

Electronic Signatures and Infrastructures (ESI); Process and tools for maintenance of ETSI deliverables



Reference

DTR/ESI-000029

Keywords

e-commerce, electronic signature, security

ETSI

650 Route des Lucioles
F-06921 Sophia Antipolis Cedex - FRANCE

Tel.: +33 4 92 94 42 00 Fax: +33 4 93 65 47 16

Siret N° 348 623 562 00017 - NAF 742 C
Association à but non lucratif enregistrée à la
Sous-Préfecture de Grasse (06) N° 7803/88

Important notice

Individual copies of the present document can be downloaded from:

<http://www.etsi.org>

The present document may be made available in more than one electronic version or in print. In any case of existing or perceived difference in contents between such versions, the reference version is the Portable Document Format (PDF). In case of dispute, the reference shall be the printing on ETSI printers of the PDF version kept on a specific network drive within ETSI Secretariat.

Users of the present document should be aware that the document may be subject to revision or change of status. Information on the current status of this and other ETSI documents is available at

<http://portal.etsi.org/tb/status/status.asp>

If you find errors in the present document, send your comment to:

editor@etsi.org

Copyright Notification

No part may be reproduced except as authorized by written permission.
The copyright and the foregoing restriction extend to reproduction in all media.

© European Telecommunications Standards Institute 2004.
All rights reserved.

DECTTM, **PLUGTESTS**TM and **UMTS**TM are Trade Marks of ETSI registered for the benefit of its Members.
TIPHONTM and the **TIPHON logo** are Trade Marks currently being registered by ETSI for the benefit of its Members.
3GPPTM is a Trade Mark of ETSI registered for the benefit of its Members and of the 3GPP Organizational Partners.

Contents

Intellectual Property Rights	5
Foreword.....	5
Introduction	5
1 Scope	6
2 References	6
3 Definitions and abbreviations.....	6
3.1 Definitions	6
3.2 Abbreviations	7
4 Maintenance activity	7
4.1 History of the TC ESI maintenance activity.....	7
4.2 Revised maintenance process	7
4.2.1 General description	7
4.2.2 Tracking stage.....	8
4.2.3 Pre-processing stage	8
4.2.4 Processing stage.....	8
4.3 Maintenance report.....	9
4.3.1 Maintenance report and its role in the maintenance process.....	9
4.3.2 Structure of the maintenance report	9
4.3.2.1 General structure	9
4.3.2.2 Clause 5: fields and structure	9
4.3.2.3 Annex A: fields and structure.....	10
5 Maintenance tools	11
5.1 Description of the tools	11
5.2 Requirements.....	12
5.3 How to install the tools.....	12
5.4 How to use the tools	13
5.4.1 Maintenance process and general instructions.....	13
5.4.2 Inserting the elementary comments into the database.....	13
5.4.3 Creating the body of the maintenance report	15
5.4.4 Finishing the maintenance report.....	17
5.5 How the tools work	17
5.5.1 Mail Merge database.....	17
5.5.2 Mail Merge Word feature and template.....	18
5.5.3 Macro producing the maintenance report target file	18
5.6 Generalized use of the maintenance tools	18
6 Tools improvements.....	19
6.1 Adding some automatic formatting capabilities	19
6.2 Improving the database structure.....	19
6.3 Improving the database insertion form.....	19
6.4 Making the tools corporate.....	19
Annex A: Database structure	20
A.1 Tables	20
A.1.1 Table "tComments"	20
A.1.1.1 Columns	20
A.1.2 Table "tCommentType".....	20
A.1.2.1 Columns	20
A.1.2.2 Predefined records	20
A.1.3 Table "tResolutionStatus"	21
A.1.3.1 Columns	21
A.1.3.2 Predefined records	21

A.2	Relationships' diagram	21
A.3	Queries	22
Annex B:	MS Word global template: macros' VBA sources and forms.....	23
B.1	VBA sources	23
B.1.1	Module "modCode"	23
B.1.2	Module "frmMenu"	27
B.1.3	Module "frmInfo"	29
B.2	VBA forms	30
B.2.1	Form "frmMenu"	30
B.2.2	Form "frmInfo"	30
Annex C:	How to recreate the tools.....	31
C.1	Introduction	31
C.2	Procedures for maintenance tools recreation.....	31
C.2.1	Mail Merge database	31
C.2.2	VBA macros	31
C.2.3	Mail Merge template	32
Annex D:	Mail Merge template and maintenance report samples	33
D.1	Sample of Mail Merge template	33
D.2	Sample of clause 5 of the maintenance report base file	34
D.3	Samples of elementary comments within clause 5 of the maintenance report	34
D.3.1	Introduction	34
D.3.2	Example n. 1	35
D.3.3	Example n. 2.....	36
D.4	Samples of contribution with metadata within annex A of the maintenance report.....	36
D.4.1	Introduction	36
D.4.2	Example n. 1	37
D.4.3	Example n. 2.....	38
History	39

Intellectual Property Rights

IPRs essential or potentially essential to the present document may have been declared to ETSI. The information pertaining to these essential IPRs, if any, is publicly available for **ETSI members and non-members**, and can be found in ETSI SR 000 314: "*Intellectual Property Rights (IPRs); Essential, or potentially Essential, IPRs notified to ETSI in respect of ETSI standards*", which is available from the ETSI Secretariat. Latest updates are available on the ETSI Web server (<http://webapp.etsi.org/IPR/home.asp>).

Pursuant to the ETSI IPR Policy, no investigation, including IPR searches, has been carried out by ETSI. No guarantee can be given as to the existence of other IPRs not referenced in ETSI SR 000 314 (or the updates on the ETSI Web server) which are, or may be, or may become, essential to the present document.

Foreword

This Technical Report (TR) has been produced by ETSI Technical Committee Electronic Signatures and Infrastructures (ESI).

Introduction

The ETSI Technical Committee on Electronic Signatures and Infrastructures (TC ESI) has a significant number of technical specifications that need to be maintained. This maintenance activity includes:

- tracking all comments received;
- resolving a certain number of comments;
- issuing a new revision of selected deliverables; and
- updating the maintenance report that documents the whole activity.

In order to facilitate and speed-up its maintenance activity some tools have been developed. Even though they were developed to support maintenance of technical specifications within TC ESI, they are considered have wider applicability. Therefore TC ESI decided to document them in the present document.

These tools provide ability to track the elementary comments on several technical specifications (keeping also many details called "metadata" as the reference to the original contributions) and record their final resolution. Starting from the elementary comments stored in a database, these tools can automatically produce the body of an ETSI Technical Report that documents the current status of comments on the TC ESI deliverables.

These tools can be used to:

- report to the working group;
- input to experts working on revising specifications;
- publish a report that identifies the status of maintenance activities on ETSI specifications.

1 Scope

The present document describes the maintenance activity as performed by TC ESI, the maintenance report and the tools developed to simplify and speed-up the maintenance tasks.

The core of the present document is the description of the various aspects of these tools: how to install and use them, how they work and what can be done in order to improve them.

Clause 4 contains the explanation of the maintenance process as performed by TC ESI and describes the maintenance report; clause 5 describes the tools developed by TC ESI in order to simplify the management of the maintenance tasks. Clause 6 describes further development of the maintenance tools that can be pursued. Annex A describes the database structure, annex B contains the source code of the developed macros and the pictures of the forms and annex C includes a sample of Mail Merge template, a sample of the core of the maintenance report base file and two examples of tables generated with the tools described in the present document and to be inserted in the maintenance report. Annex D describes how to re-create the tools having only the present document.

2 References

For the purposes of this Technical Report (TR) the following references apply:

- [1] ETSI TR 102 046 (V1.1.1): "Electronic Signatures and Infrastructures (ESI); Maintenance Report".
- [2] ETSI TR 102 046 (V1.2.1): "Electronic Signatures and Infrastructures (ESI); Maintenance Report".
- [3] ETSI SR 001 262 (V1.8.1): "ETSI drafting rules".

3 Definitions and abbreviations

3.1 Definitions

For the purposes of the present document, the following terms and definitions apply:

contribution: every block of comments (at least one comment) received as a whole, related to only one deliverable and identified by a unique code; it can be a complex comment or a set of comments

elementary comment: one of the atomic comments obtained by splitting a contribution during the pre-processing stage; it could coincide with the contribution

Mail Merge: MS Word feature that performs the mail merge operation

Mail Merge database: MS Access database containing the elementary comments; it serves as data source for the Mail Merge operation

Mail Merge template: MS Word file containing the template; it includes the Mail merge fields as available from the Mail Merge database properly formatted within a table

maintenance activity phase: historical round of the maintenance activity as performed by TC ESI

maintenance process stage: part of the revised maintenance process as improved by TC ESI during the second maintenance activity phase

maintenance report: report covering the status of maintenance activity; it can be published as an ETSI Technical Report (as done by TC ESI)

maintenance report base file: file containing the maintenance report except for the clause collecting the elementary comments: this clause includes the placeholders for the tables collecting the elementary comments for each deliverable

maintenance report target file: file containing the complete maintenance report after having launched the Mail Merge operation and the ETSI maintenance tools

3.2 Abbreviations

For the purposes of the present document, the following abbreviations apply:

HTML	HyperText Markup Language
SQL	Structured Query Language
STF	Specialist Task Force
VBA	Visual Basic for Applications

4 Maintenance activity

4.1 History of the TC ESI maintenance activity

After having developed the first set of deliverables, TC ESI started the maintenance activity collecting all the comments received on the published deliverables, both from inside and outside. The results of this earlier maintenance activity resulted in a previous version of the maintenance report being published without the use of any supporting tools (TR 102 046 [1]). This document simply collects all the comments received keeping them in their original format.

