OETCS/WP1/D1.3.1

openETCS

ITEA2

INFORMATION TECHNOLOGY FOR EUROPEAN ADVANCEMENT

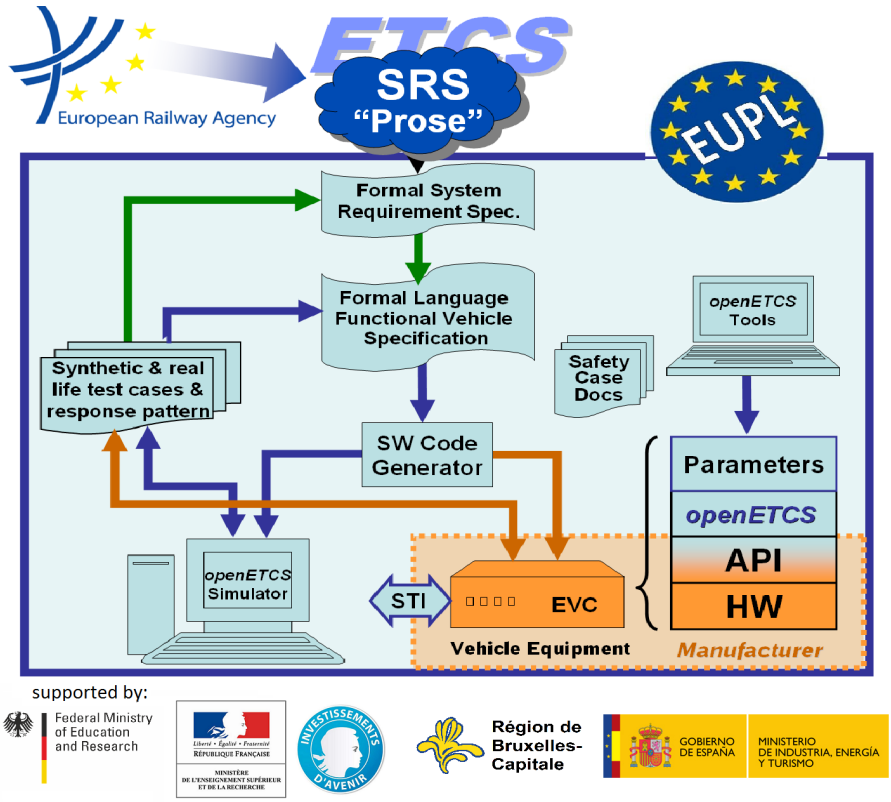
ITEA2 Project
Call 6 11025
2012 – 2015

Work-Package 1: “Management”

Project Quality Assurance Plan - Review Process

SQS

April 16, 2013



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Work-Package 1: “Management”

OETCS/WP1/D1.3.1
April 16, 2013

Project Quality Assurance Plan - Review Process

SQS

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Description of work

Prepared for ITEA2 openETCS consortium
Europa

Contents

Document History

Version	Date	Chapters modified	Reason	Name
0.0.1	09.04.2013	All	First version	SQS

1 Purpose of the document

This document presents the whole review process to follow when a document needs revision. It aims to provide a set of guidelines as technical instructions for each review cycle launched that highlights the steps to take.The roles involved in the process are clearly identified as well as their responsibilities and tasks. And finally, the mechanisms needed to achieve the proposed objectives are also included, so the process can be carried out successfully.

2 Structure of the repository

The review process involves the creation of the following directories inside the structure of each repository.

Structure of the repository	
Name	Content
Final documents	Pdf final documents validated after a RC is closed by the responsible of the document.
Review Documents	• A control sheet: With the basic information of the review cycle. • The review document: In Tex format with all its history of changes.

3 Roles

This section describes the roles of the participants in the review process of the documentation:

Roles	
Role	competencies
RC manager / Owner of the document	• Launch the Review Process – RC Request. ∗ Justify the new RC. (*TI.6.3.1 New RC Request*) – Open a review cycle for a document. To do this, create a git new branch (*TI.6.1.1. New RC branch*) – Open a new issue for the new RC linked to the document and the review. Only the owner of the document can close the issue and he/she also be in charge of conducting the discussions and comments below the issue. (*TI.6.1.2. Open issue*) – Create the Control Sheet with the basic information related to the tasks to be done during the complete new cycle. (*TI.6.1.3. Complete the Control Sheet*) • Control Review Process – Supervision of the work done. (*TI.6.1.4. Supervision of the Review Process*) • Accept/Reject – Use todonotes tool to add, verify and reject comments in the document being reviewed. (*TI.6.3.2 Add notes using todonotes*) – Make changes to the document. • Closing – Send the notification of closing. (*TI.6.1.6. RC Issue closing*) – Merge the associated RC branch into the repository master branch. (*TI.6.1.7. RC Branch merging*) – Generate an established version of the document in PDF format when the review cycle is finished and store it in the directory of Final documents. (*TI.6.1.8. Pdf delivery*)

