

2019 CIM IOP Kick-Off

August 5, 2019

Attendees:

Frank Wilhoit, Martin Miller, Karen Robinson, Ralph Mackiewicz, Herb Falk, Tom McDermott, Feng, Gerald Grey, Daniel Lowe, Margaret Goodrich

Agenda Items:

- 61968 - Testing for Messages
- 61970 - Testing for Model exchange - CDPSM and CPSM
- UCA Testing and certification - ITCA and accreditation body
 - Quality audits required by a governing body (conformance/compliance)
 - UCA to continue their responsibilities for the technical audit reviews (interoperability)
- EPRI hosting this event and providing facilities
 - Head count for participants two weeks prior to event (9/9/19)
- Submission of Models so they can be tested - 4 models for the CPSM (CIM v. 16) and 2 models for the CDPSM (CIM v 17 - if available)
 - ABB Model
 - Siemens Model
 - GE Model
 - Alstom Model
- Review test procedures
 - Discuss and issues with the model, standard or any issues there were in the past
 - UCA will publish a report after testing is complete
- Goal of testing:
 - Find problems in the standard
 - Find problems in implementation
- Participants will receive, on UCA Participation Certificate for CIM IOP testing (based on the test in which you participated)
- Deadline for sign-up September 9, 2019 for all participants

Action Items:

1. **TBD** - Willing to test CGMES if we have a minimum of two vendors participating.
 - a. Will need an RDF schema
 - b. Will need modelsWill not participate – Olivier (ENTSOE)
 - Need to get planning people involved
2. **MG Action Item** - determine which version of CIM is the latest model
 - a. CIM 17 v23 - check w/Eric Stephan – MM – Confirmed – but waiting for IEC to make this a standard. – Complete (will use if testing CDPSM)
 - b. CIM 16 v34 - check w/Eric Stephan – MM - Confirmed
3. **MG Action Item** - contact Eric Lambert and confirm participation in CDPSM testing – message sent to Eric Lambert
4. **Sutton Action Item** - work with Tony to get CIM IOP landing pages created

- a. 2019 CIM IOP attendee's registration landing page - Completed
 - b. Test procedures landing page - Completed
 - c. Landing page for all IOP documents – will be determining shortly
 - i. Schemas
 - ii. Models
 - iii. UML
- 5. MG Action Item** - post latest CIM 16 and 17 versions on the CIM IOP test site
- a. UML on the CIM IOP test site - TBD
- 6. Tom McDermott Action Item** - check with Eaton to see if they are interested in participating
- 7. TBD** - 61968 for DER (part 5) messaging (Jerry Gray) - PNNL wants to test this
- a. Part 6 - TBD (EPRI has identified companies to test this?)
 - b. Part 9 - it appears part 9 will not be participating in this test

Meeting Minutes

August 12, 2019

Attendees: Avnaesh, Margaret Goodrich, Feng Chen, Chris Kardos, Frank Wilhoit, Gerald Grey, Herb Falk, Karen Robinson, Daniel Lowe, Martin Miller, Sutton Sutherin, Ralph Mackiewicz, Rob Ward

AI – Sutton – Schedule a call on Wednesday's 9-10am CST for the 61968 – Message exchange

- Include EPRI and PNNL
- Part 5
- Send out link for CIM IOP landing page for Document (folder)
 - CPSM
 - CDPSM
 - DER – Part 5
- Send out link for CIM IOP Models (folder)
 - Include Models
 - XSD's – 3rd edition

AI – Margaret (CIM 16 models)

- Get smaller models from Alstom and Siemens – CIM 16
 - GE Alstom – 60 bus model – will follow-up with Avnaesh
- Ask AEP for a 60 bus redacted model??
- ERCOT?
- TBD - SISCO – may only be interested in testing the full import ICCP data Transfer

AI – Gerald Grey – to send Word doc for part 5 – DER to Margaret and Sutton

61970 - CPSM

Testing for the Model Exchanges – 61970:

1. Full Model Exchange
 - a. Solution test

- b. Solution exchange
 - c. Full model export
- 2. Incremental Exchange
 - a. Solution Test
 - b. Solution Exchange
 - c. Incremental Exchange Export
- 3. Model Authority Set
 - a. Model authority Exchange

Which tools will be used for the model validation and schema creation?