Later, a second maintenance phase has been started. In this phase it was decided to improve the maintenance process making it more structured and to support this improved process by producing some helpful tools. The outcomes of this second phase are:

- a revision of the maintenance process;
- the ETSI maintenance tools developed in order to support the revised maintenance report, simplifying and speeding-up it;
- a new and completely restructured version of TR 102 046 [2] (described in clause 4.3), the TC ESI maintenance report that includes the output of the first phase of the maintenance activity; this maintenance report serves as tool for the maintenance process (TC ESI internal purpose) and as public documentation of the TC ESI maintenance activity (public purpose).

Even if the mentioned outcomes are related to the TC ESI maintenance activity, an aim of this technical committee was to share this work with other technical committees and bodies involved in the maintenance of their deliverables. For this purpose TC ESI decided to document its maintenance activity and tools in an ETSI Technical Report that is constituted by the present document.

4.2 Revised maintenance process

4.2.1 General description

The maintenance process, as revised during the second maintenance activity phase, includes many stages starting from receiving the comments to approving and publishing the new version of the deliverables.

The purpose of the maintenance report and of the tools described in this document is helping the people involved in the maintenance process by covering its first three phases: tracking, pre-processing and processing the comments received.

For the purposes of this document and of the maintenance report, every block of comments received as a whole (at least one comment but it can be a complex comment or a set of comments), related to only one deliverable and identified by a unique code is "contribution".

There are different subjects involved in the maintenance process:

- the STF in charge to receive the contribution and to maintain the maintenance report:
 - the general maintenance STF;
- the STF in charge to produce a new version of a well defined set of deliverables:
 - the maintenance STF specific for a (set of) deliverable(s);
- members of the TC ESI.

It is possible that one ETSI STF acts both as general maintenance STF and specific maintenance STF.

4.2.2 Tracking stage

This stage is to record the contributions received from any source, keeping them in their original format. This stage is accomplished by the general maintenance STF.

4.2.3 Pre-processing stage

A single contribution may be constituted by a set of comments or a complex comment and these comments may refer to a single deliverable or many deliverables; it is impossible to know in advance how a contribution can be structured.

This stage is to transform the contributions from an unstructured form to a structured set of elementary comments: each elementary comment is a single and simple comment with some metadata attached to.

The outcome of this stage is a collection of elementary comments grouped by deliverable; each elementary comment is ready to be processed independently of the others in the next stage.

This stage is accomplished by the general maintenance STF.

4.2.4 Processing stage

This stage is to resolve comments. This might be done separately for each elementary comment. However it is suggested to operate this stage activity on a set of elementary comments all related to a single deliverable; the comment resolution for each comment set related to one deliverable may be operated separately. Hence starting from this point it is assumed that each set of elementary comments related to a single deliverable will be better treated as a whole block; therefore and the maintenance report has been structured and the maintenance tools have been developed to fully support this assumption.

For each set of elementary comments related to a single deliverable, this stage activity can be done in different ways and by different subjects:

- by the general maintenance STF;
- by the general and specific maintenance STFs working in parallel;
- by the general maintenance STF for the initial proposal and later only by the specific maintenance STF;
- by the general maintenance STF for the initial proposal and by the members of TC ESI under an STF request.

The selection of the deliverables whose comments shall be resolved and the choice of which way to proceed is under responsibility of the general maintenance STF; anyway this STF should get the TC ESI consensus on his choices.

4.3 Maintenance report

4.3.1 Maintenance report and its role in the maintenance process

The maintenance report is a document whose purpose is helping the people involved in the maintenance process by covering its first three stages: tracking, pre-processing and processing the comments received. This is an internal use to a body performing the maintenance of its deliverables.

The maintenance report can also have a public purpose: it can serve as public documentation of the maintenance activity of the body if published as ETSI Technical Report.

The document:

- a) provides a means of tracking the contributions received;
- b) organizes the contributions under the relevant document heading;
- c) processes the comments to identify a resolution.

In particular, the current maintenance report (TR 102 046 [2]) for TC ESI is the result of an ongoing maintenance process for ETSI Technical Specifications and Technical Reports in the area of Electronic Signatures and Infrastructures and can be considered as an example of maintenance report.

4.3.2 Structure of the maintenance report

4.3.2.1 General structure

Since the maintenance report was designed to be published as ETSI Technical Report (even if not mandatory), its structure is compliant with the ETSI template for Technical Report and its content is to be written, organized and formatted to be compliant with SR 001 262 [3]. The structure of the maintenance report is as follows:

- from the cover page to clause 3 included as the ETSI template for Technical Report makes provision;
- clause 4 describes the structure of the maintenance report itself and its content is reported in the subsequent subclauses of the present document;
- clause 5 constitutes the body of the maintenance report and includes all the elementary comments, grouped in tables, one for each deliverable (see clause 4.3.2.2 for the description of clause 5);
- annex A includes all the received contributions keeping the original formatting as much as possible (see clause 4.3.2.3 for the description of annex A).

4.3.2.2 Clause 5: fields and structure

Clause 5 constitutes the main part of the maintenance report; it is the outcome of the organizing the contributions under the relevant heading and records the proposed resolution of the comment. The elementary comments and their metadata have been inserted in a database (the Mail Merge database); the tables for each deliverable included in the clause 5 are automatically generated from the data stored in the aforementioned database using the Mail Merge feature made available by MS Word and the ETSI maintenance tools described later in the present document.

Clause 5 collects the elementary comments grouped by deliverable. The set of comments related to a single deliverable are put in a single table. If the original contribution is a complex comment or a set of comments, the contribution is split into a number of single elementary comments. In the table, the comments are grouped and ordered by the number of the section they apply to. When the comments are effectively applied to a target deliverable, they are retained in the new version of the maintenance report soon after their application, then in the subsequent version these comments will be removed.

The data and the metadata for each elementary comment are:

- *deliverable ID, version and section which the comments are applied to* (are the ones defined in annex A for each contribution);
- *source* (person and organization or group) *and date of the comment*;
- *ID of the elementary comment* (<deliverable_ID>-<unique_code>: e.g. "TS1015456-001"; the <unique_code> is a per-deliverable unique alphanumeric code and it consists of three characters; the progression of the codes is: from "000" to "999" then from "AAA" to "ZZZ" using the twenty six letters of the English alphabet);
- *reference to the original contribution*;
- *elementary comment's text*;
- *elementary comment's type; the values for this field may be only*:
 - *editorial*;
 - *technical*;
- *original proposal for comment resolution*;
- *resolution comment* (only for the following status values: *provisionally approved, applied, already applied, rejected, no change*);
- *resolution text* (only for the following status values: *provisionally approved, applied, already applied*);
- *resolution date* (only for the following status values: *provisionally approved, applied, already applied, rejected, no change*);
- *source of the comment resolution*: person and group (general maintenance STF, specific maintenance STF, TC ESI group);
- *status of comment resolution*: the values for this field may be only:
 - *not yet processed*;
 - *in process*;
 - *provisionally approved* (*resolution date* field shall be filled in; the *resolution comment* field may be filled in);
 - *applied* (*resolution date* and *target version* fields shall be filled in; the *resolution comment* field may be filled in);
 - *already applied* (*resolution date* and *target version* fields shall be filled in; the *resolution comment* field may be filled in);
 - *rejected* (*resolution date* and *resolution comment - with the reason -* fields shall be filled in);
 - *no change* (*resolution date* and *resolution comment - with the reason -* fields shall be filled in);
- *version of the target deliverable*.

4.3.2.3 Annex A: fields and structure

Annex A of the maintenance report collects all comments received in their original format grouped by originator, then by deliverable. Annex A is the outcome of the tracking stage and could be intended as a historical section. If the text received as a whole includes comments on more deliverables, the text is split into blocks, each related to only one deliverable. This is the only elaboration done on the comments received. Every block of comments (at least one comment) received as a whole and related to only one deliverable is called contribution and is identified by a unique code. If received in different times, two (blocks of) comments have different identifier even if have been originated by the same source and are related to the same deliverable: they are two different contributions. In this case they are placed in different clauses in annex A.

The data and the metadata for each contribution are:

- *ID of the contribution* (with a unique prefix for each source: <Source_ID>-<unique_code>; e.g. "TC ESI_1-001"; the <unique_code> is a per-source unique alphanumeric code and it consists of three characters; the progression of the codes is: from "000" to "999" then from "AAA" to "ZZZ" using the twenty six letters of the English alphabet) *to be referenced in the clause 5*;
- *source* (person and organization or group that originates the contribution) *of the contribution*;
- *date of the contribution*;
- *version which the contribution is referred to*;
- *original text of the contribution keeping also the original format* (as best as possible, applying only the changes needed to fit the maintenance report structure and to be compliant with SR 001 262 [3]);
- *original proposed solution, if any*.

NOTE 1: The e-mail threads (mail exchanges) are treated as follows: every thread is considered as a whole contribution and the source and date contribution metadata are the ones of the thread's first message. The messages are time ordered, each message in a different clause, removing the previous thread sequence from the message body: this way the thread is included in the present document keeping it as compact as possible, even if this causes losing the relations of the message with the thread. Only the first message is kept both in annex A and clause 5. If this original message has character and paragraph formatting, this is preserved; otherwise the Courier font is used.

NOTE 2: In order to respect the privacy, all the personal names have been removed from the maintenance report; only the name of organizations, bodies and groups are retained.

