

ISITEP

D6.1.4 - INFRASTRUCTURES DIMENSIONING TOOL

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PUBLISHABLE EXTENDED ABSTRACT

This document includes a general description of and a user guide (demonstration) for the Infrastructure Dimensioning Tool. The Infrastructure Dimensioning Tool integrates Network dimensioning sub-tool design and implementation and the Logistic tool will support the deployment of the ISI developed solution by assisting the stakeholders' decision makers through the provision of the network elements required for the realization of the anticipated interoperability functionalities. The dimensioning tool will receive input related to the "disaster" area (the area where common transnational operations take place), such as the number and the type of the first responder forces that are expected to operate in the area, as well as information related to the existing infrastructures (e.g. Base Stations, Switching nodes, etc.). In addition, information related to end user traffic load, available traffic resources, bandwidth requirements of the ISI connections will also be taken into account. The output of the tool will be an estimate of all the network elements required to fulfill the communication needs within each operational scenario.

The document is classified as Public as it does not deal with any potential security frameworks and mechanisms of the ISITEP security solution for network interconnection and there are no national security sensitive issues in the document.

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1 INTRODUCTION

The ISITEP project pursues the vision of allowing first responders of European ISITEP federated countries to seamlessly interoperate by overcoming current operational and technological barriers. New European entrants will be easily federated into the ISITEP European network to achieve seamless interoperability.

To support ISITEP's vision for user interoperability Infrastructure Dimensioning Tool is developed in order to provide dimensioning, in a fast and accurate manner, for areas of interest during emergency.

This document will provide a general description of the Infrastructure Dimensioning Tool as integrated by the two sub tools, Networking Dimensioning sub-tool and Logistics sub-tool.

1.1 Document Scope

This document presents the integration of Network dimensioning sub-tool and logistic sub-tool into one Infrastructures dimensioning tool. The integrated IDT solution provides a unified work environment.

1.2 Tool Access

You can access the tool in the URL <http://eu.majorproject.net/>

In order to access the tool functions the user must have valid login credentials.

There are two user levels, Administrators and Users.

To login as a demo user use the following credentials:

E-mail: user@ isiteptools.com

Password: User1@

1.3 Tool Technology

The tool has been built with Microsoft ASP.NET MVC 5 using C# and javascript programming languages.

SQL Server 2012 database server has been used in order to store user and content data.

2 DEFINITIONS AND ABBREVIATIONS

2.1 Definitions

This section intends to capture the definitions of some key terms used in the document for the purpose of increased consistency. Most of the definitions are obtained from official 3GPP and ETSI documents:

Access control: the prevention of unauthorized use of resources, including the use of a resource in an unauthorized manner.

Authentication: the act of positively verifying that the true identity of an entity (network, user) is the same as the claimed identity.

Confidentiality: the property that information may not be available or disclosed to unauthorized individuals, entities or processes.

2.2 Abbreviations

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

Acronym	Definition
IDT	Infrastructures Dimensioning Tool
IP	Internet Protocol
MS	Mobile Station
MT	Mobile Terminal
PC	Professional Computer
PDA	Personal Digital Assistant
TE	Terminal Equipment
VPN	Virtual Private Network
WS	Work station

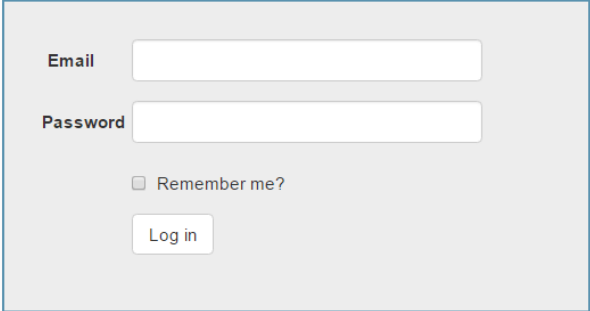
3 USER MANAGEMENT

The user management of IDT has been developed using Microsoft ASP.NET Identity framework.

The implementation of Controller layer exists at C# file AccountController.cs under the Controller sub directory on source code of the software project.

3.1 Login (User, Administrator)

A user can login on IDT using the form displayed in Figure1. After entering a valid email (which is also the username) and password and clicking login the user is navigated in IDT dashboard (Figure 2).