- 1. CIMtool
- 2. CIMspy

61970 - CDPSM – Model

We will need to get models to do testing

- 1. Eaton
- 2. PNNL

Meeting Minutes

8-19-2019

61970 – CPSM – Model

AI – Sutton/Margaret – Determine which IEC 61970-452 edition 3 document is most current published version, this will be used as the standard for testing.

- The standards document the is the most current published version for IEC 61970-452 that is being used requires the following: RDFS and UML
- In the edition published from IEC on 1-19-2017 a paragraph was added by IEC with a notable change – “voltage levels cannot be zero”

AI – Participants – Anyone wanting to test ENTSO-e has sent 61970-456 (CGMES)? The latest version [CGMES 2.4.15/IEC TS 61970-600-1/2:2017](#) was sent to us with a corresponding UML and RDFS (older version) with some read me files

AI – Feng (GE) to provide a 252 bus model (CIM v16)

AI – Alstom to provide a 60 bus model (CIM v16)

Meeting Minutes

September 16, 2019

61970 – CPSM – Model

Attendees: Sam Phillipson, Yang Feng, Margaret Goodrich, Sutton Sutherin, Feng Chen, Martin Miller,

Agenda:

1. Review who will be testing
2. Review the benefits of testing
3. Discuss Logistics for testing
 - Determine a date for testing
 - Discuss Recruiting utility witnesses for this test
 - Determine who is supplying which model
4. Discuss which tests will be run at the event – begin working on a test plan

CIM IOP Testing (61970 – CPSM and CDPSM)

- New Date for Testing is week of March 24-26 (9-5)
- Meeting sent out to WG 13 &14 for IOP testing (we need more than 2 participants for IOP CIM testing)
 - Looking to push 61970 – 452 and part 13 out to Q1 2020 March 24-26)
 - Tell David Bogen we are changing the date.
 - Companies looking to test:
 - Siemens PTI
 - PNNL
 - GE
 - Alstom
 - OSI - TBD
 - ETAP – TBD
 - Eaton
 - ABB – contact for participation
- Going to utilities to find participants
 - ~~Seada?~~
 - ICCP (457)?
 - 61970- 453?
 - 61970 – 452 (D.L.)
 - Part 13 – CDPSM (needs to include GIS models)
 - CGMES – (456) – CIM 17
 - Models need to be fixed prior to testing (in order to be compliant to the standard)
 - Use these models going forward.
 - Model Authority and Boundary sets
- Need to identify CIM17 models for:
 - Models will need to be updated to CIM17
 - 23 bus model (PTI)
 - 40 bus (ABB) Follow-up to see if this model can be used???)
 - This model has 2 model authority sets and 1 boundary set
 - 60 bus
 - 252 bus (GE)
 - Get ENTSO-E models from EU and update – TBD

- Small grid node/breaker model (Follow-up to see if we can get this model)
- Date: ~~March 24-26 (reserved from 3/23-3/27)~~
 - Several dates proposed (1st choice - March 30, 2nd choice – March 9, 3rd choice – March 2)
- Location: ONCOR - downtown
- Need 8 – 6 ft tables – in a U shape – 3 chairs per table (with testers back to the wall)
- Need about 2-3' between tables
- 2 tables in front of room
- Location for storage -
- UCA to bring laptop
- What other hardware is required?

Meeting Minutes

October 21, 2019

Confirmed: CIM IOP 2020 (61968 and 61970)

Where: Dallas, TX

Host: ONCOR

When: week of March 30, 2019 – Days are TBD

Attendees:

Gary Ockwell (advance control systems), Feng Chen, Yang Feng, Martin Miller, Herb Falk, Sutton Sutherin, Tom McDermott

CIM17 – CDPSM and CPSM

Action Items:

1. Create Test plan for CPSM
 - a. need profiles created for CIM17
 - b. 61970 – 301 – currently out for ballot
 - c. Include CGMES as part of the test plan and profiles
2. Create Test plan for CDPSM
 - a. Use current draft
 - b. Utilize the existing CIM 17 profiles
3. Network Infrastructure needed
 - a. SharePoint for file exchange
 - b. Participants should be responsible for bringing whatever is required to hook up to on-site wifi
 - c. Wifi availability in room – Sutton to confirm

