|  |  |  |
| --- | --- | --- |
|  | FROM | TO |
| Name of Group | 2.01 Data Archive Ingestion Working Group | 2.01 Data Archive Interoperability Working Group |
| Area | Mission Operations and Information Management Services Area (MOIMS) | Mission Operations and Information Management Services Area (MOIMS) |
| Chairperson | David Giaretta  | David Giaretta  |
| Chairperson E-Mail Address | david.giaretta@stfc.ac.uk | david@giaretta.org |
| Chairperson Agency | UKSA | UKSA |
| Deputy Chairperson |   | John Garrett |
| Deputy Chairperson E-Mail Address | david.giaretta@stfc.ac.uk | garrett@his.com |
| Deputy Chairperson Agency |  | USA (formerly NASA) |
| Mailing List | moims-dai@mailman.ccsds.org | moims-dai@mailman.ccsds.org |
| Scope of Activity | The DAI WG will address all areas of Archive data formats, functions, and operations. Audit and certification issues are also within the scope for this group as these documents were inherited from the Repository Audit and Certification Working Group. | The DAI WG will address all areas of Archive data formats, functions, operations, and interoperability for long-term preservation. Audit and certification issues are also within the scope for this group. |
| Rationale for Activity | Agencies need to reduce the cost and increase the automation associated with acquiring, ingesting, managing, and disseminating data and metadata to, within, and from archives. The OAIS reference model and the Producer-Archive Interface Methodology Abstract Standard set a context for all archives. Further, registry/repositories are of increasing importance as the holders of re-usable metadata in the exchange of information. The needs of Producers, Archives, and Consumers will be met by developing additional standards addressing gaps in our current suite of standards. Archives, including both mission archives, final archives and repositories performing long-term preservation, need appropriate metadata to accompany data objects to facilitate long term preservation. Currently submission requirements are usually totally ad hoc by mission, or by a given multi-mission archive or final archive. Producers of information for archives often seek guidance on how to submit such information. | Agencies have a critical need to preserve for future missions and future generations, the science and engineering data that is the hard-won benefits from their space missions. Further, they need to establish interoperable mechanisms to reduce the cost and increase the automation and capabilities for interorganizational cooperation associated with acquiring, ingesting, managing, and disseminating data and metadata to, within, and from archives. The needs of Producers, Archives, and Consumers will be met by developing additional standards addressing gaps in our current suite of standards. All archives that protect the assets of our space agencies, including both mission archives, final archives and repositories performing long-term preservation, need appropriate processes and mechanisms to be agreed to among the agencies to insure long-term digital preservation in a way that supports interoperability between agencies and other organizations (such as their partners, contractors, and users.) This working group will supply those interoperability mechanisms. The DAI WG will also endeavor, as in the past, to involve additional organizations in ISO and outside the space agency community, so that (as with OAIS), the CCSDS standards will be so broadly acceptable worldwide that they will be supported long term and commercially, hence truly assuring long-term preservation of the agencies’ assets.  |
| Goals | Goal 1: Establish an extensible framework for a Submission Information Package (SIP). It will include mandatory and optional elements, with the ability to recognize categories of information and relationships: 1) define the main metadata categories and attributes; 2) define a way to create a dictionary of various classes of objects that will be considered (e.g., with the CCSDS Data Entity Dictionary Specification Language [DEDSL] standard), taking into account the general metadata identified above, and metadata specific to each given context; 3) define a method for creating a plan of the instances of objects to be transferred during operations (from producer to archive); 4) map instances in the existing XML Structure and Construction Rules (XFDU) Package paper with the model and the dictionary; 5) develop two implementations of the SIP standard. Goal 2: As needs are identified within the scope of this group, develop new standards to address those needs. New projects will be undertaken when defined through the CCSDS project framework and following approval by the CESG. Goal 3: While this working group exists, support CCSDS archival requirements: – monitor and report on Agency archival issues and implementations; – perform the required 5-year CCSDS and ISO reviews on existing archive related standards. Update and extend these standards as needs are identified during the reviews. – complete the French version of the OAIS reference model and follow it through CCSDS and ISO approvals. | Goal 1: Establish an extensible, interoperable, architectural framework for long-term digital preservation for archives. Then proceed to develop standards required to support that architecture. The standards produced will ultimately address:* A layered architecture
* Provider, consumer and management user interfaces
* Abstraction layer functions that provide platform independence for those user interfaces.
