# Meeting Agenda

* Reports:  
  + Publicity: Paul/Chan  
      
    Background informational document produced. Need to get to Kay.  
    Need work on the Website.  
      
    Need to get visibility on who has signed up for the Boot Camp.
  + Areas of Participation form review  
      
    Use Integrated Application instead of demo terminology  
      
    Form posted- All vendors should use check-out/check-in and complete their entries prior to the end of May.
  + SCL Group: Christoph, Bruce – to assist and move the activity along.  
      
    Need ICT vendors to participate in this group.  
      
    Next meeting on May 17th 4 PM CEST.  
      
    Decision: IEDs will have unique names throughout the IOP system.

Time Sync: Bernhard

Established GOOGLE group, time sync folder on sharepoint, old test cases have been copied.

Established a mission statement: 61850-9-3 and c37.238 focus and interoperability for them. Provide a test bed for people from the integrated application to debug problem implementations.  
  
Need to get the layout of the room to Window. Kay to get the layout.  
  
Next meeting Weds May 24.

Draft of test cases available and posted.

Will be adding MIB testing. Not many implementations support MIBs. Still waiting.

GPS Repeater for Integrated Application.

Need to add tests for mixed 61850-9-3 and C37.238:2017

For devices needing GPS input, they must be able to operate with no antenna current draw (more precise wording is going to be provided).

From meeting 2017-04-13

Test cases from 2015 IOP reviewed

* New topics:
  + GPS Security (Spoofing, Jamming)
  + HSR & PRP in combination with PTP
  + GLONASS simulation
  + Leap second handling in IEC 61850 ED 2.1 – Move to integrated application testing
  + GPS Repeater may need to be over coax.
* Equipment – still in need for suppliers for transparent clocks
* Agreement reached that everybody submits what equipment will brought to IOP – Bernhard to send out questionnaire
* Key finding: October is closer than one might think
* Herb to check on GPS Repeater.
* R-GOOSE: Herb  
    
  Participants: Triangle, SISCO, GE, CISCO, Vizimax  
    
  Infrastructure vendors to be determined.  
    
  Preliminary R-GOOSE test cases posted. Need Firewall vendor input (CISCO, Palo Alto will provide).
* Security: Herb , Frances, Joel, Ralph, ABB  
    
  Started working towards test cases (Client/Server cases posted). Next meeting is  
  this Friday.  
    
  May 19th 10 AM EST is the next meeting.  
    
  Tony to round up firewall and router vendors.
  + - Palo Alto – in contact, evaluating participation
    - CISCO – will participate
    - Siemens RuggedCom – will participate
    - SEL – Amandeep to check
    - Belden/ Hirschmann - Bernhard
    - NovaTech -- will participate

* GPS Inputs for devices and clocks

For devices needing GPS input, they must be able to operate with no antenna current draw (more precise wording is going to be provided).

* Integrated Application and Test Cases  
  + Need to find an infrastructure lead.
  + Discuss remote file access purposes (security related)
  + Settings Group Test cases
  + Resiliency of GOOSE publishers (maybe from SCADA publisher)
  + Comments on Integrated Application set-up to Jun by 2017-04-24.
    - 1 SCT vendor per bay. SCT vendors will provide a resource to perform the bay/substation engineering task in advance of the IOP and during the IOP.
      * Grid Software – will generate SSD for the Integrated Application
      * Helinks
      * Kalkitech
      * (ABB (under discussion), Schneider (under discussion), Siemens, Efacec (under discussion) need more information).

* + - Software has been developed to allow exchange of GOOSE over the Internet. The software has been posted at: <http://iec61850.ucaiug.org/2017IOP-NOrleans/IOP%20Documents/GOOSE%20to%20GOOGLE%20Bridge%20(AS-IS%20Software)/XMPPBridge.zip>  
        
      GoogleTalk was found to have performance problems and OOD packet delivery (non-conformant to XMPP). New software being tested using MQTT. May be looking for somebody to host the MQTT broker. Triangle Microworks has set up hosting but performance issues are still being evaluated. Initial latency measurements are worse than GOOGLETalk, but has no dropped messages.   
        