Roles	
Role	competencies
Reviewer	• RC Request. – Justify the RC Request and explain the interest in collaborating. (*TI.6.3.1 New RC Request*) • Review Work – Prepare the working environment: To change the document, the committer has to clone the repository in local, create a branch and associate to the repository on gitHub (*TI.6.2.1. Review environment setup*). – Be aware of how to perform the review work (*TI.6.2.2 Review work*) – Make comments, suggestions or improvement proposals with the todonotes package installed for the LaTeX editing tool. (*TI.6.3.2 Add notes using todonotes*) – Comment in the issue thread in the git repository. (*TI.6.3.3 Add comments in a RC issue*)

4 Tools

Tools	
GIT	• GitHub: A web-based hosting service for projects that use Git revision control system. • SmartGit: A graphical front-end for Git distributed version control systems.
Pdf documents	• Adobe Acrobat Reader: Software package that allows to view, navigate and print pdf files. • Diffpdf: Open source application that compares different PDF files for discrepancies.
TeX documents	• MiKTeX : Provides the tools necessary to prepare documents using de TeX/LaTeX mark up language. • GhostScript. • GhostView. • TexMaker. • Todonotes package. • Adobe Acrobat Reader: Software package that allows to view, navigate and print pdf files..

5 Review Process Overview

This subject is concerned with the validation and verification of the documentation generated within the OpenETCS project. The process shall aim to confirm that what has been produced is correct and meets the expectations of the committers as well as improving the quality of the document and its reliability; it also ensures the technical approach is appropriate before releasing the related documentation.

The Review Process refers to documents that are prone to be under review consideration because the authors have delivered its first release, some sections have been included or any committee has considered an improvement.

This whole process is independent from the habitual work done in the repositories; so, whereas the OpenETCS members work as usually do in the master branch, the new Review Cycle shall be attached to a specific repository branch (previously created by the document owner). Then any change, comment, suggestion or improvement to do to the identified document under review, shall be done inside this RC branch and in the correspondent ‘review_documents’ directory inside the OpenETCS structure.

In this way, the day to day work with regard to the master branch shall not be affected by the work being done in the review context; the whole review cycle for a specific document shall be linked to a specific branch of the repository. This is the key of the process because with this

mechanism there shall be no dependencies between the ordinary work done in the project and the different review cycles launched for different documents at different times.

During their lifetime, these documents shall be involved at least in one complete Review Cycle, but it there will be as many review cycles as considered necessary. The different Review Cycles linked to each document shall be numbered and associated to their branches.

A Review Cycle will help the project to better meet its strategic goals and objectives, so the correctness of the deliverables is ensured and they cover their intended purpose.

In this context the review will help to:

- Identify deficiencies that shall be fixed. Reviewing a document in a structured way will identify problems or faults with that product. Applying a methodology for reviews shall take advantage of the expertise and knowledge of the committers involved with a greater proportion of improvements and defects found.
- Ensure the coherence, correct use of language and appropriate structure.
- Collect recommendations and improvements suggested by the committers so the document is enriched with specific experiences and multiple points of view and technical perspectives.

The key aspects of the review process include the following:

- Each review need for a document shall be translated into the creation of a new review cycle
  - A RC for a document starts when a need or objective to be fulfilled is identified.
  - Such proposal can be done by the owner of the document or by any committer that can justify the need for a new cycle.
  - When a proposal is submitted by a person who is not the owner of the document, the review proposal shall be accepted by the owner of the document and the process shall begin.
- The owner of the document shall be the RC manager
  - The owner of the document to be reviewed shall be the responsible for addressing and conducting the review during the expected time of the cycle.
  - He/she shall be aware of the tasks that are their responsibility, so the review is under control, the steps defined in the technical procedure are correctly followed and known, and it can be conducted with minor incidents.
- Close collaboration between the RC manager and the reviewers
  - The participants in the review shall be guided by the RC manager in the whole process so the optimum level of collaboration and integration is reached.
  - Any conflict detected when uploading the review in the repository, question or problem found by any reviewer at any moment shall be communicated via the opened issue thread, and the RC manager shall be responsible for providing the appropriate support.
- The documentation needed for performing the review shall be always accessible in an easy way.
  - Once the issue announcing the new Review Cycle has been published, the participants can have access to the needed information and documentation in the review_documents directory.

