

Draft IEEE P2800.2 Working Group Meeting Minutes, December 06-08,2022

IEEE P2800.2 Recommended Practice for Test and Verification Procedures for Inverter-Based Resources Interconnecting with Bulk Power Systems

Chair: Andy Hoke

Secretary: Manish Patel

Vice-Chairs: Jens Boemer, Bob Cummings, Divya Kurthakoti, Julia Matevosyan, Mahesh Morjaria, Steve Wurmlinger

Meeting Date/Time/Location: December 06-08, 2022, 11 am – 3 pm ET, Virtual Meeting

December 06, 2022 Notes:

Andy Hoke kicked-off the meeting with a brief introduction. This meeting was the fourth meeting of the IEEE P2800.2 Working Group. The meeting was held virtually. In lieu of a roll call, Andy Hoke requested attendees to put their name and affiliation in the chat window. Attendees were also asked to record attendance at <https://imat.ieee.org/attendance>; however, some issues were identified with iMat system. The TEAMS attendance will be used along with data from iMat to record attendance.

Quorum was achieved. Andy Hoke presented the agenda. The agenda was approved with no discussion, objections, or abstentions.

The IEEE SA Patents & Copyright policies along with Participants Behavior Expectations were presented.

Andy reminded attendees that meeting minutes for the previous meeting had been posted on iMeet for WG review. The minutes of the previous meeting were approved with no discussion, objections, or abstentions.

Andy Hoke briefly discussed scope and objective of the IEEE P2800.2 and presented few key strategic questions which would be discussed during the meeting. Andy emphasized that P2800.2's goal is to write procedures to verify that IBRs conform to IEEE 2800. Defining (or re-defining) an interconnection process is not in the scope of IEEE P2800.2.

SG1 Discussion

Andy Hoke presented new SG1 material. The flow chart of 2800 conformity verification process summarizing how the various subgroups' content interrelates was discussed. Andy also mentioned that some requirements in the base standard may not be clear, especially for hybrid IBRs. Those requirements would be listed in 2800.2. Patrick Hart mentioned that it would be great to have those requirements in question resolved either in 2800.2 or in the base standard.

Reigh questioned inclusion of design process in the 2800.2 work process. Is the standard about the design process or verifying that IBR plant conforms to requirements of the base standard? Jens Boemer suggested to discuss this further during SG3 session. Also noted was that the 2800.2 should not define responsibilities for entities (i.e., IBR owner, TS owner, TS operator, etc.).

A few important comments are as follows:

Pramod G: There is no pass or fail criterion for type test because most requirements apply at POM. Update SG2 part of flowchart to reflect this.

Steve W: In SG2 part of the flowchart, yes, the path showing “some requirements testable” is necessary because base standard defines most requirements at the plant level. Plant could use supplemental IBR device to conform with some requirements.

Jens B: The final design evaluation for conformity assessment should be done using the verified plant model. The preliminary assessment may be done using the best available plant model.

It was clarified that the intent is to not type test IBR unit (or other relevant equipment) every time control parameters are changed.

Divya K: Emphasized that the 2800.2 should be careful in declaring when the plant is placed in service.

Venkat K: requested to clarify meaning of “plant placed in service”.

Nath V: On SG4 chart (clause 7), what is the justification for modifying IBR plant if IBR plant does not meet 2800 requirements in the field? Venkat K agreed.

Manish P: may be worth adding a note that if plant does not meet 2800 requirements, then investigate why? The culprit may be on the grid side (i.e., other plants in the area, changes to transmission network, system operating condition, etc.).

Andy thanked everyone for providing feedback. SG1 will make changes to address raised concerns.

SG2 Discussion

Pramod opened the SG2 discussion by going through the logistics of the subgroup, and the subgroup’s scope which is based on clause 12.2.2 and Table 20 in 2800-2022.

Steve W: The base standard lists a power plant controller (PPC) as a supplemental IBR device. Some in the SG took exception to that, because in the majority of IBR plants, the PPC is not “supplemental”; it is essential, a necessary element involved in nearly every plant-level function.

Reigh W: The supplemental IBR devices are essential, by definition in IEEE 2800.

Steve W: There will be many variations of IBR plant configuration and division of functional responsibilities, so we can’t write highly prescriptive type tests for every one of those. Type test specifications will necessarily have to be more flexible than they were in, say, 1547.1-2020.

