



# ***MULTI-LAYER AGGREGATOR SOLUTIONS TO FACILITATE OPTIMUM DEMAND RESPONSE AND GRID FLEXIBILITY (SMART-MLA)***

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Kick-off meeting on SMART\_MLA

Time: November 30, 2018

Venue: Bucharest University of Economic Studies, Piața Romană 6,  
București 010374, Romania

## **1. Introduction and purpose**

The main objective of this project is to develop multi-layer aggregator solutions integrated into an informatics prototype with the aim of facilitating optimum demand response (DR)-based grid flexibility and contributing to 100% renewable source integration. At the final destination, all types of electricity consumers can have access to the energy markets and would be able to trade based on their flexibility.

The proposed framework is presented in three layers. The first layer is community aggregator (CA) layer where optimal load scheduling is preformed to minimize the community-aggregated electricity payment and consumption peak shaving considering the convenience of individual residents and hourly community load characteristics. Layer 1 can be the initial DR solution given its applicability to any community even without smart grid (SG) implementation. Control of the demand referred to as active DR, includes managing of electric vehicle (EV) charging stations, distributed RES generation and storage devices (SD) which will be addressed in Layer 2. Layer 2 may include several sub-layers depending on SG implementation level. Finally, in Layer 3, aggregation of DR contracts will be considered in the price-based self-scheduling optimization problem with optimal DR scheduling purposes for participants in day-ahead energy markets. Layer 3 requires a DR bidding framework in day-ahead energy markets, which integrates consumers DR preferences and characteristics in the DSOs market clearing process.

## **2. Agenda**



9.00-10.30	<p><b>Welcome address and introduction round, objectives and expected outcomes (WP1)</b></p> <p>Presenter: Dr. Osman Bulent Tor (EPRA) Contributors: All.</p>
10.30-10.45	Coffee Break
10.45-12.30	<p><b>Optimization algorithms design and development (WP2)</b></p> <p>11.23-11.52 + Marius</p> <p>Presenter: Qiuwei Wu (DTU) Contributors: sub-leaders for WP2 (EPRA, BUES, Inno energy)</p>
12.30-13.30	Lunch Break
13.30-15.00	<p><b>Design and development cloud-based web-service application tool (WP3)</b></p> <p>15.00-16.12/</p> <p>Presenter: Adela Bara (BUES) Contributors: sub-leaders for WP3 (KTH)</p>
15.00-15.15	Coffee Break
15.15-17.00	<p><b>Customer awareness and involvement - Business model development (WP4)</b></p> <p>16.40</p> <p>Presenter: Fredrik Billing (Inno energy) Contributors: sub-leaders for WP4 (USN)</p>
17.00-17.30	<p><b>Timeline, reporting and next steps</b></p> <p>Dr. Osman Bulent Tor (EPRA) Contributors: All.</p>



### 3. List of participants

1. Dr. Osman Bulent Tor	EPRA	Turkey
2. Mahmut Erkut Cebeci	EPRA	Turkey
3. Dr. Saeed Teimourzadeh	EPRA	Turkey
4. Oprea Simona	BUES(ASE)	România
5. Ibram George	BUES(ASE)	România
6. BOBAN VESIN	USN	NORWAY
7. MARIOS RONDE JOHANNESSEN	USN	NORWAY
8. LASSE BERNTZEN	USN	NORWAY
9. QIUWEI WU	DTU	DENMARK
10. ANDREI BOCUR	RO(MET)	ROMANIA
11. ALEXANDRU CONSTANTIN	STIMASOFT	ROMANIA
12. IONUȚ ȚĂRANU	STIMASOFT	ROMANIA
13. ADELA BĂRĂ	BUES(ASE)	ROMANIA

### 4. Discussed items and decisions

- Outline of the project as well as participants are introduced by Dr. Osman Bulent Tor as the project manager.
- It is stated that consortium agreement (CA) is required to be made between the consortium members and the consortium leader.
- For data sharing between the consortium members, a share folder on one-drive platform is envisioned (to be managed by EPRA).
- Participants are asked to share their presentations files.
- It is discussed that the deployment of smart meters is becoming mandatory in Norway which implies the necessity for considering their influence while devising the schemes.
- Considering effect of electrical vehicles, heating storage, heat pumps in the optimization models is emphasized.



- Dr. Qiuwei Wu presented features of envisioned optimization model and some details regarding the simulation engine and solvers (GAMS, CPLEX ...) are discussed.
- Dr. Marius R. Johannessen presented data management plan (DMP) devised by research council of Norway which will be used in SMART\_MLA project as well.
- The Stima Soft is asked to deal with project website and update it regularly considering significance of version control subject.
- Dr. Adela Bara presented the framework of BUES for handling corresponding work packages.
- The content of work package 4, i.e. customer awareness and involvement is discussed by all as the leader of this work package could not join the meeting.
- Prof. Lasse Bernzen made a representation regarding Business model development.
- It is decided to make to make monthly regular teleconferences. The first one would be 14 Jan. 2019, the second one would be 11 Feb 2019. The others would be decided later on. In addition, some teleconferences between the decided ones would be made if needed.
- Regular meetings for the consortium is planned: Early March 2019 Romania, Mid-June 2019 Denmark, Late September 2019 Turkey.
- It is decided to connect the consortium meetings with workshops.
- Dr. Adela Bara is assigned to circulate the documents between consortium members.
- It is emphasized to acknowledge SMART\_MLA project and funding sources in the publications.
- It is decided that the scientific committee determine the names on the publications.

## 5. To do List

Task	Responsible Partner	Deadline
Preparing new version of consortium agreement (CA) Based on Prof. Lasse Bernzen comments	EPRA	Late December
Signing the consortium agreement (CA) by each partner	All	After clearance of the status of Swedish partners (Mid. January)
Project data sharing folder through MS OneDrive	EPRA	15 Dec. 2018



Sharing kick off meeting presentations files	All	20 Dec. 2018
Data management plan (DMP) draft	USN – Marius	20 Dec. 2018
Update of the project website	Stima Soft	After kick off meeting
Sending calendar invitation for regular telcos for blocking the dates: 14 Jan. 2019 and 11 Feb 2019 4:00 Romania time. (Please check the time and confirm)	All-EPRA	20 Dec. 2018
Bilateral contacting of EPRA and DTU regarding WP2 and optimization model	EPRA-DTU	Bilateral coordination by EPRA and DTU
Bilateral contacting of BUES and MET for acquiring relevant data, say renewable generation, load consumption, market price, etc.	BUES-MET	Bilateral coordination by BUES and MET