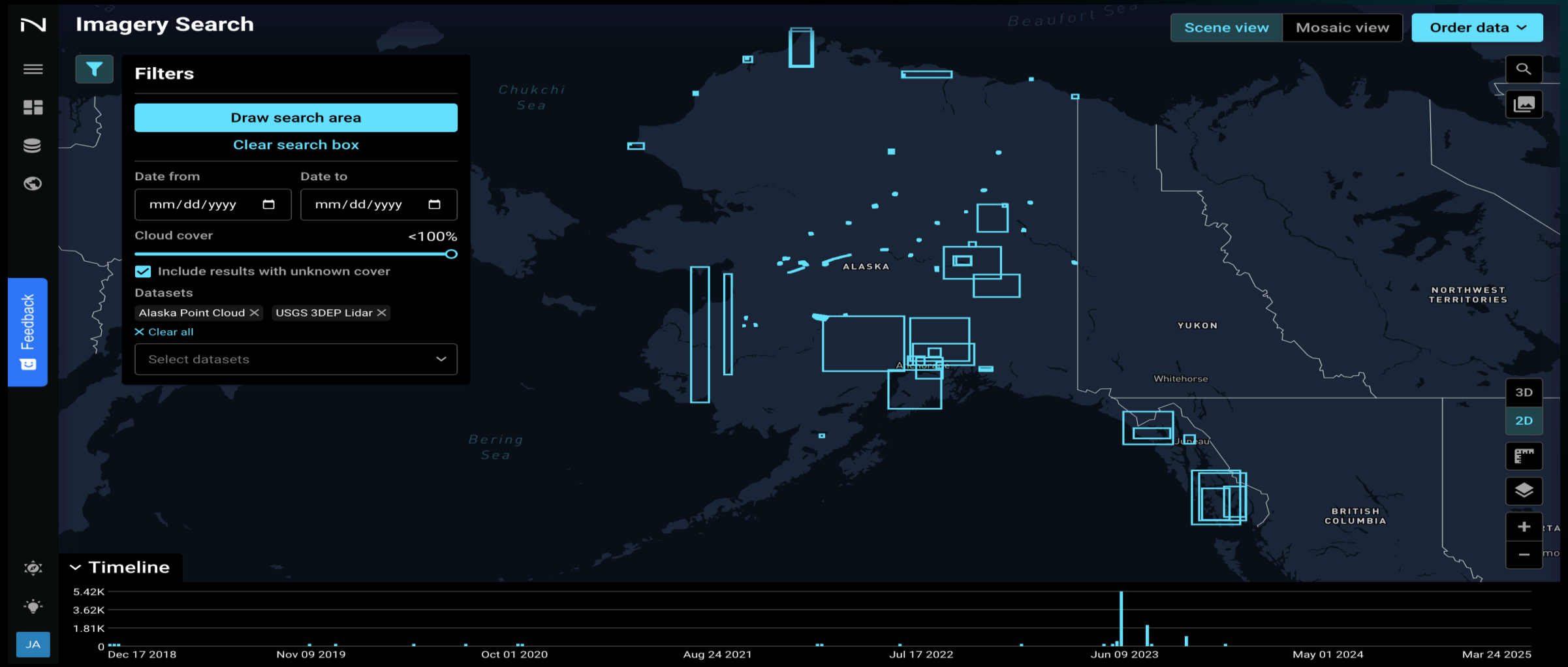
THE GREAT STATE of ALASKA + NUVIEW THE WORLD IN 3D



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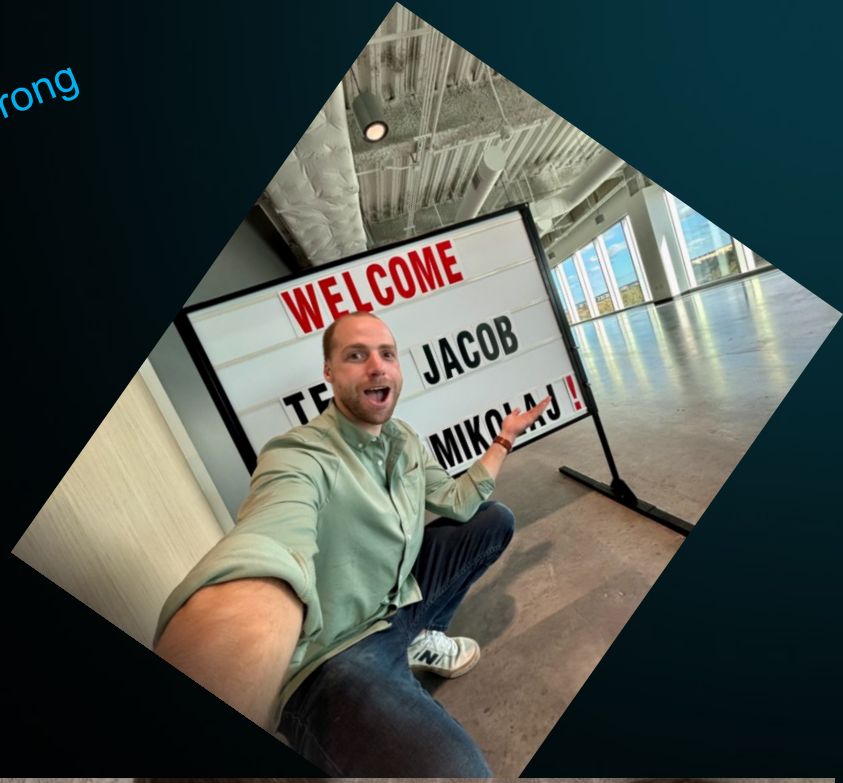
Who am I?

- Jacob Thiel – Account Executive
  - Contact: jacob.thiel@nuview.space

Smile or you're doing it wrong



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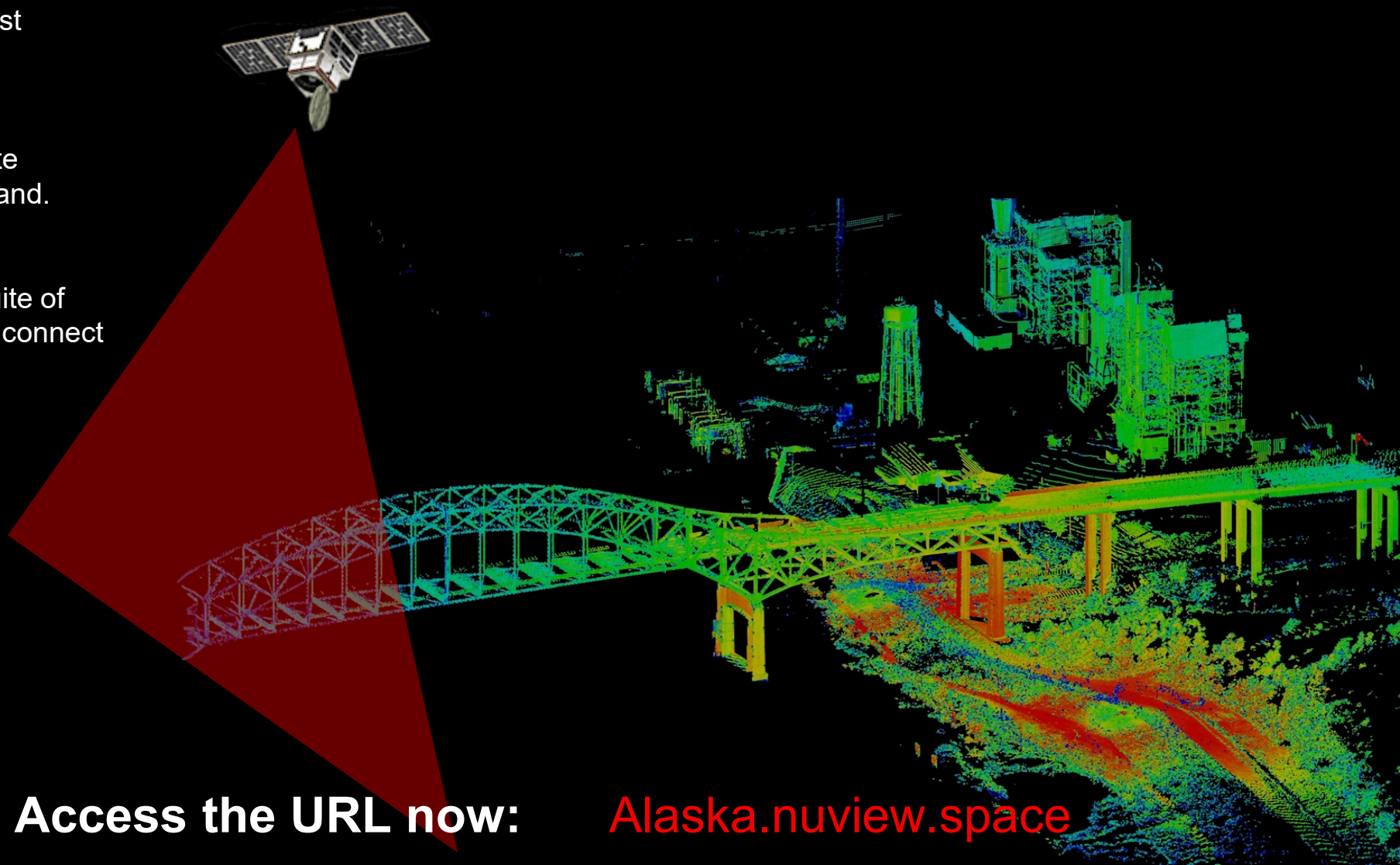
Who are we?

