

Global Positioning System (GPS) Public Interface Control Working Group (ICWG) & Public Forum

2023 Public ICWG Meeting Minutes

Meeting Details:

Wednesday, September 27, 2023
08:30 – 17:00 PDT

Primary Meeting Information (via ZoomGov)

Meeting ID: 161 531 3774

Passcode: **771952**

Dial-in: 5712001700,,1615313774#,,,,,0#,,771952#

Agenda

| Time | Item | Who |
|------------------------------------|--|----------------------|
| 8:30-8:45 | GPS Public ICWG and Public Forum Meeting Overview | Capt. Rick Merchant |
| 8:45-9:05 | Opening Remarks/GPS Overview | Maj. Stewart Brandon |
| 2023 PICWG RFC Discussion | | |
| 9:05-10:30 | RFC-502 - 2023 Proposed Changes to the Public Documents | Tony Anthony |
| 10:40-11:00 | RFC-477 - OCX XML Products for Civil Users | Danny Froerer |
| 11:00-11:15 | Action Item Review | |
| Special Topic Presentations | | |
| 12:15-12:35 | Status – ISM Proposed Changes to the Requirements Baseline | Capt. Rick Merchant |
| 12:35-13:05 | ISM CSOC IPT Recommendation | Dr. Andrew Hansen |
| 13:05-13:25 | Next Generation OCX XML | Stephan Hillman |
| 13:25-13:45 | USCG Presentation | Rick Hamilton |
| 13:55-14:15 | PRN Expansion | Karl Kovach |
| 14:15-14:45 | Walk on Topics, Open Discussion | -- |

| Time | Item | Who |
|-------------|--|----------------------|
| 14:45-15:15 | PRAT - Public Req. Accountability Tool | Tony Anthony |
| 15:15-15:35 | Action Item Review | |
| 15:35-15:40 | Closing Remarks | Maj. Stewart Brandon |

Minutes Ground Rules

1. These meeting minutes have had the slides renumbered to accommodate slide changes requested during the meeting and new PRAT items added during the meeting. This includes slide additions and removals. The slide numbers in these meeting minutes track to the relevant slides as contained in the “post Meeting” slide set only and not to the slide set presented on September 27th.
2. A few actions that came out of the Public ICWG happened after the meeting and have been mentioned in these meeting minutes. Any of these actions are clearly explained as being accomplished or decided after the Public ICWG.

Meeting Minutes

| Time | Item | Who |
|-----------|---|---------------------|
| 8:30-8:45 | GPS Public ICWG and Public Forum Meeting Overview | Capt. Rick Merchant |

No Comments

| | | |
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| 8:45-9:05 | Opening Remarks/GPS Overview | Maj. Stewart Brandon |
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No comments

2023 PICWG RFC Discussion

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| 9:05-10:30 | RFC-502 - 2023 Proposed Changes to the Public Documents | Tony Anthony |
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Slide 51 - Add explanation to Gov Response on what "defer" means in this context, clarify change will be incorporated if table is updated for another reason

Slide 52 - Add note that change is likely to be accepted when work for CEI notes is approved to continue

Slide 57-60 - Additional work needs to be done on changing GNSS ID in ICD-GPS-801 and IS-GPS-901

Slide 65 - Discussion of LEO, MEO, Earth's surface vs, Terrestrial Service Volume and the use of PRN 34 and 37. Four ball and five ball test discussed. In offline meetings, it was decided that the wording presented on the slide would go forward as proposed.

Additional items included in Action Item List

| | | |
|-------------|--|---------------|
| 10:40-11:00 | RFC-477 - OCX XML Products for Civil Users | Danny Froerer |
|-------------|--|---------------|

See action item list

| | | |
|-------------|--------------------|--|
| 11:00-11:15 | Action Item Review | |
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See Action Item List

| | | |
|-------------|--|---------------------|
| 12:15-12:35 | Status – ISM Proposed Changes to the Requirements Baseline | Capt. Rick Merchant |
|-------------|--|---------------------|

Questions:

- Question:* Europeans are waiting for ISM, what is the timeline for funding?
Response: Answer: Evaluating where funding is going, Government realizes the importance of ISM for civil and public users. Funding has not been identified at this time.

