



Allotrope Foundation Quarterly Update 2023/03

Dear Allotrope Community,

We have continued our progress this quarter and improved or expanded the AFO, ADM, ASM, and ADF further in the following areas with updates to share. Please note that access to links may require access to GitLab or other Allotrope Community resources. More details for access [here](#).

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Allotrope Foundation Ontology & Data Models (AFO/ADM/ASM)

Modeling teams have continued working to align on proposals to expand the domain coverage of the AFO, ADM and ASM. Easily access files located on Client Connect [here](#) and more granular technical details available on GitLab, <https://gitlab.com/allotrope/adm/-/tree/master/purl>.

See www.allotrope.org/product-releases for a full and updated list of available models.

AFO Updates (Now Available on OLS4 and Ontobee)

We are happy to share that an updated version of the AFO is available now on two additional public ontology lookup services, OLS and Ontobee.

OLS4 (<https://www.ebi.ac.uk/ols4/>) is the Ontology Lookup Service repository for biomedical ontologies published by the European Bioinformatics Institute. Version 4 is the latest release of OLS. An overview of OLS4 is available [here](#).

Ontobee (<https://ontobee.org/>) is a linked data server designed for ontologies. It is aimed to facilitate ontology data sharing, visualization, query, integration, and analysis. Ontobee was developed by Dr. Yongqun "Oliver" He's laboratory research group at the University of Michigan Medical School, an Allotrope Partner Network member.

Following the updated set of ADMs released this quarter, a new AFO release is published. Please note that QUDT 1.0 is no longer merged into the Allotrope Merged Ontology Suite.

The Allotrope Merged Ontology Suite release is available on:

- BioPortal, the repository of biomedical ontologies published by the National Center for Biomedical Ontology at Stanford University: <https://bioportal.bioontology.org/ontologies/AFO>
- OLS4, the Ontology Lookup Service repository for biomedical ontologies published by the European Bioinformatics Institute: <https://www.ebi.ac.uk/ols4/ontologies/afo>
- Ontobee, Ontologies data server published by the University of Michigan Medical School: <https://ontobee.org/ontology/AFO> (Ontobee generates the AFO list of terms in an Excel spreadsheet as well as Tab Separated Values file)
- Client Connect: [here](#)
- Gitlab: <https://gitlab.com/allotrope/afo/-/tree/master/afo>
- Allotrope PURL sever: <http://purl.allotrope.org/> (listed under AFO>MERGED)
- JFrog Artifactory: <https://allotrope.jfrog.io/ui/repos/tree/General/AFO-release-public>
- Allotrope website: <https://www.allotrope.org/ontologies>

AFO Tools (Term Dictionary and New Term Submission)

Allotrope Term Dictionary: The tool is available in both .xlsx (Excel) and .csv (Comma Separated Values) format and can be downloaded from the

- Allotrope website at: <https://www.allotrope.org/ontologies>



- Client Connect: [here](#)

AFO New Terms Submission Tool: This project provides the tools to enable simple (and friendly) new AFO term(s) submissions for governance independent of developing data models. To get started with the AFO New Term Submission, please refer to: <https://gitlab.com/allotrope/afo-new-term-submission>.

Allotrope Foundation Data Models (ADM/ASM)

ASM is Public

This quarter, the foundation announced the public release of the Allotrope Simple Models. By making ASM available to the public, Allotrope Foundation seeks to enable wide-spread data standardization throughout the scientific community through adoption of this technology. To accommodate the public availability of the ASM artifacts and the training material, a new Allotrope public group was open on Gitlab (<https://gitlab.com/allotrope-public>) and some of the related ASM projects were moved. For more information on how to access the ASM and licensing terms, please visit the Allotrope Foundation website at <https://www.allotrope.org/asm>.

ASM Directory

ASM Directory for the applicable sample JSON and JSON Schema files per technique is available for convenient viewing of file content using a browser. The directory contains links to the latest sample files and embedded (i.e., standalone) schema for all ASMs in REC (Recommended) status. Please refer to the new location of the directory on the public repository: <https://gitlab.com/allotrope-public/asm/-/blob/main/README.md#allotrope-simple-model-directory>

ADM/ASM Updates

During this quarter several models were updated with:

- New statistic datum pattern for statistical quantity values
- Model alignment on standardized hierarchy for aggregate models

The Allotrope Data Models and Allotrope Simple Model Suite release is available on:

- Client Connect: [here](#)
- GitLab: <https://gitlab.com/allotrope/adm/-/tree/master/>
- JFrog Artifactory: <https://allotrope.jfrog.io/ui/repos/tree/General/ADM-release-public>

The latest Tabular Model Template in Excel is available for download on GitLab: <https://gitlab.com/allotrope/adm/-/tree/develop/purl/template> or Client Connect: [here](#)

ADM Model Updates

Here is the list of the updated set of ADMs released this quarter.

