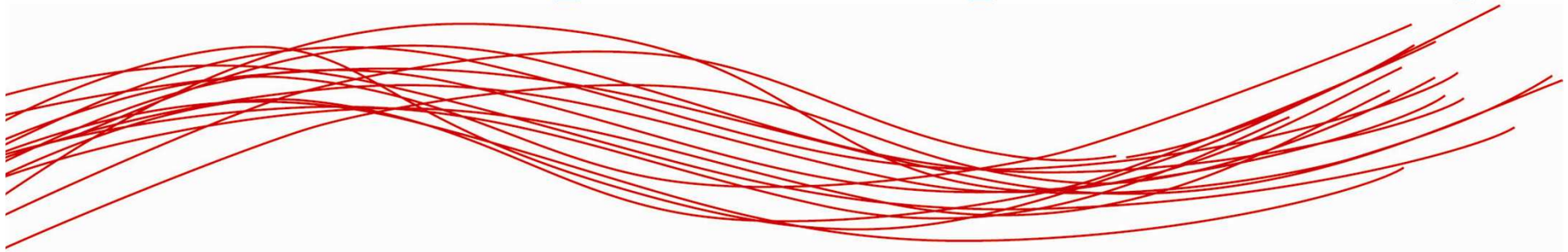


# Self Powered Wireless Sensor Network for HVAC System Energy Improvement Towards Integral BUilding CONnectivity



**Mostostal Warszawa S.A.**  
**Piotr Dymarski**



# Objectives

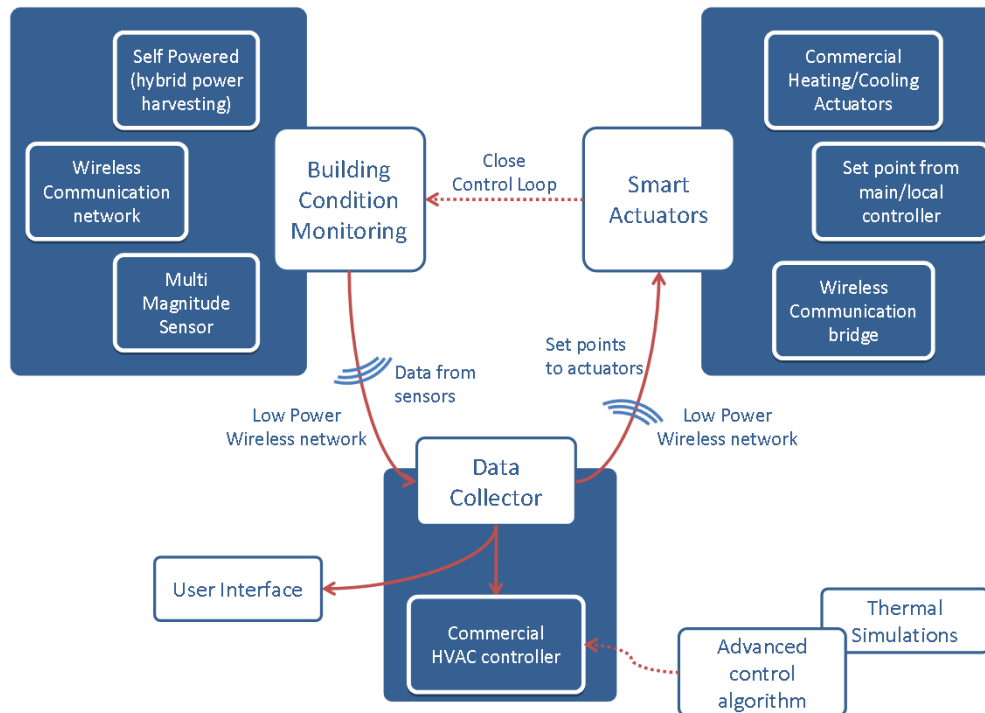
- **S&T goals of the project**

- **Development of ultra low power units to control HVAC system**
- **Development of the Hybrid Power Harvesting Unit (photovoltaic, thermoelectric, vibration energy) to power sensors.**
- **The wiring and battery removal for a control point in HVAC system**

# Objectives

- **S&T goals of the project**

- **More efficient HVAC structure in terms of energy consumption and thermal comfort for new installations**

