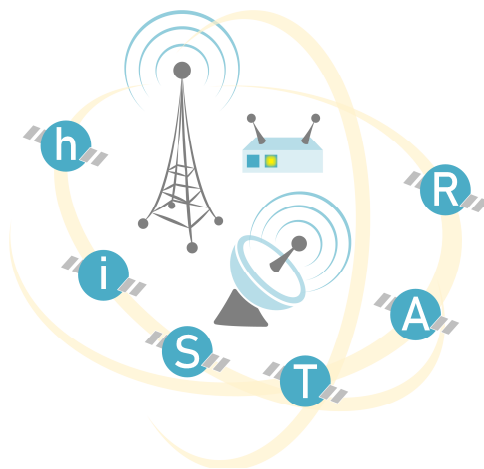


Hybrid Integrated Satellite and Terrestrial Access Network



D1.1: Internal web-based platform for collaboration

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D1.1: Internal web-based platform for collaboration



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D1.1: Internal web-based platform for collaboration

EXECUTIVE SUMMARY

The hi-STAR project addresses integration of non-terrestrial networks with terrestrial 5G network which is in focus of the next generation wireless networks. The project's main goal is to develop flexible framework for integrated terrestrial 5G and Low-Earth-Orbit (LEO) satellite networks. The project comprises seven work packages, and it is important to have a secured platform for internal document sharing among the project team members.

This deliverable is a result of the work done in WP1 Subactivity T1.1 – Coordination. Deliverable D1.1 presents description of internal web-based platform for collaboration.



TABLE OF CONTENTS

Copyright notice 2

Acknowledgment 2

EXECUTIVE SUMMARY 3

TABLE OF CONTENTS 4

LIST OF FIGURES 5

ABBREVIATIONS 6

SECTION 1 - INTRODUCTION 7

SECTION 2 – INTERNAL WEB-BASED PLATFORM FOR COLLABORATION 8

SECTION 3 – WEB PLATFORM ARCHITECTURE 13

CONCLUSIONS 14



LIST OF FIGURES

FIGURE 1: LOGIN ACCESS 8

FIGURE 2: HOME PAGE FOR LOGGED USER.....ERROR! BOOKMARK NOT DEFINED.

FIGURE 3: DOCUMENT SELECTION BASED ON ONE CRITERION 9

FIGURE 4: DOCUMENT SELECTION BASED ON TWO CRITERIA..... 10

FIGURE 5: UPLOAD FORM..... 10

FIGURE 6: SUCCESSFUL UPLOAD..... 11

FIGURE 7: UNSUCCESSFUL UPLOAD 11

FIGURE 8: PHPMYADMIN TOOL..... 12



ABBREVIATIONS

ETF	University of Belgrade - School of Electrical Engineering
FEE-UNIS	University of Niš - Faculty of Electronic Engineering
ICEF	Inovation Centre School of Electrical Engineering in Belgrade
SQL	Structured Query Language
WP	Work Package



SECTION 1 - INTRODUCTION

Deliverable D1.1 presents internal web-based platform for collaboration, which is a part of WP1 Subactivity 1.1 – Coordination. D1.1. is the first deliverable of the Subactivity 1.1 presenting work done by the end of M2 of the project. Deliverable D1.1 along with deliverable D1.2 - Project management handbook represent the foundation of the information flow and exchange, communication procedures and rules and document coordination between the project members.

This deliverable is structured as follows: Section 2 presents the internal web-based platform for collaboration. The platform's features and functionalities are explained in this section. Section 3 explains the developed platform architecture. Section 4 concludes the document.



SECTION 2 – INTERNAL WEB-BASED PLATFORM FOR COLLABORATION

Members of the hi-STAR project will have a need to share, exchange and store documents between themselves for the duration of the project. Many of the documents will be confidential. Thus, it is important to have a platform that will provide a simple storage for these documents, while all project members (and only them) will have access to the platform and the documents stored on the platform. Web-based platform is the most suitable solution as the project members only need web browser to access the platform to upload a document or to browse through the already stored documents. In this section, web-based platform features and capabilities are presented.

