GXP Xplorer® and GXP WebView® v2.4.2 release details

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License Manager Update

- The GXP™ License Manager has been updated to v19.0.x
    - The GXP License Manager bundles several applications together including the Sentinel RMS License Manager
        - The Sentinel RMS License Manager that is packaged with GXP Xplorer® v2.4.2 has been updated from version 8.4 to v9.4.0.0023
    - GXP Xplorer will only work with the GXP License Manager v19.0.x or later (Sentinel RMS License Manager v9.4.0.0023)
    - Existing licenses should continue to work with the new version
    - Older versions of GXP Xplorer will still be able to work once customers upgrade the GXP License Manager to v19.0.x+
    - Solaris SPARC and Solaris x86 are no longer supported for License Manager installs
    - Windows® 10, Windows Server 2008 R2, Windows Server 2016, Windows 8.1 and Windows Server 2012, and Windows Server 2012 RS are now officially supported
    - When viewing the GXP License Manager in Add / Remove Programs, it will show as v19.0.x
    - When viewing the Server Status from the GXP License Manager Windows menu or the Help … About from the GXP License Manager Admin Tool, the Sentinel RMS License Manager version will show (v9.4.0.0023)
    - This update should prevent problems with machines not being able to see the GXP License Manager if jumbo frames are enabled

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Infrastructure

- MSP version is 1.6.1
- Solr has been upgraded to v7.4
- Internet Explorer® v11 is no longer a supported browser
- Federation is supported from GXP Xplorer Platform v2.3.4.3 or later
- Essentials updates
    - FFmpeg has been updated to v4.2.1.3.25
    - Video Filters have been updated to v18.0.2.12

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Upgrade Information

- Upgrades are supported from GXP Xplorer Platform v2.3.4.3 or later
  - After an upgrade to v2.4.2 is complete, reclassification will automatically be launched
    - This must finish before search results will be complete after an upgrade
    - Status can be checked from <data dir>\logs\karaf.log
      - | INFO | Thread-783 | Reclassification | 445 - com.baesystems.gxp.components.main.ingest-service - 51.16.0.SNAPSHOT | Exiting the reclassification thread
- If upgrading with a custom Data Model set as the default, the GXP Data Model will be set back to default after upgrading
  - This is due to the necessity of providing Data Model View Configuration Mappings (see slide 27) for custom data models
  - By default, the search mapping will be set to the entirety of the custom data model
  - If mappings are not set for a custom data model, certain functionality may not work such as Observation collection in GXP WebView®
  - It may be easier for customers to start from a fresh GXP default Data Model and modify that to ensure their Data Model can work with all functionality

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Improved PowerPoint® Export from GXP WebView

- Publishing to PowerPoint from GXP WebView now creates a much higher resolution image
- Slides are also filled completely based on the template size
  - If the template was imported from a 16:9 PowerPoint slide, the resultant slide will be a fully filled 16:9 slide
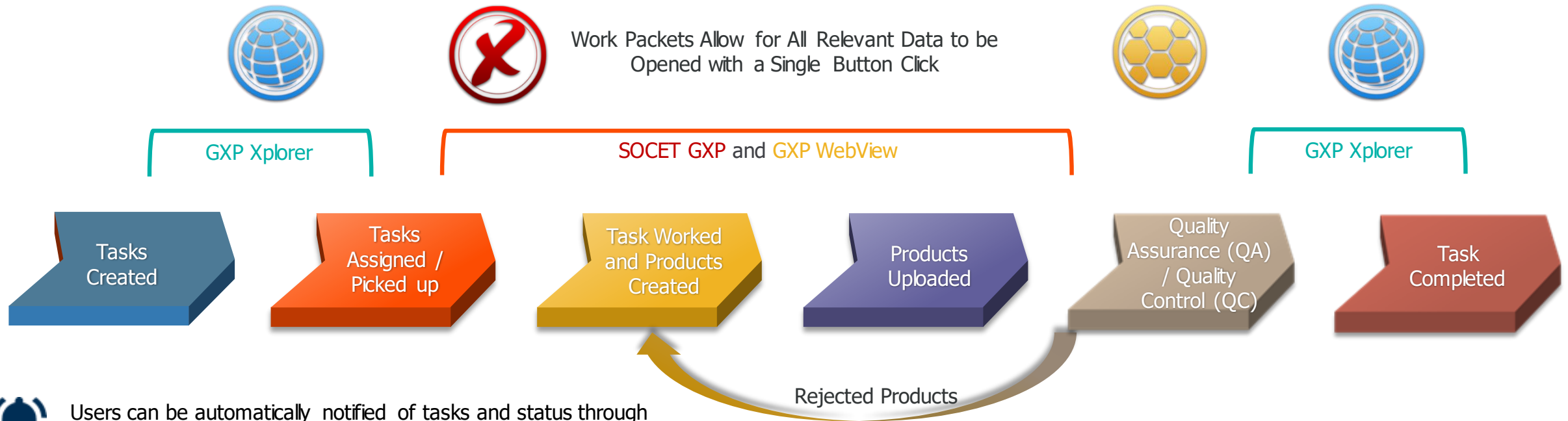
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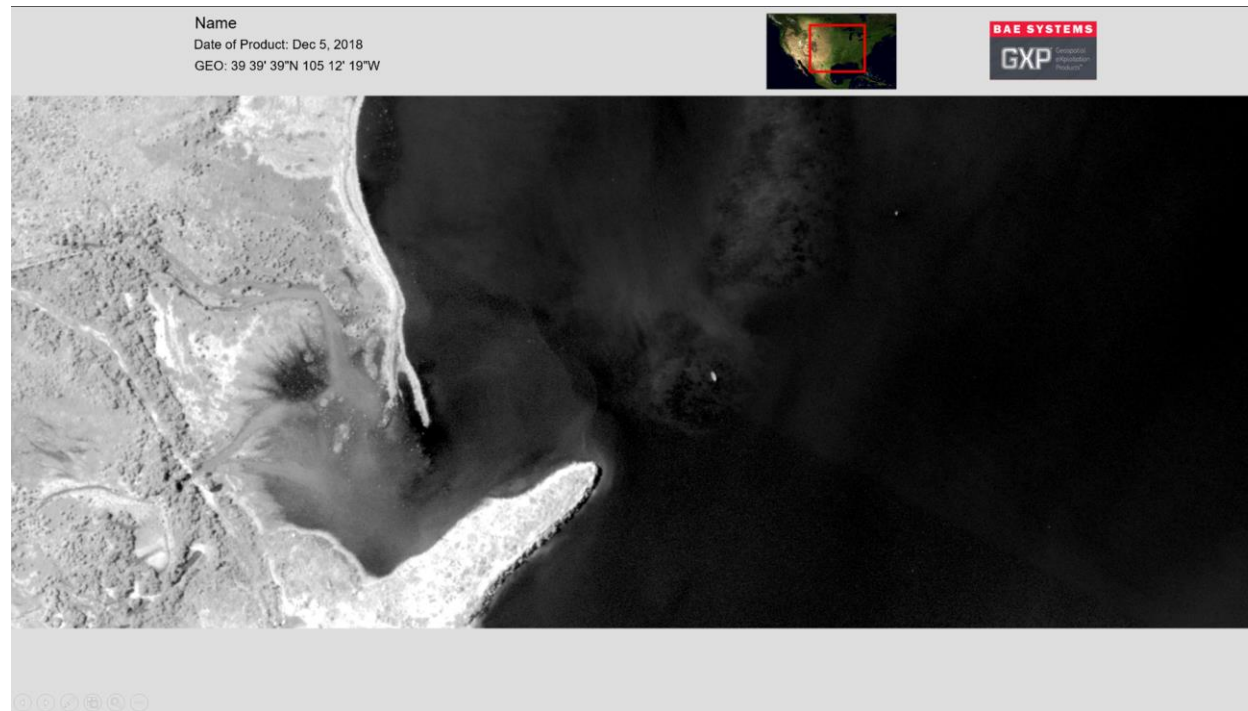
Up is Up / Shadows Down Default Settings

- By default all images are now loaded as up-is-up or shadows down in GXP WebView
- A new setting has been added to set the default orientation in GXP WebView
  - Settings … Display Options … Image Orientation
    - Up is up will rotate to up-is-up for Electro-optical (EO) imagery or shadows down for Synthetic Aperture Radar (SAR) data
    - North is up will rotate to North up
    - Original orientation will rotate the image to 0 degrees (as collected)
  - This can also be configured for all users in the Administration Settings
  - Administration Settings … GXP WebView Global Settings … Display Settings … Display Options … Image Orientation

