Documentation about CALS simulator

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Summary

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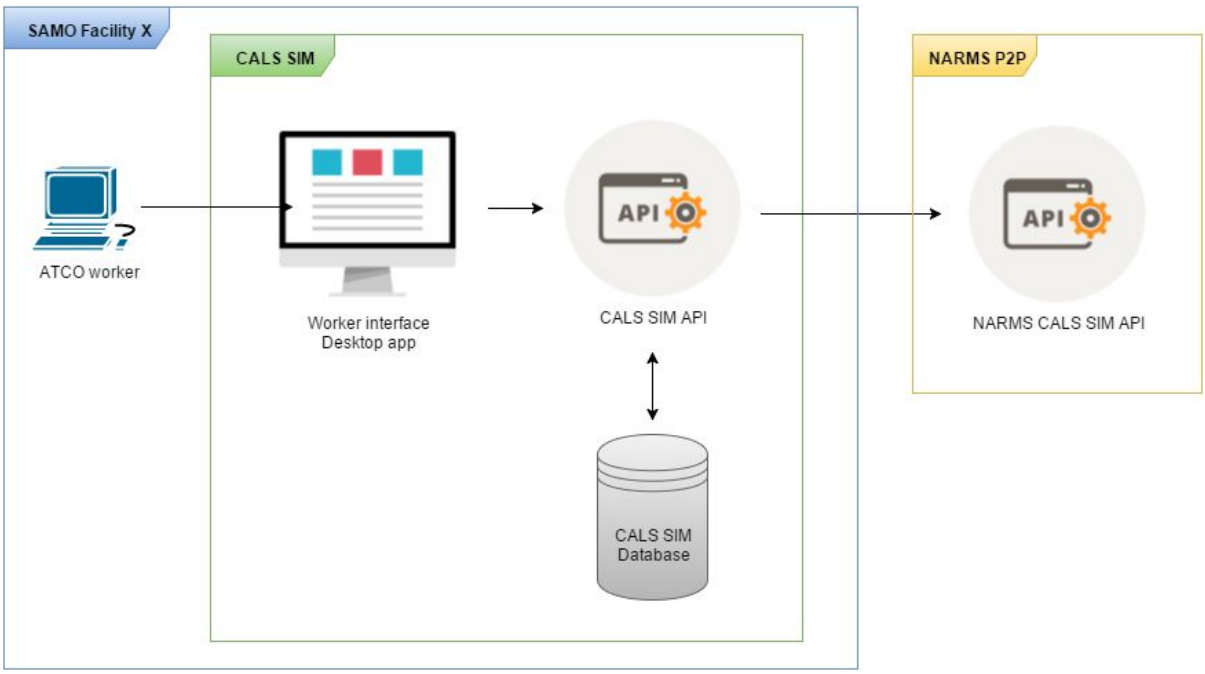
I. General architecture