  - Each Review Cycle identified for a document shall have a detailed Control Sheet with all the information needed, the tasks assigned when there is not an open a general review, the objectives to meet, deadlines, etc. support.

- The review shall be done locally by the reviewers
  - Using the Smartgit tool the reviewers shall ensure that they have switched their work context to the required RC branch and then synchronize the contents so they have the last committed version of the review_directory.
  - The reviewers shall work in the cloned repository that contains the document under review locally
  - They shall use the todonotes package installed for the LaTeX editing tool to include comments and suggestions into the document under review

- The reviewer is responsible for uploading the changes to the remote branch
  - Once the work is done, the reviewer shall ensure he/she has the last committed version of the document under review before pushing the changes into the correspondent git repository.
  - The conflicts that can appear due to simultaneous work in the same document shall be resolved before merging the changes into the document under review.
  - When the review is uploaded the reviewer shall notify the actualization by sending a message in the opened issue thread.
  - The reviewer shall wait for the RC manager to approve or reject the proposed changes.

- The RC manager shall decide when the Review Process is closed
  - The reviewer shall receive a notification by e-mail, and publicly in the opened related issue, once the RC manager has checked the proposed review.
  - The reviewers shall continue working with the document in case there are still pending issues.
  - When there are no more pending issues, neither comments nor suggestions to be done, the review process is finished. Then, the RC manager shall be the responsible for
    * closing the corresponding issue in the repository,
    * sending the notification of closing,
    * merging the associated RC branch into the repository master branch,
    * generating an established new version of the document
    * and uploading it into the Final documents directory in the repository.

There can be in the git repository different intermediate versions in pdf of the document under review in the review_documents directory. However, this pdf document can be used only as a quick reference of the progress of the review, and it cannot be taken as a final document.

It is important to have in mind that the document under review, once it has been verified and approved by the RC manager, shall be available in the Final documents directory.

In the Final documents directory of each WP inside the structure of the OpenETCS project there shall be always a readable version for anyone in the project.

When comparisons between correlative stable versions of a document need to be done, the diffPDF tool cab be used to find the differences between them.

6 Technical Instructions

In this section the whole Review process is explained step by step using technical instructions, so all the participants involved in the process are aware of the mechanisms they shall implement to work and achieve the expected objectives.

The sequence of activities or course of action that must be followed by the reviewers as well as the RC manager is explained below.

6.1 Technical Instructions for the RC Manager

This section includes the Technical Instructions the RC manager shall be aware of.

6.1.1 New RC branch

TI	TI.6.1.1. New RC branch
Roles	RC manager
Description	Any changes made to the document under review to include comments, recommendations or additional sections shall be made in a RC branch context. The RC manager shall create the branch and makes it available for the reviewers.
Steps	• Steps to create the branch locally are: 1. Open Smartgit 2. Branch menu, add branch and give a new name following this nomenclature: – *RC_<name of the document to be reviewed>_<number of review>*. 3. Push *add branch & switch*. With these steps the branch is created as a local branch. • Integrate the branch into the git repository 1. Go to the toolbar and press *Push*, accept then the messages. 2. The new branch appears in the Smartgit Branches view, below the origin tag. 3. Confirm that the local branch is linked to the remote git branch: in the local one the *set tracked branch shall* have been done and it shall address to the RC branch already created in the git repository