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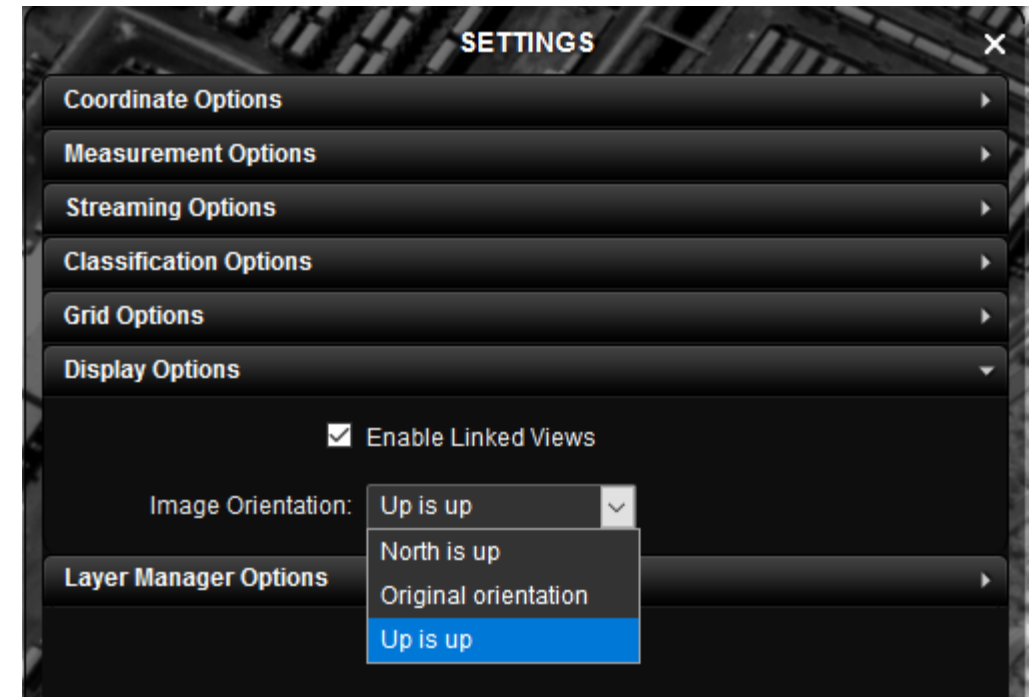
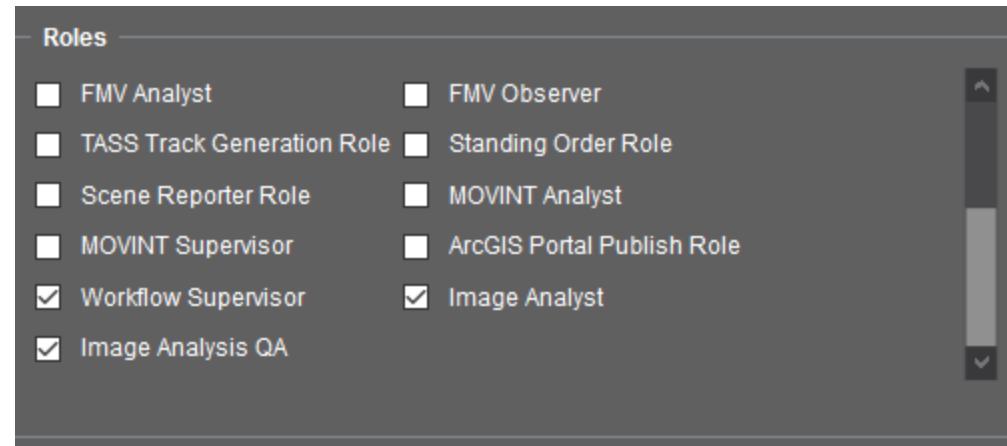# Workflow Management in GXP Xplorer

- Workflow Management is a new feature across the GXP line of products (GXP Xplorer, SOCET GXP®, GXP WebView)
  - Allows users to manage tasks from creation, analysis, quality control, and approval
  - Tasks are created and managed generally in GXP Xplorer (controlled through an add-on module called GXP_Workflow which can be added to GXP Xplorer Basic and above)
  - SOCET GXP and GXP WebView are tools for viewing and analyzing tasks for both analysts and quality controllers

Work Packets Allow for All Relevant Data to be Opened with a Single Button Click

GXP Xplorer

SOCET GXP and GXP WebView

GXP Xplorer

| Tasks Created | Tasks Assigned / Picked up | Task Worked and Products Created | Products Uploaded | Quality Assurance (QA) / Quality Control (QC) | Task Completed |

Rejected Products

Users can be automatically notified of tasks and status through GXP Xplorer notification services

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Workflow Management in GXP Xplorer ... Roles

- Three new roles have been added that are relevant to Workflow Management
  - Image Analyst – These roles can grab a task to work, attach products, and submit tasks for QA
  - Image Analysis QA – These roles can accept or reject a task that has been completed by an Image Analyst
  - Workflow Supervisor – These roles can create a workflow, assign image analyst or quality assurance candidates, and set up rules for automatic workflow creation

Roles

- ☐ FMV Analyst
- ☐ TASS Track Generation Role
- ☐ Scene Reporter Role
- ☐ MOVINT Supervisor
- ☑ Workflow Supervisor
- ☑ Image Analysis QA

- ☐ FMV Observer
- ☐ Standing Order Role
- ☐ MOVINT Analyst
- ☐ ArcGIS Portal Publish Role
- ☑ Image Analyst

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Workflow Management in GXP Xplorer … Manual Task Creation

- Currently, workflows must be started with imagery only
- As a Workflow Supervisor
    - Find one or more images in GXP Xplorer that you want to include in a task
    - Click on the Create Workflow button in the Product Gallery from either the Map or List page
    - The Start Workflow window will prompt you for several pieces of information
        - Workflow Type – The only option currently is Image Interpretation (Assign, Exploit, QA)
        - Location – This is optional and will associate a location with a particular task (generally only useful when combining tasks with observation collection
            - Anything imported under Places can be utilized
        - Comments – Allow analysts and QA personnel to communicate information about the task
        - Candidate Analyst – Any user or group that may work the task (must have Image Analyst role)
        - Candidate QA – Any user or group that may QA the task (must have Image Analysis QA role)
        - Save to Candidate Assignment page – If a location is set, this makes the Candidate Analysts and Candidate QA set in this window to be the default for this location in the future
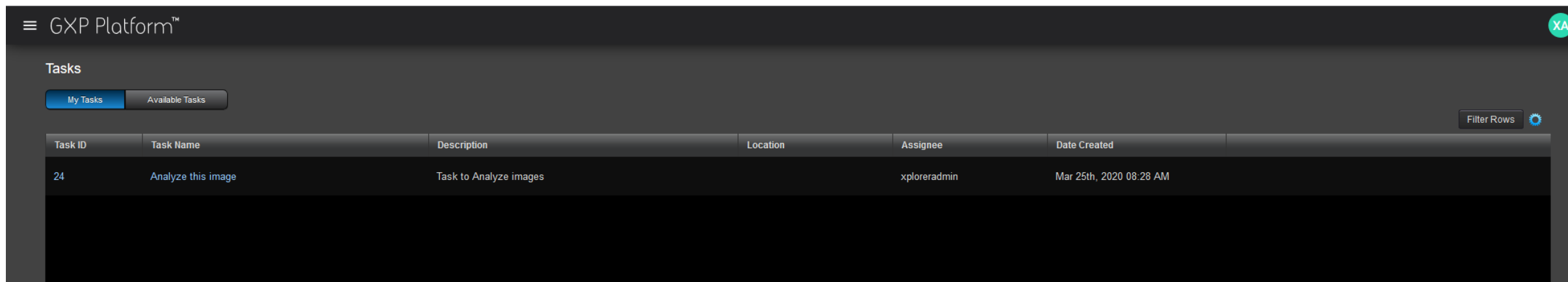
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Workflow Management in GXP Xplorer ... Task Notifications

- A notification will appear in the toolbar for candidate analysts that a new task is available to them
  - This is a new button called Task Notifications
    - It will launch a window that shows both My Tasks and Available Tasks
      - My Tasks – These are tasks that a user has assigned to them to either analyze or QA
      - Available Tasks – These are tasks that a user is a candidate to analyze or QA
    - Clicking on a task in this window will show a preview of the task with a thumbnail of one of the images associated with the task
    - Analysts can click Assign to Me in the Available Tasks tab to move the task into his queue in the My Tasks tab
    - In the My Tasks tab, a user can choose to open a task in either GXP WebView or SOCET GXP

