A Challenge Problem:

Wide-Area Control and Protection

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Challenges

- Recognize the connection between application and communication and data management
- Design use cases with power system and IT system
- Design tools to design, analyze and test use cases

Workflow

- Assume certain use cases
- Define requirement based on use cases
- Identify risk areas
- Develop tools to be able to analyze, design and test of IT system and power system together
- Engage utility and vendor
- Prototyping and testing

Sub-problems

- **Data communication**
  - Flexible & expandable
- **Data management**
  - Data quality, calibration
  - Data storage and archiving
  - Priority of data stream
- **Control/Protection**
  - Uncertainty management
  - Missing data
  - Missed operation

Metrics to measure success

- Cost
- Based on workflow description