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| 12:35-13:05 | ISM CSOC IPT Recommendation | Dr. Andrew Hansen |
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Questions/Comments:

- *Question:* What do we need to do to get an RFC to consolidate the implementation?
Response: PRAT 2023-1 was created during the PRAT session later in the meeting to address this exact question
- *Question:* How do we get definitions to standards bodies?
Response: DOD process is to do the Systems Engineering then finalize the baseline and then move out to resources/implementation.
- *Question:* How can we understand these message types well enough to go out to the standards bodies and how does that match up on paper with the PEO.
Response: Need to talk internally before we can make a recommendation on path forward.
- *Question:* There is a database of all ISM related changes in DOORS?
Response: Yes there is, the database consists of DOORS ID information that allows you to determine which document contains the most current requirement, but you have to have the latest IRN, SCN or PRN as applicable to read the actual requirements.
Note: None of the RFC-502 material presented today is ISM related; that's included in RFC-502B which is sequestered in our Technical Baseline Manager for future use and was not presented today.
- This brief may have a few items that have been changed in terms of message definition
 - 495 and 502 are changes in message format, broader integration is either all in 413 or possibly a few things aren't included that need to be addressed.
- Could start from 413 as a baseline for the IRN

Additional items included in Action Item List

| | | |
|--------------------|--------------------------------|------------------------|
| 13:05-13:25 | Next Generation OCX XML | Stephan Hillman |
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PEM will be available on USCG public website

OCX will not be distributing legacy XSLT

Questions/Comments

- *Question:* Timezone code is UTC?
Response: Date/Time is UTC per NIEM standard but GPS time is actual GPS time

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| 13:25-13:45 | USCG Presentation | Rick Hamilton |
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Presenter not available, Not Presented

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| 13:55-14:15 | PRN Expansion | Karl Kovach |
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No Questions /Comments

| | | |
|-------------|---------------------------------|----|
| 14:15-14:45 | Walk on Topics, Open Discussion | -- |
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None Presented

Current PRAT Items

| | | |
|-------------|--|--------------|
| 14:45-15:15 | PRAT - Public Req. Accountability Tool | Tony Anthony |
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- 11 open items , new PRAT items will be added at the end of the day
- Slide 153 - PRAT 2014-26
 - Closure candidate
 - Was Karl's presentation satisfactory and this can be closed? -Yes
 - **Closed**
- Slide 154 - PRAT 2018-1
 - Aligned with RFC-477, could use feedback on this can we close before associated RFC has been approved through CCB?
 - Not sure if on track to close - XML is out on [GPS.gov](https://gps.gov) right now, hope was through this review we'd raise awareness, get feedback, and make improvement. Feedback has been thin. Meets the intent of this PRAT items.
 - **Stay open, track with RFC for CCB approval**
- Slide 155 PRAT 2020-3 (Power of 10 notation)
 - **Needs to remain open**
- Slide 156 2021-2 Almanac Ephemeris URE Table
 - Remove "create a concern" from description
 - **Needs to remain open**
- Slide 157 PRAT 2021-3 Remove ISC frob Core CEI Data
 - Remove "create a concern" from description
 - **Needs to remain open, planning to close this year**
- Slide 158 -PRAT 2021-4 P_{const} to R_{const} and MFD_{const}
 - Completed at 2022 PICWG but RFC-495a not CCB approved
 - Opening a new PRAT item and referencing back (2023-1)
- Slide 159 -PRAT 2021-5 Data ID Issue
 - Covered with RFC-502
 - **Pending CCB closure** - Add status to database
- Slide 160 -2022 -1 Relevance of the ISD 5.73 factor
 - Is there anything that we need to write in the documents to explain this/take it into account/ anything
 - Does ISF interact with ISM -no orthogonal but correlated.
 - The definition of MSF that applies to ISF is in wording for ISF, ditto for ISM
 - Should this be closed because definition is in wording for ISM
 - Consensus is no impact, no need to put anything in the baseline