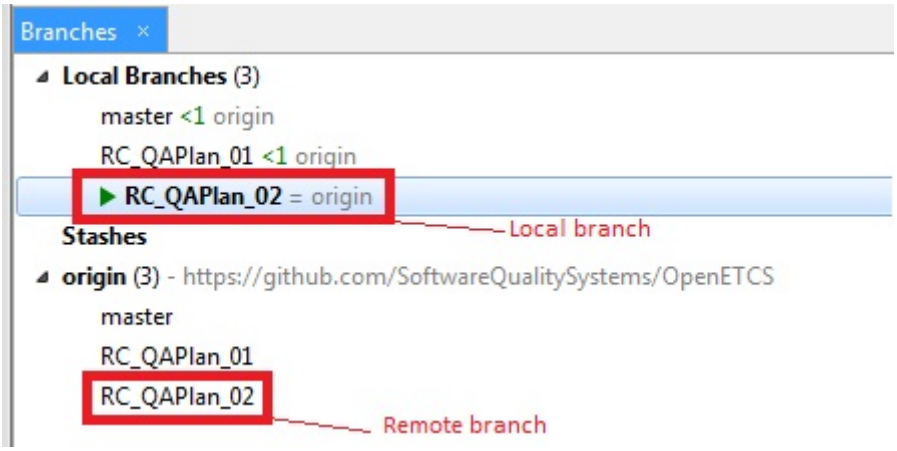


Figure 1. Branches tree in *Smartgit*

6.1.2 Open a New issue in the repository

TI	TI.6.1.2. Open issue
Roles	RC manager
Description	A new issue shall be opened to contain the discussions, comments and notifications related to a specific RC for a document.
Steps	• Create a new issue in the repository that contains the document under review. 1. Open Github and go to the correspondent repository 2. Select the *Issues section* 3. Push the *New issue* button 4. Add a descriptive title indicating the name of the new RC and the document under review 5. Add a significant description about the causes that have motivated the new RC and summarizes the objectives of the review. In case there are specific reviewers involved, provide their names. 6. Push *Submit new issue* • Notify the opening of the issue to the reviewers involved when there are specific names involved 1. Send an e-mail to all the reviewers involved when the RC is limited to a group of known people

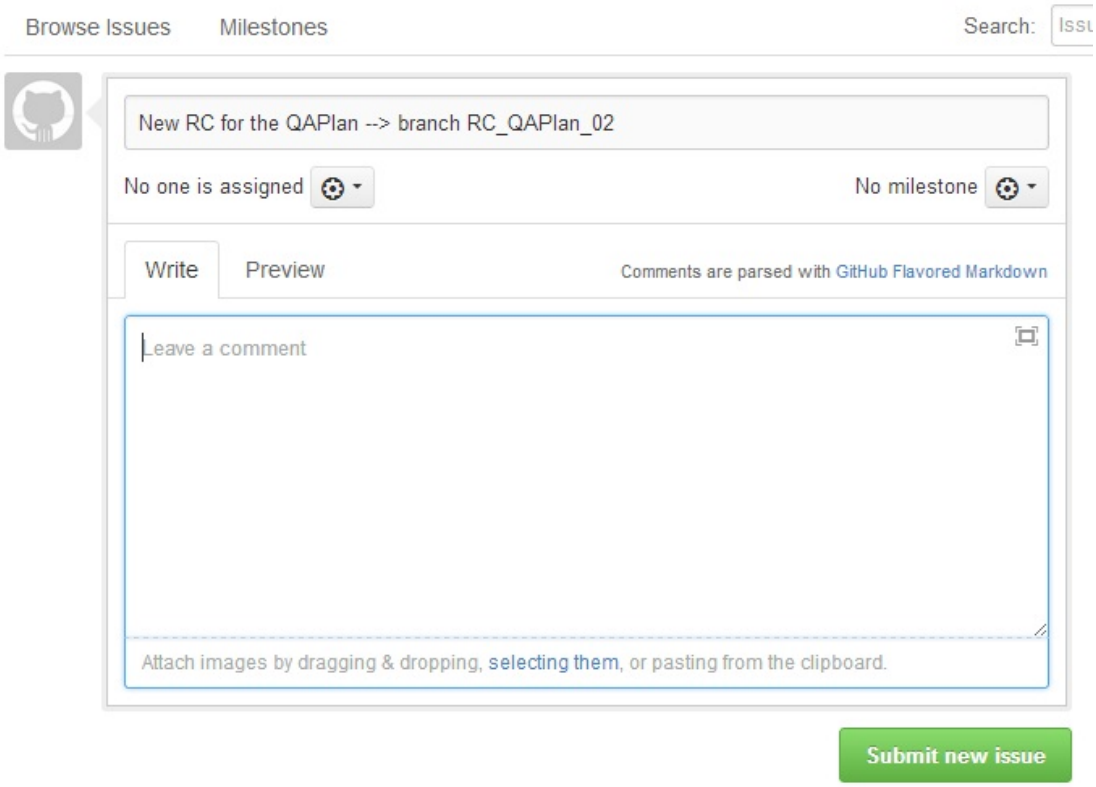
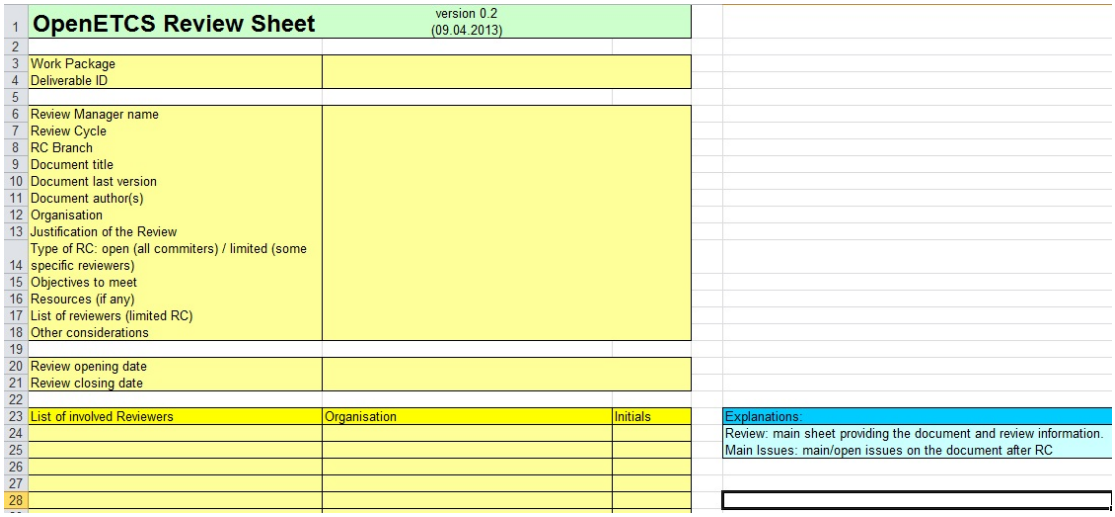


