



D5.1

Internal and external IT communication infrastructure and project website

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Abstract:	This deliverable briefly describes the website and its functionality. Further it describes the tools provided within the IT infrastructure to facilitate cooperation and coordination.
Keywords:	Collaborative tools, infrastructure, website, homepage, internal communication



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Executive Summary

This deliverable provides an overview of the Safe4RAIL project internal and external IT infrastructure and consists of two main parts. It includes the project website which has been designed to provide a user-friendly and informative environment (see Chapter 2) and the collaborative tools to facilitate the cooperation within the project and to assist in the coordination work (see Chapter 3).

A protected workspace, including a set of collaboration services has been set up for the Safe4RAIL project. The project partners log in to the workspace and have then access to all information regarding the project (see Chapter 3.1). A very important tool in this project is the Subversion server (SVN). The SVN allows easy synchronization of documents between the server and a participant's local file storage for sharing documents within the project. It is a central file repository where all project partners can get access to the required documents (see Chapter 3.2).

In all projects, communication is one of the most essential points. For that reason a communication network has been built. This includes instant messaging and mailing list servers (see Chapter 3.3 and **Error! Reference source not found.**) and telephone conference systems (see Chapter 3.4).

The established environment enables state-of-the art, efficient and user-friendly collaboration and dissemination of information and provides the ideal administrative basis for the project work.

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Chapter 1 Introduction

This deliverable provides an overview of the Safe4RAIL project IT communication infrastructure which consists of a set of tools to facilitate the cooperation among the beneficiaries, the project coordinator and the EC. Aside from the project website a whole set of tools foster the cooperation within the project and enable the dissemination of project results to the general public. Technikon has developed this system, called “Trusted-Knowledge-Suite” (TKS), for distributed project collaboration in recent years. This trusted collaborative toolbox was awarded an Austrian ICT innovation prize¹ for its security and completeness. The toolbox was incorporated into the architecture which was initiated and configured for SAFE4RAIL. The main components of the knowledge management infrastructure include the following:

- A public dissemination website running on the Joomla! 3.x content management system (CMS) including a restricted area for project participants
- A version control system (Subversion - SVN) for organizing files and documents within the project
- Mailing list server (Mailman) as primary means of communication between participants

The subversion, the restricted area of the project website as well as the Jabber instant messaging server use encrypted communication paths and can be configured to work through corporate firewalls that allow encrypted web traffic (SSL²). The versioning tool requires a web browser with java-script support. Figure 1 presents the overall architecture of the IT tools in SAFE4RAIL.