5 Maintenance tools

5.1 Description of the tools

These tools provide ability to track the elementary comments on several technical specifications (keeping also many details called "metadata" as the reference to the original contributions) and record their final resolution. Starting from the elementary comments stored in a database, these tools can automatically produce the body of the maintenance report (that can be published as ETSI Technical Report) that documents the current status of comments on the deliverables being maintained.

Therefore these tools can be used to:

- report to the working group;
- input to experts working on revising specifications;
- publish a report that identifies the status of maintenance activities on ETSI specifications.

These tools are:

- *an MS access database*: the elementary comments are stored in the database using a form;
- *an MS Word template page*: using the MS Word mail merge feature applied to the template and using the data stored in the database, it is possible to create formatted tables that contain the elementary comments and the related details;
- *a set of MS Word macros (written with Visual Basic for Application)*: is used to manage all steps needed create the body of the target document (the maintenance report), including the mail merge setup, mail merge launching, finishing the formatting of the mail merge output and to insert it into the target.

The data and metadata stored in the database for each elementary comment are described in the clause 4.3.2.2. Some samples of these data and metadata are shown by in annex C. These samples also show the final formatting of the tables inserted into the ETSI Technical Report, conforming to SR 001 262 [3] and validated by ETSI *editHelp!* staff. The tools in their actual version do not perform any formatting operation on the text within the table cells; therefore operations as indenting, creating bullets and applying font styles as "bold", "italic" and "underlined", as shown by the samples, have to be done manually to fit the requirements of the *editHelp!* staff.

These tools have been developed to be used by only one user at a time; in fact a database on a file has been used. Anyway they can be improved in order to be used in a multi-user environment (see clause 6).

5.2 Requirements

These tools require Microsoft Access and Microsoft Word as word processor. These tools have been developed and tested using the English version of MS Word 2000 and MS Access 2000 both updated with Service Pack 3. The procedures described in the next clauses refer to the English version of MS Word and MS Access.

5.3 How to install the tools

These tools are packaged in a "zipped" file ("ETSI_maintenance_tools_v1.0.zip") that contains the following files:

- "*ETSI_maintenance.dot*": this file is a MS Word 2000 template that includes the VBA macros and the toolbar;
- "*ETSI_maintenance_DB.mdb*": this file is a MS Access 2000 database for the elementary comments management;
- "*ETSI_maintenance_MM_template.doc*": this file is a MS Word 2000 document that includes a template for the Word Mail Merge function; the table included in this template is formatted according to SR 001 262 [3];
- "*Readme.txt*": this file describes the content of the zipped file and how to install the tools.

In order to install the tools the following steps should be performed:

- 1) unpack the zipped file into a directory (e.g. "<drive_letter>:\ETSI Maintenance");
- 2) install the template with the VBA macro only for one MS Word session:
 - open the "Tool ► Template and Add-Ins" menu;
 - click the Add button;
 - select the directory "<drive_letter>:\ETSI Maintenance" and select the file "ETSI_maintenance.dot";
 - check that "ETSI_maintenance.dot" is selected; if not, select it;
 - close the dialog box;
- 3) alternatively install the template with the VBA macro in order to make it available at every MS Word startup:
 - open the "Tool ► Options" menu;
 - select the "File Locations" tab;
 - select the row with "File Types" = "Startup";
 - click the "Modify" button to see the full path of the directory containing the templates to be loaded at every MS Word startup;
 - copy the file "ETSI_maintenance.dot" from the directory "<drive_letter>:\ETSI Maintenance" into the startup directory (see the previous bullet).

5.4 How to use the tools

5.4.1 Maintenance process and general instructions

As previously mentioned, these tools have been created to support the maintenance process and the generation of the body of the maintenance report. In order to achieve this goal, the following actions should be performed:

- prepare the maintenance report base file which is a maintenance report (structured as described in clause 4.3) where the clause 5 contains only the clauses' titles and the placeholders of the tables containing the elementary comments related to each deliverable (see annex D.2 for a sample of clause 5); the placeholders must be as follows (respecting the letters' cases and the spacing):

<insert_table name=DELIVERABLE_IDENTIFIER/> (es. **<insert_table name=TS101456/>**); the **DELIVERABLE_IDENTIFIER** must be identical to the prefix (the part before '-') of the unique identifier for the elementary comments related to each deliverable (see clause 4.3.2.2 for the rules on how to generate the comment identifier).

- (tracking stage) complete annex A of the maintenance report base file putting all the contribution received, assigning the unique contribution identifier according the rules defined in clause 4.3.2.3 of the present document and completing the contribution metadata (see clause D.4 for a sample of contribution and its metadata);

NOTE 1: In order to make easier to produce an anonymous maintenance report (needed when published as ETSI Technical Report) it is necessary to create the unique contribution identifier binding its prefix (the text string before '-') to the group or the organization the contribution originator belongs to and not to the originator itself; the detail of the real source originator has to be recorded manually until the pre-processing stage has been done; in this case is possible to store this piece of information into the database.

- (pre-processing stage) split every contribution recorded in annex A into elementary comments and insert each elementary comment into the Mail Merge database (the database structure is described in annex A) as described in the clause 5.4.2; the meaning of the database fields for the elementary comments is the same as the fields in clause 5 of the maintenance report (see clause 4.3.2.1 for the fields meaning explanation);

NOTE 2: Attention to assign every elementary comment an identifier unique and conforming to the rules explained in the clause 4.3.2.2; it is a mandatory requirement in order to make the ETSI maintenance tools work properly when generating the maintenance report.

- (processing stage) if any comment resolution is already available; modify the data and metadata stored in the Mail Merge database for the proper elementary comments;
- starting from the Mail Merge template (a sample is shown in annex D.1) and the filled Mail Merge database, generate the maintenance report target file (that is the complete maintenance report) using the procedure described in clause 5.4.3;
- obtain the complete maintenance report by finishing the maintenance report target file as described in clause 5.4.4.

Whenever the status of an elementary comments changes, for instance because the comment has been resolved, update the data and the metadata stored in the Mail Merge database for that elementary comment; then, if needed, generate an updated instance of the maintenance report as explained in the last two bullets.

If new contributions are received, the whole sequence described in the present clause can be repeated updating the maintenance base file with the new contribution received (instead of creating a new one as the mentioned sequence makes provision) and generating, if needed, an updated instance of the maintenance report.

5.4.2 Inserting the elementary comments into the database

To insert or edit the elementary comments into the database, open the file "ETSI_maintenance_DB.mdb" that is an MS Access database; the insertion form (see figure 1) will be opened automatically. The fields available in the only table existent in the database and exposed by the insertion form are the same as the one present in clause 5 of the maintenance report, except for two fields. Therefore the meaning of the matching fields is described in clause 4.3.2.2.

The insertion form exposes two more fields not present in clause 5 of the maintenance report. They are "anonym_contrib_source" and "anonym_resolution_source" and serve to make the maintenance report anonymous for the purpose of publication as ETSI Technical Report while the real details of the contribution and resolution sources are retained within the database.

The Mail Merge template included as sample in clause D.1 is designed to generate the maintenance report as ETSI Technical Report; therefore it binds the clause 5 fields to the Word Mail Merge fields present in the Mail Merge template. The clause 5 fields are represented by the column text in the header of the table included in the Mail Merge template. The Word mail Merge fields are made available from the database by the Word Mail Merge feature and are also exposed by the insertion form. The mentioned binding is straightforward for all fields except for the one, as follows.

Table 1

Clause 5 field names	Mail Merge Word field names
Resolution source	«anonym_resolution_source»

If there is the need to generate an instance of the maintenance report for internal purposes (without the need to make it anonymous), is it possible to modify the Mail Merge template by adding for instance some new fields and binding the clause 5 fields to the Word Mail Merge fields as follows.

Table 2

Clause 5 field names	Mail Merge Word field name
Anonymous contribution source	«anonym_contrib_source»
Real contribution source	«contrib_source»
Anonymous resolution source	«anonym_resolution_source»
Real resolution source	«resolution_source»

Examples of values for the fields listed in the previous table are given in table 3.

Table 3

Example n.	Mail Merge Word field names	Values
1	«anonym_contrib_source»	TC ESI member
2	«anonym_contrib_source»	STF 999 - Task 15 member
3	«anonym_contrib_source»	New Company inc.
4	«contrib_source»	John Doe (TC ESI)
5	«contrib_source»	John Doe (STF 999 - Task 15)
6	«contrib_source»	John Doe (New Company inc.)
7	«anonym_resolution_source»	TC ESI member
8	«anonym_resolution_source»	STF 999 - Task 15 member
9	«resolution_source»	John Doe (TC ESI)
10	«resolution_source»	John Doe (STF 999 - Task 15)

The real contribution source is a valuable piece of information to be retained because makes who performed the comment resolution able to reply to the contribution originator even much time later after the receipt of the contributions); similarly the real resolution source detail let identify who resolved the comment even much time after the comment resolution.

To manage the database records (add, delete, move to, etc.), the standard MS Access functions (buttons and menus) have to be used.

In order to successfully launch the Mail Merge operation as explained in the next clause, there is the need to fill in at least the following database fields for each elementary comment:

- "comment_ID", the primary key of the database table (see annex A for further details);
- "elem_comment_type", choosing among the values available from the combo box;
- "resolution_status", choosing among the values available from the combo box.

ETSI Maintenance Tools - (Elementary comments management)

File Edit View Insert Format Records Tools Window Help

MS Sans Serif

delivable_type sig_posit_reference resolable_name Go

delivable_id small_size anyrs_resolable_name Close

delivable_name anyrs_posit_size resolable_date

delivable_center year1_date resolable_status

connect_id deliv_connect_type delivable_target_name

deliv_preamble_text

orig_needslike_proposal

resolution_comment

resolution_text

Record: 1 of 1
Form View

Figure 1: elementary comments insertion form

5.4.3 Creating the body of the maintenance report

To create the body of the maintenance report, launch MS Word and make sure that only the default blank document is open; then click the "ETSI Maintenance" button on the toolbar: the main menu for the maintenance report creation will be shown (see figure 2 for a sample).

