

Streaming Aerial Imagery Service

Step-by-step data streaming service instructions



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The HxGN Content Program Streaming Aerial Imagery Service provides login-only access to an extensive online library of 30 cm and 15 cm (urban areas) ortho-rectified aerial imagery. This aerial imagery is the perfect base map for GIS and mapping professionals needing accuracy and currency at an affordable price.

Please see the HxGN Content Program's website for the latest product and content coverage information here: <http://hxgncontent.com>

HxGN Content Program provides an Open GIS Consortium (OGC) compliant streaming Web Map Service (WMS) and Web Map Tile Service (WMTS) based on OGC specifications found here:

<http://www.opengeospatial.org/>

This document provides step-by-step instructions on getting the most from the Streaming Aerial Imagery Service. If at any time you have additional questions or need assistance on features not covered here, our contact information is provided in the last section.

1. Detailed Instructions for WMS

Starting with OGC standards, the HxGN Content Program has added support for user authentication since there is none in the WMS or WMTS specifications.

Throughout this document, the user will be prompted to enter their username and password credentials as defined by you or your system administrator in control of your HxGN Content Program account. Note that each user must have their own unique login to access any HxGN Content Program service. Please contact our support team for more information at support.content@hexagon.com.

Access to the HxGN Content Program Service is provided using unsecured (HTTP) and secured (HTTPS) protocols. If your application requires a secured protocol connection (HTTPS) simply insert it into the web addresses in place of HTTP listed throughout this document. Please take note that HTTP will always perform faster than HTTPS the magnitude of which is based on the end client and its support of the connection. As such, HTTPS should only be used when necessary (e.g. ArcGIS online connections).

Below are examples of how to access the Streaming Aerial Imagery Service and features that are supported via WMS.

Example 1 - GetCapabilities

<http://services.hxgncontent.com/streaming/wms?request=GetCapabilities>

Hexagon Content Program has extended the GetCapabilities to return only layers viewable by a client within a bounding box, as shown in example 2. This will return only layers that are viewable at the zoom level determined by the bounding box.

Example 2 - GetCapabilities

<http://services.hxgncontent.com/streaming/wms?REQUEST=GetCapabilities&SRS=EPSG:4326&BBOX=-96.8,32.7,-%2096.7,32.8&WIDTH=400&HEIGHT=400>

Example 3 - GetMap (Geographic projection)

https://services.hxgncontent.com/streaming/wms?SERVICE=WMS&REQUEST=GetMap&SRS=EPSG:4326&BBOX=-92.39,34.69,-92.34,34.72&WIDTH=1536&HEIGHT=883&LAYERS=HxGN_Imagery&FORMAT=image/png

Example 4 - GetMap (WGS84 UTM Zone 11 projections, cached layer)

http://services.hxgncontent.com/streaming/wms?SERVICE=WMS&REQUEST=GetMap&SRS=EPSG:32611&BBOX=399771.49,3758891.40,402209.90,3760293.17&WIDTH=1536&HEIGHT=883&LAYERS=HXGN_Imagery&FORMAT=image/png

Example 5 – Access Custom layers (optional)

http://services.hxgncontent.com/streaming/wms?HxGN_Custom=True

Adding HxGN_Custom is used to access additional rendering layers such as 15 cm or 30 cm separated, leaf-off, etc.

Add WMS Server

URL:

Examples: <http://www.myserver.com/arcgis/services/mymap/MapServer/WMServer?>
<http://www.example.com/servlet/com.esri.wms.Esrimap?ServiceName=Name&>

Version:

Custom Parameters

Parameter	Value
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Server Layers

Account (Optional)

User:

Password: ☒ Save Password

Add Data

Look in:

- HxGN_CIR_15cm
- HxGN_CIR_15cm_Urban
- HxGN_CIR_30cm
- HxGN_Imagery
- HxGN_Imagery_CIR
- HxGN_RGB_15cm
- HxGN_RGB_15cm_Urban
- HxGN_RGB_30cm

Name:

Show of type:

WMS Parameters supported

REQUEST:	GetCapabilities and GetMap
SRS:	EPSG: projection code in which the image is to be returned in
BBOX:	Bounding box of the image request
FORMAT:	Format the image is to be returned
WIDTH:	Width in pixels of the image
HEIGHT:	Height in pixels of the image
LAYERS:	Image layer requested
STYLES (optional):	Used in sorting data within a mosaic, for example STYLES=BRD would sort data by color (over B&W), resolution, and image date STYLES=TIMESTAMP will timestamp the image with the acquisition date of the layer.

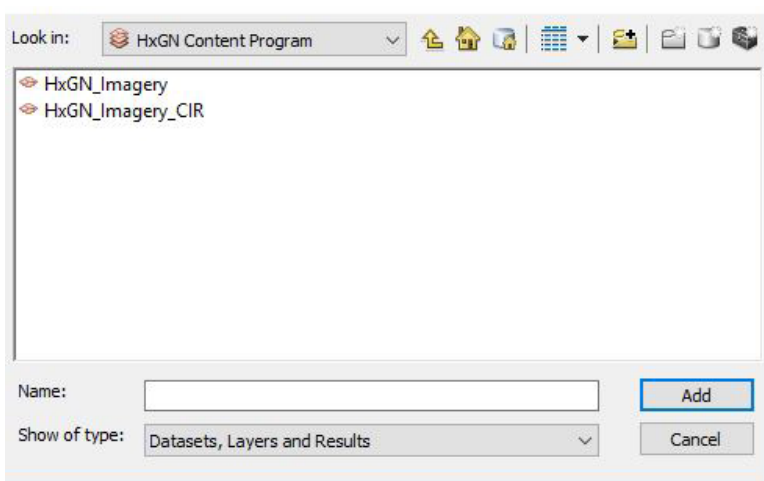
2. Streaming Aerial Imagery Layer Description

Definitions of the difference between the various layers that customers access/view within their Aerial Imagery Streaming Service subscription.

HxGN Imagery:	This is an optimized cached layer created to enhance performance. It is optimized with the newest imagery available. The resolution of the imagery is comprised of both 15 cm and 30 cm data.
HxGN_Imagery_CIR:	This is a non-cached layer comprised of 15 cm and 30 cm resolution data. The imagery contains a Color-Infrared imagery. The layer is configured with the newest imagery available.

HxGN_RGB/CIR_xxcn_20xx:

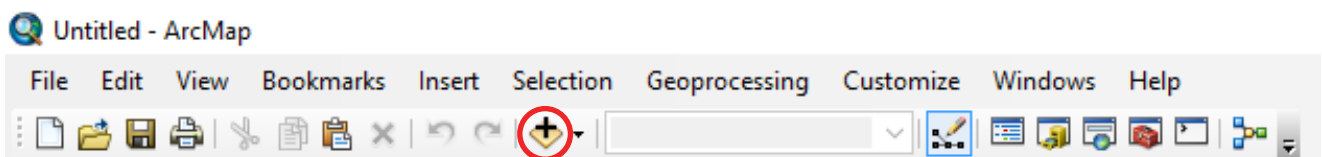
Non-cached 15 or 30 cm layer includes the 3-band (RGB) or (CIR) streaming aerial imagery for the noted year.



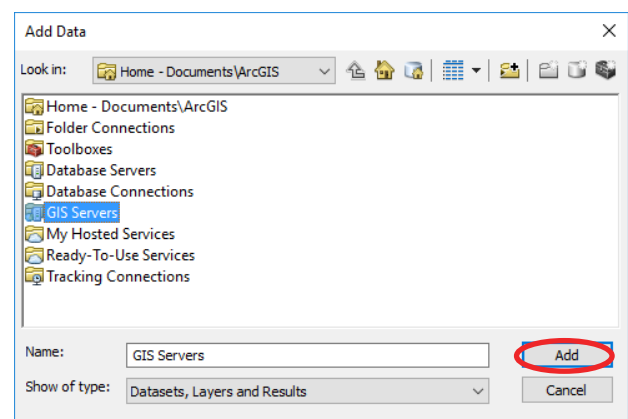
3. Streaming Aerial Imagery for ESRI ArcMap

3.1. Adding Aerial Imagery as WMS to ArcMap

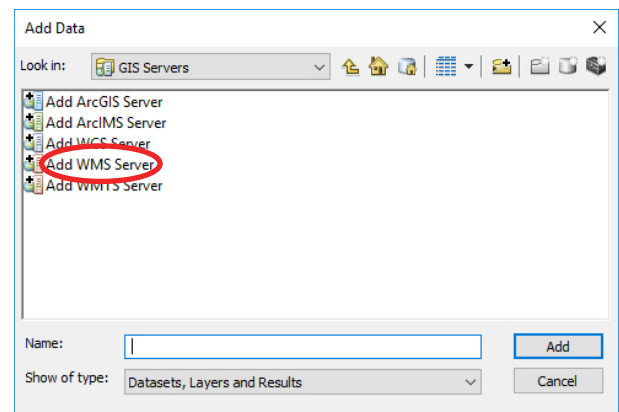
Click the “Add Data” button, or navigate to File - Add Data - Add Data.