The image shows a login form with the following elements:

- An "Email" label followed by a text input field.
- A "Password" label followed by a text input field.
- A checkbox labeled "Remember me?".
- A "Log in" button.

Figure 1.Loginscreen



Figure 2.IDT dashboard

3.2 Logout (User, Administrator)

By clicking on the button displayed in Figure3, always available in IDT GUI in each section, the user can log out from his current session.

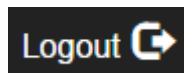


Figure 3.Logout button

3.3 User profile (User, Administrator)

By clicking the user profile button displayed in Figure4, available always at the GUI in each section, the user can:

- a. Change password
- b. Create new users, in case the logged in user is the Administrator

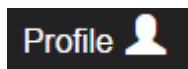


Figure 4.User profile button

3.4 Add/Edit Users (Administrator)

By clicking the user profile button displayed in Figure4, available always at the GUI in each section, the user can the Administrator can create new users.

4 IDT DASHBOARD

4.1 Create new dimensioning project

By clicking on the button labeled “Start new project” from the IDT dashboard (as seen in Figure2) the user can start anew dimensioning project or load an existing one.

In Figure 5 the GUI of the dimensioning project is displayed.

Further information about usage and technical implementation of the dimensioning project section can be found at D6.1.2 Network dimensioning sub-tool.