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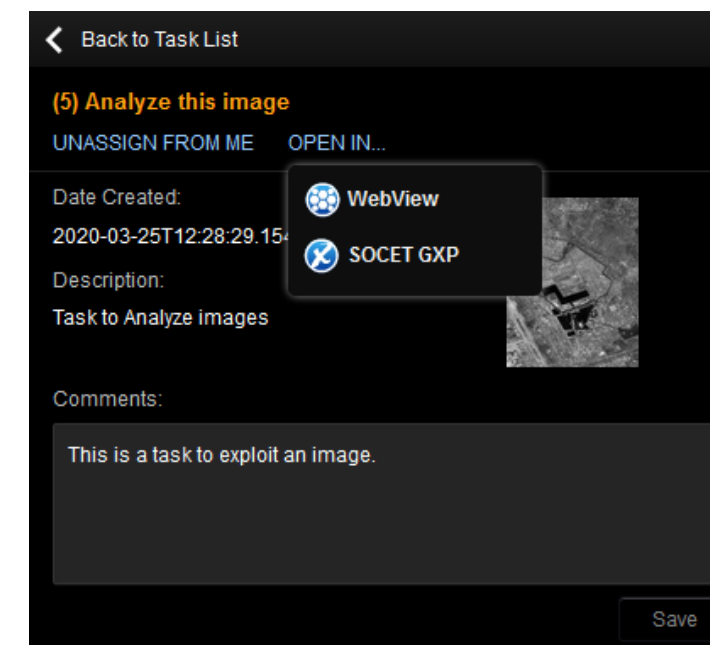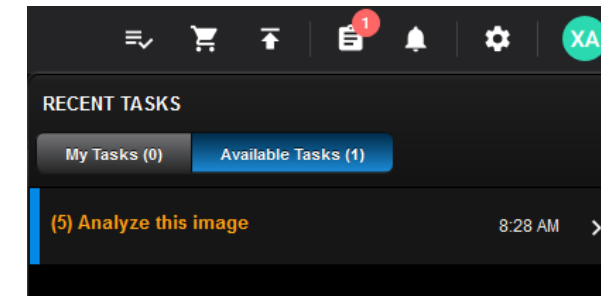
Workflow Management in GXP Xplorer – Viewing Available Tasks

- Users can click on the hamburger menu in GXP Xplorer and go to the Tasks page to see Available Tasks and My Tasks as well
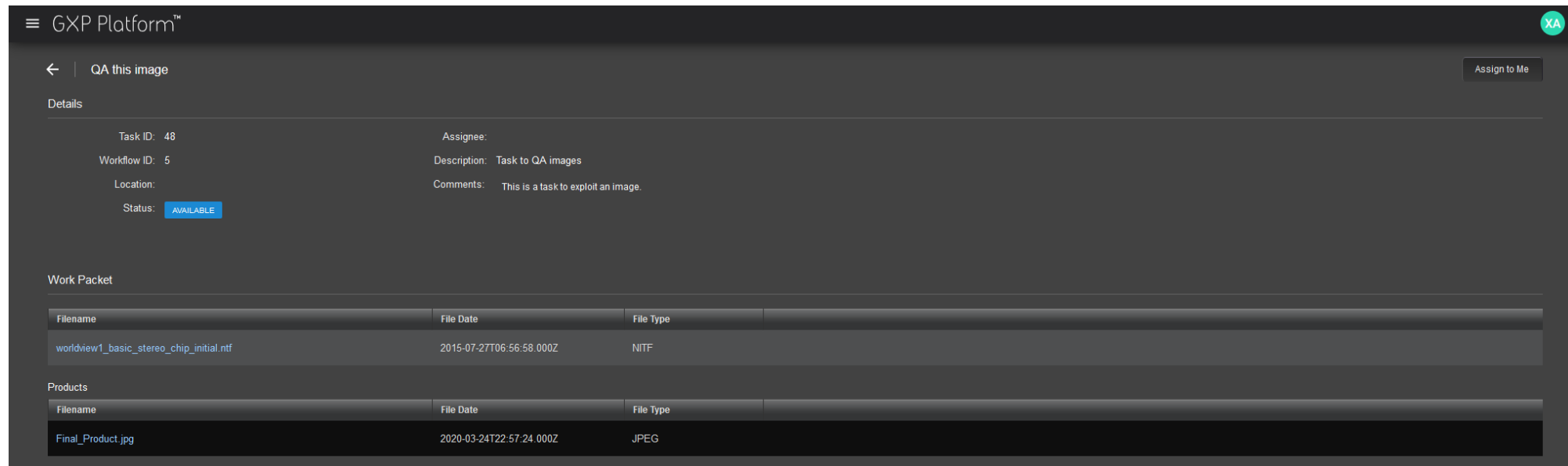
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Workflow Management in GXP Xplorer – Working a Task in GXP WebView

- If a task is opened in SOCET GXP, the imagery will be sent over along with a Workspace so the analysis can be completed
    - Details are covered in the SOCET GXP v4.4.0.3 release presentation
- Once a task is opened in GXP WebView, all imagery associated with that task will automatically be opened
- Users can then exploit the image and create output products to be attached to the task
    - Attaching products to a task can be accessed from the Task Notification button in GXP WebView
        - An Attachments tab will be available
    - There are two ways to attach final products to the task:
        - From Scene – Allows publishing to many different file types directly
        - From File – Allows uploading of any file type to associate with the task
        - Users can click on Edit Metadata to input some fields that will be associated with all products in this task (Title, Description, and geographic extent)

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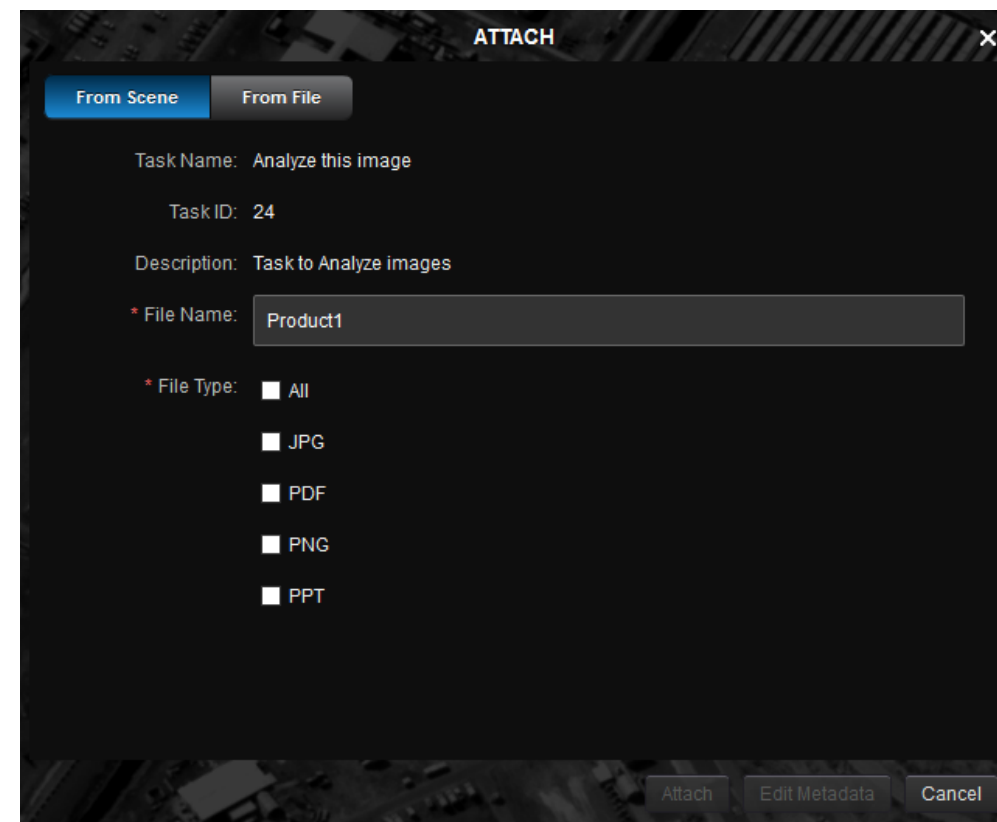
Workflow Management in GXP Xplorer … Moving a Task to QA

- Once all products are attached, an analyst can press the Mark Complete button on the Task Notification button in GXP WebView
    - This will send a notification to all candidate QA personnel that a task is ready for QA
    - It will also ensure all output products are uploaded and attached to the task
    - In addition, a Workspace will be saved so it can be reloaded during the QA process
- An Image Analyst QA can then view the tasks from the Tasks page or the Task Notification toolbar
    - It will be available in the Available Tasks tab and can be assigned to move it to My Tasks
    - The tasks will have the final products shown as attachments

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Workflow Management in GXP Xplorer – QA Process

- Once a QA task is assigned to a user, they can download or view the products in either GXP WebView or SOCET GXP (if they are imagery products) from the Tasks page
- They can also open the task in GXP WebView or SOCET GXP
  - If the task was exploited in the same tool as the QA person is trying to open, the workspace will open
  - If the task was exploited in a different tool, the source data only will be opened
    - This is because GXP WebView and SOCET GXP workspaces currently are incompatible
- The QA person can then hit Mark Complete to finalize a task, Reject it to send it back for more analysis, and add comments from either the Tasks page, GXP WebView, or SOCET GXP
- Once a task is through the QA process, the final products will be moved the GXP Xplorer catalog so they are available for everyone to view and download

