	EE	EL	ES	FI	FR	GB	HU	IE	IT	IV	LT	LU	LV	MT	NL	PL	PT	RO	SE	SI	SK	VM
2004	5513	6054	0	395	1251	7687	1893	485	1566	3195	2609	8319	7514	627	1449	8523	5399	519	1324	418	490	2996	1568	2668	0	2410	622	586	
2005	6055	6071	0	851	2575	10149	2540	1136	1862	3742	2592	11740	9706	1551	1647	15848	13458	1110	1599	1556	909	3517	3079	2769	0	2928	1772	1285	
2006	7986	8145	70	1474	4709	14638	3241	1896	2920	5019	4120	15875	22111	2160	2429	9878	18148	1828	2551	2762	1568	4669	5052	3207	101	4017	2529	2039	
2007	9599	11244	2903	1851	4143	22307	3416	2527	2950	6180	4338	17155	24541	2805	2687	17030	17776	2436	2635	5770	2881	5752	5313	3293	7570	3977	2367	2734	
2008	11468	12761	3437	2016	6083	28633	3845	2820	3125	7871	5053	22127	24430	3430	2842	22874	523	2895	2601	6752	2888	7048	6094	3590	10526	4658	3606	3763	
2009	13167	12629	4179	2064	7808	36090	4264	2660	3308	10042	5098	23425	17696	3696	3226	28420	0	2727	2764	4875	2891	8192	6732	3681	12987	4801	4068	4693	9231

Figure 14: Evolution of VIES messages per MSA 2004 – 2009

Business Forecast

The forecast below is based on information provided through the Business plans, the sector, the sources listed previously and the actual statistics for the period 2004 until 2009. In summary the Business forecast in this section includes the following:

- A five year forecast for VIES messages based on an annual growth of 20%, excluding the impact as a result of changes due to the Business plans;
- A five year forecast for VIES messages per MSA based on an annual growth of 20%, excluding the impact as a result of changes due to the Business plans;
- A forecast including the impact as a result of all changes due to the Business plans for the period 2009 until 2010 including an annual growth of 20%;
- A forecast per MSA for the years 2009 and 2010 inclusive of the 20% annual growth and the changes as a result of the Business plans. It must be noted that this forecast does not take into account national project plans.

The below chart presents the evolution of VIES messages over a five year period as of 2010 inclusive of the 20% annual growth.

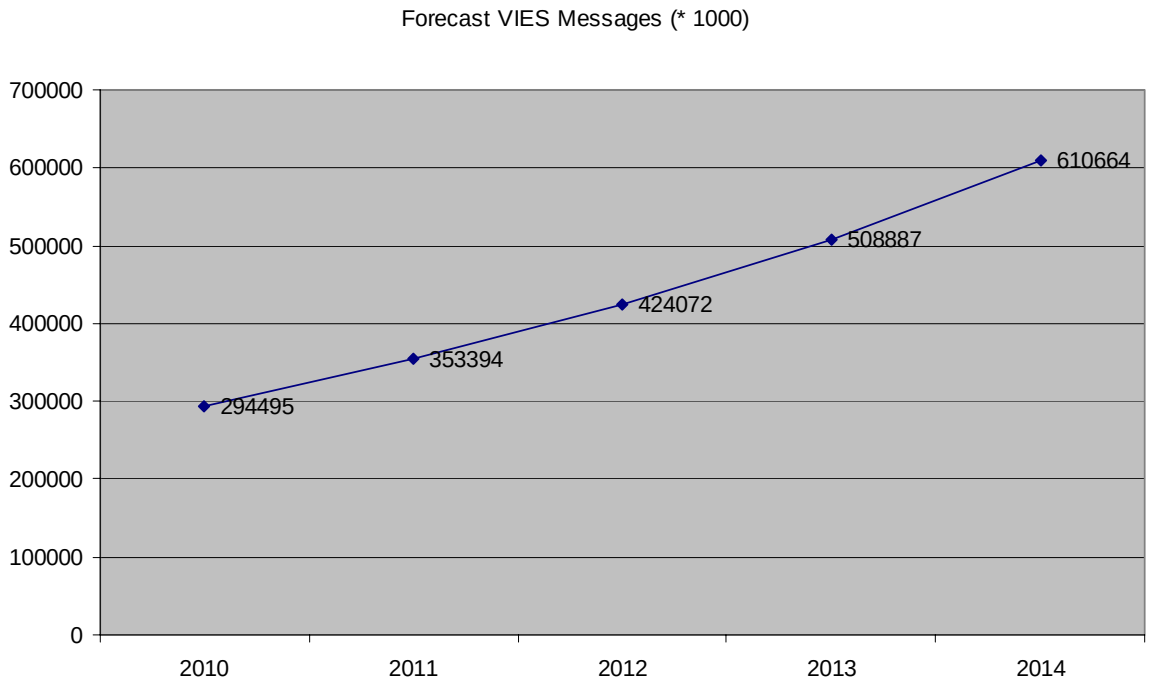
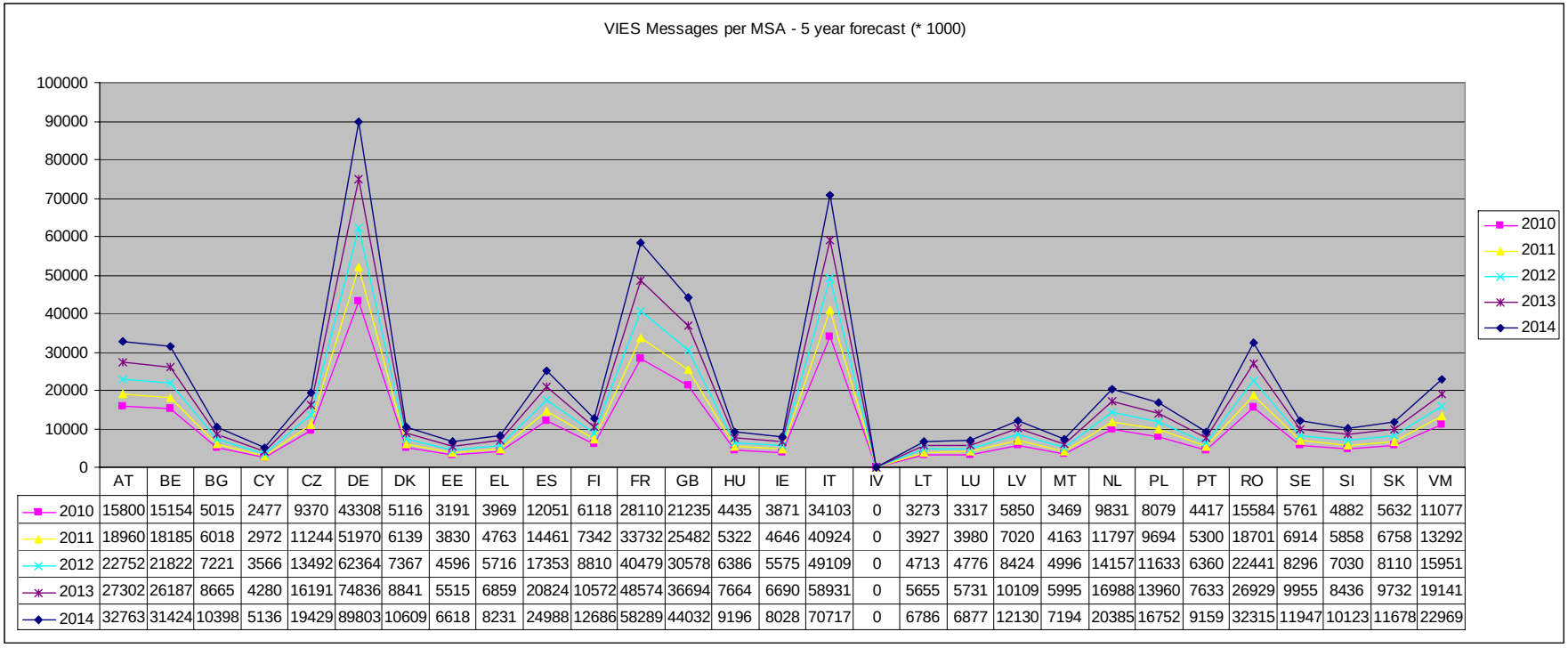


Figure 15: Evolution forecast total VIES messages 2010 – 2014

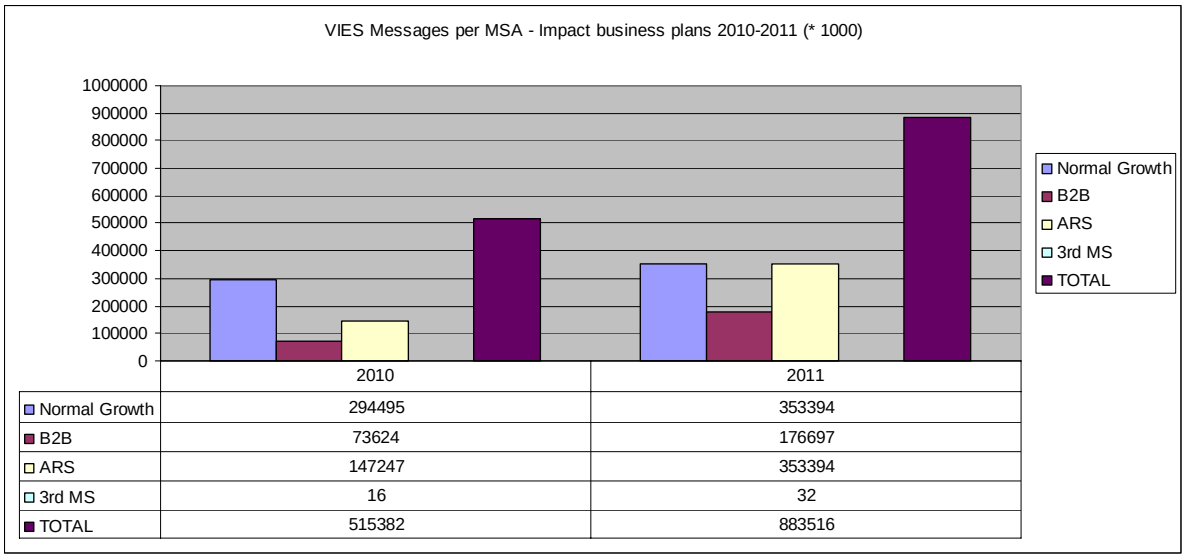
The following chart presents the projected evolution of VIES messages per MSA as a result of the projected growth excluding the impact as a result of the Business plans.



	AT	BE	BG	CY	CZ	DE	DK	EE	EL	ES	FI	FR	GB	HU	IE	IT	IV	LT	LU	LV	MT	NL	PL	PT	RO	SE	SI	SK	VM
2010	15800	15154	5015	2477	9370	43308	5116	3191	3969	12051	6118	28110	21235	4435	3871	34103	0	3273	3317	5850	3469	9831	8079	4417	15584	5761	4882	5632	11077
2011	18960	18185	6018	2972	11244	51970	6139	3830	4763	14461	7342	33732	25482	5322	4646	40924	0	3927	3980	7020	4163	11797	9694	5300	18701	6914	5858	6758	13292
2012	22752	21822	7221	3566	13492	62364	7367	4596	5716	17353	8810	40479	30578	6386	5575	49109	0	4713	4776	8424	4996	14157	11633	6360	22441	8296	7030	8110	15951
2013	27302	26187	8665	4280	16191	74836	8841	5515	6859	20824	10572	48574	36694	7664	6690	58931	0	5655	5731	10109	5995	16988	13960	7633	26929	9955	8436	9732	19141
2014	32763	31424	10398	5136	19429	89803	10609	6618	8231	24988	12686	58289	44032	9196	8028	70717	0	6786	6877	12130	7194	20385	16752	9159	32315	11947	10123	11678	22969

Figure 16: Forecast VIES messages per MSA 2010 – 2014

The next chart provides a forecast of the evolution of messages including the estimated growth and the impact as a result of the changes that will occur in 2009 and 2010 due to the current Business plans.



	2010	2011
Normal Growth	294495	353394
B2B	73624	176697
ARS	147247	353394
3rd MS	16	32
TOTAL	515382	883516

Figure 17: Forecast VIES messages per MSA – Impact Business plans

Conclusion

Based on the statistics reported above in combination with the Business forecast for this service, the conclusions are:

- A significant increase in the total amount of messages is expected due to the estimated 20% annual growth and the impact of the Business plans;
- Based on the estimated growth and the Business plans the total amount of exchanged messages in 2010 equals a total of more than 883Mio messages;
- Trends of the actual message numbers show that the 20% annual growth is estimated too high for the years 2008 and 2009, where the growth was respectively 10 and 13%. The actual trends for the upcoming years will probably be a bit lower than the forecasted ones. For the next capacity plan the average growth of the last three years will be taken to do the forecast;
- From a service point of view, actions are required to ensure sufficient capacity in the near future for this service exists to support the growth. The CCN production gateways and local systems must be evaluated in terms of capacity and the necessary actions taken to ensure sufficient capacity exists to support the upcoming demand.

