Distribution System State Estimations: Practical challenges, limitation of current tools and way forward

DSA WG Meeting minutes

Monday, July 28, 2014
Room: Azalea 3 at Gaylord Hotel and Convention Center, National Harbor, MD
Start: 3:00 PM

3:00 PM Start of the meeting with Bikash showing the agenda

3:05 Self introduction of the attendees and signing in

3:15 Bikash started the discussion by highlighting the questions asked in last WG meeting

3:16 Bikash invited the comments from attendees on the "Existing DSSE technologies and their limitations"

- Kevin highlighted the issue that the utilities pull only real power information from the meters due to economic reasons. The reactive power information which is important for SE is not available for estimation.
- Also the models good representatives of the system behaviour which compromises the accuracy
- Tom McDermot from university of Pittsburgh mentioned that in dynamic estimation, the accuracy is a challenge as the measurements are not recorded in real time, instead they are average value of measurement of data taken over period of 15 minutes.
- There was a discussion about the use of PMUs in DSSE. It was concluded that a focused case to bring PMUs is not clear.
- Ahmad Majeed from university of Stuttgart highlighted the scenario of metering in Germany. He pointed out that measurements are available every 3 seconds, but measurement mean values are collected every 15 minutes due to legal requirements. Real time communication with smart meters is not allowed due to privacy concerns.
- Mingguo Hong from Case Western Reserve University pointed out that weights of measurements are accurate for regular behaviour, but bad for customers with irregular behaviour.

3:36 Bikash initiated a discussion on the topic "How fast the estimator should run?"

- It was pointed by the attendees that this depends on application. For example voltage regulation require estimator to run within half an hour time frame.
- Kevin mentioned the topology processing time prior to run of estimator.
- Yinhua Guo mentioned that topology processing is very limited in distribution system
- Bikash pointed out that tap position change causes a challenge in topology processing and tap position can be considered as a measurement.

3:46 Finally, Bikash invited the discussion on target DSSE applications. The following applications came up during the discussion:

- Voltage Var optimization, feeder reconfiguration, DG/DER based ancillary services, , frequency response, demand response

3:56: Bikash made a proposal for a Panel session for next year General Meeting.
4:00: Adjourn

List of Attendees:

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