|  |  |
| --- | --- |
| **Ref.:** MOIMS/DAI/202404  Minutes of CCSDS MOIMS Data Archiving Ingest (DAI) Working Group  4-8 November 2024  London, UK |  |
| **EXECUTIVE SUMMARY**  Over this week DAI has managed to resolve many issues affecting the draft BB for OAIS-IF, and re-organised the way in which the testing will be planned, carried out and summarised in the Yellow Book. | |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Subject:** Minutes of the DAI Working Group, | | | | | |
| **Meeting Date:** 4-8 November 2024 | | | **Place:** London, UK | | |
| Present: | | | Copies To: | | |
|  |  |  | CNES |  |  |
| UKSA | David Giaretta | DG |  |  |  |
| ESA | Roberta Svanetti | RS | ESA |  |  |
| NASA | John Garrett  Steve Hughes  Terry Longstreth | JGG  SH (v)  TL (v) | NASA |  |  |
| JAXA |  |  |  |  |  |
| Brazil |  |  | Various | Email list | DAI |
| SANA |  |  |  |  |  |

[1 Mon 4th Nov 2024 4](#_Toc181791400)

[1.1 CESG comments on OAIS and IPELTU discussion 4](#_Toc181791401)

[1.2 OAIS-IF BB discussion 4](#_Toc181791402)

[1.3 OAIS-IF YB discussion 5](#_Toc181791403)

[2 Tues 5th Nov 2024 5](#_Toc181791404)

[2.1 OAIS-IF YB discussion 5](#_Toc181791405)

[2.2 OAIS-IF BB discussion 5](#_Toc181791406)

[3 Wednesday 6th Nov 2024 6](#_Toc181791407)

[3.1 OAIS-IF YB discussion 6](#_Toc181791408)

[3.2 Review of RASIM 6](#_Toc181791409)

[3.3 CCSDS and ISO 6](#_Toc181791410)

[4 Thursday 7th Nov 2024 7](#_Toc181791411)

[5 Friday 8th Nov 2024 7](#_Toc181791412)

# Mon 4th Nov 2024

## CESG comments on OAIS and IPELTU discussion

See earlier discussion in <http://review.oais.info/show_bug.cgi?id=393> and , <http://review.oais.info/show_bug.cgi?id=395> which were agreed by the submitted. However there was uncertainty about <http://review.oais.info/show_bug.cgi?id=394> and <http://review.oais.info/show_bug.cgi?id=396>.

In the course of the day Peter Shames (PS) agreed to leave OAIS unchanged. For IPELTU DAI proposed some changes to avoid repetition of PMBOK and DMBOK; these changes were accepted by him.

All four DAI documents, namely the updated OAIS, ISO 16363, ISO16919 and the new IPELTU, we understood would therefore be published by CCSDS and then ISO.

## OAIS-IF BB discussion

DG pointed out a number of issues he had been having with the JSON schema validator tools. They seemed not to detect some obvious problems. The tools, and others, would need to be tested by others, see <https://json-schema.org/tools?query=&sortBy=name&sortOrder=ascending&groupBy=toolingTypes&licenses=&languages=&drafts=&toolingTypes=&environments=>

DG has been using ajv and a web based tool.

See <https://www.dropbox.com/scl/fi/ecdd2mqs43qj4uhq8m6xh/OAIS-IF-Core-Specification-pre-panelreview.docx?rlkey=08jqncwy7pf5r42ogv4n3k284&st=49zqf4h4&dl=0> for the latest version.

### Discussion with SANA

DAI will need to register the JSON Schemas with SANA. A meeting was arranged via [info@sanaregistry.org](mailto:info@sanaregistry.org)

It was agreed that SANA would set up a JSON registry Data Archive Interoperability JSON to register these.

DAI must provide the Title for the registry. - **Data Archive Interoperability JSON**

The columns to be defined are:

* Filename – should include the version number in the name
* Description
* Group – OAIS-IF

This would be part of a CCSDS DAI Standard registry which would contain:

* The existing Data Archive Ingest XML (**NOTE SHOULD CHANGE TITLE TO DATA ARCHIVE INTEROPERABILITY**)
* The existing CCSDS ADID
* The new Data Archive Interoperability JSON

The associated policy will be that updates will be determined by updated Blue Books so authority is DAI.

It was noted that SANA would first set up the new registry in a provisional implementation e.g. dai.sanaregistry.org. This would have to be used for the YB. After the BB is published the provisional registry will be migrated to sanaregistry.org. Therefore we should note in the YB that the dai.sanaregistry.org should be replaced by sanaregistry.org after the BB is published.

**ACTION: DG: Add version number to filename of json schemas**

**ACTION: DAI: agree on details for SANA in BB**

**ACTION: RS: Add text about provisional registry to YB**

## OAIS-IF YB discussion

RS has updated the draft YB, see <https://www.dropbox.com/scl/fi/ecdd2mqs43qj4uhq8m6xh/OAIS-IF-Core-Specification-pre-panelreview.docx?rlkey=08jqncwy7pf5r42ogv4n3k284&st=49zqf4h4&dl=0>. Sections have been completed by ESA but text was required from UK (i.e. DG) and NASA (i.e. SH) to describe the implementations.