- 90% of the planet is missing the most valuable geospatial data, LiDAR.
- NUVIEW is building a LiDAR satellite constellation to satisfy pent up demand.
- We've already built an enterprise suite of cutting-edge geospatial analytics to connect users around the world.



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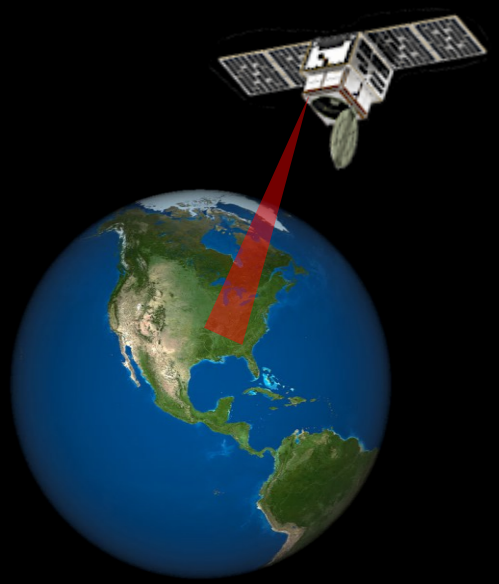
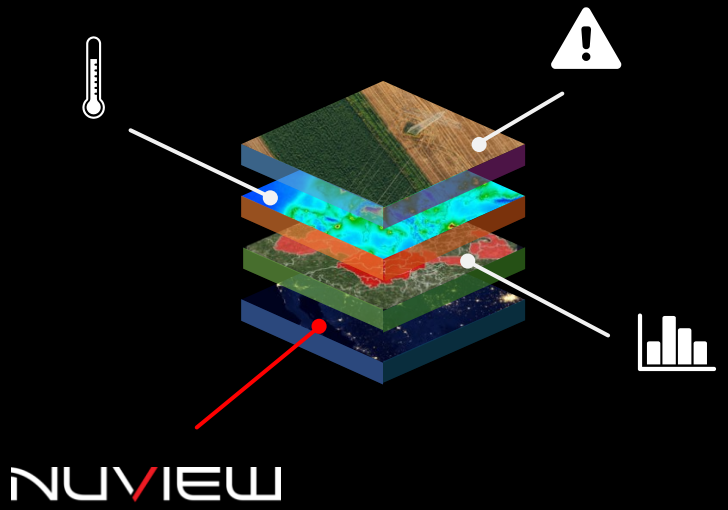
How It Works

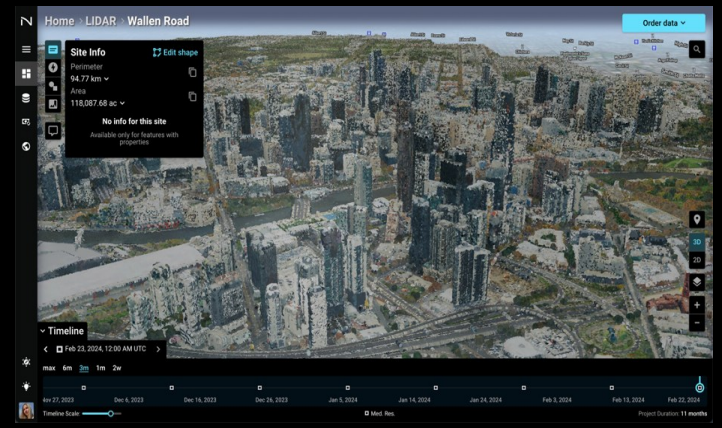
1. NUVIEW's patent-pending LiDAR technology will produce the first continuously updated, high resolution direct measurement of the entire Earth's surface.

2. NUVIEW's platform is the built for integrating multi-source geospatial data, allowing for AI/ML on a global scale.

3. NUVIEW's platform enables rapid data visualizations and access.







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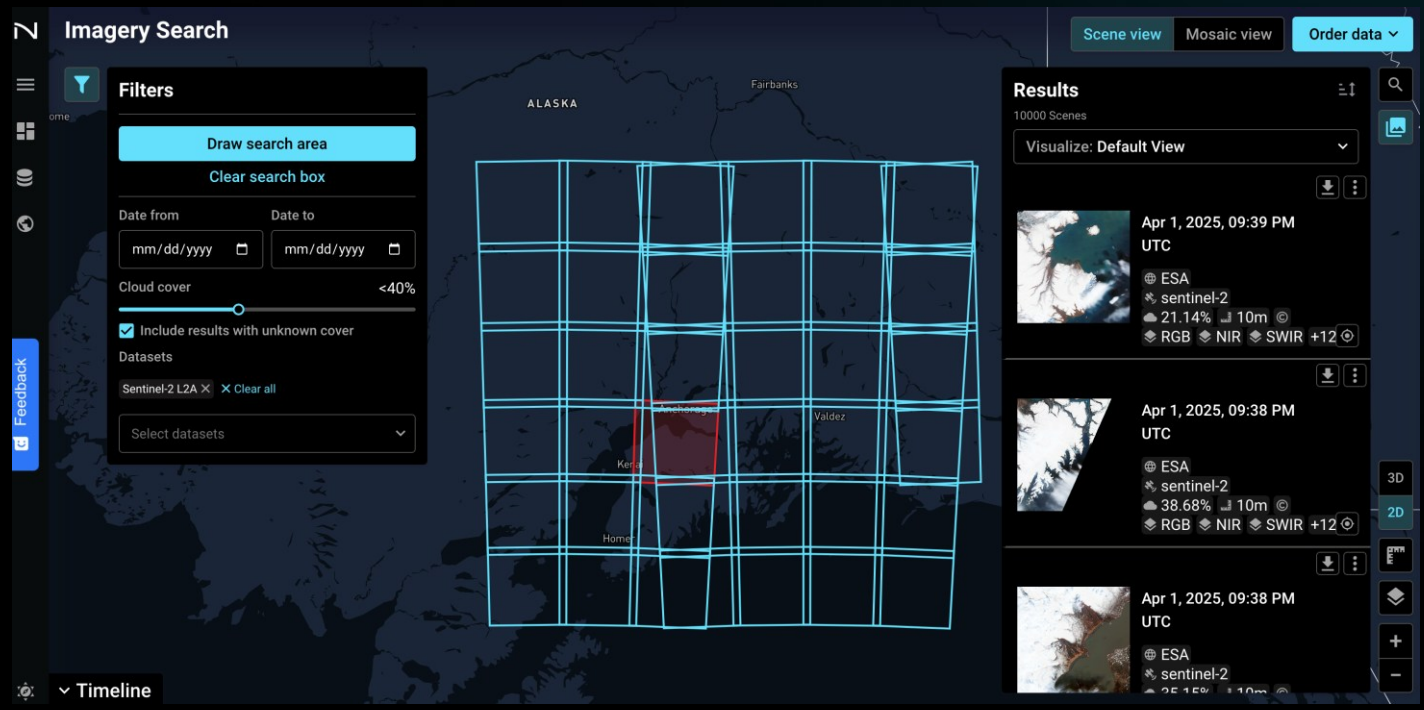
Open-Source Data in the NUVIEW platform

- USGS - Lidar and DEM’s
- Sentinel
- USDA NAIP
- Landsat 8
- Maxar Disaster Open Data
- Umbra Open Data