        
      Decision: Since GOOGLE Talk has service drop outs, the MQTT version should be used. Instructions and revised software is posted. Triangle Microworks has provided a publically available MQTT broker located at: **45.20.211.173**
* High Level Use cases and Abstract Test Cases (coordinated by Joel)  
    
  See the following folder: <http://iec61850.ucaiug.org/2017IOP-NOrleans/IOP%20Documents/General%20Integrated%20Demo%20Information/Test%20procedure%20drafts>

Joel will put together a matrix of the ACSI services tested.

|  |  |  |  |
| --- | --- | --- | --- |
| Item | Responsible People | Estimated Comp | “Submitted” |
| IED Isolation for maintenance and testing in the field | Herb Falk Andreas Klien |  | Yes |
| IED Replacement | Bruce Muschlitz | 10-03-2017 | Yes |
| IED Addition to Bay | Vladen | 17-03-2017 | Yes |
| IED Failure/power down | Michael Haecker | 10-03-2017 | Yes |
| Clock Failure – Station Bus | Peter Pfisterer (TUV-SUD) |  | Yes |
| Network Failure | Bruce Muschlitz | 10-03-2017 | Yes |
| Merging Unit Failure | Dean | 31-03-2017 | Yes |
| EAP/Failure | Herb, Chan/IT | 17-03-2017 | Yes |
| Clock Failure – Process Bus | Peter Pfisterer |  | Yes |
| Cyber Intrusion of GOOSE | Herb Falk | 17-03-2017 | Yes |
| Reporting to SCADA Masters | Mark and Ursla – Copadata | 12-04-2017 | Yes |
| SOE Testing (Logging) | Vladan | 12-04-2017 | Yes |
| Security Event Monitoring (Syslog, SNMP, IEC 62351-7) | Frances, Herb | 12-04-2017 | In progress as part of security test cases |
| Secure IEC 61850 MMS | Joel, Ralph, Herb | 12-04-2017 | In progress as part of security test cases |
| Leap Second Test (Based upon 2.1) PTP and SNTP | Herb and Joel |  |  |
| Clock/GPS Time Discontinuity | Herb and Joel |  |  |
| Settings Group |  |  |  |
| Matrix of ACSI Services Covered – email: jgreene@trianglemicroworks.com | Joel | Ongoing until all test cases are complete. |  |

* Boot Camp: Herb  
    
  People interested in being instructors should send email to [herb@sisconet.com](mailto:herb@sisconet.com) and also provide an indication of what they would like to present based upon the current outline.  
    
  Meeting of “instructors” scheduled for May 1st.

# Logistics

URL for IOP Site: <http://iec61850.ucaiug.org/2017IOP-NOrleans/default.aspx>

Email Exploder: [iec-61850-iop-2017@googlegroups.com](mailto:iec-61850-iop-2017@googlegroups.com)

Boot Camp: October 13-14

IOP: Setup: October 14, Testing October 15-19

Hotel: New Orleans Downtown Marriot at the Convention Center  
 859 Convention Center Blvd  
 New Orleans, LA 70130  
 Phone: 504-613-2888

web: <http://www.marriott.com/hotels/fact-sheet/travel/msymc-new-orleans-downtown-marriott-at-the-convention-center/>

IOP Reservation Link: <https://aws.passkey.com/go/UCAIOP> (room rate $189 + tax/night)



**Participation fees:**

|  |  |  |  |
| --- | --- | --- | --- |
|  | UCA Members (USD) | Non-member  (USD) | Comments |
| Participating Company | $ 6,500 | $ 8,000 | Includes one Individual if staying at the IOP hotel |
| Individual Staying at the IOP Hotel | $ 1,000 | $ 1,350 | For non-members, the fee includes UCA membership. |
| Individual not staying at the IOP Hotel | $ 2,000 | $ 2,350 | For non-members, the fee includes UCA membership. |

Participation fees are due by July 1st.  
  
Individual fees can vary after.  
  
Kay will check on hotel cut-off - June.

**Boot Camp fees and logistics:**

The Boot Camp has the ability to provide training for 30-40 people. Reservations are first come and will be based upon payment of a registration fee of $250.

WG10 Meetings will be held at Entergy (October 23-27). Entergy is located at:

Entergy  
639 Loyola Ave  
New Orleans, LA 70113

# Known Participants and Witness

|  |  |  |
| --- | --- | --- |
|  | | Participating Companies |
|  | ABB | |
|  | ArcInfo | |
|  | CISCO | |
|  | Copadata | |
|  | Doble | |
|  | Efacec | |
|  | GE-Alstom | |
|  | GENTEC | |
|  | Grid Software | |
|  | Kalkitech | |
|  | NovaTech | |
|  | NREC | |
|  | OMICRON | |
|  | OSII | |
|  | Reinhausen | |
|  | RTDS | |
|  | Schneider | |
|  | Schweitzer | |
|  | Siemens | |
|  | SISCO | |
|  | Sprecher-automation | |
|  | Subnet Solutions | |
|  | Toshiba | |
|  | Triangle Microworks | |
|  | Vizimax | |

|  |  |
| --- | --- |
|  | Witnessing Companies |
|  | Amprion |
|  | BPA |
|  | CenterPoint Energy |
|  | CEPRI |
|  | ComEd |
|  | ConEd |
|  | DNV/GL |
|  | Eandis |
|  | EDF |
|  | Entergy |
|  | Entso-e/Elia |
|  | EPRI |
|  | Hydro Quebec |
|  | It4power |
|  | National Grid |
|  | NERC |
|  | NIST |
|  | NYPA |
|  | Reliability First |
|  | SCE |
|  | SWECO |
|  | Tesco |
|  | TÜV SÜD |
|  | UCA |