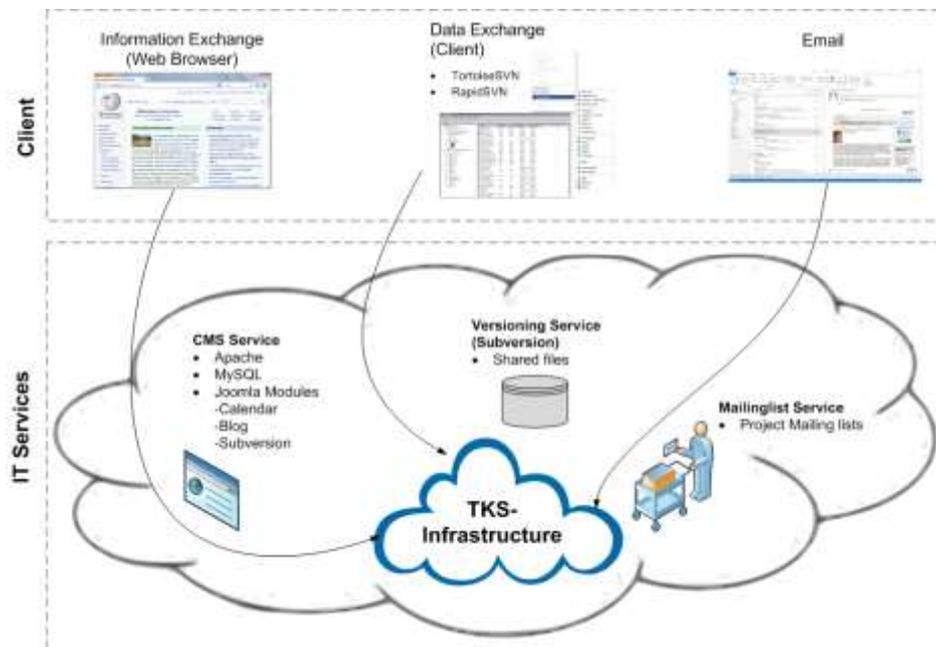


Figure 1: IT infrastructure

¹ http://www.technikon.com/index.php?option=com_content&view=article&id=76&Itemid=79

² Secure Sockets Layer – Protocol for a secure connection

Chapter 2 The SAFE4RAIL project website

The project website has been designed to provide a user-friendly and informative environment. It is based on the Joomla! Content Management System, which has been adapted to divide the site in to an open area for the public and a closed area for the project partners.

Additional to the information spreading platform, plug-ins, modules and other services are available for the website on request. In detail we provide the following preinstalled functionality for registered users which can be found in the restricted area of the website: documentation & tutorials, calendar, mailing lists, mailing list archives and the integration of the SVN repository within the website.

The SAFE4RAIL project website is available on the following link:

<http://www.safe4rail.eu/>

The design of the website is based on the colours of the SAFE4RAIL Logo.



Figure 2: SAFE4RAIL Logo

If a member of the consortium or a third party visits the SAFE4RAIL website, he or she will only see the frontend of the website. The purpose is that the visitors cannot change the content of the website as opposed to the administrator.

For users who have an account for the SAFE4RAIL website, it is also possible to log in to the restricted area with their username and password (as mentioned before).



Figure 3: The start page of the website

Figure 3 illustrates the start page of the SAFE4RAIL website. The main categories on the front page are: About, News, Blog, Partners, Contact Us and Restricted Area.

- **About**

In the first category, the visitor receives information about the project's mission and motivation, about the concept, the planned results and the technical approach (work packages) of SAFE4RAIL.

- **News**

In this area visitors can find an overview of SAFE4RAIL news like conferences, workshops and meetings, press releases, leaflet, etc.

- **Blog**

Relevant information can be posted by consortium members via the BLOG. In Figure 4 the first official SAFE4RAIL project blog post is displayed.

- **Partners**

On this page everyone gets an overview of the project team members. Furthermore, each partner homepage is linked on the logo and name.

- **Contact Us**

Via the "contact us" page it is possible to send an email directly to the coordinator of the SAFE4RAIL project. It's intended for general feedback or questions to the project or website.

- **Restricted Area**

Every registered user has access to the restricted area which contains several useful and practical features such as a calendar or the SVN-Repository.

SAFE4RAIL PROJECT KICK OFF

14 November 2016 · by Sandra Moschitz ·

On 1st of October 2016, a European cooperative research project within the Shift2Rail H2020 Framework successfully started. SAFE4RAIL aims to create safety concepts for mixed-critical ethernet-based networking as well as a mixed-criticality application framework, including the brake-by-wire concept. SAFE4RAIL will reinforce European competitiveness by offering fundamentally simplified electronic and Train Control and Monitoring architectures required for the optimization of railway systems, to minimize system lifecycle and operational costs.

On 13th and 14th October 2016 the SAFE4RAIL project consortium met for the first time at the kick off meeting in Vienna at TTTech's premises. The first day was dedicated to the organization of the collaboration and to get to know each other. The second day focused on the technical work packages, the starting points for the technical work and a concrete action list towards the timely submission of the first project Deliverables.



Figure 4: SAFE4RAIL Blog

At each page of the SAFE4RAIL website the disclaimer, the legal notice, the privacy policy and the feedback form are accessible (located at the bottom).

The website can be viewed with a standard desktop web browser as well as on a smart phone and will be kept alive throughout the project period and a few years afterwards.

