IIT ROORKEE

NPTEL ONLINE CERTIFICATION COURSE

Charging Infrastructure

Lecture-2

Building Blocks of an AC EV Charger

Dr. Apurv Kumar Yadav

Department of Electrical Engineering

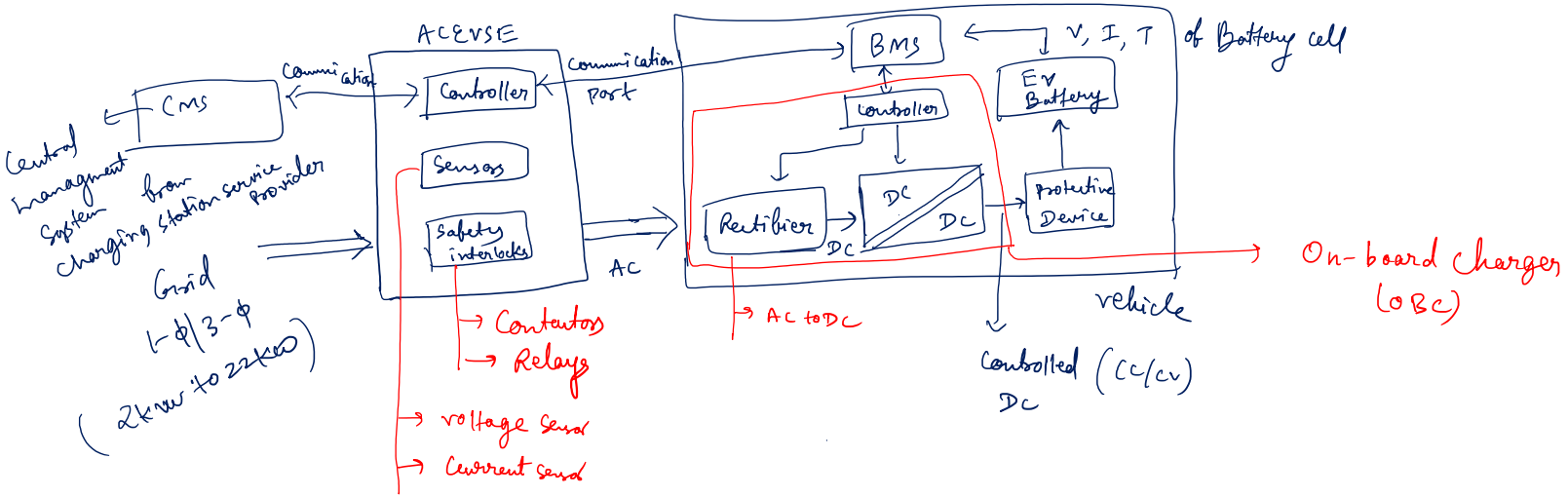
Recap

- EV ecosystem → Low voltage Battery (48 - 72v)
  → High voltage Battery (350v - 500v)
- Charging modes of an EV Batteries → CCCV charging profiles
- Necessity of an EV charger

Building Blocks of an EV Charger

- Basic building blocks of an EV charger
  - Power Conversion unit
    - AC-DC converter, isolated DC-DC converter, Filters
  - Communication Ports / channel
    - Proximity pilot, control pilot, CAN H, CAN L
  - EVSE (electric vehicle supply equipment): AC, DC EVSE
  - Connectors and cables:
    - Charging plug from EVSE, Vehicle inlet connector
    - Cables

Building Blocks of an AC EV Charger



BMS is the master

AC EVSE
- Metering
- Monitoring
- Safety

OBC (On-board charger)

AC → DC

Thank You