A. Diagram representation



B. Description

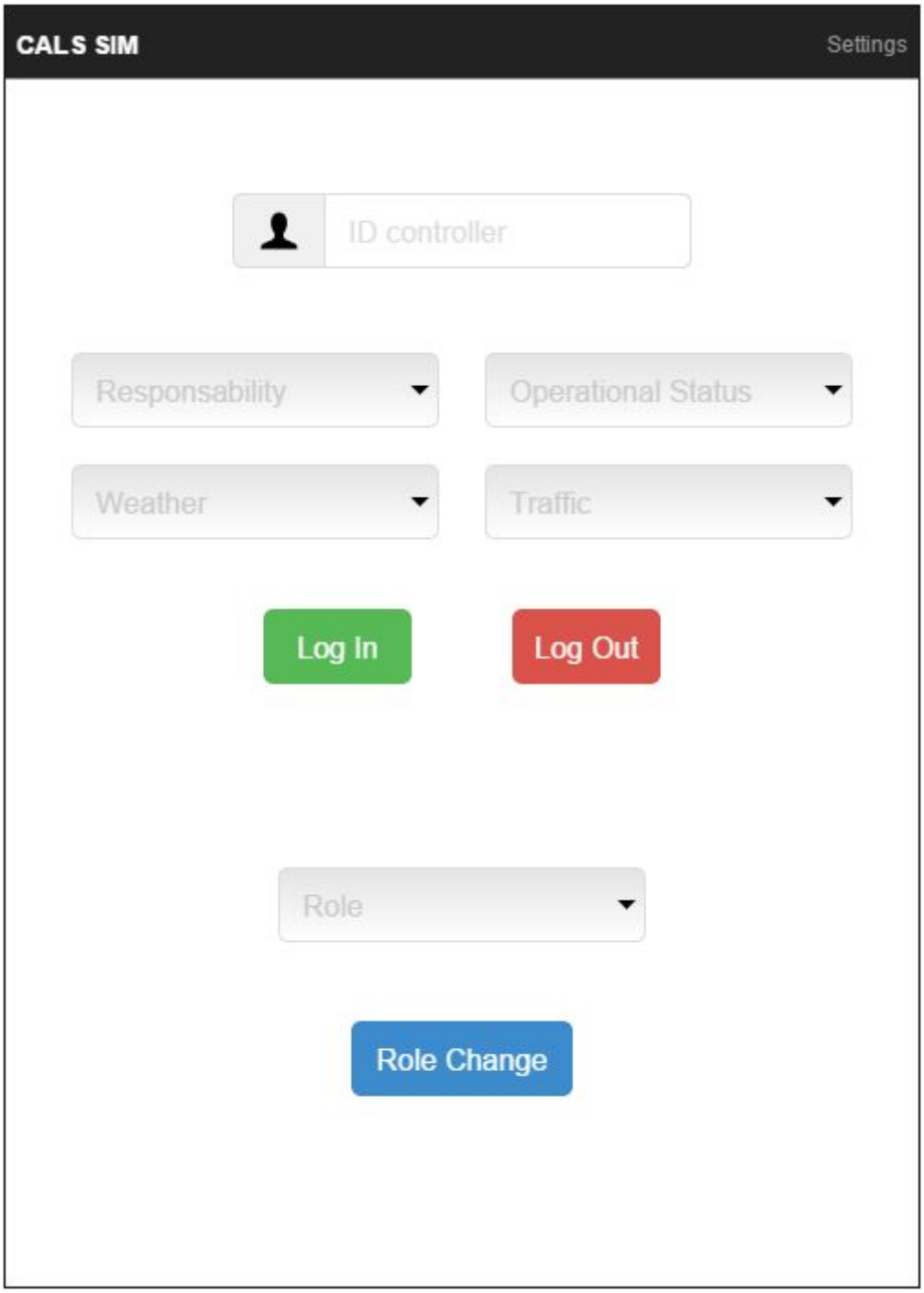
CALS SIM is divided in three parts : a desktop application, an API and a database.

By using the desktop application (see the mockup below), controllers can log into their workstations. Then the desktop application sends a request to the CALS SIM API with the data enter by the controller. Finally, the CALS SIM API records the event and key data about the controller in the CALS SIM database in the facility and it sends the data to NARMS Prototype through the NARMS CALS SIM API provide by NARMS Prototype.