Since only the project members should be able to access the platform, the access is password protected. All project members have login credentials and can access the platform by providing their username and password as shown in Figure 1. Documents cannot be accessed if the user is not logged in. The header of the page is the same as in the case of the project's website.

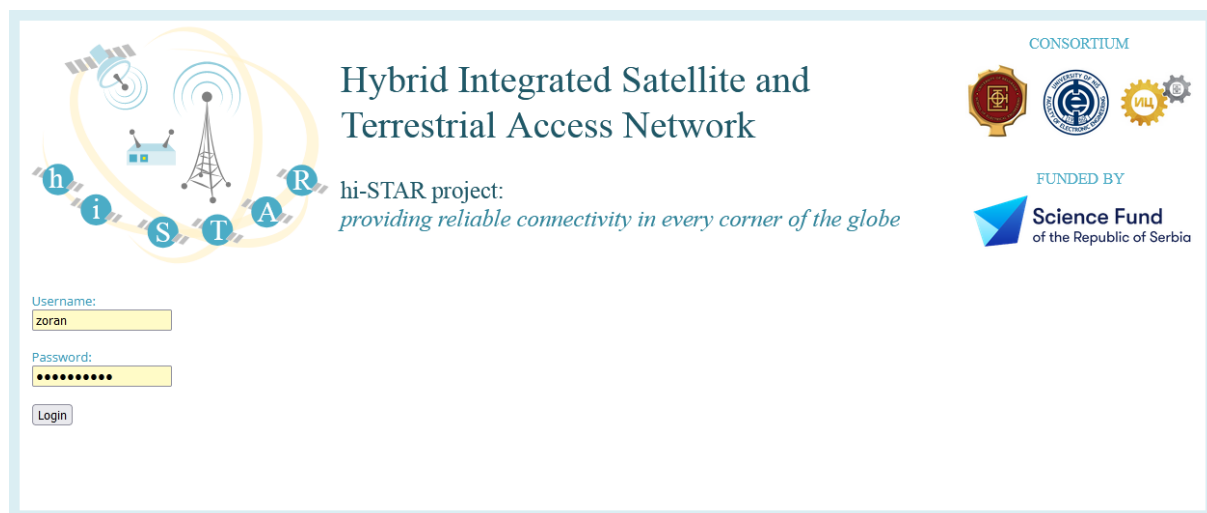


Figure 1: Login access

After successful login, user gets a list of all the stored documents as shown in Figure 2. List comprises basic information such as:

- Document name with link guiding to document,
- Author of the document (if there are multiple authors, the first author is always listed),
- Work package to which the document belongs,
- Category of the document,
- Brief description of the document.



Logout

[Upload new document](#)

Filter results by:

Author:
All authors

Category:
All categories

Work Package:
All work packages

Submit

Document list

- **Document:** [Project_Start_Presentation.pptx](#)
 - **Author:** Predrag Ivaniš
 - **Work Package:** WP1
 - **Category:** miscellaneous
 - **Description:** Presentation for initial meeting that discusses the events regarding the start of hi-STAR project
- **Document:** [website_code_v01.zip](#)
 - **Author:** Zoran Čiča
 - **Work Package:** WP7
 - **Category:** source code
 - **Description:** Source code for initial version of the hi-STAR website

Figure 2: Home page for logged user

At the left side of the home page, there are several control elements (Figure 2). The first element is the logout button which is used to logout of the web portal. The second element is the link to the upload form when a user wants to upload new document. The third element is the filter for document list display in the central part of the page. Here, user can filter display via choosing author, category and/or work package. After selection, by clicking the Submit button, the document list is refreshed according to the set filter values. Figure 3 shows the result for selection of one selection attribute (work package - selection WP1), while Figure 4 shows the result for selection of two selection attributes (work package and category - selection WP1 and reports). It is obvious that the document list is properly filtered according to set filter parameters. Note that WP values are in range WP1 to WP7 according to defined work packages in hi-STAR project. Author values comprise only the members of hi-STAR project. Currently, supported category values are: report, publication, source code, comments and miscellaneous.