Landsat 8 Coverage



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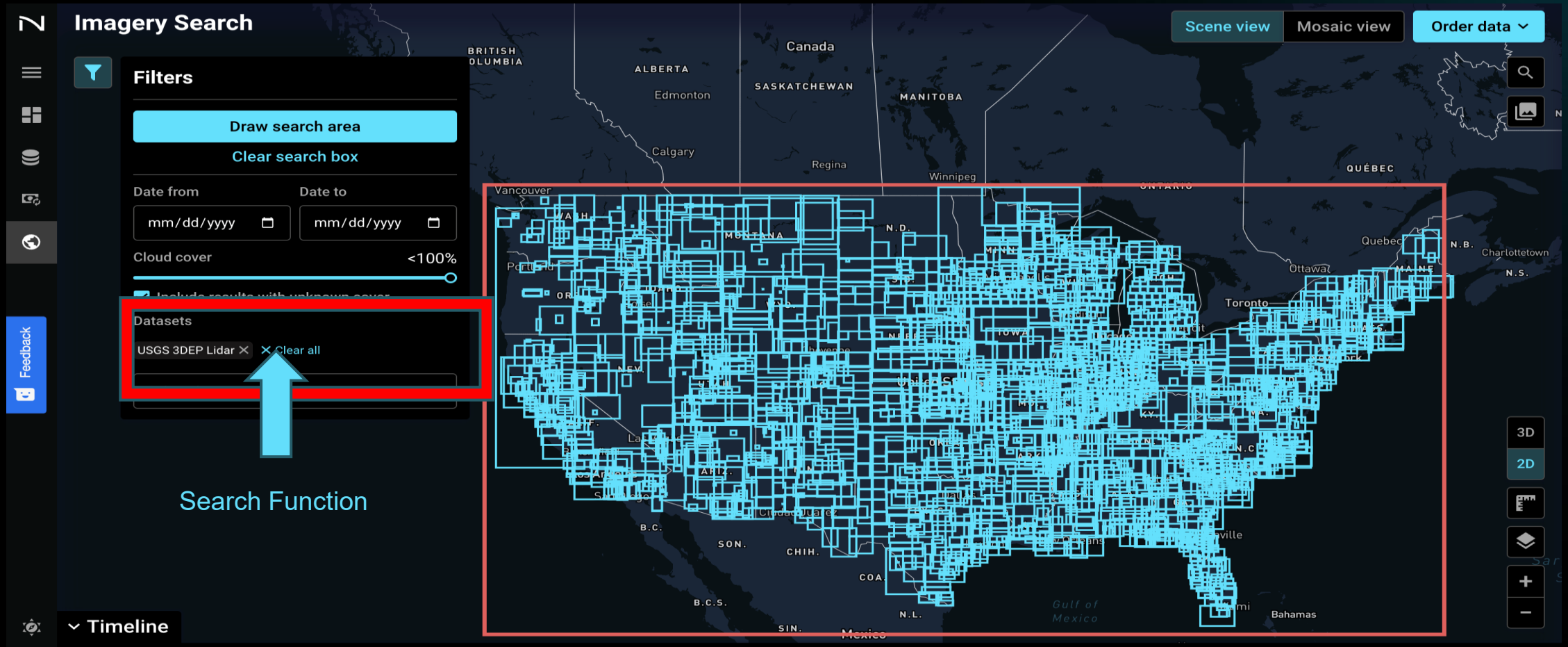
NUVIEW ECOSYSTEM
Accessing Data

The NUVIEW Ecosystem. A Cloud Native Software Suite



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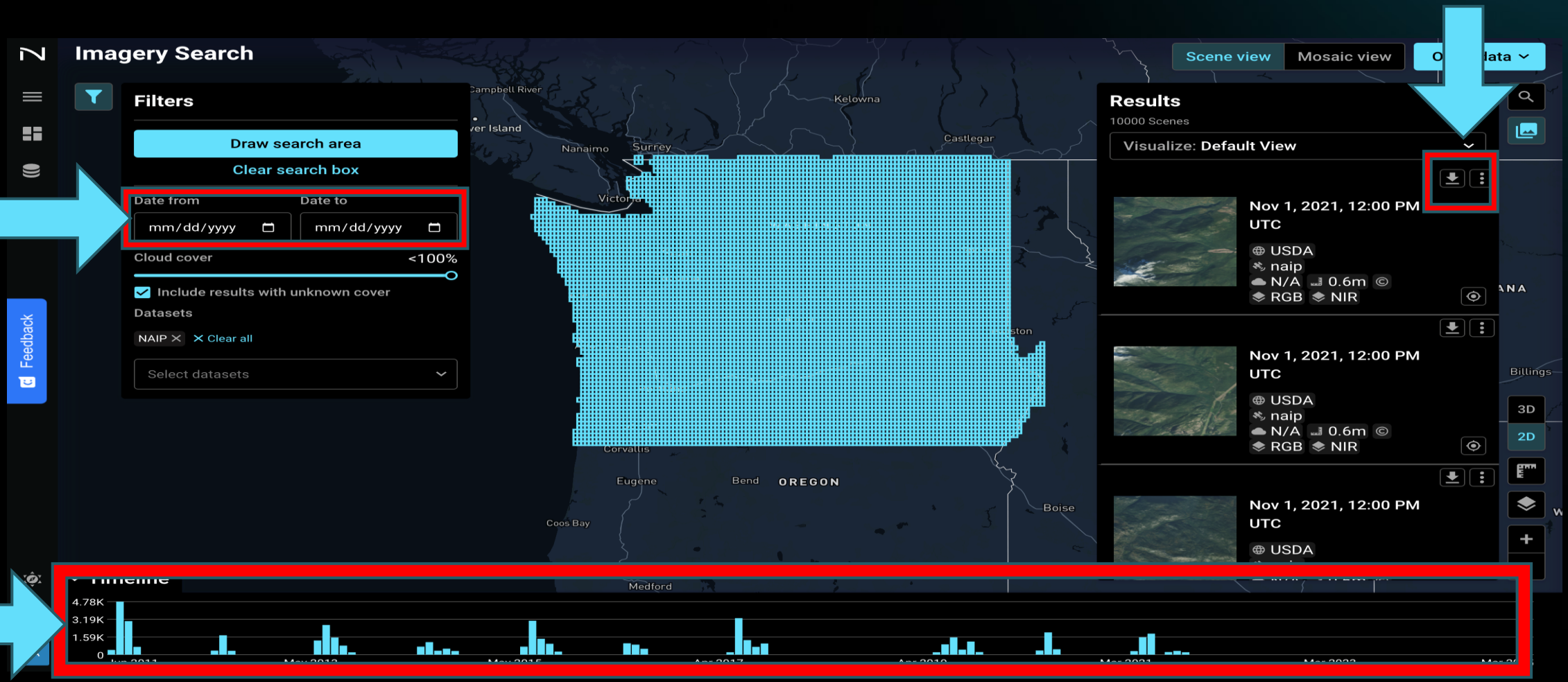
NUVIEW ECOSYSTEM

Capabilities: Search data catalogs, filter by date, download, and stream datasets

Download & Stream Data

Search by date

Results based on collection



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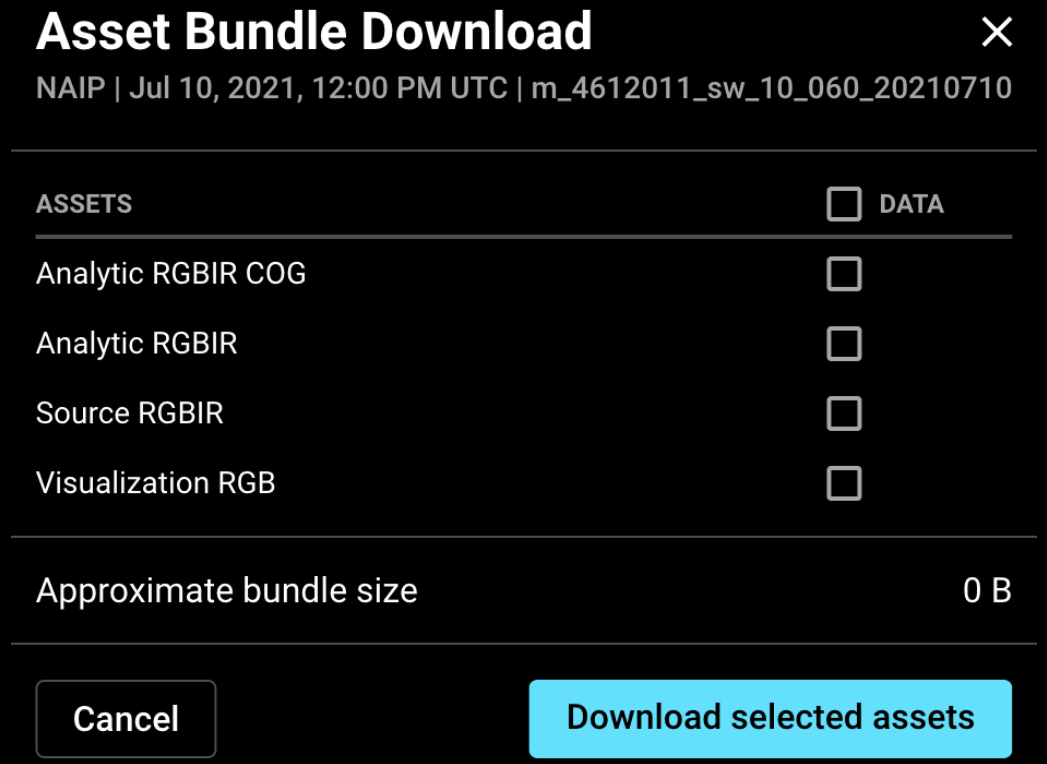
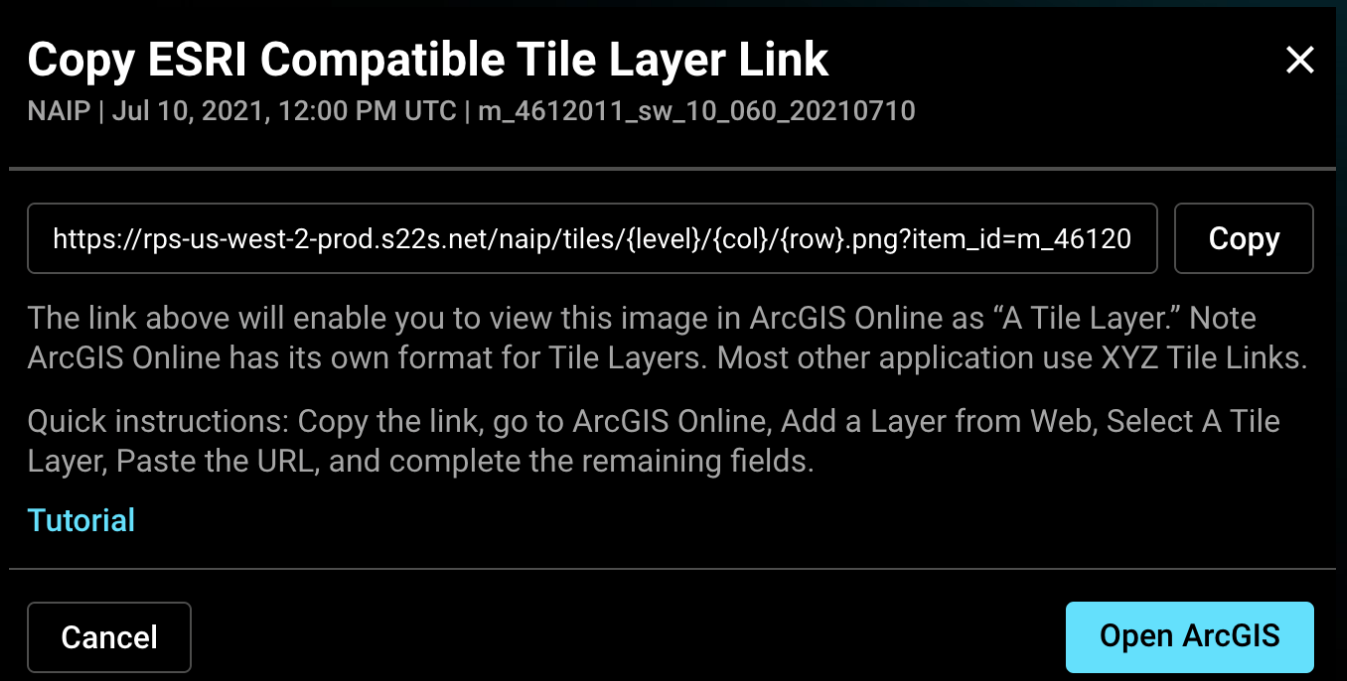
Download & Stream