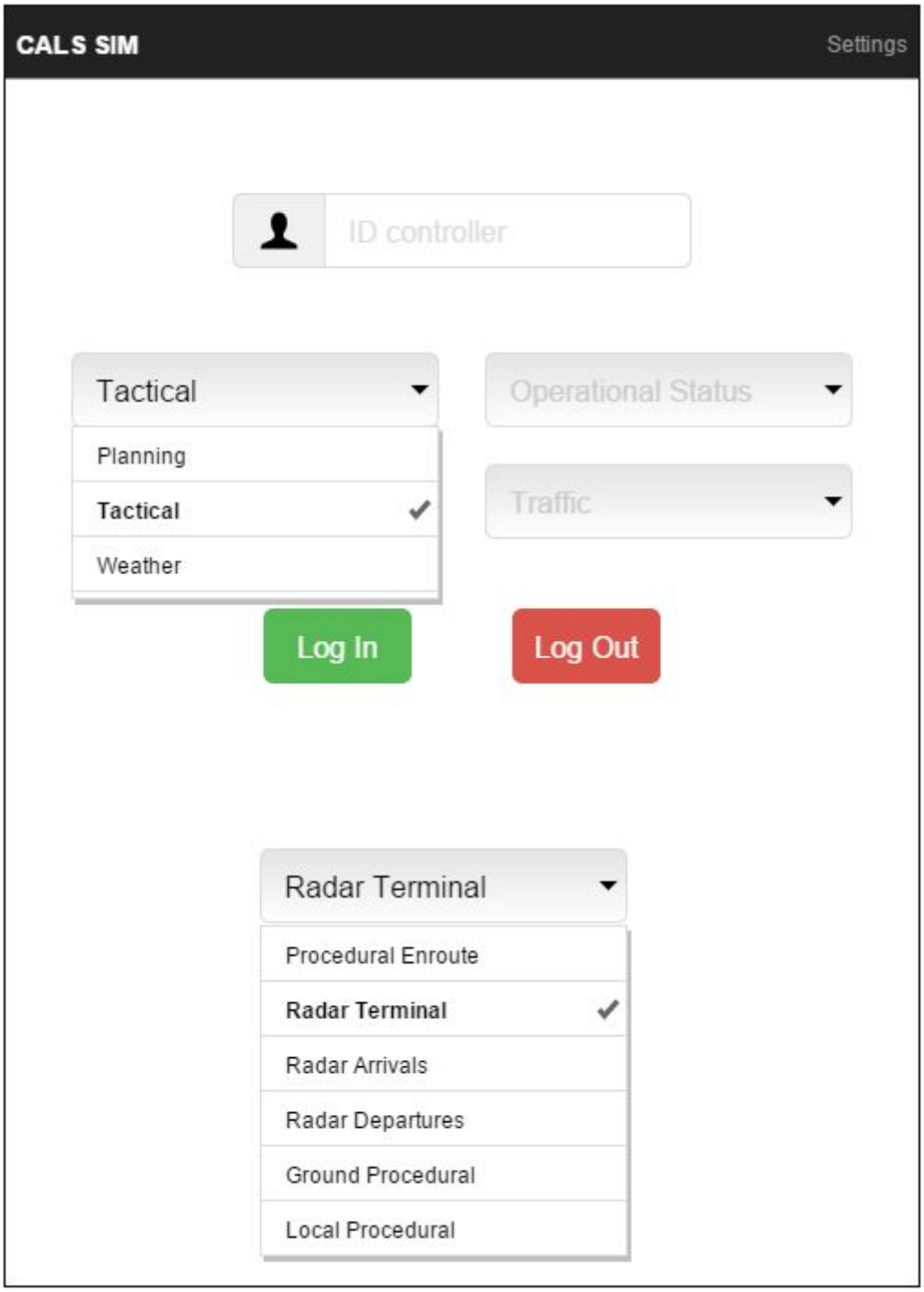
The UI of the desktop application :

1. Home page

The controller could perform three types of events : log in, log out and role change.
For the simulation, “Operation Status”, “Weather” and “Traffic” will have a default value (or can be modified in the UI) since we cannot access an API in SAMO facility to get the current weather...