ADM Model	Type	Maturity	Path	GitLab Links
Pumping	Tabular	REC	New	Diagram Shape
Stirring	Tabular	REC	New	Diagram Shape
Temperature Monitoring	Tabular	REC	New	Diagram Shape
pH Sensor	Tabular	REC	New	Diagram Shape
Pressure Monitoring	Tabular	REC	New	Diagram Shape
Liquid Chromatography	Tabular	REC	Promoted CR to REC	Diagram Shape
Gas Chromatography	Tabular	REC	Promoted CR to REC	Diagram Shape
FPLC	Tabular	REC	Promoted CR to REC	Diagram Shape
Hot Seal (Hot Tack)	Tabular	REC	Update	Diagram Shape
Fluorescence	Tabular	REC	Update	Diagram Shape
Luminescence	Tabular	REC	Update	Diagram Shape
UV Absorbance	Tabular	REC	Promoted CR to REC	Diagram Shape

ASM Model Updates

Here is the list of the updated set of ASMs released in this quarter.

ASM Model	Type	Maturity	Path	GitLab Links
Pumping	Tabular	REC	New	JSON schema Sample file
Stirring	Tabular	REC	New	JSON schema Sample file
Temperature Monitoring	Tabular	REC	New	JSON schema Sample file
pH Sensor	Tabular	REC	New	JSON schema Sample file
Pressure Monitoring	Tabular	REC	New	JSON schema Sample file

Liquid Chromatography	Tabular	REC	Promoted CR to REC	JSON schema Sample file
Gas Chromatography	Tabular	REC	Promoted CR to REC	JSON schema Sample file
FPLC	Tabular	REC	Promoted CR to REC e	JSON schema Sample file
Hot Seal (Hot Tack)	Tabular	REC	Update	JSON schema Sample file
Fluorescence	Tabular	REC	Update	JSON schema Sample file
Luminescence	Tabular	REC	Update	JSON schema Sample file
UV Absorbance	Tabular	REC	Promoted CR to REC	JSON schema Sample file

ASM Training Materials and Working with the ASM

ASM training materials are now available on Allotrope public repository at the following locations:

- Brief introduction to ASM: <https://www.allotrope.org/allotrope-simple-model>
- ASM Primer: <https://gitlab.com/allotrope-public/asm-primer/-/wikis/home>
- ASM Jupyter Notebook Demo: <https://gitlab.com/allotrope-public/asm-jupyter-demo> It is a step-by-step example file for working with ASM files in a Jupyter Notebook. It was also tested with Google Colab.

ASM Licensing

The ASM is collectively licensed under three licenses, depending on intended usage and membership status:

a) If your use is non-commercial (e.g., academic research), the ASM is licensed under the [Creative Commons Attribution-NonCommercial 4.0 International](#) License (CC-BY-NC 4.0). This license does not permit commercial use but enables modification* of the ASM.

b) If your use is commercial (e.g., to incorporate into or to support a commercial product or service), the ASM is licensed under the [Creative Commons Attribution-NoDerivatives 4.0 International](#) License (CC-BY-ND 4.0). This license permits commercial use, but restricts modifications to maintain the Allotrope standards.

c) Alternatively, if you are a member of the Allotrope Foundation or the Allotrope Foundation Partner Network, the ASM is licensed under the Allotrope Commercial License available to members**. This license allows for commercial use and modification* of the ASM.

*Validation of modifications by Allotrope required to utilize ASM or Allotrope designation.

**<https://www.allotrope.org/membership-and-access-to-framework>



ASM Modeling and Support

ASM related support tickets can be opened at the ADM project (<https://gitlab.com/allotrope/adm/-/issues>).

The latest updated set of ASM models is available on Gitlab. New and updated models will be released in conjunction with the release of new tabular models. Adopters can generate example results of tabularized data based on the JSON ASM format.

In cases where there is no Tabular model for a chosen instrumentation type or technique, the product team is available to support the drafting of a new tabular model and the Modeling Working Group is ready to review and govern drafted models.

Allotrope Data Format (ADF):

ADF Library Version 1.5.5 RF Released

The ADF Library version 1.5.5 RF was released during this quarter by the HDF Group support team.

New Features:

- New *AdfAudit.hasFixedDigest* Algorithm property was added and will appear in tandem with *AdfAudit.hasDigestAlgorithm*. The new property uses the following correct namespace IRI: <http://id.loc.gov/vocabulary/preservation/cryptographicHashFunctions/>. The new property was added as part as the fix for [Issue #130](#). Please see below.