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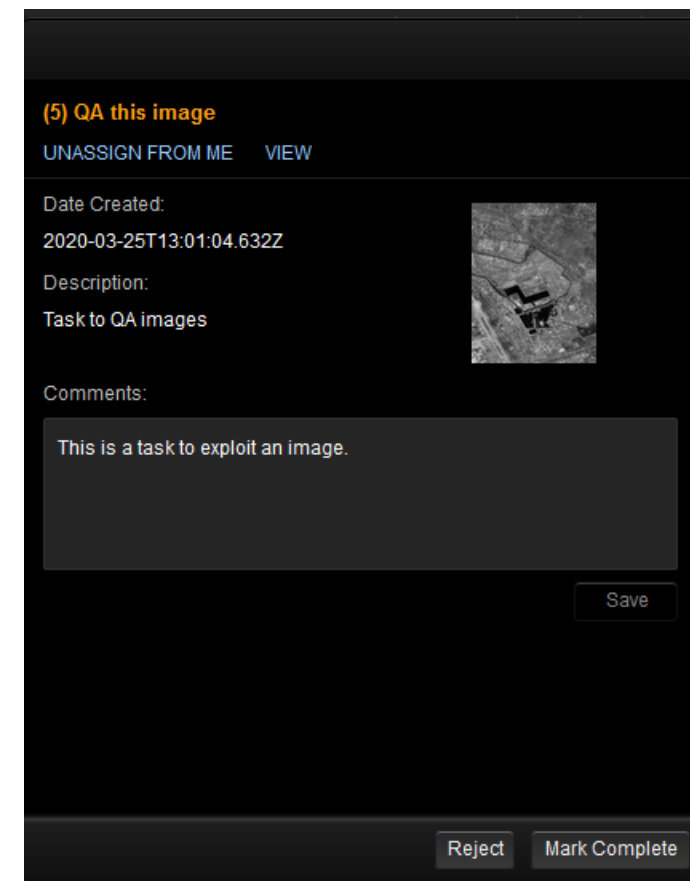
Creating an Automated Rule for Task Creation

- Users can also set up rules so that a task gets created when imagery is found in GXP Xplorer that meets certain criteria
- This is done through the Workflows page that is accessible from the hamburger menu in GXP Xplorer
- Users can add a new rule and walk through the wizard for defining the rule
    - Step 1: Define Rule
        - Rule Name – Any descriptive name for the rule
        - Workflow Type – Currently only Image Interpretation
    - Step 2: Trigger
        - Trigger Event – On Ingest (when an image is cataloged) or On Schedule (defined time)
        - Discoverable Types – Limited to imagery and any sub-types
        - Places – This defines the area an image must intersect to have it trigger the creation of a task
            - Any reference data imported under places can be used
        - Data Sources – This is the monitored folders you want to be included in this rule
        - Advanced Metadata – Allows further criteria for the imagery (cloud cover, resolution, etc.)
    - Step 3: Preview
        - This just shows all images that meet the criteria for your rule (workflows will be created for each)
- Default candidates for locations can also be managed in the Workflows page under the Candidate Assignment sub-page

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Advanced Place Selection

- When selecting a Place in GXP Xplorer an Advanced Button has been added to make selecting the Place easier

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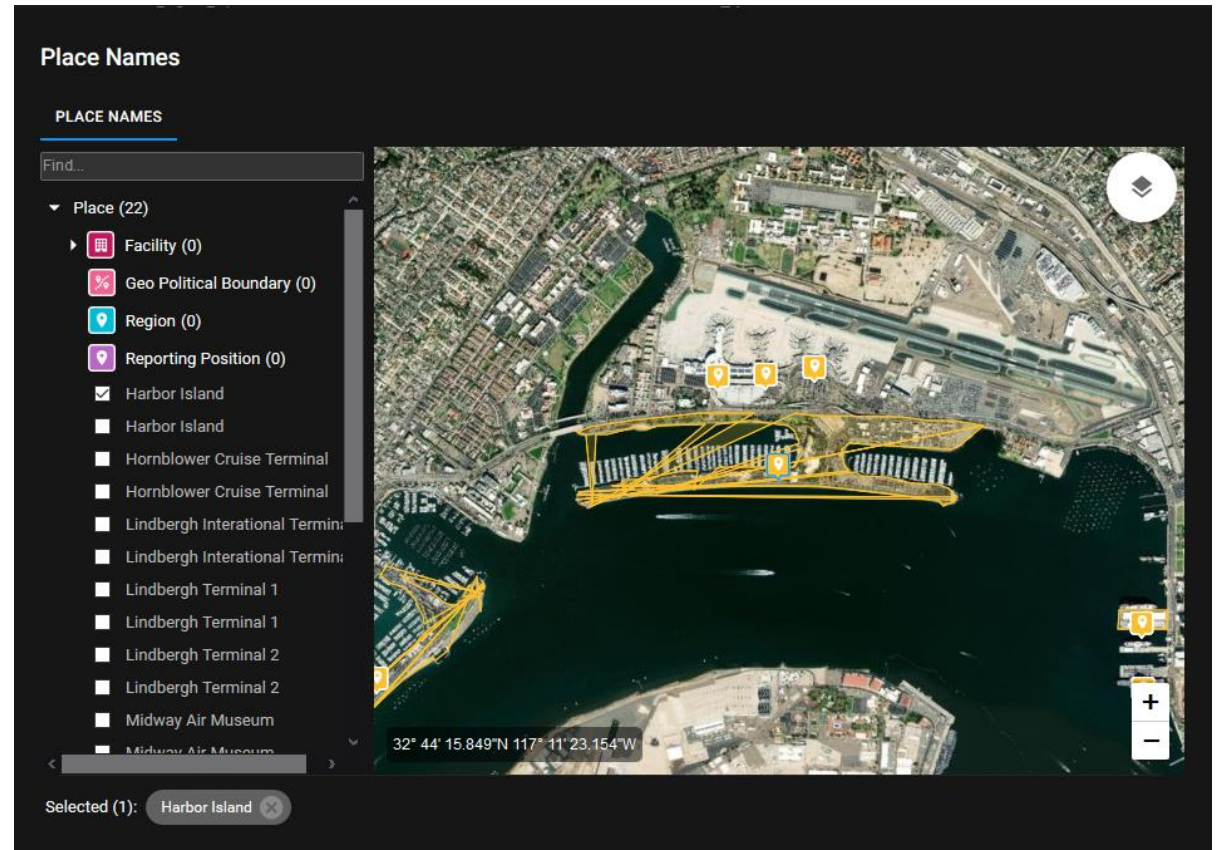
Observation Collection in GXP WebView

- A new capability has been added to allow users to collect observations directly in GXP WebView that will be stored in the GXP Xplorer Database

  - This is licensed as an add-on module called GXP_Observations that can be added to GXP Xplorer Basic Plus and above

  - A Observation button will appear on GXP WebView toolbar on the left-hand side

    - This must be enabled (it is off by default) which can be done from Administration Settings … Configuration Settings … Observations … Observations Settings … Enable Observations

   - This will launch the Observation Toolbox

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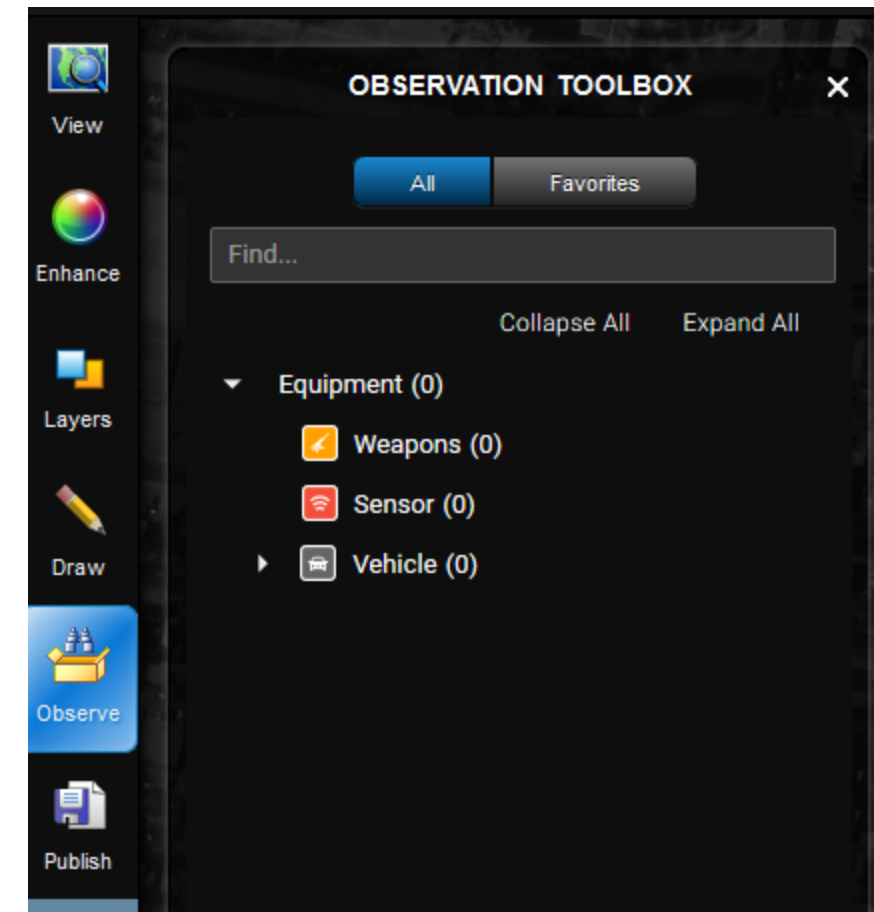
Observation Toolbox in GXP WebView