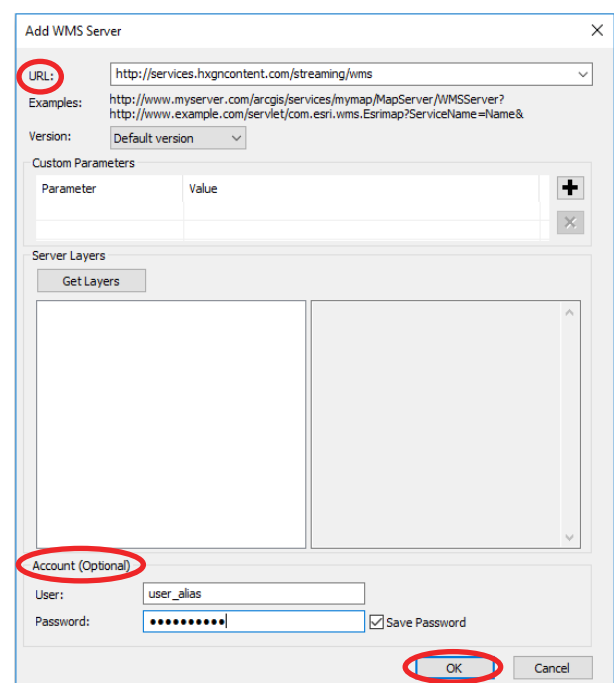
Choose “GIS Servers” from the drop-down menu and click on “Add”.



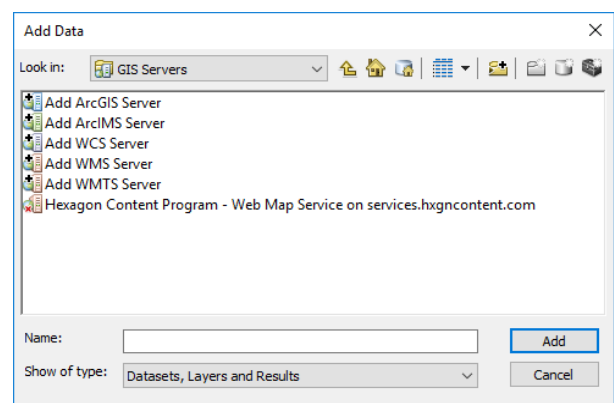
Double click on “Add WMS Server”.



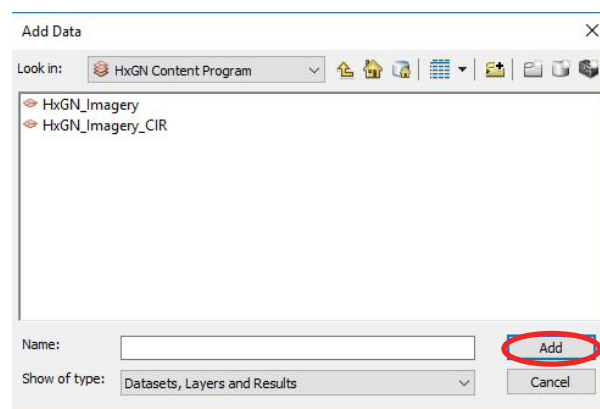
1. The Add WMS Server window opens. In the URL field, add the URL:
<http://services.hxgncontent.com/streaming/wms>.
2. Under Account (Optional) fill in your username and password. Click on “Save Password” if you would like ArcMap to remember your password. Click on “OK”.



The connection to Streaming Aerial Imagery has been made, and the connection is shown in the GIS servers location.

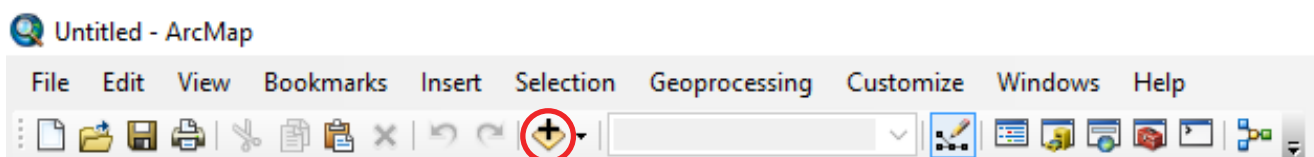


Double click on the connection to see the list of services you are subscribed to, select the service you wish to add and click on “Add”.

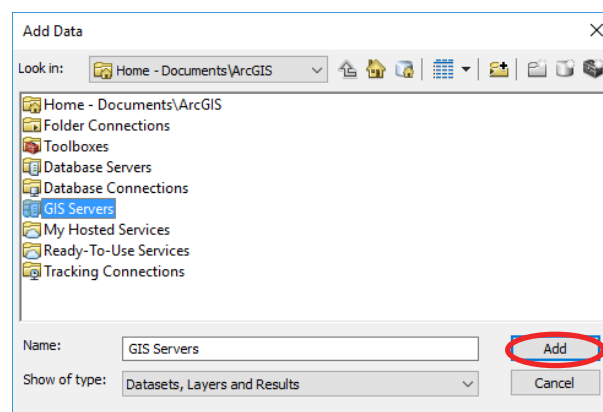


3.2. Adding Aerial Imagery as WMTS to ArcMap

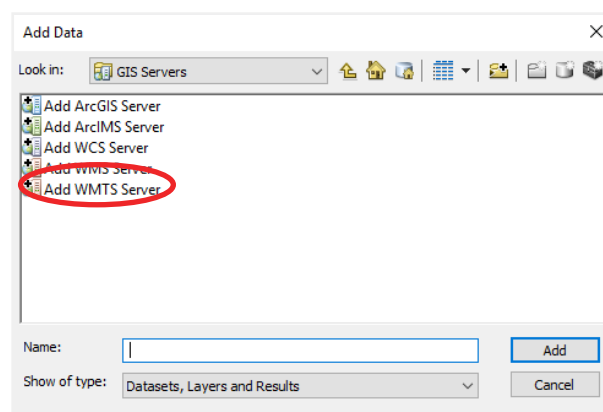
Click the “Add Data” button, or navigate to File - Add Data - Add Data.



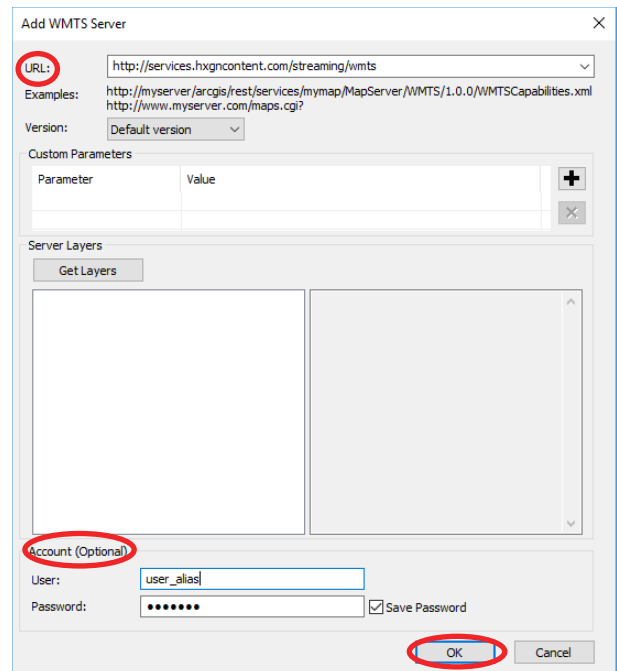
Choose “GIS Servers” from the drop-down menu and click on “Add”.



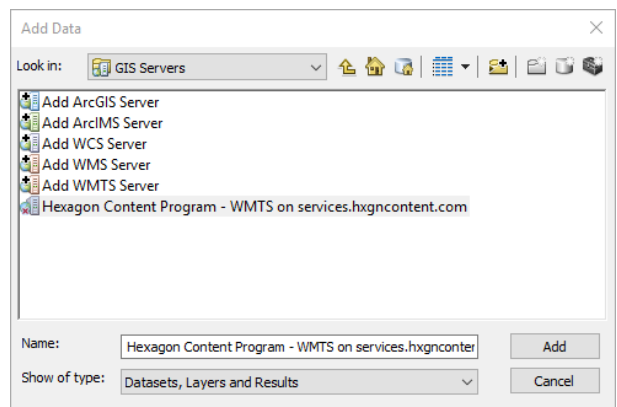
Double click on “Add WMTS Server”.



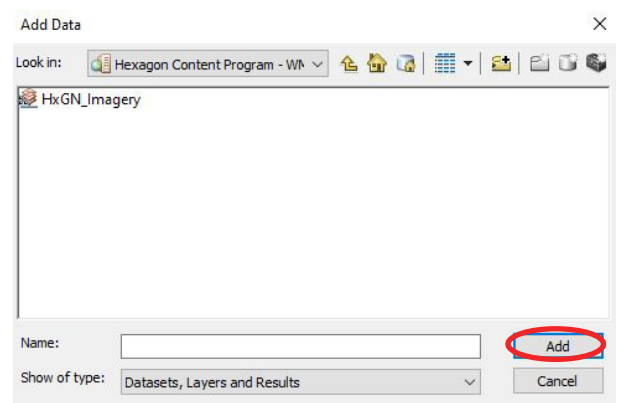
1. The Add WMTS Server window opens. In the URL field, add the URL:
<http://services.hxgncontent.com/streaming/wmts>.
2. Under Account (Optional) fill in your username and password. Click on “Save Password” if you would like ArcMap to remember your password. Click on “OK”.



The connection to Streaming Aerial Imagery has been made, and the connection is shown in the GIS servers location.



Double click on the connection, select a WMTS layer and click on “Add”.