The website is updated by Technikon on a regular basis, depending on the release of major updates by developers of the Joomla! CMS. In each periodic report of SAFE4RAIL, statistics will be presented, in order to evaluate the success of the website. For collecting these, Technikon makes use of two different tools, AWStats³ and Google-Analytics⁴, both having different approaches on how they generate their statistics. The metrics chosen to be presented will be selected depending on need or interest respectively. For example, these can be:

- The number of unique visitors
- The number of total visits
- Top 10 downloads
- The geographical distribution of the visitors' locations
- The ratio between new and returning visitors

³ <http://www.awstats.org>

⁴ <http://www.google.com/analytics/>

Chapter 3 SAFE4RAIL collaborative tools

A set of collaborative tools are provided by the coordinator to facilitate the cooperation within the project and to assist in the coordination work. These tools are:

- A protected online workspace (CMS → Joomla! 3.x),
- A version control system (SVN) for keeping track of documents, and
- A mailing list system for information exchange.

All users have provided a registration link via email at the beginning of the project. This link allowed them to set their password, which works for all tools. Further, members can at any time retrieve a new link to reset their password (e.g. periodically update of password due to security issues).

3.1 Protected workspace

The collaborative workspace is using the same platform as the website. The users log in to the restricted area of the website and are then presented with the additional protected information accessible through a separated user menu. Once logged in, the users have read and write access to several useful and practical features such as a calendar or the SVN-Repository. The menu item “Documentation & Tutorials” provides helpful links and documentation concerning the internal IT infrastructure and SVN. Figure 5 illustrates the content of the restricted area.

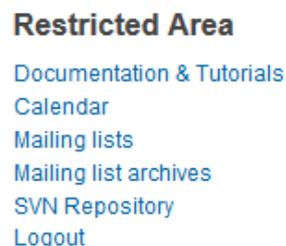


Figure 5: Content of restricted area

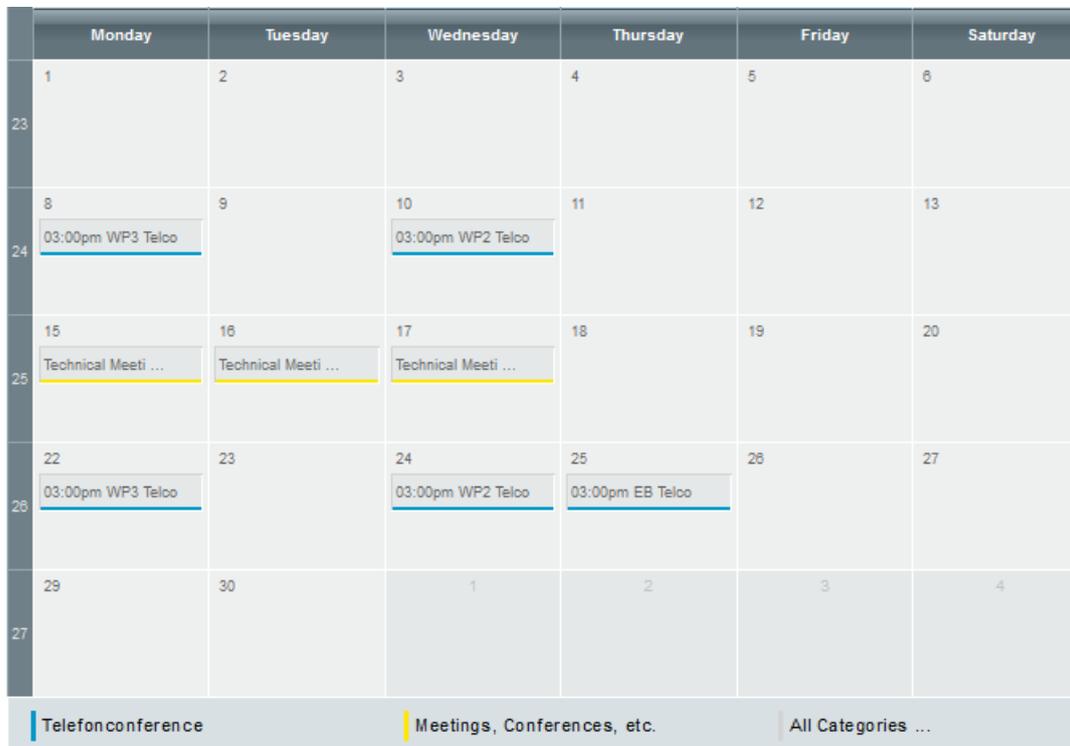
3.1.1 Documentation & Tutorials

In this section every registered user can download or view some documentation regarding the project, for example:

