



US-INDIA COLLABORATIVE FOR SMART DISTRIBUTION SYSTEM WITH STORAGE

----- Evolving Future Energy Distribution Grids

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Pilot-1 (Semi-Urban)

- It is a cluster of single storey houses in two of the lanes of IIT Kanpur.
- Planned for rooftop solar panels (about 200kWp capacity), Storage and EV charging station.

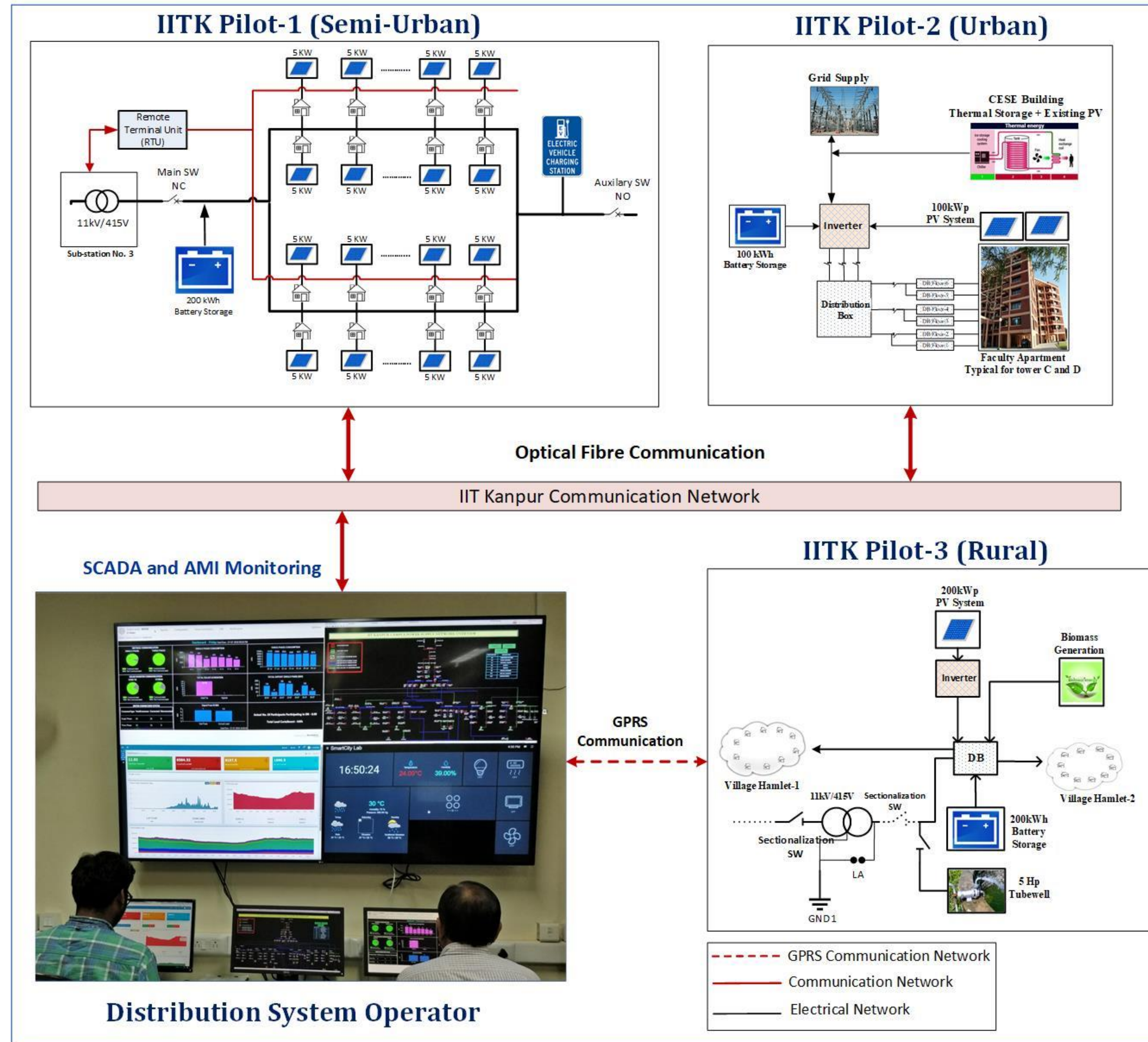
Smart City Control Room

At present IIT Kanpur has smart city pilot with a control center, which has following features:

- Monitoring and control of eleven 11/0.433 kV and one 33/11kV substations at each breaker level using RTU panel located at each substation.
- Continuous monitoring and storage of data and communication status of single phase and three phase meters in the campus.
- Remote monitoring of grid tied and Hybrid Inverter based solar installation for different electrical parameters.
- Peak load management (PLM) and demand response (DR)
- Implementation facility for Integration of DR program with the existing MDAS to implement and test different algorithms of load forecasting, clustering etc.
- Control of different components integrated in the system, home automation devices and utilizing the devices for demand response implementation at individual device level as well as house level.

The above existing platform will be extended to implement advanced DMS functions at control center.

IIT Kanpur Field Demonstration Pilots



Pilot-2 (Urban)

- Urban pilot projects which includes
- One in multi-storey faculty housing towers with SPV of capacity 50kWp and storage
- Second in Center of Environment Science and Engineering (CESE) building of IIT Kanpur, which is planned to have thermal storage system.

Pilot-3 (Rural)

- Two villages selected for setting up the rural AC microgrid pilot; Chhabaniwada and Bargadiyapurwa, which are hamlets of the Harnoo village in Kanpur district.
- These villages are planned to have SPV of 200 kWp capacity, battery storage and biomass plant.
- Drinking water and irrigation water through solar powered systems are also being worked out.