Hold Over

1. Introduction
2. Discuss philosophy of testing for this IOP –
   1. Integrated application
      1. Multiple Bays with IEDs and HMIs
      2. Communication inter and intra bays
      3. Process bus with multiple Merging units
      4. Multiple grandmasters
      5. LSVS/LGOS
      6. Mod/Beh Testing
      7. Testing isolation and field testing
      8. Application possibilities
         1. Transfer Trip Zone1->Zone 2
         2. Breaker Fail (similar to Cigre)
      9. ED2<->ED1 IOP (maybe have a separate bay for ED1 devices?)
      10. SCADA/Gateway (e.g. IEC 61850-90-2 and IEC 61850-7-1)
      11. 90-5/Synchrophasor testing
      12. NERC/CIP perimeter testing last two days?
      13. HSR/PRP

Jun (Doble), Joel Greene, Herb to come up with high level constructs.

* 1. Sub-testing areas
     1. Time Sync (Chan to liaison with IEEE ICAP)
     2. NERC/CIP (Herb and Scott, Chan to add user input)
        1. Firewall/Router
     3. SCL (may not be needed if integrated application is good enough)
     4. RGOOSE

1. Marketing
   1. Entergy to put press release together – Chan to lead
   2. EPRI will also socialize
   3. What do we want to do with Press attending/reporting on the IOP?

# Questions to discuss

1. Discuss people being added to the group that have little or no intent to participate or witness (call them lurkers for now).  
     
   So accept “lurkers” until they become disruptive.
2. Boot Camp Agenda and lead. – Herb to organize.
3. Students – Chan to work on scholarship application form. Kay to work out a mechanism to accept corporate donations to a scholarship fund for students. Companies that contribute to the fund get to review and accept the students. Companies should send candidate universities and professor contact information to Chan. Companies that decide that they want certain universities/students present need to indicate that and donate to the fund.
4. Network Infrastructure testing
5. NIST set of questions from January 18, 2017
   1. Who is bringing clocks…
      1. 61850-9-3 and C37.238 2011. C37.238 2017 a possibility.
   2. External determination Time Inaccuracy – yes it will be tested
   3. Holdover testing – probably yes
   4. NIST to provide detail about usage of IOP Information desire.
   5. Kay will check about government rate in our block or rooms.

# SCL Testing Testing Ideas

1. Is it possible to mention explicitly test cases including ENTSO-E requirements on SCL: information exchange between functions ; virtual IEDs ; telecommunication network configuration; ...  This is of course depending on the WG10 and Jörg TF progress but there are probably already some possibilities ...

# Time Sync Testing

Will be facilitated by Bernhard Baumgartner (bernhard.baumgartner@omicron-lab.com).

# Action Items

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Creation Date | Item | Needed  by | Closed |
|  | 17-11-2016 | Everybody who doesn’t have UCA IDs, get them and send them to Herb. |  |  |
|  | 17-11-2016 | Jun, Joel, and Herb to start high level discussions on integrated testing. Joel to take the lead. Joel to schedule the first meeting. |  | 10-02-2017 |
|  | 17-11-2016 | Need leads for Time Sync area (Omicron to check and respond if they still want to lead) | 15-12-2016 | 21-11-2016 |
|  | 17-11-2016 | Scott and Herb to work out high level concepts for NERC/CIP |  | 14-12-2016 |
|  | 17-11-2016 | Chan to lead user use case development |  |  |
|  | 17-11-2016 | Chan and Paul to lead on the socialization and marketing for the IOP. |  |  |
|  | **09-02-2017** | **Participants need to declare number and type of equipment and LN capability that they intend to bring. Delay in submitting this may result in not being included in the integrated application. Looking for transformer diff, Blocking scheme, breaker failure, transfer trip, line differential, line distance, POTT, etc…** | **April 15, 2017** | **Complete** |
|  | **09-02-2017** | Fix Witness resource page – Bruce. |  |  |