Paris Session 2022

Model Validation & Benchmark Models

SC C6 - PS2 – Q2.8

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Group Discussion Meeting

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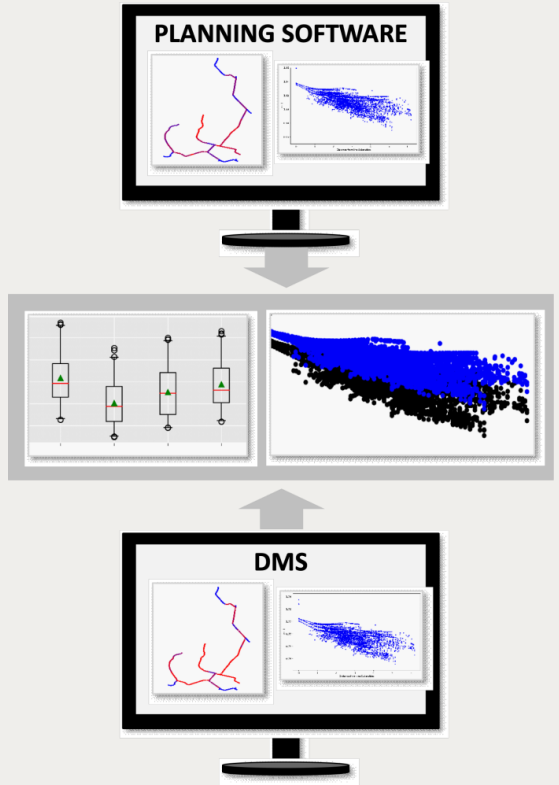
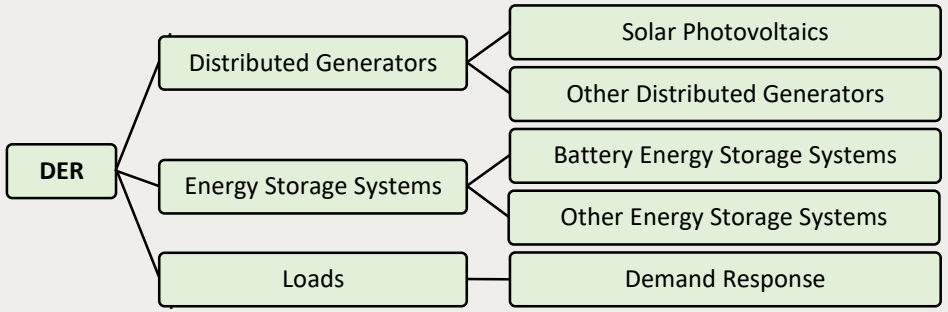
Modeling Requirements Are Increasing

- DER requires increasingly complex and detailed assessment and hence, more detailed and accurate models

- Distribution system models
  - Subject to numerous errors
  - Models rarely validated in the past
  - Increasingly complex controls
  - New software tools

- DER models
  - Rapidly evolving technologies and controls
  - Limited utility visibility to customer-owned DER
  - Lack of uniformly accepted models





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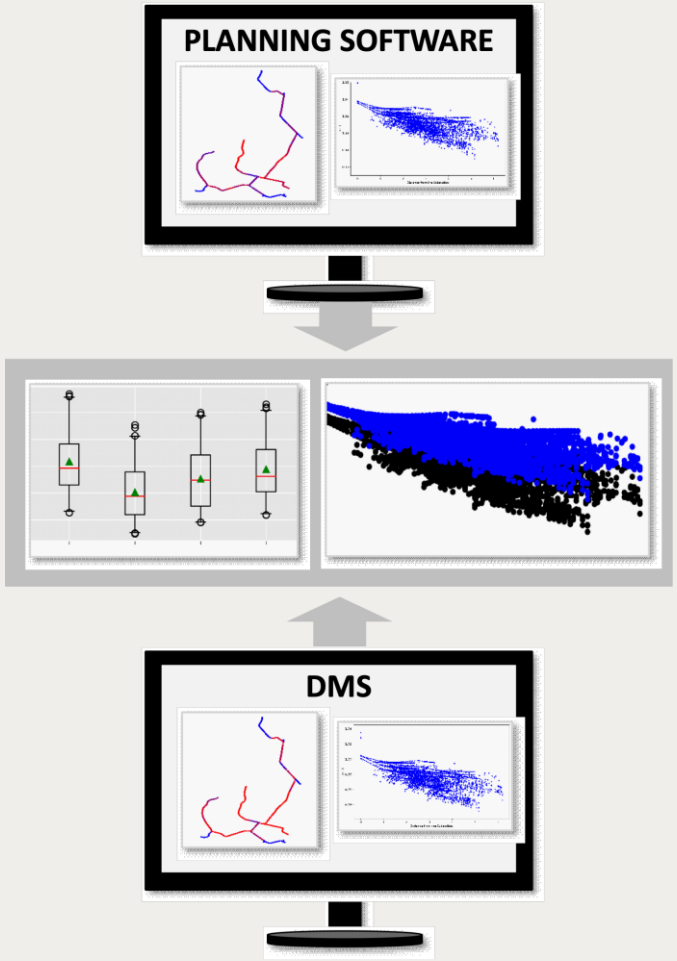
How to Increase the Confidence in Distribution Models