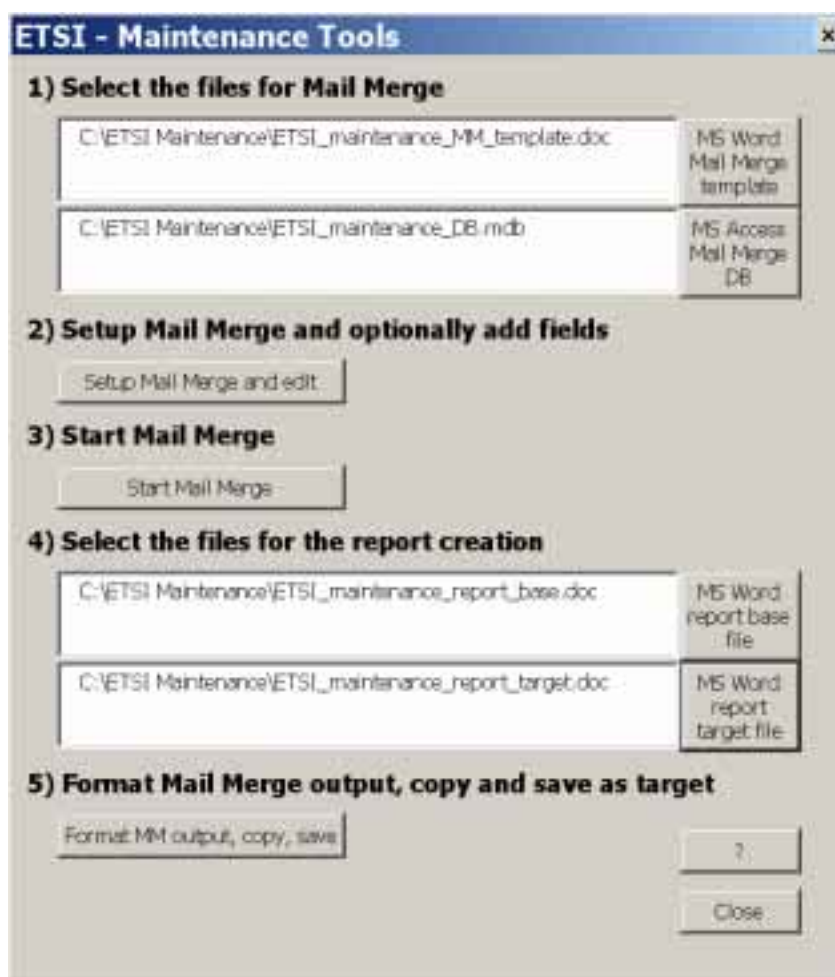


Figure 2: menu for maintenance report creation

Then the following actions should be done:

- type the full path of the Mail Merge template or select it by clicking the "MS Word Mail Merge Template" button; the default Mail Merge template is "ETSI_maintenance_MM_template.doc", included in the tools' package and was validated by *editHelp!* staff; anyway it is possible to modify it or to create a new one;
- type the full path of the Mail Merge database that contains the elementary comments or select it by clicking the "MS Access Mail Merge DB" button; the default Mail Merge database is "ETSI_maintenance_DB.mdb", included in the tools' package; anyway it is possible to modify it or to create a new one; the requirements to comply with when creating a new database are that a query called "qComments" must exist and must return at least one record;
- click the "Setup Mail Merge and edit" button to setup the MS Word Mail Merge function: the Mail Merge template will be loaded and shown; at this stage the user can modify the template, adding, modifying or removing text, Mail Merge and Word fields (by clicking the proper buttons present on the toolbars); if any of the mentioned text boxes are empty, an error message box is shown; if the Mail Merge template does not exist the user is asked if he wanted to continue creating a new template or not; if the Mail Merge database does not exist an error message box is shown;
- click the "ETSI Maintenance" button on the toolbar to show again the main menu;
- click the "Start Mail Merge" button to start the Mail Merge operation; the outcome of these operation will be document named "Catalog1" with the result of the mail merge and optionally an error window;
- close any open document but the one named "Catalog1" and save the Mail Merge template if needed;

- type the full path of the maintenance report base file or select it by clicking the "MS Word report base file" button; this document includes the placeholders (see clause D.1) and serves as basis for the generation of the maintenance report;
- type the full path of the maintenance report target file or select it by clicking the "MS Word report target file" button; this will be a new document obtained by substituting the placeholders with the tables including the elementary comments for each deliverable (one table for each deliverable);
- click the "Format MM output, copy, save" button to start the macro that format properly the tables produced by launching the Mail Merge by joining the tables of the elementary comments related to each deliverable into a single table; then this macro will copy the tables in place of the placeholders included in the maintenance report base file and will save the result (maintenance report target file) with the specified name; if any of the mentioned text boxes is empty, an error message box is shown; if the maintenance report base file does not exist, an error message box is shown; if the maintenance report target file already exists the user is asked if he wanted to continue overwriting the existent file or not; while running, the Word window is minimized in order to increase the speed of the operation; two message box are shown, one telling the user that the first part of the macro (formatting) is ended and the other one telling the user that second part of the macro (copying) is ended: the macro is terminated;
- click the "Close" button to close the main menu;
- close the "Catalog1" window without saving the document; it served as intermediate output and it won't be useful anymore;
- when MS Word will be closed, it is possible that a dialog box is shown asking the user to retain the data present in the Windows Clipboard; it is suggested to clean the Windows Clipboard selecting the "No" choice.

5.4.4 Finishing the maintenance report

In order to obtain the final maintenance report, some actions should be done over the maintenance report target file produced by the ETSI maintenance tools:

- the actual ETSI maintenance tools do not perform any formatting operation on the text within the table cells; therefore operations as indenting, creating bullets and applying font styles as "bold", "italic" and "underlined" have to be done manually to fit the requirements of the *editHelp!* staff (see clause D.3);
- some elementary comments may be so long that they do not fit a single page; in this case the table cell containing the elementary comment is automatically enlarged to fit the page and the text in excess; in order to revolve this problem there is the need to manually split the text of the elementary comments into a number of pieces to be put each one in a separate;
- in order to minimize the growth of the maintenance report, especially when published as ETSI Technical Report, the elementary comments resolved are retained only in the first issue of the maintenance report after their resolution, then they will be removed (see clause 4.3.2.2); the actual ETSI maintenance tools do not have the capability to support this assumption; therefore there is the need to manually remove the resolved comments in the maintenance report subsequent to the first one issued after they have been resolved.

5.5 How the tools work

5.5.1 Mail Merge database

It is an MS Access database whose structure is described in annex A. In order to be used successfully as data source for the Mail Merge feature as managed by the ETSI maintenance tools, a query called "qComments" must exist within the database. This query must return the records ordered by comments' identifier in order to make the macro generating the maintenance report target file work properly (see clause 5.5.3).

5.5.2 Mail Merge Word feature and template

To extract the data and the metadata of each elementary comment and properly format the extraction result, the Mail Merge feature provided by has been chosen. After having chosen a data source (in this case the Mail Merge database) and having created a template with the Mail Merge fields, provided by the data source, the launch of this feature produce automatically a new document where the content of the template is repeated as many times as the number of the record provided by the data source and the Mail Merge fields are replaced by the corresponding value for each record.

In order to simplify the use of this feature, its use is managed through the main menu for the report creation (see clause 5.4.3). The macro that setup the Mail Merge feature lets the user choose the data source (the Mail Merge database) and the Mail Merge template, but it requires that a query called "qComments" exists within the database and return the records with the proper fields needed to fill in the Mail Merge template.

In order to be successfully used with the ETSI maintenance tools, the template shall include a Word paragraph before the table containing the Mail Merge fields and another one after.

This way the outcome of the Mail Merge operation will be is a document, named "Catalog1", containing many tables, one for each elementary comment returned by the data source. The tables are separated by one Word paragraph.

5.5.3 Macro producing the maintenance report target file

Two parts constitute the macro that generates the maintenance report target file:

- the first one operates over the outcome of the Mail Merge operation (the document named "Catalog1") and join together the tables of the elementary comments related resulting in a number of tables same as the number of the deliverables maintained;
- the other one copies each table present in the "Catalog1" replacing the corresponding placeholder present in the maintenance report base file and save the file as the maintenance report target file.

The first part of the macro infers the deliverables, which the elementary comments are related to from comments' identifiers. Therefore, in order to make the macro work properly, the comments' identifiers stored into the Mail Merge database must respect the rules defined in clause 4.3.2.2. Moreover all the elementary comments related to a single deliverables must be contiguous; this must be guaranteed by the data source used to perform the Mail Merge operation.

The list of the deliverables generated by the first part is internally stored while the macro is running and is used by the second part of the macro; the deliverables' identifiers within the placeholders present in the maintenance report base file must be identical to the ones present in that internal list and constituted by the prefixes of the comment identifiers (see clause 4.3.2.2). Moreover the placeholders must be compliant with the format described in clause 5.4.1.

NOTE: When the macro is running, no error will be returned if trying to copy a table the placeholder was not found. Simply the table related to a deliverable won't be present within the maintenance report target file without any advice being returned to the user.