- The Observation Toolbox is populated from Equipment in the data model
  - There are two tabs:
    - All – Lists all available equipment
    - Favorites – Lists only equipment that an analyst has designated as a favorite by using the heart icon next to a specific type of equipment in the All tab
  - Search capabilities are included to find specific equipment

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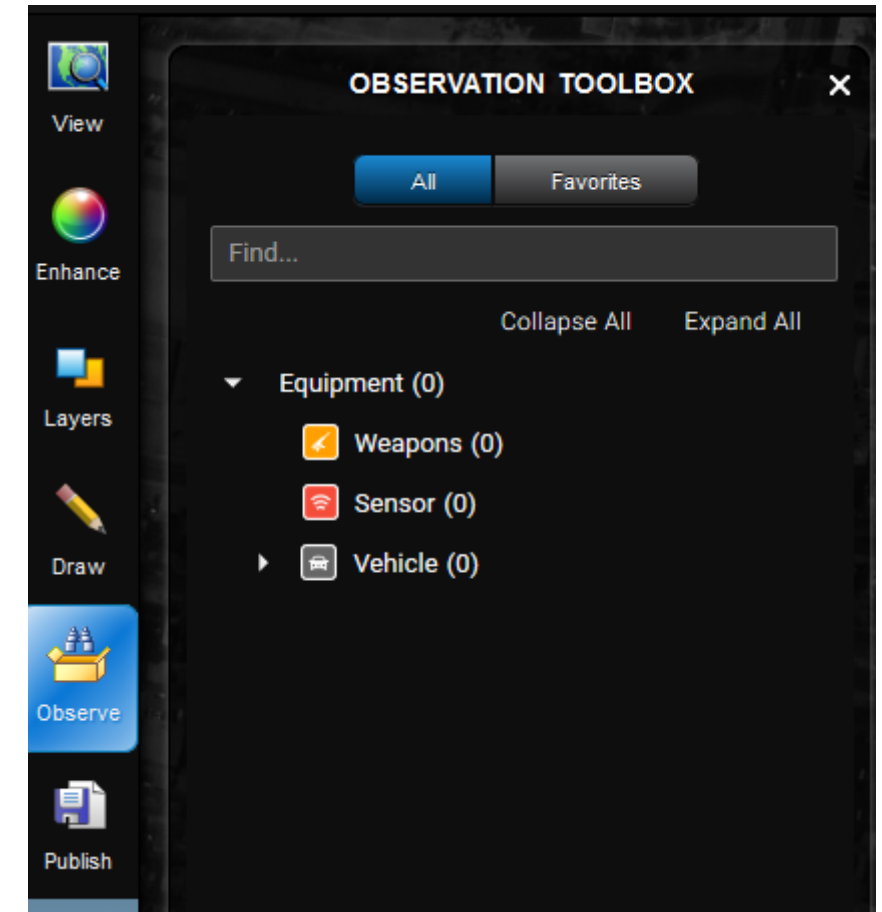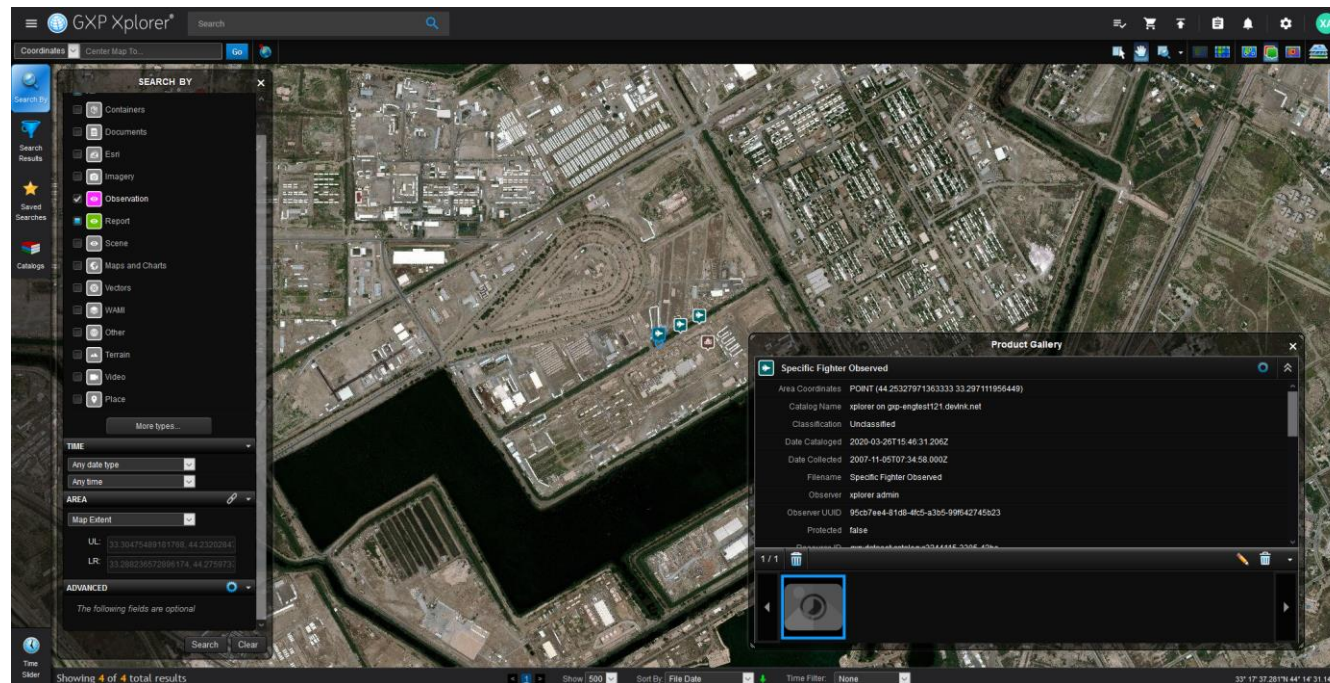
Collecting an Observation

- When clicking on an item in the Observation Toolbox and dropping it on an image in GXP WebView, an observation is added to the scene
  - The Observation has attributes as defined by Observation in the Data Model
    - This can be configured in the Data Model View Configuration in Configuration Settings
  - An observation table will open in GXP WebView that will show attributes related to the observations that were collected
    - The attributes are tied to the Observation node in the Data Model, not the attributes of the Equipment
    - Users can modify any of the attributes to describe what is being observed
    - A Location can be associated with the Observation to enable associations that can be exploited in GXP Fusion™
    - The Object Name can be modified to add a specific instance of that particular equipment type
      - This could be a specific airplane as identified by tail number which would be an instance of an airplane equipment type for example
      - This would allow users to track a specific instance of equipment for long term tracking of that object
  - Once all required attributes are filled out, users can hit Publish to Catalog which will save the Observations to the catalog so they can be searched by users or utilized in GXP Fusion

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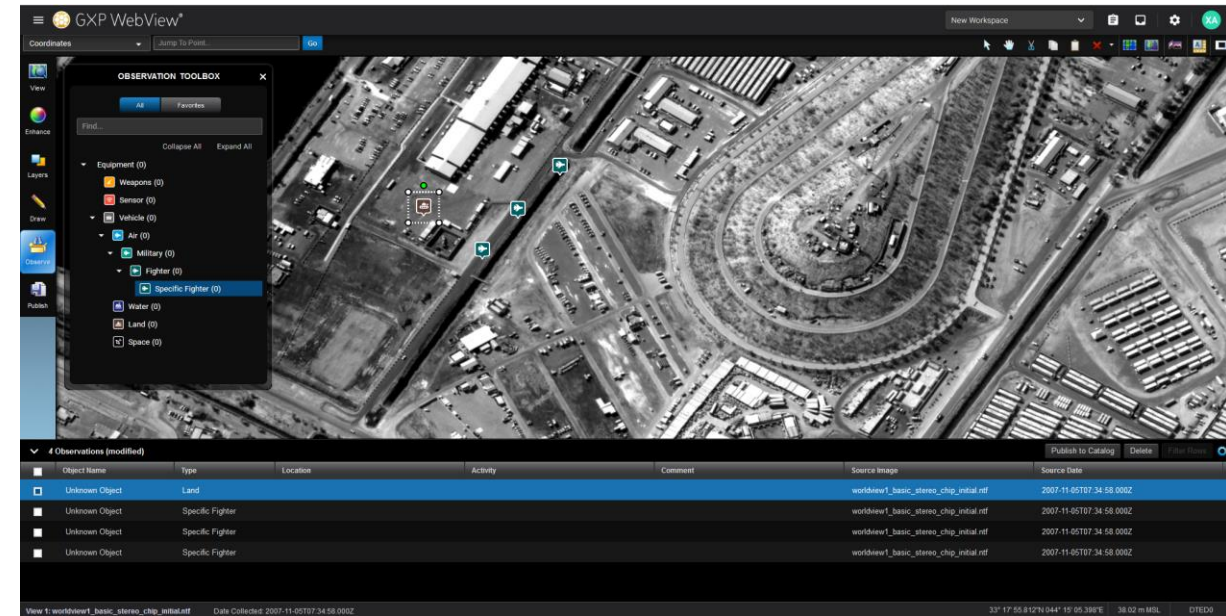
Publishing Observations