- **Action: Bert - come up with language. And email to Tony , resolution of all ISM issue to be part of closing note**
 - **Remains open**
- Slide 161 - PRAT 2022-2 Search for B_{nom}
 - None found, closure candidate?
 - **Closed**
- Slide 162 - 2022-3 Investigate CNAV Schedules Technical Baseline Changes
 - CNAV on track for closure
 - More work to be done for CNAV-2 possibly - Bert agrees
 - Do we want to modify this to include CNAV -2 in description or open a new PRAT item
 - Rhonda- close this one and open a new one in 2023 for this one, not doing it on 502
 - If we're going to close this one add a note about new CNAV PRAT item from this year.
 - **Closure contingent on RFC-502 approval and open new CNAV-2 PRAT item**
- Slide 161 - 2022-4 Is clarifying note needed on equal applicability of b_{nom} for LNAV and CNAV
 - MOPS has to say somewhere, only MOPs is going to get an answer is going to the generator. Add MOPS into the note
 - ISM generator and MOPs definition in first sentence of description , discretion of ISM generator and MOPS (include in closure note)
 - **Closed**

New PRAT items

- Slide 165: 2023-1 Drive ISM to Final Engineering State
 - Objective here is to drive to ISM final state
 - Residual SE work for PRN/IRN set
 - Originator - Calvin Miles
 - Assignee - SE&I , Capt. Merchant / Tony Anthony
 - Notes: See special topic and PRAT item 2021-4
- Slide 166: 2023-2 Investigate CNAV-2 Schedule Constraints (copy PRAT 2022-3 description)
 - Originator: Rhonda Slattery
 - Assignee: Bert Hayden
 - Note: Prior item that handled CNAV is PRAT 2022-3
 - *Request:* Don't have a target year
 - *Question:* Should CEI be PRAT? Any other deferred items for PRAT?
 - *Response:* This item is addressed by PRAT 2023-3 below
- Slide 167: 2023-3 Investigate the inclusion of all changes that have been deferred from RFC-502
 - CEI Data Set Parameter Notes
 - Originator: Rhonda Slattery

- Assignee: Tony Anthony
- Slide 168: 2023-4 Status 495b for Completion
 - Originator: Dr. Andrew Hansen
 - Assignee: Jason Bolger
 - *Note:* Need by 2024 PICWG
 - *Comment:* Might need to kill 495A?
 - *Comment:* Do not implement RFC-413 on its own. Later engineering shows it is not 100% correct.
- Slide 169: 2023-5 Investigate impact of PRN 34 and 37 for presentation at 2024 PICWG
 - Originator: Dr. Andrew Hansen
 - Assignee: Bert Hayden
 - Note: Addresses change approved in RFC-502
- 2023-6 Explore conducting Public ICWG mostly in person rather than strictly virtual
 - Originator: Calvin Miles
 - Assignee: Capt. Merchant
 - *At the October 5, Public ICWG Management Tag Up, the team decided that this item is not a technical action item and should be processed as a regular Action Item and not as a PRAT Item.*

Some items included in Action Item List

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|--------------------|---------------------------|--|
| 15:15-15:35 | Action Item Review | |
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See Action Item List

| | | |
|--------------------|------------------------|---------------------------------|
| 15:35-15:40 | Closing Remarks | Maj. Stewart Brandon |
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Action items

