Release Guide

ImageStation 2020

Version 16.6 – ImageStation Automatic Elevations DSM (ISAD) Initial Release
21 July 2020

HEXAGON

Contents

About This Release

This document describes the enhancements, fixes, and system requirements for ImageStation. Although the information in this document is current as of the product release, see the Hexagon Geospatial Support website for the most current version.

This release includes both enhancements and fixes. For information on new features, see the New Technology section. For information on fixes that were made for this release, see the Issues Resolved section. For information on hardware and software requirements, see the System Requirements section.

This document is only an overview and does not provide all of the details about the product's capabilities. See the online help and other documents provided with ImageStation for more information.

ImageStation

The ImageStation® software suite enables digital photogrammetry production workflows, including project creation, orientation, and triangulation from aerial and satellite imagery. It also provides stereo GIS feature collection and editing, digital terrain model (DTM) collection and editing, as well as orthophoto production and editing. ImageStation is specially designed for high-volume photogrammetry and production mapping customers who need to move large quantities of raw spatial information to an actionable or exploitable format.

New Platforms

2020 – ISAD Initial Release

None

2020

GeoMedia Desktop 2020 and Core Components

All ImageStation products are now compatible with GeoMedia 2020 and its underlying core components, including Common Raster Platform and Common Coordinate Systems.

More Bentley Platforms Supported

In addition to running with MicroStation V8i, all the ImageStation applications that are MicroStation-based (ISSD, ISFC, ISDC) were modified to run with Power InRoads V8i and Power GEOPAK V8i. Although MicroStation is not a requirement to run ISAE, if any of these Bentley products are found on the system while ISAE is installed, ISAE is enabled to write surface points and data out to DGN files.

New Technology

2020 – ISAD Initial Release

ImageStation Automatic Elevations DSM

This release includes the initial release of the new product ImageStation Automatic Elevations DSM (ISAD) which replaces ImageStation Automatic Elevations – Extended (ISAE-Ext). ISAD is a superset of ImageStation Automatic Elevations (ISAE). In addition to the feature-based matching approach to create digital terrain models from stereo aerial frame, ADS, and satellite images found in ISAE, ISAD adds 64-bit dense matching to create digital surface models from stereo aerial frame and satellite images using the Semi-Global Matching (SGM) methodology. Both the feature-based terrain matching and the dense surface matching support local or distributed processing via HTCondor for Hexagon Geospatial.

The ISAD 2020 release includes the same feature-based matching capabilities that ISAE-Ext had, and replaces the old SGM engine in ISAE-Ext with a completely new SGM engine. The new SGM engine provides a number of improvements over the old SGM engine, including:

- Adds support for satellite imagery and scanned film in addition to digital aerial frame imagery. The old SGM engine only supported digital aerial frame imagery.
- Provides better coverage with fewer void areas on roof tops, trees, water, power lines, vertical or nearly vertical faces, and other areas for most projects
- Processes jobs 2-3 times faster while using less memory
- Fixes several issues that were present in the previous product ISAE-Ext

The previous version of ImageStation Automatic Elevations 2020 and Leica Geosystems XPro SGM 6.4, if present, must be uninstalled before installing ISAD 2020.

HTCondor for Hexagon Geospatial

An updated version 16.6.1 of HTCondor for Hexagon Geospatial 2020 is included in this release for compatibility with ISAD.

The previous version of HTCondor for Hexagon Geospatial 2020 v16.6, if present, should be uninstalled before installing HTCondor for Hexagon Geospatial 2020 v16.6.1. You do not need to uninstall or reinstall Condor 8.4.0.

2020

Licensing

A new product license is required for the 2020 release. The latest Geospatial License Administration tool should be downloaded and used for this release.