6.4.2 VAT-on-e-Services (VoeS)

VoeS Generic Information	
HOSTED AT/ MANAGED BY	MSA
CAPACITY METRICS COLLECTED BY	CPU usage - Not applicable Memory usage - Not applicable HD space usage - Not applicable DB table space usage - Not applicable NW/bandwidth usage - CCN/TC Business Monitoring - CCN/TC E2E Monitoring - undetermined
CAPACITY RELATED SLA AGREEMENTS IN PLACE	SCIT68-SLA (see [A5])

Table 6-16: VoeS – Generic Information

Generic Information

According to principles established by the European Union, Value Added Tax (VAT) on a trade over electronic networks is to be charged in the country of a purchaser and not in the country of a supplier (seller). Therefore it is necessary to ensure a flow of relevant information between all Member States. VAT-on-e-Services (VoeS) provide such functionality for specific cases. It enables exchange of information between Member States concerning transactions of electronic services and goods, their participants, charged Value Added Tax (VAT) and amount of tax paid and due, when a supplier is a non-established taxable person within the territory of European Union.

VoeS national applications are developed and operated by each Member State separately; DG TAXUD delivers only message specifications and guidelines for implementing national VoeS applications.

VAT on eServices (VoeS), is a special scheme which rules the VAT legislation and procedure applicable for traders who are not established in the EU but who provide electronically supplied services to non-taxable persons established within the EU.

This special scheme has led to the implementation of the dedicated system “VoeS” for exchange of information between MS.

The scheme provides for traders not established within the EU, supplying specific eservices, an electronic means of:

- Registration for VAT;
- Submission of VAT return;

- Payment of VAT due.

in a single MS of their choice irrespective of the MS of residence of the non-taxable client. This simplified system allows the non-established taxable person to use a Member State of identification dedicated web site to access an automated system for registering and declaring VAT on-line. The data for the three above-mentioned VAT obligations is then submitted via Internet or e-mail or any other electronic means to this Member State of identification by the non-established taxable person.

Assumptions and restrictions

Statistics

Problems regarding performance/capacity issues

From source: Problem Management Annex to the MSR [R7] the following problem overview is created:

Capacity related Problems			
PROBLEM ID	REGISTRATION	TITLE	CATEGORY
-	-	-	-

Table 6-17: VoeS – Capacity related Problems

No VoeS problems regarding performance/capacity issues have been registered in the last year.

Business Transactions

The exchange of information between administrations of the Member States takes place through the CCN-Mail2 system (SMTP over CCN) with XML attachments and the application domain *e*Services. The Business usage of VoeS is indicated by the total number of e-mail messages exchanged.

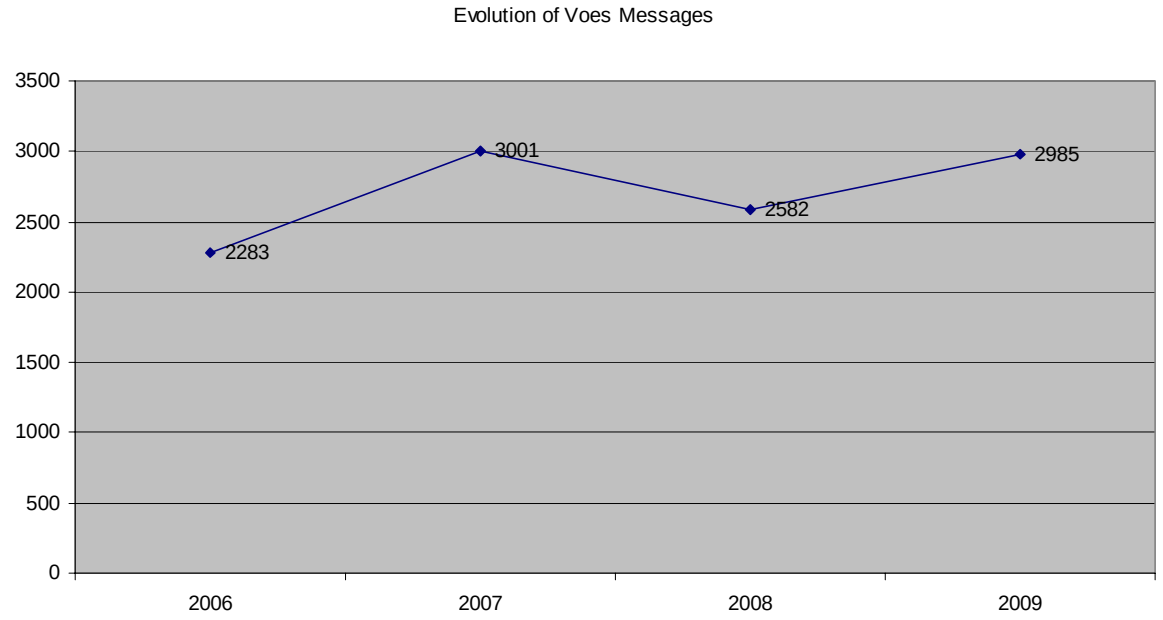
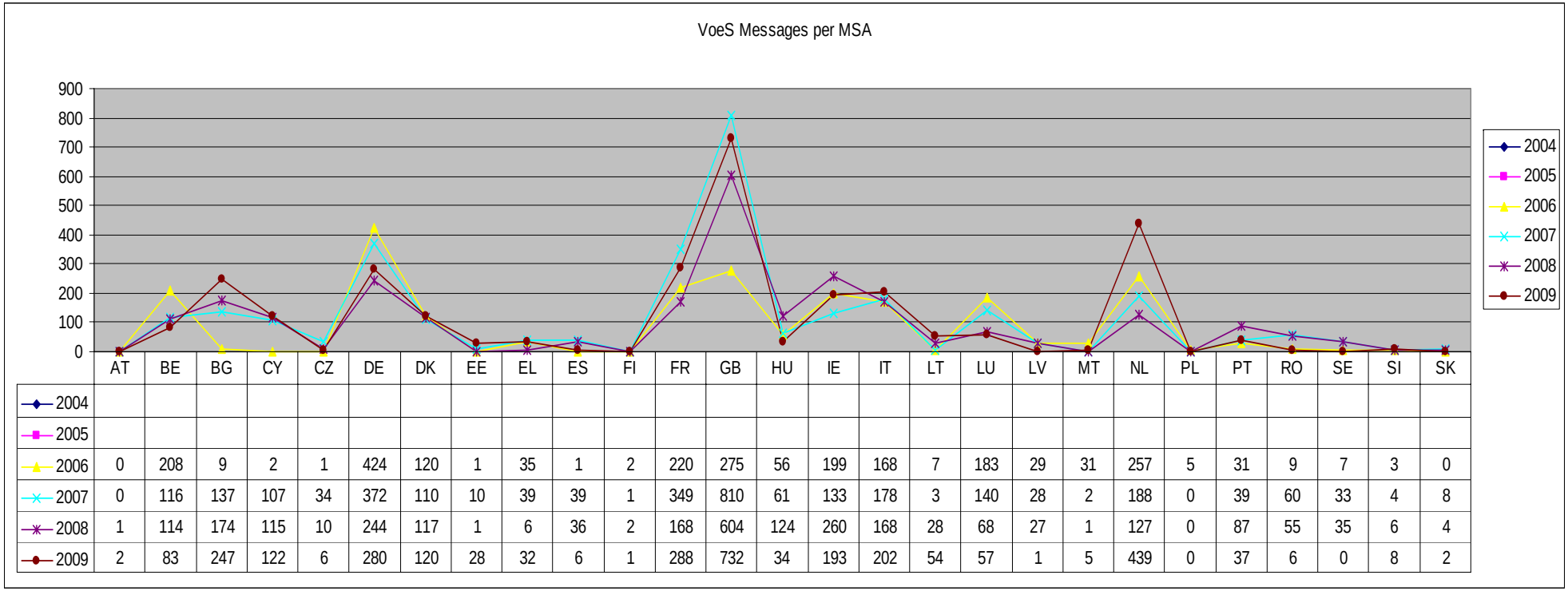


Figure 18: Evolution of VIES messages 2006 - 2009

The chart above provides an overview of the total amount of VoeS messages exchanged between 2006 and 2009. In total 10851 messages have been exchanged during a period of four years.

The following chart gives a good indication of the major contributors to the total messages exchanged during the past six years.



	AT	BE	BG	CY	CZ	DE	DK	EE	EL	ES	FI	FR	GB	HU	IE	IT	LT	LU	LV	MT	NL	PL	PT	RO	SE	SI	SK
2004																											
2005																											
2006	0	208	9	2	1	424	120	1	35	1	2	220	275	56	199	168	7	183	29	31	257	5	31	9	7	3	0
2007	0	116	137	107	34	372	110	10	39	39	1	349	810	61	133	178	3	140	28	2	188	0	39	60	33	4	8
2008	1	114	174	115	10	244	117	1	6	36	2	168	604	124	260	168	28	68	27	1	127	0	87	55	35	6	4
2009	2	83	247	122	6	280	120	28	32	6	1	288	732	34	193	202	54	57	1	5	439	0	37	6	0	8	2

Figure 19: Evolution of VoeS messages per MSA 2004 – 2009

Business Forecast

A forecast of the VoeS messages for the next five years can not be made as the annual growth fluctuates too much. The annual growth is shown in the table below.

Country	Growth 2006-2007	Growth 2007-2008	Growth 2008-2009
AT	0%	0%	200%
BE	56%	98%	73%
BG	1522%	127%	142%
CY	5350%	107%	106%
CZ	3400%	29%	60%
DE	88%	66%	115%
DK	92%	106%	103%
EE	1000%	10%	2800%
EL	111%	15%	533%
ES	3900%	92%	17%
FI	50%	200%	50%
FR	159%	48%	171%
GB	295%	75%	121%
HU	109%	203%	27%
IE	67%	195%	74%
IT	106%	94%	120%
LT	43%	933%	193%
LU	77%	49%	84%
LV	97%	96%	4%
MT	6%	50%	500%
NL	73%	68%	346%
PL	0%	0%	0%
PT	126%	223%	43%
RO	667%	92%	11%
SE	471%	106%	0%
SI	133%	150%	133%
SK	0%	50%	50%

Table 6-18: VoeS – Annual Growth

Conclusion

As no forecast is included in this version of the plan, no conclusions have been drawn at this stage.

6.4.3 Taxation on Savings (ToS)

ToS Generic Information	
HOSTED AT/ MANAGED BY	MSA
CAPACITY METRICS COLLECTED BY	CPU usage - Not applicable Memory usage - Not applicable HD space usage - Not applicable DB table space usage - Not applicable NW/bandwidth usage - CCN/TC Business Monitoring - CCN/TC E2E Monitoring - undetermined
CAPACITY RELATED SLA AGREEMENTS IN PLACE	No known agreements upon performance/response times

Table 6-19: ToS – Generic Information

Generic Information

For the Taxation of Savings application DG TAXUD provides only proposal of high level application architecture. Leaving implementation decisions up to concerned Member State the DG TAXUD defines a list of non-functional requirements that national applications should met.

According to principles established by the European Union, in the situation when the interests are paid by an entity in one Member State of European Union and a recipient of interest payments is resident of another Member State of European Union, then process of taxation of those interests falls under the authority of the second. Meaning that tax return forms should be submitted in the Member State of Relevant Interest Recipient and also there taxes on interests should be paid. Also withheld taxes should be transferred from other Member States to the Member State of Relevant Interest Recipient. Therefore it is necessary to ensure a flow of relevant information between all Member States and the Taxation of Savings System provides such functionality.

Assumptions and restrictions

No assumptions and restrictions are made.

Statistics

Problems regarding performance/capacity issues

From source: Problem Management Annex to the MSR [R7] the following problem overview is created:

Capacity related Problems			
PROBLEM ID	REGISTRATION	TITLE	CATEGORY
-	-	-	-

Table 6-20: ToS – Capacity related Problems

No ToS problems regarding performance/capacity issues have been registered in the last year.

Business Transactions

Currently the CCN Mail 2 system is used for the exchange of information between the Member States.

