CCSDS Mission Planning & Scheduling WG
Fall Meeting 2024

Attendants:

Peter van der Plas (ESA, chair)
Eric Ferguson (NASA, deputy chair)
Cesar Coelho (ESA, SM&C WG)
Christoph Lenzen (DLR, remote)
Clement Hubin-Andrieu (CNES)
Dominik Marszk (ESA, SM&C WG)
Geoffrey Lochmaier (NASA)
Guillermo Buenadicha (ESA)
Luke Berry (ESA, remote)
Maria Wörle (DLR)
Marvin Wittschen (DLR, remote)
Matthew Dailis (NASA, remote)
Olly Page (UKSA)
Quinten Van Woerkom (ESA)
Rachel Jenkins (ESA, remote)
Roger Thompson (ESA)

Agenda

Date	Time	WG	Topics
Mon 4 Nov	08:45 – 09:45 GMT Chiswick Ballroom	CCSDS	CCSDS Opening Plenary
Mon 4 Nov	09:45 – 10:45 GMT Chiswick Hogarth	MOIMS	MOIMS Area Plenary
Mon 4 Nov	10:45 – 12:30 GMT BSI 5.4	MP&S	WG day #1 morning session - Welcome and agenda - MP&S projects status
Mon 4 Nov	13:30 – 17:30 GMT BSI 5.4	MP&S	WG day #1 afternoon session - Blue Book RIDs for WG information and/or endorsement
Tue 5 Nov	08:45 – 12:30 GMT Chiswick South	MP&S	WG day #2 morning session - Blue Book RIDs for WG discussion and/or decision – part 1
Tue 5 Nov	13:30 – 17:30 GMT Chiswick South	MP&S	WG day #2 afternoon session - Blue Book RIDs for WG discussion and/or decision – part 2
Wed 6 Nov	08:45 – 12:30 GMT BSI 5.4	MP&S	WG day #3 morning session

			- Magenta Book: scope and contents, additional information, project planning
Wed 6 Nov	13:30 – 17:30 GMT BSI 5.4	MP&S	WG day #3 afternoon session - Prototyping: test specifications, prototypes implementation, test execution and reporting - Yellow Books finalisation planning
Thu 7 Nov	08:45 – 12:30 GMT BSI 5.4	MP&S	WG day #4 morning session - Green Book (Issue 2): scope and contents, updates and new sections, project planning
Thu 7 Nov	13:30 – 17:30 GMT BSI 5.4	MP&S SM&C	WG day #4 afternoon session - Prototyping: Services Testbed - Blue Book RIDs related to MAL - MAL tooling
Fri 8 Nov	08:45 – 12:30 GMT BSI 5.4	MP&S	WG day #5 morning session - Next steps and planning - Reporting to MOIMS
Fri 8 Nov	16:00 – 17:30 GMT BSI G.1	MOIMS	MOIMS Area Closing Plenary

MoM

Day #1: Monday 4th November 2024, 10:45 to 17:00

RID discussion – general RIDs

The consolidated RID table can be found here:

https://drive.google.com/drive/folders/1ptB-2mQiTw5etkWLCqvSVdnPHXG__H-a?usp=sharing

CNES-36: Agreed to provide cross-references on all data types

CNES-38: Agreed to remove sequence diagrams and refer to the MAL with some examples

Question: Reference [1] Mission Operations Reference Model: is [1] still applicable? As clarified by SM&C: this is still the latest issue and still applicable, but an update is underway with the Magenta book going now in Agency Review. If possible, the up issue should be referenced (when publication happens before MP&S BB publication).

CNES-39: Same conclusion as for CNES-38

CNES-40: Add explanation at BB, MB and GB level. Add missing terms to Glossary

CNES-43: Remove ConfigData data type and operation

DLR-003: Remove directory service, including the table

DLR-010: Add additional filter option on revisions

DLR-014: Reject with clarification

Day #2: Tuesday 5th November 2024, 08:45 to 17:30

RID discussion – controversial

CNES-044: The WG agrees to keep the Plan Edit Services. Section 3 will be enhanced, to describe it better and provide the constraints.

DLR-041: Option 3.1: keep lists nullable but describe the default of an empty list, with an additional explanation in the introduction section

ESA-022: Agreed to keep PIMS, may be moved in a dedicated Blue Book in the future, to be checked with SM&C is that would be possible in terms of XML Service Specification (shared data types in the same area)

ESA-023: Agreed to keep this in the book

NASA-002: Can be solved with an argument, add a note about this in the document

NASA-025: Change argValues to List<Mal::Element>, add ANYTYPE to enumeration, add MPS::NamedElement type for pointing template arguments

ESA-064: Use MAL::Element as the actual type for an Expression, with a dedicated ExternalExpression type to model any expression language. Note that the type checking has to be done by the receiver, based on the Expression<type> in the Blue Book.

RID discussion – general RIDs (continued)

ESA-012: Not actively supporting extendibility. Mention this in section 2 and PICS annex. For enumerations, extensibility is possible; the upper part of the value range should be used for this (provided as a note).