5.6 Generalized use of the maintenance tools

The tools have been developed to support the maintenance process and to generate the maintenance report as described but they can also be used to generate documents with different purposes. In particular the Mail Merge database and the Mail Merge template can contain any data type (not necessarily elementary comments) and to be managed through the menu for maintenance creation report there is only the need for the query named "qComments" stored in the database.

Instead, in order to make the formatting and copying macro work properly, all the constraints described in clause 5.5 must be respected.

6 Tools improvements

6.1 Adding some automatic formatting capabilities

As explained in clause 5.4.4, the actual ETSI maintenance tools do not perform any formatting operation on the text within the table cells. Some useful features can be added to the tools in order to perform automatically operations as indenting, creating bullets and applying font styles as "bold", "italic" and "underlined" to fit the requirements of the *editHelp!* staff (see clause D.3).

Since the elementary comments are stored in the database within the MS Access "memo" fields, only text can be stored. Therefore a hint to adding the automatic formatting capabilities is to use tag similar to the HTML ones to enclose the pieces of text that need to be formatted. Then the formatting and copying macro should be modified to recognize the formatting tags, remove them and apply the proper formatting element or style to the enclosed text.

Furthermore, the database insertion form could be modified to make easier the insertion of these formatting tags.

6.2 Improving the database structure

The actual Mail Merge database is not normalized; therefore there is the need to input redundant data while inserting the elementary comments: for instance the contribution source and date, etc. The database normalization will increase the number of the tables and the database complexity but will avoid the need to insert many times the same data.

Moreover such an improvement makes also possible to manage the insertion of the contribution metadata into the database while filling the annex A of the maintenance report and not later, avoiding also the need to track manually the anonymous data.

6.3 Improving the database insertion form

After having improved the database structure, it is possible to modify the insertion form in order to speed-up the input of the elementary comments related to the same deliverable and to speed-up the assignment of values to multiple comments.

6.4 Making the tools corporate

As explained in clause 5.1, these tools in the actual version have been designed to be used by only one user at a time. Anyway they could be modified to support a multi-user and corporate environment. In order to do that some suggestion is given:

- the use of a centralized server database engine for corporate instead of a database on a file; this would enable the tools:
 - to give the experts resolving the comments a concurrent access to the database;
 - to be used by all technical committees each one maintaining their set of deliverables;
 - to give the users of deliverables the opportunity to become aware of the ongoing maintenance activity performed over those deliverables through a web based application;
- implementing the insertion form through a dedicated application supporting the visual formatting of the elementary comments data or through a web based form;
- extending the tools to support a range of versions of MS Word and Access (for instance from 97 to 2003).

Annex A: Database structure

A.1 Tables

A.1.1 Table "tComments"

A.1.1.1 Columns

Table A.1

Name	Type	Size
deliverable_type	Text	2
deliverable_ID	Text	50
deliverable_version	Text	10
deliverable_section	Text	15
comment_ID	Text	12
orig_contrib_reference	Text	12
contrib_source	Text	50
anonym_contrib_source	Text	50
contrib_date	Date/Time	8
elem_comment_type	Text	50
elem_comment_text	Memo	-
orig_resolution_proposal	Memo	-
resolution_source	Text	50
anonym_resolution_source	Text	50
resolution_date	Date/Time	8
resolution_comment	Memo	-
resolution_text	Memo	-
resolution_status	Text	20
deliverable_target_version	Text	15

A.1.2 Table "tCommentType"

A.1.2.1 Columns

Table A.2

Name	Type	Size
CommentTypeID	Text	4
CommentType	Text	20

A.1.2.2 Predefined records

Table A.3

CommentTypeID	CommentType
EDIT	editorial
TECH	technical

A.1.3 Table "tResolutionStatus"

A.1.3.1 Columns

Table A.4

Name	Type	Size
ResolutionStatusID	Text	4
ResolutionStatus	Text	25

A.1.3.2 Predefined records

Table A.5

ResolutionStatusID	ResolutionStatus
ALAP	already applied
APPL	applied
INPR	in process
NOCH	no change
NYPR	not yet processed
PRAP	provisionally approved

A.2 Relationships' diagram

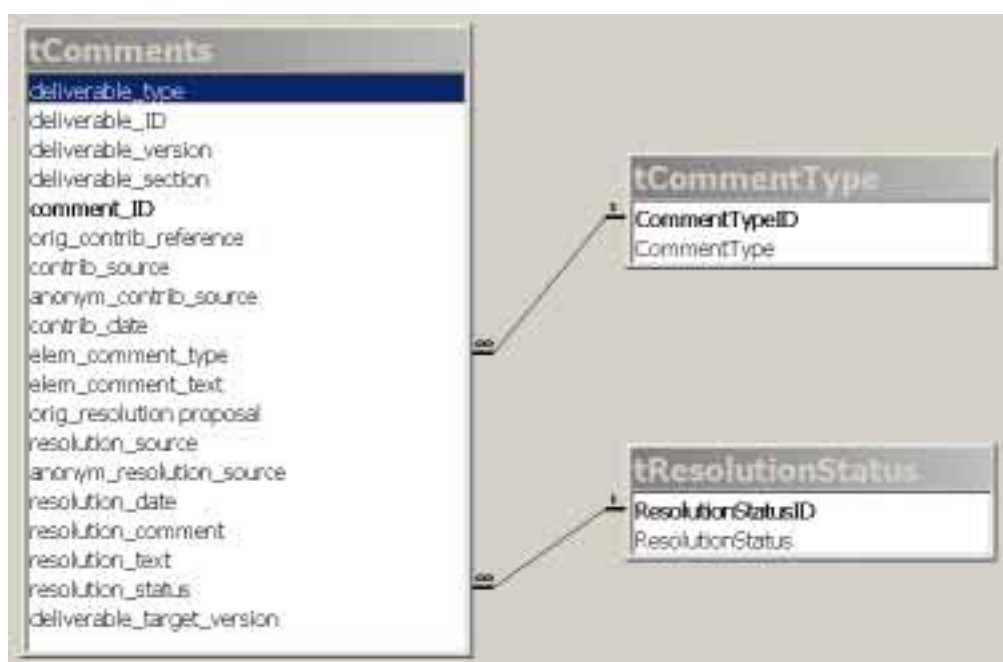


Figure A.1: Tables relationship

A.3 Queries

Only the query named "qComments" is present in the database. The MS SQL source for the query is:

```
SELECT tComments.deliverable_type, tComments.deliverable_ID, tComments.deliverable_version,
tComments.deliverable_section, tComments.comment_ID, tComments.orig_contrib_reference,
tComments.contrib_source, tComments.anonym_contrib_source, tComments.contrib_date,
tCommentType.CommentType, tComments.elem_comment_text, tComments.[orig_resolution proposal],
tComments.resolution_source, tComments.anonym_resolution_source, tComments.resolution_date,
tComments.resolution_comment, tComments.resolution_text, tResolutionStatus.ResolutionStatus,
tComments.deliverable_target_version
FROM tResolutionStatus INNER JOIN (tCommentType INNER JOIN tComments ON tCommentType.CommentTypeID =
tComments.elem_comment_type) ON tResolutionStatus.ResolutionStatusID = tComments.resolution_status
ORDER BY tComments.comment_ID;
```

Annex B: MS Word global template: macros' VBA sources and forms

B.1 VBA sources

B.1.1 Module "modCode"

```

'
' ETSI maintenance tool v. 1.0 - 14 March 2004
' for MS Word 2000 SP3
'
' developed by Gianluca Ramunno (Politecnico di Torino) for ETSI
' Copyright European Telecommunications Standards Institute 2004
'
' force the variables' declaration
Option Explicit

Sub StartETSIMaintenanceTool()
    frmMenu.Show
End Sub

Sub FormatMMOutput(parBase As String, parTarget As String)

Dim I As Integer
Dim keyword As String
Dim listID(30) As String
Dim storedID As Integer
Dim targetName As String
Dim sourceDoc As Document
Dim targetDoc As Document
Dim sourceDocWindowsState As Long
Dim targetDocWindowsState As Long

'keyword definition to search the header row of the tables
keyword = "Comment ID"

'counts the number of deliverables IDs stored in the 'listID' array
storedID = 0

Set sourceDoc = ActiveDocument

' save the current status and minimize the windows to improve the performances
sourceDoc.WindowsState = sourceDoc.ActiveWindow.WindowState
sourceDoc.ActiveWindow.WindowState = wdWindowStateMinimize

' go to the beginning of the document
Selection.HomeKey Unit:=wdStory

' start the search loop

Do

    ' set not to search for any formatting item
    Selection.Find.ClearFormatting

    ' set the search parameters
    With Selection.Find
        .Text = keyword
        .Replacement.Text = ""
        .Forward = True
        .Wrap = wdFindStop ' the search ends when reaching the end of the document
        .Format = False
    
```

```

.MatchCase = True
.MatchWholeWord = False
.MatchWildcards = False
.MatchSoundsLike = False
.MatchAllWordForms = False
End With

' search execution
If Selection.Find.Execute = False Then
    ' string 'Comment ID' not found (reached the end of the doc. or string not present
    Exit Do
End If

' go down of one row: go to the cell with data
Selection.Move wdRow, 1
'Selection.MoveDown Unit:=wdLine, Count:=1

' select the whole cell
Selection.SelectCell

' come back of one char to skip the cell marker
Selection.MoveEnd Unit:=wdCharacter, Count:=-1

'MsgBox Selection.Text + " " + GetDocId(Selection.Text)
If GetDocId(Selection.Text) = listID(storedID) Then

' this comment is related to the same deliverable as the previous one,
' therefore the tables have to be joint

' go to the row just above (moving of one row only unselects the cell:
' the second movement is the real one)
Selection.Move wdRow, -2

' go to the line just above the table
Selection.MoveUp Unit:=wdLine, Count:=1

' go to the beginnging of the line
Selection.HomeKey Unit:=wdLine

' go to the end of the line selecting the line itself
Selection.EndKey Unit:=wdLine, Extend:=wdExtend

'delete the line (and join the tables)
Selection.Delete Unit:=wdCharacter, Count:=1

' go to the previous position
Selection.Move wdRow, 1
Else
' this comment is related to the new deliverable, therefore the tables
' have to remain disjoint and the deliverable ID has to be stored

storedID = storedID + 1
listID(storedID) = GetDocId(Selection.Text)

If storedID > 1 Then ' there is at least one table completed

' go to the row just above (moving of one row only unselects the cell:
' the second movement is the real one)
Selection.Move wdRow, -2

' go to the last line of the previous table (supposing that only one line
' separates the tables
Selection.MoveUp Unit:=wdLine, Count:=2

' select the table where the insertion point is in
If Selection.Information(wdWithInTable) Then
    ' select the table where the insertion point is in
    Selection.Tables(1).Select

    ' add a bookmark (for the selected table) named as the deliverable ID