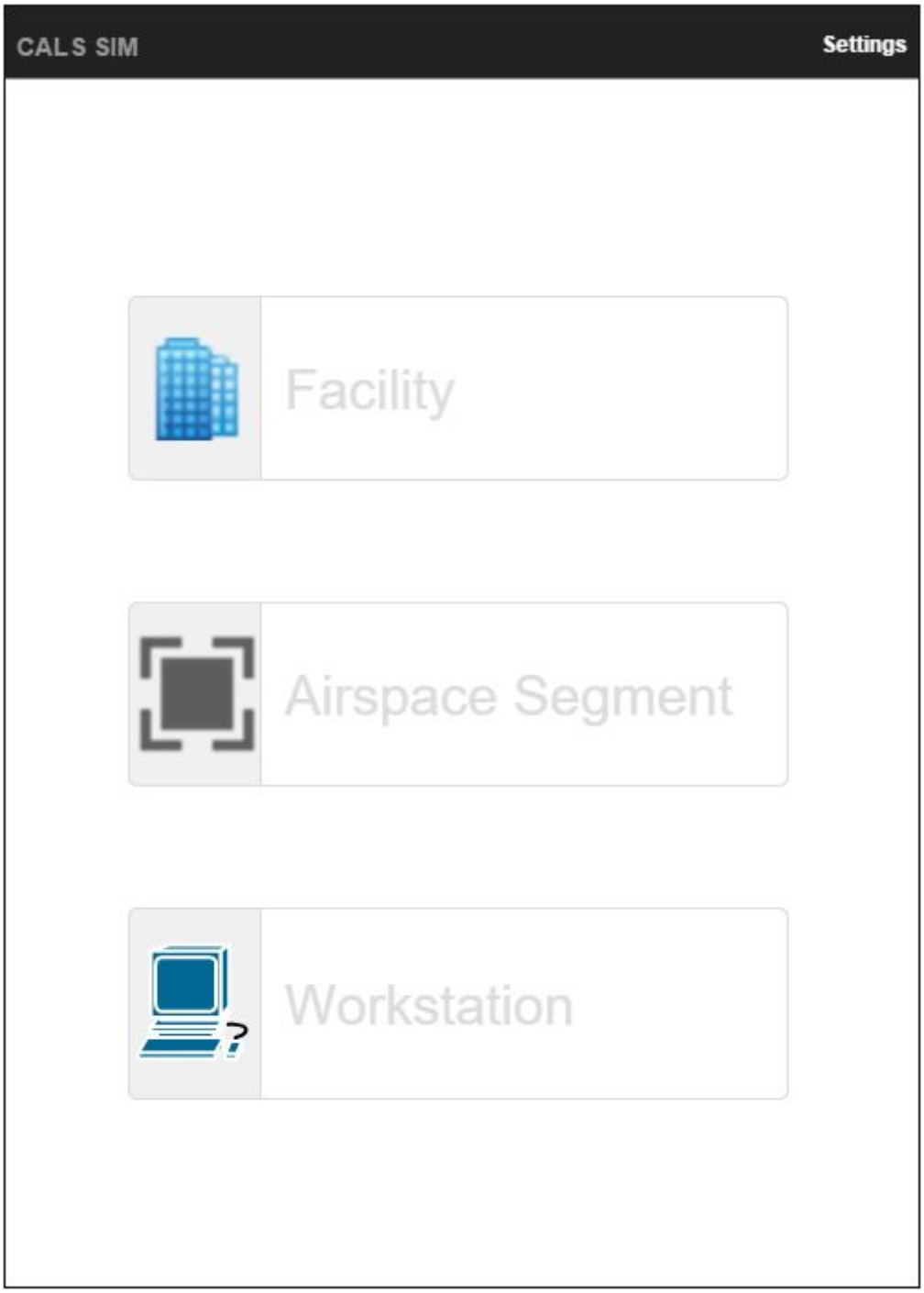


2. Home page detailed (dropmenu view)



3. Settings page

This page will defined the name of the facility, the airspace segment and the workstation. This page must be filled in order to send logs events (log in, log out and role change).



C. Technologies

Part	Technology	Version
Desktop app (UI)	Python	3.4.4
API		

II. Network environment

The CALS SIM API has not been programmed yet.

We use MySql technology to push the log event data from the desktop application to the CALS database.
The desktop application have a Network module in python which contain a method sendData.
This module is using the library PyMySql (https://github.com/PyMySQL/PyMySQL). It is a python MySQL driver. We have chosen this library because it does not require a compiled C component or MySQL libraries and header files to be installed on client machines. And it has python 3 support (we are currently using Python 3.4).

III. System requirements

On Windows:

- IDE : Visual Studio with Python tools
- Install python version 3.4.4 : https://www.python.org/downloads/
- You need Pip 8.0.2 in order to install python packages (package manager)
  Pip is already installed if you are using Python 3.4.4.
- Install Setuptools version 19.6 (Enter pip -install setuptools in the console)
- Install PyMySQL version 0.7.1 (Enter pip -install pyMySql in the console)
- Install PyQt
  Download the file in the libs folder and enter pip -install file.whl

Suggestion :
We are using QT Designer to create the UI widget.