CITIES OF THE FUTURE
BRUSSELS 2017

Faculty of Electrical Engineering
University of Belgrade

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Description of the Organization

- Faculty of Electrical Engineering (**ETF**) was founded in 1948. Faculty Units are Departments of: Power Systems, Power Converters and Electrical Drives, Signals and Systems, Electronics, Microelectronics and Technical Physics, General Electrical Engineering, Computer Engineering and Information Theory, Telecommunications, Applied Mathematics and General Education.
- Our research and development previous projects are:
  - **9 projects of fundamental research**
  - **22 projects of technology development**
  - **13 integral projects**
  - **157 projects of cooperation with industry**
  - **3 European union FP7 projects**
  - **1 EURECA project**
  - **1 TEMPUS project**
  - **1 NATO project**
  - **9 commercial international projects**
- International cooperation exist with: **Microsoft, CISCO, Hewlett Packard, IBM, Siemens, ABB, Ericsson and Oracle.**

Department of Power Systems

- Entire Department is still involved into five-year project “Smart Grid”, financed by Ministry of Science and Education of the Republic of Serbia. Also,
- We were involved in many studies and projects regarding renewable energy, wind energy as well as photovoltaic technology.
- Additionally, we have just realized a study financed by Serbian TSO regarding Smart Grid – Demand Side Management.
- During our involvement in these projects and studies, we have collected a vast number of data regarding energy production and consumption that we could use in realization of the proposed project. Methods and algorithms that we intend to use in the proposed project have already been developed in our scientific papers that are published in international journals and conferences.