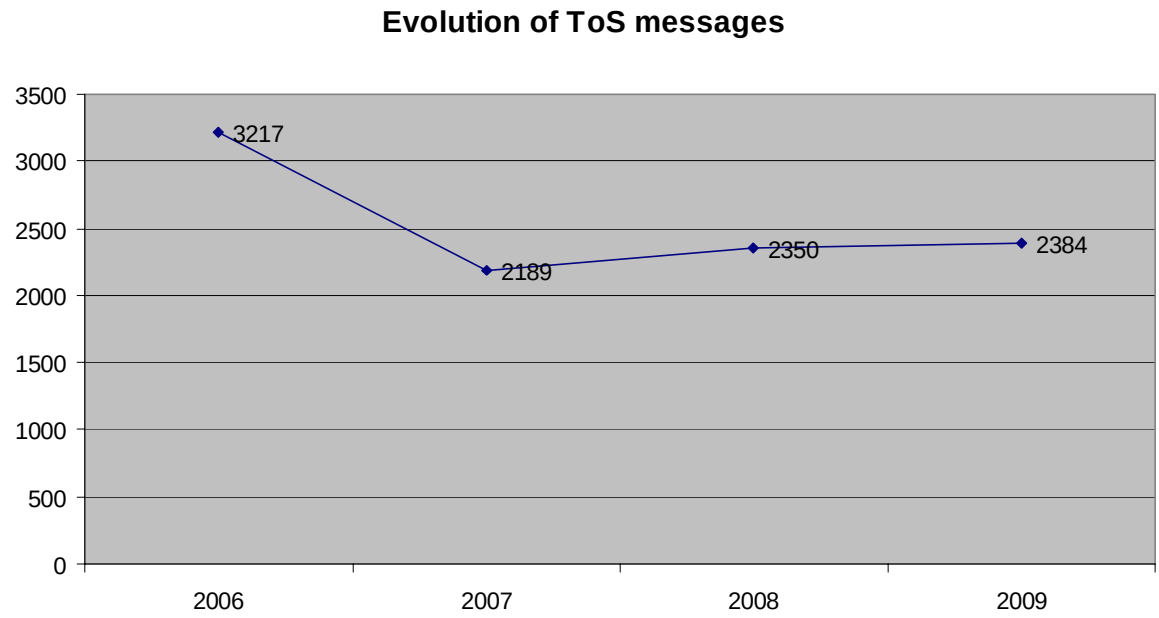
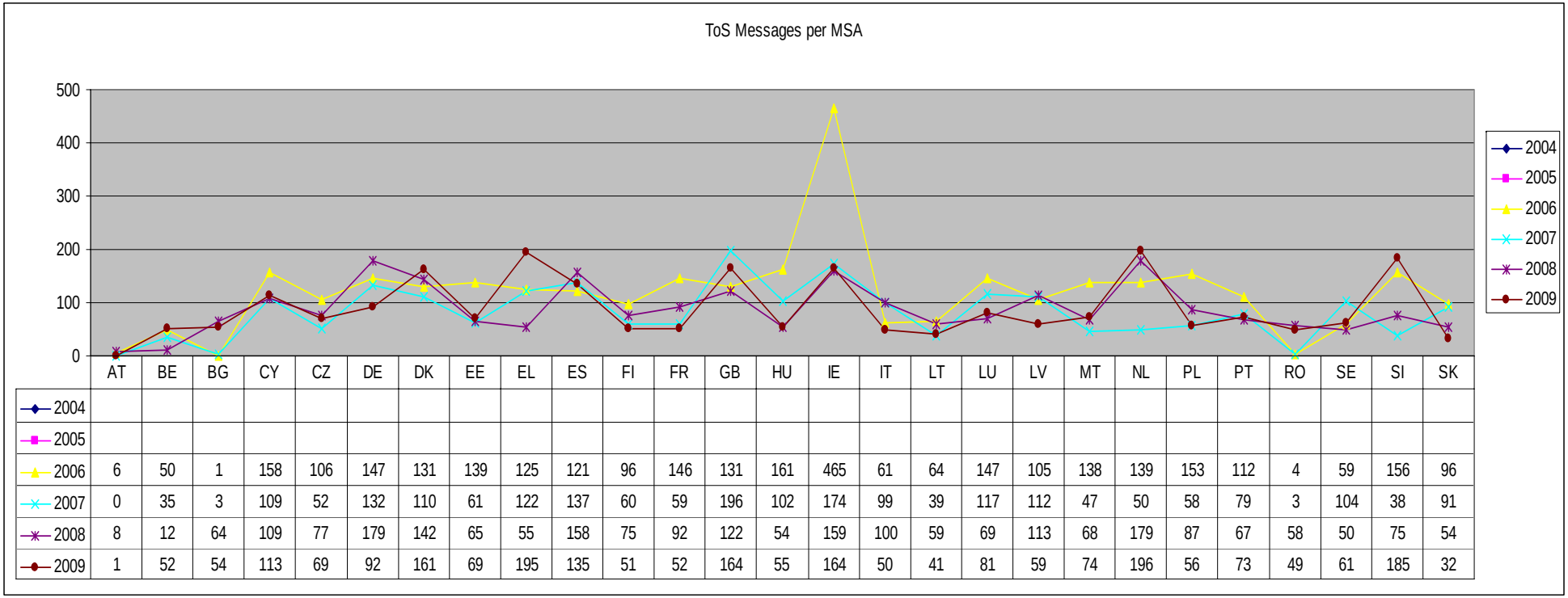


Figure 20: Evolution of ToS messages 2006 - 2009

The chart above provides an overview of the total amount of ToS messages exchanged between 2006 and 2009. In total 10140 messages have been exchanged during a period of four years.

The following chart gives a good indication of the major contributor's to the total messages exchanged during the past six years.



	AT	BE	BG	CY	CZ	DE	DK	EE	EL	ES	FI	FR	GB	HU	IE	IT	LT	LU	LV	MT	NL	PL	PT	RO	SE	SI	SK
2004																											
2005																											
2006	6	50	1	158	106	147	131	139	125	121	96	146	131	161	465	61	64	147	105	138	139	153	112	4	59	156	96
2007	0	35	3	109	52	132	110	61	122	137	60	59	196	102	174	99	39	117	112	47	50	58	79	3	104	38	91
2008	8	12	64	109	77	179	142	65	55	158	75	92	122	54	159	100	59	69	113	68	179	87	67	58	50	75	54
2009	1	52	54	113	69	92	161	69	195	135	51	52	164	55	164	50	41	81	59	74	196	56	73	49	61	185	32

Figure 21: Evolution of ToS messages per MSA 2004 – 2009

Business Forecast

A forecast of the ToS messages for the next five years can not be made as the annual growth fluctuates too much. The annual growth is shown in the table below. .

Country	Growth 2006-2007	Growth 2007-2008	Growth 2008-2009
AT	0%	0%	13%
BE	70%	34%	433%
BG	300%	2133%	84%
CY	69%	100%	104%
CZ	49%	148%	90%
DE	90%	136%	51%
DK	84%	129%	113%
EE	44%	107%	106%
EL	98%	45%	355%
ES	113%	115%	85%
FI	63%	125%	68%
FR	40%	156%	57%
GB	150%	62%	134%
HU	63%	53%	102%
IE	37%	91%	103%
IT	162%	101%	50%
LT	61%	151%	69%
LU	80%	59%	117%
LV	107%	101%	52%
MT	34%	145%	109%
NL	36%	358%	109%
PL	38%	150%	64%
PT	71%	85%	109%
RO	75%	1933%	84%
SE	176%	48%	122%
SI	24%	197%	247%
SK	95%	59%	59%

Table 6-21: ToS – Annual Growth

Conclusion

As no forecast is included in this version of the plan, no conclusions have been drawn at this stage.

6.4.4 Exchange of Forms (EoF)

EoF Generic Information	
HOSTED AT/ MANAGED BY	MSA
CAPACITY METRICS COLLECTED BY	CPU usage - Not applicable Memory usage - Not applicable HD space usage - Not applicable DB table space usage - Not applicable NW/bandwidth usage - CCN/TC Business Monitoring - CCN/TC E2E Monitoring - undetermined
CAPACITY RELATED SLA AGREEMENTS IN PLACE	SCIT68-SLA (see [A5])

Table 6-22: EoF – Generic Information

Generic Information

E-Form System is an element of a common system for the exchange of information between Member States. The main objective of E-Form System is to establish means for exchange of certain information between Member States. Its essential functionalities are revolving around three major issues:

- information requests, requests for administrative enquiries and exchange of spontaneous data sent by the competent authority of one Member State (the requesting authority) to the competent authority of another Member State (the requested authority);
- notification of an administrative decision to another Member State who communicates it to its taxable person;
- introducing a simplified form for a fast exchange of information in case of suspected fraudulent operation.

Electronic Forms exchanged between MS to retrieve / verify information, in the framework of the “Administrative Cooperation”

The e-form system:

- Uses XML for the forms data to allow the automatic processing of the forms;
- Provide the MS with a form implementation that will allow them to load, edit and save the form data while easing the support of the different languages;

3 Forms are concerned:

- MISSING TRADER FORM (SCAC 383 Annex 1 Rev 2) = commonly used as a simplified form for a fast exchange of information in case of suspected fraudulent operation
- REQUEST FOR NOTIFICATION = commonly used to notify of an administrative decision to another MS who communicates it to its taxable person
- FORM "SCAC 2004"= commonly used for exchange of spontaneous data and information requests.

An e-form is completed by the first MS-A who will, after completing their part, generate an XML document.

This XML document is sent to the other MS-B who will import it and fill out the rest of the form, depending on how the first MS-A completed their part.

This information is sent back to MS-A (also in XML format)

The XML file can only be sent through a secured mailbox (e.g. CCN-Mail2)

Assumptions and restrictions

No assumptions and restrictions are made.

Statistics

Problems regarding performance/capacity issues

From source: Problem Management Annex to the MSR [R7] the following problem overview is created:

Capacity related Problems			
PROBLEM ID	REGISTRATION	TITLE	CATEGORY
-	-	-	-

Table 6-23: EoF – Capacity related Problems

No EoF problems regarding performance/capacity issues have been registered in the last year.

Business Transactions

The CCN Mail 2 system is used for the exchange of forms (i.e. SCAC CLO form, Recovery forms, missing trader form, automatic and structured forms, etc.) and files between the Member States. The usage of EoF is indicated by the number of e-mail messages exchanged.

For the following EoF related statistics, the next type of messages are taken into account :

- TAXFRAUD;
- VIESCLO;

- RECTAX;
- RECVAT;
- TAXAUTO.

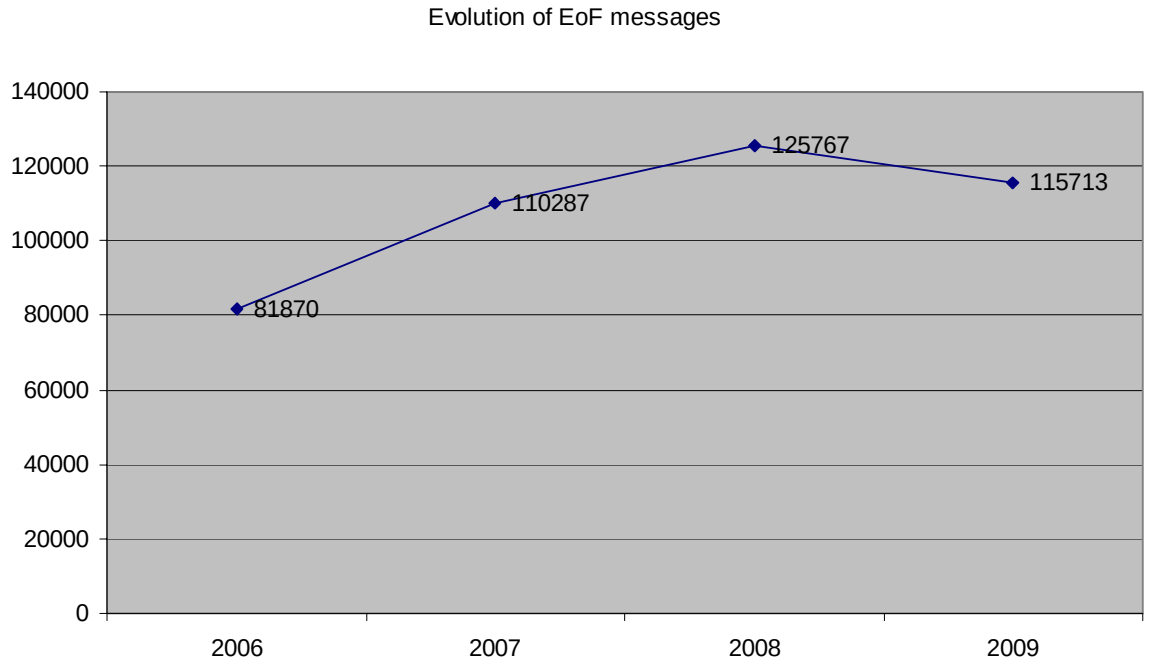
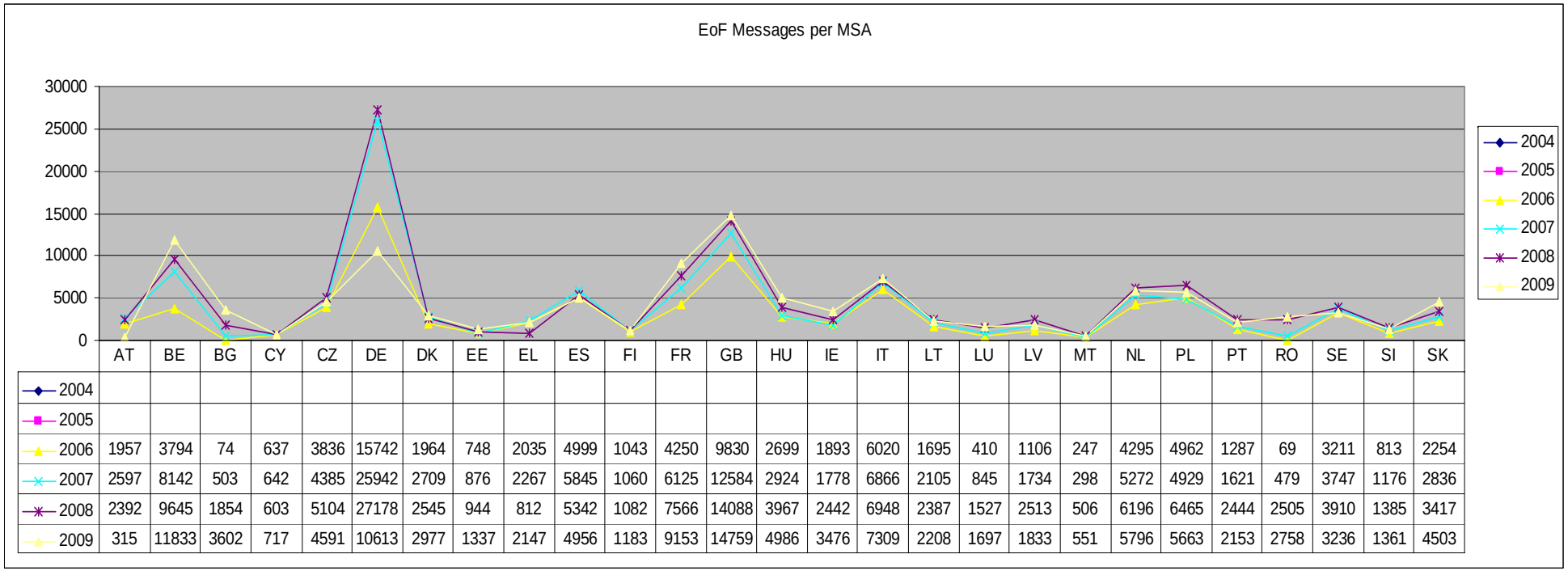


Figure 22: Evolution of EoF messages 2006 - 2009

The chart above provides an overview of the total amount of EoF messages exchanged between 2006 and 2009. In total more than 433 thousand messages have been exchanged during a period of three years.