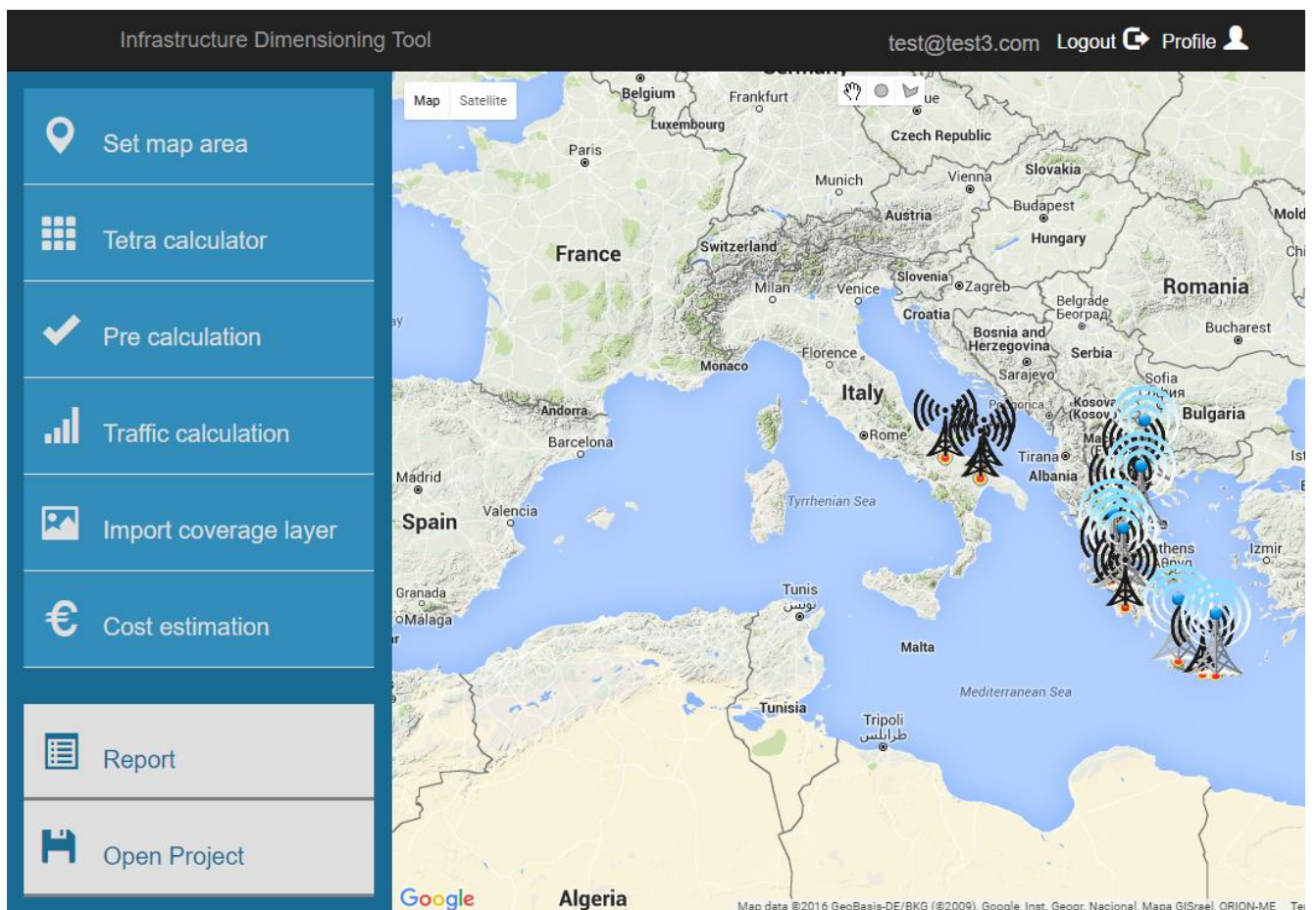


Figure 5.Dimensioning project GUI

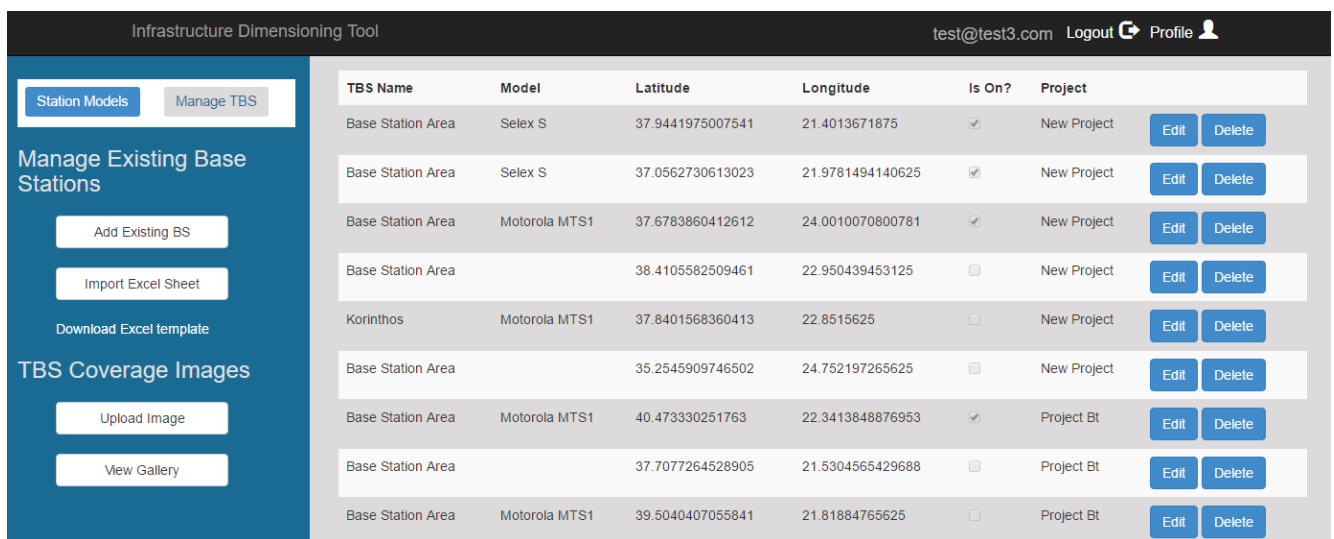
4.2 Setup parameters

By clicking on the button labeled “Setup parameters” from the IDT dashboard the user can view the system setup environment containing sections for adding and modifying station models of several types (Tetra base stations, TetraPOL base stations, vehicle stations and handheld devices).

By clicking on the tab labeled “Manage TBS” the user can add/edit or remove base stations assigned to a specific location. Also, the user can import massively base stations from excel file using a specific template, upload and review images visualizing base station coverage.

The GUI of the “setup parameters” section can be seen in Image5 (the tab “Manage TBS” has been selected).

Further information about the usage of the setup parameters section can be found at ISITEP_D6.1.3 Logistics tool and ISITEP_D6.1.2 Network dimensioning sub-tool.