- IT-Infrastructure Tutorial
- SVN – Rules of Conduct HowTo
- Usage central file repository HowTo
- Pidgin chat client usage HowTo
- Project Handbook

3.1.2 Calendar

The calendar shows upcoming events to every user. The calendar is configured to show a monthly overview by default, but the user can view the calendar by year, month, week or by day as well as search for an event. The calendar can be exported and downloaded as iCalendar-file. There is also the possibility to integrate the calendar into the partners personal Microsoft Outlook or Mozilla Sunbird calendar to be kept up-to-date. Further on, there is an overview with upcoming events in the right navigation bar which shows the next 5 upcoming events (maximum 150 days up front).



	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
23	1	2	3	4	5	6
24	8 03:00pm WP3 Telco	9	10 03:00pm WP2 Telco	11	12	13
25	15 Technical Meeti ...	16 Technical Meeti ...	17 Technical Meeti ...	18	19	20
26	22 03:00pm WP3 Telco	23	24 03:00pm WP2 Telco	25 03:00pm EB Telco	26	27
27	29	30	1	2	3	4
	Telefonconference		Meetings, Conferences, etc.		All Categories ...	

Figure 6: Calendar

3.1.3 Mailing lists and mailing list archives

This menu allows users to have a look at the set of available mailing lists, as well as on the mailing list archives. This is helpful to quickly check the archive of past email correspondence, when a user has no immediate access to an email client. Further, the archives help to follow up email conversations and implicitly act as backup service.

3.1.4 SVN Repository

In this menu, the subversion repository <https://SAFE4RAIL.technikon.com/> (see Chapter 3.2) will be shown within the website. As the repository is in this case accessed via browser, only read-access is given.

3.2 SVN Server

The Subversion server allows easy synchronization of documents between the server and a participant's local file storage. The system includes tools for retrieving older versions of a particular file, resolving conflicts between different versions of the same file and locking files for local editing. Two main tools are provided by the server. On the one hand, there is the

client access which provides the user reading and editing rights. On the other hand, there is the browser access on which the user only has read access to the data.

Some major advantages of the subversion are for example:

- Offline availability of the data via SVN clients (stored on your local hard disc)
- Read-only access via HTTPS⁵ (Web Browser)
- Synchronizing the data between Client/Server
- All former versions of the file are available and reproducible
- E-mail notification on activity (e.g. “commit” action)

3.2.1 TortoiseSVN Client access

This is a very useful software tool for accessing and working with SVN repositories. Although there are several other clients available, good experiences with this software have been made in the course of several years of usage.

To get a feeling of how to handle the connection to the SVN server the following chapter shows a short introduction on installing and using the software tool:

a.) Create and download the repository:

- Download and install the subversion client.

The rest of this instruction will assume that you have installed the TortoiseSVN client, which can be downloaded from <http://tortoisesvn.tigris.org>. For the installation of the client, please follow the instructions written on the homepage.

- Create a folder on a local disk. For example C:\SVN\SAFE4RAIL
- Right click on the folder and choose "SVN Checkout"