Fixed issues:

- [Issue #130](#) - Backward incompatibility introduced by ADF 1.5.4 RF: The ADF 1.5.4 release replaced the namespace IRI of the *AdfAudit.hasDigestAlgorithm* property values with the new and correct one ([issue #101](#)). This caused ADF files created with this version of the library to be unusable by any previous ADF library versions. The ADF 1.5.5 introduces a new property, *AdfAudit.hasFixedDigestAlgorithm*, for the new namespace IRI while keeping the old one for *AdfAudit.hasDigestAlgorithm*. This ensures that older ADF library versions will continue to work for ADF files created by version 1.5.5 or later.
- [Issue #43](#) - Handle the support for *xsd:dateTimeStamp* (Jena version 2 limitation): ADF library now recognizes *xsd:dateTimeStamp* datatype which improves interpretation of the data description content of ADF files.
- [Issue #8](#) - Fix the DataCube API *qb.order* property: The W3C RDF Data Cube ontology defines a property named order with the range *xsd:int*. The ADF library now generates RDF triples with this property in the specified range.
- [Issue #128](#) - Ambeth Unsatisfied Dependency Exception on Windows 2019: Using ADF library on Windows Server 2019 can fail with an error similar to this one: "java.lang.UnsatisfiedLinkError: C:\Users\{current.user}\AppData\Local\Temp\jna-507776630\jna2663869931461593043.dll". If this happens, please install the Microsoft Visual Studio 2010 C++ Redistributable available [here](#).



- [Issue #127](#): Support for pre-release ADF packages in C# build and test pipeline jobs.

We would like to thank Aleksandar Jelenak from the HDF Group engineering team for his dedication and releasing the ADF Library 1.5.5 RF

General ADF Library Information

ADF Library version 1.5.5RF is available for download via:

- Client Connect: [here](#)
- JFrog Artifactory:
 - Java Library: <https://allotrope.jfrog.io/ui/repos/tree/Properties/libs-release-internal>
 - C# Library: <https://allotrope.jfrog.io/ui/repos/tree/Properties/libs-release-internal-net>

Deprecating ADF Library 1.5.4 RF:

ADF Library 1.5.4 RF is deprecated due to backward incompatibility issue that was fixed in version 1.5.5 RF. We strongly recommend for all users of version 1.5.4 RF, to upgrade to the latest version of 1.5.5 RF.

ADF Library Version 1.5.6

As a further commitment to supporting and maintaining the ADF Library, the Product Team together with the HDF Group support team started to work on library improvements toward the next ADF Library release version 1.5.6.

Support tickets:

Support tickets can be viewed and opened at the ADF repo ([here](#)). Please select the “new bug” template to describe the issue and attach any supporting artifact.

Tooling, Testing, QA and Automation Pipeline

Updates to the AFO and ADM Pipeline and Tools

During this quarter, we continued with the efforts to improve the quality of our AFO development lifecycle.

The work on tooling and the automation CI pipeline for exporting AFO to OWL & RDF/XML format was completed. We now provide the following file formats for the latest AFO release:

- Turtle: <http://purl.allotrope.org/voc/afo/latest.ttl>
- OWL: <http://purl.allotrope.org/voc/afo/latest.owl>
- RDF/XML: <http://purl.allotrope.org/voc/afo/latest.xml>

In addition:



- The Semantic Diff tool ([here](#)) that compares two ontology files went through some improvements in its filtering capabilities ([here](#)).
- The automation CI pipeline to package and deploy the AFO and ADM release package to JFrog Artifactory is under development.

We would like to thank Karin Colman from the OSTHUS engineering team for her dedication and commitment to improve the overall tooling, testing, QA and automation pipeline.

Working Group Updates

Please note that the working groups meetings are recorded to improve access and transparency for those unable to attend or for the folks that are just interested in what's going on. To sign up for any working group, go to: www.allotrope.org/working-groups

Modeling: (Notes: [here](#))

- The team was working on updates to some of the models with the new structures for hierarchical aggregation patterns of laboratory test models and the new approach for modeling statistical features. An overview of representing statistical parameters in a Tabular Model was presented by Ben during the 2022 Fall Allotrope Connect and can be viewed on the Allotrope YouTube channel at [here](#)
- New models were developed to support lab automation, monitoring using a sensor or a device data over time (Time series data), and data acquisition applications.

Chromatography: (Notes: [here](#))

- GC, LC, and FPLC tabular models were updated with the latest statistics and hierarchy aggregation patterns.
- Some of the Chromatography model's fields were downgraded from mandatory to optional. This was done to accommodate the fact that JSON schema is not supporting validation warnings instead of errors (unlike SHACL).

MS: (Notes: [here](#))

We would like to thank Graham McGibbon (ACD/Labs) and Fengjian Shi (Amgen) for stepping forward and continuing to lead the MS working group.

- A new "Walkup" LC-MS model (Merck) is under discussion.
- Two of Genentech's SMEs joined the bi-weekly WG meetings.