Figure 2. New issue in *Github*

6.1.3 Complete the Control Sheet



1	**OpenETCS Review Sheet**	version 0.2 (09.04.2013)		
2				
3	Work Package			
4	Deliverable ID			
5				
6	Review Manager name			
7	Review Cycle			
8	RC Branch			
9	Document title			
10	Document last version			
11	Document author(s)			
12	Organisation			
13	Justification of the Review			
14	Type of RC: open (all commiters) / limited (some specific reviewers)			
15	Objectives to meet			
16	Resources (if any)			
17	List of reviewers (limited RC)			
18	Other considerations			
19				
20	Review opening date			
21	Review closing date			
22				
23	List of involved Reviewers	Organisation	Initials	Explanations:
24				Review: main sheet providing the document and review information.
25				Main Issues: main/open issues on the document after RC
26				
27				
28				

Figure 3. Template of the Control Sheet

TI	TI.6.1.3. Complete the Control Sheet
Roles	RC manager
Description	A Control Sheet shall be prepared so all the basic and pertinent information of the review is available to all the reviewers involved. The RC manager shall indicate as much information as possible about the deadlines, the objectives to be met, the tasks assigned to specific reviewers when it is a limited review, and any information he/she considers relevant to accomplish the Review Process
Steps	• Take the Control Sheet Template as reference. It contains a set of columns that shall be completed 1. The sheet shall be available in the Review Process directory available in the *governance* repository 2. The responsible of the Review Cycle: the owner of the document shall be the responsible so their name is indicated in the sheet 3. Name of the document to be reviewed 4. Needs, objectives or improvements identified that justify the new review cycle. 5. The branch created for the review, so the reviewers can change their contexts to the specific branch and work from this point on with that. For any other works the reviewers are doing, they shall be aware that they must leave the change before uploading any new version. 6. Participants involved in the process: the RC could include any committer that wants to participate or could be addressed to specific committers. The specific case is explained in detail in the sheet. Whenever specific participants are identified the specific tasks for each of them are clearly proposed. 7. Starting date and deadline. • Add additional information whenever it is necessary • Put the Control Sheet inside the *Reviews directory* available for the document under review

6.1.4 Supervision of the Review Process

TI	TI.6.1.4. Supervision of the Review Process
Roles	RC manager
Description	The RC Manager shall be responsible for assessing the progress done in the RC
Steps	• The RC manager shall wait for the reviewers to answer, so they confirm the pending issues have been fixed or they have more suggestions to do. • The iterative work done in a RC shall finish once the RC manager and reviewers have reached a common agreement about the state of the document, and no more issues are pending. • When this happens, the RC manager shall clean the document, deleting all the comments, confirmations and notes inserted into the document, so a final editable version is obtained.