# Tues 5th Nov 2024

## OAIS-IF YB discussion

Need to carry out checks on the JSON schema validator s/w.

**ACTION: DAI, SH, ESA: review use of JSON Schema validator tools. In particular create errors in schema e.g. change names, and also change JSON results file to check that errors are found.**

DG added text describing UKOAISIF s/w.

The tables should be put into a separate spreadsheet and the tables linked into the document. This will ensure that the tables are consistent – see <https://www.dropbox.com/scl/fi/3d859rl0f6w3kly57hntz/TestPlan.xlsx?rlkey=gj7jl6uk93pe4spfr63ebborx&dl=0>

This spreadsheet can be used to track other aspects of the testing.

## OAIS-IF BB discussion

DG must update the services on [www.oais.info](http://www.oais.info)

* /IO must remove “[“ and “]”
* Add return RepInfo using /RI

**ACTION:DG: Update S/W**

Review possibility of using REST pagination so that listing sources could deal with very large numbers of entries. See [www.baaeldung.com/rest-api-pagination-in-spring](http://www.baaeldung.com/rest-api-pagination-in-spring)

Could be optional extra in API.

**ACTION: DG: test pagination code**

Add text to say that we provide convenience for smaller table of entries as an EncodedObject in JSON. But if this would result in a String which would be too large then the alternative would be to use a pointer to a spreadsheet, with associated RepInfo.

SH points out that we would mostly be sending metadata about the data )including pointers to the bits),unless the data is of small volume.

**ACTION: DG: add text to BB**

SH and RS mentioned the possibility of streaming for large objects. We could look at this.

# Wednesday 6th Nov 2024

Reviewed and corrected the minutes of last 2 days.

## OAIS-IF YB discussion

The spreadsheet was reviewed. It seems OK, but needs to be tidied up in terms of the success criteria.

Extra sheets will be added to capture details of each test

## Review of RASIM

Reviewed RASIM <https://public.ccsds.org/Pubs/312x0g1.pdf> – issues with the view contained in that document of OAIS Ref Model. This should be corrected.

Peter Shames had emailed:

|  |
| --- |
| We have sent the RASDSv2 off for approval to publish and are starting on the Reference Architecture for Space Information Management (RASIM) updates. In addition to handling the RASDSv2 updates, we are planning to incorporate materials relating to some of the newer deployment options: cloud based, virtualization, containerization, and also to newer technologies like AI and LLMs, which can be thought of as forms of information processing architectures. |

DAI could describe our thoughts about

* Information Modelling – recursion and OAIS
* Use of cloud – contractual and risk aspects
* Use of Virtualisation and containerisation – and how to preserve
* AI/LLM issues – Privacy, Provenance and Authenticity issues etc

## CCSDS and ISO

Discussion of email from Monica Ibido (ISO) concerning CCSDS and ISO relationship wrt the SANA Registry. She wrote:

|  |
| --- |
| Dear David, Dear All,  we are aware that we are taking a very long time, and I/we do apologize for that. We are still discussing internally what to propose to you as a way forward.  Those days we are even discussing the possibility as well to have one agreement for the Registration Authority regrouping all ISO/TC 20/SC13 standards into ‘a family of standard’/series.  May I ask you if it makes sense talking about a connection (a series) of standards for the ISO/TC 20/SC13 standards ISO has adopted by CCSDS?  I am keen to update you weekly on the progresses.  Best regards  Monica |

We requested clarification of the implications for our standards if such a series was made.

## Preparation for MOIMS Plenary

Checked with SH the PPT for presentation in MOIMS closing plenary on Friday.

## IPELTU and OAIS

Checked the final changes in IPELTU and OAIS

## OAIS-IF BB discussion

The BB says that all communication used Information Packages. There is an issue that this is not true in the JSON returned in some cases.

**ACTION: DG: Propose JSON Information Packages for all returns.**

# Thursday 7th Nov 2024

Reviewed and updated the YB and associated “Executed-OAIS-IF-TestPlan” spreadsheet which is available at <https://www.dropbox.com/scl/fi/3d859rl0f6w3kly57hntz/Executed-OAIS-IF-TestPlan.xlsx?rlkey=gj7jl6uk93pe4spfr63ebborx&dl=0>

We will review the potential errors which can/should be tested.

**ACTION: DAI: Review potential errors to test**

## Joint meeting with SEA

Discussions were held with SEA.

* DAI will provide ideas on limitations in RASIM which we have identified
  + Especially in their Information Model and Archival model
* Provide SEA with OAIS-IF details

**ACTION: DG, JGG, SH, RS: review RASIM and send feedback**

**ACTION: DG: update OAIS-IF BB and GB, review in DAI and copy to SEA**

# Friday 8th Nov 2024

Presentation to MOIMS Plenary – see <https://www.dropbox.com/scl/fi/pi1eummx67pw0f5w2y6ib/Report-to-MOIMS-DAI-202411-closing.pptx?rlkey=m610prl1agcr8nncykhvcqikp&dl=0>