It was recognized that there is need to specify the capabilities of the test setup, including primary sources and grid connection/simulator. The draft 0.3 includes some placeholder text copied from 1547.1.

Next methods of performing type tests were discussed. It was noted that some type tests might not be able to be performed in a laboratory, or some tests may require certain conditions to be met (e.g., a test of a wind turbine that is dependent on the actual wind speed).

Pramod: A lot of WTs are tested in the field on prototype turbines, but WTs are moving increasingly to laboratory testing because of needs for controllability and for things like fault tests.

Pramod: Some type tests produce data that will be used by other SGs in other stages of the plant evaluation.

Pramod: The equipment setup itself might test the entire IBR unit, or subsets of the equipment (e.g., CHIL). For example, in a WT, it might not be necessary to have the entire nacelle and converter unit for a test. In other cases, PHIL might be needed to get a truly meaningful test.

Pramod: Calibration is essential when using any external device to measure EUT performance. These must be calibrated using a traceable standard.

Mark S: Field testing has been done from 35 kV up to 200 kV, but the equipment becomes prohibitively large and expensive.

Steve W: Can you even find meters with a 17025 calibration at such high voltages?

Jens B: Suggested SG2 to start looking at Tables from SG3 in Draft 0.3, Clause 6.5.3.2: Basic performance and protection verification tests. It could be good to have a unified set of "tests" that are coherent across the various subgroups, and they could be specified in tables in a normative annex to 2800.2."

Gustavo B: It would be good if IBR units internally record data during system events. The usefulness of high-speed event recording by relays in event analysis is well-known. IBRs should use COMTRADE or something like this at the IBR unit level. Basically, transfer the experience from the protective relay industry to IBR units.

Pouyan: Most SVCs have a DFR built into the control system, so susceptances, control signals etc. recorded by the actual control system can be recorded during the event. The recommendation is that the IBR units should have some in-built DFR capability to record some of these things itself, so that we have recorded data on what the IBR unit "thought" was going on.

Steve W: The IBR unit has internal datalogging, so does the PPC. How do we verify?

Gustavo B: Meant to refer to the IBR unit, not the plant level. Wants to see recording capability at the low-voltage electronics level, so we can retrieve them post-event, or after a signal-injection type of test. Gustavo is on the IEC committee standardizing frequency measurements by IBRs and sees value in getting that unit-level data during events.

Pouyan: Some of this will be handled by other SGs in 2800.2.

Manish: Measurements that need to be recorded at the unit level are already in the base standard. Andy agreed.

Pramod: Data acquisition cards and transducers need to be calibrated to ensure that they have the required accuracy.

Pramod: We will need procedures for verifying accuracy of measurements. Hopefully in many cases we can simply refer to existing standards, and we might be able to adapt some sections of 1547.1.

Steve W: Want to focus a bit on the Summary statement in red. SG2 will look at the SG3 list of tests. Might be some differences between the plant level, and the unit-level response to each of the functions spec'ed in Table 20. Might be IBR unit, might be IBR unit + PPC... the test procedure will vary in each of these cases. Because of all these variabilities, type tests won't be as straightforward as writing a specific procedure. There will have to be more general procedures that can accommodate all of these different situations.

Pramod: The "HIL" could be either CHIL or PHIL as appropriate.

Amir K: Is this mainly aimed at the PPC, not at the IBR unit?

Pramod: It will depend on the architecture. The local controller will have some role in the overall realization of the function, but testing that local controller capability might not require that we have the entire HW setup; CHIL might suffice.

Ratan Das: The test procedure can become overwhelming if we're not careful. OEMs have their own extensive procedures. What level of detail do we want to give? Will we need to put some procedures in the annex? Main goal is to demonstrate compliance with 2800, but 2800 doesn't give much detail so the detail will have to be in 2800.2.

Steve W: That pretty much sums up the fundamental difficulty faced by this SG. How much detail? What variations of equipment/architecture are covered? Or do we just provide general guidance on what should be tested and what the test should demonstrate, and leave the specifics of the test up to the testing personnel?

Pramod: We'll highlight the main components of what needs to be measured. Independently of the test setup, the signals need a certain accuracy and to be recorded for a certain duration, so some of that high-level guidance will be in the main document. Details may go into an annex.