Start Menu

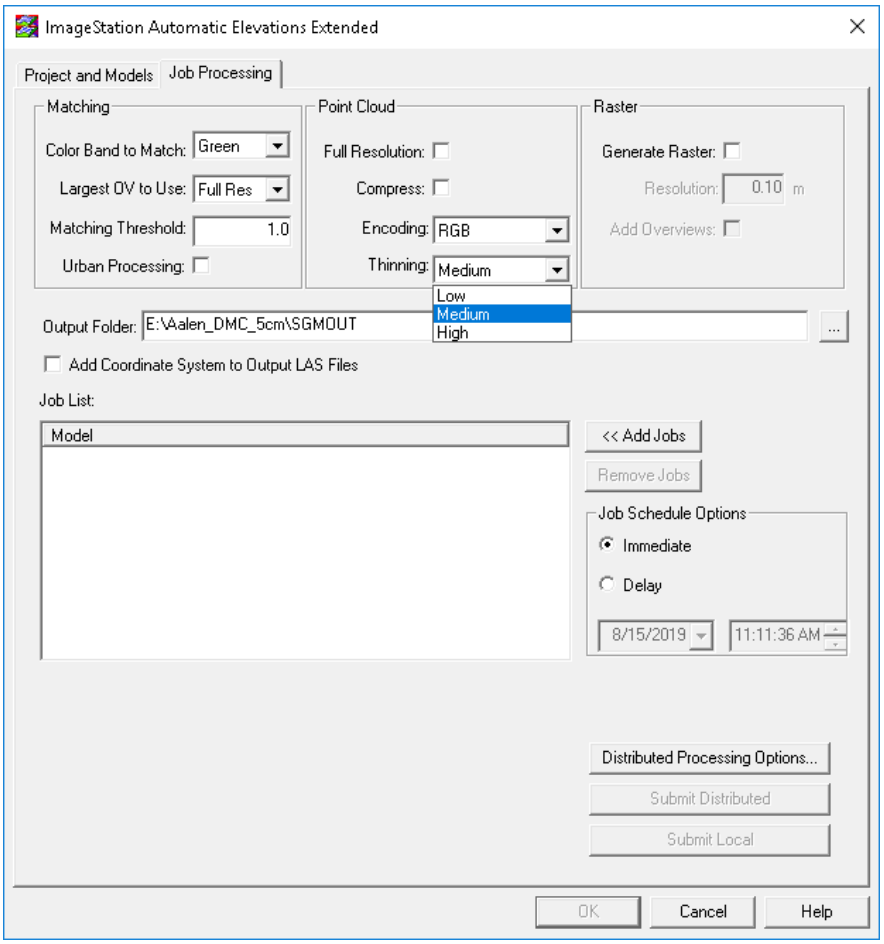
The prefix “Hexagon” has been removed from the product name on the Start menu as well as the Windows product uninstall facilities available from Settings and the Control Panel. This provides consistency with other Hexagon Geospatial products, as well as improved ease in finding the product by its familiar name in these product lists.

Support for 4K Monitors

Support for 4K monitors was added to the ImageStation products. Stereo applications will run in this environment, but window size is limited, and roam performance suffers. It is recommended to run stereo applications at half resolution.

More Thinning Options in ISAE-Ext

Options for thinning the LAS files coming from ISAE-Ext have been incorporated into the user interface. The options are *Low*, *Medium*, and *High*, with *Medium* being default and equivalent to past behavior.

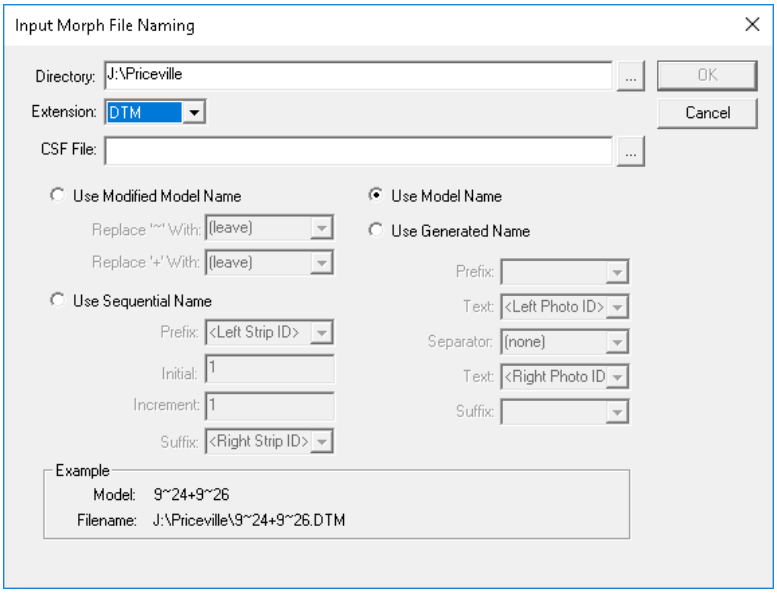


More Coordinate System Options for ISAE-Ext

Previously, the option to embed the coordinate system information into the header of the LAS files was limited to cases where the vertical datum was one of four settings (*Newlyn, NGVD29, NAVD88, or ellipsoid*). The option now allows users to embed the coordinate system regardless of the vertical datum setting. However, users should be aware that any other vertical datums will be embedded as "*unknown*" and therefore no datum transformation to other vertical datums is possible.