- When publishing observations, a dialog will appear that asks for information regarding the scene that was exploited when the observations were collected
  - The attributes associated with scenes can be customized in the Data Model
- The observations and scene will then be published to the catalog and can be searched through GXP Xplorer
- If a user searches for a scene in GXP Xplorer, they can load it back into GXP WebView and see the image along with the associated observations
- If the user searches for an observation, they can identify those on the map

Dual Publication of Observations into Esri® Geodatabases

- New setting has been added to configure access to an Esri Geodatabase that will be used to dual populate observations
  - Accessed from Administration Settings … Configuration Settings … Observations … Esri Feature Server Export Settings
  - This requires that an organization has ArcGIS® Server configured to allow access to their geodatabase
  - A mappings file must be configured to translate between fields in GXP Xplorer and the Esri Geodatabase
   - This mappings file can be held in a customized location which is configurable in this window

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Observation Collection as a Part of Workflow

- Users can also collection observations as a part of a workflow task
  - If a location is associated with a task, the location will be automatically populated as a default for each observation that is collected
    - This can be changed by the analyst if desired
  - When done collecting Observations, the Publish to Catalog button will instead say Attach to Task
- When the task is moved to QA, users can open the Observations which will open the scene imagery and observations into GXP WebView

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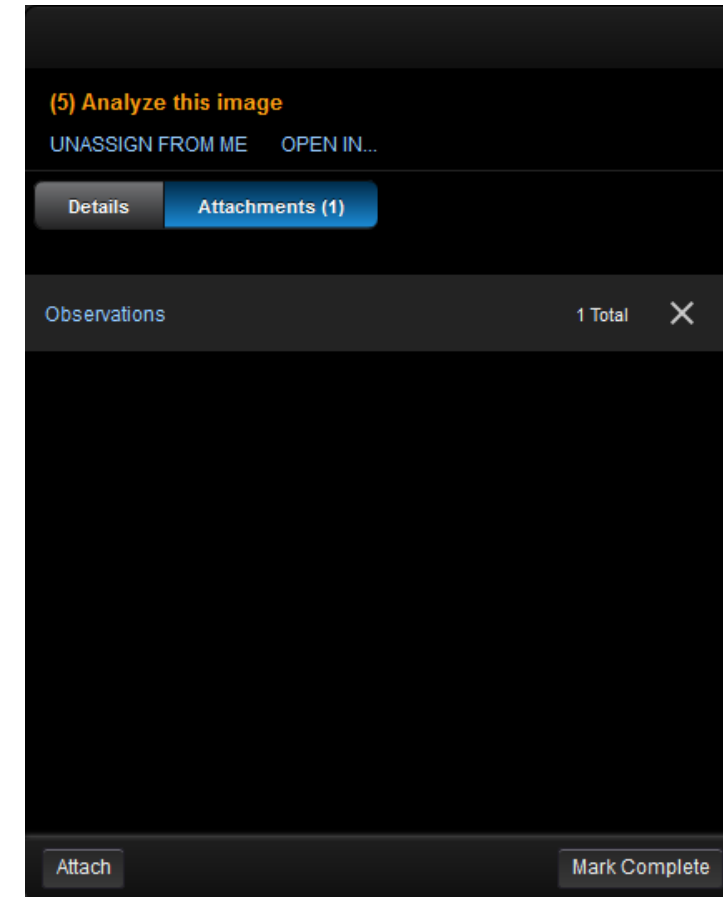
Orthomosaic Generation in GXP Xplorer

- Users can now generate an orthomosaic in GXP Xplorer
  - Administration Settings … GXP Xplorer Global Settings … Ortho Generation
  - Orthomosaic has been added under Action when setting up a new job
    - Feathering and Fill Voids options have been added to the Task Setup when generating an orthomosaic
    - In the Source Selection panel, a new section has been added for Mosaic Image Source Requirements allowing the user to set additional parameters
    - Mosaic Method – Most Recent on Top, Most NADIR
    - Minimum Images Required
    - Composed of a Single Sensor Type
    - Complete Coverage Over Area
    - Taken Within Range

Mosaic Image Source Requirements

*Mosaic Method   Most Recent On Top ▾

☐ Minimum Images Required Enter value ▴▾

☐ Composed of a single sensor type

☐ Complete coverage over area

☐ Taken Within 0 ▴▾ Select ▾

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Default Data Model Updates

- The order has been changed to be more intuitive
  - Imagery, Terrain, Vectors, Video, WAMI are now at the top
- Containers
  - GXP Workspace has been added (GXP WebView)
  - Mission has been added
  - Workflow has been added
- Documents
  - GXP InForm Note Document has been removed
- Imagery
  - GBDX and subtypes have been added
  - Planet and subtypes have been added
- Vectors
  - Tracks
    - SPIRE Hit has been removed
    - SPIRE Track has been removed
- Place has been added with the following sub-types
  - Facility (Transportation, Government, and Infrastructure sub-types)
  - Geo Political Boundary
  - Region
  - Reporting Position
- Activity has been removed from under Observation
- Scene has been added which represents imagery combined with observations
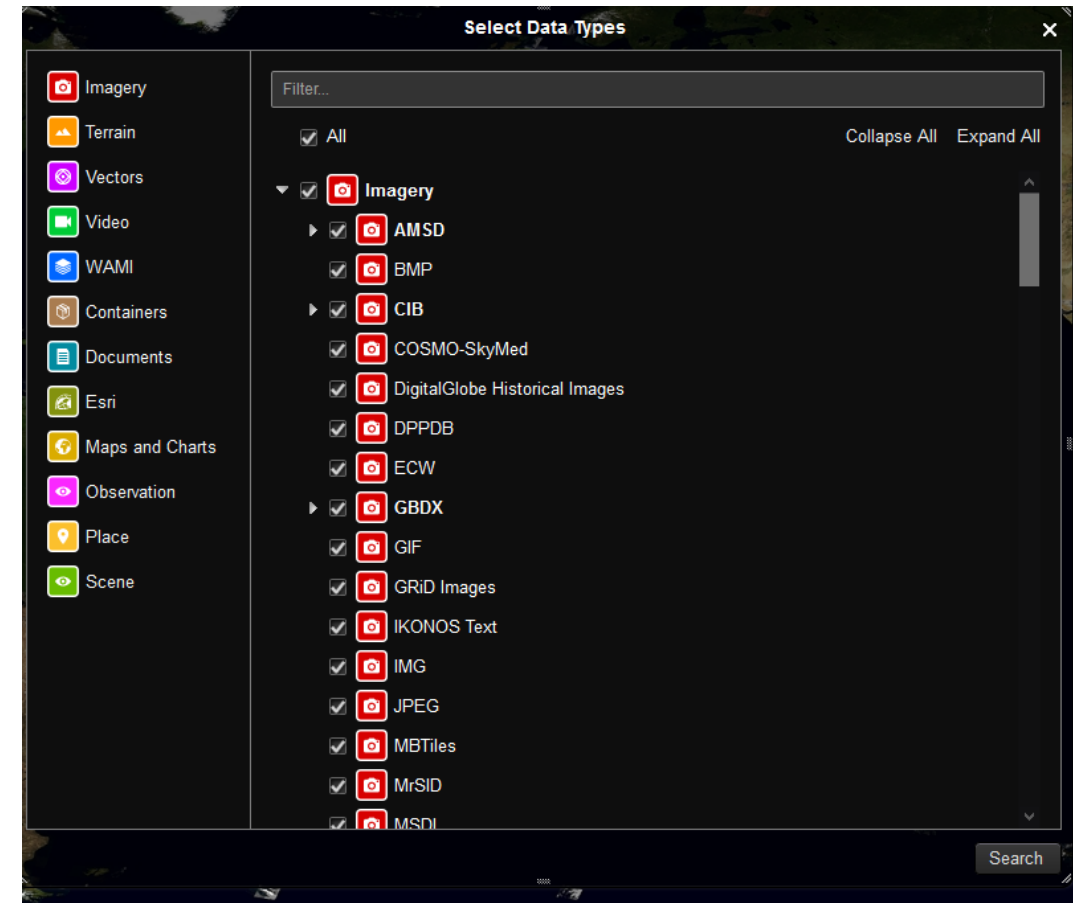
Cloud Capabilities