6.1.5 Approval/rejection of comments

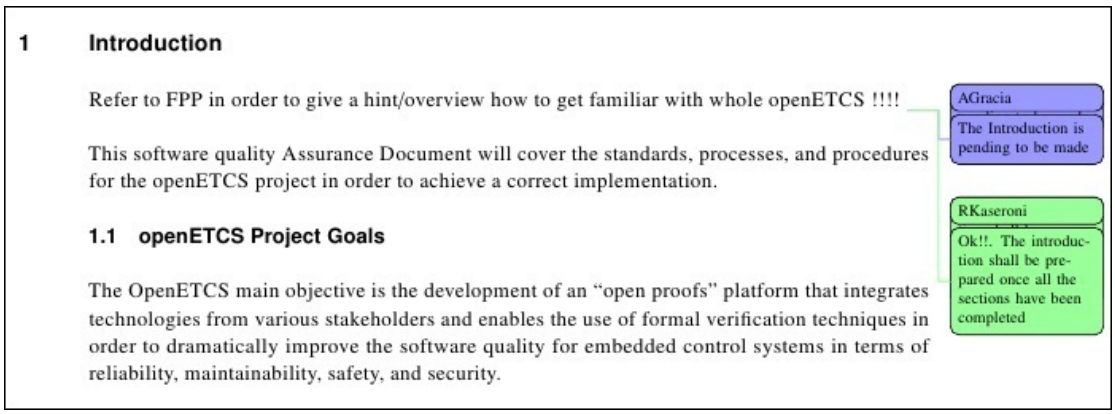


Figure 4. New issue in *Github*

TI	TI.6.1.5. Approval/rejection of comments
Roles	RC manager
Description	The RC manager shall study each proposal, recommendation or comment that appears in the document under review and decide how to implement the proposed changes in case he/she estimates it is appropriate to be included in the document.
Steps	• When a reviewer notifies in the RC issue thread that some changes have been uploaded using the corresponding RC branch, the RC manager synchronizes their repository to obtain the last commit made for the document with the *SmartGit* tool. • He/she reads carefully any annotation that appears in the document and decides whether he/she shall implement that comments or not. • For each annotation the RC manager finds in the document, he/she shall provide a written confirmation about what is their decision about the subject. 1. Use the *todonotes* to confirm/reject proposals made by the Reviewers (*TI.6.3.2 Add notes using todonotes*) 2. The RC manager shall adds a comment confirming or rejecting it. A justification for that decision shall be included. 3. When the suggestion is accepted: (a) Assess whether the recommendation made implies writing new paragraphs, sections, adding new figures, etc. and modify the document accordingly. (b) Highlight the new text or the modified text with *todonotes* using the *inline* option. • The RC manager commits the changes made in the document and push them into the RC branch so the reviewers can have access to the changes, confirmations and rejections made by the RC manager. • The RC manager adds a message to the RC issue thread so everyone can be informed about the commit recently done.

6.1.6 RC Issue closing

TI	TI.6.1.6. RC Issue closing
Roles	RC manager
Description	The RC manager shall be the responsible for closing the current Review Cycle after verifying and confirming all the changes done. The first task to be done is to notify the closing and highlight the results obtained.
Steps	• Add a Comment in the issue thread to indicate that the RC has finished 1. Follow the indications provided in the *TI.6.3.3 Add comments in a RC issue* to add a comment 2. Provide a brief summary of the RC: (a) Indicate the way the objectives have been met (b) Are there pending objectives?. Indicate the reason for closing the RC before all the objectives have been met. (c) Identify the key aspects of the review (d) Highlight the results obtained (e) Identify improvements for a future Review Cycle for the document under review • Close the RC issue thread pushing the *Close* button in *GitHub*. • Notify the closing of the RC when the review process has been carried out by limited Reviewers. The notification shall be made by e-mail.

6.1.7 RC Branch merging

TI	TI.6.1.7. RC Branch merging
Roles	RC manager
Description	Merging the *RC Branch* to the *Master branch* implies incorporating the changes made in a document to the main branch of the repository. In this way, the new release of the editable document is available in the master branch.
Steps	• Merge the branches 1. Switch to the *master branch*, so that the working tree will be the master branch from this moment on 2. With the RC branch selected the RC Manager shall do a click on right button and select *merge to working tree*. • Confirm the update 1. Make *push* to the repository and the merge shall be done. 2. Make *synchronize* so all the changes made are reflected remotely and locally.

6.1.8 Pdf Delivery

TI	TI.6.1.8. Pdf Delivery
Roles	RC manager
Description	The RC manager shall deliver the document under review (once the complete RC has finished) in a only-readable format. This versioned, stable and verified release of the document shall be accessible publicly by everyone with the certainty that it is a confirmed work.
Steps	• Preparation of the pdf 1. The RC manager shall compile the document under review in its editable version (LaTex) and obtain a pdf non-editable document. 2. The new document shall be put in the appropriate repository, inside the *Final documents* directory. • Notification of the update 1. A notification of the update shall be done publicly, posting a new Issue in the repository that shall be labelled as *enhancement*.