Jens B: Remember that Andy H got us copies of FGW TR3 and some of the other German documents. A lot of these questions had to be answered by the writers of those documents, so perhaps we can draw from there. There were a lot of long tables for type tests and plant-level verification.

Pramod: Yes, agreed. In FGW, most requirements are at PoC, but in 2800 most requirements are to be met at the POM. So, there are several aspects in which FGW doesn't address our key challenges.

Ling Chen (SunGrow): Combined testing of IBR units plus supplemental equipment, e.g., PPC. Utilities want clients to benchmark both the IBR units and the PPC, in the lab and backed up by field test results. This is a difficult task because the IBR units and PPC are provided by different OEMs. How do we work with PPC vendors to get all of this type-tested? Hopes that SG2 can provide some guidance on testing this equipment together.

Pramod: We need to align with other SGs on the plant-level evaluations and how the unit-level tests connect to those.

Type test results and information:

Pramod: If requirements cannot be verified via type test, the type test can provide data to SG3 and others for plant-level evaluation.

Steve W: Even though PFR might be the PPC interacting with something else, there's still probably a type test to be done on the PPC to make sure it's doing what it says it's supposed to do, in an acceptable period of time. The PPC's performance needs to be evaluated SOMEHOW.

Pouyan: There's no value in connecting a PPC to an inverter unit in a factory and making sure it does PFR. If we do an HIL test making sure that the IBR unit responds as expected to an input signal, that's fine, but don't require that each PPC get connected to each IBR unit in a type test. Steve W agreed.

Invitation to contribute to SG2

Steve W: So far, SG2 has very little on actual test procedures, and that's what we'll work on next. We'll start working through each of the Table 20 functions, writing a procedure for each as required.

Amir Kazemi: How will data from the type tests be used, especially for things like model validation? Will we define a "validated model"?

Jens B: Model validation procedures and pass/fail criteria are part of SG3 and SG5.

Pramod G: The requirements for type-test data that will be obtained at unit level but used at plant level need inputs from other SGs.

Pouyan P: We could write up a simple example in the Annex, pulling from other IEEE papers, showing examples of, say, an LVRT type test and how it might be done, and how one might know whether the unit "passed". We don't need examples of everything. Pouyan doesn't believe in quantitative pass/fails; "engineering judgment" has to come into play here.

Steve W: Right. The type test is providing information on the capability and performance of a particular component of a plant. This needs to be done prior to putting stuff in the field. For example, we need to know in advance whether an IBR unit can ride through, because if it can't then the plant won't.

Rajat M: The unit capabilities might not always be a complete representation of what the plant can do, because some functions may be handled by supplemental devices. As long as an OEM can prove via type tests that the unit is capable of doing what the OEM says it's capable of doing, then we're covered; that's what we need. The rest then falls to SG3.

Ling Chen: What he would like to see from the OEM side would be that the type tests are verifying the inverter's stated capability, and they also have to be as broad as possible. For example: say equations XYZ are implemented in the inverter. Then the type test should prove that equations XYZ are implemented correctly. Beyond that, then the model of the unit will implement equations XYZ, and at the field test stage we're worried only about parameter adjustment, not capability demonstration. We don't want a situation where something will appear in the field that will take us all the way back to the type-testing stage.

Cross-SG Handoffs and Definitions

Jason MacDowell discussed need for collaboration between SGs as well as some common terminology/definitions that are expected to be used by multiple SGs. Jason then resented definitions of “verification” and “validation” from NERC MOD-026 which is going through round of balloting at this time. Then proposed definitions of following were presented: verification, testing, conformity assessment, validation. Also presented was a conformity assessment process flow and information handoffs.

Meeting in recess at approximately 3 pm ET. WG to reconvene at 11 am ET on December 7, 2022.

December 07, 2022 Notes:

FGW TR3 Presentation

Manish Patel kicked-off session with a reminder to be mindful of IEEE policies and agenda for today.

Jens Boemer introduced Fritz Santjer from FGW (Germany). Fritz provided a brief overview of FGW-TR3 (Determination of the Electrical Characteristics of Power Generating Units and Systems, Storage Systems as well as their Components in Medium, High and Extra-High Voltage Grids). The power generation unit (PGU) in FGW TR3 is equivalent to IBR unit in IEEE 2800. The presentation was very informative and will be posted with other meeting materials.

Jens B – Grid code requirements in Germany apply to the overall plant and not only units. Fritz agreed.

