



Highly Innovative building controlTools Tackling the energyperformance gapA new OS+Apps for building energy management

Energy Performance Gap Platform and App store Fault Detection and Analysis Data Mining

Building Performance Simulation Users Behaviour Models













hit2gap



# A solution to the performance gap

hit2gc

Improvement of Commissioning & Operation

# Design

Improvement of Future Design & Construction







# Objectives

- To reduce the energy performance gap between predicted and real building performances, focusing on the operational phase of buildings.
- To propose a new paradigm for the development of energy management platforms in buildings, integrating existing expertise and resources: open approach for A NEW GENERATION OF BMS SOLUTIONS with plug and play analytics tools and modular services using a win-win strategy.
- Significant reduction of the energy performance gap using enhanced data treatment modules for monitoring real-time building operation and occupancy data and real-time meteorological and building performance data that will be used to continuously calibrate the models to more accurately represent the real energy behaviour.

*a data platform* – collection and storage of data *modelling* – e.g. energy predictions, users' behaviour modelling *modules* – data mining, EnMS and visualisation



# What is addressed by the project?

- Challenges on energy and environment: 30% energy savings based on data collected in buildings and advanced data treatment approach
- Open, modular, extensible and scalable platform aiming at create a community through providing added value basic services
- New services associated to a win-win strategy with external developers
- Advance data treatment serving energy optimisation based on calibrated simulation module, forecasting module, Fault Detection and Diagnosis module, Users behaviour modelling module, ISO50001 module



# What is HIT2GAP?



# **Basis Functionalities of HIT2GAP**



### Advanced data treatment modules



# Visualisation modules



# Modules and Applications



>Fault detection: "Are there any failures in the system?" >Fault diagnosis: "Which component is involved?" and "What is the exact reason for the failure?"

#### Faulty sensors





>Energy management:
identification of current energy
uses, objectives and targets
>Action management



 Information directly acquired from the occupants via monitoring devices and questionnaires.
User behaviour models combined with building information to generate a dynamic, adaptable and holistic recommendation and decision support system.



# Who is targeted?

# Main end-users/Customer segments:

- 1. Building Owner, estate manager
- 2. EM / FM / MM (EPC, awareness raising of occupants)
- 3. ESCo /FM organisations
- 4. EE Consultant/ Professional (e.g., engineers, designers)
- 5. BMS providers (to enrich the existing offer)

# **Contributors segments (win-win strategy):**

- 1. External developers
- 2. Actors in the value chain associated with monitoring and building energy performance measurement



# HIT2GAP project in short

# www.hit2gap.eu

The HIT2GAP project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N° 680708.











# A complementary partnership