4. Premise of test plans:
 - a. Round trip of files – import/export to look if enough information is maintained
 - b. Solve Powerflow
 - c. No graphics profile exchange
 - d. No dynamics
 - e. CDPSM: – test Power electronics connection? (Participants to evaluate if they want to test this)
 - f. DER? (participants to evaluate if they want to test this)
 - g. No ICCP Testing
 - h. Unbalanced testing
 - i. Chuck and Margaret – check wire spacing info – updates made to the UML for CIM17
5. Develop initial instance files and incremental files for the profiles

Meeting next Monday, October 28, 2019 at 10 am EST

Meeting Minutes

October 28, 2019

Confirmed: CIM IOP 2020 (61968 and 61970)

Where: Dallas, TX

Host: ONCOR

When: March 30, 2020 - April 2, 2020

Chuck DuBose will be test director for 61968-13 and 61970 testing

- Participants also wanted to know if SCADA and ICCP (457?) will be included as part of testing
 - o If so, who will be participating in the SCADA and ICCP testing?

Herb Falk will be test director for 61968-5

- Participants wanted to know if part 4, 6 and 9 will be included in testing
 - o If so, who will be participating in testing those parts?

Meeting Minutes

November 11, 2019

Attendees: Yang Feng, Gary Ockwell, Ralph Mackiewicz, Mike Stanislawski, Tom McDermott, Chuck DuBose

61970-301 UML link sent out to the group of people on this call

The new group email for this testing IOP is: 2019-IOP-attendees@cimug.org

<https://cimug.ucaiug.org/WG13/Forms/AllItems.aspx?RootFolder=%2FWG13%2FPart%20301%20CIM%20Base%20%5BKendall%20Demaree%2C%20Kurt%20Hunter%2C%20Lars%20Dola%20Osterlund%5D&FolderCTID=0x012000BAC29B02F4E39F4BAB80847D74C7EF8E&View=%7B3C4BDE6F%2D7A3F%2D474E%2D8F96%2D33CCE2A72999%7D>

Test mutual coupling – as determined by the testing group

CDPSM (61968-13) –CIM v 16 - changes need to be incorporated when they are available – meetings are next month.

CPSM (61970-301, 452, 456) CIM v17

ICCP testing -

AI – Chuck – need to look at Asset info section (61970-100)

AI – Chuck – add in tests for the mutual coupling

AI – Chuck – merge documentation for CIM 17 v35 (61970-100) – UML

AI – Tom to send 3 updates to the 61970-100 UML that need to be updated

AI – Chuck to produce a list of action items that can be referenced to make sure all testing activities are accounted for.

Meeting Minutes

November 18, 2019

Meeting Attendees: Gary Ockwell, Gerald Gray, Yang Feng, Tom McDermott, Chuck DuBose, Ralph Mackiewicz, Xihui Yan, Sutton Sutherin

- 301 profile has not yet been completed but it is being worked on and will be submitted shortly
 - After the 301 is submitted, the 452 will be updated.
- Cim v 16 (CDPSM) is posted to the old site and will be transferred to the new site by Friday, November 22, 2019.
- Example data files – need help working on this from this group
- Test Plan – to be adapted for CPSM and CDPSM
 - Determine Scope of testing with the Monday testing group
 -

AI – Siemens (Yang Feng) will work on these files as exports from P/SSE
AI – Chuck – will follow-up with Kurt to identify the change log of the CIM 16 to CIM 17 UML – **COMPLETED and Uploaded 11-22-2019**
AI – Sutton will post this on the SharePoint Site
AI – Chuck – Test Plans (2 – CPSM and CDPSM) will make any required changes
AI – Sutton – Contact Ralph after the sharepoint page is up and tested (will post on linkedin)
AI – Sutton – post a message about the IOP testing to all users
AI – Sutton – post the latest edition of the 61970 – 452 ed. 4 in word doc format – **Completed and uploaded 11-22-2019**
AI – Chuck – UML for CIM 17 – **Completed and uploaded 11-22-2019**

Meeting Minutes

December 2, 2019

Meeting Attendees:

Yang Feng, Chris Kardos, Chuck DuBose, Martin E. Miller, Tom McDermott

Take a look at the changes that will be posted by Chuck DuBose on the SharePoint Site for your review and feedback.

