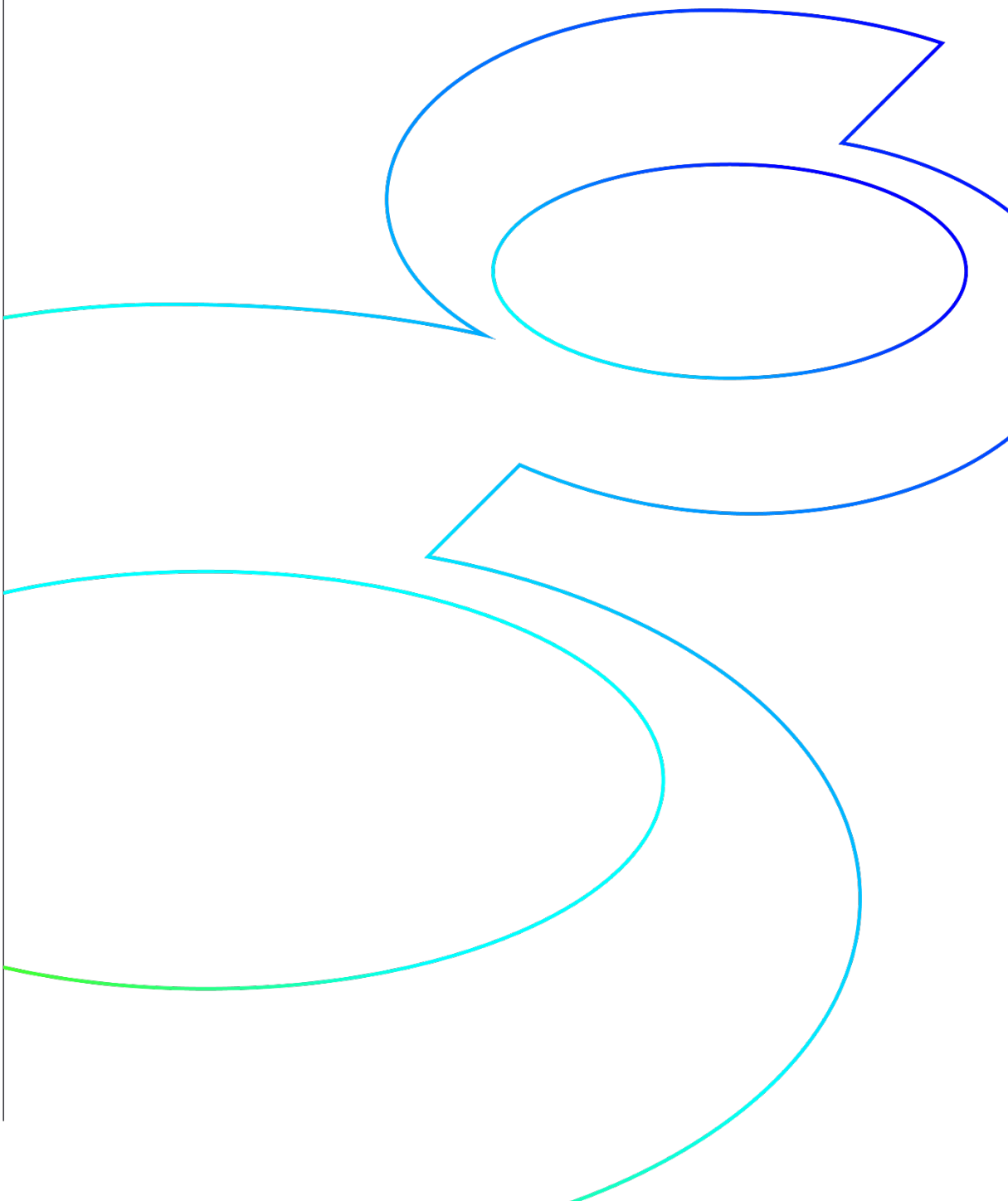
Release guide

Octave Alto Data Management 2025

12 November 2025



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About this release

Octave Alto Data Management (formerly ERDAS APOLLO) 2025 is a continuation of the product modernization effort first introduced with Alto Data Management 2023 released in October 2023. This release continues technology consolidation and feature compatibility such as introducing cross-platform, full feature support for Linux, significant performance improvements throughout, integration with the latest Octave Alto (formerly Luciad) platform, Spatial Modeler technology updates and many customer-reported bug fixes.

In comparison with v2023, this release brings incremental improvements with fewer platform and product changes.

This release guide highlights the key points but should not be considered exhaustive. Existing customers that may still be on Alto Data Management versions 2022 or older are encouraged to contact your Octave representative to discuss your individual platform usage to plan any migration to account for significant release changes.

Alto Data Management product tiers

Alto Data Management is a comprehensive data management server solution that helps to identify, locate, secure and organize your geospatial and related business data into a searchable, secure repository while enabling simple distribution of that data through interoperable web service delivery options.

Alto Data Management also alleviates pressures associated with optimizing spatial data archive storage requirements through usage of Octave's industry-leading ECW image compression and HSPC point cloud storage technology. Wherever possible, Alto Data Management aims to read the data as-is with no conversion based on other best of breed industry format standards.

- **Essentials** is the perfect solution for organizations requiring an enterprise solution to make sense of their traditional spatial data archive. Building on Alto Data Management Essentials' history of rapid imagery services, beginning with 2023 the Essentials tier services an expanded target market covering all traditional spatial data types with a robust Catalog and security model with matching web service delivery options. The expanded Alto Data Management Studio web administrator is available across all tiers, enabling rapid administration and control. Alto Data Management is an ideal starter solution for customers seeking a core catalog with distribution capabilities for traditional 2D raster or vector data sources.

- **Advantage** takes things to the third dimension by adding point clouds, 3D meshes and BIM/CAD data types to the Catalog model. It also expands support from the traditional file-based data types to also cover spatial data residing in databases such as Microsoft SQL Server, PostgreSQL and Oracle, among others. Defense industry users also gain support for VPF, MGCP and other defense-aligned formats and visualization standards. Additionally, 360-degree panoramic imagery support is also now available from E57 or Leica Pegasus sensors. All these data types inherit the foundational workflow and security model introduced with Alto Data Management Essentials. These data formats are discovered seamlessly through automatic data crawlers to locate, insert and extract metadata.

- **Professional** provides a powerful server-side geoprocessing solution for geospatial data, employing complex algorithms that underpin the engine within Octave Imagine (formerly ERDAS IMAGINE) or Octave GeoMedia (formerly GeoMedia). Geospatial analysts create custom models using these desktop expert tools and publish them to the Geoprocessing Server to enable execution on demand by other users.

Installation packages

Alto Data Management is available in two installation packages:

Alto Data Management [1]

The complete package including all components and features.

Windows and Linux version are now supported!

Alto Data Management Core

Streamlined installer focused on advanced imagery delivery only

Windows and Linux version are supported

For new customers, the Alto Data Management suite installer is recommended for all functional capabilities unless you have very specific raster delivery needs. Alto Data Management Core is no longer included in the main Alto Data Management package to simplify architecture through various technology integration work completed in v2023.

We are continuing to provide a separate “Data Pack” with an assortment of sample data across New York City, USA and Melbourne, Australia to help onboard new customers and demonstrate key workflows. This is not required to deploy the software.

[1] Previously known as Octave Alto Data Management Advantage/Professional

Capabilities per tier

Higher tiers incorporate functionality of all lower tiers and depend on the installation package used.

Alto Data Management	V2025
Professional	Geoprocessing
	Data Extraction Service (DES)
	Generate active and precise footprints NEW
	Maritime standards
	Aviation standards
	Point cloud catalog and visualization
	Panoramic imagery
	3D Mesh
	BIM
	Defense standards and symbology
Advantage	CAD
	Vector database
	OGC 3D Tiles
	HSPC
	LTS
	Download service
	Catalog
	Vector
	Raster
	Security
	AOI notification
	Catalog Explorer
Essentials	Web administration
	Metadata parsers and editor
	Raster and vector style creator
	OGC WMS, WCS, WMTS, WFS(T), GML, KML
	ECWP
	OGC API Records
	REST API

There have been no changes to the feature matrix for Alto Data Management Core installer.

