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TARIC3

Infrastructure Requirements Document

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1. INTRODUCTION

1.1. Objective of this document

The objective of this document is to describe the infrastructure requirements for the deployment (installation and operation) of the TARIC3 CDCO application in the DG DIGIT's infrastructure and in the CCN.

The document is an input for the action to be taken by the Service Contractor toward external parties (DG DIGIT, CCN/TC and CS/RD) in order to prepare the deployment environments (e.g. PSAT, SAT, conformance, production, training) of the TARIC3 CDCO application.

1.2. Structure of this document

After this introduction chapter (Chapter 1), the document contains two chapters:

- Chapter 2 describes the environment requirements;
- Chapter 3 describes the communication requirements.

1.3. Intended audience

This document is intended for the responsible for TARIC3 CDCO application deployment (installation and operation): the Service Contractor of DG TAXUD. It should be used as a technical reference.

The document will be used by the Service Contractor to define the exact infrastructure requirements for the TARIC3 CDCO application. This is a development document, as such, it must be refined (or instantiated) to map precisely to the operational environment (e.g., the document will state the overall schema required capacity in the different types of environments but will not detail it by table spaces (indeed, the division in separate table spaces is an operational decision which cannot be assumed by the development team).

1.4. Abbreviations and acronyms

CCN	Common Communication Network
CCN/TC	CCN Technical Centre
CDCO	Centrally Developed, Centrally Operated
COA	Confirmation of Arrival
COD	Confirmation of Delivery
CS/RD	Central Services/Reference Data
CSI	Common Service Interface

DG DIGIT	Directorate General for Informatics
DG TAXUD	Directorate General for Taxation and Customs Union
EAR	Enterprise Archive
EFTA	European Free Trade Association
GB	Gigabyte
HTTP	HyperText Transfer Protocol
JDK	Java Development Kit
JMS	Java Messaging Service
JRE	Java Runtime Environment
LCT	Local Client Tests
LST	Local Server Tests
MB	Megabyte
MS	Member State
PAR2	Parity Archive Tool 2
PSAT	Pre-Site Acceptance Test
RCT	Remote Certification Tests
RDBMS	Relational Database Management System
RIT	Remote Interoperability Tests
SAT	Site Acceptance Test
SDK	Software Development Kit
SFTP	Secure File Transfer Protocol
TATAF	Tariff Application Technical Architecture Framework
UM	User Management
URL	Uniform Resource Locator

1.5. Reference documents

[TATAF] "Tariff Application Technical Architecture Framework", Ref. TATAF, 5.10

[TARIC3-FS]	"TARIC3 Functional Specifications", Ref. TARIC3-FS, 2.01
TARIC3-IPR	"TARIC3 Installation Procedure Manual", Ref. TARIC3-IPR, 0.01
TARIC3-AMN	"TARIC3 Administration Manual", Ref. TARIC3-AMN, 0.01
TARIC3-MIGPLN	"TARIC3 Migration Plan", Ref. TARIC3-MIGPLN, 1.10.

1.6. Applicable documents

None.

2. ENVIRONMENT REQUIREMENTS

The environment requirements describe all platforms, servers, users and external software needed for the installation and operation of the TARIC3 CDCO application.

2.1. Platform requirements

The platform requirements define the external software that must be installed on the target machine(s) in order to install and run the TARIC3 CDCO application. They are detailed in Table 1.

These software items are not bundled in the TARIC3 CDCO application distribution and must be installed by the DG TAXUD administrator prior to the installation of the application.

The hardware (machine names, processor, memory, etc.) on which the application is installed and operated is out of the scope of the document. Also, the deployment of the application server and of the RDBMS on a single or several machines is out of the scope of the document. DG TAXUD and DG DIGIT must agree on the hardware and machines to use.

Finally, note that it is possible to build the runtime archive (to compile the application) on a given machine and to install this runtime archive on another machine. Both machines must have the same software installed.

Operating system	Sun Solaris 10.
RDBMS	Oracle 10.2.0.3. and Oracle 9.2.0.4
Application server	BEA WebLogic Server 10.3.
JDK	Java 6 update 5 (included in WebLogic 10.3 installation).