The following chart gives a good indication of the major contributors to the total messages exchanged during the past six years.



	AT	BE	BG	CY	CZ	DE	DK	EE	EL	ES	FI	FR	GB	HU	IE	IT	LT	LU	LV	MT	NL	PL	PT	RO	SE	SI	SK
2004																											
2005																											
2006	1957	3794	74	637	3836	15742	1964	748	2035	4999	1043	4250	9830	2699	1893	6020	1695	410	1106	247	4295	4962	1287	69	3211	813	2254
2007	2597	8142	503	642	4385	25942	2709	876	2267	5845	1060	6125	12584	2924	1778	6866	2105	845	1734	298	5272	4929	1621	479	3747	1176	2836
2008	2392	9645	1854	603	5104	27178	2545	944	812	5342	1082	7566	14088	3967	2442	6948	2387	1527	2513	506	6196	6465	2444	2505	3910	1385	3417
2009	315	11833	3602	717	4591	10613	2977	1337	2147	4956	1183	9153	14759	4986	3476	7309	2208	1697	1833	551	5796	5663	2153	2758	3236	1361	4503

Figure 23: Evolution of EoF messages per MSA 2004 – 2009

Business Forecast

A forecast of the EoF messages for the next five years can not be made as the annual growth fluctuates too much. The annual growth is shown in the table below. .

Country	Growth 2006-2007	Growth 2007-2008	Growth 2008-2009
AT	133%	92%	13%
BE	215%	118%	123%
BG	680%	369%	194%
CY	101%	94%	119%
CZ	114%	116%	90%
DE	165%	105%	39%
DK	138%	94%	117%
EE	117%	108%	142%
EL	111%	36%	264%
ES	117%	91%	93%
FI	102%	102%	109%
FR	144%	124%	121%
GB	128%	112%	105%
HU	108%	136%	126%
IE	94%	137%	142%
IT	114%	101%	105%
LT	124%	113%	93%
LU	206%	181%	111%
LV	157%	145%	73%
MT	121%	170%	109%
NL	123%	118%	94%
PL	99%	131%	88%
PT	126%	151%	88%
RO	694%	523%	110%
SE	117%	104%	83%
SI	145%	118%	98%
SK	126%	120%	132%
TOTAL	135%	114%	92%

Table 6-24: EoF – Annual Growth

Conclusion

- Based on the statistics of 2006 until 2009 an average growth of 14% has been identified. This has not been used to forecast the next 5 years because the annual growth shows a lowering trend;
- Forecasts from the Business and the impact as a result of the Business plans remains to be analysed and processed in order to determine the progressive growth for the coming years;
- The use of assumptions and restrictions is important to determine the exact capacity requirements and the growth. This remains to be included in the plan and requires Business input.

7. Resource Capacity Management

7.1 Introduction

Resource Capacity Management deals with analysis and forecasting of resources on the technical level. Monitoring tools are used to measure the amount of resources available using thresholds to alert support personnel to take preventive action. Based on the monitoring data trending analysis can be done which results in a forecast for required capacity of technical resources. Those activities, to ensure that the most efficient use is made of the existing capacity, would also prevent distress purchases and disruption.

Resource Capacity Management involves understanding the performance characteristics and capabilities and current utilisation levels of all technical components (CIs) that build up the infrastructure and predict the impact of any changes and trends.

Resource Capacity Management should ensure the right amount of processing power, storage capacity and network bandwidth to guarantee proper performance and prevent incidents related to capacity shortage.

For the local resources which are hosted and maintained by the National Administrations no data is currently available. For the scope of this plan it is also not needed to gather all the resource usage details from all local components. The responsibility for these lies with the National Administration. DG Taxation and Customs Union only needs to be sure that the various National Administrations are performing Capacity Management activities on their local infrastructure and that they are aware of the future capacity requirements for their environment and anticipate on that.

This will be handled as follows. Periodically country specific Capacity Management information (e.g. number of messages created/received by NA, including trending) which is available within DG Taxation and Customs Union will be shared with the NA. The information will be accompanied with some explanation on how to interpret the data and a questionnaire. The questionnaire will list a number of questions with the goal to gain insight in the Capacity Management activities that the NA performs. In other words, is the NA “in control” of their environment and do they anticipate on future developments.

The resources which should be managed, monitored and under control of the NA s are:

- Disk space;
- CPU Usage;
- Memory Usage;
- Network Bandwidth.

Note: The information provided by the NA shall not be on the detailed resource level (e.g. disk space usage). See also recommendation B2 in paragraph 8.5.

The only NA specific resource information which can be centrally collected is the network usage statistics (see paragraph 7.2.4).

7.2 Current Resource Capacity Targets

This section provides an overview of current requirements related to capacity of IT-services and underlying ICT infrastructure (derived from agreements such as SLA, OLA and TOC).

According to the Technical Annex [R4] there are no agreed Service Quality Indicators regarding Capacity Management which are applicable for the systems hosted by the NA s.

Capacity targets for trans-European IT services					
ID	NAME	TARGET	LIMIT	MINIMUM NUMBER OF EVENTS	APPLICATION PERIOD
-	-	-	-	-	-

Table 7-1: Capacity targets for trans-European IT services

For completeness the Service Quality Indicator regarding Capacity Management applicable for Commission IT services according to the Technical Annex [R4] is stated below:

Capacity targets for Commission IT services					
ID	NAME	TARGET	LIMIT	MINIMUM NUMBER OF EVENTS	APPLICATION PERIOD
SQI14	ICT Resource usage by Managed objects under the responsibility of the Commission	No usage of the Managed Objects resource above 70%	No usage of the managed resource above 80%	1 Managed Object	Over the last month

Table 7-2: Capacity targets for Commission IT services

The Capacity related targets/requirements as described in the Terms of Collaboration for Customs [R11] is limited to the following description:

“The National Administrations shall at any time assure an adequate capacity for storing the Customs data and ensure a production and test environment available and configured. National Administrations will also ensure back-up storage for the NCTS & eCustoms data and applications. The National Administrations will inform the Commission on any risk related to Capacity Management, on ad hoc basis.”

Similarly the Capacity related targets/requirements as described in the Terms of Collaboration for Excise EMCS [R12] (please note this is a draft document) is limited to the following description:

“The National Administrations shall at any time assure an adequate capacity for storing the Excise data and ensure a production and test environment available and configured. National Administrations will also ensure back-up storage for the Excise data and applications. The National Administrations will inform the Commission on any risk related to Capacity Management, on ad hoc basis.”

The Capacity related targets/requirements as described in the SLA [A5] concerning the VAT related systems is limited to the following description: "The Member States shall at any time assure an adequate capacity for storing the VIES data as defined in [RD4] art. 22. Furthermore, Member States shall ensure a production and test environment available and configured. Member States shall also ensure back-up storage for the VIES data and VIES applications."

The questionnaire as proposed in the recommendations should therefore focus on the local responsibility of the NA s to ensure sufficient capacity is in place and to retrieve sufficient information from the NA to be able to conclude that the NA is in control and is actively managing capacity of its managed resources.

Additional: We added high level capacity questions for the Periodic Voice Survey which planned due date is in June 2010. That will be the starting point, as to go possibly more in-depth with more specific questions as listed below in the questionnaire.

7.2.1 Disk space

Note: The information provided by the NA shall not be on the detailed resource level (e.g. disk space usage). See also recommendation RC2 in paragraphs 8.2 and 8.5.

7.2.2 CPU usage

Note: The information provided by the NA shall not be on the detailed resource level (e.g. CPU usage). See also recommendation RC2 in paragraphs 8.2 and 8.5.

7.2.3 Memory usage

Note: The information provided by the NA shall not be on the detailed resource level (e.g. Memory usage). See also recommendation RC2 in paragraphs 8.2 and 8.5.

7.2.4 Network bandwidth

Generic Information

Scope of monitored resources

Monitoring and reporting the network bandwidth is under the responsibility of another contractor: CCN/TC.

This paragraph contains some network statistics on an aggregated level and includes the network traffic volumes extracted from the CCN traffic matrix and LCMS statistics files.

Statistics

Problems regarding performance/capacity issues

From source: Problem Management Annex to the MSR [R7] the following problem overview is created:

Capacity related Problems			
PROBLEM ID	REGISTRATION	TITLE	CATEGORY
-	-	-	-

Table 7-3: Network Bandwidth – Capacity Related Problems

No capacity related problems regarding network bandwidth have been registered.

The following charts provide an overview of the actual network traffic volumes per service area generated from the CCN production gateways. These represent the actual size (network traffic volume) of all messages exchanged for a relevant period.