- [Anthony, Ralph E. \[US\]](#) to check with Jeff Crum to ensure RFC-502 comments were received and addressed. *This has since been accomplished and all comments concurred by the originator.*
- [Anthony, Ralph E. \[US\]](#) Slide 31/32 - should IS-200 and IS-705 match? MT 30 and 37 called out for 200 but only MT 30 is called out for 705. Rhonda and Jeff feel requires further investigation. *This has since been reinvestigated and it turns out a hand edited file incorrectly showed a redline that showed WNOP applied to more than Message Type 30. Slide 32 now shows the correct redline.*
- [Anthony, Ralph E. \[US\]](#) Slide 45 answer to question is yes. change the "and" to "or" as was done on slide 45. *This change has since been completed and appears on Slide 47.*
- [Anthony, Ralph E. \[US\]](#) Slide 47 redlines too hard to read. Add a new "IS" slide so the change can be read easily. *This change has since been completed and appears on Slide 50.*
- [Anthony, Ralph E. \[US\]](#) Slide 56 needs double check that IS-GPS-705 does not say "at least once once". *This section of text has since been checked and the extra "once" removed. Now shown correctly on Slide 56.*
- [Kovach Karl \(Aerospace\)](#) Slide 65 - Earth's Surface vs, Terrestrial service volume; action for Aerospace Karl Kovach to research using Terrestrial term instead of Earth's Surface in the recommended added new text slide 65; during lunch break consider rewording from Bert Hayden "any point below 3000 km altitude". *During the lunch break, the issue was discussed by key stakeholders and left as presented in the AWG.*
- [Anthony, Ralph E. \[US\]](#) readdress at the end of the day: are there any deferred comments other than comment #161 that should be made actions if they aren't already a concern or listed in PRAT.
- [Froerer, Daniel R. \[US_CTR\]](#) Update wording on Slide 76; regarding folder structure in zip file. *This change has since been completed and appears on Slide 75.*
- [Anthony, Ralph E. \[US\]](#) Take the brief and review with Jed Dennis to ensure all ISM items are covered
- [Merchant, Rick Capt.](#) with Dr. Hansen - IPT team prepared a consolidated representation. Right now unclear to IPT what contract vehicles or what is necessary for DOT and FAA to advocate for funding, We can have a consolidated end state representation of what's needed from the public input to this process that gives raw material to reengage on the programs so

we can answer Calvin's question about how to we move something on enterprise forward on implementation.

- [Anthony, Ralph E. \[US\]](#) Open new PRAT item as a followon to PRAT 2021-4 for ongoing tracking of ISM changes. *The PRAT Item 2023-1 has been initiated and appears on Slide 165.*
- [Anthony, Ralph E. \[US\]](#) Open new PRAT item off of PRAT 2022-3 to cover CNAV-2, add reference to new PRAT item in closure notes for PRAT 2022-3. *The PRAT Item 2023-2 has been initiated and appears on Slide 166.*
- Hayden, Bert (Aerospace) to come up with closure note language and email to Tony regarding PRAT 2022-1. *This has been accomplished and the note appears on Slide 160.*

Attendees

| Name | Organization | Method |
|------------------------|---------------|-----------|
| Tony Anthony | SAIC | In Person |
| Captain Rick Merchant | Space Force | In Person |
| Major Stewart Brandon | Space Force | In Person |
| Michael Cole | Aerospace | In Person |
| Dr. Andrew Hansen | VOLPE | In Person |
| Bert Hayden | Aerospace | In Person |
| Stephan Hillman | Aerospace | In Person |
| Karl Kovach | Aerospace | Computer |
| Calvin Miles | FAA | In Person |
| Angie Wang | Aerospace | In Person |
| 2d LT Zachary Carroll | CGE | Computer |
| Maj. Adam Rich | Space Force | Computer |
| Danny Froerer | SE&I | Computer |
| Emily Hendrickson | SE&I | Computer |
| Barbara Hemmerich Shaw | SE&I | Computer |
| Austin Finn | ARL:UT | Computer |
| Alpa Viradia | US NAVY | Computer |
| Clint Robison | TAG | Computer |
| Robert Dunning | T2S Solutions | Computer |
| Deondre Broome | SSC/CGLP | Computer |
| Rafal Zbikowski | Spirent | Computer |
| Danielle Jackson | Space Force | Computer |
| Eric Biedermann | SNL | Computer |
| William Stroud | SE&I | Computer |
| Wayne Su | SE&I | Computer |
| Tracy Malone | SE&I | Computer |
| Tim Yoshinaga | SE&I | Computer |