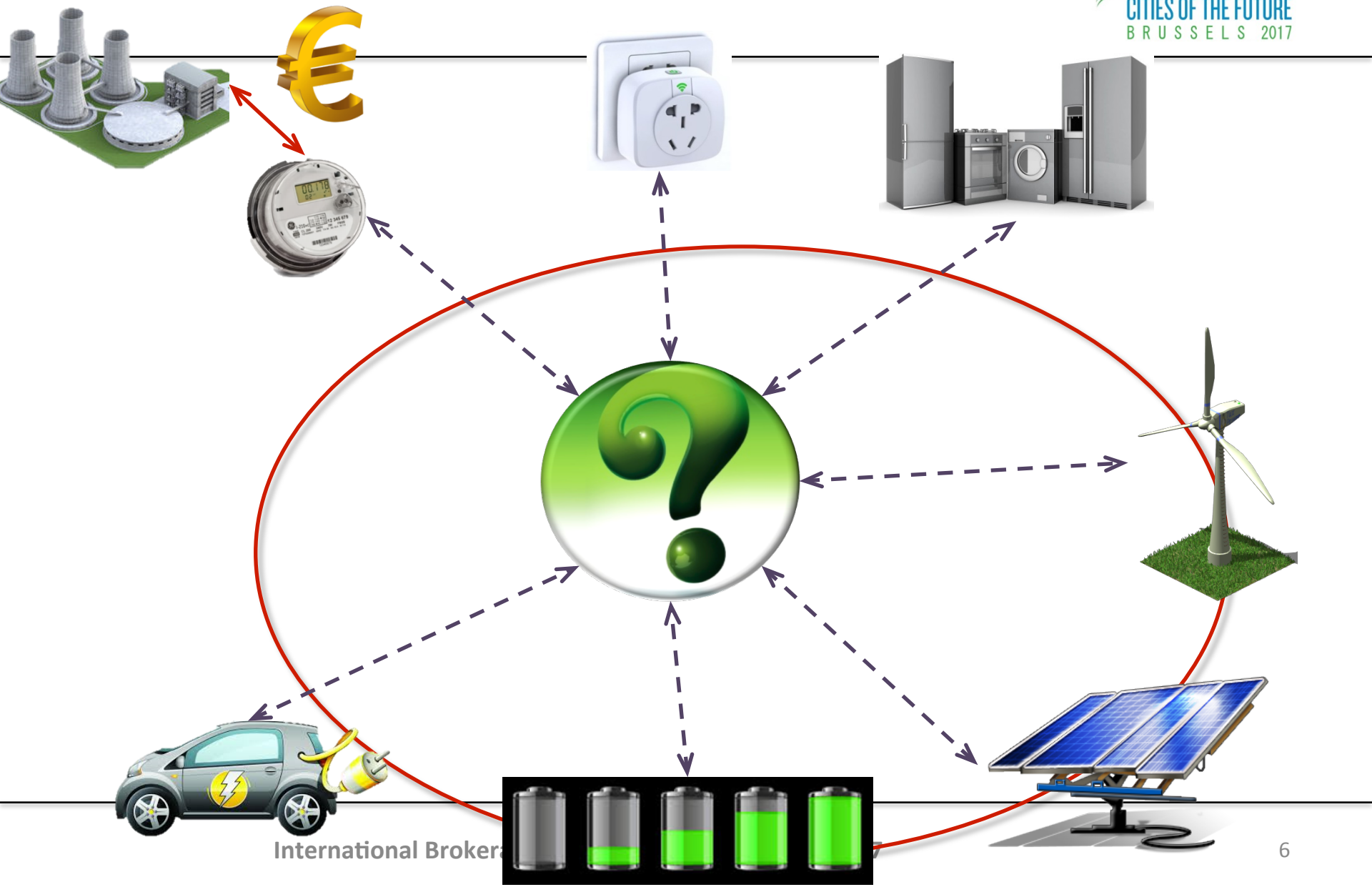
Department of Power Systems interests

- Smart Energy Systems and Consumers
- Consumer engagement and demand response
- Solutions for increased regional cross-border cooperation in the transmission grid
- TSO – DSO – Consumer: Large-scale demonstrations of innovative grid services through demand response, storage and small-scale (RES) generation
- Research on advanced tools and technological development
- Next-generation of Energy Performance Assessment and Certification
- Flexibility and retail market options for the distribution grid
- New developments in plus energy houses

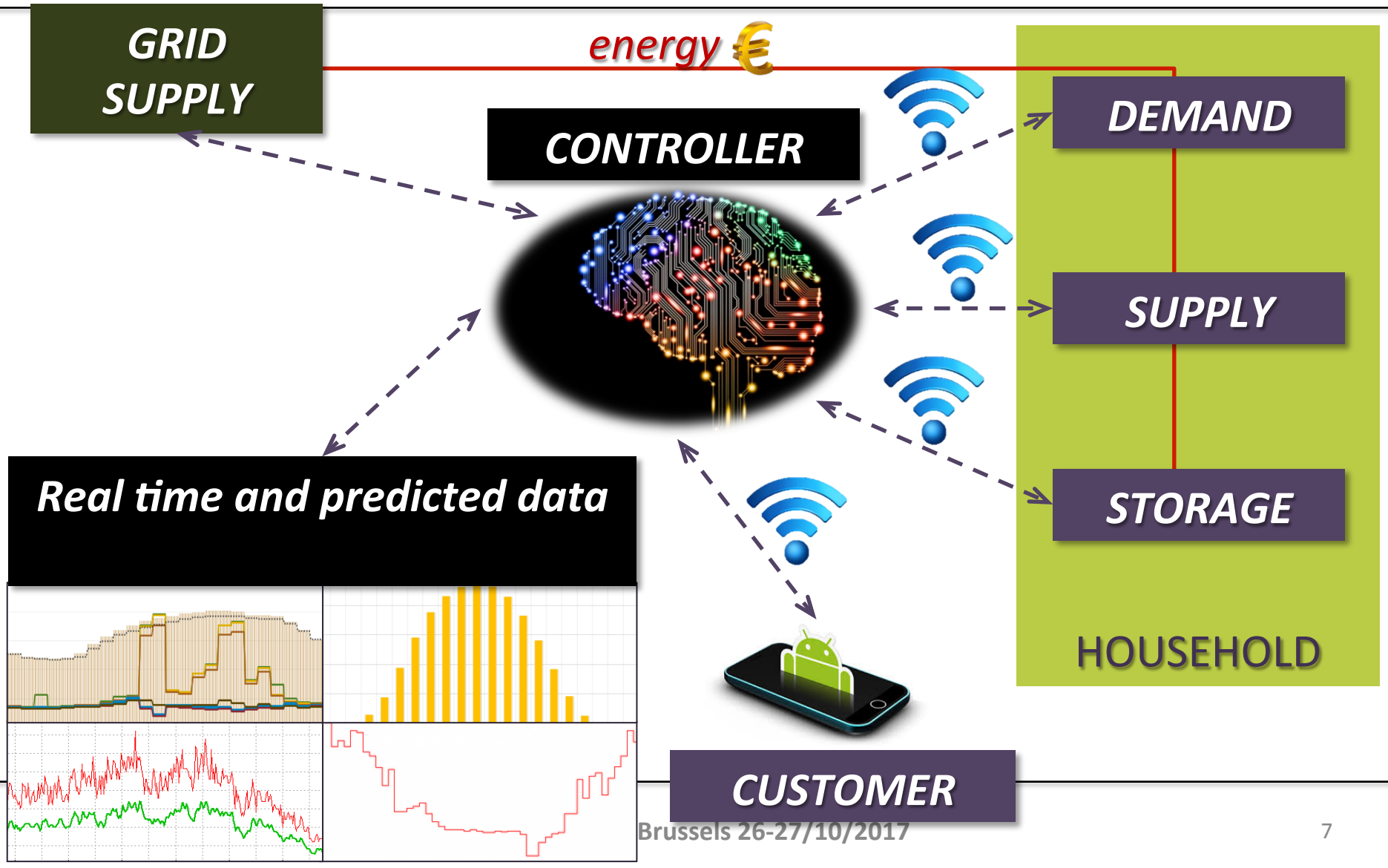
Home&Building Management System

- Objectives:
  - resolve the problems faced by modern *PROSUMERS* and *CONSUMERS* of electrical energy trying to optimally control their resources in order to maximize the benefit of modern technologies
- Expected results
  - The solution is an intelligent controller that will optimize *CONSUMPTION*, *PRODUCTION* and *STORAGE* of energy considering real time data as well as predicted future data of energy resources and real time prices
  - AI based controler that learn the customer behavior and use the combination of real time data and predicted future data to automatically make decisions in order to reduce electricity bill without the reduction of customer comfort.