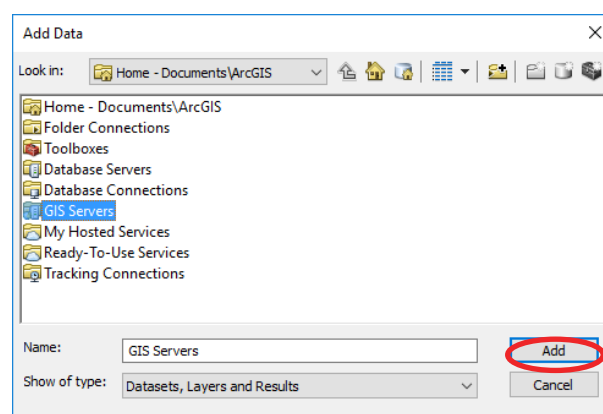


3.3. Adding Aerial Imagery as SOAP to ArcMap

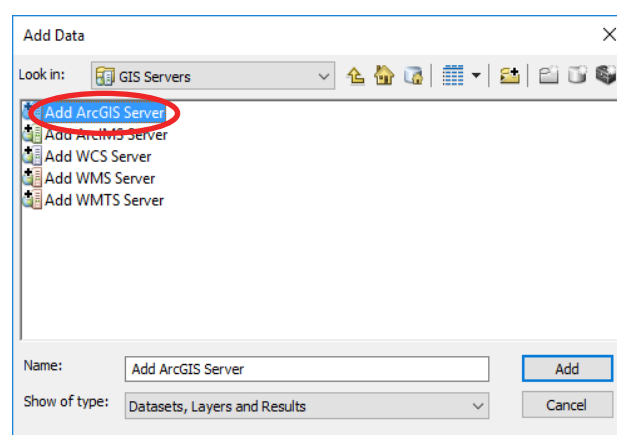
Click the “Add Data” button, or navigate to File - Add Data - Add Data.



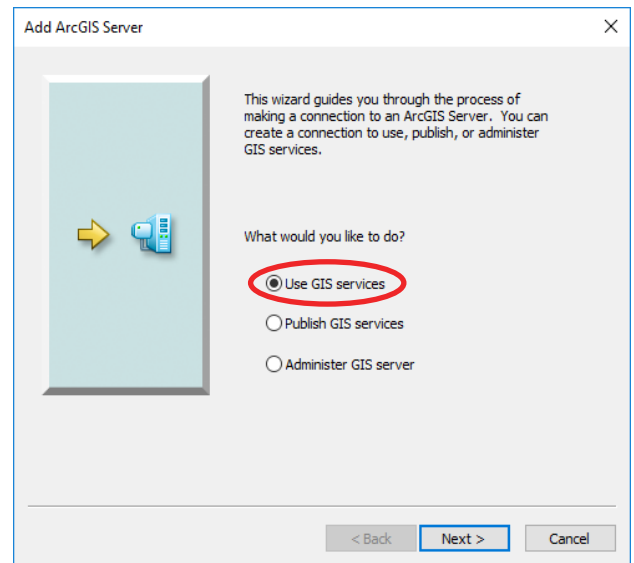
Choose “GIS Servers” from the drop-down menu and click on “Add”.



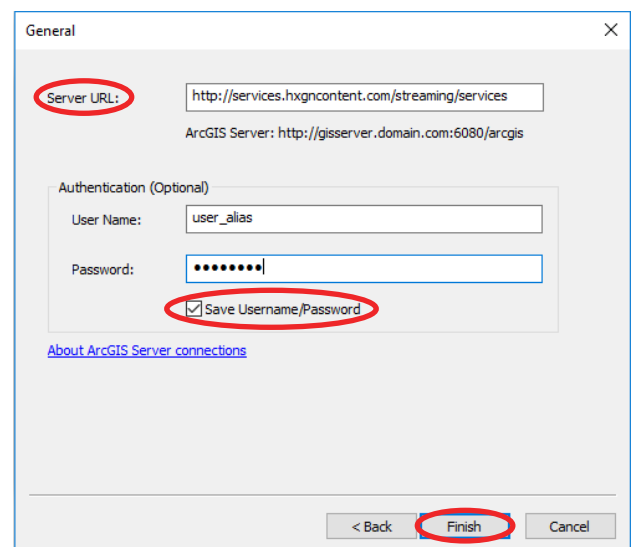
Double click on “Add ArcGIS Server”.



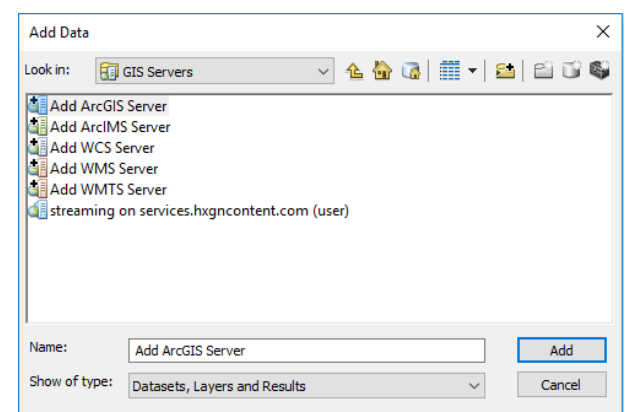
Select “Use GIS services” and click next.



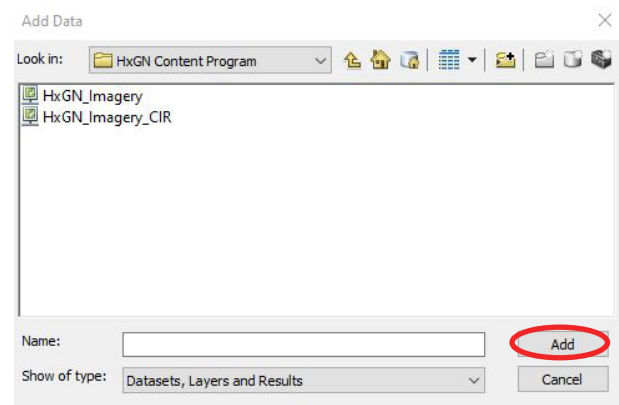
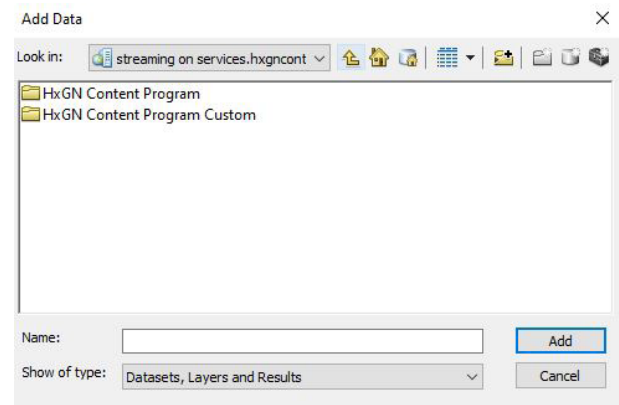
1. The General window opens. In the Server URL field, add the URL:
<http://services.hxgncontent.com/streaming/services>.
2. Under Authentication (Optional) fill in your username and password. Click on “Save Password” if you would like ArcMap to remember your password. Click on “Finish”.



The connection to Streaming Aerial Imagery has been made, and the connection is shown in the GIS servers location.



Double click on the connection to see the list of services you are subscribed to, select the service you wish to add and click on “Add”.



3.4. Adding Aerial Imagery as REST to ArcGIS Online

Login into your ArcGIS Online account, and Navigate to the Maps page.



Click on “Add” and select “Add Layer from Web”.

Add Layer from Web

What type of data are you referencing?

An ArcGIS Server Web Service

URL: https://services.hxgncontent.com/streaming/rest/services

☐ Use as Basemap

BROWSE FOR MORE LAYERS

ADD LAYER CANCEL

The “Add Layer from Web” window opens. Select “An ArcGIS Server Web Service” from the drop-down box. In the URL field, add the URL: <https://services.hxgncontent.com/streaming/rest/services> and click on “BROWSE FOR MORE LAYERS”.

Add Layer from Web

What type of data are you referencing?

An ArcGIS Server Web Service

URL: https://services.hxgncontent.com/streaming/rest/services/HxGN_Imagery/MapServer

☐ Use as Basemap

Choose a layer

HxGN_Imagery

ADD LAYER CANCEL

The “Sign In” window appears, fill in your username and password, and click on “Sign in”.

Sign in

http://services.hxgncontent.com

Your connection to this site is not private

Username user_alias

Password *****

Sign in Cancel

You will be returned the “Add Layer from Web” window, select the layer you wish add and click on “Add Layer”.

Add Layer from Web

What type of data are you referencing?