ISAE Input Wizard Accommodates DTM Files

The Input Files wizard on the Project and Models tab was modified to accept DTM format files as input morphological files. Previously the wizard only accepted DGN format files. This allows ISSG/ISDG users to use model-wise input DTM files to assist the ISAE matching process.



New DTM Format Persists Point Classification from ISAE

The DTM format generated from ImageStation products was modified to maintain the classification of points that are generated with ISAE. Other products, such as ISDG and ISSG, now recognize this classification and use it to properly color code points for display.

IMPORTANT:

- This change to the DTM format structure makes it incompatible with older versions of ImageStation applications. Product releases prior to 2020 cannot use these files. Users that are required to create files with backward compatibility for older products should use the new DTM6 to DTM5 translator that is delivered with ISDQ. No license is required to use the translator.
- ISDC 2020 uses a different surface engine than the rest of the ImageStation products and therefore will not recognize this new DTM format. It is not typical to feed DTM files into ISDC for surface generation and editing, that is typically done via DGN files. However, if users should find it necessary to use open these files with ISDC they can use the DTM6 to DTM5 format translator as described below.

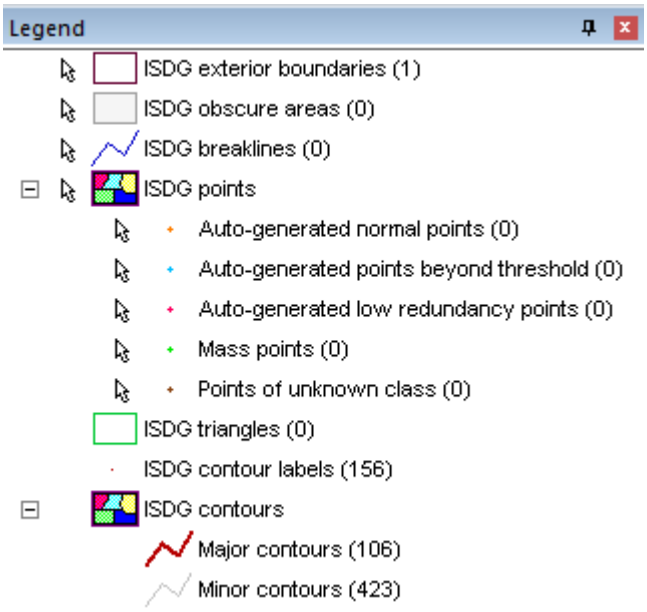
DTM6 to DTM5 Format Translator

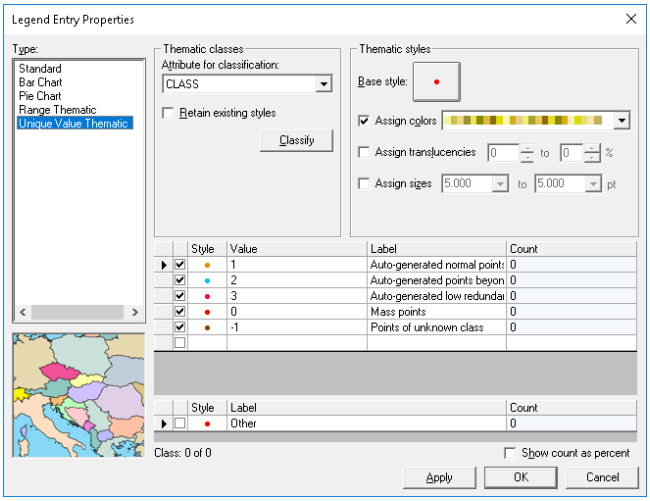
A new command line translator allows ISDQ users to reformat DTM6 format surface files to the older DTM5 format so as to be backward compatible with older versions of ImageStation software. This translator does not require an ISDQ license to run. EX:

```
start /wait Dtm2Dtm5.exe --input input.dtm --output output.dtm
```