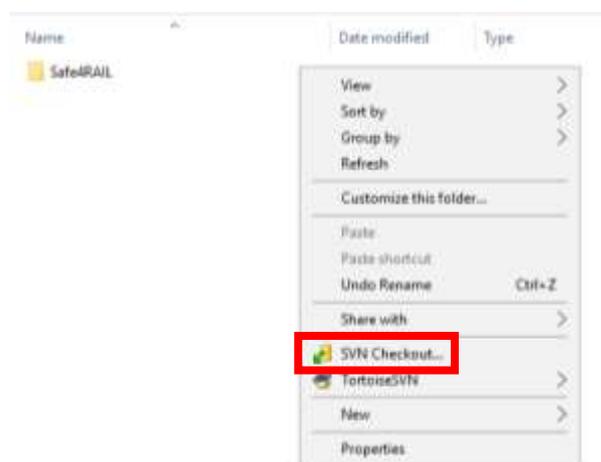


Figure 7: SVN Checkout (a)

- Use <https://safe4rail.technikon.com/> as the URL of the repository. Everything else can be left as it is. Make sure that “HEAD revision” is checked.

⁵ Hypertext Transfer Protocol Secure – used for a secure connection between Browser and Web server

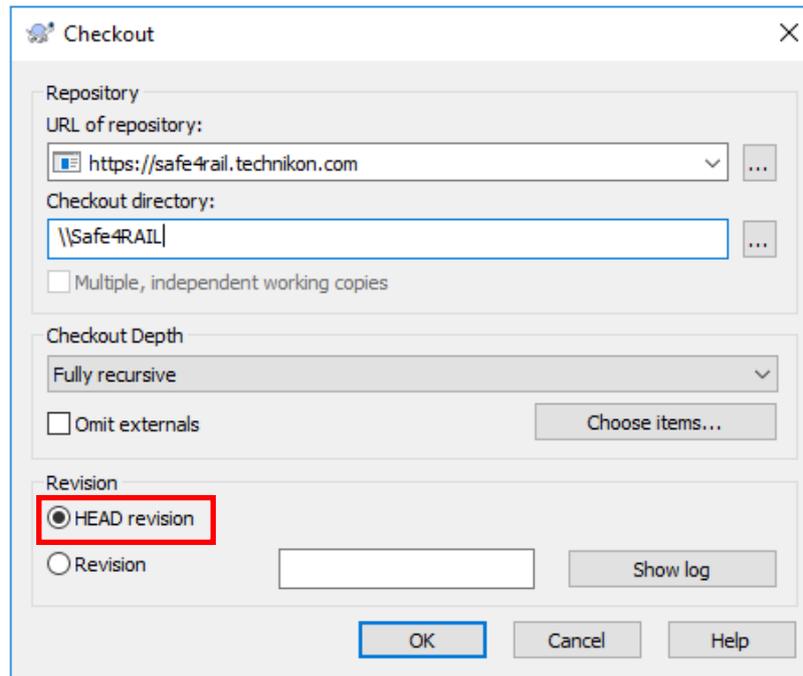


Figure 8: SVN Checkout (b)

- Authorization for SAFE4RAIL SVN is required: Insert your username and password.
- Download the content of the repository to the newly created folder. This might take a while, depending on the bandwidth and the size of the repository.