An ArcGIS Server Web Service

URL: https://services.hxgncontent.com/streaming/rest/services/HxGN_Imagery/MapServer

☐ Use as Basemap

Choose a layer

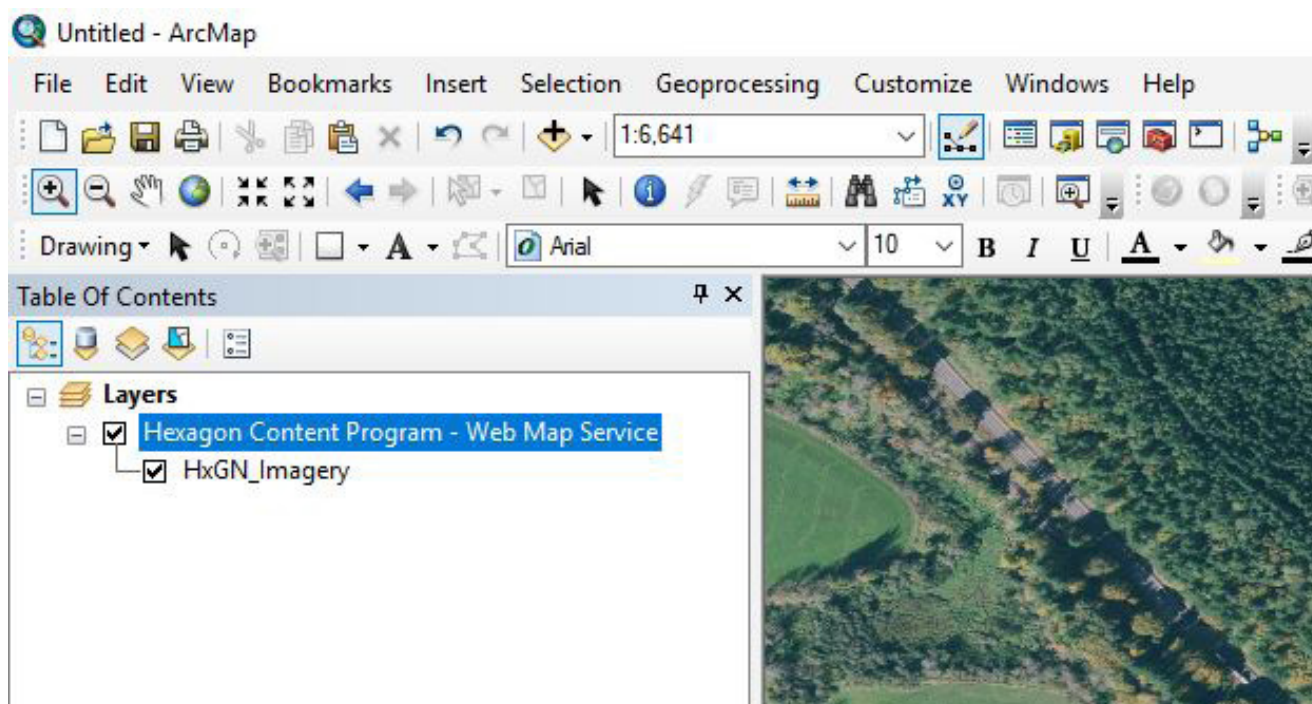
HxGN_Imagery

ADD LAYER CANCEL

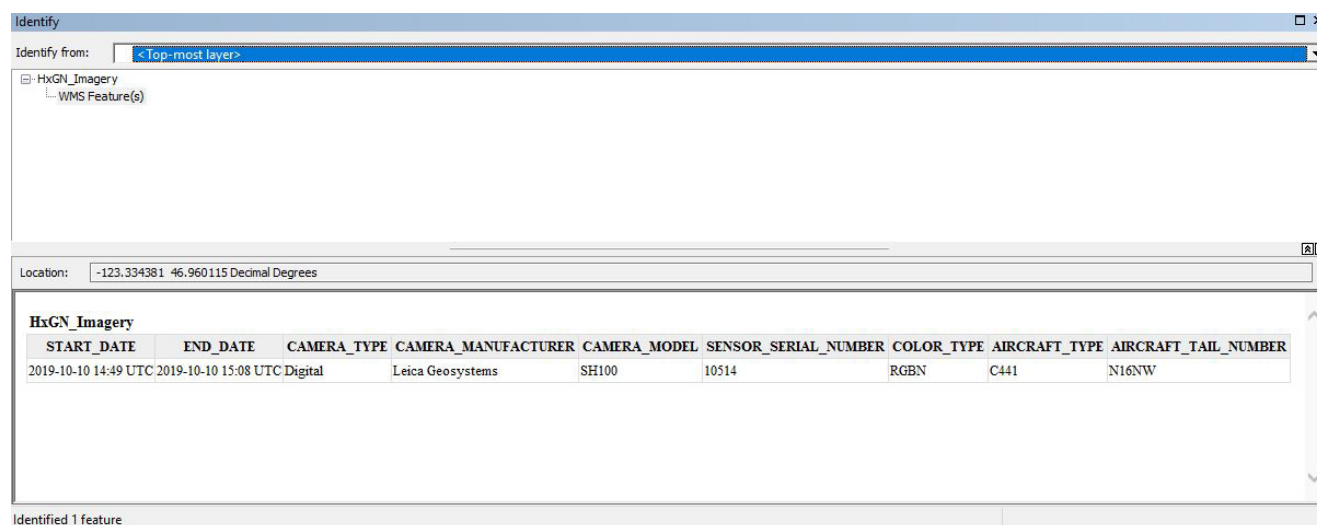
3.5. Getting Imagery Metadata from ArcMap

Most GIS applications will support a function called GetFeatureInfo. This function allows you to click any area of the map and be returned metadata (if any exists).

Have the Streaming Aerial Imagery loaded and click on the “Identify Features” button.



The metadata will be returned for the location you clicked on.



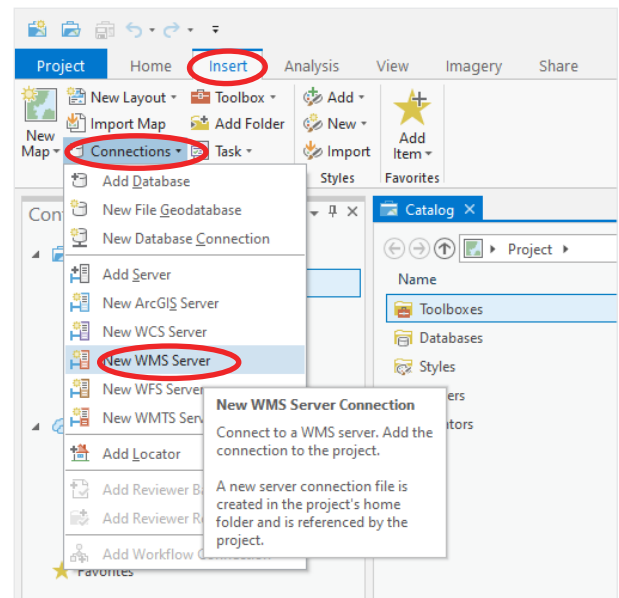
4. Streaming Aerial Imagery for ESRI ArcGIS Pro

4.1. Adding Aerial Imagery as WMS to ArcGIS Pro

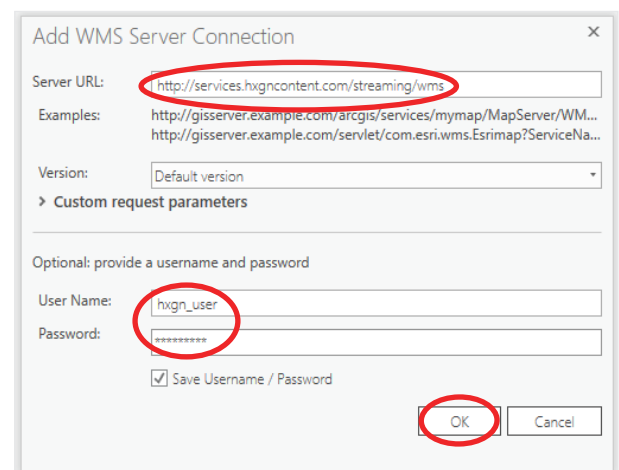
Click on the “Insert” tab.

Click on “Connections”.

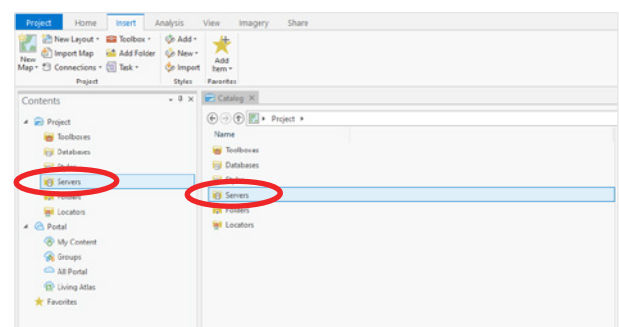
Click on “New WMS Server”.



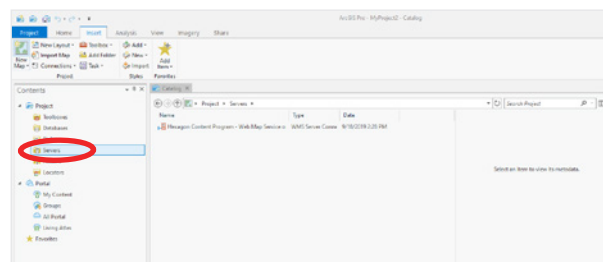
1. The Add WMS Server Connection window opens. In the URL field, add the URL: <http://services.hxgncontent.com/streaming/wms>.
2. Under Optional fill in your username and password. Click on “Save Username / Password” if you would like ArcGIS Pro to remember your password. Click on “OK”.



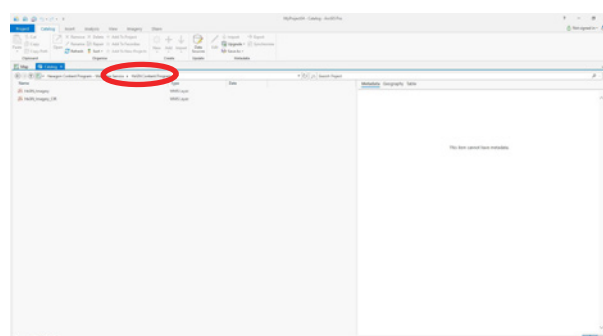
The connection to Streaming Aerial Imagery has been made, and the connection is shown in “Servers” drop down in the “Catalog” Window.



Double click on “Servers” to see the connection to the HxGN Streaming Service.



Double click on Hexagon Content Program connection, double click Hexagon Content Program – Web Map Service, double click on HxGN Content Program to see the list of services you are subscribed to, select the service you wish to add and right click and “Add to New” and then select “Map”.