Alto Data Management Core	V2025
Professional	Synchronous geoprocessing
	Image chain rendering
Advantage	OGC WMS, WMTS
	Octave ECWP
Essentials	ISO JPIP
	Esri Geoservices

Note: It is expected that Alto Data Management Core v2025 will be the last release of the image server-only installation package and will be deprecated during CY2026 once we achieve feature equivalent compatibility. Existing customers are encouraged to still upgrade to v2025 for the latest platform and performance updates and continue to evaluate migration in due course.

New technology

Server

Support for Linux

Finally! All tiers of Alto Data Management — Essentials, Advantage and Professional — will now run on the Linux platform. For many years, we have heard requests to support the Linux operating system so cloud environments could run on a cheaper platform. The support for Linux will be delivered as a Docker container that is defined through a Docker Compose file; basic Docker experience is required for installation.

Active and Precise footprint support

The ability to store more precise footprints has been a gap in our supported capabilities since moving to the Octave Alto Server (formerly LuciadFusion) platform. The native footprints stored in Alto Server are simple MBRs. However, they have given us the ability to store Alto Data Management footprints as an MBR, Active or Precise bounding area as defined in the pictures below.

These areas are defined as follows:

- **Bounds:** Sets the extent property to the smallest orthogonal rectangle that fully encloses all raster pixels, including areas with null data. The rectangle's edges align with the minimum and maximum X and Y coordinates of the raster.
- **Active:** Sets the extent property to a five-point closed polygon that roughly approximates the area of the raster containing valid (non-null) data. Because the extent polygon uses only five points, it may include some null data and exclude some valid data.
- **Precise:** Sets the extent property by considering the outer boundary of all non-null raster pixels. The resulting polygon closely follows the shape of the valid data.

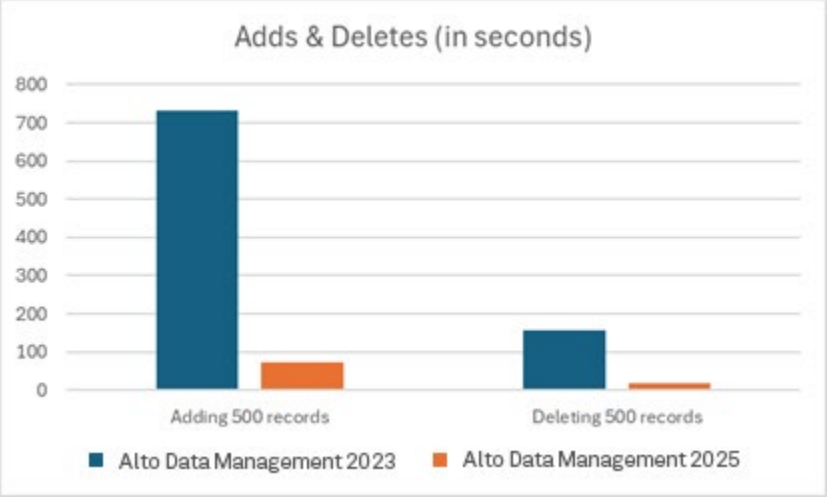
When upgrading from Alto Data Management 2023 to Alto Data Management 2025, a new custom property called "extent" will be added to each catalog record. This property is typically populated using the original record's extent. If that process fails, Alto Data Management will fall back to using the record's WGS84 Bounds to populate the "extent" property.

NOTE: When starting Alto Data Management 2025 services for the first time, initialization may take a few moments as existing catalog records are updated with the new "extent" property.

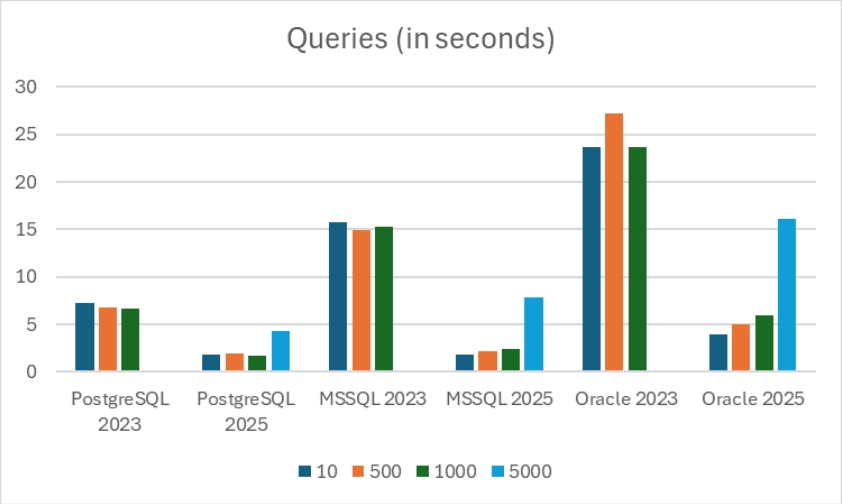
For new data, the user will be able to select the type of footprint desired. This footprint can be set through the APIs, or Alto Data Management can generate the appropriate footprint based on input provided with the Studio Add Data command.

Huge performance improvements

A huge concentration of this release has been performance improvements in workflows to add data and delete data. We have made numerous changes to how the software works, reduced unneeded API calls and included several new indexes on columns in the catalog database. Our crawling has improved its memory usage, so the crawl times remain flat over large crawls.

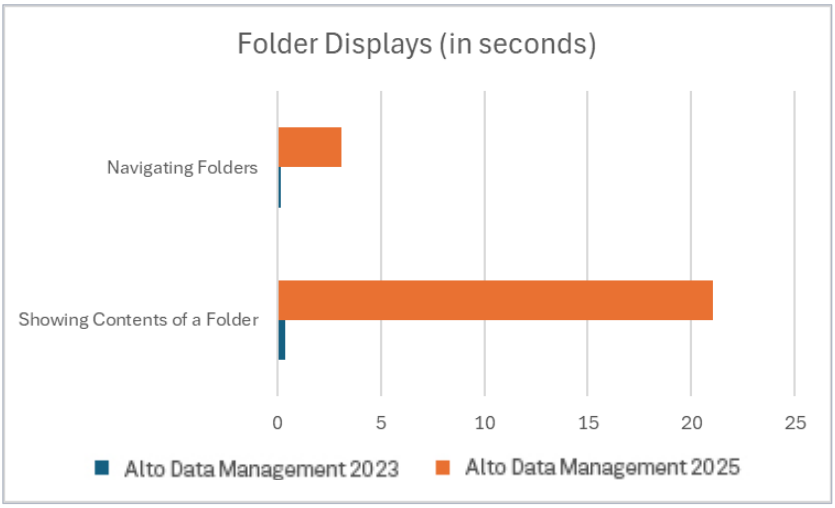


We also achieved substantial performance boosts in queries.



NOTE: Queries could not retrieve 5,000 records in 2023.

In addition, we have made improvements in data visualization presentation speed within Studio. Listing folders has improved about 400 times and folder navigation has improved nearly 10 times.

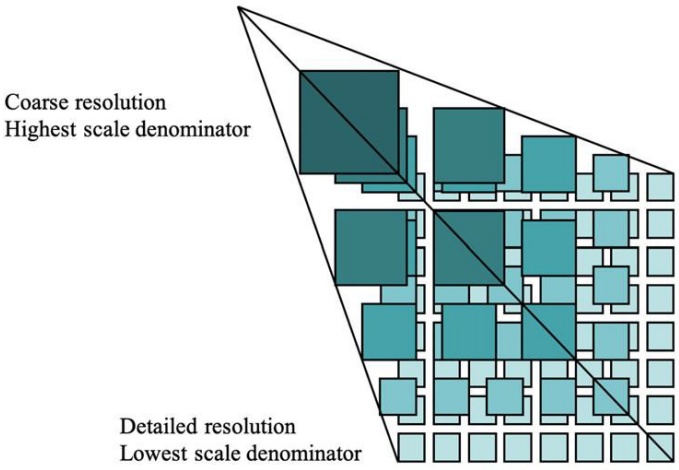


Custom WMTS TileMatrixSets

We have had multiple customers asking for the ability to create custom tile matrix sets, as well as a way to configure them to some degree. However, Alto Server services were hard-wired to only provide a limited set of tile matrix sets, including:

- WorldCRS84Quad
- GoogleMapsCompatible
- EPSG3395TiledMercator
- NSG Arctic (North) UPS Tile
- NSG Arctic (South) UPS Tile
- WGS84

Alto Data Management now has the ability to extend and customize the available tile matrix sets within published WMTS endpoints. This is a key feature compatibility improvement to help Alto Data Management Core customers who had a similar capability migrate. This was implemented in accordance with OGC Tiling definitions.



