

IEEE Working Group on State Estimation Algorithms (<http://www.ece.neu.edu/~abur/ieee/wg.html>)
Power System Operations Subcommittee (<http://ewh.ieee.org/cmte/psoc/>)
Task Force on 'SE Concepts and Terminologies'
Meeting at the 2012 IEEE PES General Meeting

Venue: Ford B, Manchester Grand Hyatt, San Diego

Time: 17:00 – 19:00 hrs

Day: Tuesday July 24, 2012

Minutes

1. Opening remarks by Mili. (21 attendees)
2. Sarma introduces the task force and gives the history. He presents the first draft of the paper and re-initiates the discussions on Bus Mismatch, hierarchical SE and gross error.
3. Discussions
 - a) Clements argued that there was still confusion with the Bus Mismatch definition.
 - b) Atanackovic said that KCL is implemented with a weighting factor in Alstom Grid's software and the flows that are incident to a zero-injection bus doesn't add up to zero.
 - c) Mili said that KCL is always satisfied.
 - d) Atanackovic said that some vendors may allow KCL not to be satisfied.
 - e) Clements said that estimated flows sum up to zero.
 - f) Feng said that Bus Mismatch is the "measurement residual".
 - g) Guo said that in actual implementation KCL may not be satisfied.
 - h) Clements said that Bus Mismatch is (measured value – estimated value) which is the residual.
 - i) Atanackovic mentioned that Alstom Grid SE has different terminology and causes confusion. He mentioned that addition of redundant pseudo-measurements could corrupt the solution.
 - j) Gomez mentioned that normalized residual test and equality constraints were missing in the list of terminology.
 - k) Sarma said that next edition can include more definitions. He also initiated a discussion on how to proceed with the task force. He also mentioned the metrics for the SE solution.
 - l) Atanackovic mentioned the "quality indices".
 - m) Mili asked how to assess the "quality"?
 - n) Atanackovic said that different vendors have different quality indices. Alstom SE doesn't perform bad data analysis. They rank the normalized residuals and then let the user eliminate the measurements. He also mentioned the anomaly detection to re-weight the measurements. He said that de-weighting was also performed.
 - o) Mili mentioned "calibration".
 - p) Ramesh Hariharan requested to include Data Dictionary which explains the inputs to a state estimator since the definition of inputs change from vendor to vendor.
 - q) Abur said that the document included vendor independent terminology.

- r) Gomez questioned the “basic vocabulary” and asked what the assumed knowledge was.
- s) Mili mentioned a more comprehensive dictionary.
- t) Sarma said that 2nd edition could include more.
- u) Mili and Atanackovic initiated a discussion on distribution system state estimation and performance indices.
- v) Feng warns that two definitions in the paper were in conflict: measurement error, e vs. error estimate.

Attendee List

	Name	Affiliation	E-mail
1	Lamine Mili	Virginia Tech	lmili@vt.edu
2	Sarma (NDR) Nuthalapati	ERCOT	ndrsarma@ieee.org
3	Ali Abur	Northeastern University	abur@ece.neu.edu
4	Kevin Clements	PSA Consulting	clements@wpi.edu
5	Antonio Gomez-Exposito	University of Seville	age@us.es
6	Cansin Yaman Evrenosoqlu	Virginia Tech	cyevrenosoglu@ieee.org
7	Atanackovic Atanackovic	BC Hydro	Atanackovic.atanackovic@bchydro.com
8	Newton Bretas	University of Sao Paulo	ngbretas@sc.usp.br
9	Xiaodong Liu	NSTAR Electric & Gas	Xiaodong.liu@nstar.com
10	Raju Vinnakota	BC Hydro	veera.raju.vinnakota@bchydro.com
11	Andrew Ford	PJM	ford@pjm.com
12	Catalina Gomez-Quiles	University of Seville	catalinagq@us.es
13	Xiaoming Feng	ABB	xiaoming.feng@us.abb.com
14	Chunling Yang	MISO	cyang@misoenergy.org
15	Yinhua Guo	Hydro One	yinhua.guo@hydroone.com
16	Amit Jain	Infotech Enterprises Limited	amit.jain@infotech-enterprises.com
17	Ramesh Hariharan	Compusharp	ramesh@compusharp.com

18	Ram Rajagopal	Stanford University	ramr@stanford.edu
19	Junjie Qin	Stanford University	jqin@stanford.edu
20	Raffi Sevlian	Stanford University	rsevlian@stanford.edu
21	Yue Zhao	Stanford University	yuez@stanford.edu