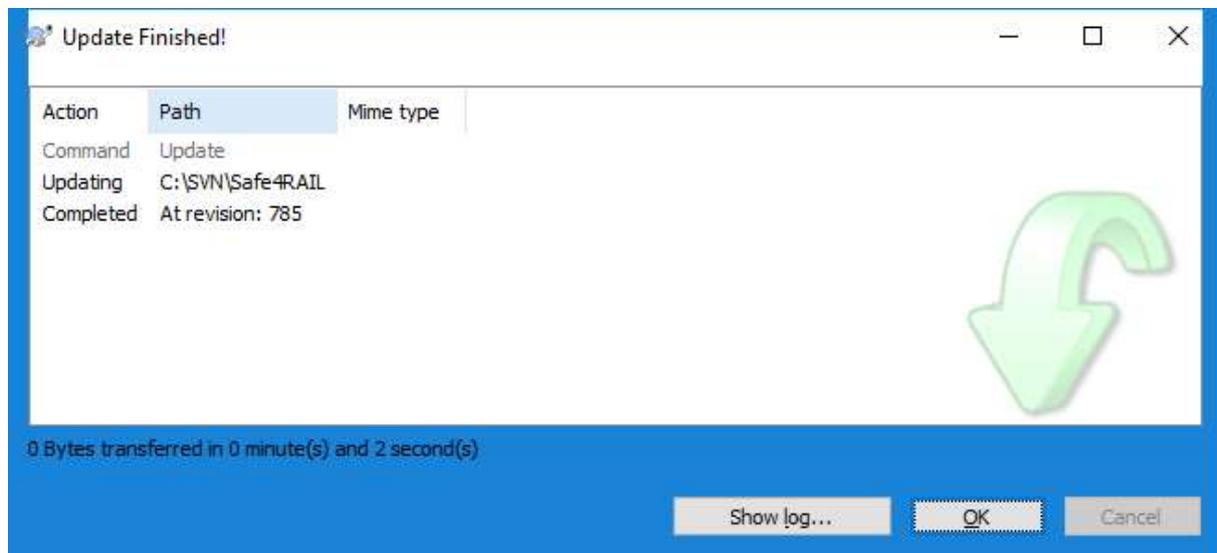


Figure 9: Download content from repository

b.) Keeping up-to-date:

- Right click on the folder and choose “SVN Update”.

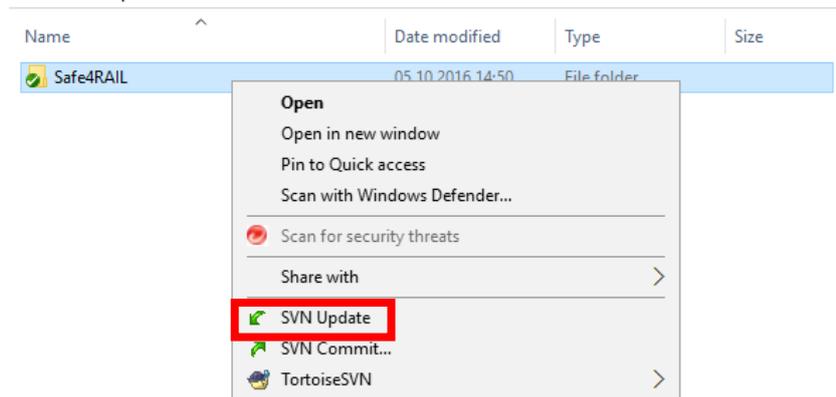


Figure 10: SVN Update

c.) Committing new documents (uploading)

- Save the document in an appropriate location within the folder created in the chapter above.
- Right click on the new file and choose TortoiseSVN → Add. (A small + will be added to the icon of the file)
- Right click on the file again and choose "SVN Commit..."
- Enter a comment about the document and the updates you made.

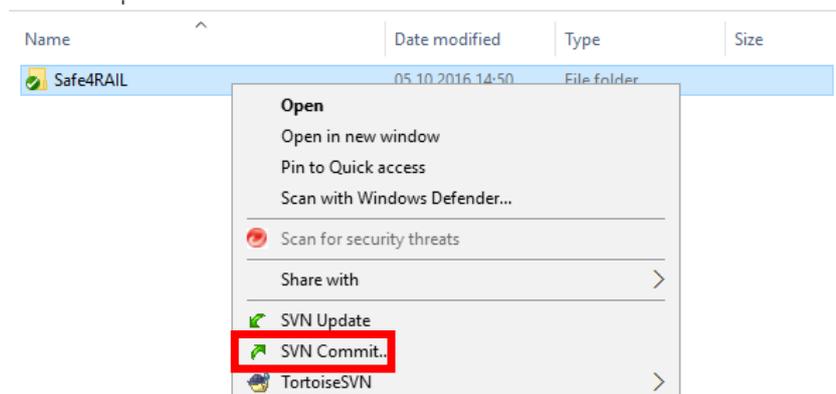


Figure 11: SVN Commit

The described procedure can also be used on entire folders and will then work recursively.