Alto Server upgrade

Integration with the Alto Server platform has been achieved, providing an assortment of new functional capabilities as well as enabling modernization of existing key functionality associated with Alto Data Management. Alto Data Management is currently built on Alto Server version 2025.0. Refer to the Issues resolved section in this document for specific updates from the Alto Server component that Alto Data Management inherits.

Additional language support

We are continuing to add more languages to the list of supported languages. Alto Data Management 2025 now includes Hindi, Czech and Slovak that have been reviewed by the respective regions.

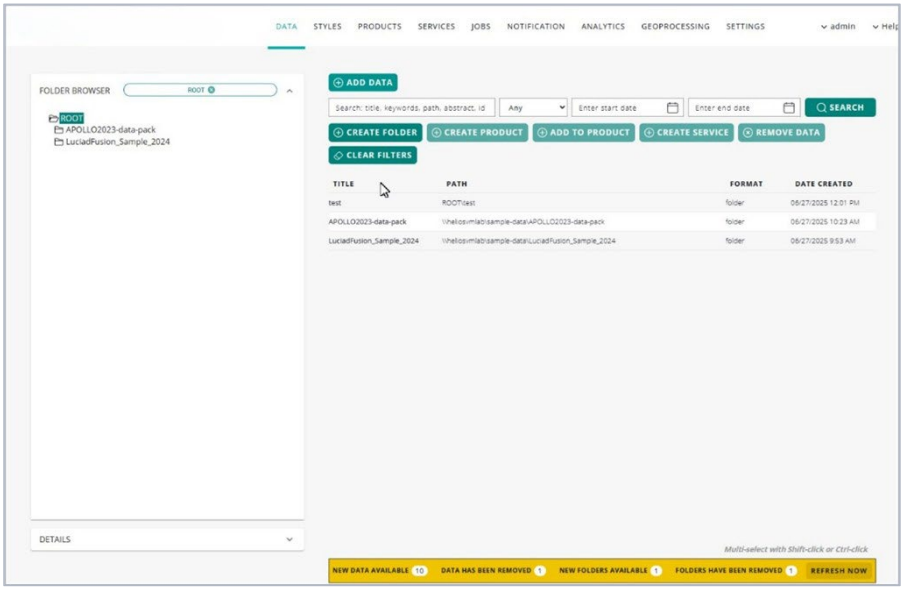
Arabic	Chinese	Czech
Dutch	English	French
German	Hebrew	Hindi
Italian	Korean	Polish
Portuguese	Slovak	Spanish
Turkish		

Studio

The previously available Alto Data Management Studio has been further enhanced with several additional components to expose the plethora of new capabilities provided in this release, such as folders, security, custom metadata parsers, vector styling editor and geoprocessing.

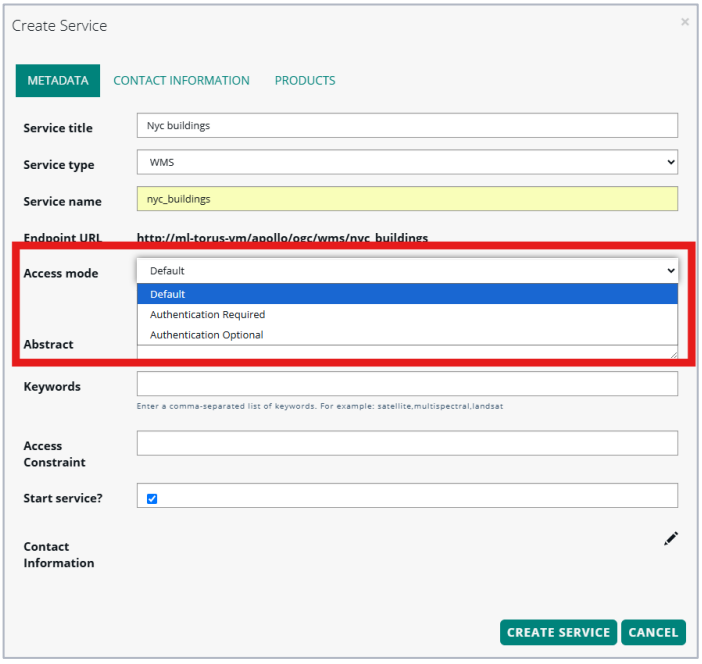
More visibility into background processing

It is not easy to tell what is happening with the background processing for adding and removing data. One indication is the “New Data Is Available” banner that pops up and updates if new data is added to the system. Also, with an Add Data Root crawl that has a deep directory structure, upfront processing happens to create these folders, but the user wasn’t given any notification that this was happening. Alto Data Management 2025 extends this banner adding more notifications for deleting data and folders. Additionally, we have added notifications for adding folders to inform the user that some preprocessing is being done prior to adding the data.

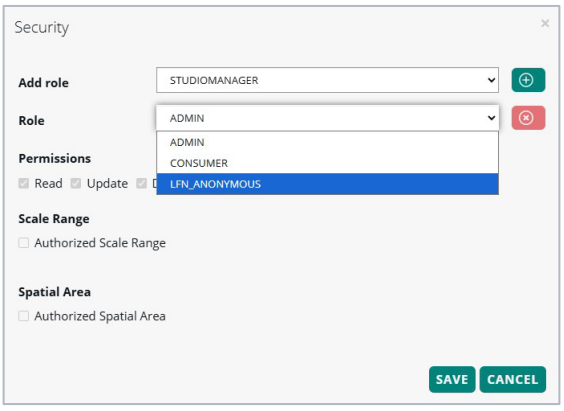


Setting services for anonymous access

Feedback from the regions is that we needed to provide the ability to set data/services to optionally allow anonymous access. Right now, all Alto Data Management services are set behind access control. Allowing anonymous access could be done, but it was a very manual process and not user friendly.



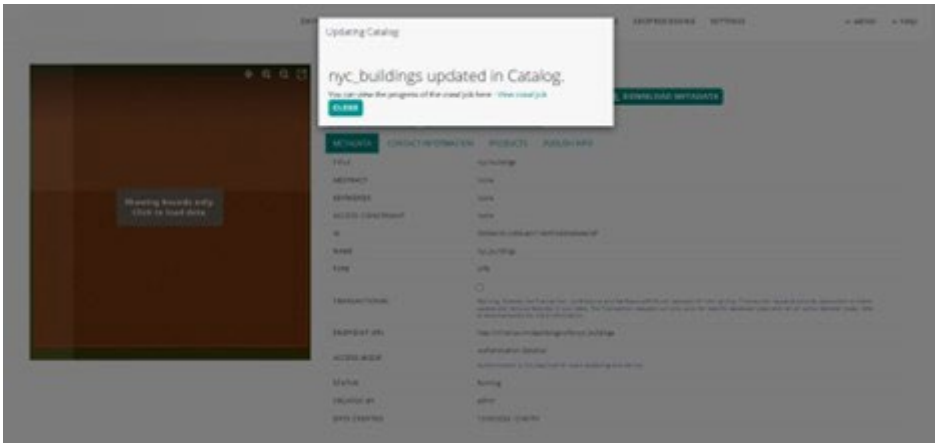
We have exposed the LFN_Anonymous role so data access rights can be set. Then on service creation, we allow admins to specifically set a service to “authentication: false” via the Studio interface. This sets the internal configuration necessary so that the service will not prompt for credentials. The only data exposed as anonymous are those contained within the service that were granted the LFN_Anonymous role.