Allotrope in the News



For the latest list of “Allotrope in the News”, please visit our website at:

<https://www.allotrope.org/allotrope-in-the-news>

Allotrope Foundation Further Expands Access to Interoperable Laboratory Data Standards with Public JSON-based Analytical Data Models

WASHINGTON (PRWEB) FEBRUARY 08, 2023.

The Allotrope Simple Models (ASMs) enable the collection and conversion of scientific information from a broad range of laboratory instruments into a unified human-readable FAIR data format.

The press release is available at: <http://www.prweb.com/releases/2023/2/prweb19153189.htm>

The Pistoia Alliance welcomes the news that the Allotrope Foundation has made its interoperable laboratory data standards available to all.

February 2023.

The Pistoia Alliance welcomes the news that the Allotrope Foundation has made its interoperable laboratory data standards available to all, and fully supports open collaboration and data standardization across the scientific and life sciences ecosystem.

The LinkedIn post is available [here](#).

Allotrope Publications

We have published 2-page summaries:

- **Allotrope Models & Domains:** can be downloaded from [here](#)
- **Allotrope Data Strategies:** can be downloaded from [here](#)

A step-by-step guide to a Tabular Model creation using Excel was written by the Product Team:

- **Tabular Model Creation with Excel:** is available for download from Client Connect within the Modeling WG folder: [here](#)

AF Community and Events

2023 Spring Allotrope Connect – Registration is Open

We're excited to announce the return of our in-person Allotrope Connect meetings for Spring 2023! This Spring's event will be held April 25-27th, 2023 at the Allotrope Secretariat offices in Philadelphia, Pennsylvania, USA.



After several years of being virtual, we're looking forward to resuming our tradition of lively in-person presentations, discussions, and collaboration. Similar to previous in-person events, we will start the meeting with a day of updates, open to the public, from Foundation leadership and presentations by Allotrope and APN members. On the second day, the session will feature strategic and technical working group discussions on a variety of topics focusing on Allotrope's adoption and open to all members. The final day will wrap up with Allotrope's quarterly Board of Directors meeting and the opportunity for in-depth discussions around implementation with Allotrope's technical leadership.

The agenda can be found on the registration page as well as on our website:

- <https://www.allotrope.org/2023-spring-allotrope-connect>
- <https://survey.alchemer.com/s3/7244035/Spring-2023-Allotrope-Connect-Registration>

Call for Presentation - 2023 Spring Allotrope Connect

We wanted to use this opportunity to call for brief presentation abstracts from the community related to work you are doing (or planning to do) involving one or more Allotrope products (Allotrope Foundation Ontologies, Data Models, Data Format, or the new Allotrope Simple Models). The Connect events are great opportunities to share and discuss not just your own work and experiences with Allotrope, but also to share challenges and opportunities you see that we can tackle together as a pre-competitive community. Please send your presentation suggestions to the organizing team at product_team@allotrope.org as soon as you can.

Allotrope Data Framework Onboarding Guide

The Allotrope Onboarding Guide wiki page was updated. Please refer to the following link: [Allotrope Data Framework Onboarding Guide](#)

Allotrope YouTube Channel

Our YouTube channel has new a handle: <https://www.youtube.com/@allotropefoundation>. The Allotrope YouTube Channel hosts a technical playlist as well as the Allotrope Connect public presentations from 2017 and 2020 to the latest 2022 Fall Connect event. The YouTube Channel videos are organized by playlists at: <https://www.youtube.com/@allotropefoundation/playlists>.

Community Website

A reminder that the Allotrope Foundation Community website is an effort to improve and centralize the non-public knowledge and communication with the community. The GitLab-hosted website can be accessed <http://community.allotrope.org> Note this requires GitLab access.

Some of the pages to look for:

- Allotrope Foundation Data Models (ADMs):
https://community.allotrope.org/resources/reference/semantic/allotrope_data_models/
The page includes information about the structure of ADM repository under the section “ADMs artifacts repository”
- ADF Application Programming Interface (API):
<https://community.allotrope.org/resources/reference/adf/api/>



- [ADF Specification: https://docs.allotrope.org/](https://docs.allotrope.org/)
- Allotrope Framework Semantic Style Guide:
https://community.allotrope.org/resources/reference/semantic/style_guide/afo_style_guide/
- Allotrope Foundation Data Model and Ontology Governance Process:
https://community.allotrope.org/resources/reference/semantic/governance/afo_adm_governance_process/

If you would like access to GitLab, please fill out our onboarding questionnaire, [here](#) – It’s a Google Form. If your firewall denies access to Google drive links, please contact amnon.ptashek@allotrope.org.

Looking Forward

The Allotrope Product Team is looking forward to another productive quarter. We are looking to develop additional improvements to meet the evolving needs of our community.

Please contact us for any questions at product_team@allotrope.org.

Sincerely,

Allotrope Product Team