Are there any pass/fail criteria for conformity assessment at the unit level? Yes.

How often requirements in addition to already in various grid codes are specified? Generally, there are not any additional requirements.

All WG members that can access iMeet can review the FGW technical guidelines TG3, 4, 8 and 9 at <https://ieee-sa.imeetcentral.com/p/ZgAAAAA3YS3>.

The presentation was well received with engaging Q&A.

SG3 Discussion

Jens Boemer kicked off SG3 discussion.

SG3 is seeking feedback from WG members on following:

- Overall structure of clause 6, definitions, and responsibilities.
- How the language from the informative Annex G of IEEE 2800 have to be modified, if at all?
- Is the use of ‘best available model’ inside or outside the scope of P2800.2 conformity assessment?
- Is there value in including model quality ‘checklists’ with pass/fail criteria?
- Is the level of specificity of the tables for ride-through tests in the early draft of plant performance verification tests adequate and sufficient?
- Any additional feedback?

The WG members were made aware of placeholder definitions for conformity assessment, positive-sequence stability dynamic model, generic model, model, model benchmarking, testing, verification. The SG3 may add definitions for following: EMT model, best available IBR plant model, aggregated IBR plant model, detailed IBR plant model, continuous commercial operation, and trial commercial operation.

Pramod G: Will definition of conformity assessment also include supplemental IBR devices? Jens answered that requirements in the base standard are applicable to either IBR unit or IBR plant only. Bob expressed his concern with plant controller being called a supplemental IBR device.

Ritwik C: Noted that definition of conformity assessment is specific to 2800 & 2800.2. Ritwik recommends using an existing definition from the IEEE dictionary.

Pouyan P: Suggested to add a definition for steady-state power flow and short-circuit model.

Henry G: Why not differentiate between phasor-domain with time-domain?

It was noted that more discussions to take place in SG3 calls.

Next, clause 4.4: responsibilities was presented.

Pouyan P: Does not have objection to proposed language, however, wonder if annexes summarizing international practices are necessary?

Ritwik C: Do not have strong opinion either way but would like to see language revised a bit for clarity. Jens B took a note.

Rajat M: Agrees to keep in principle.

Nath V: Recommends striking "trial operation". In general, if there are any exceptions agreed upon by TS owner/operator should be recognized here.

David Z: There should be flexibility for all parties, just in case necessary.

Ratan D: Recommends keeping an annex summarizing international practices. Bob C agrees with Ratan.

Manish P – Encourages to write 2800.2 with as much passive language as possible. Janos R and Nath V agreed.

Next clause 6: design evaluation was presented. Regarding path B in the flowchart (using best available models for design evaluation), it was suggested to add a note that this path is outside the scope of final conformity assessment. It may be used by IBR developer/owner during the design phase of the IBR plant for risk management and to prepare for final conformity assessment. Michael Ropp agrees with the added note.

Ratan D: Instead of adding this note, why not just completely drop Path B?

Nath V: Agrees with Ratan. However, Nath would like to see minor tweaks to allow for flexibility in cases where for IBR unit design process where verified model may not be readily available.

Pouyan P: Also agrees with Ratan and Nath.

Jens B recognized the feedback and SG3 to address.

Next questions: Is there a value in model quality checklist? Are there any tests for verify conformity assessment missing?

Test structure was briefly presented due to lack of time. Jens encouraged all to provide feedback, especially seeked feedback from utility members, with what level of detail should be included in 2800.2.

PQTF Discussion

Dave M and Eugen S kicked off the discussion. Eugen presented slides on summarizing some of the thoughts/discussion of the PQTF regarding harmonics of IBR plants. Dave did not have time to review the PQTF draft for PQ commissioning recommendations that is forwarded to SG4.

Ratan Das mentioned that different projects will have different harmonic studies timelines and procedures. Eugen also agreed that all requirements should not apply to all plants, smaller plants need less consideration. Andrew Issacs also mentioned that many plants have a very low risk of harmonics problems, so “how can we be useful and do certain things?” Pouyan also stressed that harmonics problems have been rare in certain plants, so can we (by exception) determine which projects when and where need to be studied.” Wilsun Xu also mentioned varying needs for such studies, that most IBR are slight sources of harmonics. Wilsun put some very useful general requirements for harmonics studies in the meeting chat.