Table 1: Platform requirements

2.2. Application sever requirements

The application server requirements define the parameters of the BEA WebLogic environment needed for the proper installation and operation of the TARIC3 CDCO application. They are detailed in Table 2.

It must be noted that the required WebLogic domain and server may already be available.

Application server version	As defined in Table 1 of section 2.1.
WebLogic domain	1 WebLogic domain is required per environment. The following applications are properly installed and configured in the WebLogic domain: – The UM application (1 instance); – The CSI Bridge application (1 instance). Note that the proper configuration of these applications for the TARIC3 CDCO application is performed during their installation.
WebLogic server	The TARIC3 CDCO application (EAR file) must be deployed on 1 WebLogic server of the WebLogic domain. Note that the TARIC3 CDCO application can share this WebLogic server with other TATAF applications. The memory assigned to the WebLogic server should be of at least 2048 MB for the TARIC3 CDCO application. However, the administrator of the WebLogic domain must take into account the global requirements of all TATAF applications deployed on the same WebLogic server.
WebLogic resources	All resources (connection pools, JMS queues, etc.) necessary to the operation of the TARIC3 CDCO application are automatically created during the installation. These resources are documented in [TARIC3-IPR].
WebLogic security	All security groups necessary to the operation of the TARIC3 CDCO application are automatically created during the installation. These resources are documented in [TARIC3-AMN].

Table 2: Application server requirements

2.3. Database requirements

The database requirements define the Oracle parameters needed for the proper operation of the TARIC3 CDCO application. They are detailed in Table 3.

The application needs an access to an Oracle database instance that uses the UTF-8 character encoding and on which the Oracle Context/Intermedia package is installed (this package is used to implement the full text search functions of the application).

A single user is required to create the database schema and run the application itself. This user must be created by DIGIT. The requirements about the user roles and accesses are given in Table 3.

By default, all Oracle objects are created in the default table space of the user during the installation procedure. The DG TAXUD database administrator is free to tune the database schema. The size of the permanent storage for the production environment has been estimated to 20 GB in [TARIC3-FS] (this includes the QUOTA2 data).

Additionally, the TARIC3 application requires a migration of TARIC2 data to the TARIC3 schema, therefore additional schemas and space are required to perform the database migration.

The procedure for the migration is defined in [TARIC3-MIGPLN]. Basically, the TARIC2 data, which is located in an Oracle 9.2.0.4 database, is exported to an intermediate schema in an Oracle 10.2.0.3 database. The data is then transformed in the intermediate schema, until it complies with the TARIC3 DB structure. Finally, the data is exported from the intermediate schema and imported in the TARIC3 DB schema.

Therefore; executing the database migration procedure requires 2x20 GB in the Oracle 10.2.0.3 DB.

RDBMS	Oracle 10.2.0.3
Optional package	Oracle Context/Intermedia package.
Character set	UTF-8.
Table space size	The table space size depends on the environment: – Production environment: 40 GB; – Test environment (PSAT or SAT): 40GB; – Conformance environment: 40GB; – Training environment: 40 GB; – Performance testing environment (if required): 40 GB (the performance testing environment is similar to the production environment).
User	2 Oracle users are required per environment (TARIC3 schema and intermediate schema): – The following roles must be granted to the user: CREATE SESSION, CREATE TABLE, CREATE VIEW, CREATE SYNONYM, CREATE SEQUENCE, CREATE TRIGGER, CREATE PROCEDURE and CREATE CLUSTER; – The user must have the ‘select’ access to the DBA_PENDING_TRANSACTIONS view.

Table 3: TARIC3 Oracle 10.2.0.3 Database requirements

RDBMS	Oracle 9.2.0.4
Optional package	Oracle Context/Intermedia package.
Character set	UTF-8.
Table space size	The table space size depends on the environment: – Production environment: 20 GB; – Test environment (PSAT or SAT): 20GB; – Conformance environment: 20GB; – Training environment: 20 GB; – Performance testing environment (if required): 20 GB (the performance testing environment is similar to the production environment).
User	1 Oracle users is required per environment: – The following roles must be granted to the user: CREATE SESSION, CREATE TABLE, CREATE VIEW, CREATE SYNONYM, CREATE SEQUENCE, CREATE TRIGGER, CREATE PROCEDURE and CREATE CLUSTER; – The user must have the 'select' access to the DBA_PENDING_TRANSACTIONS view.

