

IEEE CSS Technical Committee on Smart Grids (TC-SG)

DRAFT meeting minutes, June 30, 2011, IEEE ACC, San Francisco

Notes taken by Dean Eyad Abed

1. The meeting was called to order by Prof. Massoud Amin at 9:30AM. He then provided items 2-6 and 8-10 below by way of updating the TC members on recent activities.
2. Massoud reminded the attendees of two sessions that were being held later in the day, and of a special session in honor of Prof. Joe Chow that was taking place the following day starting at 9:30AM in room Golden Gate 8.
3. Massoud informed the attendees that Prof. Jakob Stoustrup will be organizing a smart grid track at the IEEE Conf. on Decision and Control in Orlando in December, and that Massoud would be delivering a plenary lecture on the subject at that meeting.
4. Massoud informed the group that IEEE is undertaking a smart grid effort, and that he accepted to be Founding Chairman of the IEEE Smart Grid Newsletter. Massoud mentioned that the first issue of the Smart Grid newsletter appeared in January. The next issue is scheduled for July, and will include articles on China and India. The August issue will focus on data for smart grid, sensors, and what to do with data. An average utility has 70 Tbytes of data, and this volume will increase by a factor of 12 to around 820 Tbytes. In power system control, we haven't done much with such a volume of data. Massoud mentioned that it is possible to sign up on the web to receive the newsletter free of charge.
5. Massoud noted that IEEE has a Smart Grid journal, and that the DOE has an informative web site on smart grid.
6. In addition an IEEE smart grid vision project is underway in partnership with 4 societies — Mr. Bill Ash of IEEE provides funding for this effort under the "Vision Projects" program. Dr. Anu Annaswamy accepted to be Editor-in-Chief of the IEEE Smart Grid Vision Project for Control Systems. She will consider the solid and deep issues that the Control Systems Society community can pursue in the smart grid area. If any member of the TC is interested in being involved in this activity, they should contact Massoud and/or Anu.
7. Prof. Joe Chow noted that four IEEE Societies are teaming on the IEEE Smart Grid Vision Project; these are the Control Systems Society, the Computer Society, the Communications Society, and the Power and Energy Society. Joe is involved in this effort through his membership in the Computer Society. The Computer Society will be having a workshop on smart grid. Joe suggested that CSS may want to also hold a workshop. Bill Ash of IEEE is the main contact person in obtaining support. Massoud suggested that Joe can be a liaison between CS and CSS on this.

8. Massoud mentioned that the TC-SG is a "safe space" for thinking about what the Control Systems community can pursue in the area of smart grid. Members can propose various types of activities, including workshops, webinars, etc.
9. Massoud requested TC members to sign up for the CSS LinkedIn group, and look up Jakob's LinkedIn group for this TC and sign up for the group.
10. Massoud mentioned that we are one of 19 TC's in CSS. By the end of the summer, all these TC's should have a common web presence.
11. Anu mentioned that she put together a track for CDC/ECC which includes a broad set of sessions. These are being considered for inclusion in the conference.
12. Joe and Massoud recommended that Anu select 2-3 people as a planning committee for this year's goals for the Vision project of CSS.
13. Mark Balas mentioned that smart grid in the US doesn't amount to very much - consisting of meters in homes to turn off coffee machines etc. In reply, Massoud mentioned that most federal funding for smart grid in the US went to the distribution level. Sean Meyn noted that smart meters funding is a result of lobbying of the federal government by GE. He mentioned that we as a community need to be connected to policy.
14. Massoud mentioned that we as CSS members can do systems thinking, developing end-to-end systems concepts, being deep and rigorous in our work.
15. Joe mentioned that US universities haven't done much hiring in the power systems area from 1985-2005, but now students are coming back into power programs. He said there's a problem of lag in getting qualified people as new faculty.
16. Prof. Manfred Morari mentioned that at ETH, enrollment in power systems courses has risen from 10 to 80. Soon some of these individuals will be available as faculty. He also said that smart meters in homes have been in place in Europe for a long time, and this has not caused any problem.
17. Anu commented regarding our role as a TC in driving policy: One possibility is to propose initiatives to NSF, DARPA-E, etc. Perhaps we can provide a white paper to NSF (Dr. Kishan Baheti) with possible joint initiatives between NSF and DOE, etc. Massoud replied that this was an excellent idea that TC members can work together on. NSF can use some of the recently appropriated funds for such initiatives.

18. Joe mentioned that smart grid is just beginning, and therefore researchers' discussions are at a high level at this stage. However all the smart meters can be used for important system issues. The TC needs to think about these issues. Massoud interjected that the new smart meters are less reliable and less accurate than old meters.

19. Dr. Paul Houpt noted that the TC has no representation from utilities. Joe Chow replied that we should organize sessions that are of interest to power companies.

20. Dr. Steven Goldsmith mentioned that in his opinion utilities tend to hold on to the status quo. For example, they could push cybersecurity but aren't interested in doing so. He mentioned an internal Sandia project on developing green microgrids decoupled from the grid. He also mentioned that Sandia had trouble hiring power engineers with strong control and math backgrounds, so instead they hire control and computer people and teach them power. He noted that utilities are embracing microgrids, as is DOD. Following on these comments, Massoud noted that there are over 3000 military bases that can provide test cases for microgrid development.

21. Anu mentioned that it is quite important to include utility people in the TC's work, in order to have issues from the field adequately represented. She mentioned that Ram Sastry of AEP might be willing to engage in a dialogue.

22. Manfred noted that utilities are not expecting academia to produce results they can use. He said utilities rely on the ABB's and GE's of the world. So we should work with those companies.

23. Mr. Zhihua Qu mentioned that as a TC, we should focus on major technical challenges, like stability with intermittent sources.

24. Dr. Dennice Gayme said that at Caltech she has had very good interactions with utilities. Their people were happy to take part in seminars and meetings at Caltech and help to define problems.

25. Massoud mentioned that at Minnesota several utilities are very progressive and forward looking. For example, some have done good work on consumer behavior.

26. Prof. Mani Venkatasubramanian mentioned that he his projects with industry motivated by problems faced by the companies have worked very well and the work is taken seriously by the partner companies. Utilities view CSS as being interested solely in theory, while the Power Society is viewed as being more practical. The timing is critical; funding available today might not be available tomorrow. If our community isn't involved in determining how the infrastructure is built out now, there won't be another opportunity.

27. Massoud mentioned that controls have a major and pivotal role to play in SG. There's also a TC in power generation and control. We can connect with them. Also IFAC and AACC have committees we can work with to help in Anu's committee's work. We can help train the next generation.

28. Action Items:

- i) Brief white paper to NSF and other sponsors (for more details, please see item 17 above)
- ii) Support Anu in SG Vision
- iii) Track at CDC that Anu, Jakob, John Bailieul and Michael will hopefully be approved.
- iv) Come up with technical challenges (Anu). Example, Problems mentioned by Mani, sensor placement problem, etc.
- v) Eyad: interactive workshop
 - Anu: Pitch with goals
 - Massoud: Include utilities
 - Have a meeting one month after the CDC.
- vi) Mani: Can have targeted invited sessions with industry on new control applications.

29. The meeting was adjourned at 11am.