Download



ESRI - X, Y, Z Tiles Layer



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STAC (SpatioTemporal Asset Catalog)

- **What is STAC?**
  - **STAC (SpatioTemporal Asset Catalog)** is an open standard for indexing and organizing geospatial data.
- **Helps with:**
  - Enables efficient **search, access, and streaming** of geospatial data.
- **How STAC Works**
  - **STAC Items**: Metadata-rich descriptions of imagery, LiDAR, or raster files.
  - **STAC Catalogs & Collections**: Organize datasets by source, date, and location.
  - **API-Driven Search**: Users can filter datasets by time, location, and quality.

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Challenges we faced

- Multiple of the same files
  - .las & derivatives files
    - Multiple files with different projections
- **Acquisition Dates per scene for derived products**
  - **Identify original .las file and use acquisition date per scene**
- Rendering methods of derived product for visualizations: **Item Family**
  - **Intensity : Grey Scale**
  - **Swath Overlap : RGB**
  - **Elevation Values : Normalized Terrain Color Map**
- Different Delivery Products
  - Normalized Digital Surface Model (Digital Height Model)
  - First Return Intensity Images
- Outdated .laz Chunk Table Versioning
  - Inconsistent chunk table information through various .laz files
  - Our most up to date .laz reader doesn't support older .laz chunk tables ☹
- Basemap vertical misalignment
  - Difference in Z alignment
    - Basemap vs lidar data

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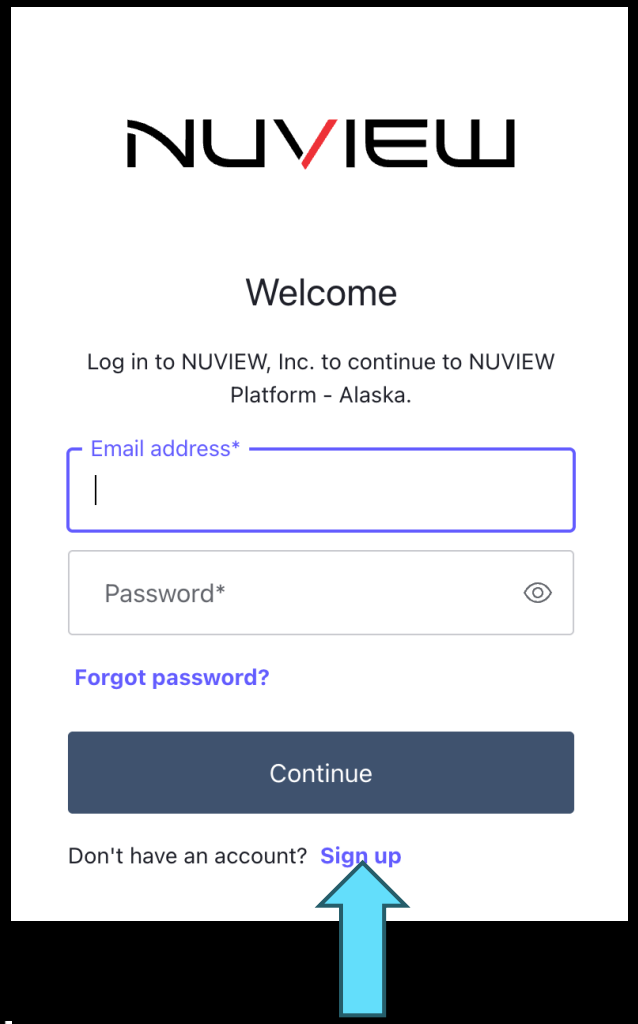

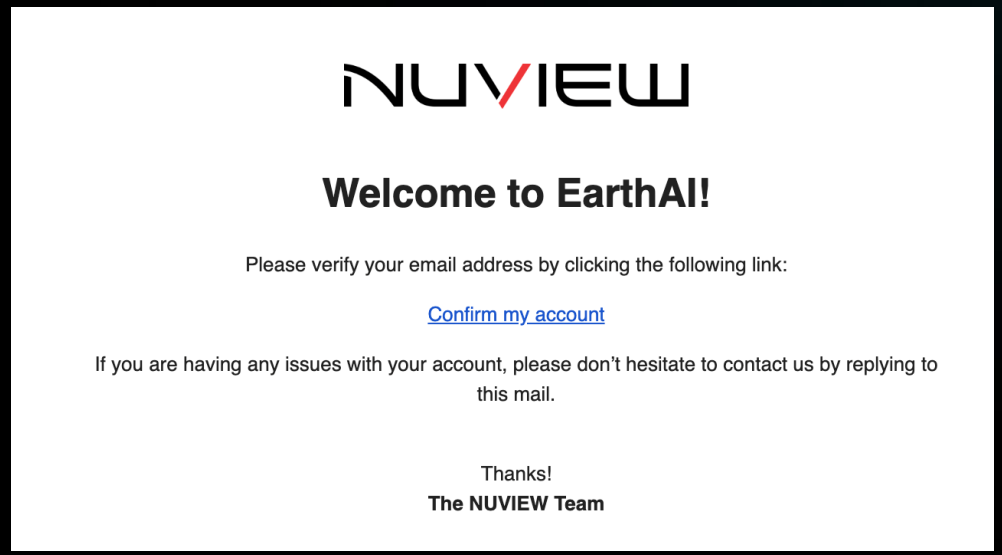

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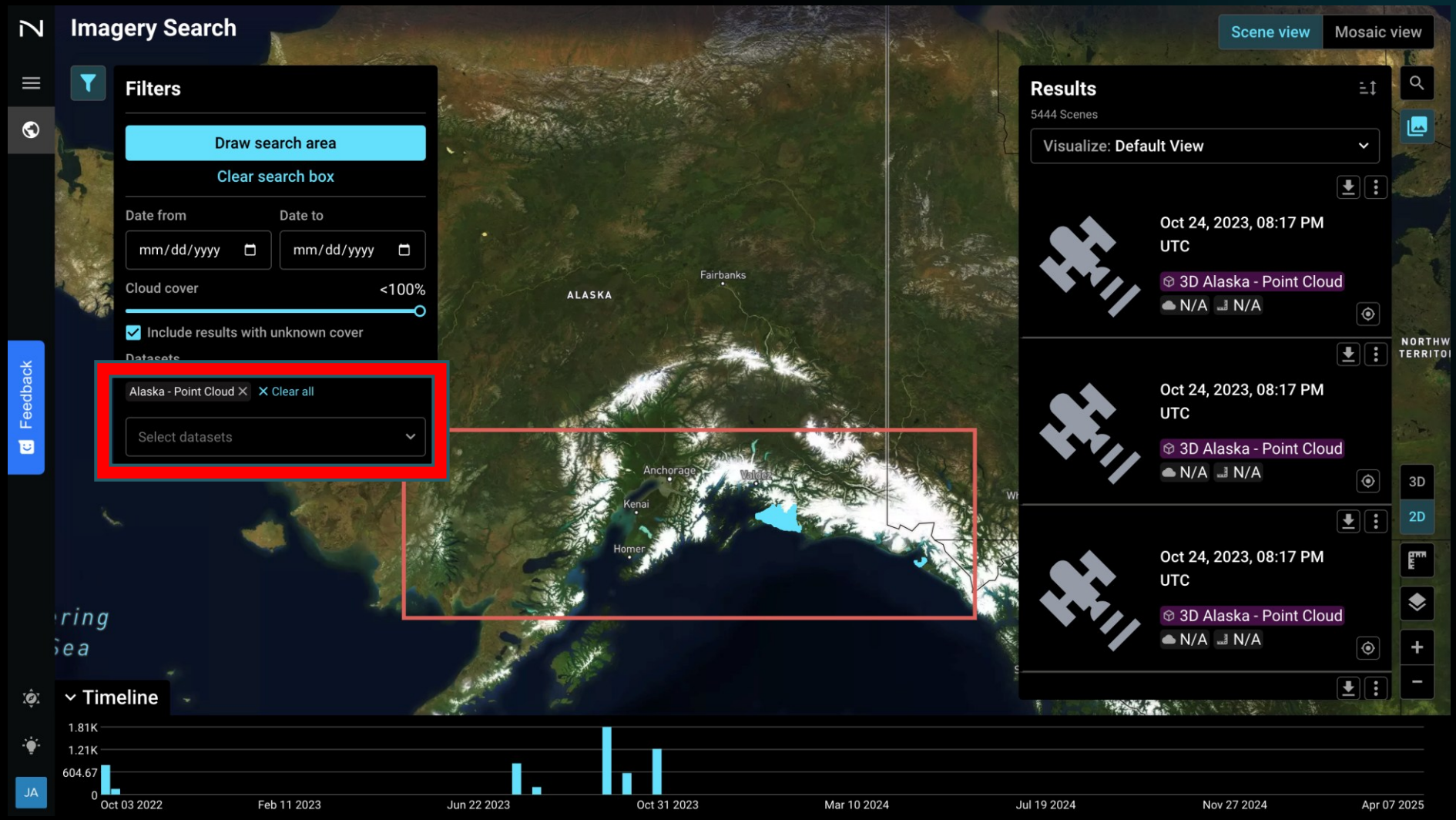
Select Catalog & Draw AOI