Ability to crawl existing service into the catalog

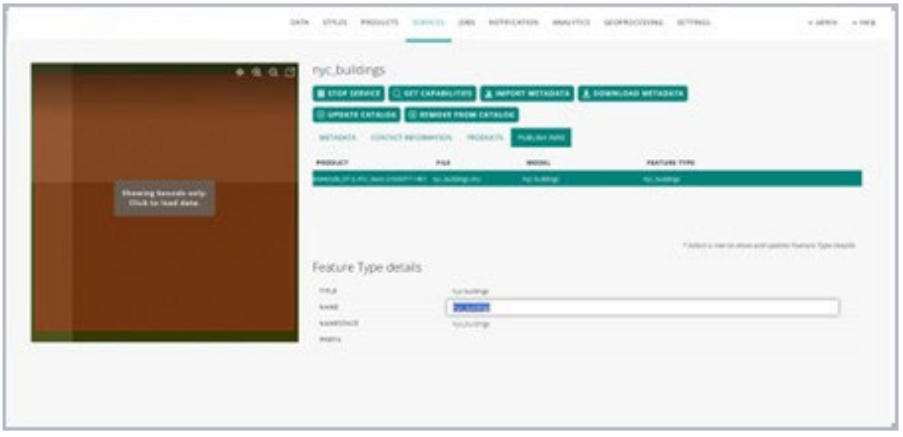
Prior to the Alto Data Management 2025 release, performing a search by data type would only locate services that were crawled as an OGC external service. Any services created with the Studio application will not be found because the queries are looking for catalog items and not the actual service themselves.

This release provides a way for administrators to crawl WMS, WFS, WMTS and WCS services after they are created in Studio. This will allow Catalog Explorer to locate those services through a query to the catalog.



Editing of WFS feature type names

Many times, WFS feature names simply take on an unrecognizable ID value as a type name. For this release, Alto Server 2025 has introduced a capability to modify the feature types for WFS services. The Alto Data Management Studio application has added a user interface to control this. This will help make the exposed service layers more identifiable to service consumers.



Catalog Explorer

Catalog Explorer continues as a robust exhaustive web-based exploitation client based on the Alto Browser platform. Although Catalog Explorer has been around since version 2020, we have continued to enhance it with capabilities consistent with other Alto Data Management enhancements and customer requests. The client remains the general purpose end-user client.

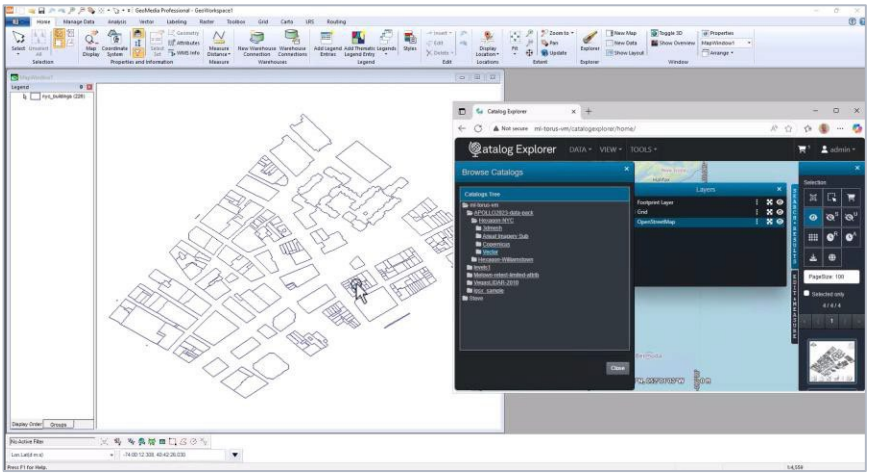
Octave Alto Browser upgrade

We continue to upgrade Catalog Explorer to the latest versions of Octave Alto Browser (formerly LuciadRIA), gaining an assortment of new functional capabilities. Alto Data Management is currently built on Alto Browser version 2025.0.01. See the Issues resolved section in this document for any relevant updates.

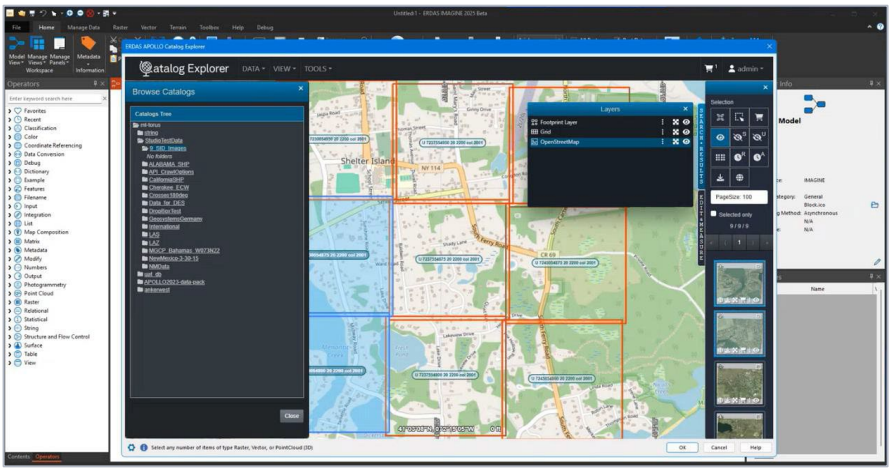
Integration with GeoMedia and Alto Data Management

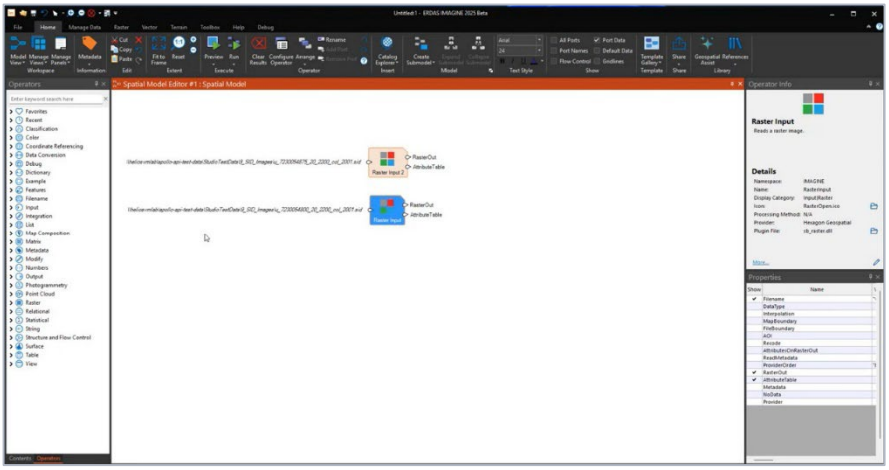
With all the changes in the Alto Data Management 2023 release, compatibility with GeoMedia and Imagine were broken. In this release, we have reestablished that connection in a much different way. Instead of building unique user interfaces that perform searches of the Alto Data Management catalog, we have chosen to provide ways for both GeoMedia and the Spatial Modeler tool to make use of the existing Catalog Explorer to perform searches.

For GeoMedia, Catalog Explorer supports drag-and-drop functionality using the text/plain MIME type. Once you have obtained search results, you can drag a catalog item from the Search Results panel to any desktop application, such as those developed in C++, C#, Java or other languages. This functionality also extends to web applications. This enhancement increases compatibility and facilitates communication with applications developed in various programming languages. These search results can be dragged on the GeoMedia map where GeoMedia will create a connection and use the data.



The Imagine team has chosen to add the new integration to the Spatial Modeler application. For this integration, Spatial Modeler embeds the Catalog Explorer application inside a web frame. After finding the desired results from Catalog Explorer in the web frame, Catalog Explorer will send an event package for each search result as it is selected. This will allow Spatial Modeler to create an input operator for the data so it can be used within a model.