```



```

        ActiveDocument.Bookmarks.Add Name:="_ETSI_frmt_" + listID(storedID - 1),
Range:=Selection.Range

        End If

        ' go to the two lines below the table (the first line of the next table)
        Selection.MoveDown Unit:=wdLine, Count:=2

        ' go to the previous position (second row)
        Selection.Move wdRow, 1
    Else

        Selection.HomeKey Unit:=wdLine

    End If

End If

Loop

If storedID = 0 Then
    ' keyword (e.g. 'Comment ID') string not found: missed tables or not properly filled. The
macro will end
    MsgBox "string '" + keyword + "' not found: missed tables or not properly filled. The macro
will end!", vbOKOnly + vbExclamation, "Macro End"
    Exit Sub
Else

    ' select the table where the insertion point is in
    If Selection.Information(wdWithInTable) Then
        ' select the table where the insertion point is in
        Selection.Tables(1).Select

        ' add a bookmark (for the selected table) named as the deliverable ID
        ActiveDocument.Bookmarks.Add Name:="_ETSI_frmt_" + listID(storedID),
Range:=Selection.Range

    End If

End If

MsgBox "Mail Merge output formatted - starting copying to target document", vbInformation

' copy and paste the tables (one for each deliverable) in the target document

targetName$ = parBase

' open the file of the target document
Set targetDoc = Documents.Open(targetName$)

' save the current status and minimize the windows of the target doc to improve the performances
targetDoc.WindowsState = ActiveDocument.ActiveWindow.WindowState
targetDoc.ActiveWindow.WindowState = wdWindowStateMinimize

For I = 1 To storedID
    If ActiveDocument.Bookmarks.Count >= 1 Then

        ' activate the source document (the one just formatted)
        sourceDoc.Activate

        ' select a table through its bookmark
        ActiveDocument.Bookmarks("_ETSI_frmt_" + listID(I)).Select

        ' copy the table in the clipboard
        Selection.Copy

        ' activate the target document
        targetDoc.Activate

        ' set not to search for any formatting item
        Selection.Find.ClearFormatting

```

```

' set the search parameters
With Selection.Find
    .Text = "<insert_table name=" + listID(I) + "/>"
    .Replacement.Text = ""
    .Forward = True
    .Wrap = wdFindContinue ' since the position of the searched text is unknown
                            ' the search continues from the beginning when reaching the
end of the document
    .Format = False
    .MatchCase = True
    .MatchWholeWord = False
    .MatchWildcards = False
    .MatchSoundsLike = False
    .MatchAllWordForms = False
End With

' search execution
If Selection.Find.Execute = True Then
    ' string 'Comment ID' not found (reached the end of the doc. or string not present
    Selection.Paste
End If
End If

Next I

' restore the window status of the source and target documents
sourceDoc.ActiveWindow.WindowState = sourceDocWindowsState
targetDoc.ActiveWindow.WindowState = targetDocWindowsState

ActiveDocument.SaveAs FileName:=parTarget, FileFormat:=wdFormatDocument _
, LockComments:=False, Password:="", AddToRecentFiles:=True, _
WritePassword:="", ReadOnlyRecommended:=False, EmbedTrueTypeFonts:=False, _
SaveNativePictureFormat:=False, SaveFormsData:=False, SaveAsAOCELetter:= _
False

MsgBox "Target document saved - end of macro", , vbInformation

End Sub

Function GetDocId(parCommentID As String)
    Dim I As Long

    ' Search for the separator between deliverable ID and comment number
    For I = 1 To Len(parCommentID)
        If Mid$(parCommentID, I, 1) = "-" Then
            Exit For
        End If
    Next I

    GetDocId = Trim$(Left$(parCommentID, I - 1))
End Function

Sub SetupMailMerge(parMailMergeBase As String, parMailMergeDB As String)

    Dim fs As Object
    Set fs = CreateObject("Scripting.FileSystemObject")
    If fs.FileExists(parMailMergeBase) = False Then

        Documents.Add DocumentType:=wdNewBlankDocument

        ActiveDocument.SaveAs FileName:=parMailMergeBase, FileFormat:=wdFormatDocument, _
        LockComments:=False, Password:="", AddToRecentFiles:=True, WritePassword _
        :="", ReadOnlyRecommended:=False, EmbedTrueTypeFonts:=False, _
        SaveNativePictureFormat:=False, SaveFormsData:=False, SaveAsAOCELetter:= _
        False

    Else

        Documents.Open FileName:=parMailMergeBase, _
        ConfirmConversions:=False, ReadOnly:=False, AddToRecentFiles:=False, _
        PasswordDocument:="", PasswordTemplate:="", Revert:=False, _
        WritePasswordDocument:="", WritePasswordTemplate:="", Format:= _
        wdOpenFormatAuto
    End If

```

```

Windows(parMailMergeBase).Activate
ActiveDocument.MailMerge.MainDocumentType = wdCatalog
ActiveDocument.MailMerge.OpenDataSource Name:=parMailMergeDB, _
    ConfirmConversions:=False, ReadOnly:=False, LinkToSource:=True, _
    AddToRecentFiles:=False, PasswordDocument:="", PasswordTemplate:="", _
    WritePasswordDocument:="", WritePasswordTemplate:="", Revert:=False, _
    Format:=wdOpenFormatAuto, Connection:="QUERY qComments", SQLStatement:= _
    "SELECT * FROM [qComments]", SQLStatement1:=""
ActiveDocument.MailMerge.EditMainDocument

End Sub

Sub StartMailMerge(parMailMergeBase As String, parMailMergeDB As String)

    With ActiveDocument.MailMerge
        .Destination = wdSendToNewDocument
        .MailAsAttachment = False
        .MailAddressFieldName = ""
        .MailSubject = ""
        .SuppressBlankLines = True
        With .DataSource
            .FirstRecord = wdDefaultFirstRecord
            .LastRecord = wdDefaultLastRecord
        End With
        .Execute Pause:=False
    End With

End Sub

```

B.1.2 Module "frmMenu"

```

'
' ETSI maintenance tool v. 1.0 - 14 March 2004
' for MS Word 2000 SP3
'
'
' developed by Gianluca Ramunno (Politecnico di Torino) for ETSI
'
' Copyright European Telecommunications Standards Institute 2004
'

Private Sub cmdFormatMMOutput_Click()

    Dim fs As Object
    Dim response As Integer

    Set fs = CreateObject("Scripting.FileSystemObject")
    If fs.FileExists(Trim$(txtBase.Text)) = False Then
        MsgBox "The file " + Chr$(34) + Trim$(txtBase.Text) + Chr$(34) + " doesn't exist!" _
            + Chr$(10) + Chr$(10) + "Select an existent file.", vbCritical
        Exit Sub
    ElseIf fs.FileExists(Trim$(txtTarget.Text)) = True Then
        response = MsgBox("The file " + Chr$(34) + Trim$(txtTarget.Text) + Chr$(34) + " already
exists!" + _
            Chr$(10) + Chr$(10) + "Do you want to start the procedure to produce the target document
that will overwrite the existent the file?", vbQuestion + vbYesNo)
        If response = vbNo Then
            Exit Sub
        End If
    End If
    Me.MousePointer = fmMousePointerHourGlass
    FormatMMOutput Trim$(txtBase.Text), Trim$(txtTarget.Text)
    Me.MousePointer = fmMousePointerDefault

End Sub

Private Sub cmdClose_Click()
    Unload Me
End Sub

Private Sub cmdSelectBase_Click()
    With Dialogs(wdDialogFileOpen)
        .Name = "*.doc"
        .Display
        If Trim$(.Name) <> "*.doc" Then