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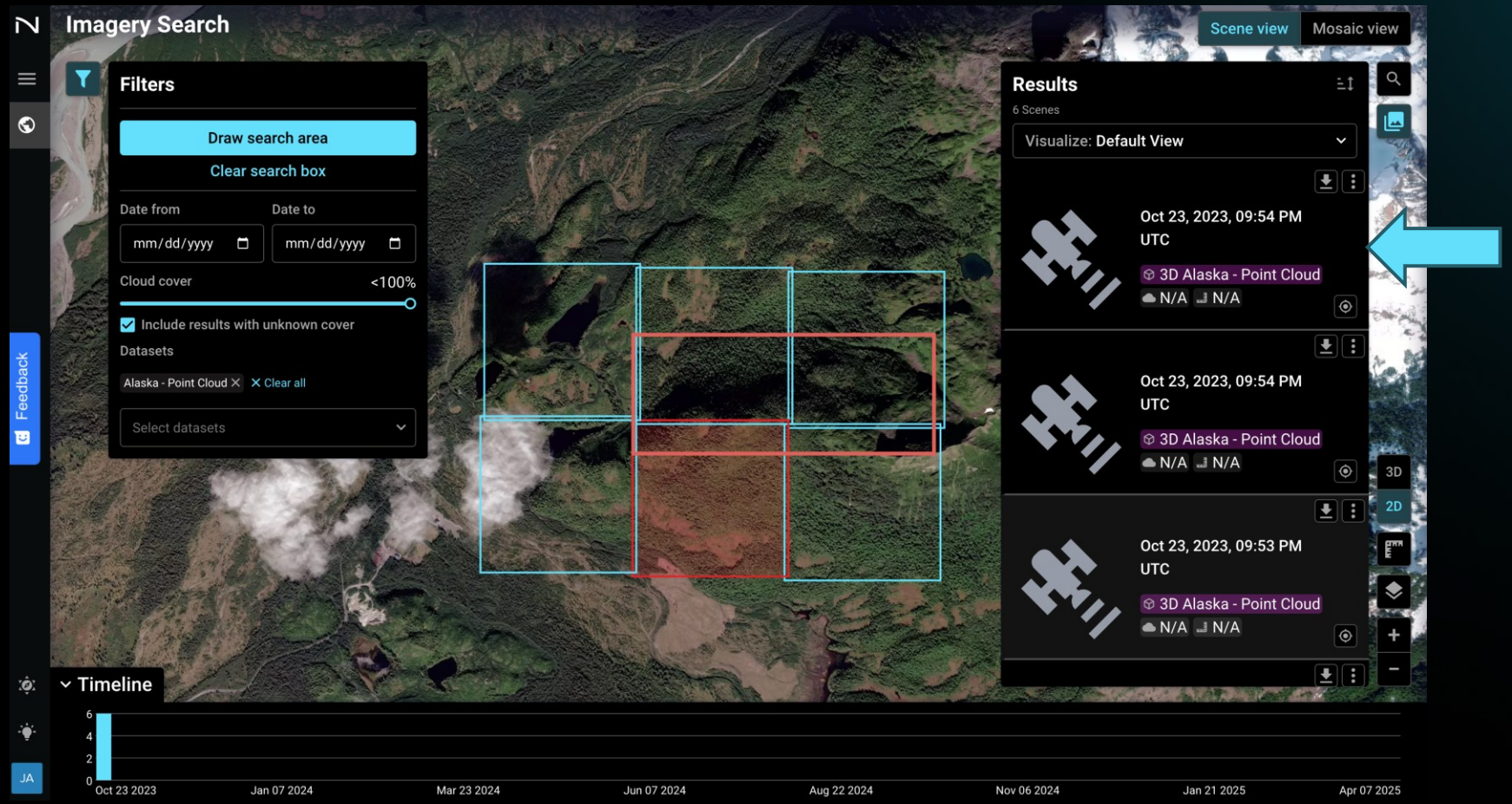
NUVIEW ECOSYSTEM
Accessing Alaska & USGS Data



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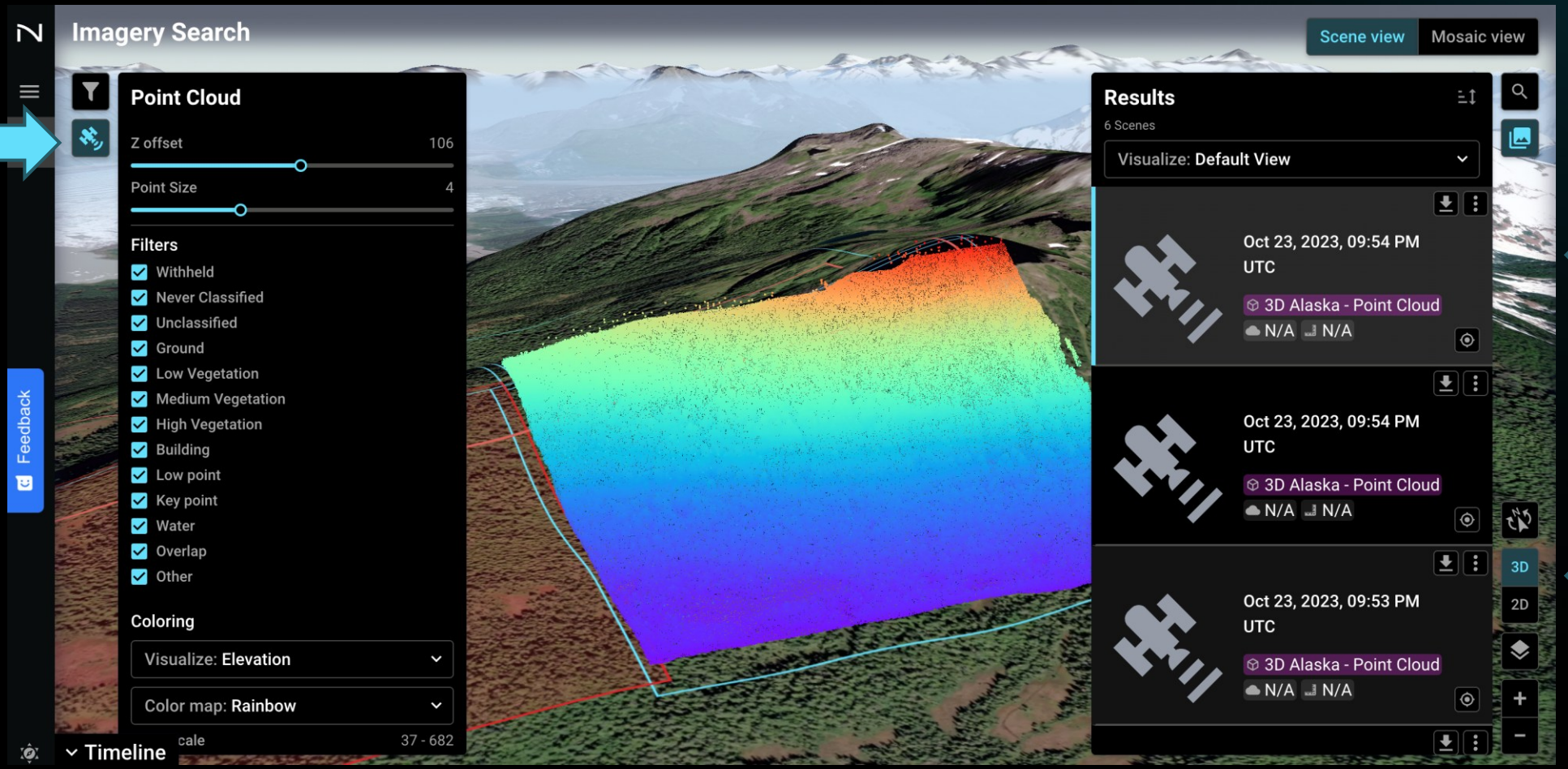
NUVIEW ECOSYSTEM
Visualizing the data