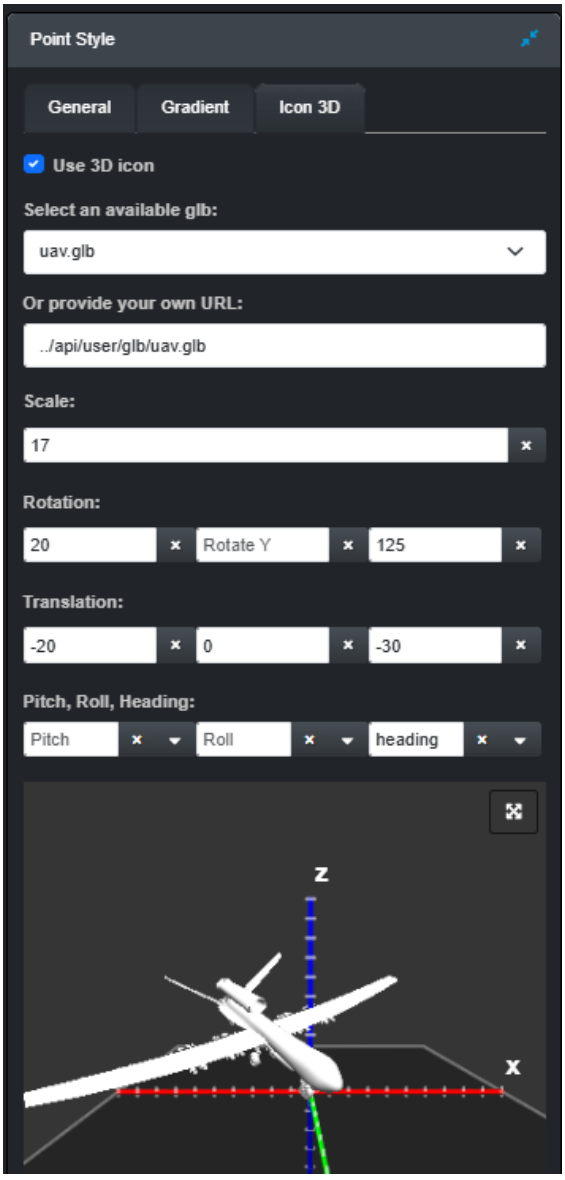




Live Tracks and 3D icons

Support for Live Tracks in the 2023 version was only for the STOMP format. Since that format is a little old, we have added additional support for both AIS and NMEA formats.

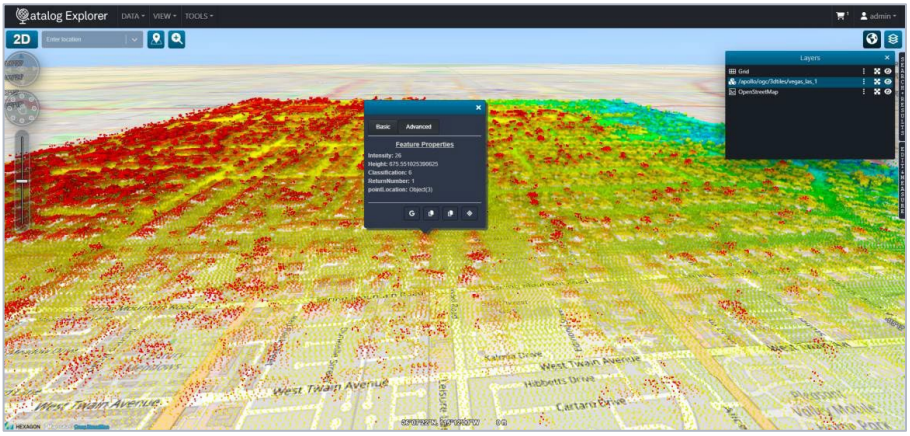
In addition to the new formats, we have added support for 3D icons in vector styling. We have supported styling vector data point geometry with 2D icons, but this release allows the user to style point geometry using 3D icons. The UI and Painter have been extended to support this case. A few predefined icons are included as part of the Catalog Explorer war file, but users can use their own icons by pointing to the URL where the icon is located. The icons need to be in GLB format.



Single point property selection within point clouds and meshes

It is now possible to select an individual point from a point cloud or mesh and display certain properties contained on that point. These properties can include:

- Height
- Intensity
- Return number
- Classification
- Point location

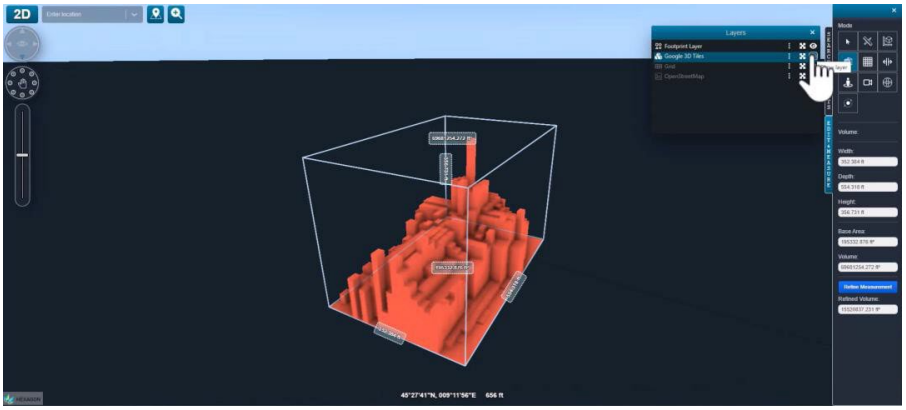


Additional options on the properties dialog allow the user to:

- Open the location in Google Maps
- Copy location data to the clipboard in CSV format
- Copy point location as GeoJSON
- Add an annotation to the map view at that location

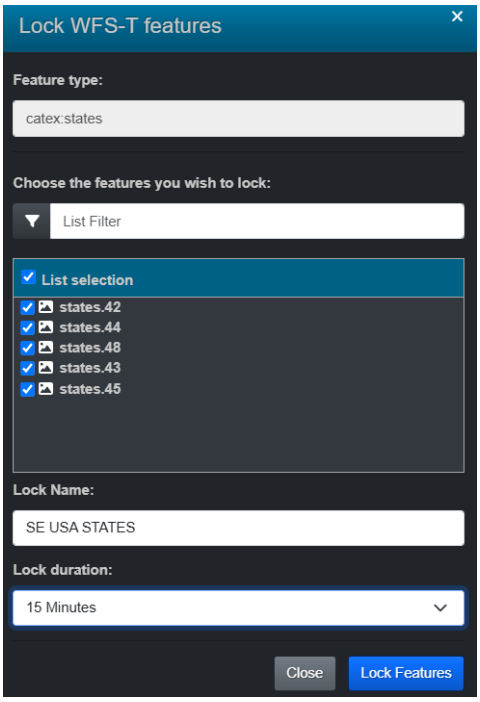
Volume measurements

Alto Data Management 2025 supports volume measurements. After defining the volume box, width, depth, height and volume are shown on both the map and the toolbar display. Currently, this is limited to “box” measurements, but the intent is to expand the capability in the future to inlcude cylinders and extruded polygons. However, with the Refine Measurement button, a scan is performed to generate a more accurate bounding area within the defined box.

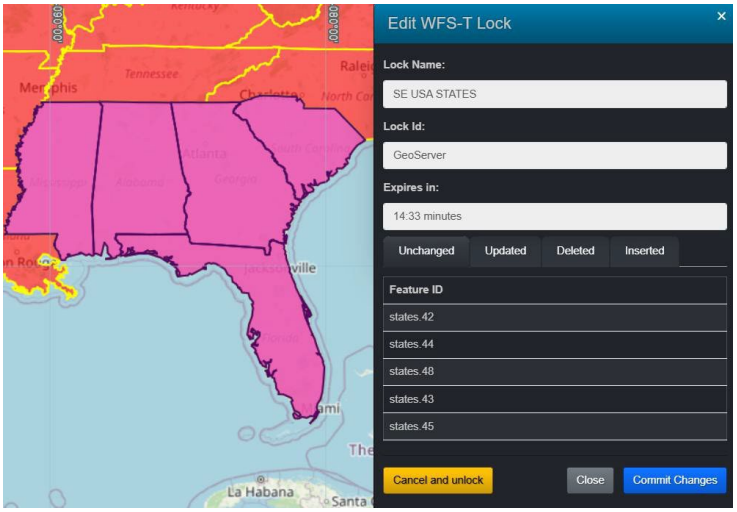


Explorer to allow any WFS-T with feature locking support

Now that Alto Server supports transactional WFS (WFS-T), we have updated Catalog Explorer to allow any edits made to be submitted back to the service for inclusion. The biggest area of improvement with our WFS Transactional service is the ability to lock features. This functionality locks specific features during editing to prevent conflicts.



From the user menu, select "List WFS-T Locks" to view the lock you have activated. The dialog lists each feature being edited under the "Unchanged" tab. As your editing session progresses, feature IDs will appear under the appropriate tab (e.g., Updated, Deleted, Inserted). Once you have completed your edits, select the "Commit Changes" button to apply your edits and unlock the features.