Document list

- **Document:** [Project_Start_Presentation.pptx](#)
 - **Author:** Predrag Ivaniš
 - **Work Package:** WP1
 - **Category:** miscellaneous
 - **Description:** Presentation for initial meeting that discusses the events regarding the start of hi-STAR project
- **Document:** [project_handbook_v01.docx](#)
 - **Author:** Predrag Ivaniš
 - **Work Package:** WP1
 - **Category:** report
 - **Description:** Initial version of hi-STAR project handbook.

Figure 3: Document selection based on one criterion



Document list

- **Document:** [project_handbook_v01.docx](#)
 - **Author:** Predrag Ivaniš
 - **Work Package:** WP1
 - **Category:** report
 - **Description:** Initial version of hi-STAR project handbook.

Figure 4: Document selection based on two criteria

Upload form is set on different web page. The structure of the upload form is shown in Figure 5. It comprises the form that defines the document properties and enables the upload of the document itself. Document properties that can be set are:

- The first author of the document that is chosen from the drop down selection,
- Category of the document that is chosen from the drop down selection,
- Work package to which the document belongs, that is chosen from the drop down selection,
- Brief description of the document.

Upload document

Author:

Category:

Work Package:

Description:

File to upload:
 Project_Start_Presentation.pptx

Figure 5: Upload form

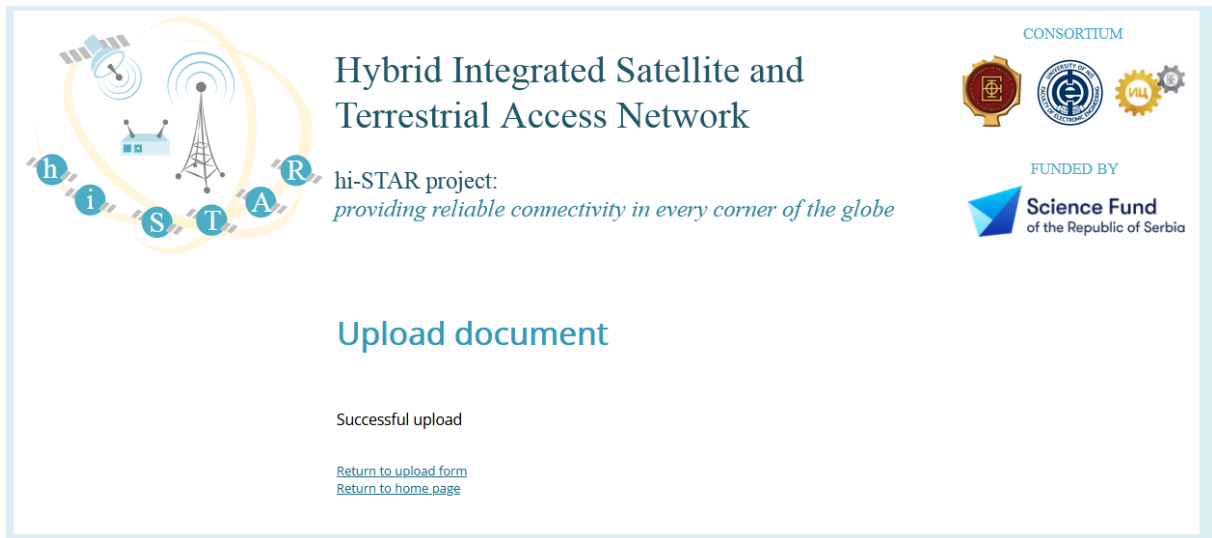


Figure 6: Successful upload

Upload document

File already exists

[Return to upload form](#)
[Return to home page](#)

Figure 7: Unsuccessful upload

Also, document upload field is present in the upload form. After filling in all the form fields, by hitting the Submit button, the document is uploaded and stored in the web platform (example of successful upload message is shown in Figure 6). If any of the fields is empty, error is reported and the document is not uploaded. Also, if there exists the document with the same name on the web platform, error is reported and the document is not uploaded (example of unsuccessful upload message is shown in Figure 7). In both cases (successful or unsuccessful upload), besides the success/error message, user has selection to return to home page or to upload form page.