TBS Name	Model	Latitude	Longitude	Is On?	Project	
Base Station Area	Selex S	37.9441975007541	21.4013671875	<input checked="" type="checkbox"/>	New Project	Edit Delete
Base Station Area	Selex S	37.0562730613023	21.9781494140625	<input checked="" type="checkbox"/>	New Project	Edit Delete
Base Station Area	Motorola MTS1	37.6783860412612	24.0010070800781	<input checked="" type="checkbox"/>	New Project	Edit Delete
Base Station Area		38.4105582509461	22.950439453125	<input type="checkbox"/>	New Project	Edit Delete
Korinthos	Motorola MTS1	37.8401568360413	22.8515625	<input type="checkbox"/>	New Project	Edit Delete
Base Station Area		35.2545909746502	24.752197265625	<input type="checkbox"/>	New Project	Edit Delete
Base Station Area	Motorola MTS1	40.473330251763	22.3413848876953	<input checked="" type="checkbox"/>	Project Bt	Edit Delete
Base Station Area		37.7077264528905	21.5304565429688	<input type="checkbox"/>	Project Bt	Edit Delete
Base Station Area	Motorola MTS1	39.5040407055841	21.81884765625	<input type="checkbox"/>	Project Bt	Edit Delete

Image5. Setup parameters section

4.3 Project history

By clicking on the button labeled “Project history” from IDT dashboard, the user is navigated in the GUI shown in Image6.

In this section the user can review all the projects s/he has created on IDT system.

By clicking on the project form list on the left area of the screen, the user can see its report on the right area.

The project report contains information regarding the number of base stations and TxRxs that have been added and the total cost of the project.

Also, there is a listing of the base stations in the project. Each base station can be selected to review its details on the information area on the right of the base station list.

Dimensioning Projects

New Project

Project Bt

Name Project Bt	Base Stations <input type="text" value="Base Station Area"/> <input type="text" value="Base Station Area"/> <input type="text" value="Base Station Area"/> <input type="text" value="Base Station Area"/> <input type="text" value="Base Station Area"/> <input type="text" value="Base Station Area"/> <input type="text" value="Base Station Area"/>	TBS Name Base Station Area Latitude 40.473330251763 Longitude 22.3413848876953 Is Operating <input checked="" type="checkbox"/> TxRx Number 2 Station Model Motorola MTS1
Datetime 3/19/2016 11:13:49 AM		
NewStations 8		
Total Number of TRXs 16		
TotalCost 0		

[Print](#)

Image6. Project history GUI

5 SETUP INSTRUCTIONS

For installing and running IDT on a PC running Microsoft Windows (7 or higher version) it is needed to be already installed:

- a) Microsoft Visual Studio 2015
- b) Microsoft SQL Server 2012 or Microsoft SQL Server Express with SQL Server management studio

In order to install and run IDT tool follow these steps:

- a) Open the software project solution file "NetDimensioningTool.sln" located under the directory "NetDimensioningTool" on the source code of the project, using Microsoft Visual Studio 2015.
- b) Modify the content of the file Web.config located into the source code root folder, adding your database server username and password along with the database server name in the fields depicted with _____ in the following cde example.

```
<connectionStrings>
<add name="DefaultConnection" connectionString="Data
Source=(LocalDb)\MSSQLLocalDB;AttachDbFilename=|DataDirectory|\aspnet-NetDimenisoningTool-
20151027114113.mdf;Initial Catalog=aspnet-NetDimenisoningTool-20151027114113;Integrated Security=True"
providerName="System.Data.SqlClient" />
    <add name="EntitiesW" connectionString="Data Source=localhost;Initial Catalog=NetToolDB;Persist
Security Info=True;User ID=_____;Password=_____"
providerName="System.Data.SqlClient" />
<add name="Entities" connectionString="Data Source=_____;Initial
Catalog=NetDimensioningTool.Models.NetTool.NetToolContext;Persist Security Info=True;Integrated
Security=True" providerName="System.Data.SqlClient" />
</connectionStrings>
```

- c) Build and run the project on the localhost.
- d) At first run, the database will be automatically created with the initial data included.
- e) In order to publish the project to a specific web server, right click the project entry through visual studio and select Publish. You can choose from the publish wizard that appears the desired publish method, enter the required server environment fields and click publish in order to start the process of deploying the project to the web server.

6. USER REQUIREMENTS

The user must have IE (version 9 or newer) or Chrome (version 49 or newer) in order to access and use the tool.

An internet connection is required. Although the tool can work even over dial-up connections, a broadband connection (speed more than 0.5 Mbps) is suggested for better performance.