6.2 Technical Instructions for the Reviewers

This section includes the Technical Instructions the Reviewers shall be aware of.

6.2.1 Review Environment setup

TI	TI.6.2.1. Review environment setup
Roles	RC manager
Description	Each Reviewer shall prepare the working environment locally and ensure it is ready before starting with the review tasks.
Steps	• Setup using *Smartgit* tool 1. Clone the repository with the *Project –> Clone* option. 2. Go to the *Branch* menu, select *Add branch* and give a name. Then, the branch is created as a local branch. 3. Link the local branch to the remote git branch, to do that, select *Set tracked branch* in the context menu of the local branch. The local environment is then ready for working in the Review Process • Update the environment – It is essential to work in the last release of the document under review, so minimal conflicts appear in the future when uploading the changes. To be sure about this, a pull request shall be done to the repository before editing the document. ∗ Select the *Pull* option on the toolbar

6.2.2 Review work

TI	TI.6.2.2 Review work
Roles	Reviewers
Description	The Reviewer shall perform the review in the expected time and conditions and the starting point shall be provided by the Control Sheet prepared by the RC manager and the work. The work of a reviewer shall finished when the RC owner confirms the closing of the RC.
Steps	• The Reviewer shall: 1. Make comments, suggestions or improvement proposals with the *todonotes* (See *TI.6.3.2 Add notes using todonotes*). 2. Add comments in the RC issue thread when it applies (See *TI.6.3.3 Add comments in a RC issue*). 3. Make changes in the document. Each insertion shall be highlighted indicating the initials of the Reviewer. The review process shall be done by different people and what comments have been written by whom shall be known. • The reviewer shall integrate the changes to the document that is hosted in the remote repository in GitHub. • To do that, click on the *Push* button in the SmartGit tool. When pushing different situations can happen: – There are no conflicts with the original repository . 1. The changes shall be included. – There are one or more conflicts. 1. Click on the *Pull* button so the last version is loaded. 2. Open the *Conflict Solver* Window to compare the committed version in the *Github* and the local version. 3. The conflict shall be solved in the following way. (a) The reviewer shall indicate that the version stored in the remote repository is the correct one. The changes in case of conflict are not included. (b) The Reviewer will *Push* the changes that do not have any conflict and add a notification in the document about that. (c) After finishing the *pushing*, he/she shall perform a *pulling* to obtain the integrated and last committed version; then he/she shall add a note using *todonotes* tool in the section where the conflicts were; he/she shall explain the problem found. 4. Have in mind that after *pushing/pulling* the document the changes in conflict made by the Reviewer shall be lost. Anytime a conflict appears, the reviewer shall prepare a copy of the suggestions or modifications made by him/her. 5. He/she also adds a comment in the RC issue thread exposing that problem in the document and requesting a solution. 6. The RC Manager shall take part in the discussion and propose a solution. The Reviewer can put in the document again the suggestions in conflict stored locally if the RC manager requires that.