Geoprocessing Server

The modernized Geoprocessing Server was first introduced in v2022; however, we have continued to enhance its capabilities, including:

SMSDK 16.9 platform updates

The Geoprocessing Server included in the Alto Data Management 2025 release has been updated to the SMSDK 16.9 platform. This means the Geoprocessing Server includes all operator packs from Imagine and GeoMedia.

Performance optimizations

Performance optimizations have been made to improve starting Geoprocessing Coordinator and Worker instances.

Geoprocessing now supported on Linux

In addition to supporting Linux on the Alto Data Management Server, the Geoprocessing Server is also now supported on Linux. This included the move of many Windows-only operators. However, there are some caveats that apply with respect to operator availability.

Generating Precise footprints

The new ability to store more Precise raster footprints comes with the ability to have Alto Data Management generate either Active (convex hull type boundary) and Precise (an exact boundary of the raster image). This generation tool relies on Geoprocessing for extraction. Because of this, users will only be able to generate these more accurate footprints if they have a Professional license.

Deprecation of legacy Octave Geoprocessing Service APIs

These APIs were used for the original implementation and predated the OGC API Processes implementation. All usage of Geoprocessing must now use OGC API Processes. No impact is expected since all v2023 customers and Catalog Explorer were already using the new API.

System requirements

	Alto Data Management Core	Alto Data Management
Computer/processor	Intel® or AMD x86 quad-core processor with a clock speed of 2.0 GHz or higher	
Memory (RAM)	16 GB or more strongly recommended	
Server disk space	10 GB for application footprint, 10GB at a minimum for application cache.	
Peripherals	Gigabit ethernet	
Server operating systems	• Windows Server 2022 • Windows Server 2025 • Red Hat Enterprise Linux 9.x (and compatible systems)	
Cloud environments	Amazon Elastic Cloud Compute (EC2), Azure Virtual Machines	
Software	• Java LTS versions 17 or 21 • Docker (Linux Only)	
Licensing	Geospatial Licensing Administrator 2023+ with 16.9 feature code versions configured	
Application servers	Microsoft IIS 10 or higher (Windows) Apache 2.4 or higher (Linux)	• Tomcat 11.0 – Windows: embedded in installer • Linux: external dependency
Databases	• Oracle Database 19c, Standard or Enterprise Edition • Microsoft SQL Server 2019, 2022 Standard or Enterprise Edition • PostgreSQL version 14 - 17, with PostGIS 3.4 or higher • SQLite (Alto Data Management Core only) Other versions might be viable but please contact Octave Support	
Admin tools	• Alto Data Management Core Console	• Alto Data Management Studio
Compatible client applications	• Catalog Explorer 2025 • GeoMedia 2025 • Octave Imagine 2025 • GeoCompressor 2025 • Any OGC-compliant WMS, WFS, WMTS, WCS, CSW, OGC API - Processes compliant client applications	

Migration guide

Alto Data Management Core v2022 to Alto Data Management Core v2025

Upgrading from v2022 to v2025 with the Alto Data Management Core installer follows previously established upgrade patterns where the previous version should be uninstalled, configuration kept when prompted and the new 2025 version deployed. An in-place upgrade of the configuration and database will be performed if needed.

Please refer to the user guide for more information and ensure appropriate backups are taken.

Alto Data Management Core to Alto Data Management v2025

Existing imagery-based customers who have deployed using the previous Alto Data Management Core/Essentials installer but are interested in the new capabilities must recreate their raster services.

This process is manual; however, in most cases a significant portion of the data archive can be readded using the new Data Root functionality and then remapping to the published service types.

The two options can be deployed side by side; however, we recommend a separate installation to enable a simpler comparison and deployment. Due to the number of features now available on the Essentials tier, we expect some customers to explore this option, especially those looking to take advantage of the expanded capabilities outside the traditional raster at the Essentials level.

Alto Data Management Advantage / Professional v2022 to Alto Data Management v2025

A Migration Tool is available to assist in the migration from Alto Data Management 2022 to Alto Data Management 2023. However, it will not be delivered directly for Alto Data Management 2025 since most organizations are handling the upgrades internally through APIs. However, users can use the tool to upgrade to Alto Data Management 2023 Update 3 before migrating to the Alto Data Management 2025 release. Before beginning the migration, you must be on Alto Data Management 2022 Update 2. You will need to ensure you have all the necessary roles defined in your 2023 version to properly map your 2022 system.

Please contact your Octave representative regarding availability and requirements for the Migration Tool.

Alto Data Management v2023 to Alto Data Management v2025

The Migration Tool is not required for intra-2023 or higher updates. Please refer to the user guide for more information on workflow to uninstall, leaving configuration and then deploying the new version. Any necessary updates will be applied.

Conversely, new deployments do not require installation of previous v2023 versions. Simply install Alto Data Management 2025.

Issues resolved

Alto Data Management 2025

Support ticket / Jira #	Summary
TR-1341	Alto Data Management cannot tell why datasets are being added assumes because of upload and also doesn't find folders for the data if the new da ta is in a new subfolder
TR-1389	Alto Data Management has three different "no thumbnail" images
TR-1390	OpenID - catalog connection in Catalog Explorer goes stale after 5min of inactivity
TR-1423	Several issues attempting to create AOI notifications from Studio
TR-1439	Dataset(s) in Alto Data Management Product lose Style information if dataset(s) is moved up/down in the list immediately after setting style
TR-1544	Folders - Add ability to rename folders
TR-1843	Improve CXP GP service entry logic
TR-1868	Catalog Explorer download item does not save geometry when toggle file vs zip
TR-1869	Studio - ICH dialog formatting problem when using French
TR-1880	Catalog Explorer installed as standalone application will not start
00213361 TR-1981	Catalog Explorer / Alto Browser WMS tiles scaling
TR-1982	Configuration Console diagnostics page still shows Catalog Explorer even if you don't install it
00023518 TR-1984	Tile services not sharp in Catalog Explorer
00217865 TR-1989	Alto Data Management 2023u1 WCS doesn't return GetCoverage Correctly
TR-2015	The Studio GUI doesn't know about files being deleted, and clicking on a deleted file gets the GUI stuck on a blank screen
00224121 00407027 00405444 00472703 TR-2031	Missing precise footprint option in Alto Data Management 16.8

TR-2096	Investigate how to enhance performance when you have in your folder lots of "SRS not supported"
TR-2207	Batch Update - Closing the UI forces a page refresh
TR-2223	Studio - "Max concurrent tasks" & "Days to keep DES output" ≤ 0 breaks Studio
00302981 TR-2415	REST API for Users not usable with OpenId integration
TR-2772	Issues with the acknowledgements text box layout on the About page in Studio
TR-2875	Update to Alto Server 2025.0
00405417 TR-2885	Keywords per record significantly slow down Studio browsing performance
00405445 TR-2886	Inability to update footprints via REST API
TR-2899	Parameter names are not being populated in swagger
TR-2918	Cancelling GP Jobs no longer works
TR-2927	OpenAPI conformance issues
00413950 TR-2939	Folders created manually have no data extent
TR-2941	Occasionally, the title of both the panoramic and point cloud get set to include panoramic
00418272 TR-2972	Alto Data Management 2023 Update 3 - When creating a WMS service - assign each dataset within a product to a layer
TR-2984	Catalog Explorer - need to remove a workaround for WFS-T issue updates to properties not working sometimes
TR-2995	Alto Data Management - Add files option should merge extents to the parent folder.
TR-3057	Drag and Drop integration with GeoMedia
TR-3070	Use a consistent gradient template control across Catalog Explorer
TR-3072	Resolve critical usage of thread.sleep
TR-3074	Add data root, ignores "Crawl only selected extensions" and still processes other files.
TR-3083	Provide ability to select and view point attributes in CXP
TR-3114	Build SpatialModelerRuntime-installer for Linux
TR-3144	Advanced Search by temporal extent range isn't returning any records