Amir mentioned that most projects in the US don't have existing PQ monitors, Andy pointed out that this is a requirement in IEEE 2800 going forward.

Meeting in recess at approximately 3 pm ET. WG to reconvene at 11 am ET on December 8, 2022.

December 08, 2022 Notes:

FGW-TR4 Presentation

Jens Boemer introduced Jens Fortmann from HTW Berlin – University of Applied Sciences. Jens Fortmann provided a brief overview of FGW-TR4 (Conformity Assessment of Unit and Plant-level Capability and Performance with Technical Requirements). The presentation was very informative and well received. The presentation is available at <https://iee-SA.imeetcentral.com/p/ZgAAAAA8zyh>. The FGW technical guidelines TG3, 4, 8 and 9 are available at <https://iee-SA.imeetcentral.com/p/ZgAAAAA3YS3>.

For conformity assessment, detailed fundamental-frequency plant models are used in Germany. Jens B emphasized that for 2800.2, we must decide whether to follow that approach or use EMT (detailed or aggregated) models or a combination of both depending on requirements.

There are many things in measurements that cannot be captured in simulations done using either EMT or fundamental-frequency plant models. This makes it extraordinarily difficult to make an automated way (using quantitative approach) to decide conformity assessment. Jens Fortmann clarified that in 95% of cases automated approach works fine and engineering judgement is needed for remaining cases. Pouyan P mentioned that automated (quantitative) approach may work for unit level conformity assessment but for plant level assessment based on commissioning tests, qualitative approach is more appropriate. Jens F clarified that automated approach used in Germany is for field tests but at a unit level. Jens F emphasized that for large plants, things become very complicated.

Nath V: I would advocate that model validation should not necessarily mean "trace matching" particularly for RMS models. RMS models by definition do not fully and accurately represent the actual product. If there is an expectation to closely match specific traces, then often the only way to do it is by making changes to the model that might result in greater structural deviation of the model from the actual product. In other words if you force changes to a RMS model to perfectly match one specific trace, then you might have made the model's accuracy worse for traces that were not evaluated.

SG4 Discussion

Divya K. presented progress made by SG4 since the last WG meeting. Key highlights are as follows:

- WG members are encouraged to review draft language in iMeet folder
- Scope of P2800.2 materials is limited to verification of 2800 requirements. Other commissioning tests that may be performed for other purposes are out of scope.
- Divya reviewed draft language from D0.3.
- Ratan: Can we include a table of which requirements are verified in commissioning and as-built vs which are verified via modeling?
 - Divya: Currently we are only proposing four commissioning tests, because we are limited to what is feasible in a plant-level field test. We can summarize that in a table.
- Gustavo: How will we deal with frequency control? Divya: Frequency control requirements apply at POM. The As-built Evaluation just makes sure the plant and its settings are as designed. There is also a commissioning test for frequency controls.
- Wilsun: The proposed framework looks good. Can we include some background information on the system status during the tests? Divya: We are working on an annex to describe what conditions should be recorded for each commissioning test. We will provide guidance, but some details will be system-specific. There may be some limitations on what information is allowed to be shared on the transmission system.
- Manish reminded the subgroup to use "should" language rather than "shall" language in alignment the status of P2800.2 as a recommended practice
- Ratan requests an example of a good commissioning test report. Some concerns were expressed on whether this is in scope of an IEEE standard; it will be considered in the subgroup.
- Nath asked to understand what is in the draft related to islanding protection. He asked how this can be verified in an as-built evaluation, given that it can be a complex, multi-parameter behavior. The WG discussed this. Discussion will continue in the subgroup.
- Divya presented the proposed language related to commissioning tests of reactive power capability. The extent of this test depends on the transmission operator's ability to accommodate it. Reigh mentioned that data from some critical IBR units should be recorded in addition to grid conditions; the concern is that IBR units far from the POM could be the limiting factor in reactive capability, but they might not become limiting if the test can only cover part of the reactive capability. Divya asked OEMs if they have any concerns with the language on page 65, last paragraph. Divya emphasized that the intent is to validate the plant model based on the limited tests that are feasible. The WG discussed this, and the discussion will continue in SG4.
- Divya reviewed the proposed language on voltage-reactive power control mode test procedures. It contains two optional procedures. The WG did not express concerns.