| Name | Organization | Method |
|-----------------------|-----------------|----------|
| Ryan Gomez | SE&I | Computer |
| Randall Grossman | SE&I | Computer |
| Patrick Oliver | SE&I | Computer |
| Matt Kohn | SE&I | Computer |
| Kristin Duby | SE&I | Computer |
| Jeff Thomas | SE&I | Computer |
| Jay Ho | SE&I | Computer |
| Jason Bolger | SE&I | Computer |
| Greg Serrien | SE&I | Computer |
| Everly J Silva | SE&I | Computer |
| David Lawrence | SE&I | Computer |
| Christopher Adams | SE&I | Computer |
| Christina Escandon | SE&I | Computer |
| Bruce Lagatree | SE&I | Computer |
| Aaron Kuhn | SE&I | Computer |
| Nandhini Sudarsanann | SE&I | Computer |
| David Hartman | SE&I | Computer |
| Jean M Carranza | SE&I | Computer |
| Estela Azevedo | SE&I | Computer |
| David Bain | SDB-II SPO | Computer |
| Alex Petrbock | SDB-II SPO | Computer |
| Melissa Thrush | SDB-II SPO | Computer |
| Ruben Marecos | RTX | Computer |
| Luis Cabrera-Torres | RTX | Computer |
| John Meadows | RTX | Computer |
| Cheryl Ford | PNT PO | Computer |
| William Notley | NASA | Computer |
| Nathan Anderson | MN DoT | Computer |
| Mary Villegas | MITRE | Computer |
| Kanwaljit Sandhoo | MITRE | Computer |
| David Hoki | MITRE | Computer |
| Dan O'Laughlin | MITRE | Computer |
| Jonathan Branson | ManTech | Computer |
| Rex T. Claire | Lockheed Martin | Computer |
| Nancy Morrison | Lockheed Martin | Computer |
| Mark Dahle-Melsaether | LMCO | Computer |
| Jeff Crum | LMCO | Computer |
| Isaac Remington | LMCO | Computer |
| Kevin Lui | L3 Harris | Computer |
| Jim Semler | L3 Harris | Computer |

| Name | Organization | Method |
|--------------------------|------------------------------|----------|
| Claudina Tiznado | L3 Harris | Computer |
| Hamza Abduselam | FAA | Computer |
| Jed Dennis | FAA | Computer |
| Kevin Bean | FAA | Computer |
| Jamie Dougherty | FAA | Computer |
| Steven Hutsell | DOAN | Computer |
| Matthew Navarro | CGV | Computer |
| Jamall Dean | CGV | Computer |
| Chuck Pocher | CGJA | Computer |
| Tan Nguyen | CGIN | Computer |
| John McCanless | Booz Allen Hamilton | Computer |
| Bill Witwicki | Boeing | Computer |
| Roger Kirpes | BAE | Computer |
| Marv Anselm | BAE | Computer |
| Gareth Jones | BAE | Computer |
| Alexandre Van Anderlecht | Azimuth Corporation | Computer |
| Miquela Stein | ARL:UT | Computer |
| Debora Personius | AFLCMC/WNX | Computer |
| 2d Lt EMMANUEL HALL | AFLCMC/EBDM | Computer |
| Rhonda Slattery | Aerospace | Computer |
| Tim Martin | Aerospace | Computer |
| Marco Vasquez | CGC | Computer |
| Thomas Wong | | Computer |
| Joe Ross | CGUE/ Booz Allen Hamilton | Phone |
| Alpa Viradia | USMC | Phone |