ESA-32: Allow both time window and event window to be provided, acting as an AND operation

ESA-47: Explain in the document that this is a mission specific definition

ESA-050: Discussion not yet conclusive…

RID discussion – general RIDs (continued)

ESA-050: Conclusion:
1. Constraint Node will be Constraint, the node will be at lower level
2. ConditionalConstraint level will be removed
3. ActivityNode will be ActivityDetails, the node will be at lower level
4. ActivityNode purpose will be grouping for repetition
5. ActivityDetails will be a List
6. Effects will be separated, on ActivityDefinition, ActivityDetails and ActivityInstance

ESA-070: Keep MAL:: prefix for MAL types

NASA-008: ExclusionEvent to be renamed to ConcurrencyEvent (time based)?!
Discussion ongoing, not yet conclusive…

Prototyping – Specification and Yellow Books

Guillermo presented the Test Specifications issue 16 was recently released. The change record contains the latest changes of the specification.

There is a new tab in the XL file for the object status. Currently, this assumes running all tests at once. However, it should be possible to re-run for example only the tests of a single service. Guillermo to update the table to have the interim states at the start of each Service.

Discussion of the remaining issues identified by Guillermo.

The state activation state of sub-plans after activation of a plan is not clear. The current Blue Book mentions that this is implementation specific. In this case, it should be listed in the PICS table. Note that this applies to ALL similar implementation specific issues. Alternatively, the initial activation state could be provided. A RID to be created for this.

The state diagrams (and enumerations) are useful but have been removed in the latest Blue Book. There shall be a RID created for this, to reinstate this information in the Blue Book.

There seems to be a shortcoming with the filtering on the original user or its domain when the request was submitted. Probably a RID to be created. There are about 4-6 attributes for which we would like to filter, in addition to the existing one:
- Definition
- Source

- Status
- Arguments (nice to have / useful)
- Duration (nice to have)

The PartialPlan contains the filter values. Either to be extended, but probably the PartialPlan can be completely removed (as it is a Plan). When removing the PartialPlan, we need to ensure that the partial plan is marked accordingly, not to be confused with a full plan.

RID discussion – general RIDs (continued)

NASA-032: Clarification on sequential constraints, no action

NASA-033: Use of term function versus entity, no action

NASA-008: Continued discussion, not conclusive

Day #4: Thursday 7th November 2024, 08:45 to 17:00

RID discussion – general RIDs (continued)

NASA-008: On exclusion, concurrence and sequential constraints. An agreement was made but needs to be worked out in the Blue Book (**action** Quinten).

RID discussion concluded (except 4 MAL RIDs).

Services Prototyping and MAL Tools

Guillermo presented the latest test specification. As tests can be run per Service, the object status at the start of a Service still needs to be added. Issue 17 is expected in the near term and will update the issue above and other issues which have been clarified now. After the Blue Book is updated with the RID dispositions, an up-issue 18 will be provided.

Cesar presented the latest updates/decisions to the MAL. A full presentation will be available on the SM&C CWE.

The next steps for the prototyping were discussed:
1. Guillermo to make available the Test Specification v17 to include the updates according to the WG agreements from this week.
2. DLR and ESOC/GMV to incorporate any changes due to TS v17 and to fix any issues in the current prototyping (GMV).
3. Quinten to update the Blue Book according to the RID dispositions and to generate the MPS artefacts (XML Service Specification and File Formats Schemas).

4. Cesar to validate the XML Service Specification and update the MAL implementation and code generator with the latest MAL updates and make available for the prototypes.
5. Guillermo to update the Test Specification v18 – work could start as of now, but this can only be finalized with the "final" Blue Book.
6. DLR and ESOC/GMV to update the prototyping according to TS v18.
7. The prototypes (Services and File Formats) shall be runnable and shall produce the test reports to be included in the Test Reports (Yellow Books).

Remaining MAL RIDs were discussed. A presentation of the latest MAL changes was provided by Cesar (continuation from above).

RID discussion on MAL RIDs with Cesar:

DLR-057: Tags will remain a MAL::String. Probably a Blue Book update clarifying this in the text. Still not conclusive, as the MAL has a restriction on filtering on multiple tags (strings of strings).

DLR-111: The HTTP/XML book is in the process of being updated. Currently, we are in line with the previous book, but cannot directly use it, as the HTTP part does not apply to File Based transfers. MP&S will review the updates of the HTTP/XML once available.

Cesar provided a presentation of the MAL tooling (MO Navigator).

Day #5: Friday 8th November 2024, 08:45 to 12:00

Recap from the previous day: all RIDs have been dispositioned, see the latest RID list on the GDrive: https://docs.google.com/spreadsheets/d/1SeyWdjmHzKcro5Mzxu1-ZKfsWnXUJcV5/edit?gid=278781270#gid=278781270

Magenta Book

The WG agreed that the Magenta Book will contain the Information Model including the detailed data type tables from the Blue Book (i.e. the tables). At a later stage, it may be decided that some of the duplicated information should not be included in the Magenta Book.

A new informative section will be added to the Magenta Book with the use cases. For this, the WG is requested to propose ideas on the structure/content of this section. Then a template could be created to collect inputs on the use cases from the WG members.

Green Book

The Green Book updates have been discussed already in the Washington meeting and still apply. In terms of making prototypes and reference implementations available:

here we will be dependent on the SM&C WG, as this largely depends on the MAL implementation and the testbed and including the MAL tools. Other information could be provided for example on the public CWE area of MP&S WG or on any Open-Source repository.

Next steps and Planning

The next steps regarding the Blue Book and Prototyping were discussed on Thursday.

Next meeting:

Next WG meeting will be on Monday **25 November 2024**, 16:00 – 18:00. Peter to send the invite. Agenda will be any issues with the Blue Book that may be encountered by Quinten.

Attachments:

None.