Point Filtering



Click Thumbnail

Click 3D

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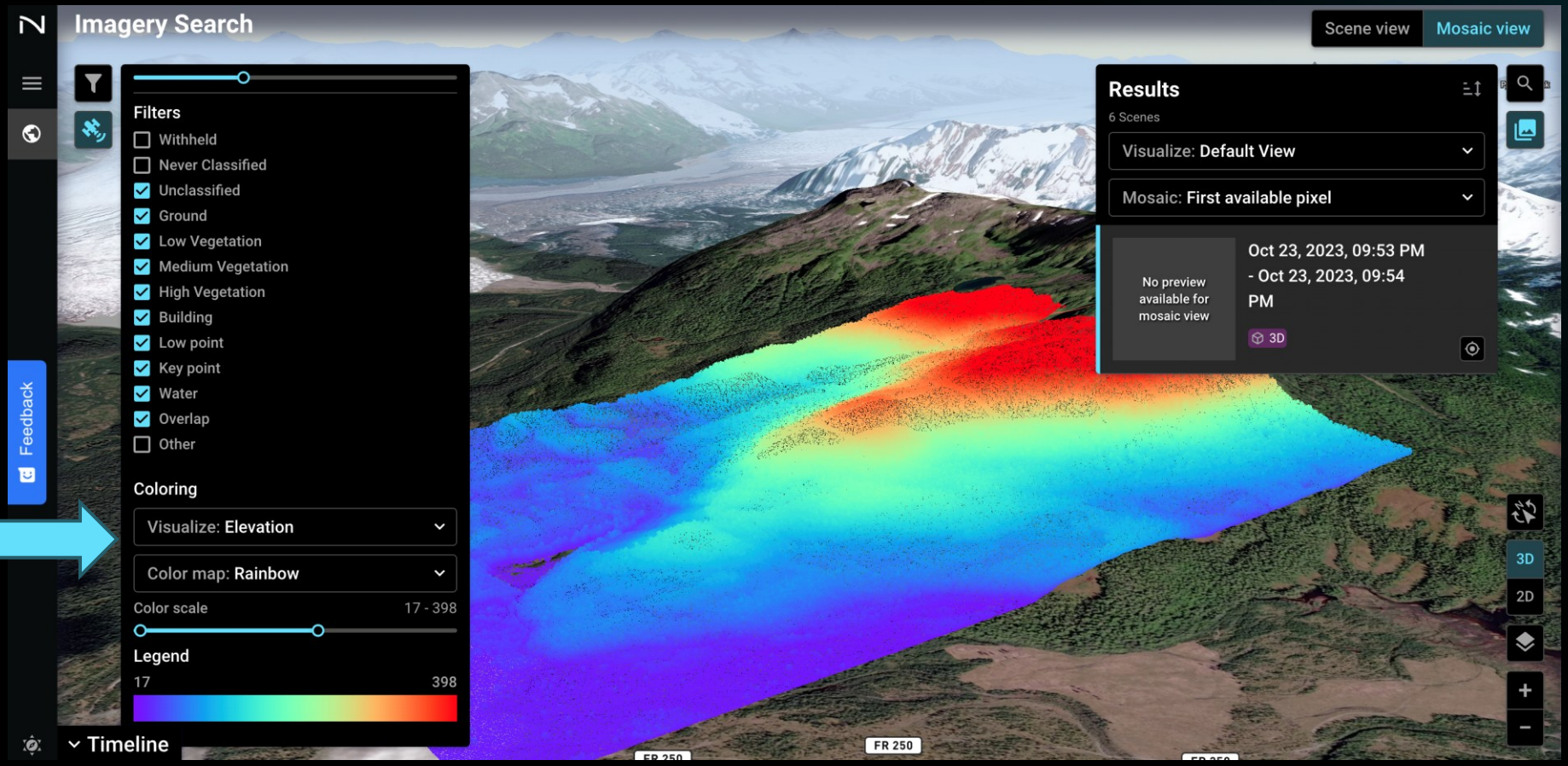
NUVIEW ECOSYSTEM
Visualizing the data

Bring Multiple Datasets Together

Visualizations



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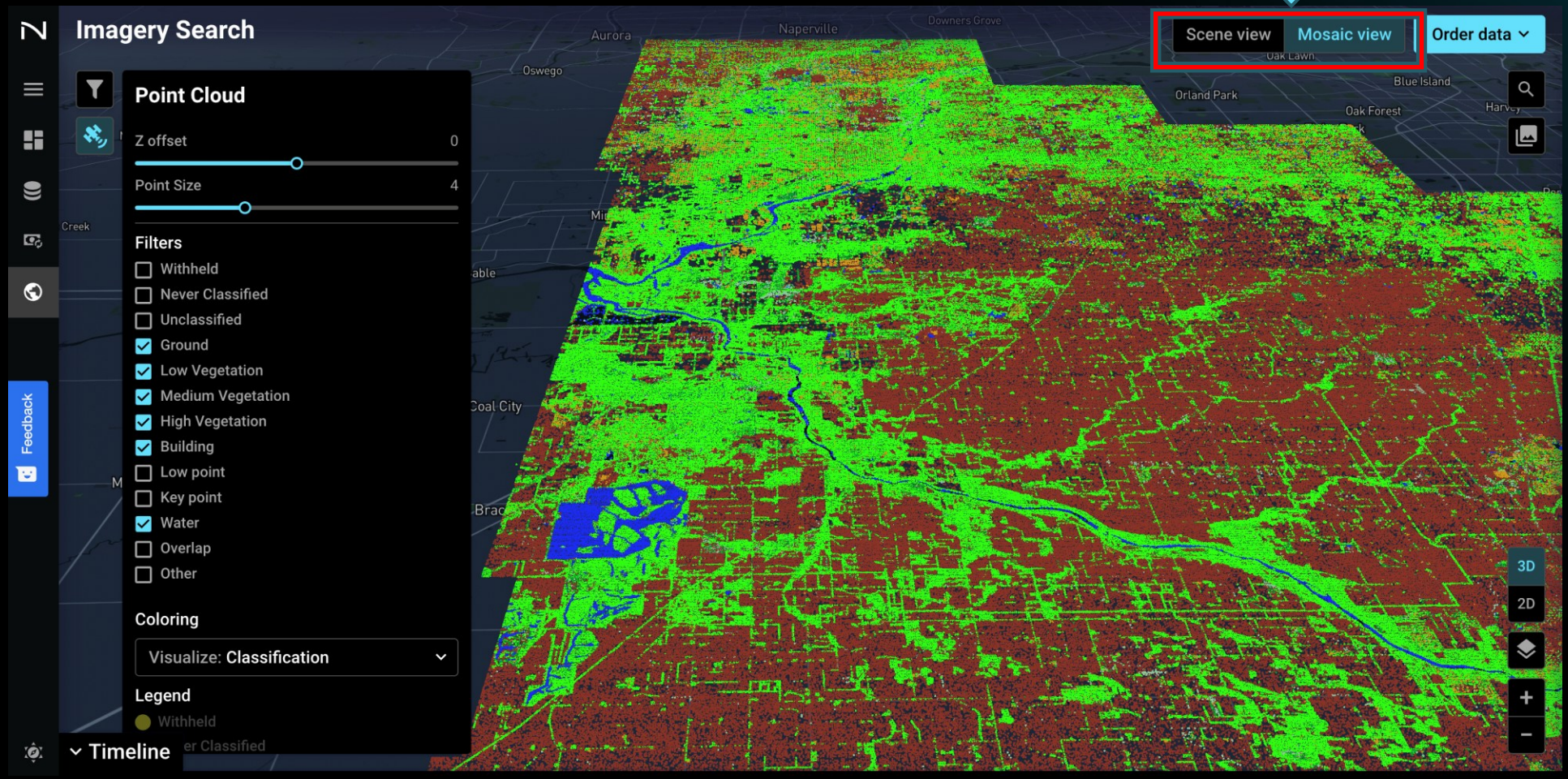
NUVIEW ECOSYSTEM