Currently, users are not able to delete or edit documents. There are two reasons for this decision. The first is to avoid accidental deletion of material. The second and more important reason is to avoid tampering and deletion of the documents if some of user logins would be hacked. In this case, the confidentiality would be violated, but the documents' structure would be preserved, and it would not be possible for the attacker to delete the documents. The direct manipulation with database records and stored documents is possible only from the local machine that stores the web portal by using the web-based phpmyadmin tool (Figure 8). If in later stages of the project, a decision would be made to transfer more control to web access approach, it is very simple to add such feature.

D1.1: Internal web-based platform for collaboration



The screenshot shows the phpmyadmin interface for a MySQL server at 127.0.0.1, connected to the database db_ideje. The top navigation bar includes tabs for Structure, SQL, Search, Query, Export, Import, Operations, Privileges, Routines, Events, and Triggers. Below this is a 'Filters' section with a search box labeled 'Containing the word:'. The main area displays a table list with columns: Table, Action, Rows, Type, Collation, Size, and Overhead. Three tables are listed: doc_categories (5 rows, 16.0 KiB), doc_table (4 rows, 16.0 KiB), and ideje_members (11 rows, 16.0 KiB). A summary row shows 3 tables with a total of 20 rows and 48.0 KiB size. At the bottom, there is a 'Check all' checkbox and a 'With selected:' dropdown menu.

Table	Action	Rows	Type	Collation	Size	Overhead
<input type="checkbox"/> doc_categories	★ Browse Structure Search Insert Empty Drop	5	InnoDB	utf8mb4_croatian_ci	16.0 KiB	-
<input type="checkbox"/> doc_table	★ Browse Structure Search Insert Empty Drop	4	InnoDB	utf8mb4_croatian_ci	16.0 KiB	-
<input type="checkbox"/> ideje_members	★ Browse Structure Search Insert Empty Drop	11	InnoDB	utf8mb4_croatian_ci	16.0 KiB	-
3 tables	Sum	20	InnoDB	utf8mb4_croatian_ci	48.0 KiB	0 B

Figure 8: phpmyadmin tool



SECTION 3 – WEB PLATFORM ARCHITECTURE

This section provides the insight in the overall structure of the internal web-based platform for collaboration, and explains which tools are used for setting up the platform environment.

Apache server is used as the web server for the developed internal web-based platform. PHP is used for server side processing. Web platform comprises multiple php files which are stored in the Apache htdocs location, which represents a sort of home location for web server. However, php files carrying sensitive information are stored outside this directory (more precisely subtree) to prevent attackers from reading their contents. Furthermore, the internal web-platform will be placed on computer that is used only for the project purposes. Also, the Apache server is configured to allow only access from the networks that belong to the participants of the project (ETF, FEE-UNIS, ICEF). All this measures are used to minimize the breach of web platform security.

Besides the Apache server, MySQL server is also used to store data about users (project members) and documents. Database created for the project comprises three tables:

- table for storing the data about project members (name, last name, username, password)
- table for storing information about document categories (currently defined categories are: report, publication, source code, comments and miscellaneous)
- table for storing information about the uploaded documents (link to author and category stored in previously described tables, description, work package number and document name)

Connection to database from web platform uses credential that has privileges only for the web portal database to minimize security issues for other databases that might be stored in the MySQL server. As stated in the previous section, for complete control of database for web platform, phpmyadmin is used on the local machine to minimize impact of potential security breaches. Connection between Apache server, i.e. web platform stored on Apache server and MySQL server is localhost connection.



CONCLUSIONS

This document D1.1 describes hi-STAR internal web-based platform for collaboration. The document shows and explains the features and capabilities of this web-based platform and demonstrates how the platform should be used.

The internal web-based platform will be continuously evaluated and updated with new features if such need shows up. The goal is to have place for secure document exchange and storage that will enable better collaboration between the project members.