Will be testing CIM 17 for 61970

AI – Sutton to send Chris Kardos an updated meeting invite (make sure Chris is on this CIM IOP 2020 distribution list) - **complete**

AI – Sutton Send Yang Feng my contact information to create an invoice for Siemens - **Complete**

AI – Sutton contact Tom Mc Dermott re: contact person in Eaton - **Complete**

AI – Requesting a RDF (example file) for 61968-13

AI – Siemens is working on the RDF example file for 61970 (CIM 17)

AI – Chuck will contact Scott to get a copy of the comments for 61968-13 – **completed and loaded on site**

- get comments posted to SharePoint Site as quickly as they are available for 61968-13_edition 2 this is based on:
iec61970cim17v24_iec61968cim13v11_iec62325cim03v14.eap
- These comments need to be posted on the SharePoint site and most people will want to test CIM 100
- Post the link Tom McDermott sent on 12-2-2019 (see link below)
<https://github.com/GRIDAPPSD/powergrid-models/tree/develop>

AI – Sutton – get copy of test scripts used at last IOP for 61970 and 61968-13

- Need this in word document format to make changes for the next IOP

Meeting Minutes

December 9, 2019

Attendees: Gary Ockwell, Pat Brown, Chuck DuBose, Feng Yang, Tom Mc Dermott

We need to decide on which version of the UML that we will be testing during the CIMIOP 61970 and 61968-13

Margaret -

AI – Chuck talk to kurt re: 61970 classes and attributes that were missed for “power electronics”

AI – Chuck and Margaret – what should everyone attending this IOP bring with them to the IOP?

AI -Chuck and Tom McDermott – need to agree upon and freeze the UML that will be tested and get it posted/handed off to Margaret (current – 61970 cim 17v36a Margaret will add in changes and reversion this item)- **Eric Stephan handed this off to Todd Viegut at beginning of 2020.**

AI – Margaret will get the compare completed (will start January 2,2020

AI – Margaret will make updates to the profile

AI – Agreed 61968-13 ED 2 will test this standard – this includes the wires package.

Meeting Minutes

December 16, 2019

Attendees: Chuck DuBose, Pat Brown, Tom McDermott, Margaret Goodrich

Test procedures for 61970 and 61968-13 have been posted to the SharePoint site they are in their own directory on the site. Please see link below for those files.

61970

https://cimug.ucaiug.org/Meetings/Dallas2020_CIM-IOP/Shared%20Documents/CIM%20IOP%20Test%20Documents%20-%2061970/Test%20Plan/cim_gid%20interop12%20procedures-12-10-2019.docx

61968-13

https://cimug.ucaiug.org/Meetings/Dallas2020_CIM-IOP/Shared%20Documents/CIM%20IOP%20Test%20Documents%20-%2061968-13/Test%20Plan/CDPSM%20IOP%20Test%20Procedures-1.doc

Please TURN ON track changes if any changes will be made to this document and email Chuck DuBose as these changes will need to be reviewed by the group.

Action Items:

AI – Sutton and Margaret – contact individual participants to get them engaged in this event (for all the CIM IOP testing) (contact OSI to ask them to attend)

AI -

Please Note: we will be suspending this call for the holidays and will return on January 6, 2020 at 10am EST.

Please make sure you attend as we will be reviewing and working on the test procedures for the CIM IOP.

Meeting Minutes

January 6, 2020

Attendees: Gary Ockwell, Pat Brown, Dr. Yan, Jia (Joe), Chuck DuBose, Tom McDermott, Margaret Goodrich, Sutton Sutherin

1. Will be going through/reviewing the test procedures for CDPSM
 - a. Review objectives
2. A number of items have been sent from the CIMug.org – specifically from Sutton@cimug.org and I'm receiving a number of bounces. Would you please add my email address and the group email CIM-IOP-attendees@cimug.org in order to receive emails related to the 2020 CIM IOP event.