* Adaptations or bindings (plug-ins, drivers, APIs) for various archive types, both within the space agencies and across the worldwide community of archives.
* Secure participation from external organizations to supplement the resources from the space agencies, and to completely perform any standards development that is of negligible interest to the space agencies.
* Approaches for legacy archive interface compatibility.

Goal 2: As other needs are identified within the scope of this group, we will develop new standards to address those needs. New projects will be undertaken when defined through the CCSDS project framework and following approval by the CESG. Goal 3: While this working group exists, support CCSDS archival requirements: – monitor and report on Agency archival issues and implementations; – perform the required 5-year CCSDS and ISO reviews on existing archive related standards. Update and extend these standards as needs are identified during the reviews. – complete the French version of the OAIS reference model and follow it through CCSDS and ISO approvals. |
| Survey of Similar Standards Efforts Undertaken in Other Bodies and elsewhere in CCSDS | The area of archiving standardization is active. Due to the successful adoption of past CCSDS archival standards, this working group is looked to as a leader in the archival standardization field. Working group members continue to network with their colleagues outside the CCSDS attempting to ensure that duplication of efforts is minimized. | The area of archiving standardization is active. Due to the successful adoption of past CCSDS archival standards, this working group is looked to as a leader in the archival standardization field, and the past work in OAIS has been widely adopted in those other bodies. Additionally, the DAI WG has provided an extensive response to CCSDS management concerning surveys of other bodies working in this area. In summary, that list of other bodies is: CCSDS SM&C, the OGC, ISO TC211/WG7, the IIPC, the OMG, the RDA, ISO TC46, the LTDP, PIN, the GEO, LOTAR, IVOA, and METS. We have confirmed that there are no conflicts or overlaps with those bodies. Working group members continue to network with their colleagues outside the CCSDS attempting to ensure that duplication of efforts is minimized. |
| Patent Licensing Applicability for Future Standards | No patent licensing issues are currently envisioned. As new projects are defined, any patent licensing issues will be identified within the individual projects.  | No patent licensing issues are currently envisioned. As new projects are defined, any patent licensing issues will be identified within the individual projects.  |
| Technical Risk Mitigation Strategy | Technical risks are low since there is already broad activity in this area and many years of experience of ad hoc non-standardized activities meeting the needs of individual archives. The initial scoping is the Space agency archives and their Producers. It may also be expanded if reviewers outside the proposed scope find it relevant and useful. Attempts will be made to include participation interested parties from outside the traditional CCSDS members. If outside participation is not obtained, these activities may result in standards that are less well accepted outside the CCSDS community. Lack of outside participation introduces more possibilities for outside standards that may overtake or conflict with CCSDS activities. Working group members continue to network with their colleagues outside the CCSDS to mitigate as much of the risk as possible. | Technical risks are low since there is already broad activity in this area and many years of experience of ad hoc non-standardized activities meeting the needs of individual archives. The initial scoping is the Space agency archives and their Producers. It may also be expanded if reviewers outside the proposed scope find it relevant and useful. Attempts will be made to include participation by interested parties from outside the traditional CCSDS members. If outside participation is not obtained, these activities may result in standards that are less well accepted outside the CCSDS community. Lack of outside participation introduces more possibilities for outside standards that may overtake or conflict with CCSDS activities. Working group members continue to network with their colleagues outside the CCSDS to mitigate as much of the risk as possible. |
| Management Risk Mitigation Strategy | Unavailability of resources could delay achievement of milestones. Fallback option would be to reschedule the milestones in accordance with actual availability of resources. There is the potential that one or more active experts from various agencies may become unavailable and this could impact the schedule if the timeline slips substantially. Fallback option would be to reschedule the milestones in accordance with actual availability of personnel. | Unavailability of resources could delay achievement of milestones. There is the potential that one or more active experts from various agencies may become unavailable and this could impact the schedule if the timeline slips substantially. A fallback option would be to reschedule the milestones in accordance with actual availability of personnel and other resources. There are no missions within agencies that have an interdependency or critical path need date for these products, so they will be produced at a pace commensurate with the resources. This allows the opportunity to prioritize quality of product over speed of production. This is appropriate considering the long-term view of long-term digital preservation.  |