Point Cloud Capabilities

Bring Multiple Datasets Together



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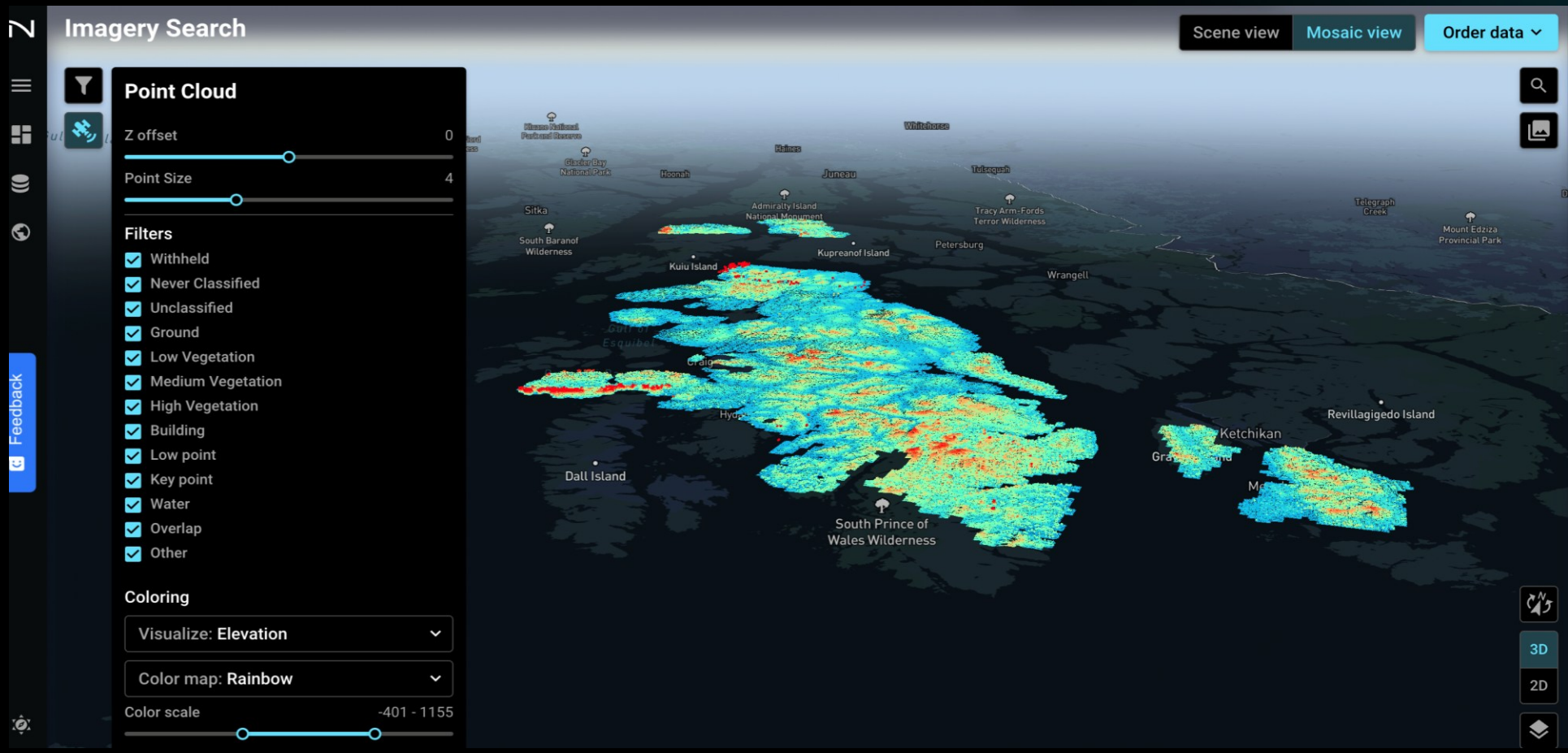
USGS Entwine Data Viewer



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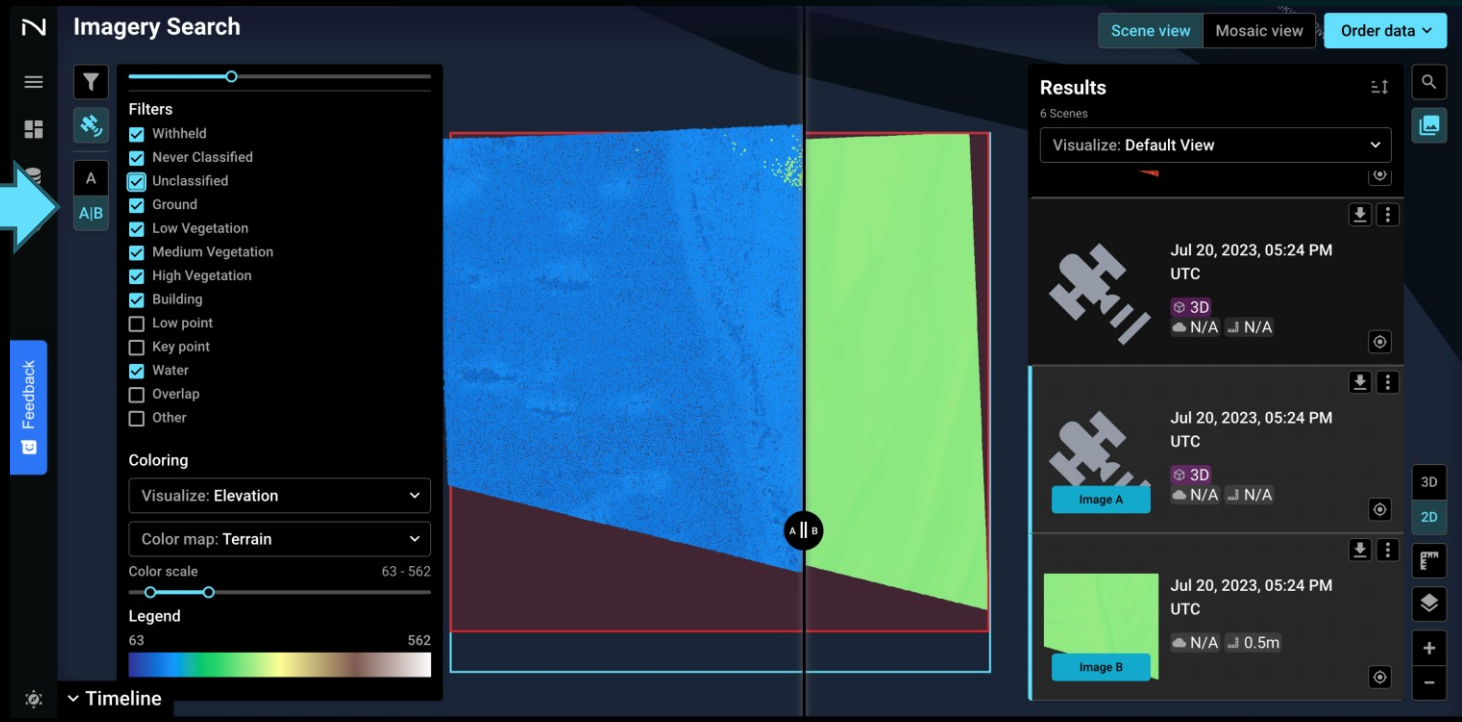
Visualizing Data

Visualizing and comparing different datasets

DEM (Digital Elevation Model)
&
Lidar Point Cloud

Change Detection



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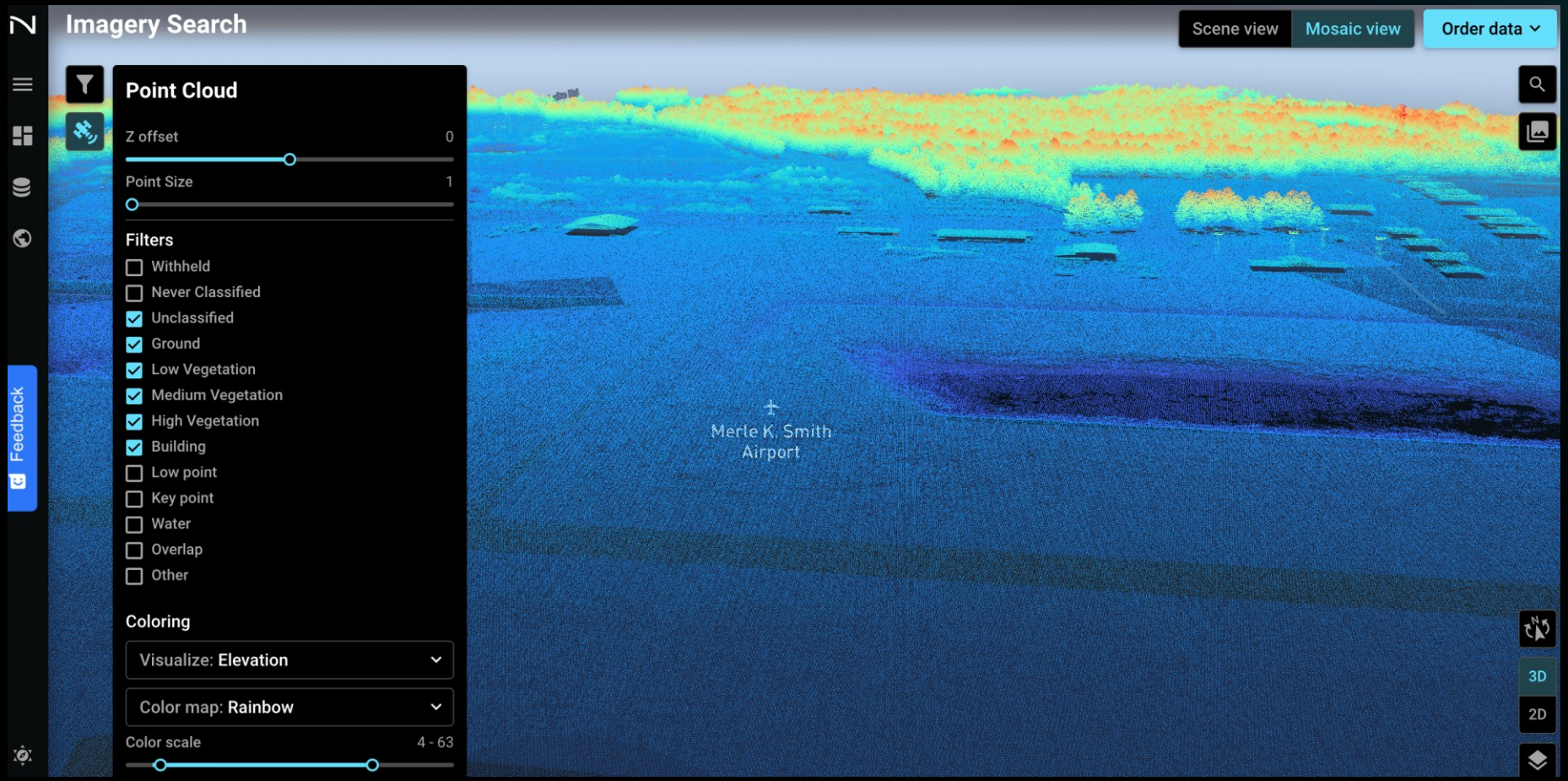
Merle K. Smith Airport – Point Cloud



