

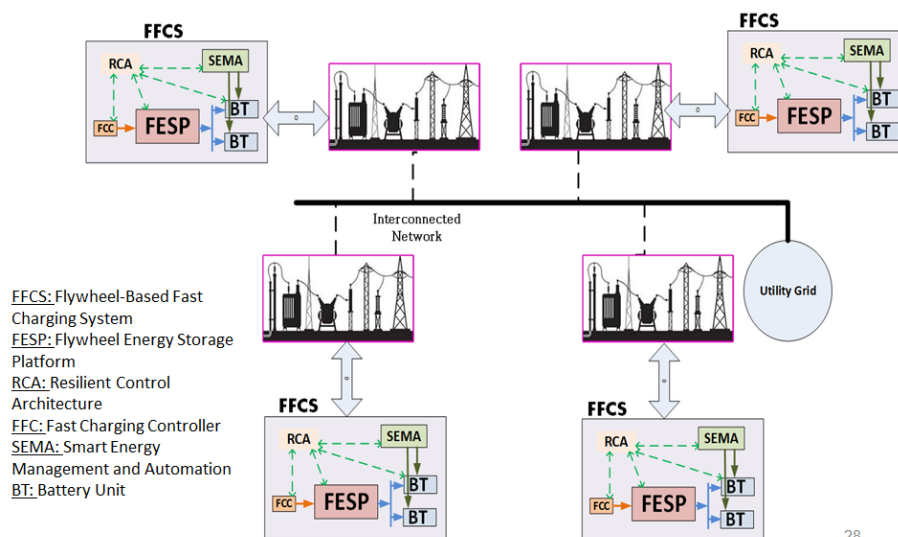
Flywheel Energy Storage Platform (FESP) for Energy and Transportation Infrastructures

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1. Scope:

The project is aiming at the deployment of Flywheel-based Energy Storage Platform (FESP) and implementation in energy and transportation infrastructures. Different design and operation strategies will be studied and evaluated to integrate FESP while ensuring high performance energy storage with adaptive and dynamic performance to meet the required demand side management, in view of generation and supply. Flywheel-based Fast Charging Systems (FFCS) will be integrated with battery systems to provide fast charging capabilities to meet load demands in extended hours of operation while achieving cheap and high performance energy supply. Intelligent control and optimization algorithms are used to ensure optimum and high performance energy storage for both charging and discharging scenarios in view of local and global load profiles, mobility models, life cycle costs, and grid connection requirements. Integrated energy management system is used to ensure resilient energy storage, with the following functions: (a) monitor and control FESP units; (b) monitor and control FESP during charging and discharging scenarios; and (c) optimize the overall performance of FESP in terms of load profiles.



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2. Implementation Projects

FESP implementation projects are managed and coordinated with GPROSYS Corp., where each deployment project is executed as follows:

- Study user requirements and target load profiles
- Conceptual and detailed design of FESP units, control, protection, and resiliency functionalities
- Develop data communication and security using IoT technology
- Implement integrated monitoring and business intelligence and intelligent performance optimization