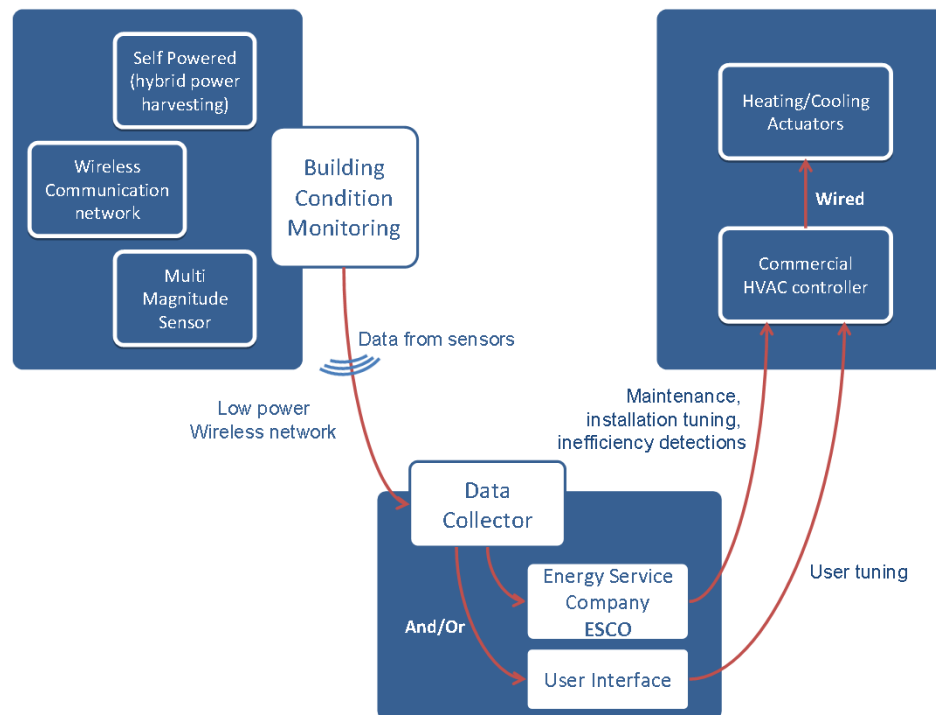


**New building - Poland**

# Objectives

- **S&T goals of the project**

- **More cost effective and less invasive tool for HVAC retrofitting**



**Existing building - Spain**



# Impact expected

- **Energy Savings**

- **Annual average abatement of 0.41 TWh on Dakias's buildings**

- **CO2 Emission Reduction**

- **There is an annual average abatement of 0.19 Mt equivalent CO2 emission reductions as the result of the direct deployment of TIBUCON on Dalkia's building pool**

- **Battery use reduction**

- **The use of 3 million batteries will be avoided till year 2015**



## Links

### • Link with the multi-annual roadmap

- Reducing the energy use in buildings and its negative impacts on environment.
- Reduction of carbondioxide emissions
- Increasing of the share of renewable energy sources in construction industry
- Energy efficiency based on green tech → power harvesting gets rid of batteries





# Consortium

## ➤ Industry



## ➤ Research organisations / universities



# Innovation issues

- **Exploitation**

➤ **Industrial partners will be in charge of promoting the commercial exploitation of strategic TIBUCON technologies.**

Name	Product/service	Responsible
SP-MM-WSN	Product	TEK, UoS, GSU
Rapid Energy Audits	Service	GSU
Enhanced HVAC Retrofitting	Service	GSU
Smart Building	Product	MW, ELA



# Innovation issues

## •Dissemination

➤ **Web platform** [www.tibucon.eu](http://www.tibucon.eu)

➤ **Internal Marketing**

(Dalkia Industries Newsletter, Mostostal's Panorama Bulletin)

➤ **Publications in magazines**

(„Elsevier's Energy and Buildings“, „Building and environment“)

➤ **International conference sessions relevant to energy harvesting, wireless sensing, and industrial /infrastructure condition monitoring**

➤ **Participation in EU concertation events and publications. Workshops.**

# Innovation issues

## •Dissemination

### ➤Cooperation with National Contact Point

➤**Dissemination through constructor fair and trade shows such as:** International Building Fair BUDMA (Poland), International Building Fair (Czech Republic), Bauma (Germany), Bautech (Germany), Construtec-Building Exhibition (Spain), Construtec-Building Exhibition (Spain), Swissbau - Swiss Building Fair (Switzerland) and Climatización (Spain).

## •Standardisation

➤**Creation of new standard is not predicted. Information data models which will be used by sensor to exchange information will be described.**

# PPP Added Value

- **How does the PPP add value to your project?**
  - **Strong consortium based on E2B Assotiation multidisciplinary members.**
  - **Critical mass and new market creation for Energy Efficiency in Buildings.**
- **How can you provide an added value to the PPP?**
  - **New products /servicess for global goals of E2B PPP**
  - **New business oportunitinities for ICT's in buildings**
  - **PPP research model popularization**

# Thank you for your attention!