- We have ported Object Storage Support into the GXP Xplorer v2.4.2 baseline
  - This is licensed as an add on module called GXP_ObjectStorage
    - It can be added to GXP Xplorer Basic Plus bundles and above
  - A system administrator can manually configure GXP Xplorer to catalog new objects coming into a S3 bucket
    - This does not support S3 Glacier
    - GXP Xplorer will not catalog items sitting in an existing S3 bucket, it will only see new things once the setup is configured
      - However, we can consult on ways to make GXP Xplorer pick up existing items
        - Generally done through scripting to generate a SQS message that GXP Xplorer will interpret as a new item to catalog
        - When cloud storage is in use, certain complex files types may be catalogued differently as opposed to local storage

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Updates to the Welcome Page

- The default background image and available images have been updated on the Welcome Page

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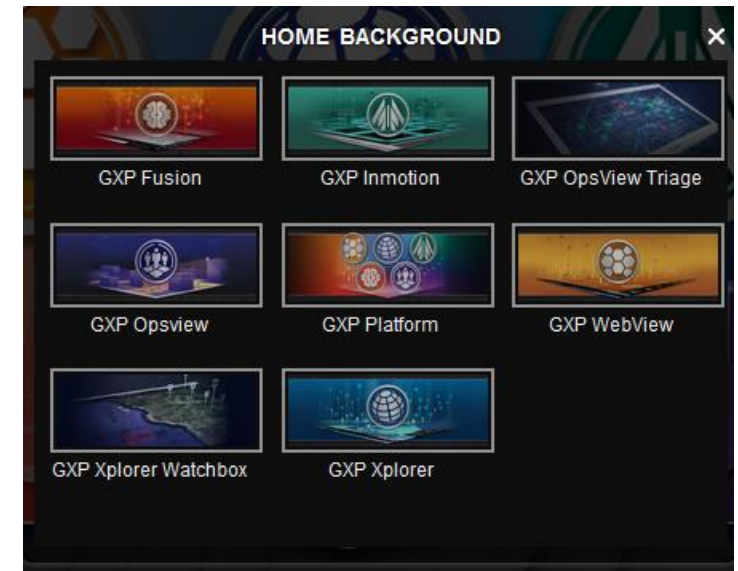
Industrial Info Resources (IIR) Plugin Updates

- New attribute fields have been exposed through the IIR plugin
- Additional fields added to Plants:
  - Feed Actual Capacity
  - Feed Design Capacity
  - Feed Capacity Unit of Measure
  - Feed Product Description
  - Output Actual Capacity
  - Output Design Capacity
  - Output Capacity Unit of Measure
  - Output Product Description
  - Shifts per Day
  - Ultimate Parent Name
  - Lat Long Verified
- Additional fields added to Projects:
  - Plant Name
- Plant Ultimate Parent Name
  - Lat Long Verified
  - Flag-Environmental Air
  - Flag-Environmental Land
  - Flag-Environmental Water
  - Kickoff Slippage
  - Project Probability

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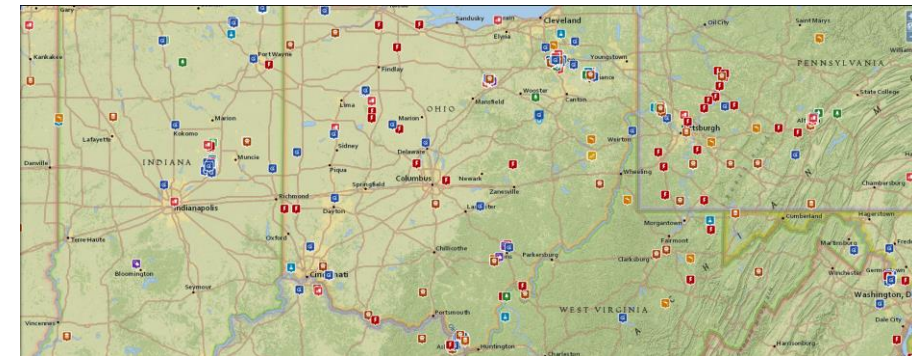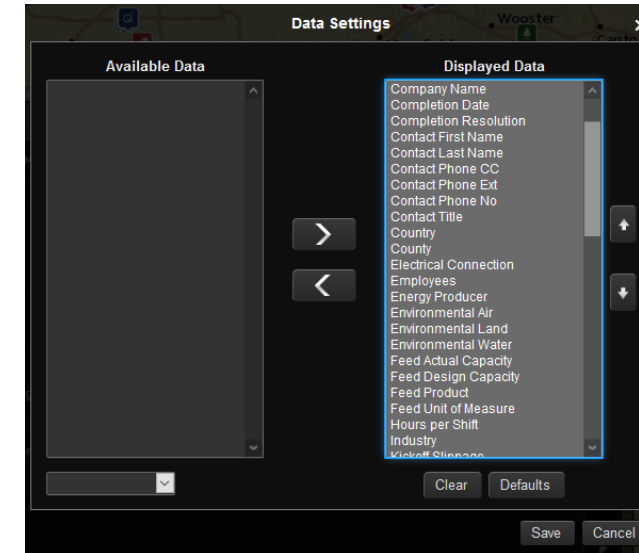
Data Model Import / Export Improvements

- Users can now import and export Data Models directly from the GXP Xplorer user interface
    - Administration Settings ... GXP Xplorer Global Settings ... Data Models
    - New Import and Export buttons have been added
    - Exporting a Data Model will allow a user to save a .zip file of the data model or models to their local machine
    - Importing allows a user to select the .zip file to import
    - Data Model View Configuration Mappings are now exported and imported with the data model

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Data Model View Configuration Mappings

- The Data Model View Configuration Mappings window has been added to allow users to select graphically, the nodes desired for each capability in the software
    - Accessed from Administration Settings ... Configuration Settings ... Data Model View Configuration Mappings
    - Previously, this could only be done through modification of configuration files
    - This maps user interfaces in GXP Xplorer to specific nodes in the data model
        - For example, Search defines which nodes show up when a user does Search By in GXP Xplorer and Places will use the nodes defined to determine what is shown in the drop-down when a user is prompted to select a Place
    - This is extremely important when using a custom data model
    - These settings are now saved to the data model and will update as the user switches between different data models

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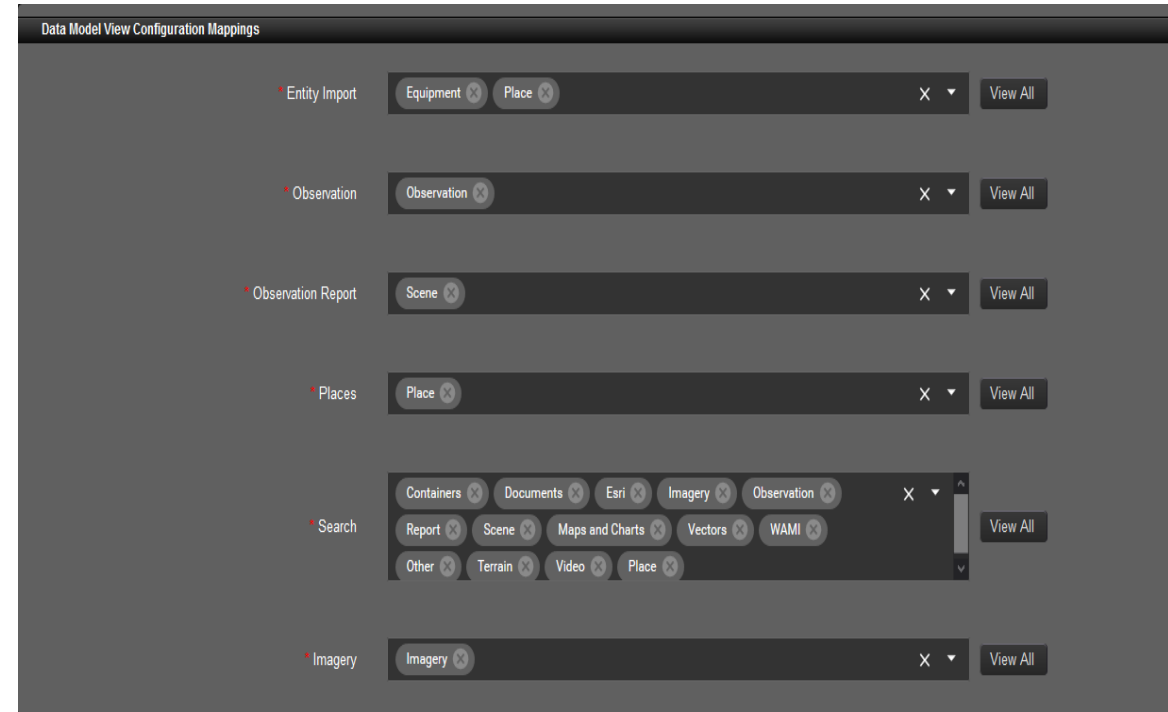
New Data Management Options

- New setting added to Administration Settings … GXP Xplorer Application Settings … Application Settings … Data Management
  - When using Move or Bin, these options allow users to move RSets, thumbnails, and explicitly move rather than copy the data

