OPTIMISING ENERGY USE IN CITIES THROUGH SMART DECISION SUPPORT SYSTEMS

OPTIMUS DSS Online Interface: An Overview

Introduction

This OPTIMUS DSS offers two interfaces:

- *DSS end-user web interface*: The front end of the DSS, where the users are able to understand the suggestions offered by the DSS and react to them.
- *DSS management interface*: The back office of the DSS, where the technicians can setup and fine-tune the components of the DSS.

The interfaces have been designed in collaboration with end-users through surveys and mock-up series and are constantly being updated and improved based on end-user feedback. A flexible design has been used so they can be easily installed in any town or city.

End-user Web Interface

Who for: energy managers responsible for one or more public buildings.

Purpose: supports the decision making processes of the users with the objective of increasing the energy efficiency in public buildings.

How: After logging in, the screen shows a Dashboard with a list of all the buildings currently registered to the DSS and for each building, there are the values of the four DSS indicators, the total energy consumption and generation, CO_2 emissions and energy cost. These indicators are also available on the City Dashboard, but in this case, aggregated to the total of the buildings.

The user can see more information, by selecting the building he is interested in viewing. Monitored and predicted data are presented to the user as well as suggested action plans, building DSS indicators, reports about the usage of the DSS and a stream of the users' recent activity.

For each action plan applied to a building, there are screens for displaying the daily suggestions to the user, who has the option to accept or decline them.

Management Interface

Who for: is designed for a technician who knows how the building being supervised and also how the OPTIMUS DSS operates.

Purpose: to help the administrator to configure the DSS, in order to suit the characteristics of the monitored buildings.

How: After logging in the management interface, a screen shows all the registered buildings and a list of the possible actions:

- Adding a new building.

- Editing an existing building.
- Removing buildings.
- Editing the Optimus tracker data

The configuration of a building includes setting up the building partitions, sensors, real time indicators and action plans. In the building partitioning view, the user can describe the elements in which the building space is divided such as floors, sections and rooms.

The action plans will be constrained to a building spatial element. For example, a user can perform an action plan which conveys turning on/off the heating system in every floor.

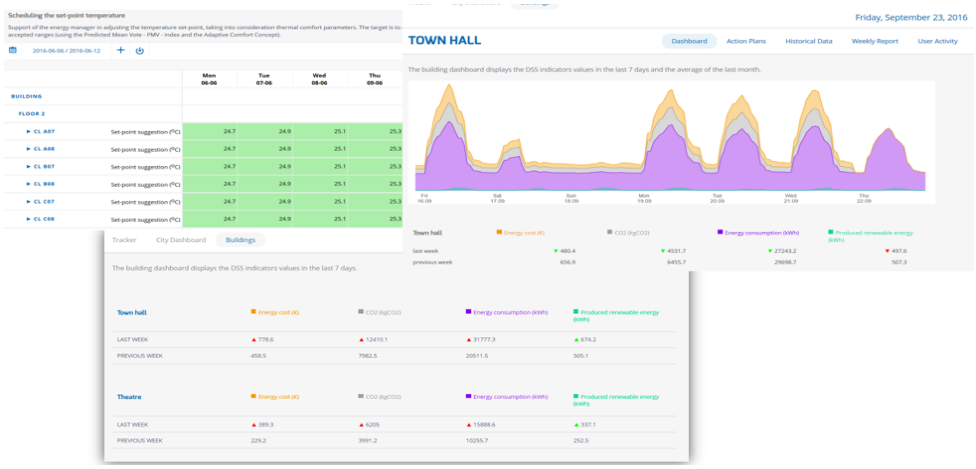

Figure 1 - The end-user web interface

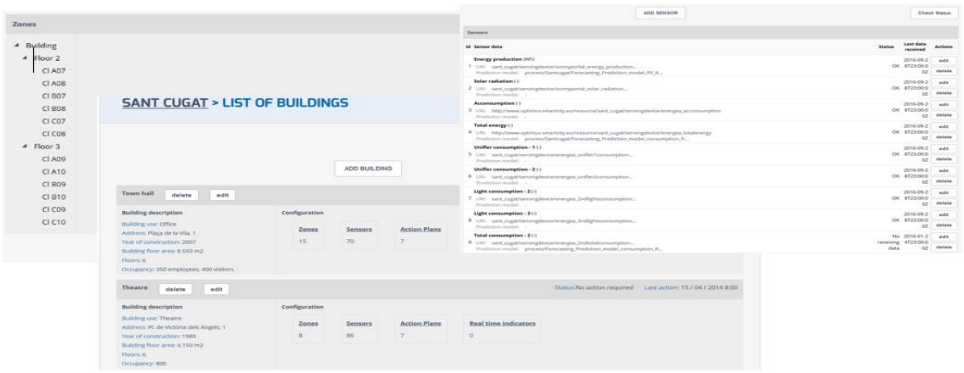

Figure 2 - The management interface

The OPTIMUS project

OPTIMUS aims to design a Decision Support System (DSS) to help towns and cities reduce CO_2 emissions by optimising energy use in public buildings.

This project has received funding from the European Union's Seventh Framework Programme for research, technological development and demonstration under grant agreement no 608703. The sole responsibility for the content of this publication lies with the authors. It does not necessarily reflect the opinion of the European Union. The European Commission is not responsible for any use that may be made of the information contained therein.