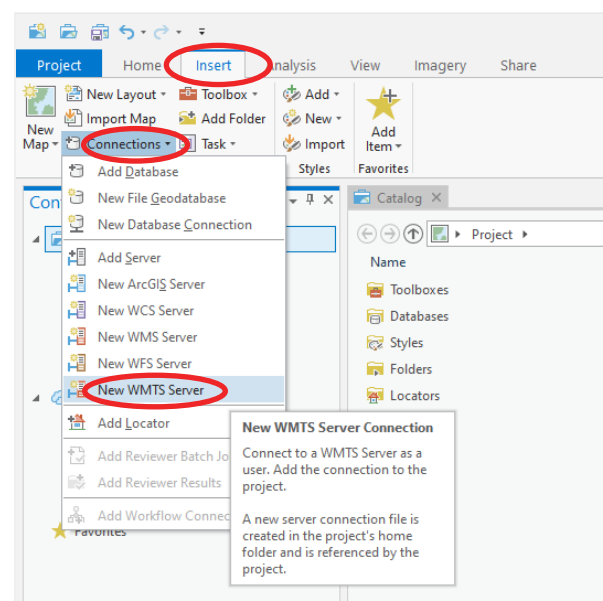


4.2. Adding Aerial Imagery as WMTS to ArcGIS Pro

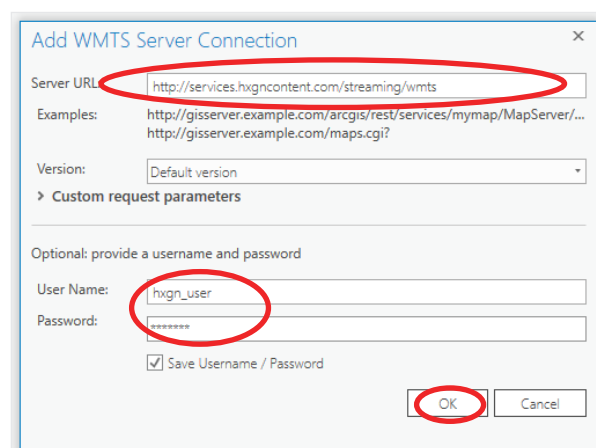
Click on the “Insert” tab.

Click on “Connections”.

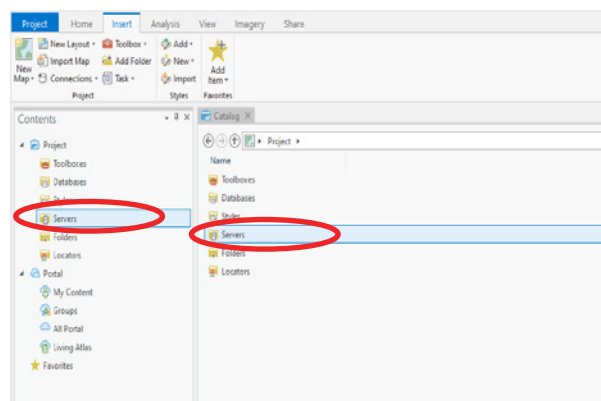
Click on “New WMTS Server”.



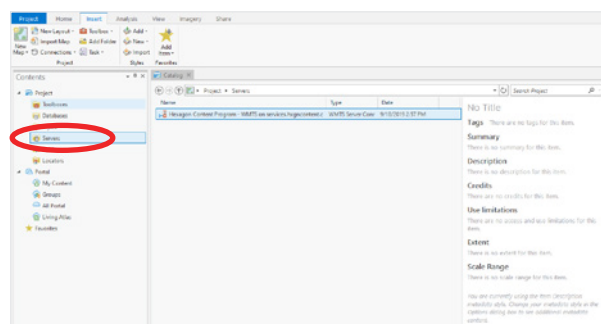
1. The Add WMTS Server Connection window opens. In the URL field, add the URL: <http://services.hxgncontent.com/streaming/wmts>.
2. Under Optional fill in your username and password. Click on “Save Username / Password” if you would like ArcGIS Pro to remember your password. Click on “OK”.



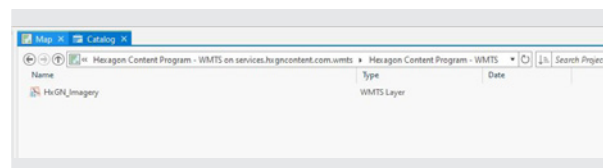
The connection to Streaming Aerial Imagery has been made, and the connection is shown in “Servers” drop down in the “Catalog” Window.



Double click on “Servers” to see the connection to the HxGN Streaming Service.



Double click on Hexagon Content Program connection, double click Hexagon Content Program – WMTS, to see the list of services you are subscribed to, select the service you wish to add and right click and “Add to New” and then select “Map”.

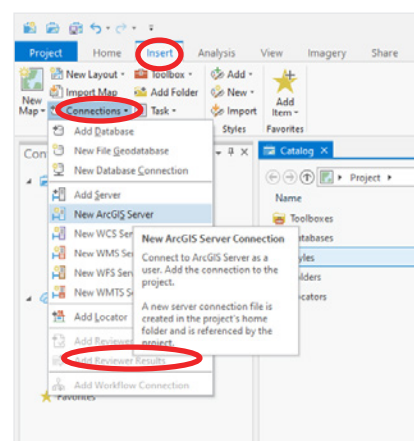


4.3. Adding Aerial Imagery as SOAP to ArcGIS Pro

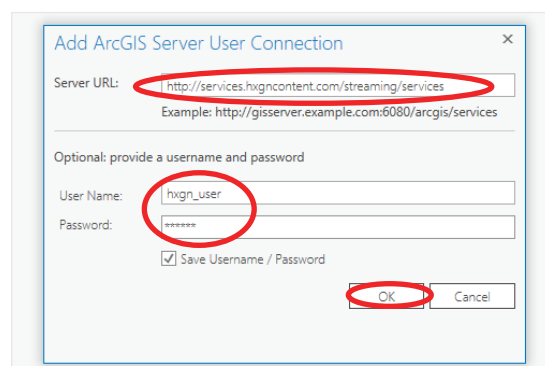
Click on the “Insert” tab

Click on “Connections”

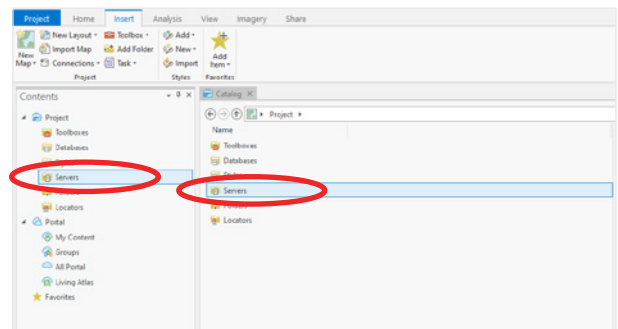
Click on “New ArcGIS Server”



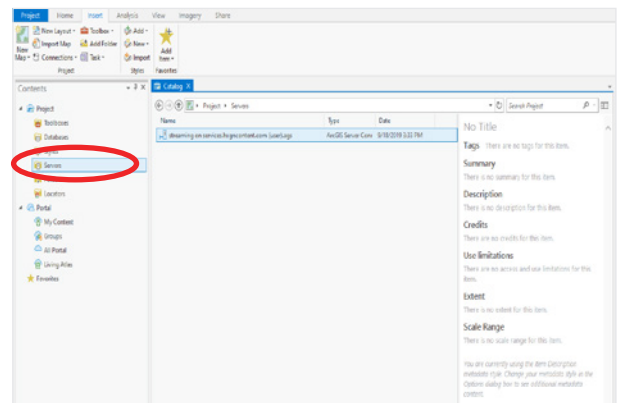
1. The Add ArcGIS Server User Connection window opens. In the URL field, add the URL: <http://services.hxgncontent.com/streaming/services>.
2. Under Optional fill in your username and password. Click on “Save Username / Password” if you would like ArcGIS Pro to remember your password. Click on “OK”.



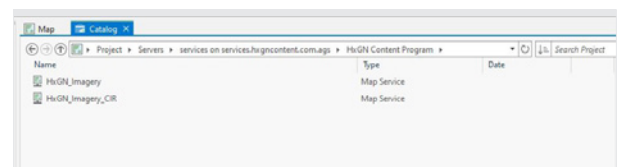
The connection to Streaming Aerial Imagery has been made, and the connection is shown in “Servers” drop down in the “Catalog” Window.



Double click on “Servers” to see the connection to the HxGN Streaming Service.

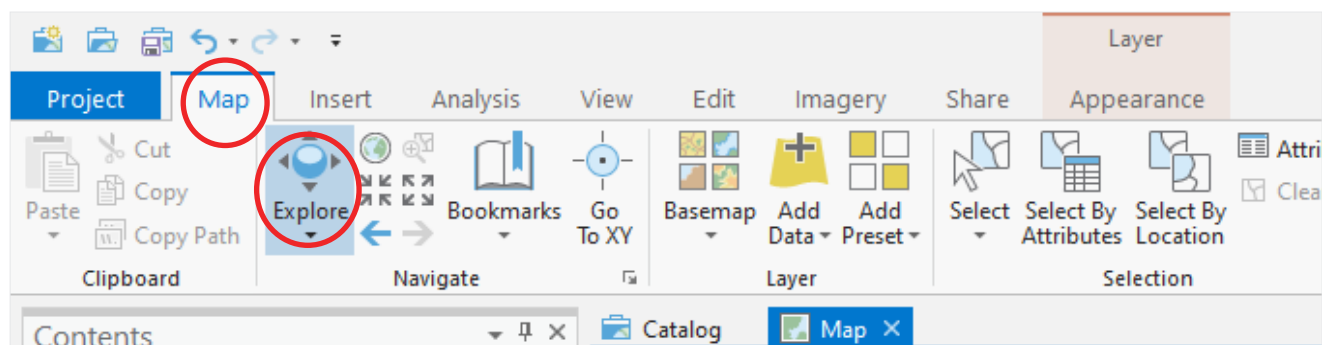


Double click on Hexagon Content Program connection, double click Hexagon Content Program Cached or Rendered, to see the list of services you are subscribed to, select the service you wish to add and right click and “Add to New” and then select “Map”.