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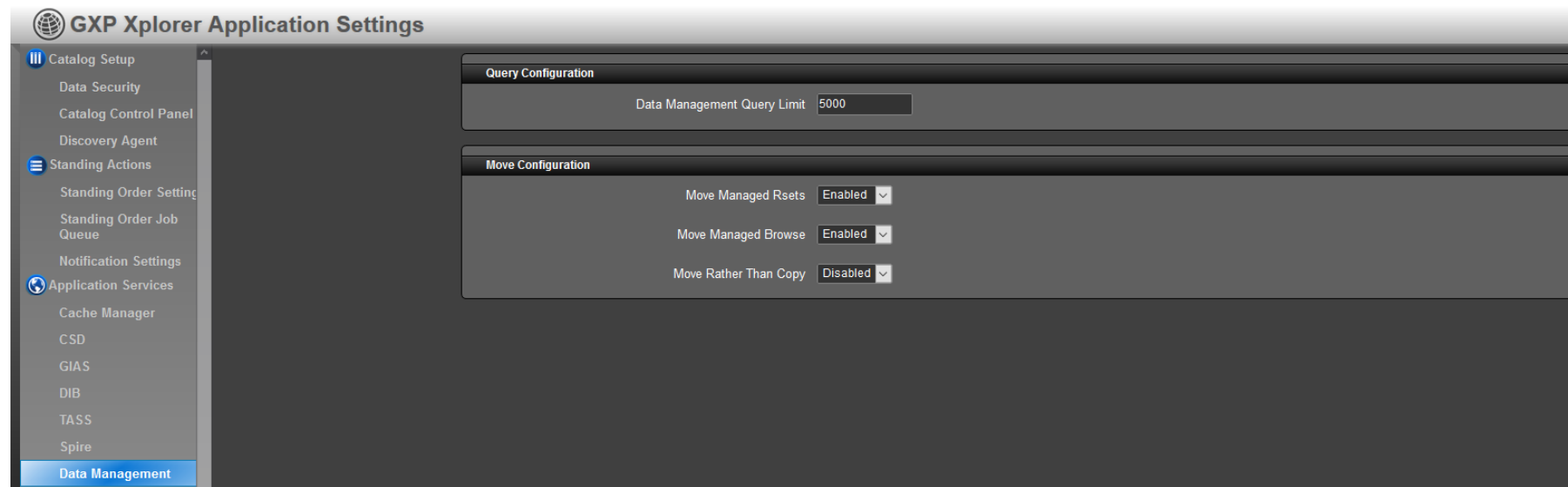
Additional Options for Inbox / Move / Bin

- New settings have been added to Administration Settings … GXP Xplorer Application Settings … Catalog Setup … Discover Agent
  - The following only apply to inbox / move / bin as opposed to file crawling
    - Deterministic UUID – Allows users to set file attributes to be used when generating UUIDs so equivalent files will have the same UUID across multiple GXP Xplorers
    - Duplicate File Processor – Settings allow GXP Xplorer to recognize pure duplicate files and updates to existing files with a common UUID based on configurable metadata fields
      - Ensures GXP Xplorer only keeps one holding (Enable Duplicate File Processor)
      - Can delete duplicate file on disk (Enable Duplicate File Processor Delete Execution)
    - Quarantine Failed Files Manager – Files coming into the inbox that fail or are determined to be pure duplicates can be moved off to an alternative directory that will be deleted after a user configurable time period
    - Ghost File Buster – Configurable on how often and when files in an inbox directory get cleaned up after they are copied to the new location
    - Keywords Processor – Allows metadata fields to be stored as Keywords for easier searching

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New Metrics Availability

- A new metrics page has been added to show a detailed breakdown of the ingest process for GXP Xplorer

  - GXP Metrics … Ingest … Ingest Detail

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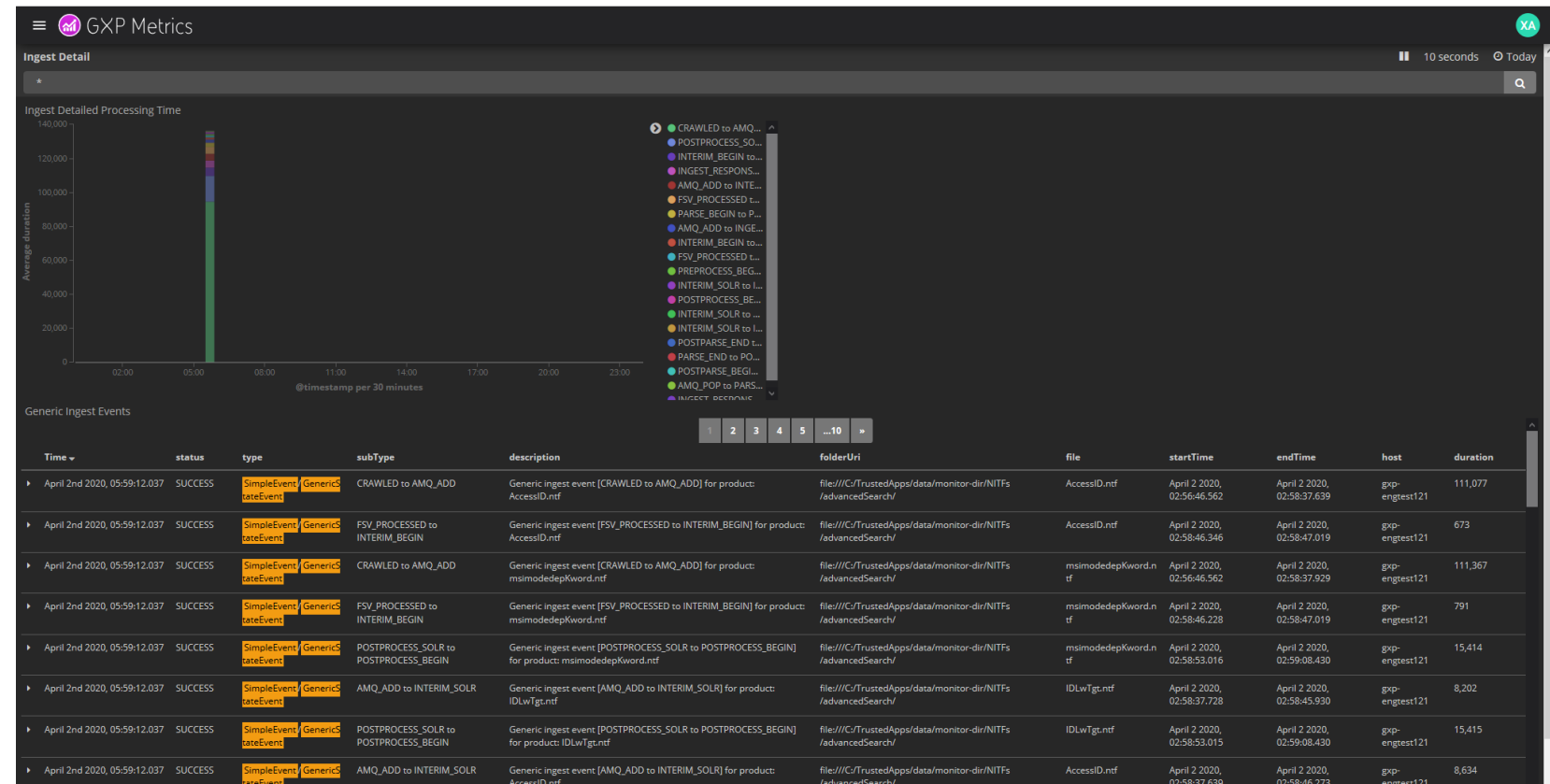
Other significant enhancements

- Graphics drawn in GXP WebView no longer temporarily disappear after drawing them
- Place of Interest (POI) Lists can only have items listed as Places as defined in the Data Model View Configuration Mappings
    - This is defaulted to Place only (if a user wants to use images or other objects as an input to a POI list, it must be added to the Data Model View Configuration Mappings for Places)
- When chipping from GXP Xplorer to PowerPoint, the user can add this to the cart only (direct download has been removed)
- Navigating to the Shared Global Settings will now default to the Basemaps page
- The Shared Global Settings navigation menu has been re-ordered (alphabetized)
- When performing upgrades, a disk space check is run for the Postgres upgrades to prevent unsuccessful installations
- GXP InMotion™ and GXP Fusion can now be set as the default landing page
- When connecting to the DigitalGlobe® Catalog Plugin, if a connect ID is not configured, users will get an opportunity to authenticate using a username and password
- Nodes can be explicitly excluded from search by modifying the "Hidden" attribute in the database
- When using Bin to move files, users can further break down the sub-folders based on metadata tags in the catalog
    - Administration Settings … GXP Xplorer Global Settings … Data Management … Actions … Metadata File Path
- Groups can be automatically created and assigned based on attributes of users when using LDAP
    - Administration Settings … Authentication … LDAP Settings … Group Attributes

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Thank You

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