

CAOM-2.5 Working Draft

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IVOA InterOp Meeting Nov 2025, Görlitz



Overview

- status of CAOM-2.5 model
 - VO-DML model
 - IVOA standard document and process
- status of CAOM-2.5 implementations
 - java libs, python libs (minor changes)
- try to indicate remaining work to be done

WD-CAOM-2.5 standardisation plan

- meetings with IVOA Data Model WG
 - position CAOM in the IVOA landscape:
 - data discovery
 - single- or multi-mission archive implementation
 - define relationship with ObsCore + extensions (incomplete)
<https://github.com/ivoa-std/CAOM/blob/main/CAOM-ObsCore-mapping.md>
- finish the document
 - build most of the document from source (VO-DML spec)

WD-CAOM-2.5 status

- repository moved! <https://github.com/ivoa-std/CAOM>
- latest WD recently published to docrepo
- significant changes since May
 - extracted DataTypes into separate VO-DML model: re-usable?
 - re-wrote all the VO-DML descriptions as prose
 - generate normative sections of ivoatex document from VO-DML
- **TODO**
 - formatting/markup in VO-DML? currently have some LaTeX in there
 - abstract, introduction (use cases) need work
 - serialisation formats: they exist, add to standard

WD-CAOM-2.5 status

- utypes!!

- relationship between data model vodml-id values and VOTable utype values: <https://github.com/ivoa/vo-dml/pull/46>
- reconciling this in prototype TAP service and it seems plausible to use:

$\{\text{vodml-ref}\} == \{\text{prefix}\}:\{\text{vodml-id}\} == \{\text{utype}\}$

- in the process of adapting prototype TAP service to use vodml-ref(s) as utypes in tap_schema (tables and columns)

WD-CAOM-2.5 status

- diffs from CAOM-2.4 (community):
 - refactoring, mainly in identifier (URI) usage
 - add radio-inspired metadata
 - shift from enums to vocabularies (started in 2.3)
 - remove components that overlap CubeDM; focus on discovery
 - metadata checksum algorithm improvements

C is for Common

- CAOM is intended to cover a wide range of use cases
 - try to use mission and wavelength agnostic terminology
 - try to balance specificity vs sparseness
- easy to measure which fields are populated by various missions
 - detailed report of usage of every field, broken down by mission and instrument (Séverin Gaudet), for ~30 missions
 - analysis to gather insights into current sparseness (in progress)
 - potential to declare some fields *not very common after all*: **remove?**

<https://www.canfar.net/storage/arc/list/projects/CADC/caom2usage>
- hard to measure what scientists actually use

WD-CAOM-2.5 dependencies

- vocabulary dependencies:
 - Plane.calibrationLevel: still an enum (integer w/ labels)
 - Plane.dataProductType -> product-type (was ObsCore)
 - Artifact.productType -> DataLink core
- vocabularies that do not really exist as such:
 - Plane.observable.ucd -> UCD1+ (not a vocabulary)
 - Position.calibration, Energy.calibration, Time.calibration, Observable.calibration: axis calibration vocabulary
 - initial vocabulary could be extracted from ObsCore (appendix)
 - Telescope.trackingMode
 - Polarization.states: ObsCore enum w/ extras

WD-CAOM-2.5 current issues

☐	Open	5	Closed	0	Author	Labels	Projects	Mile
☐	☒	SQL/ADQL reserved terms used for types and attributes	question					
		#6 · pahjbo opened 3 days ago						
☐	☒	Extensive use of attribute multiplicity > 1						
		#5 · pahjbo opened 3 days ago						
☐	☒	Descriptions contain LaTeX markup						
		#4 · pahjbo opened 3 days ago						
☐	☒	metaChecksum algorithm robustness	documentation	enhancement				
		#3 · pdowler opened 2 weeks ago						
☐	☒	complete metaChecksum algorithm -- use of external data types	documentation	enhancement				
		#2 · pdowler opened 2 weeks ago						

CAOM-2.5 implementation

- java repository: <https://github.com/opencadc/caom2>
 - feature branch: caom25
- python repository: <https://github.com/opencadc/caom2tools>
 - feature branch: CAOM25
- changes since May InterOp:
 - implemented complete JSON serialisation (java and python)
 - json and xml equally usable with CAOM-2.5 repository service
 - prototype CAOM-2.5 TAP using vodml-ref(s) as utypes: soon!
- TODO:
 - update metadata checksum code for external DataType handling once documented

adjacent work: ObsCore

- REC-ObsCore-1.1 document ported from Word to ivoatex
- ready to begin work on WD-ObsCore-1.2
 - collect extension input from IGs
 - consolidate some things into *Core*
 - specify extension mechanism: technical and specification
- editors for 1.2: Mireille Louys, Patrick Dowler

<https://github.com/ivoa-std/ObsCore>

- WD-CAOM-2.5 now on ivoa-std github
- normative part of document ~complete, a few issues
- prototype implementations (java and python) working and interoperable