4.4. Getting Imagery Metadata from ArcGIS Pro

Most GIS application will support a function called GetFeatureInfo. This function allows you to click any area of the map and be returned metadata (if any exists). Have the streaming Aerial Imagery loaded and click on the “Map” tab, and the “Explore” button.



The metadata will be returned for the location you clicked on.

Pop-up

Hexagon Content Program - Web Map Service (1)

Hexagon Content Program - Web Map Service

Hexagon Content Program - Web Map Service - Hexagon Content Program - Web Map Service

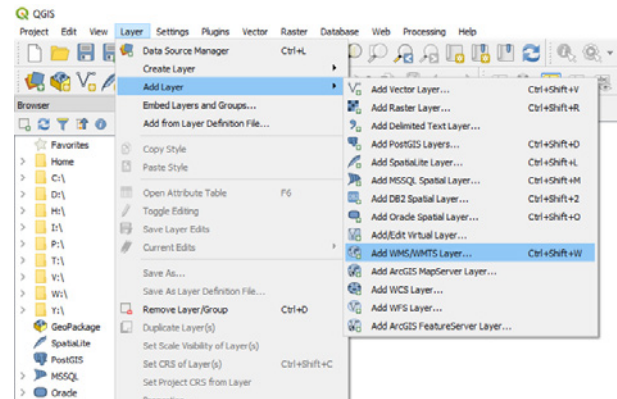
HxGN_Imagery

START_DATE	END_DATE	CAMERA_TYPE	CAMERA_MANUFACTURER	CAMERA_MODEL	SENSOR_SERIAL_NUMBER	COLOR_TYPE	AIRCRAFT_TYPE	AIRCRAFT_TAIL_NUMBER
2019-08-26 16:10 UTC	2019-08-26 16:28 UTC	Digital	Leica Geosystems	SH100	10540	RGBN	C441	N13NW

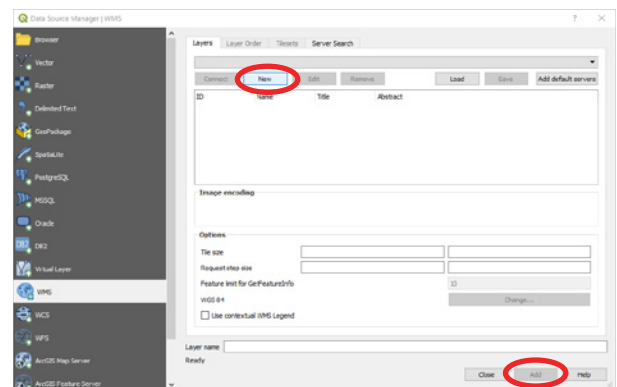
5. Streaming Aerial Imagery for QGIS

5.1. Adding Aerial Imagery as WMS to QGIS

Select “Layers”, “Add Layers” then “Add WMS/WMTS Layer”.

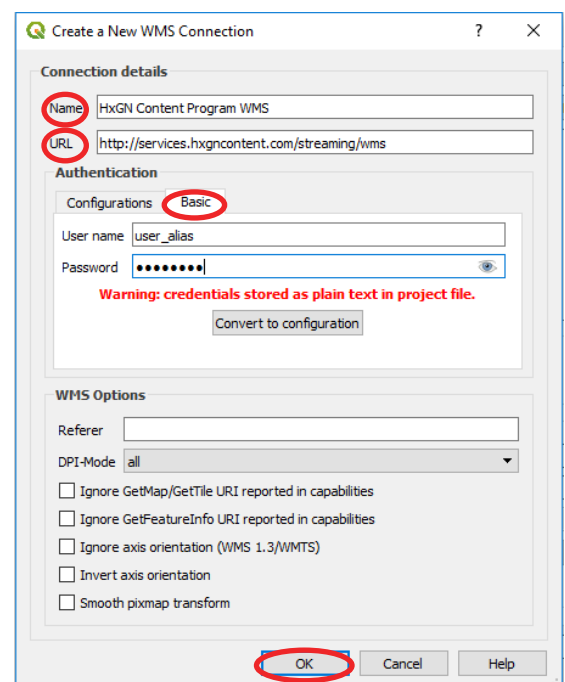


The ‘Data Source Manager’ window will open. Click on “New”.

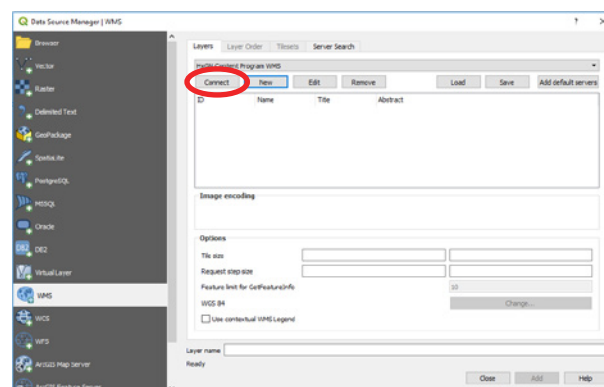


The ‘Create a New WMS Connection’ will open:

1. Fill out the name of the connection
2. Fill in the following URL:
<http://services.hxgncontent.com/streaming/wms>.
3. Enter in your user credentials
4. Click on “OK”

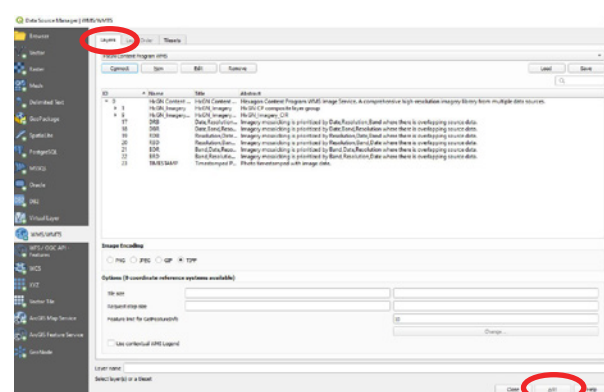


The connection has been made to Streaming Aerial Imagery, and you are returned to the ‘Data Source Manager’ window. Click on “Connect”.



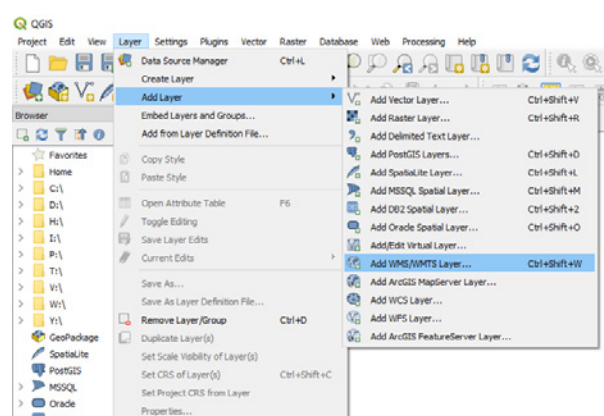
Click on the “Layer” tab from the ‘Data Source Manager’ window, it will have all the layers you have access to.

1. Highlight layer to add
2. Click on “Add”

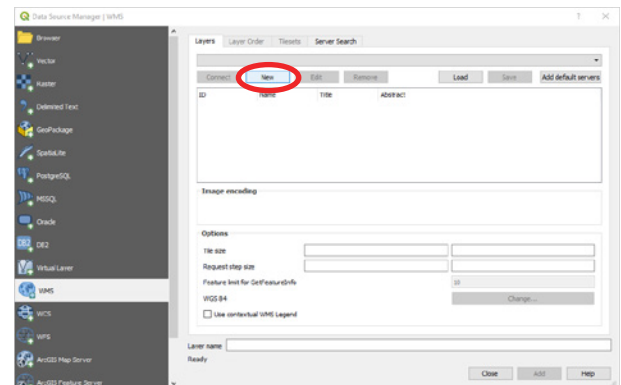


5.2. Adding Aerial Imagery as WMTS to QGIS

Select “Layers”, “Add Layers” then “Add WMS/WMTS Layer”

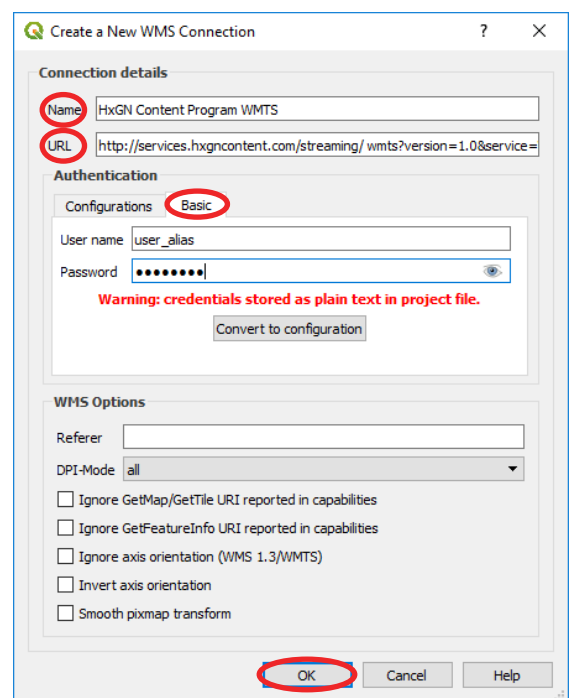


The 'Data Source Manager' window will open.
Click on "New".