Table 4: TARIC3 Oracle 9.2.0.4 Database requirements

2.4. Unix user requirements

The TARIC3 CDCO application will be installed and operated by a Unix user (actually, the WebLogic server runs under this Unix user). Table 5 below defines the requirements about this user.

[User1]	1 Unix user is required. – The name of the Unix user is not relevant. However, for convenience, it is referred to as the *[User1]* in this document; – This *[User1]* is used to install and run all applications of the WebLogic domain. This includes the TARIC3 CDCO application and other TATAF applications; – The *[User1]* must have write/read access to the directory where the TATAF applications are installed and where the logs are written. He must also have this access on the directory where the TARIC3 extractions are written (this directory is configured during the installation procedure).

Table 5: Unix user requirements

Table 6 gives the disk space requirements of the *[User1]* for the TARIC3 CDCO application. Disk space requirements of other TATAF applications must be taken

into account. Note that there is no need to keep the TARIC3 full/differential extraction messages online for a long period. They can be transferred to offline storage.

TARIC3 CDCO application source archive (needed during installation)	200 MB.
TARIC3 CDCO runtime archive building (needed during installation)	300 MB + 100 MB in /tmp
TARIC3 CDCO application runtime environment (needed during installation and operation)	100 MB.
WebLogic server logs (needed during operation)	This is under control of the DG TAXUD operator who can configure this in the WebLogic console.
TARIC3 full extraction messages processing (needed during operation)	Maximum 100 MB / full extraction message.
TARIC3 differential extraction messages processing (needed during operation)	Maximum 53 MB / differential extraction message.

Table 6: Disk space requirements

2.5. End-user pc requirements

The user interface of the TARIC3 application is a Java Swing client. In order to use the client, an installation of the Java JRE is required on the pc of the end-user.

The version of the required JRE is: JRE 6 update 13.

3. COMMUNICATION REQUIREMENTS

The communication requirements describe all communication means that allow the TARIC3 CDCO application to communicate with his users and other systems or applications.

3.1. CCN requirements

The CCN requirements define all CCN objects that must be created by the CCN/TC on request of DG TAXUD in order to allow the operations of the TARIC3 CDCO application.

It is stressed that these requirements do not define the CCN objects that must be created by the MS administrations (or by the CCN/TC on request of the MS administrations).

Note that the physical CCN gateways (gateway names and machines) on which the CCN objects are deployed are out of the scope of the document. This is managed by the CCN/TC. The document only informs about the CCN gateways by their functions:

- CCN gateways of DG TAXUD;
- CCN gateways of the MSs[1].

3.1.1. CCN mode

The following table lists the CCN modes used by the TARIC3 CDCO application. Their affectation is also given in the table.

LST	Development contractor environment.
LCT	PSAT environment.
RIT	SAT environment.
RCT	Conformance testing environment.
-	Operation environment.

Table 7: CCN mode requirements

3.1.2. CCN message type

The following CCN message type (see Table 8) must be created. This CCN message type must be disseminated to the CCN gateways of the MSs and of DG TAXUD.

DATA-MSG.TARIC3	Message holding the TARIC3 system data.
DATA-QU2-MSG.TQM	Message holding the QUOTA2 system data.

Table 8: CCN message type requirements

[1] It is important to note that only the CCN gateways of the MSs are concerned (e.g. the CCN gateways of the EFTA countries are not concerned).

3.1.3. CCN application names

The following CCN application names (see Table 9) must be created by the CCN/TC. These application names must be disseminated to the CCN gateways of DG TAXUD.

The CCN application names must be created for the following modes (the <*MODE*> parameter must be updated accordingly): production, LCT, LST, RCT and RIT.

SEND- <MODE>-APP.TARIC3	DG TAXUD application that sends the extractions. It also sends the upload acknowledgement messages.
REPORT-<MODE>-APP.TARIC3	DG TAXUD application that reads the CCN reports (COA and COD).
RECV-<MODE>-APP.TARIC3	DG TAXUD application that reads the CCN DATA. Will not be use at the beginning. We could imagine Suspensions sending its data over CCN later on.
SEND-QU2-<MODE>-APP.TQM	DG TAXUD application that sends the QUOTA2 data and the upload acknowledgement messages. It also reads reads the CCN reports (COA and COD).