TR-3219	Catalog Explorer: Add support for Cloud Optimized GeoTIFF (COG)
TR-3232	LINUX 16.9 - Spatial Modeler Runtime INSTALLER - Initialization of the SMSDK
TR-3233	LINUX 16.9 - Spatial Modeler Runtime INSTALLER - Integrate the Image Chain Plugin built by Alto Data Management Core/Linux
TR-3241	Studio - Cataloging Services after they are created
TR-3247	Update CatalogExplorer to Alto Browser 2025.0
TR-3248	Update Tomcat from 10.1.39 to 10.1.42
TR-3262	Alto Data Management user guide needs update to disable "Advanced text indexing" in Alto Data Management multinode setup.
00462437 TR-3266	Alto Data Management 2023 - Duplicate enum value in OGC API Records schema prevents C# code generation
TR-3275	Catalog Explorer - control layout breaks for RTL languages in some of the controls
00465828 TR-3276	Catalog Explorer - Fix for Google api update
TR-3280	Deleting many items in a folder at once will leave orphans
TR-3281	Upgrade tomcat from version 10.1.42 to version 11.0.8 in Alto Data Management
TR-3289	Catalog Explorer - Add support for Live Tracks in NMEA format
TR-3293	Catalog Explorer - Add support for Live Tracks in AIS format.
TR-3302	HxDR connection is broken
TR-3312	Upgrade to ActiveMQ Server 5.19 from 5.18.3
TR-3314	Upgrade spring-security 6.4.2 items
TR-3320	Change Azure Maps implementation to the native RIA capabilities
TR-3321	Integrate CXP with Spatial Modeler through eventing
TR-3322	Geoprocessing oAPI schema now fails our validation
00471392 TR-3326	Geojson extension is missing from Alto Data Management studio "crawl only selected extensions" filter
TR-3328	Resolve blocking GP Server sonarqube issues
TR-3329	Resolve user-controlled data handling Sonarqube bugs
00473418 TR-3335	API field naming inconsistency for abstract/abstractText

00473118 TR-3336	Possible Memory Leak in Alto Data Management after multiple POST /api/data requests
00473120 TR-3337	POST /api/data Interface Issues makes the API unusable for heavy load on the REST-API
TR-3338	Search Field in Studio GUI Misleads Users on preview (Only Title Queried)
TR-3340	Add Data Dialog Doesn't Remember Last Selected Path
00473450 TR-3341	Add Data dialog lacks filtering capabilities for file selection, limiting usability when browsing large datasets
TR-3344	Changing dataset title requires refresh to update
00474526 TR-3345	Multiple Delete Requests on same folder possible ending with ERROR messages in Alto Data Management.log
00474516 TR-3346	Folder Deletion with Files Extremely Slow 1.46 files/sec
00474512 TR-3352	Intransparent Folder Deletion Process with Large File Count in Alto Data Management Studio
TR-3361	Catalog Explorer - Density Analysis gradient list uses IDs rather than names.
00476107 TR-3372	Alto Data Management 16.8.0.1928 (16.8 update 5 Beta) - the API Endpoint api/records/collections/search fails with multiple threads
TR-3377	Catalog Explorer - Allow messaging when embedding as iframe
00470399 TR-3379	Issue with adding drive as a data root
TR-3380	Metadata decoders - Expected filename case does not match spec
TR-3391	Catalog Explorer : Style Vector Color on property value.
00479137 TR-3401	Catalog explorer stops loading a workspace if the CRS is not in the predefined list
TR-3412	Catalog Explorer - Add configuration option to control log location
00481435 TR-3418	Critical Startup Performance Issue: Hash Generation Process
00481418 TR-3419	Issues with Deletion Plan After Reboot when Rebooting Again
00481448 TR-3420	Alto Data Management cluster nodes exhibit inefficient and potentially problematic behavior during startup when resuming deletion operations
TR-3424	Job Configuration Schedule setting is not retained after Job is run.

00482159 TR-3428	Alto OGC Common Server requests unrealistic disk space for cache (default temp path)
00471051 TR-3432	Configuring Alto Data Management Studio login via Keycloak behind a proxy server
TR-3436	Coordinator log file is missing when worker component installation is skipped
00483959 TR-3437	Oracle 19c database experiencing sustained 100% CPU utilization across all cores, causing severe performance degradation in Alto Data Management application background processes during data ingestion operations
TR-3442	Update the Add Data and Add Data Root APIs with Extent
TR-3443	Update Studio Add Data dialog with Active/Precise footprint options
TR-3445	Generate Active or Precise footprints for raster data
TR-3446	Modify CXP spatial queries to make use of the Extent custom property
TR-3463	Studio does not check the availability of Keycloak server
TR-3465	Resolve sonar critical bug in TAplStylingRestApiControllerTest
TR-3466	Resolve spring-security 6.4.3 reported vulnerability
TR-3477	Attachment defined by GIM file for txt dataset is failing to get attached and related CI test is failing.
TR-3480	Add CRS:1 to fusion.common.yml
TR-3488	Update language translations with reviewed czech and slavik
TR-3489	Catalog Explorer - Prevent errors when patching live tracks for non-existent features.
TR-3490	Trying to CREATE a folder results in an error
TR-3510	Add the mapping operator pack (MOP) to Geoprocessing
TR-3521	Configuration Console - disabling OpenID should also disable the related OpenID proxy settings

Alto Data Management Core 2025

Improvements
Platform and component upgrades throughout to latest versions for security, compatibility and performance updates

Support Ticket / Jira #	Summary
IW-7464	NITF performance regression when updating SMSDK 16.8.0.1987 -> 16.8.0.2079
IW-7692	Write the "VERSION" in metadata when writing JPEG2000 using ECW SDK >=50
IW-7710	Compile with extended GTiff creationformats
IW-7711	Build GDAL against OpenSSL for Earth Engine
IW-7730	Update libtiff to 4.7.0 to fix a vulnerability, and rebuild Proj and GDAL using the updated libtiff.
IW-7742	Unable to install Alto Data Management Essentials or Geocompressor on Oracle Linux 9
IW-7753	Upgrade unit tests to use postgres 15
IW-7756	TestNCSServerUtil Linux Crash
IW-7757	DB connection to Oracle doesnt work - QT Driver does not load - Mismatch version QTCore 6.8.3 and QT Oracle driver 6.8.1
IW-7758	Linux Console preview window fails to display
IW-7765	Update splash dialogs
IW-7766	Resolve SonarQube vulnerabilities for release criteria

Alto Server

Alto Data Management inherits all improvements within the Alto Server pillar and extends its broad capabilities further. The references below relate to the version used by Alto Data Management v2025.

New features

- The `pgcrypto` extension no longer need to be enabled when using a PostgreSQL database with Alto Server
- The `libjpeg`-turbo library has been upgraded to version 3.0.0.lcd-5
- It is now possible to specify the OGC 3D Tiles version when creating a Alto Server OGC 3D Tiles service for OBJ, GLB or BIM datasets
- `The TLcdOGC3DTilesModelEncoder` now allows specifying the OGC 3D Tiles version when encoding 3D Tiles. The version can be set

using the `setTileSetVersion` method, which accepts an `ELcdOGC3DTilesVersion` argument.

  - The default version is `VERSION_1_0`, which is the earlier version of the OGC 3D Tiles specification
  - Not all features of `VERSION_1_1` are used. An overview of differences between data exported with the two versions can be found in the `ELcdOGC3DTilesVersion` javadoc.

- It is now possible to define access control on a service-by-service basis. This can be done through the service detail panel in Studio or the `PUT /api/services/{serviceId}` endpoint.

- You can now configure the WFS feature type names used by your WFS services. To enable this, we have introduced new REST API endpoints that enable you to update feature type names programmatically:
  - `GET /api/services/{serviceId}/products/{productId}`: Retrieve the current feature type information, included in the `publishInfo` property, for a specific WFS Service and Product.
  - `PUT /api/services/{serviceId}/products/{productId}`: Update the feature type names by modifying the feature type list in the `publishInfo` property for a specified WFS Service and Product.