```

```

        'FullNameOfDoc = ReplaceWithin(FullNameOfDoc, Chr(34), "")      ' Requires the
ReplaceWithin Function
        FullNameOfDoc = CurDir & "\" & .Name
        txtBase.Text = FullNameOfDoc
        'MsgBox txtBase.Text
    End If
End With

End Sub

Private Sub cmdSelectMailMergeBase_Click()
Dim FullNameOfDoc As String

    With Dialogs(wdDialogFileOpen)
        .Name = "*.doc"
        .Display
        If Trim$(.Name) <> "*.doc" Then
            'FullNameOfDoc = ReplaceWithin(FullNameOfDoc, Chr(34), "")      ' Requires the
ReplaceWithin Function
            FullNameOfDoc = CurDir & "\" & .Name
            txtMailMergeBase.Text = FullNameOfDoc
            'MsgBox txtMailMergeBase.Text
        End If
    End With

End Sub

Private Sub cmdSelectMailMergeDB_Click()
Dim FullNameOfDB As String

    With Dialogs(wdDialogFileOpen)
        .Name = "*.mdb"
        .Display
        If Trim$(.Name) <> "*.mdb" Then
            'FullNameOfDoc = ReplaceWithin(FullNameOfDoc, Chr(34), "")      ' Requires the
ReplaceWithin Function
            FullNameOfDB = CurDir & "\" & .Name
            txtMailMergeDB.Text = FullNameOfDB
            'MsgBox txtMailMergeDB.Text
        End If
    End With

End Sub

Private Sub cmdSelectTarget_Click()
Dim FullNameOfDoc As String

    With Dialogs(wdDialogFileOpen)
        .Name = "*.doc"
        .Display
        If Trim$(.Name) <> "*.doc" Then
            'FullNameOfDoc = ReplaceWithin(FullNameOfDoc, Chr(34), "")      ' Requires the
ReplaceWithin Function
            FullNameOfDoc = CurDir & "\" & .Name
            txtTarget.Text = FullNameOfDoc
            'MsgBox txtTarget.Text
        End If
    End With

End Sub

Private Sub cmdSetupMM_Click()
    Dim fs As Object
    Dim response As Integer

    Set fs = CreateObject("Scripting.FileSystemObject")
    If fs.FileExists(Trim$(txtMailMergeBase.Text)) = False Then

        response = MsgBox("The file " + Chr$(34) + Trim$(txtMailMergeBase.Text) + Chr$(34) + "
doesn't exist!" _
        + Chr$(10) + Chr$(10) + "A new empty Mail Merge template will be created with the same file
name. Do you want to proceed", vbQuestion + vbYesNo)
        If response = vbNo Then
            Exit Sub
        End If

    ElseIf fs.FileExists(Trim$(txtMailMergeDB.Text)) = False Then
        MsgBox "The file " + Chr$(34) + Trim$(txtMailMergeDB.Text) + Chr$(34) + " doesn't exist!", _

```

```

        Chr$(10) + Chr$(10) + "Select an existent file.", vbCritical
    Exit Sub
End If

    Me.MousePointer = fmMousePointerHourGlass
    SetupMailMerge Trim$(txtMailMergeBase.Text), Trim$(txtMailMergeDB.Text)
    cmdStartMM.Enabled = True
    Me.MousePointer = fmMousePointerDefault

End Sub

Private Sub cmdStartMM_Click()
    Me.MousePointer = fmMousePointerHourGlass
    StartMailMerge Trim$(txtMailMergeBase.Text), Trim$(txtMailMergeDB.Text)
    Me.MousePointer = fmMousePointerDefault
End Sub

Private Sub cmdInfo_Click()
    frmInfo.Show
End Sub

Private Sub txtMailMergeBase_Change()
    If Trim$(txtMailMergeBase.Text) <> "" And Trim$(txtMailMergeDB.Text) <> "" Then
        cmdSetupMM.Enabled = True
    Else
        cmdSetupMM.Enabled = False
    End If
End Sub

Private Sub txtMailMergeDB_Change()
    If Trim$(txtMailMergeBase.Text) <> "" And Trim$(txtMailMergeDB.Text) <> "" Then
        cmdSetupMM.Enabled = True
    Else
        cmdSetupMM.Enabled = False
    End If
End Sub

Private Sub txtBase_Change()
    If Trim$(txtBase.Text) <> "" And Trim$(txtTarget.Text) <> "" Then
        cmdFormatMMOutput.Enabled = True
    Else
        cmdFormatMMOutput.Enabled = False
    End If
End Sub

Private Sub txtTarget_Change()
    If Trim$(txtBase.Text) <> "" And Trim$(txtTarget.Text) <> "" Then
        cmdFormatMMOutput.Enabled = True
    Else
        cmdFormatMMOutput.Enabled = False
    End If
End Sub

```

B.1.3 Module "frmInfo"

```

'
' ETSI maintenance tool v. 1.0 - 14 March 2004
' for MS Word 2000 SP3
'
' developed by Gianluca Ramunno (Politecnico di Torino) for ETSI
'
' Copyright European Telecommunications Standards Institute 2004
'

Private Sub cmdClose_Click()
    Unload Me
End Sub

```

B.2 VBA forms

B.2.1 Form "frmMenu"

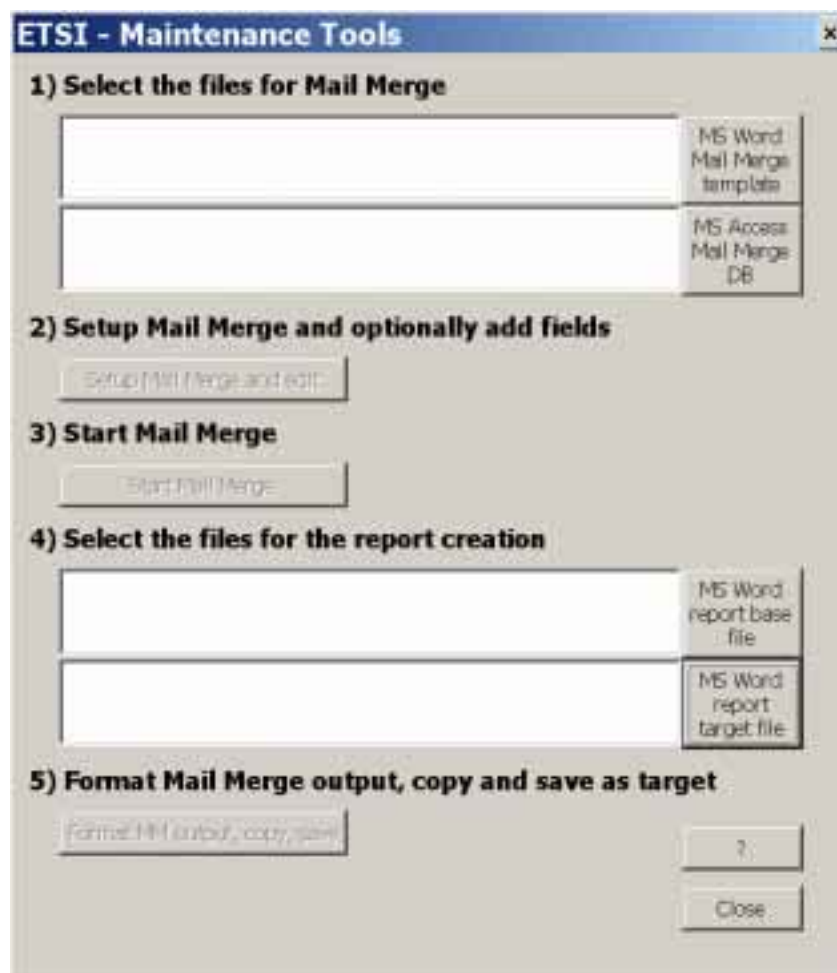


Figure B.1

B.2.2 Form "frmInfo"



Figure B.2

Annex C: How to recreate the tools

C.1 Introduction

This annex describes how to recreate the ETSI maintenance tools having available only the present document. The mail Merge database, the VBA macros and the Mail Merge template are taken into account. In order to make easy recreate the tools the components have to be recreated in the order they have presented in clause C.2.

C.2 Procedures for maintenance tools recreation

C.2.1 Mail Merge database

In order to recreate the Mail Merge database, the following steps have to be done:

- launch MS Access and create a blank database named "ETSI_maintenance_DB.mdb";
- create a new table named "tComments" according to clause A.1.1;
- create a new table named "tCommentType" according to clause A.1.2.1 and create the predefined records as shown in clause A.1.2.2;
- create a new table named "tResolutionStatus" according to clause A.1.3.1 and create the predefined records as shown in clause A.1.3.2;
- set the relationship among the tables as shown in clause A.2;
- create the query "qComments" as shown in clause A.3;
- create the insertion form "fComments" as shown in clause 5.4.2, including all the fields present in the "tComments" table.

C.2.2 VBA macros

In order to recreate the VBA macros, the following steps have to be done:

- launch MS Word and make sure that only the default blank document is open;
- open the Visual Basic editor (open the "Tool ► Macro ► Visual Basic Editor" menu);
- right click the "Project (Document1)" line for the current blank document in the "Project" panel and select "Project Properties": change the VBA project name from "Project" to "ETSIMaintenance" and click the "OK" button;
- right click the "ETSIMaintenance (Document1)" line for the current blank document in the "Project" panel and select "Insert ► UserForm": change the form name in the "Properties" panel from "UserForm1" to "frmMenu" and create a form as shown in clause B.2.1;
- right click the "frmMenu" line for the form just created in the "Project" panel and select "View code" and in the blank editor copy the VBA code present in clause B.1.2;
- right click the "ETSIMaintenance (Document1)" line for the current blank document in the "Project" panel and select "Insert ► UserForm": change the form name in the "Properties" panel from "UserForm1" to "frmInfo" and create a form as shown in clause B.2.2;

- right click the "frmInfo" line for the form just created in the "Project" panel and select "View code" and in the blank editor copy the VBA code present in clause B.1.3;
- right click the "ETSIMaintenance (Document1)" line for the current blank document in the "Project" panel and select "Insert ► Module": change the form name in the "Properties" panel from "Module1" to "modCode" and in the blank editor copy the VBA code present in clause B.1.1;
- click the "File ► Save" menu: select a proper directory where save the file, then select "Document Template (*.dot)" in the "Save as type" combo box and type "ETSI_maintenance.dot" in the "File name" combo box;
- close the Visual Basic Editor and close MS Word.