Action Items:

AI – Margaret Goodrich to contact EDF to see if we can use the EDF balanced model file generated by Eric Lambert for the 2020 CIM IOP CDPSM testing

AI – Margaret/Sutton – contact EATON and ETAP to determine participation in 2020 CIM IOP CDPSM testing

AI – Margaret and Chuck to follow-up with whether incremental files will be tested – create or have donated incremental files for testing CDPSM

AI – Margaret to bring hub, cable, computers etc – will use ethernet connection instead of wifi

AI – Chuck make updates to the test plan and post working version on the SharePoint site.

Meeting Minutes

January 13, 2020

Attendees: Chuck DuBose, Pat Brown, Margaret Goodrich, Sutton Sutherin

AI – Sutton review the document and make red-lines then hand back to Chuck.

Meeting Minutes

January 20, 2020

Attendees: Chuck DuBose, Stephan Amsbary, Pat Brown, Tom McDermott,

No notes

Meeting Minutes

February 3, 2020

Attendees: Pat Brown, Chuck DuBose, Yang Feng, Sutton Sutherin, Thomas McDermott, Margaret Goodrich, Mike Ford

No notes – reviewed the test procedures from CDP5M

Meeting Minutes

February 17, 2020

Attendees: Yang Feng, Chuck DuBose, Gary Ockwell, Pat Brown, Sutton

- 61968 – Tom McDermott to produce incremental files
- Need to find more vendors to determine if they want to participate in the 61970 testing
 - Contact – IPS, ABB and OSI, Sisco
 - GE and Siemens – were a no for 61970 testing
 - IPS was a no
 - Sutton to contact ABB and OSI, Sisco
- Next Monday we will be discussing profiles –
 - Include Margaret and Henry Dotson on the call.

Meeting Minutes

February 24, 2020

Attendees: Chuck DuBose, Yang Feng, Gary Ockwell, Sutton Sutherin

- Need to produce an XSD file (RDF files needed) for 61968-13 (Margaret or Henry?)
 - We have an EAP file for this profile – uploaded on the current CIM IOP site
 - We need this by end of week – February 28, 2020
- Test Document for 61968-13 (week of March 9th to send out for review by the team)
- Sutton send out an email to all users to let them know that the files were posted to the 61968-13 directory – (I'll send out the link with this email)
- Ask Margaret where Henry is on the 61970 – Exchange Profiles
 - ETA for completion

Meeting Minutes

March 9, 2020

Attendees: Margaret Goodrich, Chuck DuBose, Sutton Sutherin, Yang Feng, Gary Ockwell, Tom McDermott

CDPSM/CPSM – CIM IOP testing

Sutton – to contact Christine and David at ONCOR for dates in late April or May 2020.

Sutton – move meetings every two weeks – March 23

Sutton – contact EPRI – re: proposed testing date for 61958-5

Sutton/Margaret – look for more participants for testing

Margaret (and Tom) – create profiles for CDPSM and CPSM

- When profiles are available, they will be posted on the site

Chuck – work on test procedures

Meeting Minutes

March 23, 2020

Attendees: Chuck DuBose, Yang Feng, Gary Ockwell, Joe Jia, Thomas McDermott

Chuck – received an advanced copy of the 61970-452 that will be posted on the CIM IOP SharePoint site. (Autogendraft-iec61970-452-cdv)

Chuck – need a UML for 61970-452

Sutton- Determine event time for this event. A decision will be made regarding this event on April 13.

Sutton – send out the link to the group when it is back online.

Margaret and Tom – work on the profile

Chuck – work on test procedures (61968- 13)

Meeting Minutes

April 6, 2020

ONCOR CIM IOP – May 18-22, 2020 - RESCHEDULE to June – Date TBD (preferred date wk of June 22)

Attendees: Yang Feng, Tom McDermott, Pat Brown, Margaret Goodrich, Gary Ockwell, Chuck DuBose, Joe Jia

Chuck Dubose – reach out to Kurt to determine the status of the 452 Profile

Action Items:

1. Tom McDermott to send out the UML which is the basis for our testing profile and artifacts
2. Margaret – will use the UML to produce the Profile and RDFS
3. Chuck to lead a review of the profile that we will be using for testing and validate test cases

Meeting Minutes

April 20, 2020

NOTE: CIM IOP at ONCOR has been tentatively moved to the week of June 22, 2020.