Customs

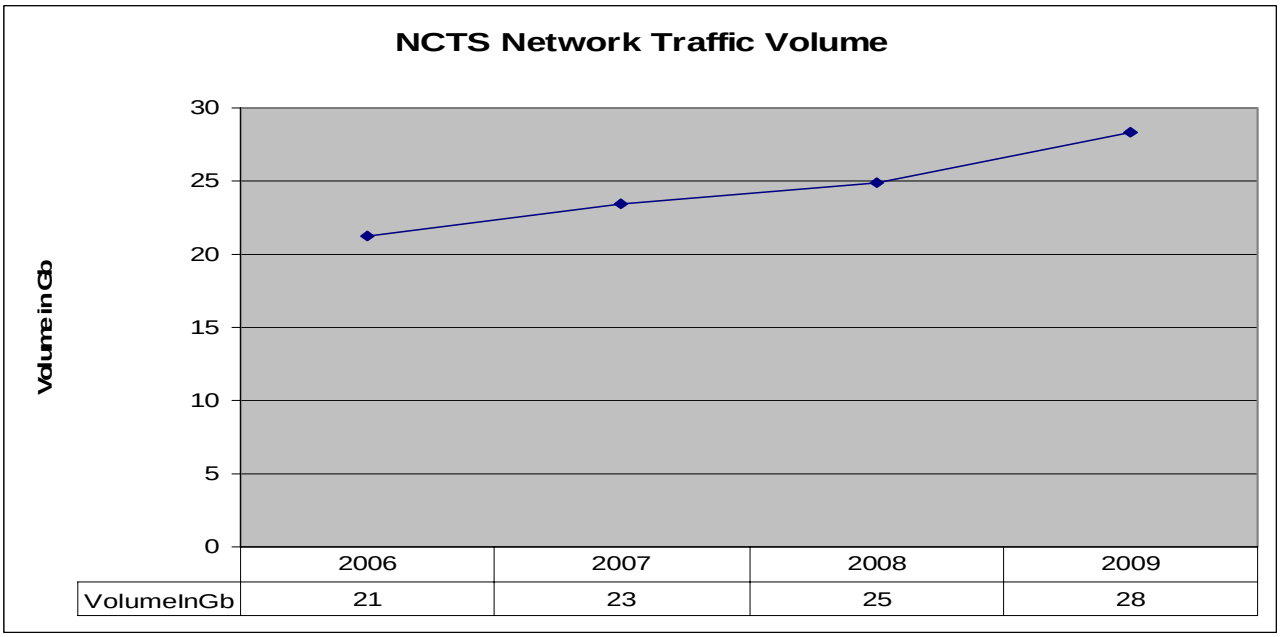


Figure 24: Evolution NCTS Network Volume 2006-2009

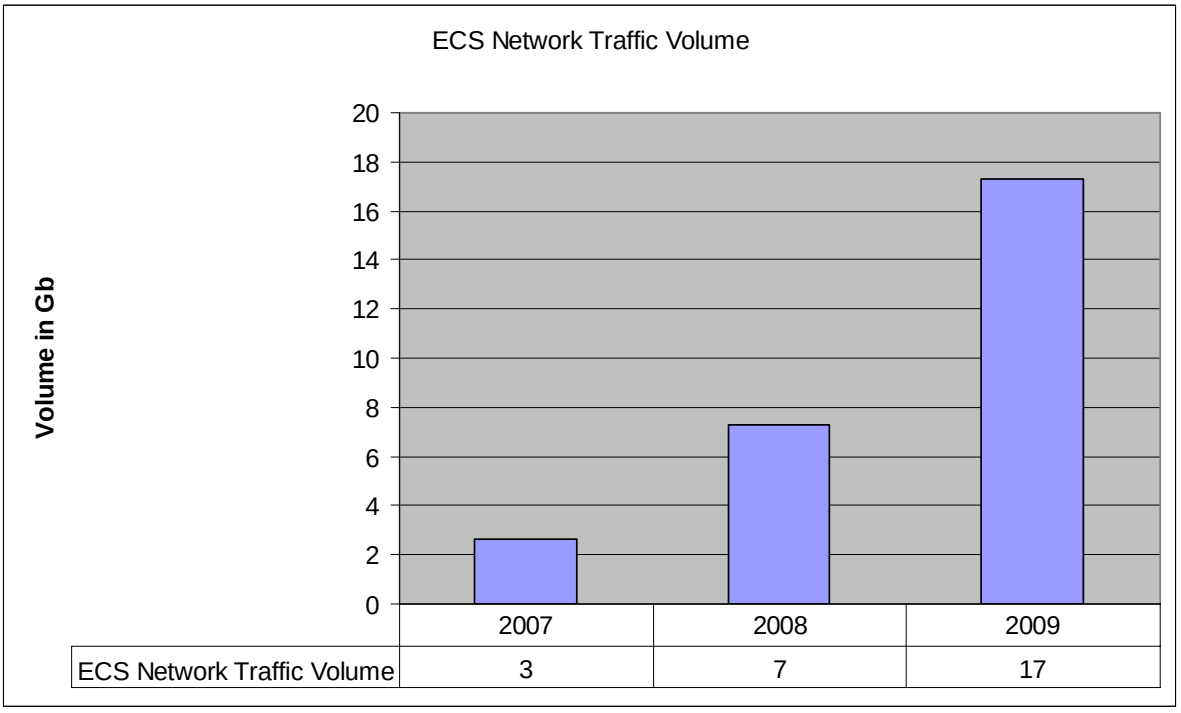
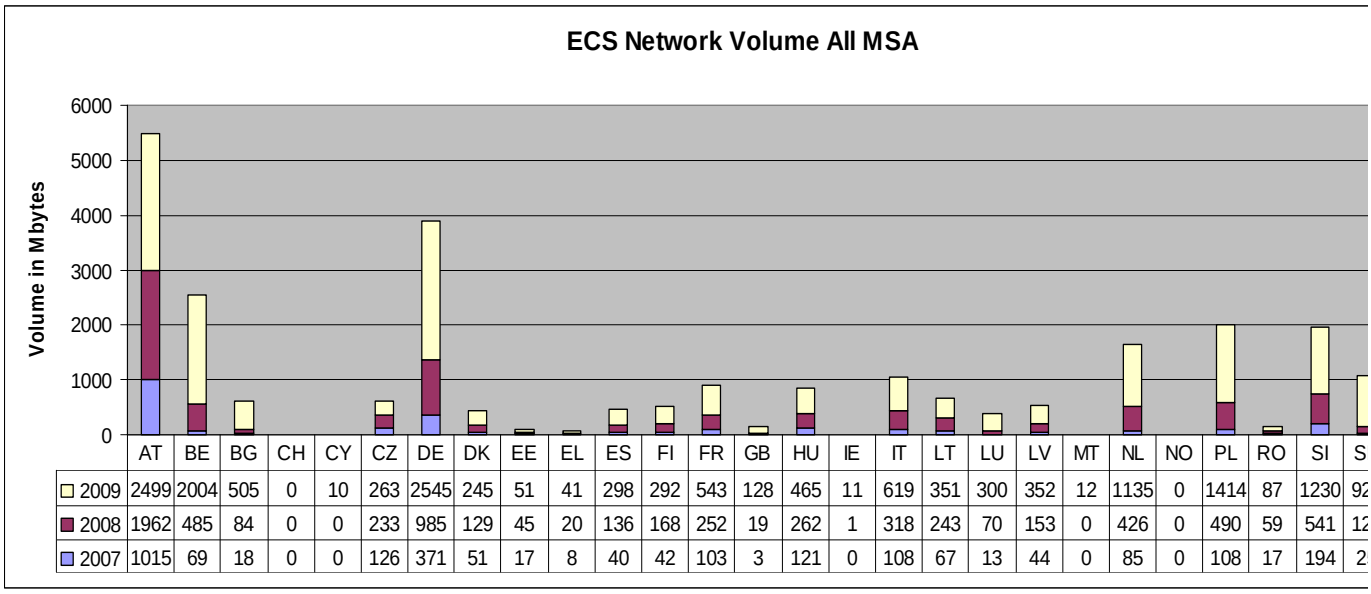
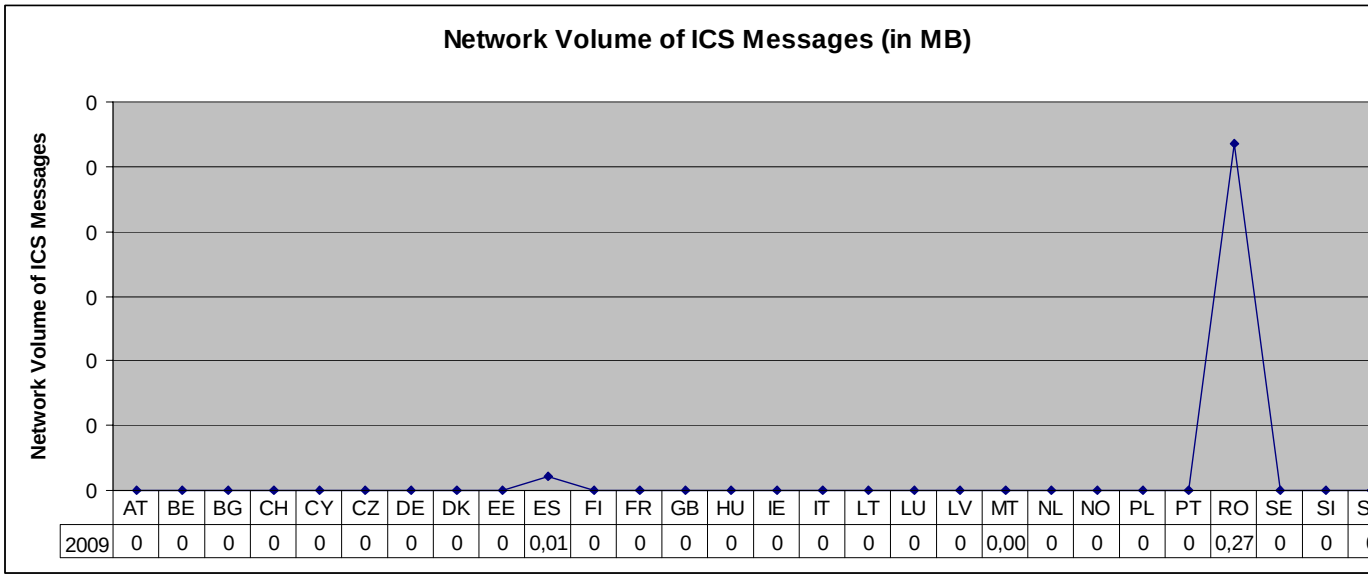


Figure 25: ECS Network Volume 2006-2009



	AT	BE	BG	CH	CY	CZ	DE	DK	EE	EL	ES	FI	FR	GB	HU	IE	IT	LT	LU	LV	MT	NL	NO	PL	RO	SI	S
2009	2499	2004	505	0	10	263	2545	245	51	41	298	292	543	128	465	11	619	351	300	352	12	1135	0	1414	87	1230	92
2008	1962	485	84	0	0	233	985	129	45	20	136	168	252	19	262	1	318	243	70	153	0	426	0	490	59	541	12
2007	1015	69	18	0	0	126	371	51	17	8	40	42	103	3	121	0	108	67	13	44	0	85	0	108	17	194	2

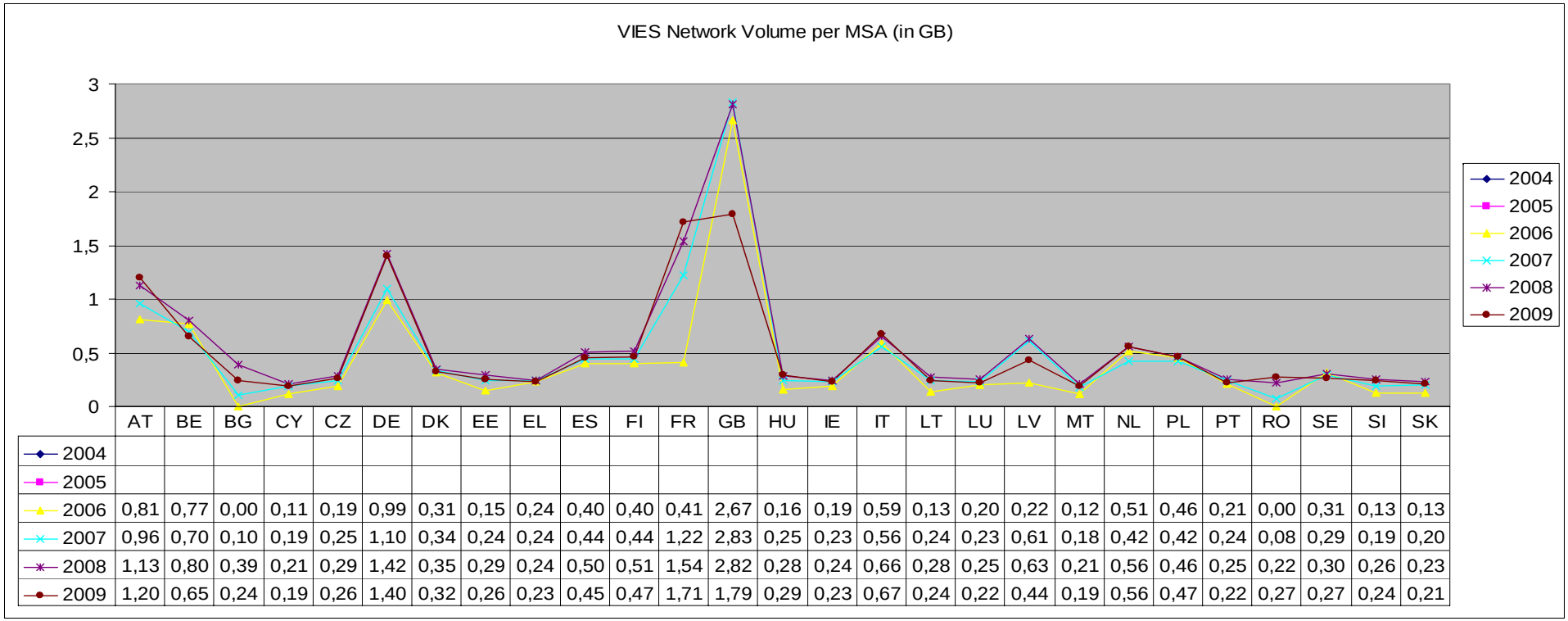
Figure 26: ECS Network Volume per MSA 2007-2009



	AT	BE	BG	CH	CY	CZ	DE	DK	EE	ES	FI	FR	GB	HU	IE	IT	LT	LU	LV	MT	NL	NO	PL	PT	RO	SE	SI	S
2009	0	0	0	0	0	0	0	0	0	0,01	0	0	0	0	0	0	0	0	0	0,00	0	0	0	0	0,27	0	0	

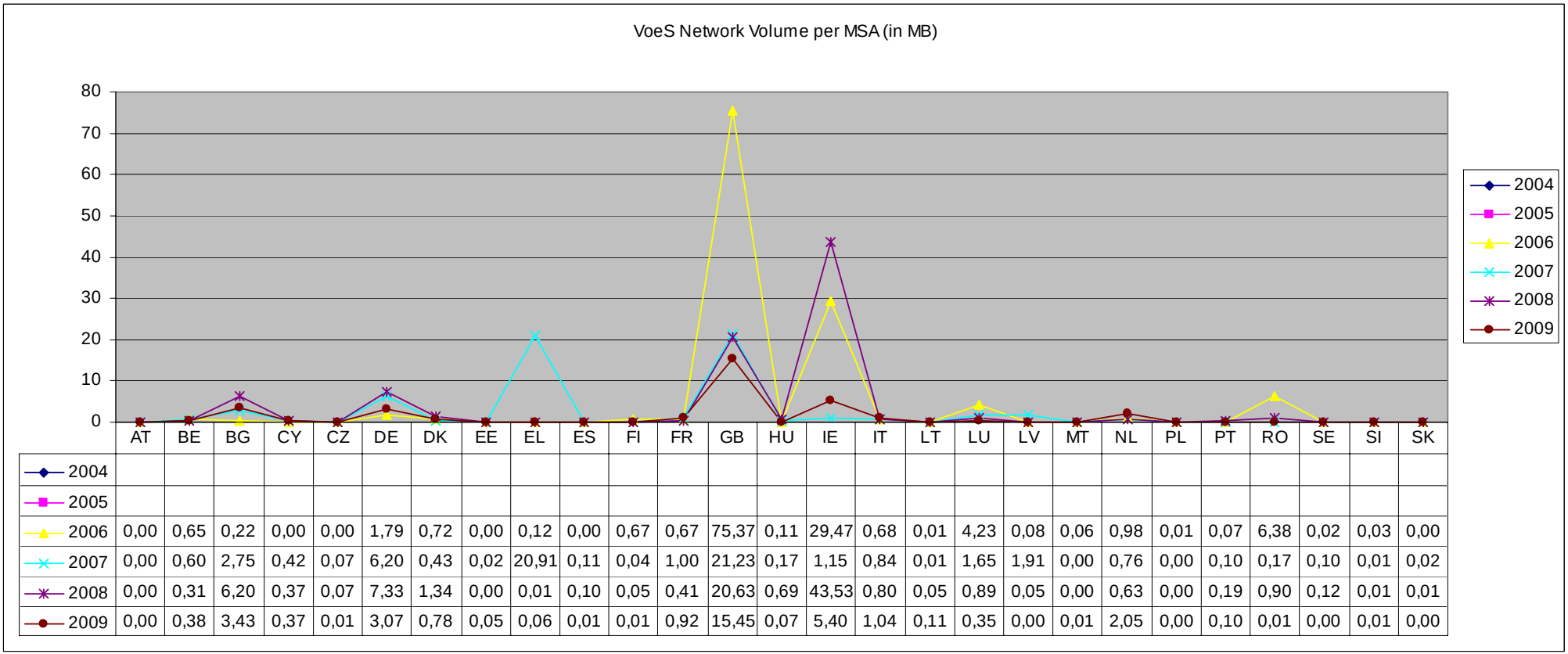
Figure 27: ICS Network Volume per MSA 2009

