OAIS RM and OAIS Architecture discussion -- Mike Kearney

The challenge is to describe the new architecture description (w/ associated protocols, etc.) as “OAIS-supporting”, but not OAIS disrupting. These should not be new requirements on OAIS trusted repositories, \*unless\* the repositories *want to add interoperability* to their OAIS feature set.

* Small caveat – as we go through this architecture process, it’s possible we might identify some improvements that can be made to the OAIS RM in the ***next*** revision.

Compliance with the OAIS RM is adequate to be able to claim that an archive is a trusted repository because it follows the reference model and the associated organizational practices. To extend an archive’s capabilities further, a trustworthy repository can also implement compliance with the Data Archive Architecture and protocol (or plugin/binding/API/whatever) and can then cite that it is a trusted archive that is interoperable with other entities (archives, providers, consumers)

**Some guidelines for the architecture work:**

* The CCSDS DAI WG addressed the processes and methods of trustworthy digital repositories first, as is appropriate. The “second stage” is to move on to interoperable systems, architecture and protocols, with those processes as the foundation.
* Therefore, the OAIS RM drives the architecture/protocols; the architecture/protocols do not drive the OAIS RM.
* ISO 16363 will not be affected/updated by the architecture work.
* It may be that an interoperability certification can be done as a separate effort, later.  If so, it will be outside of 16363 or PTAB certification.
  + But don’t hold your breath, because many CCSDS WGs have talked about that “gold standard” interoperability certification capability, but none have accomplished it.

**Relationships of requirements vs. implementations.**

* One man’s ceiling is another man’s floor (Paul Simon).
* One layer’s requirements are another layer’s implementations.

1. The OAIS RM is the highest layer, and the highest-level set of requirements.
2. Below the RM, one could consider a reference architecture an implementation example of the RM.
3. However, that reference architecture is a requirements set on lower-level protocols (or bindings or APIs).
4. From that architecture level the protocols/APIs are the implementation.
5. However, the Interoperable protocols (or bindings or APIs) are requirements imposed on an archive database implementation (An “implementation” based on Oracle or MySQL or another RDBMS). Or on an AIP implementation. The database and the AIP design must comply with the communication formats at the protocol interface or API but they can implement with various underlying structures..
6. With this “implementation example” we have largely reached the floor on the ground floor. Not counting the basement where they keep the machine language.

Conclusion: Yes, to the OAIS RM, the Data Archive Architecture prescribed (normative) in the DA ADD looks like one of many possible architectural “implementations.” But it’s not an implementation to the protocols or the archive implementers, it’s another (albeit lower) set of requirements. So let’s not call it an implementation. It’s an architecture.

**A question of names**

“The name of the song is called ‘Haddocks' Eyes.’”

“Oh, that's the name of the song, is it?" Alice said, trying to feel interested.

“No, you don't understand,” the Knight said, looking a little vexed. “That's what the name is called. The name really is ‘The Aged Aged Man.’”

“Then I ought to have said ‘That's what the song is called’?” Alice corrected herself.

“No, you oughtn't: that's quite another thing! The song is called ‘Ways And Means’: but that's only what it's called, you know!”

“Well, what is the song, then?” said Alice, who was by this time completely bewildered.

“I was coming to that,” the Knight said. “The song really is ‘A-sitting On A Gate’: and the tune's my own invention.”

* Through the Looking Glass – Lewis Carroll

*Reference* [*https://www.physicsforums.com/threads/could-someone-explain-the-humor-in-haddocks-eyes-for-alice-in-wonderland-fans.597002/*](https://www.physicsforums.com/threads/could-someone-explain-the-humor-in-haddocks-eyes-for-alice-in-wonderland-fans.597002/)

I said many times in the past that we were developing the OAIS architecture, but today (3/6) was the first time that someone objected to its being an ***OAIS*** architecture. The basis of the objection, I think, is that if it is an “OAIS” architecture, then the implication is that repositories that claim OAIS compliance would necessarily have to be compliant to not only the Reference Model, but also to the architecture.

I think that’s not necessarily the case, because compliance can be specified on a document-by-document basis. Personally, I think the architecture completes an incomplete OAIS, hence should be called (named) OAIS. But I understand that the terminology could become confused. So, what is the alternative? Referring to the Architecture (and protocols/bindings/APIs) with a new name.

To explore that…

How about Open Archival ***Interoperable*** Information System (OAIIS)? The OAIS RM and the 16363 Certification are OAIS but not necessarily interoperable. A subset of OAIS archives would become OAIIS archives, and are interoperable. The assumption would be that all OAIIS are OAIS, but not all OAIS are OAIIS.

Open Archival Information ***Software Interoperable*** System (OAISIS). (Finally pronounced “oasis” as so many already mispronounce)

Or simply ***Open Archival Software Interoperable System*** (OASIS) so there will be fewer misspellings. OAIS is a higher level acronym for a higher level structure. OASIS is a lower level acronym for a lower level structure. OASIS is a subset of OAIS.

Another option: OAIS-I for Open Archival Information System – Interoperable.

Summary: By diverging the nomenclature, we’re protecting OAIS from being either impacted by or confused with the architecture/protocol work. Simply adding or deleting the “I” for Interoperability accomplishes the distinction. However, we are somewhat striking divergence between OAIS and the architecture (whatever it’s called, uh… named.) That can be a double-edged sword.