- Divya presented the draft PFR commissioning test procedures. There are two optional procedures; at least one should be performed. These procedures use synthetic frequency signal injection. The WG did not express concerns.
- Divya presented the draft FFR commissioning test procedures. The procedure for PV and storage is the same as the PFR test procedure. The FFR test procedure is different for wind turbines because the requirement is different in IEEE 2800. Patrick Hart asked if the procedures can instead be separated by capability instead of resource type. Divya explained that IEEE 2800 already separates the requirement by resource type. Patrick asked how an IBR that is neither wind, PV, nor BESS would apply the test (e.g. a variable-speed hydro plant or a wave energy plant).
- Bob Cummings asked if the unit-level FFR capability is captured in the commissioning test. Divya stated that the proposed test samples a subset (“e.g.” 20%) of unit responses. There was discussion on details of the FFR test for plants where FFR controls are implemented at the unit level, and an edit to the draft language was proposed. There was discussion of whether the 20% number is adequate. It will be taken back to the subgroup.
- There was discuss in the chat about whether 2800 applies to hydro plants that are interfaced via power electronics. Kay Chen stated that she did not believe such plants to be in scope. Others stated that hydro plants coupled via power electronics are in scope of 2800, citing the 2800 PAR. However, it was noted that most hydro plants are not IBRs. However, most new proposed pumped hydro plants are variable speed, and hence are IBRs, though they have different properties from other IBRs. This will be taken back and discussed further in SG4 meetings.

SG5 Discussion

Julia M. presented progress made by SG5 since the last WG meeting. Key highlights are as follows:

- Julia summarized the pre-amble to the subgroup 5 scope. It states that a change in a plant that could result in failure of compliance with 2800 should result in re-evaluation of the plant’s compliance.
- Julia summarized the proposed approach to post commissioning model validation, which is based on the commissioning tests from SG4.
- Jens asked whether SG5 is considering aggregate plant models or un-aggregated plant models. Julia stated that SG5 is considering aggregate plant models.
- Julia noted that Table 19 of 2800 contains sufficient data collection requirements
- Julia stated that that models used for post-commissioning model validation should match field conditions as well as possible
- Julia summarized the proposed model validation approach for reactive capability. Reigh asked whether a full model could be used for steady-state reactive power validation. Julia stated that the SG believes that should have been validated in the design evaluation (SG3), so there is no need to repeat it in SG5.
- Ratan asked to clarify the scope of SG5 relative to the plant life cycle. Julia stated that SG5’s procedures occur after the plant has been built and P2800.2 commissioning test have been completed (as well as previous steps), and that the SG is agnostic as to whether the plant is in commercial operation or not.
- Julia summarized the proposed model validation approach for voltage and reactive power control. Nath asked about challenges to exact matches of field tests and model results, especially related

to grid conditions and plant input power conditions. The WG discussed this extensively. Julia stated that this can be taken back to subgroup. Nath recommended that SG5 also includes examples of unsuccessful model validation with additional guidance on further actions. Jason promised to share such examples with the subgroup.

- Julia summarized the proposed model validation approach for PFR. Some work still to be done by the subgroup to address provision of PFR at inverter level rather than plant level and how to handle individual inverter test results during IBR plant model validation.
- Julia summarized the proposed model validation approach for FFR. Gustavo asked about how the frequency signal injection would be injected. Pouyan clarified the proposed approach, which does not involve actually trying to change grid frequency. Instead, the IBR plant or unit would need to include a signal injection port. Gustavo asked whether control hunting between IBR units can be a problem. Jason clarified that this can be avoided through proper parameter selection in droop controls, and/or via a power plant controller.
- Julia summarized the proposed approach to post-commissioning monitoring. Xiaoyu asked how this relates to other aspects of the conformity verification process. Julia clarified that SG5 focuses on the conformity verification and model validation process during plant operation (post-commissioning). Xiaoyu noted that for the past two days of WG meetings he was getting an impression that IEEE 2800 applies only during commissioning process. Julia responded that IEEE 2800 is a performance standard and applies during the entire IBR plant lifecycle.

After the SG5 discussion, there was a brief discussion around clarifying which types of models are used when, and a proposal for a chart or figure in the standard to clarify that.

Andy asked meeting attendees to join any subgroups or task force they are interested in to continue to develop the technical content of IEEE P2800.2.

Andy thanked the subgroup leads and working group members and adjourned the meeting.