Table 9: CCN application names requirements

3.1.4. CCN user profiles

The following CCN user profiles (see Table 10) must be created. These CCN user profiles must be disseminated to the CCN gateways of the MSs and of DG TAXUD.

The CCN user profiles must be created for the following modes (the <*MODE*> parameter must be updated accordingly): production, LCT, LST, RCT and RIT.

Table 10 below lists the CCN user profiles that give access to the TARIC3 system-to-interface (information upload and downloads via queues).

<*MODE*>-PRF.TARIC3	Grants the right to read and write messages onto DG TAXUD queue DATA-TARIC3-QUE.TARIC3 + Grants the right to read messages from DG TAXUD queue REPORT-TARIC3-QUE.TARIC3
MS-<*MODE*>-PRF.TARIC3	Grants the right to read and write messages onto the MS queues + Grants the right to read messages from the MS administration queues.
QU2-<*MODE*>-PRF.TQM	Grants the right to read and write messages onto the MS queues + Grants the right to read messages from the MS administration queues.

Table 10: CCN user profiles requirements for the TARIC3 system-to-system interface

3.1.5. CCN queues

The following CCN queues (see Table 11) must be created for the system-to-system interface of the TARIC3 CDCO application.

The CCN queues must be created for the following modes (the <*MODE*> parameter must be updated accordingly): production, LCT, LST, RCT and RIT.

DATA -<*MODE*>-QUE.TARIC3	DG TAXUD queue onto which TARIC3 extraction messages are put.
REPORT-TARIC3-<*MODE*>-QUE.TARIC3	DG TAXUD queue onto which CCN reports (COA and COD) for TARIC3 system are put.
DATA-QU2-<*MODE*>-QUE.TQM	DG TAXUD queue onto which QUOTA2 data messages are put.
REPORT-QU2-<*MODE*>-QUE.TQM	DG TAXUD queue onto which CCN reports (COA and COD) for QUOTA2 system are put.

Table 11: CCN queue requirements for the system-to-system interface

The access rights on these CCN queues are specified in the following table.

	Write access	Read access
DATA-<*MODE*>-QUE.TARIC3	<*MODE*>-PRF.TARIC3	<*MODE*>-PRF.TARIC3
REPORT -<*MODE*>-QUE.TARIC3	<*MODE*>-PRF.TARIC3	<*MODE*>-PRF.TARIC3
DATA-QU2-<*MODE*>-QUE.TQM	QU2-<*MODE*>-PRF.TQM	QU2-<*MODE*>-PRF.TQM
REPORT-QU2-<*MODE*>-QUE.TQM	QU2-<*MODE*>-PRF.TQM	QU2-<*MODE*>-PRF.TQM

Table 12: CCN queue access rights requirements for the system-to-system interface

3.1.6. CCN user

The following CCN user (see Table 13) must be created by the DG TAXUD CCN administrator.

Note that the name of the user is given for information and can be freely chosen by the DG TAXUD CCN administrator. This CCN user will be used to:

- Get the TARIC3 extraction messages from the DATA-<*MODE*>-QUE.TARIC3 CCN queue;
- Get the CCN reports from the REPORT-<*MODE*>-QUE.TARIC3 CCN queue;
- Put the TARIC3 extraction acknowledgement messages on the CCN queues of the MS administrations;
- Put the TARIC3 extraction messages on the CCN queues of the MS administrations.

<*MODE*>-USR-TARIC3	1 CCN user that has the following CCN user profiles: – <*MODE*>-PRF.TARIC3; – <*MODE*>-PRF.TARIC3.
<*MODE*>-USR-QUOTA2	1 CCN user that has the following CCN user profile: QU2-<MODE>-PRF.TQM

Table 13: CCN user requirements for the system-to-system interface

3.2. SFTP access requirements

The SFTP server of DG DIGIT will be used by the MSs to download the initial TARIC3 full extraction file produced by the TARIC3 CDCO system.

MS users	1 SFTP user must be defined par MS: – This user must have read/write access to a directory dedicated to his MS.
DG TAXUD user	1 SFTP user must be defined for the DG TAXUD operator: – This user must have read/write access to the directories of all MSs.

Table 14: SFTP access requirements