ATTENTION: Please refrain from committing the entire repository! Subversion is robust and changes can always be rolled back but smaller commits significantly reduce the risk of committing old versions etc.

d.) Locking

You are highly encouraged to “lock” SVN documents while working on them. This avoids conflicts by concurrent editing. The downside is that sometimes “stale” locks are forgotten. If a lock is older than 24hrs without any new commit in between, then we consider it outdated

and you can steal it. If in doubt or urgent access is needed, also feel free to contact the owner of the lock directly.

e.) Clients

- “TortoiseSVN” <http://tortoisesvn.tigris.org/> -- Windows client that interacts with Windows Explorer
- “Rapid SVN” <http://rapidsvn.tigris.org/> -- Linux/MacOS/Windows client

3.2.2 Browser access

It is also possible to access the data through your Web Browser. NOTE: With the Web Browser you only have read access to the data.

- Revision 1062: /

- [00-Contacts-Howtos-Guides-Templates/](#)
- [01-Meetings-Telcos/](#)
- [02-Legal-Documents/](#)
- [03-Work-Packages/](#)
- [04-Financial/](#)
- [05-Submitted-Deliverables/](#)

Powered by [Apache Subversion](#) version 1.8.8 (r1568071).

Figure 12: Browser access

3.3 Mailing list server

A number of mailing lists are available to the project members for easy communication with a set of participants. For subscriptions and other management tasks it is necessary to write an email to coordination@Safe4RAIL-project.eu. Access is controlled by the coordinator to ensure the integrity of the lists.

Technikon has set up a mailing server with a wide range of different mailing lists, where all people who are responsible for the various sections are subscribed.

The different SAFE4RAIL mailing lists can be seen in the following table:

Mailing List Name	Members
Safe4RAIL@lists.technikon.com	All personnel actively involved in the project
Safe4RAIL-ga@lists.technikon.com	General Assembly members and deputies
Safe4RAIL-eb@lists.technikon.com	WP leaders and deputies
Safe4RAIL-wp1@lists.technikon.com	all personnel working in work package 1
Safe4RAIL-wp2@lists.technikon.com	all personnel working in work package 2
Safe4RAIL-wp3@lists.technikon.com	all personnel working in work package 3

Mailing List Name	Members
Safe4RAIL-wp4@lists.technikon.com	all personnel working in work package 4
Safe4RAIL-svnlog@lists.technikon.com	Email notification on SVN commits

Table 1: Mailing lists

3.4 Telephone conference system

In addition to the planned physical meetings, we will perform regular telephone conferences within the SAFE4RAIL project. Therefore the following telephone conference system is available for all partners:

GoToMeeting:

This web conferencing tool allows you to host an online meeting with up to 25 people. Users can dial in either via a local client (VoIP⁶) or use the dedicated country code, which is provided by the organizer. GoToMeeting provides the possibility to share any application on your computer in real time. The tool is provided by the TEC.

⁶ Voice over IP – voice communication technique transmitted over internet protocol (IP) networks

Chapter 4 Summary and Conclusion

This document provides an initial documentation of the SAFE4RAIL IT-related infrastructure and will be included into the project handbook for subsequent maintenance.

The website was reviewed by several management and research employees of TEC and very useful feedback has been received. Special attention was paid to the privacy. Only logged in users have the possibility to have a look at the documents, tutorials and the calendar.

Through publishing all relevant public information of the project on the official SAFE4RAIL website, the website will be kept lively and external visitors will immediately see the current news and activities. Further, this allows more interaction and communication within and outside the SAFE4RAIL Consortium.

The SAFE4RAIL infrastructure provides an essential benefit for all project partners. One of the most important points is the Subversion Repository (SVN). All project partners are able to access all project relevant information and documents. Further, the communication environment, including Jabber Server, different mailing lists, conference call systems, create transparent efficient working conditions.

During the creation of this deliverable, new challenges and perspectives have been identified for all persons involved.

Chapter 5 List of Abbreviations

CMS	Content Management System
HTTPS	Hypertext Transfer Protocol Secure
SSL	Secure Sockets Layer
SVN	Subversion
TKS	Trusted Knowledge Suite
URL	Uniform Resource Locator
VoIP	Voice over Internet Protocol
XMPP	Extensible Messaging and Presence Protocol