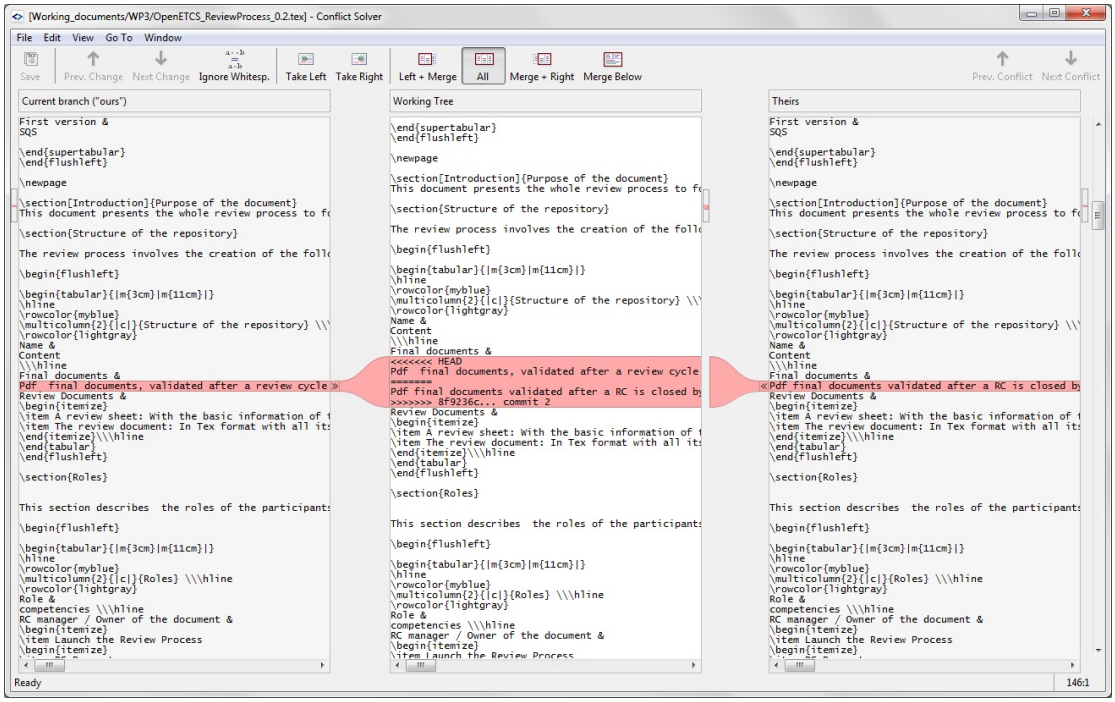


Figure 5. Conflict Solver Window

Steps	• In any case, the reviewer shall inform about the progress of their work posting a message in the RC issue thread. From this point, the reviewer shall wait for the RC manager to read the proposed review and provide comments. (See *TI.6.3.3 Add comments in a RC issue*).

6.3 Technical Instructions for any Role

This section includes any Technical Instruction that shall be followed by the RC manager or Reviewers at different phases of the Review Process

6.3.1 New RC request

TI	TI.6.3.1 New, RC request
Roles	RC manager Any committer
Description	Any person belonging to the OpenETCS project can prepare a review proposal and make a request.
Steps	• The proposer is the owner of the document – A member of the project has finished a document and proposes a general review of contents and structure – The owner of a document is interested in receiving several suggestions or improvement recommendations by specific experts. 1. He/she needs no confirmation for beginning the review. 2. He/she is responsible for starting the process and takes charge of the preparation of the working environment. • The proposer is not the owner of the document – The person interested in opening a new review cycle posts a new issue in the repository. 1. Appropriate and complete information about the review proposal is required. It shall be justified. 2. The proposal could include suggestions of people who can play the role of Reviewers considering the technical difficulty and the expertise of them. – The issue shall be answered by the owner of the document after analyzing the request. * The request is accepted: the owner of the document shall be the RC manager and he/she shall be in charge of opening the RC. * The request is rejected: the owner of the document shall provide the reasons that have motivated him/her to denied the proposal.

6.3.2 Add notes using todonotes

TI	TI.6.3.2 Add notes using todonotes
Roles	RC manager, Reviewers
Description	The package todonotes must be installed locally to make comments in the document under review.
Steps	• Verify the installation of the todonotes package locally. In case the package is not installed, follow these steps: 1. Got to the *MixTex* tool directory, select *Maintenance (Admin)* and click on *Package Manager (Admin)*. 2. Look for the *todonotes* package using the filtering option. 3. Select the package after the search is done and install. • Be used to the most common commands available in the package. 1. Go to the *governance* repository in the Github and look for the *Reviews Process* folder. There you can find a *todonotes* document that explains all the commands that can be used during the reviewing. • Identify always any comment done with your initials. 1. The initials of the person who inserts a comment into the document shall be the the first letter of the name plus the surname. • Use different colours in the document for different meanings 1. *Red*: indicate in a comment what paragraph, section or line the reviewer propose to delete. This color shall be used also by the RC manager when he/she confirms the suggestion done by a reviewer has been rejected. 2. *Green*: the suggestion made by a reviewer has been approved and the RC manager adds a comment with this color. 3. *Orange*: the comment refers to any conflict found between commits done by different reviewers. 4. *Blue*: any general comment done by the participants in the review.

6.3.3 Add comments in a RC issue

TI	TI.6.3.3 Add comments in a RC issue
Roles	RC manager, Reviewers
Description	The issue opened by the RC manager at the beginning of the RC shall be used whenever a notification shall be done, conflict reported or questions asked. The collaborative work shall aim to get a dynamic approach when the discussions are fluid, with quick answers and sharing of information.
Steps	• Go to the repository where the document under review is located. • Select the issue that has the RC you are working on. • The comments posted shall be descriptive enough so any reader can understand the message. 1. Identified yourself clearly, providing your name and role in the project. 2. When required, include diagrams, figures, partial texts or specific data that help to understand the problematic found. • Do not edit any comment done. It is a better option to rewrite it with the additions you proposed than editing and make the changes directly. In this way, it is assured that everyone reads the new message because in the other case, the change/addition can be missed. • Push the *Comment* button to post the message.