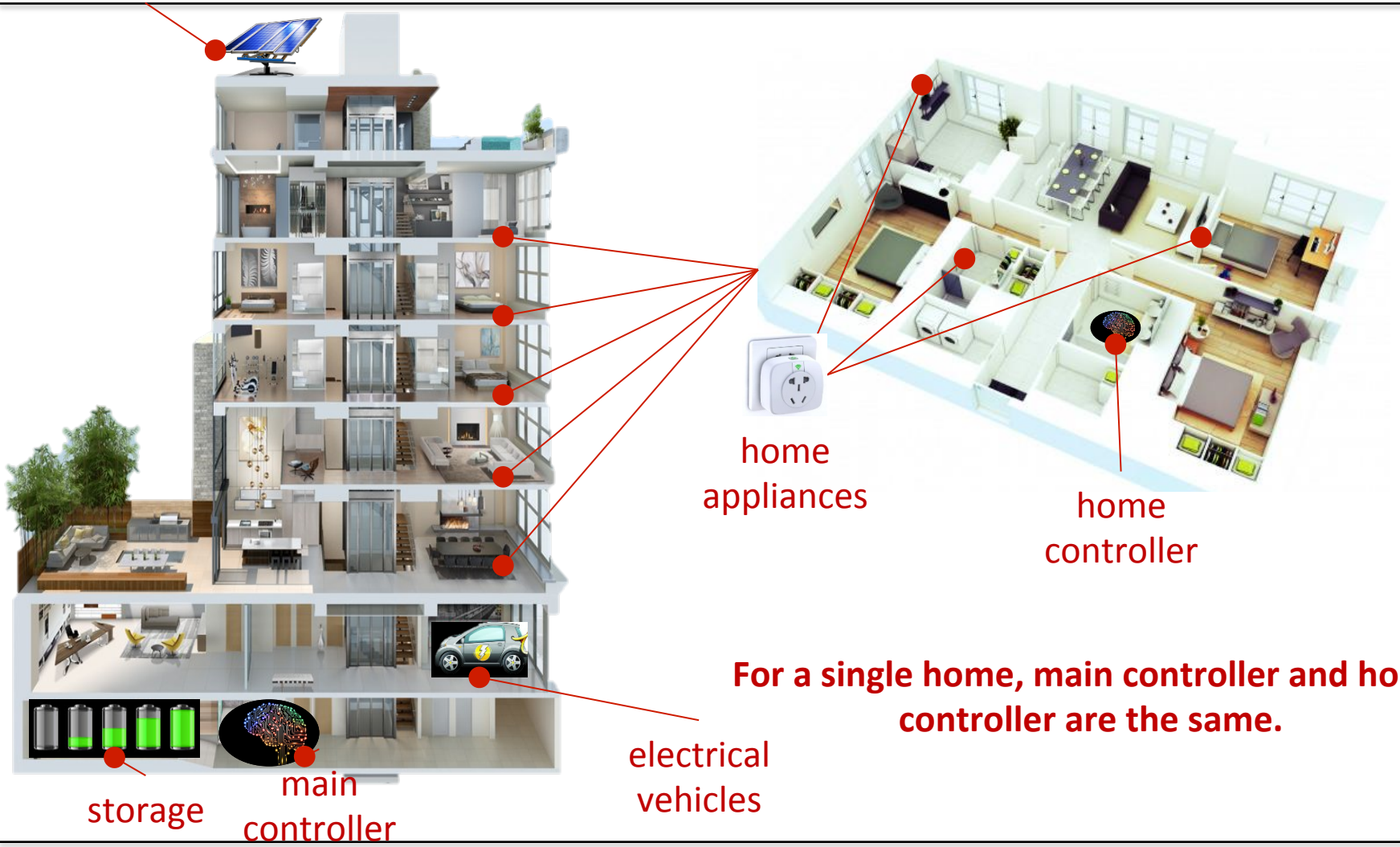
Home&Building Management System



Home&Building Management System



Home&Building Management System



For a single home, main controller and home controller are the same.

Consortium - profile of known partners *(if any)*

No	Partner Name	Type	Country	Role in the Project
01	ZEDP "Elektro-Bijeljina"	SME	**Bosnia And Herzegovina**	Testing products and software
02				
03				
04				
05				
06				
07				
08				

Consortium - required partners

No	Expertise	Type	Country	Role in the project
01	Reseach instituions and university	RTD	any	Research in area of implementing algorithms and software in Smart homes and buildings
02	Poses distributed generation and smart house in distribution network	SME	any	Testing in the distribution network and distribution generation
03	Smart controlers, plugs and other electronic devices	IND	any	Production of smart controlers, plugs and automated devices

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