Taxation



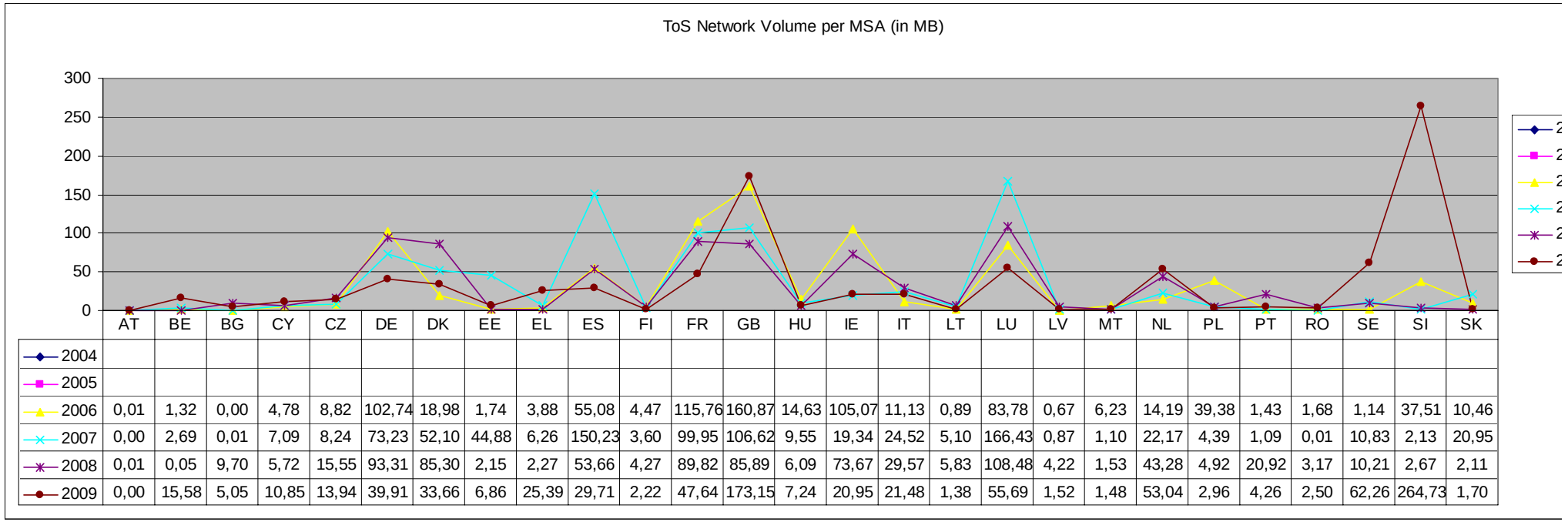
	AT	BE	BG	CY	CZ	DE	DK	EE	EL	ES	FI	FR	GB	HU	IE	IT	LT	LU	LV	MT	NL	PL	PT	RO	SE	SI	SK
2004																											
2005																											
2006	0,81	0,77	0,00	0,11	0,19	0,99	0,31	0,15	0,24	0,40	0,40	0,41	2,67	0,16	0,19	0,59	0,13	0,20	0,22	0,12	0,51	0,46	0,21	0,00	0,31	0,13	0,13
2007	0,96	0,70	0,10	0,19	0,25	1,10	0,34	0,24	0,24	0,44	0,44	1,22	2,83	0,25	0,23	0,56	0,24	0,23	0,61	0,18	0,42	0,42	0,24	0,08	0,29	0,19	0,20
2008	1,13	0,80	0,39	0,21	0,29	1,42	0,35	0,29	0,24	0,50	0,51	1,54	2,82	0,28	0,24	0,66	0,28	0,25	0,63	0,21	0,56	0,46	0,25	0,22	0,30	0,26	0,23
2009	1,20	0,65	0,24	0,19	0,26	1,40	0,32	0,26	0,23	0,45	0,47	1,71	1,79	0,29	0,23	0,67	0,24	0,22	0,44	0,19	0,56	0,47	0,22	0,27	0,27	0,24	0,21

Figure 28: VIES Network Volume per MSA 2004-2009



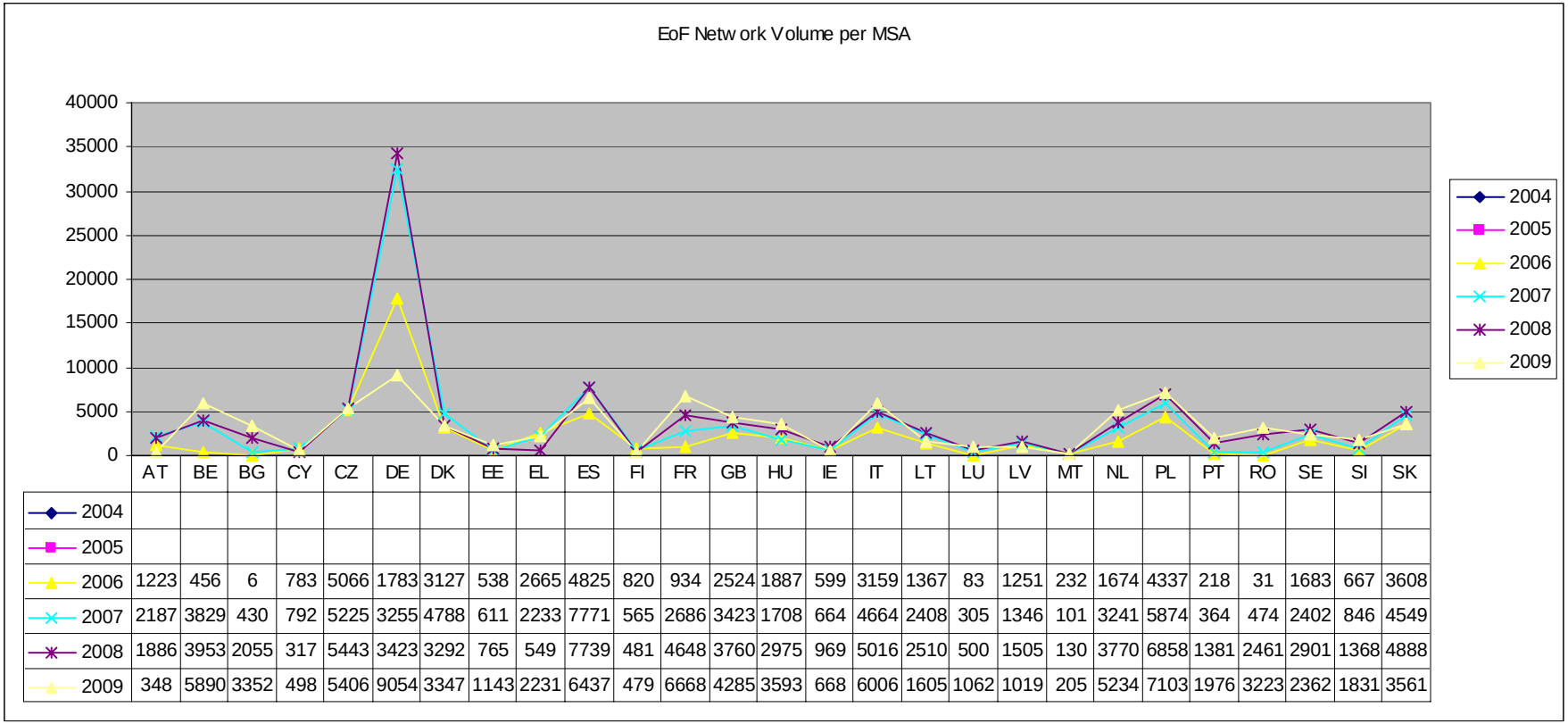
	AT	BE	BG	CY	CZ	DE	DK	EE	EL	ES	FI	FR	GB	HU	IE	IT	LT	LU	LV	MT	NL	PL	PT	RO	SE	SI	SK
2004																											
2005																											
2006	0,00	0,65	0,22	0,00	0,00	1,79	0,72	0,00	0,12	0,00	0,67	0,67	75,37	0,11	29,47	0,68	0,01	4,23	0,08	0,06	0,98	0,01	0,07	6,38	0,02	0,03	0,00
2007	0,00	0,60	2,75	0,42	0,07	6,20	0,43	0,02	20,91	0,11	0,04	1,00	21,23	0,17	1,15	0,84	0,01	1,65	1,91	0,00	0,76	0,00	0,10	0,17	0,10	0,01	0,02
2008	0,00	0,31	6,20	0,37	0,07	7,33	1,34	0,00	0,01	0,10	0,05	0,41	20,63	0,69	43,53	0,80	0,05	0,89	0,05	0,00	0,63	0,00	0,19	0,90	0,12	0,01	0,01
2009	0,00	0,38	3,43	0,37	0,01	3,07	0,78	0,05	0,06	0,01	0,01	0,92	15,45	0,07	5,40	1,04	0,11	0,35	0,00	0,01	2,05	0,00	0,10	0,01	0,00	0,01	0,00

Figure 29: VoeS Network Volume per MSA 2004-2009



	AT	BE	BG	CY	CZ	DE	DK	EE	EL	ES	FI	FR	GB	HU	IE	IT	LT	LU	LV	MT	NL	PL	PT	RO	SE	SI	SK
2004																											
2005																											
2006	0,01	1,32	0,00	4,78	8,82	102,74	18,98	1,74	3,88	55,08	4,47	115,76	160,87	14,63	105,07	11,13	0,89	83,78	0,67	6,23	14,19	39,38	1,43	1,68	1,14	37,51	10,46
2007	0,00	2,69	0,01	7,09	8,24	73,23	52,10	44,88	6,26	150,23	3,60	99,95	106,62	9,55	19,34	24,52	5,10	166,43	0,87	1,10	22,17	4,39	1,09	0,01	10,83	2,13	20,95
2008	0,01	0,05	9,70	5,72	15,55	93,31	85,30	2,15	2,27	53,66	4,27	89,82	85,89	6,09	73,67	29,57	5,83	108,48	4,22	1,53	43,28	4,92	20,92	3,17	10,21	2,67	2,11
2009	0,00	15,58	5,05	10,85	13,94	39,91	33,66	6,86	25,39	29,71	2,22	47,64	173,15	7,24	20,95	21,48	1,38	55,69	1,52	1,48	53,04	2,96	4,26	2,50	62,26	264,73	1,70

Figure 30: ToS Network Volume per MSA 2004-2009



	AT	BE	BG	CY	CZ	DE	DK	EE	EL	ES	FI	FR	GB	HU	IE	IT	LT	LU	LV	MT	NL	PL	PT	RO	SE	SI	SK
2004																											
2005																											
2006	1223	456	6	783	5066	1783	3127	538	2665	4825	820	934	2524	1887	599	3159	1367	83	1251	232	1674	4337	218	31	1683	667	3608
2007	2187	3829	430	792	5225	3255	4788	611	2233	7771	565	2686	3423	1708	664	4664	2408	305	1346	101	3241	5874	364	474	2402	846	4549
2008	1886	3953	2055	317	5443	3423	3292	765	549	7739	481	4648	3760	2975	969	5016	2510	500	1505	130	3770	6858	1381	2461	2901	1368	4888
2009	348	5890	3352	498	5406	9054	3347	1143	2231	6437	479	6668	4285	3593	668	6006	1605	1062	1019	205	5234	7103	1976	3223	2362	1831	3561

Figure 31: EoF Network Volume per MSA 2004-2009

Resource Forecast

The following graphics show the forecast of the applications for which information was found. Forecasts for applications that are not included will be provided in the maintenance version of this plan if the statistics are available. The forecasts are based on the assumptions, the Business impact and any forecast provided by the Business earlier in the document.