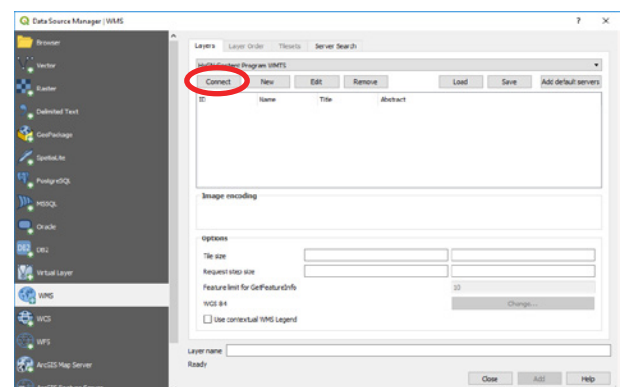


The 'Create a New WMS Connection' will open:

1. Fill out the name of the connection
2. Fill in the following URL:
<http://services.hxgncontent.com/streaming/wmts?version=1.0&service=WMTS&REQUEST=GetCapabilities>.
3. Enter in your user credentials
4. Click on "OK"

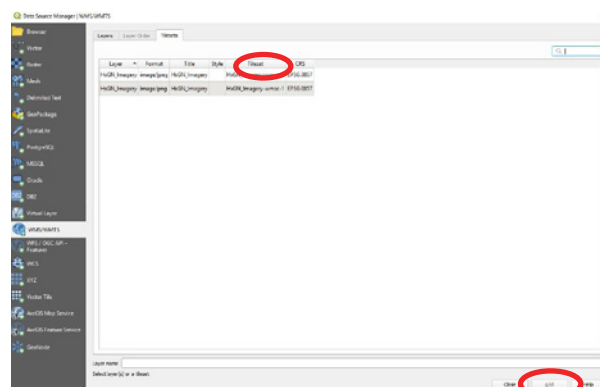


The connection to Streaming Aerial Imagery has been made, and you are returned to the 'Data Source Manager' window. Click on "Connect".



Click on the “Tilesets” tab from the ‘Data Source Manager’ window, it will have all the layers you have access to.

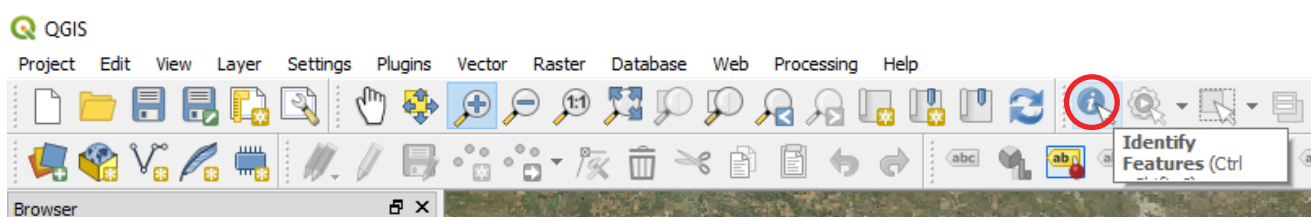
1. Highlight layer to add
2. Click on “Add”



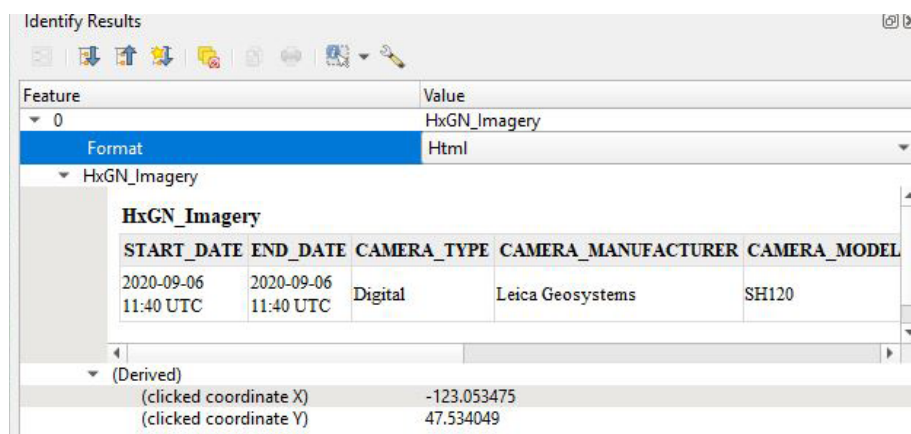
5.3. Getting Imagery Metadata from QGIS

Most GIS applications will support a function called GetFeatureInfo. This function allows you to click any area of the map and be returned metadata (if any exists).

Have the Streaming Aerial Imagery loaded and click on the “Identify Features” button.



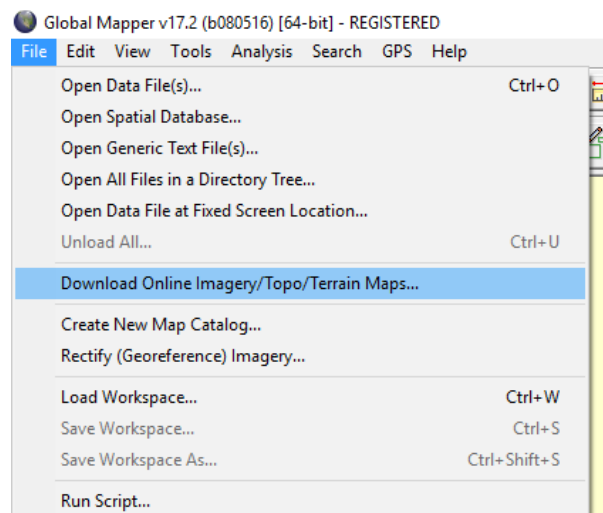
The metadata will be returned for the location you clicked on.



6. Streaming Aerial Imagery for Global Mapper

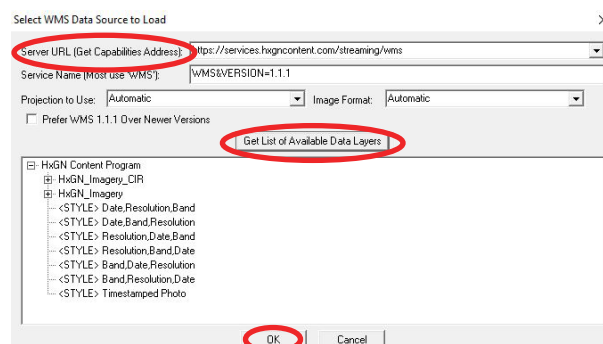
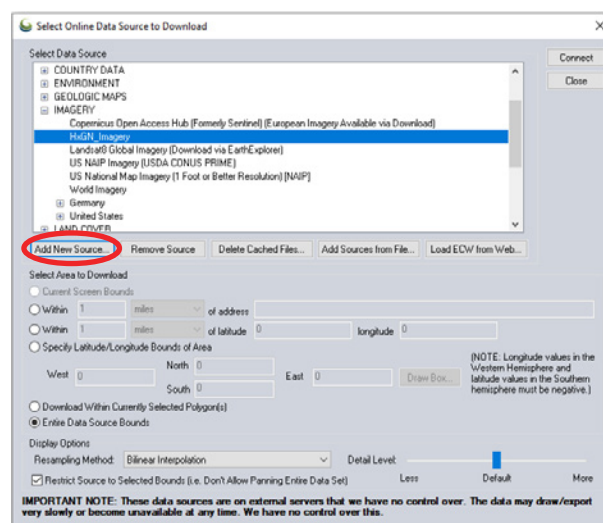
6.1. Adding Aerial Imagery as WMS to Global Mapper

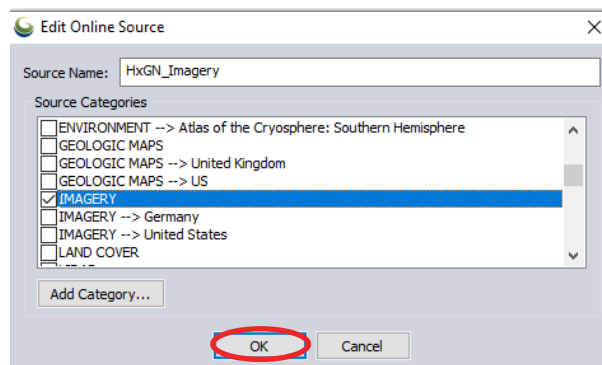
Select “File” then “Download Online Imagery/Topo/Terrain Maps”.



The ‘Select Online Data Source to Download’ window will open. Click on “Add New Source”.