Attendees: Gary Ockwell, Chuck DuBose, Thomas McDermott, Yang Feng, Xihui Yan, Margaret Goodrich, Sutton Sutherin, Joe Jia, Pat Brown

- When can the team get instance files? When will they be up on the site?
- Kurt to provide the updated 452 in May 2020
- Updated files sent out and uploaded to the site by – Tom McDermott
 - If you reviewed this document and have any feedback please contact Tom directly

Action Items:

Sutton:

- Review go forward plan at meeting on June 22-June 26
- can testing be done remotely? (what level of effort will this be)
- need web interfaces to setup for testing
- possibly need to write code (Scott Newman)

Margaret

- contact Scott Newman re: writing code for remote testing
- Send out CPSM (CIM 16) 40 bus model

Yang

- Send out Siemens instance files for CPSM (CIM 16)

Chuck

- Test Documents
- Continue to follow-up with Kurt on the 452 and artifacts

Meeting Minutes

May 4, 2020

Attendees: Chuck DuBose, Joe Jia, Xihui Yan, Margaret Goodrich, Pat Brown, Tom McDermott

- Review documents that were sent out by Tom McDermott on April 20
 - Margaret to review the CDPSM2 file
- Test procedure update – data types need to be defined

Action Items:

Sutton:

- Review go forward plan at meeting on June 22-June 26

- can testing be done remotely? (what level of effort will this be)
- need web interfaces to setup for testing
- possibly need to write code (Scott Newman)
- update (bi-weekly) meeting schedule
- send out update to on-site meeting at Oncor
 - (tentative date scheduled for June 22-June 26)
- From the date we have profiles completed – a minimum of 6 weeks will be required for everyone to get ready for testing

Margaret

- contact Scott Newman re: writing code for remote testing
- Send out CPSM (CIM 16) 40 bus model – completed April 20, 2020
- Review the CIM16 bus models (uploaded on the SharePoint site)
- Check with utilities if the proposed testing format (via remote) is a viable solution

Yang

- Send out Siemens instance files for CPSM (CIM 16) - completed April 20, 2020

Chuck

- Test Documents
- Continue to follow-up with Kurt on the 452 and artifacts
- Test procedure update – data types need to be defined within the test document

Tom McDermott and Jerry Grey

- Help out with the infrastructure to test the models remotely. We need to be able to pass large models.
- Per Tom McDermott's email from 5-4-20

From: CIM-IOP-attendees@cimug.org <CIM-IOP-attendees@cimug.org>
 Sent: Monday, May 4, 2020 11:27 AM
 To: Margaret Goodrich <Margaret@j-mgoodrich.com>
 Cc: cim-iop-attendees@cimug.org; Gary Ockwell <gary.ockwell@acspower.com>; Frank Wilhoit <wilhoit@broadheath.com>; King, Kenesha <kenesha.king@oncor.com>; Zhuokang Jia <zhuokang.jia@epri.com>; DuBose <chuck.dubose@pcitek.com>; ssutherin17@gmail.com; Gerald Gray <ggray@epri.com> <ggray@epri.com>
 Subject: RE: [2019 IOP Attendees] Functional Requirements of a Virtual Interop

Hi Margaret – I'm in a meeting with Ron Melton now, and he's pretty sure that a virtual interop could be hosted either in PNNL's Energy Infrastructure Operation Center (<https://eioc.pnnl.gov/>), or on AW (Gray). We could formulate a list of functional requirements and then pursue different options. Here is a starting outline:

1. Host and transfer CIM XML files up to MB in size
2. Secure virtual machines and volumes for the software vendors
3. Verifiable data transfers
4. Verifiable software execution results for validation
5. Access for test witnesses and observers

Are there any other high-level requirements that are missing? Any points where a little more detail should be provided at this stage?