C.2.3 Mail Merge template

In order to recreate the Mail Merge template, the following steps have to be done:

- install the tool "ETSI_maintenance.dot" as described in clause 5.3;
- launch MS Word and make sure that only the default blank document is open;
- click the "ETSI Maintenance" button on the toolbar: the main menu for the maintenance report creation will be shown (see figure 2 for a sample).
- type the full path of the Mail Merge template to be created select it by clicking the "MS Word Mail Merge Template" button, choosing the name or "ETSI_maintenance_MM_template.doc";
- type the full path of the empty Mail Merge database ("ETSI_maintenance_DB.mdb") or select it by clicking the "MS Access Mail Merge DB" button; the default Mail Merge database is, included in the tools' package;
- click the "Setup Mail Merge and edit" button to setup the MS Word Mail Merge function: the user is asked for a new template creation; clicking the "Yes" button, the empty Mail Merge template will be loaded and shown; at this stage the user can modify the template, adding, modifying or removing text, Mail Merge and Word fields (by clicking the proper buttons present on the toolbars);
- create a tabled layout as shown in clause D.1 using the ETSI styles for table formatting;
- click the "ETSI Maintenance" button on the toolbar to show again the main menu and click the "close" button;
- save the "ETSI_maintenance_MM_template.doc" document and close Word.

Annex D: Mail Merge template and maintenance report samples

This annex includes some examples of the maintenance report base file and of the maintenance report as outcome of the Mail Merge operation and the application of VBA macro included among the ETSI maintenance tools.

D.1 Sample of Mail Merge template

Table D.1 represents a sample of a Mail Merge template. In particular this is the template used to generate the updated TC ESI maintenance report (TR 102 046 [2]). Examples of the Mail Merge outcome obtained using this template are shown in clause D.4. The Mail Merge fields present in the table cells are the ones available when using the ETSI maintenance database (or Mail Merge database) as MS Word Mail Merge data source.

Table D.1

Comment ID	Deliverable version	Deliverable clause	Original contribution reference	Comment date	Comment type	Resolution source	Resolution date	Resolution status	Deliverable target version
«comment_ID»	«deliverable_version»	«deliverable_section»	«orig_contrib_reference»	«contrib_date»	«CommentType»	«anonym_resolution_source»	«resolution_date»	«ResolutionStatus»	«deliverable_target_version»
	Comment text	«elem_comment_text»							
	Original resolution proposal	«orig_resolution_proposal»							
	Resolution comment	«resolution_comment»							
	Resolution text	«resolution_text»							

D.2 Sample of clause 5 of the maintenance report base file

The textbox below represents a sample of the clause 5 of the maintenance report base file, including the placeholders needed by the VBA macro in order to copy the outcome of the Mail Merge operation and create the target maintenance report properly formatted.

5 Comments

This clause collects all the elementary comments obtained by pre-processing the original contributions in a structured format.

5.1 TS 101 456 - Qualified certificate policy
<insert_table name=TS101456/>

5.2 TS 101 733 - ES electronic signature formats
<insert_table name=TS101733/>

5.3 TS 101 861 - Time stamping profile
<insert_table name=TS101861/>

...

D.3 Samples of elementary comments within clause 5 of the maintenance report

D.3.1 Introduction

The actual version of the ETSI Maintenance Tools does not perform any formatting operation on the text included in the table cells. Therefore indenting and formatting (es ASN.1) as shown by the samples (and validated by *editHelp!* staff) are done manually.

D.3.2 Example n. 1

Comment ID	Deliverable version	Deliverable clause	Original contribution reference	Comment date	Comment type	Resolution source	Resolution date	Resolution status	Deliverable target version
TS101456-007	1.2.1	6.2	UNSTT-001		technical			not yet processed	
	Comment text	<p>Modify the text: "The CA shall oblige, through agreement (see clause 7.3.1 h)), the subscriber to ensure that the subject fulfils the following obligations:</p> <ul style="list-style-type: none"> a) submit accurate and complete information to the CA in accordance with the requirements of this policy, particularly with regards to registration; b) only use the key pair for electronic signatures and in accordance with any other limitations notified to the subscriber (see clause 7.3.4); c) exercise reasonable care to avoid unauthorized use of the subject's private key; d) if the subscriber or subject generates the subject's keys: <ul style="list-style-type: none"> - generate subject's keys using an algorithm recognized as being fit for the purposes of qualified electronic signatures; - use a key length and algorithm which is recognized as being fit for the purposes of qualified electronic signatures; <p>NOTE 1: It is currently proposed that the recognition of algorithms, with associated key length, being fit for the purposes of qualified certificates is through a cryptographic advisory panel under the committee identified in article 9 of the Directive [1].</p> <ul style="list-style-type: none"> - only the subject holds the private key once delivered to the subject. e) if the certificate policy requires use of an SSCD (i.e. QCP public + SSCD), only use the certificate with electronic signatures created using such a device; <p>NOTE 2: The above item is NOT applicable to qualified certificate policy: QCP public.</p> <ul style="list-style-type: none"> f) if the certificate is issued by the CA under certificate policy QCP public + SSCD and the subject's keys are generated under control of the subscriber, generate the subject's keys within the SSCD to be used for signing; <p>NOTE 3: The above item is NOT applicable to qualified certificate policy: QCP public.</p> <ul style="list-style-type: none"> g) notify the CA without any reasonable delay, if any of the following occur up to the end of the validity period indicated in the certificate: <ul style="list-style-type: none"> - the subject's private key has been lost, stolen, potentially compromised; or - control over the subjects private key has been lost due compromise of activation data (e.g. PIN code) or other reasons; and/or - inaccuracy or changes to the certificate content, as notified to the subscriber. h) following compromise, the use of the subject's private key is immediately and permanently discontinued." 							
	Original resolution proposal	<p>New text: "The CA shall oblige, through agreement (see clause 7.3.1 h)), the subscriber:</p> <ul style="list-style-type: none"> 1) to make the subject aware (in the case the subscriber and the subject are not the same person) of the CA's terms and conditions as provided for in clause 7.3.1.a); 2) to ensure that the subject fulfils the following obligations: <ul style="list-style-type: none"> a) submit accurate and complete information to the CA, directly or through the subscriber, in accordance with the requirements of this policy, particularly with regards to registration; b) only use the key pair for electronic signatures and in accordance with any other limitations notified to the subscriber (see clause 7.3.4); c) exercise reasonable care to avoid unauthorized use of the subject's private key; d) idem; e) idem; f) idem; g) notify the CA without any reasonable delay, directly or through the subscriber, if any ...; h) idem." 							
	Resolution comment								
	Resolution text								

D.3.3 Example n. 2

Comment ID	Deliverable version	Deliverable clause	Original contribution reference	Comment date	Comment type	Resolution source	Resolution date	Resolution status	Deliverable target version
TS101733-019	1.3.1		JCPKI-002		technical			already applied	
	Comment text	Pages 49, 67 and 76: "OPTIONAL" should be described after [2] OtherRevVals marked ****. <pre> RevocationValues ::= SEQUENCE { crlVals [0] SEQUENCE OF CertificateList OPTIONAL obspVals [1] SEQUENCE OF BasicOCSPResponse OPTIONAL otherRevVals [2] OtherRevVals **** } </pre>							
	Original resolution proposal	"OPTIONAL" should be described after [2] OtherRevVals marked ****							
	Resolution comment	This problem is fixed in the version 1.4.0.							
	Resolution text								

D.4 Samples of contribution with metadata within annex A of the maintenance report

D.4.1 Introduction

This annex collects some sample of the contribution with metadata as to be inserted in annex A of the maintenance report.

D.4.2 Example n. 1

A.1 Comments from a TC-ESI member

A.1.1 TS 101 456 - Qualified certificate policy

A.1.1.1 Proposed amendments from CEN/ISSS area M on system backup and recovery

Contribution metadata	
ID contribution	TC-ESI_1-001
Source	TC-ESI member
Version of the deliverable	1.2.1
Date	14 February 2003

Contribution: comment

In clause 7.4.8 subsection CA General an additional sub-sub-section could be added, named "System backup and recovery", covering the need for these backups in order to resume functions upon disaster. This clause should specify that while the system data **backup** may be performed by one officer provided they have sufficient privileges, **restore** must be performed under at least dual control.

Contribution: proposed resolution

To add a sub-sub-section named "System backup and recovery" in clause 7.4.8 subsection CA General. To be further specified.

D.4.3 Example n. 2

A.2 Comments and proposed amendments from UNINFO-STT (Italy)

A.2.1 Proposed amendments on TS 101 456

Contribution metadata	
ID contribution	UNSTT-001
Source	Uninfo-STT
Version of the deliverable	1.2.1
Date	

Contribution

Introduction

The present document means to give suggestions in order to modify TS 101 456 [**Error! Reference source not found.**]: the proposed changes concern both document's stylistic aspects (spelling/syntax) and the content of the deliverable.

For each paragraph to be modified the numeric reference is given and a new statement is proposed (highlighted in bold): those parts of statement that have to be deleted are highlighted in bold and struck out.

a) Spelling/Syntax corrections

✓ 2 References

[9] FIPS PUB 140-2 (2001): "Security Requirements For Cryptographic Modules".

✓ 4.1 Certification Authority

(first section) "The Certification Authority has overall responsibility for the provision of certification services identified in **clause 4.2. The certification authority is identified in the certificate as the issuer and its private key is used to sign qualified certificates.** "

...

History

Document history		
V1.1.1	June 2004	Publication