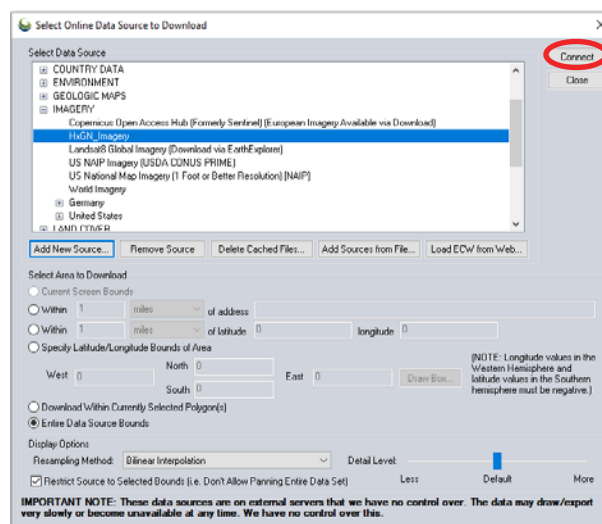
1. From the drop-down list, select “WMS (Web Map Service)” and click on “OK”.
2. Fill in the following URL:
<http://services.hxgncontent.com/streaming/wms>.
3. Select ‘Get List of Available Data Layers’
4. Enter your username and password
5. Select the service you want and click on “OK”
6. The “Edit Online Source” window will open. Click on the “Imagery” category and click on “OK”





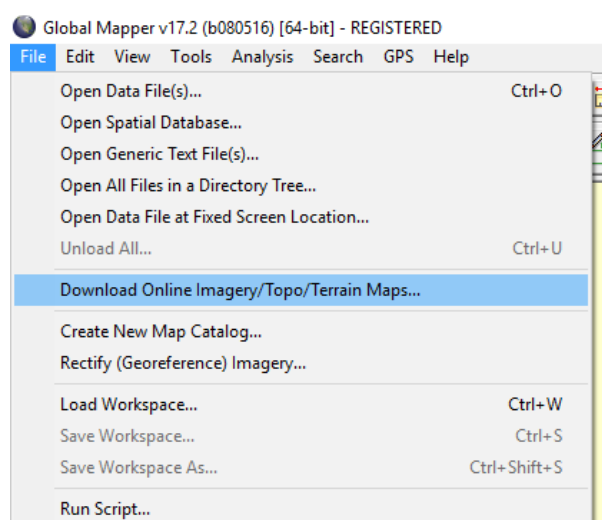
The Streaming Aerial Imagery will be added to your list of Data Sources.

Click on “Connect”. The Streaming Aerial Imagery will be added to your Global Mapper project.



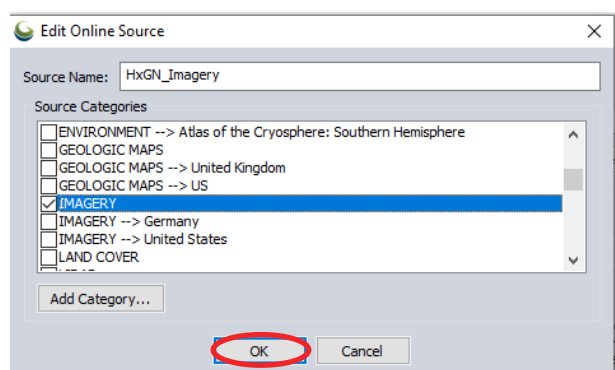
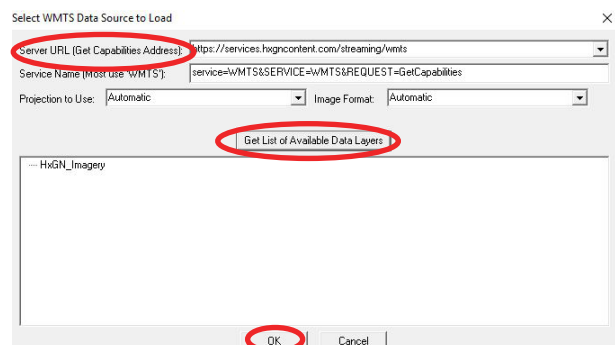
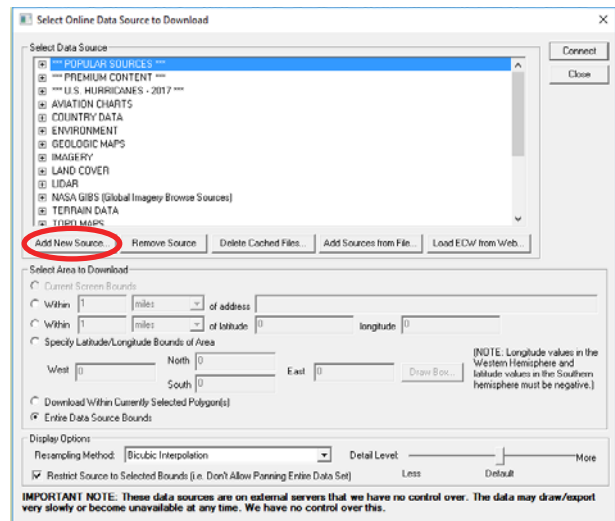
6.2. Adding Aerial Imagery as WMTS to Global Mapper

Select “File” then “Download Online Imagery/Topo/Terrain Maps”



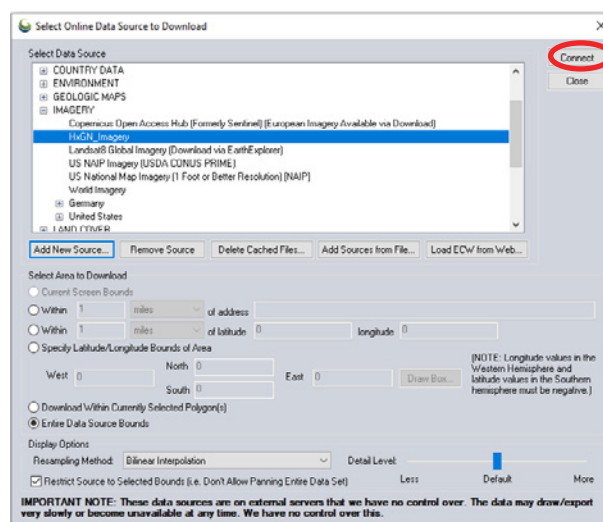
The ‘Select Online Data Source to Download’ window will open. Click on “Add New Source”.

1. From the drop-down list, select “WMTS (Tiled WMS)” and click on “OK”.
2. Fill in the following URL:
<http://services.hxgncontent.com/streaming/wmts>.
3. Select ‘Get List of Available Data Layers’
4. Enter your username and password
5. Select the service you want and click on “OK”
6. The “Edit Online Source” window will open. Click on the “Imagery” category and click on “OK”



The Streaming Aerial Imagery will be added to your list of Data Sources.

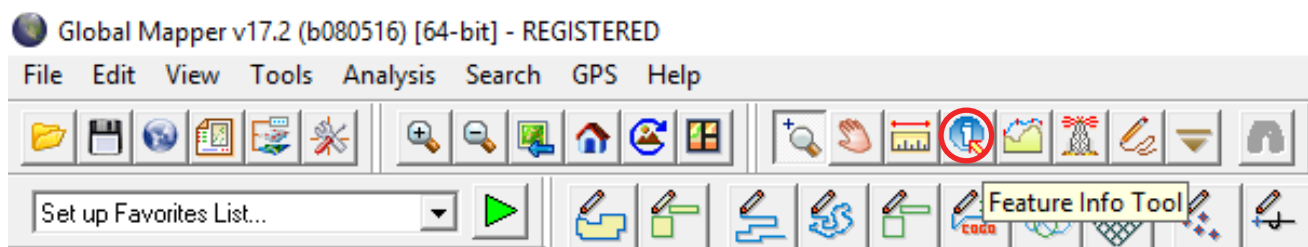
Click on “Connect”. The Streaming Aerial Imagery will be added to your Global Mapper project.



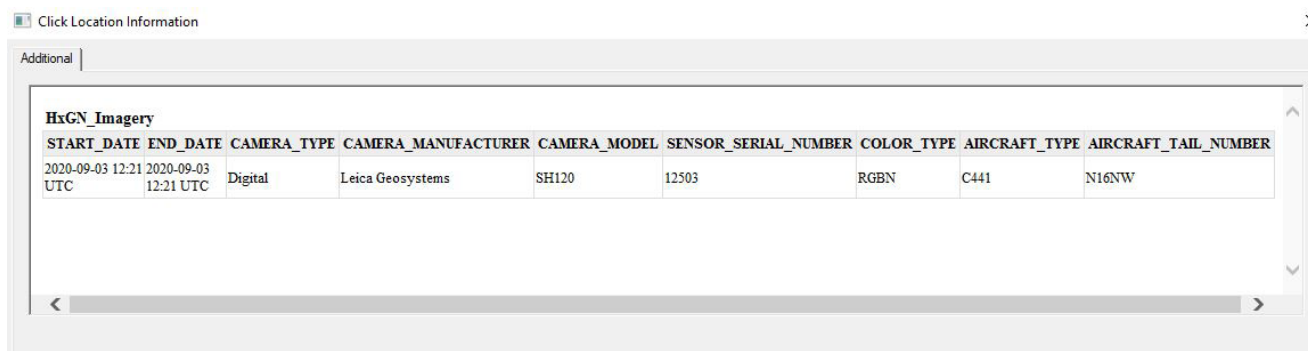
6.3. Getting Imagery Metadata from Global Mapper

Most GIS applications will support a function called GetFeatureInfo. This function allows you to click any area of the map and be returned metadata (if any exists).

Have the Streaming Aerial Imagery loaded and click on the “Feature Info Tool” button.



The metadata will be returned for the location you clicked on.



The HxGN Content Program Support Team is here to help. Should you require assistance or would like additional information, please email us at **support.content@hexagon.com**.