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Merle K. Smith Airport – Intensity Image

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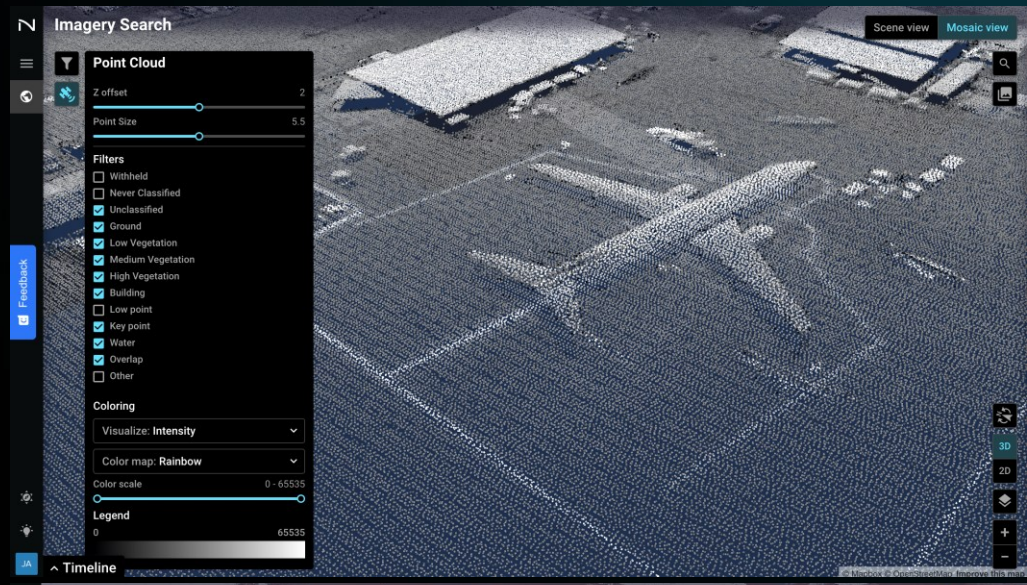
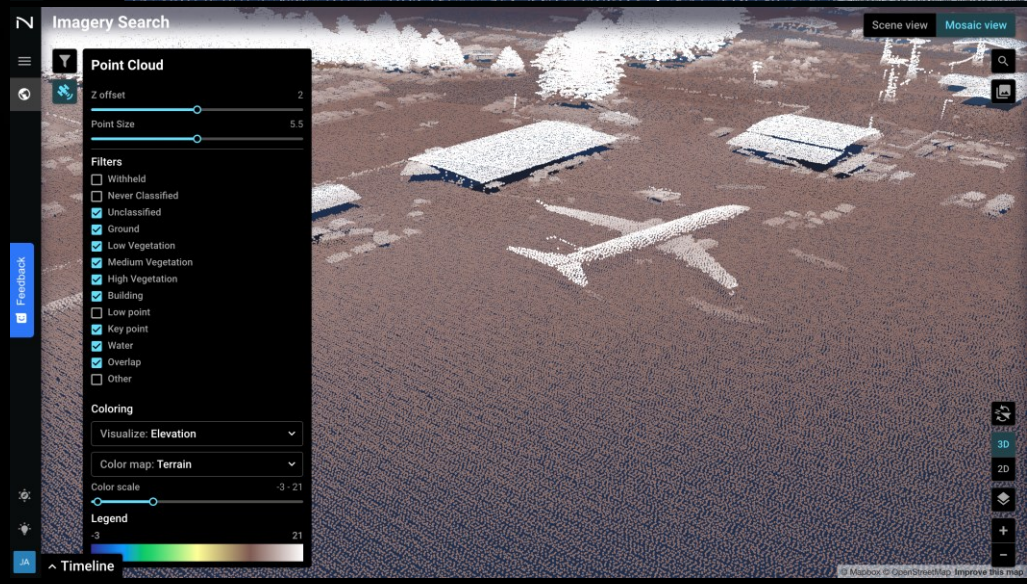
Merle K. Smith Airport – Point Cloud





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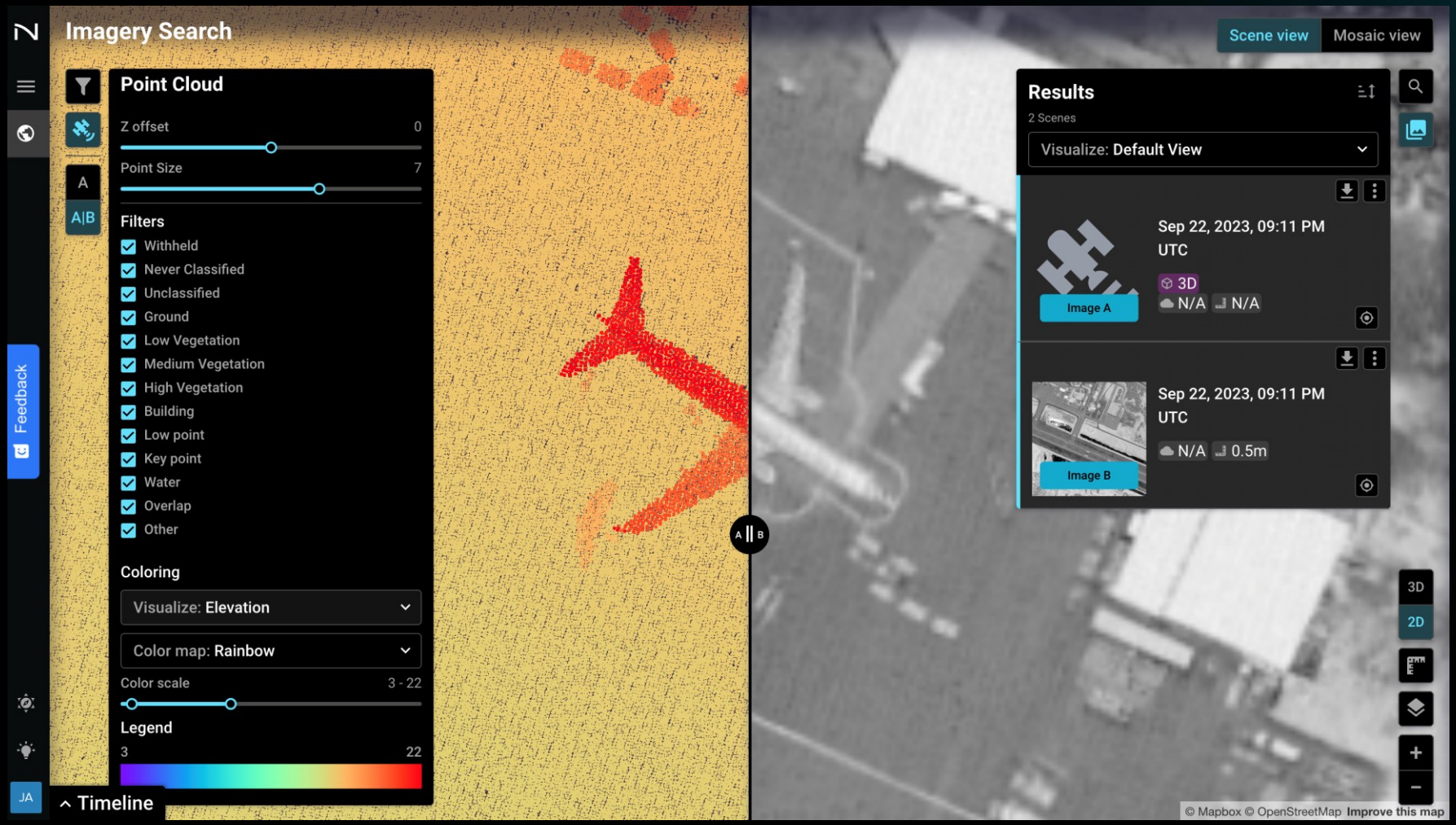
Comparing Different Datasets



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ELEVATING LiDAR & ACCESSIBILITY

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