Improvements

- The `/api/data/filter` API now exposes equivalent POST interface in addition to the existing GET. This supports longer query types where the query could exceed GET maximum URI length.
- The `/api/data/filter` API now allows spatial filtering on Data resources by using the new contains, within and intersects operators
- When encoding data to GML, the `(f)id` attributes no longer have a prefix bound to the GML namespace if it is already the default namespace of the document. This improves interoperability with third-party libraries such as GDAL.
- Custom Properties now supports `2DGeometry` type definitions, enabling additional spatial properties to be filtered against outside of the standard dataset extent
- The server startup performance when using many custom properties has been improved significantly, due to improved database index creation and utilization
- The WCS server now supports `image/jp2` (JPEG2000), `image/jpeg` and `image/png` as output formats in addition to existing `GeoTIFF` coverage types `LCD-13897`
- The WCS Server now accepts `image/tiff` as format parameter as an additional alias for the GeoTIFF coverage format to improve interoperability with third-party WCS clients `LCD-13891`

- Improved the heuristics determining whether GeoTIFF is of an elevation type. It will now inspect the second band for alpha and if the other existing conditions are met, still resolve back to an elevation. Previously a 2-band elevation source would fail due to inclusion of an alpha band. LCD-13942

- The 3D Tile processing engine will now produce smaller glTF mesh output datasets. While data dependant, this optimize can yield 10-60% smaller, more efficient output and applies to both OGC 3D Tiles v1.0 (`.b3dm` paylod) and v1.1 (`.glb` payload). Mesh quality is not impacted and is an internal optimization avoiding unnecessary data duplication. LCD-13922

- The performance of loading and visualizing WMTS raster layers with specific, irregular pyramid structures have been improved LCD-13893

- We now pick up the WKT geo-reference, part of the "user coordinate system", inside the LGSx file. LF-2675

- A new configuration property has been added to allow users to specify the granularity of the mapping of Products and the Data items contained in these Products to WMS layers for a WMS service. By default, each Product in a WMS service is mapped to a single WMS layer. See the `wms.layerPerProduct` property.

- It is now possible to publish non-georeferenced data items with a Pixel Coordinate model reference (CRS:1) as a WMS service in Alto Server

- The Studio web application will now select an appropriate service type when creating a service if the data for that service cannot be published in a WMS service LF-2134

- `ALfnJob` has been extended with a `LastCompletionTime` property. The property contains the last time the job completed successfully. The responses from the REST API endpoints /api/crawl-jobs and /api/preprocess-jobs include this new property. This property is only available for jobs that have completed after the upgrade, since the property will be missing from existing jobs. LF-2363

- Studio now uses a new thread pool to perform preprocessing jobs. Whereas previously, each preprocessing job could create a new thread pool for each running job to execute its asynchronous tasks, now each running preprocessing jobs will reuse the same thread pool to execute its asynchronous tasks. This prevents Studio to be overloaded or go out of memory when running multiple preprocessing jobs at the same time. The number of threads in this new thread pool can be configured using the configuration properties `fusion.studio.configuration.preprocessing.threadPool.minimumSize` and `fusion.studio.configuration.preprocessing.threadPool.maximumSize`. LF-2665

Bug fixes

- Aligned the behaviour of `Contains` and `Within` spatial operators used on Oracle to align with other database types when using CSW. `LF-2789`
- Resolved a potential race condition causing faulty filename extension checks in ILcdModelDecoder implementations `LCD-13980`
- Fixed an issue that could cause a schema parse error when handling Dublin Core Metadata XML
- Fixed an issue that caused the job schedule of a crawl job to be removed when the job ran. `LF-2790`

- Trying to replicate a coverage with an area of interest did not work for a coverage with a geodetic reference based on a geodetic datum different from a WGS84 horizontal datum. `LF-2782`
- The WFS Server now returns an appropriate service exception report in case an unknown property name is used in a WFS request, instead of silently ignoring it. `LCD-13938`
- The vendor-specific FILTER parameter, which can be used in `GetMap` and `GetFeatureInfo`
- requests, is now also supported for raster data. `LCD-13950`
- Improved the WFS server's exception service content where a distance-based OGC Filter (`DWithin, Beyond`) was used with incorrect units of measure information. `LCD-13937`
- Resolved an issue where the Studio application would continually request service information from the REST API on the service details page. `LF-2771`
- Vertical dimension information can now be encoded to metadata XML. `LCD-13862`
- Fixed an issue in WCS 2.0.1 `DescribeCoverage` response which caused an incorrect description of band information in the `rangeType` section. `LCD-13898`
- The OpenAPI REST specification has been updated to remove schema names containing a space which was invalid. The `readOnly` specifier has also been removed from unnecessary properties. `LF-2668`
- Fixed an issue that prevented wildcard characters * from being used to filter results on `lfn.filePath` property `LF-2767`
- Accessing a WCS 2.0 coverage without size or resolution parameters when access control is enabled would result in an unexpected error response `LCD-13894`
- Fixed an issue causing "You are not logged in" exceptions to be thrown when crawl jobs were resumed after a restart `LF-2760`
- Fixed an issue where the CSW metadata records of a service resource would not be updated when removing a product from the service. This could cause outdated `operatesOn` links to be present in the service CSW record. `LF-2761`

Alto Browser

Alto Data Management's Catalog Explorer client inherits all improvements within the Alto Browser pillar and extends its broad capabilities further. The references below relate to the version used by Alto Data Management v2025.

Features

- HSPC attribute mapping is now decoded and can be accessed through the `HSPCTilesModelDescriptor RIA-5071`
- Azure Maps API is now supported via the new RIA `AzureMapsTileSetModel`

- When selecting features from a 3D Tile Set Layer, any associated metadata properties that are stored within textures or vertices will now be preserved. These properties can be accessed through the `FeatureProperties` attribute found in `PickInfo` objects.
- In OGC 3D Tiles, tiles that contain metadata properties stored in textures can now be used in any expression of `MeshStyle` with the attribute expression. The same `MeshStyle` can be used for tiles that contain metadata properties stored in vertices.
- Improved support for the `EXT_structural_metadata` extension that is part of the OGC 3D Tiles specification version 1.1:
    - Property Textures are now supported
    - More than one Property Texture per object is also supported
    - Property Textures that use floating point values stored in PNG textures are also supported

Property Textures must use the first texture coordinates attribute defined in the mesh of glTF data. They will not work with any other texture coordinates attribute.

Improvements

- `Google3DTilesLoader` has been updated so that it can now load the updated Google 3D Tiles API `RIA-5214`
- The `Map.pickAt()` function can now retrieve elements from point clouds within a `TileSet3DLayer`. The `PickInfo` object will contain a Feature with:
    - the identifier set as "unknown"
    - a Point representing the point location in the map's reference frame as `Feature.Shape`
    - all the properties defined for this point
    - an extra property called `pointLocation`, indicating the point's location as it appears in the original data
- You can now use the `getMetadata` method of `HSPCTilesModel` and `OGC3DTilesModel` to get the reference before creating the model `RIA-5056`

- `GeoJsonCodec` now enforces the RFC 7946 right-hand rule on `LinearRings` during encoding: exterior rings are counterclockwise, and holes are clockwise when `GeoJsonCodecConstructorOptions.encodeWindingOrder` is set to “true” `RIA-5180`

- You can now set the `wrapAroundWorld` property of `WebGLMap` after the map has been created, instead of only at construction time `RIA-5181`

- Enhanced the quality of compressed textures for 3D Tiles on desktop platforms. Compressed textures now exhibit fewer visible artifacts, with a slight increase in computational requirements. `RIA-5099`

Bug fixes

- HSPC attributes of the type 64 bits integers can now be used in expressions for point clouds. See `HSPCTilesModel.properties` for more info. `RIA-5277`

- Fixed an issue that could cause georeferenced OGC 3D Tiles to exhibit minor offsets `RIA-5260`

- Fixed an issue where outline and occlusion styles were not applied correctly to transparent OGC 3D Tiles `RIA-5246`

- Resolved an issue where a view-to-map transformation just after changing the style of a 3DTileLayer could raise an error `RIA-5230`

- Fixed an issue where the `FeatureLayer.filter` predicate was not respected when rendering features on the bottom and left borders of the vertical view map. As a result, features that should have been filtered out were still displayed on the borders. `RIA-5125`

- Resolved an issue where `WebGLMap` with spatial capabilities failed in vertical view when using a Cartesian reference with model features in an incompatible map reference but a compatible `ShapeProvider` reference. Before the fix, this resulted in the error "Cannot create a transformation between a Cartesian Reference and a non-Cartesian Reference." `RIA-5238`

- Enhanced the robustness of picking on a `TileSet3DLayer` when it is very close to the terrain `RIA-5199`

- glTF meshes with triangle strips are now properly loaded `RIA-5197`

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