- Model management foundational
  - Over time
  - Across software tools
- Data can be leveraged for model calibration
  - Identify & fix issues
  - Topology, phasing, impedances, DER, etc.
- The two are complementary



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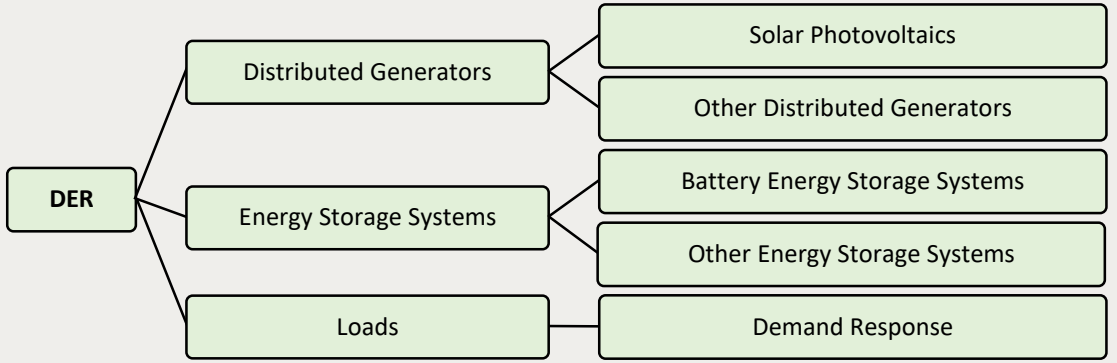
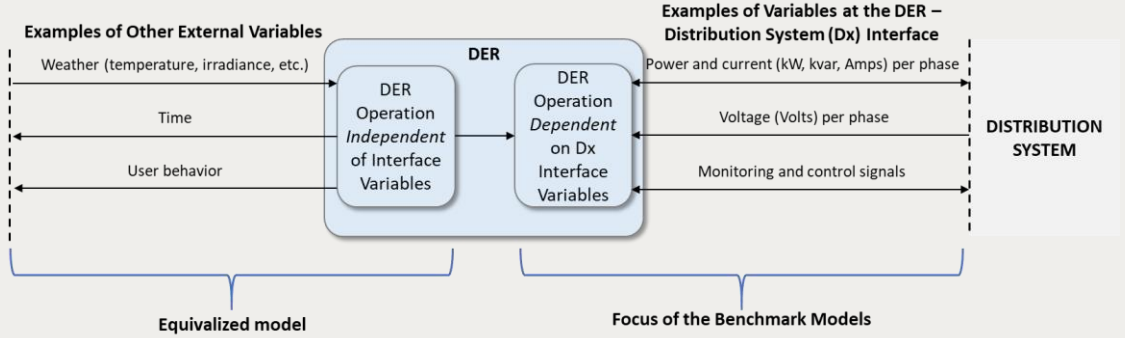
How to Increase the Confidence in DER Models

CIGRE WG C6.36:

- DER benchmark model framework for quasi-static time-series power flow simulations
  - Model structure & scope
- DER models:
  - Do not need to capture everything
  - Should capture relevant interactions
  - Controls are a challenge
- Future work:
  - Further development of reference models
  - Field testing of against reference models





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