Customs

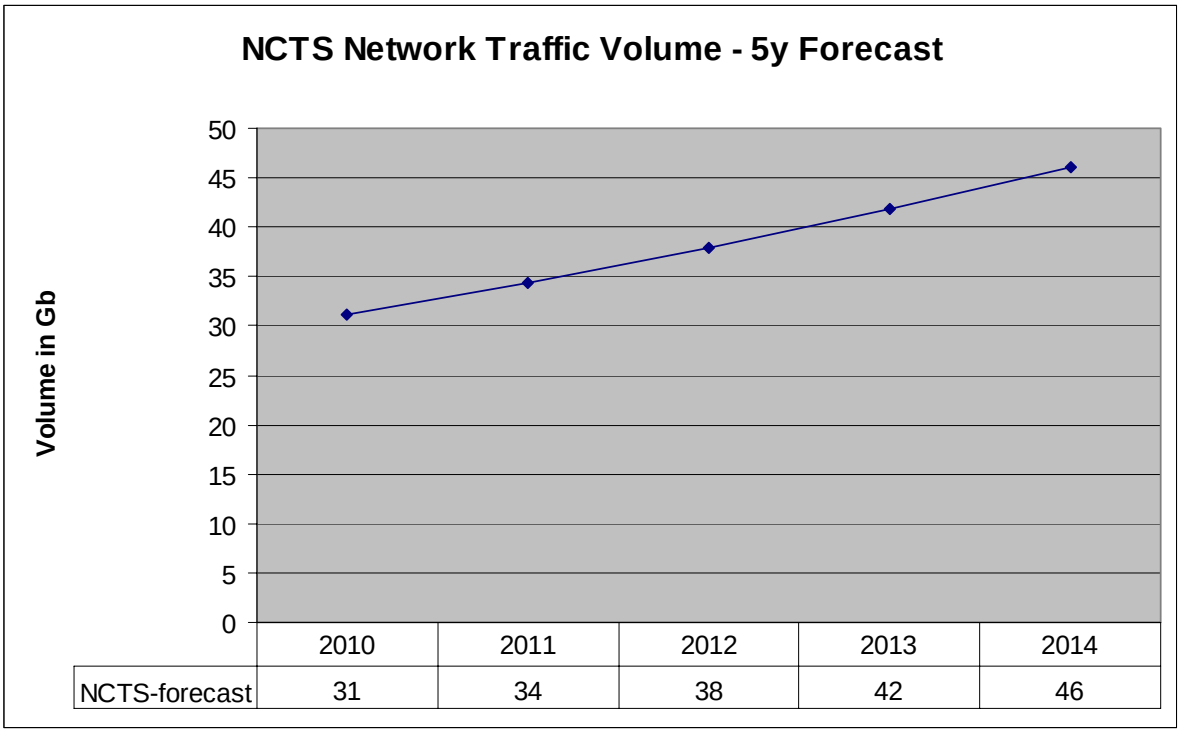


Figure 32: NCTS Network Volume – five year forecast

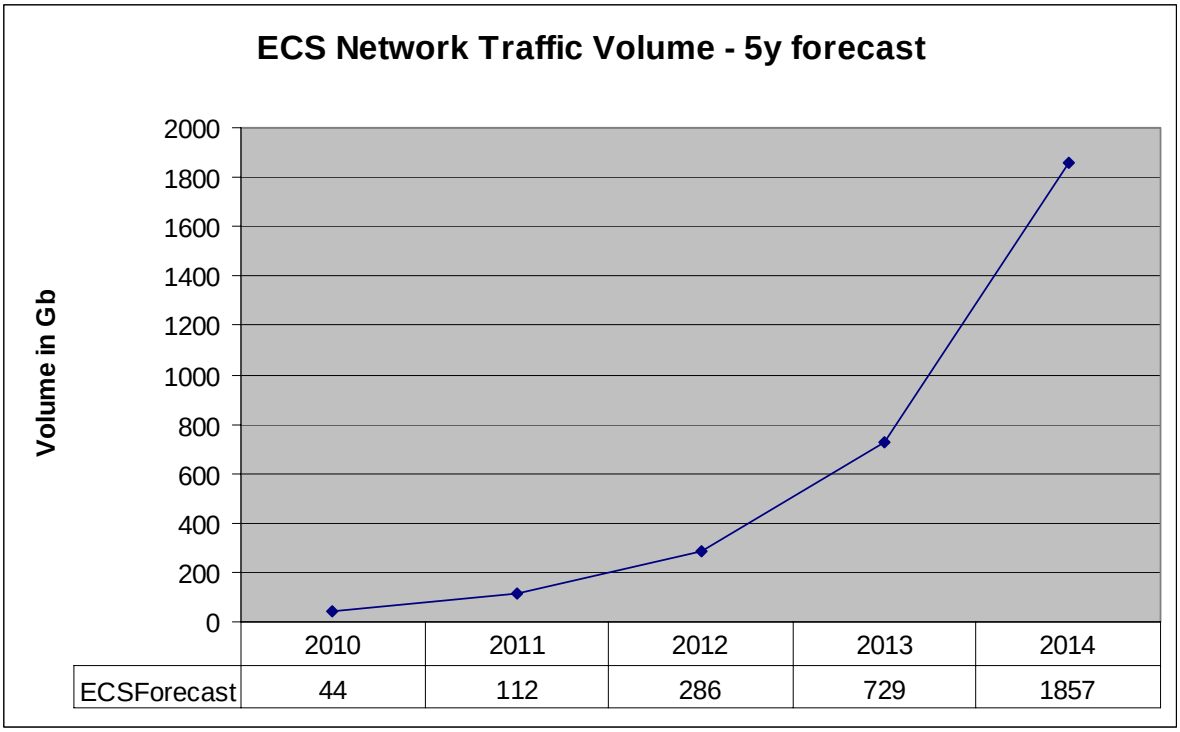
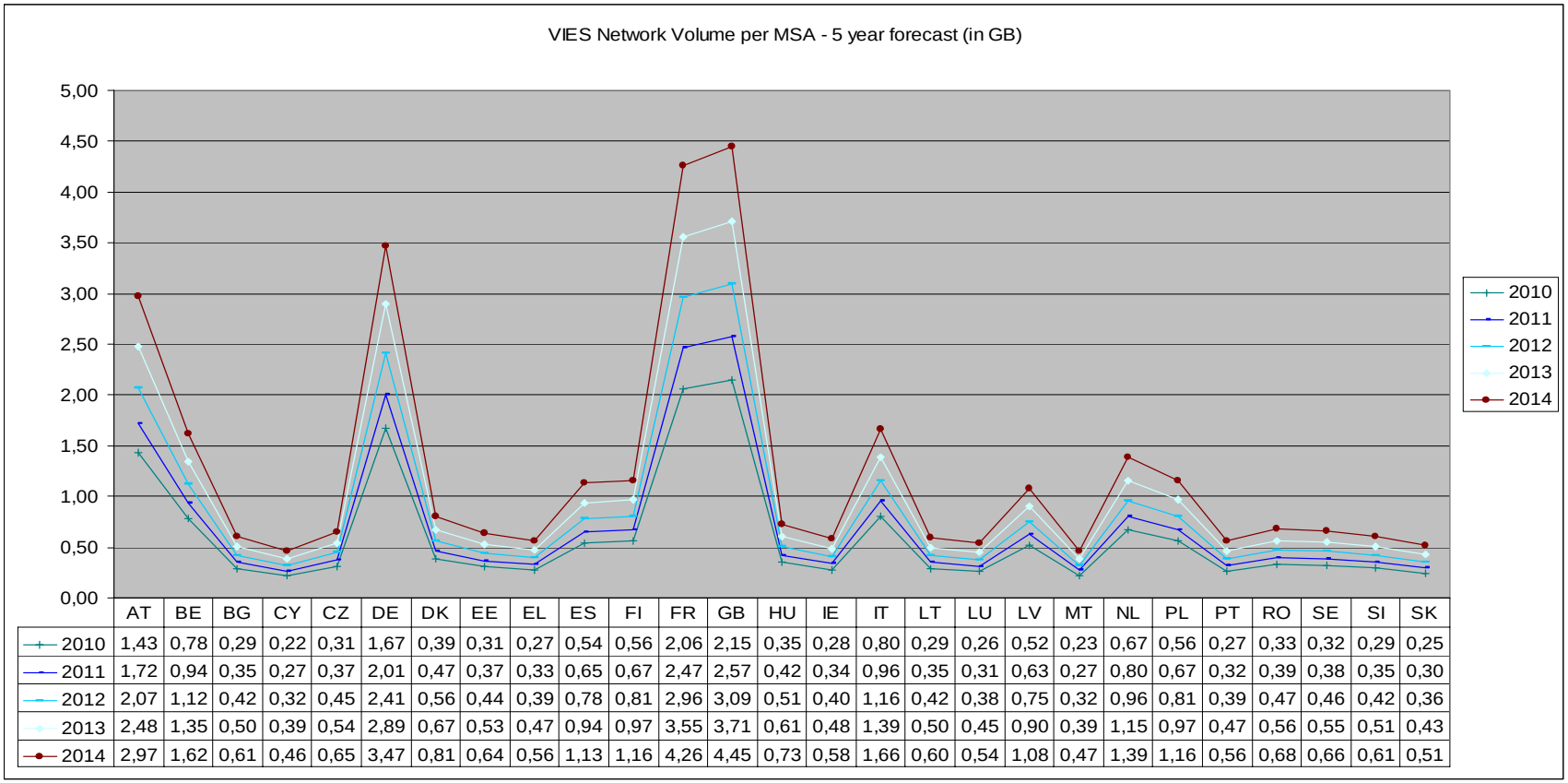


Figure 33: ECS Network Volume – five year forecast

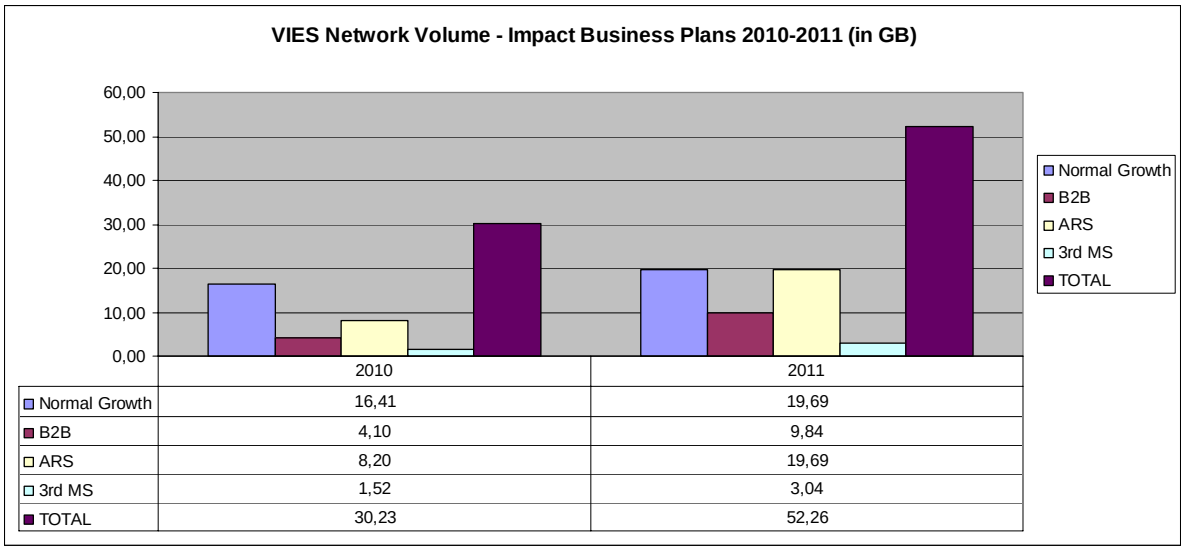
As ICS is put in production for some MSA s only, no forecast could be made.

Taxation



	AT	BE	BG	CY	CZ	DE	DK	EE	EL	ES	FI	FR	GB	HU	IE	IT	LT	LU	LV	MT	NL	PL	PT	RO	SE	SI	SK
2010	1,43	0,78	0,29	0,22	0,31	1,67	0,39	0,31	0,27	0,54	0,56	2,06	2,15	0,35	0,28	0,80	0,29	0,26	0,52	0,23	0,67	0,56	0,27	0,33	0,32	0,29	0,25
2011	1,72	0,94	0,35	0,27	0,37	2,01	0,47	0,37	0,33	0,65	0,67	2,47	2,57	0,42	0,34	0,96	0,35	0,31	0,63	0,27	0,80	0,67	0,32	0,39	0,38	0,35	0,30
2012	2,07	1,12	0,42	0,32	0,45	2,41	0,56	0,44	0,39	0,78	0,81	2,96	3,09	0,51	0,40	1,16	0,42	0,38	0,75	0,32	0,96	0,81	0,39	0,47	0,46	0,42	0,36
2013	2,48	1,35	0,50	0,39	0,54	2,89	0,67	0,53	0,47	0,94	0,97	3,55	3,71	0,61	0,48	1,39	0,50	0,45	0,90	0,39	1,15	0,97	0,47	0,56	0,55	0,51	0,43
2014	2,97	1,62	0,61	0,46	0,65	3,47	0,81	0,64	0,56	1,13	1,16	4,26	4,45	0,73	0,58	1,66	0,60	0,54	1,08	0,47	1,39	1,16	0,56	0,68	0,66	0,61	0,51

Figure 34: VIES Network Volume per MSA – five year forecast



	2010	2011
Normal Growth	16,41	19,69
B2B	4,10	9,84
ARS	8,20	19,69
3rd MS	1,52	3,04
TOTAL	30,23	52,26

Figure 35: VIES Network Volume – Impact Business Plans 2010-2011

A forecast for VoeS can not be made because the annual growth fluctuates a lot. This is shown in the table below:

	Growth 2006-2007	Growth 2007-2008	Growth 2008-2009
AT	0%	0%	500%
BE	91%	52%	123%
BG	1238%	226%	55%
CY	10650%	90%	99%
CZ	7100%	99%	11%
DE	347%	118%	42%
DK	60%	308%	59%
EE	900%	17%	1867%
EL	17408%	0%	722%
ES	5700%	89%	13%
FI	6%	145%	11%
FR	150%	41%	227%
GB	28%	97%	75%
HU	158%	394%	10%
IE	4%	3797%	12%
IT	122%	95%	130%
LT	43%	933%	195%
LU	39%	54%	39%
LV	2353%	3%	4%

	Growth 2006-2007	Growth 2007-2008	Growth 2008-2009
MT	4%	100%	500%
NL	78%	83%	326%
PL	0%	0%	0%
PT	147%	183%	51%
RO	3%	517%	1%
SE	532%	125%	0%
SI	26%	157%	118%
SK	0%	41%	57%

Table 7-4: VoeS Network Volume – Annual Growth

A forecast for ToS can not be made because the annual growth fluctuates a lot. This is shown in the table below:

Country	Growth 2006-2007	Growth 2007-2008	Growth 2008-2009
AT	0%	0%	13%
BE	204%	2%	30681%
BG	300%	165617%	52%
CY	149%	81%	190%
CZ	93%	189%	90%
DE	71%	127%	43%
DK	274%	164%	39%
EE	2578%	5%	319%
EL	161%	36%	1117%
ES	273%	36%	55%
FI	81%	119%	52%
FR	86%	90%	53%
GB	66%	81%	202%
HU	65%	64%	119%
IE	18%	381%	28%
IT	220%	121%	73%
LT	575%	114%	24%
LU	199%	65%	51%
LV	130%	487%	36%
MT	18%	139%	97%
NL	156%	195%	123%
PL	11%	112%	60%
PT	76%	1925%	20%

Country	Growth 2006-2007	Growth 2007-2008	Growth 2008-2009
RO	0%	54183%	79%
SE	946%	94%	610%
SI	6%	125%	9926%
SK	200%	10%	81%

Table 7-5: ToS Network Volume – Annual Growth

A forecast for EoF can not be made because the annual growth fluctuates a lot. This is shown in the table below:

Country	Growth 2006-2007	Growth 2007-2008	Growth 2008-2009
AT	179%	86%	18%
BE	840%	103%	149%
BG	43544%	478%	163%
CY	101%	40%	157%
CZ	103%	104%	99%
DE	183%	105%	26%
DK	153%	69%	102%
EE	113%	125%	149%
EL	84%	25%	407%
ES	161%	100%	83%
FI	69%	85%	99%
FR	288%	173%	143%
GB	136%	110%	114%
HU	90%	174%	121%
IE	111%	146%	69%
IT	148%	108%	120%
LT	176%	104%	64%
LU	367%	164%	212%
LV	108%	112%	68%
MT	44%	129%	157%
NL	194%	116%	139%
PL	135%	117%	104%
PT	167%	380%	143%
RO	1530%	519%	131%
SE	143%	121%	81%
SI	127%	162%	134%
SK	126%	107%	73%
TOTAL	156%	111%	83%

Table 7-6: EoF Network Volume – Annual Growth

Conclusion

Based on the statistics and the graphs the following conclusions have been drawn:

- The network traffic volume generated by NCTS will grow 62% by 2014 compared to 2009. The annual average growth as of 2010 is 10%. This growth excludes the impact of Business forecasts and Business plans at this stage;

- The network traffic volume for ECS will grow significantly. The estimated growth factor in volume is based on the average growth of the last 3 years and is 255% which is extremely high. By 2014 1857Gbytes of network traffic volume is expected. The impact of the Business plans is not taken into account for this calculation;

- The network traffic volume for VIES will increase as a result of the organic growth and the Business plans. During 2010 more than 30Gbytes of network traffic volume is expected which equals a growth of more than 42% compared to 2009;

- For all the above mentioned action is required to ensure sufficient capacity exists to support the growth and the demand. This applies not only to the infrastructure managed and maintained by the MSA but includes the network and the CCN production gateways as well. Especially the network requires long lead times for upgrades. It is therefore advisable to conduct an analysis of the exact requirements per MSA immediately and develop an upgrade plan to ensure the right capacity is available at the right time;

- For the Taxation applications VoeS, ToS and EoF a forecast can not be made because of the unpredictable fluctuations in annual growth.

8. Capacity Management Improvement Recommendations

8.1 Introduction

This chapter contains an overview of the current status of recommendations, if any, defined in the previous Capacity Plan as well as a full overview of recommended improvement actions on various areas which are defined to resolve the findings described in previous chapters.

Each recommendation has a priority assigned to it which indicates the impact and/or urgency. This priority can be used to decide which actions will be executed first in order to prevent foreseeable capacity bottlenecks.

Where possible the recommendation is quantified in terms of:

- The Business benefits to be expected;
- The potential impact of carrying out the recommendations;
- The risks involved;
- The resources required;
- The timescale.

Based upon the capacity analysis and review a list of findings, issues and recommended improvement actions are identified in this Capacity Plan.

Shortly after the publishing of this Capacity Plan a follow-up meeting needs to be organised with all stakeholders to define the actions which will have to be executed, based on the recommendations. The approved actions should become part of the Continuous Service Improvement Programme (CSIP).

The goal of these actions is to improve the effectiveness and efficiency of Service Delivery in general and Capacity Management in specific.

Note: some of the recommendations stated in the Capacity Plan for trans-European IT Services are generic and have also been stated in the Capacity Plan for Commission IT Services [R10].

8.2 Recommendations from Previous Capacity Plans

This section contains a summary of the recommendations made in previous Capacity Plan and their current status. All recommendations are reviewed for their success, accurateness on the predicted result and the proposed timescale.

It is important that in the next paragraphs the recommendations are accompanied with predictions of their likely effect to be able to review the results in this paragraph.

In case of a change, the review should have been part of the change record (mention the change number). Included in the review are any incidents resulting from the change, the actual Business impact, etc.

Capacity Management should also ensure that not only the actions are reviewed for their success and documented, but also that explanations are provided for actions that do not meet expectations. For example if a future capacity advice was given in the previous Capacity Plan, it should be evaluated here to see if the advice given was appropriate.

The goal of this paragraph is to learn from mistakes and continue to improve the Capacity Management process.

Capacity recommendations from previous Capacity Plan

ID	FINDING & RECOMMENDATION	PRIORITY	STATUS	REVIEW
B1	Work with ITSM Business Perspective Management to gain more insight in the long-term Business plans as input for the Capacity Plan. Knowledge to gather and interpret/translate Business plans is being built up within ITSM, however more information exchange is needed. R: A dialog should be maintained between DG Taxation and Customs Union and ITSM, to inform ITSM on a regular basis of the future Business plans which will have impact on the entire IT environment. A translation from Business metrics to IT indicators driving capacity usage should be made, with the cooperation of both parties, in order to determine the impact of any Business plan on the IT Infrastructure. Please note that this dialog with the Business should be held periodically (e.g. every three months) to ensure the two parties stay connected.	H	To start	Will be reported as a CSIP action
B2	F: No Business Events information from the National Administrations is collected	M	Started	See the ongoing process concerning the questionnaire

Capacity recommendations from previous Capacity Plan

ID	FINDING & RECOMMENDATION	PRIORITY	STATUS	REVIEW
	R: Ask the National Administrations for their Business Plans. This information should be gathered in collaboration with WP.8.3.1.2 "Periodic survey of each of the NA s" which needs to be performed by Business Perspective Management. See Annex A for a draft setup of this questionnaire.			
S1	F: There are no SLA agreements on Capacity related aspects for all Business Threads (no SQI's related to Capacity either). R: Should DG Taxation and Customs Union or the National Administrations require so, and also for clarity on the mutual expectations, standard SLA targets can be defined on Capacity related aspects like response times.	L	Cancelled	This will be handled by Recommendation P4 & the questionnaire. There is an overall rule as not to exceed infrastructure capacity level of 70% on Disk space, Memory and CPU.
RC1	F: For DG Taxation and Customs Union it is unknown which NA s are in control of the capacity aspects of their locally managed environment which is hosting trans-European services R: Ask the National Administrations specific Capacity related questions to gain insight in the maturity level of the locally performed Capacity Management activities. This information should be gathered in collaboration with WP.8.3.1.2 "Periodic survey of each of the NA s" which needs to be performed by Business Perspective Management. See Annex A for a draft setup of a Capacity Management questionnaire.	M	Started	See ongoing process with questionnaire
	R: In order to support the NA s with their local Capacity		Cancelled	

Capacity recommendations from previous Capacity Plan				
ID	FINDING & RECOMMENDATION	PRIORITY	STATUS	REVIEW
	Management activities, DG Taxation and Customs Union should pro-actively provide the NA s with the NA specific Service and Resource statistics. This provides the NA with volume and trending information and will help the NA determine the future capacity requirements for the NA s locally managed infrastructure.			
P1	F: Capacity Management is not always involved in the Change Assessment phase R: Ensure a Capacity Analyst is always involved in the assessment of a capacity related change.	M	To start	
P2	F: Currently there are only a little number of capacity related Problems identified. R: More structural problem management should be performed to periodically analyse the capacity- related incidents and identify capacity-related problems for this.	M	Cancelled	

Table 8-1: Capacity Recommendations from Previous Capacity Plan

8.3 New Business Scenarios Recommendations

The following table captures the most important Business scenarios findings and the defined recommendations:

New Business Scenarios recommendations			
ID	FINDING	RECOMMENDATION	PRIORITY
B3	Conformance Test environments not in Service & Business capacity chapter	KVD : Reconsideration is needed when defining the scope as to include	L

Table 8-2: New Business Scenarios recommendations

8.4 New Service Capacity Management Recommendations

The following table captures the most important Service Capacity Management findings and the defined recommendations:

New Service Capacity Management recommendations			
ID	FINDING	RECOMMENDATION	PRIORITY
-	-	-	-

Table 8-3: New Service Capacity Management recommendations

8.5 New Resource Capacity Management Recommendations

The following table captures the most important Resource Capacity Management findings and the defined recommendations:

New Resource Capacity Management recommendations			
ID	FINDING	RECOMMENDATION	PRIORITY
-	.-	-	-

Table 8-4: New Resource Capacity Management recommendations

8.6 New Capacity Management Process Recommendations

In order to get Capacity Management up and running some specific process implementation actions need to be performed. These are stated below.

The following table captures the most important Capacity Management Process findings and the defined recommendations:

New Capacity Management process recommendations			
ID	FINDING	RECOMMENDATION	PRIORITY
P3	Monitoring statistics and graphics are not always available anymore in comparison with the previous month.	Also consult capacity management when changing reports and graphs in the MSR reports.	M
P4	Document fit for purpose, topic to be discussed more deeply as to adapt accordingly, of course MS involvement is needed as to have their input on measured data & forecasts.	As per comment review : The structure should be built also taking into account the 3 key questions: 1 what is available? 2. What is needed? 3. Will it fit? Also, once the feedback is really collected from the MS, the document might needs to be adapted to manage all the info received.	H

Table 8-5: New Capacity Management Process Recommendations

Annex A. Draft setup for Capacity Management questionnaire

For each revision of the Capacity Plan for trans-European IT Services input from the NA s is required. According to the FQP the gathering of information from the NA s should be done in collaboration with WP.8.3.1.2 “Periodic survey of each of the NA s” which needs to be performed by Business Perspective Management.

The proposed way to do this is by the creation of a questionnaire which Business Perspective Management can share with the NA s local IT Manager. The questionnaire can be separately discussed in a review cycle if needed.

The goal of the questionnaire is to:

- Gain insight in the local Business plans of the NA which will have impact on capacity of the used systems;
- Gain insight in the maturity level of the locally performed Capacity Management activities;
- Gather sufficient data for the next revision of the Capacity Plan for trans-European IT Services.

As the management and operation of the infrastructure hosting the trans-European Services is the local responsibility of the NA s, it is specifically not the idea to gain detailed insight in the local resource statistics. The answers to the questions asked to the NA s should provide DG Taxation and Customs Union with sufficient insight to determine if the NA is “in control” of their local infrastructure and if sufficient measures have been taken to prevent capacity shortages in the future.

So basically the NA is looked at as a “black box”. The approach is as follows:

1. The Commission provides input to the NA s by:
    a. Periodically sending them this questionnaire in combination with;
    b. The NA specific Service Capacity Management statistics for the trans-European Services.
2. The NA can then use the statistics provided for their local Capacity Plan.
3. The NA can then provide output to the Commission by:
    a. Answering the questions in the questionnaire and;
    b. Providing the Commission with the local Business Events.

The best format to present the questionnaire (e.g. Word or Excel with pre-defined answers in drop-down box) is to be defined later. For consistency it is advisable to use mostly closed questions. This provides the possibility to merge the results of all NA s and use this as a baseline measurement for the future.

It is likely that the Capacity questionnaire will be accompanied by similar questionnaires of the other Service Delivery processes as well.

Find below a draft setup of the questionnaire:

Capacity Management questionnaire for the National Administrations

The aim of Capacity Management is to match the supply of IT resources to customer demands for them. The process is needed to support the optimum provision of IT services by helping organisations to match their IT resources to the demands of the Business. It is concerned with having the appropriate IT capacity and with making the best use of it and to ensure that the most efficient usage is being made of the resources and to avoid distress purchases.

The demand for IT resources is based on agreeing with users of IT services, levels to which those services will be delivered, based on Business requirements and embodied within service level agreements.

The customer's needs are assessed by forecasting the likely growth in demand for current services and by sizing new service elements. The desired service levels required can then be agreed with service users, based on Business needs. The sub-processes associated with Capacity Management are concerned with forecasting workload, sizing applications, and maintaining a Capacity Plan in order to meet existing and future needs.

The Capacity Plan is beneficial to Systems Management in order to gain visibility of the schedule and likely infrastructure changes necessary to maintain service at the required levels.

Questions:

1. Do you have a Capacity Management process defined and implemented?
2. Have responsibilities for Capacity Management activities been assigned?
3. Do you produce and update a Capacity Plan (including future Business Requirements) periodically?
4. Do you use monitoring tools to monitor system resources (disk space usage, CPU usage, memory usage, network usage)?
5. If you use monitoring tools, which percentages of the systems which are running production services are being monitored?
6. Do you have capacity and/or performance targets defined (e.g. in a Service Level Agreement with your customers)?
7. Is future demand predicted based on current workloads?
8. Is future demand predicted based on the Business plans and their anticipated impact?

*** End of document ***