User-Defined Styles for ISDG Features

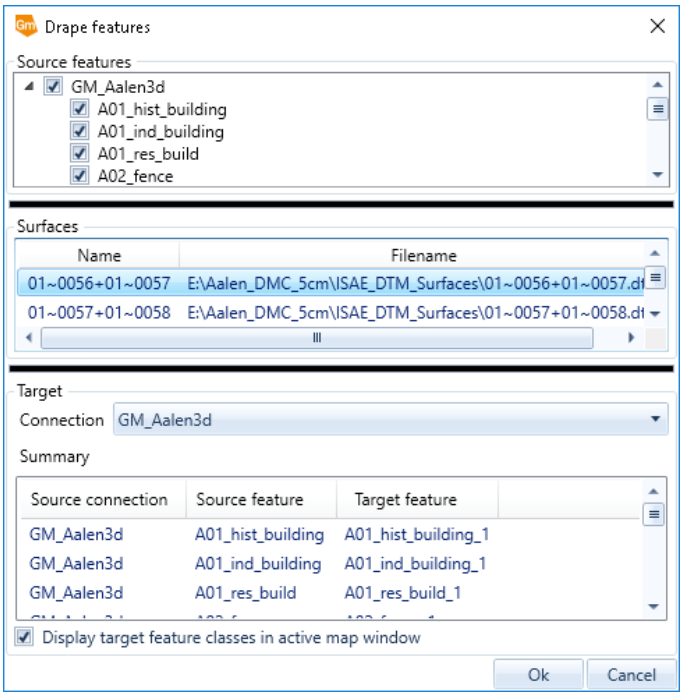
A style library is now delivered by ISDG to the GeoWorkspaces\Libraries folder so that users can customize the display of point and geomorphological features in the Map and Stereo Windows in GeoMedia. The ContourLabel feature class has defaulted to 50% translucent frame, this can be changed by modifying the style. The Display Frame option has been removed from the View Contours dialog as it is now redundant with style settings in ContourLabel feature class. Color codes that correspond to point classification originating from ISAE are also defined in the style library.





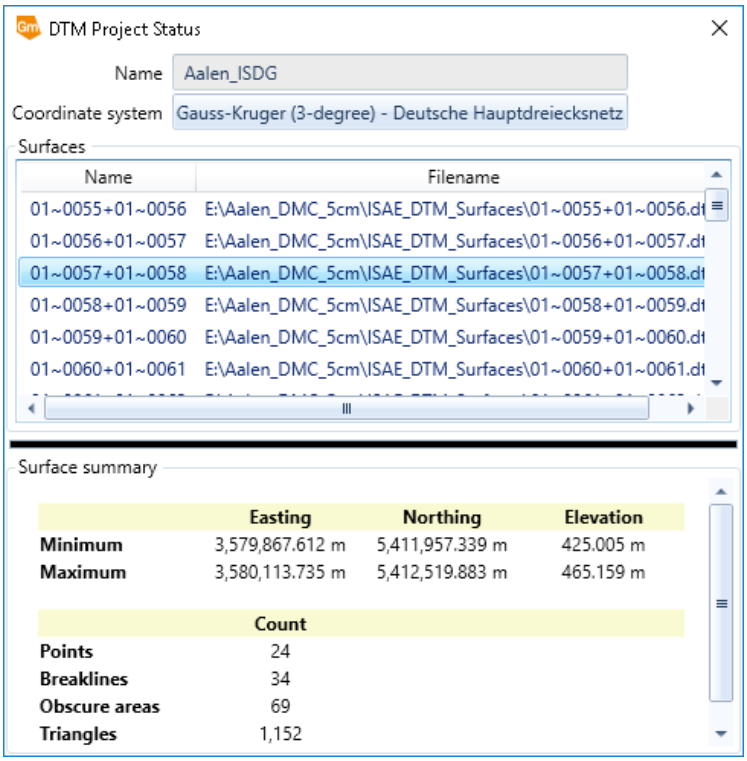
Drape Features Command in ISDG

A new Drape Features command added to ISDG allows users to drape existing features on surfaces to create new features with updated Z values.



DTM Project Status Includes Surface Summaries

The ISDG DTM Project Status dialog was modified to include statistical information about surfaces in the active project, this includes the XYZ range of the surface and the number of DTM features that make up the surface.

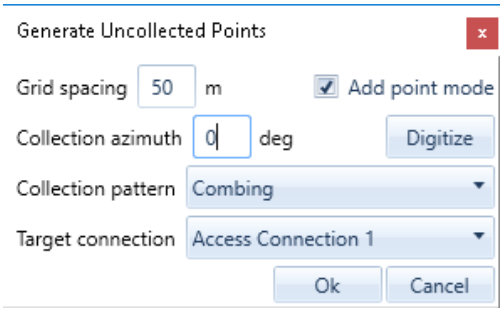


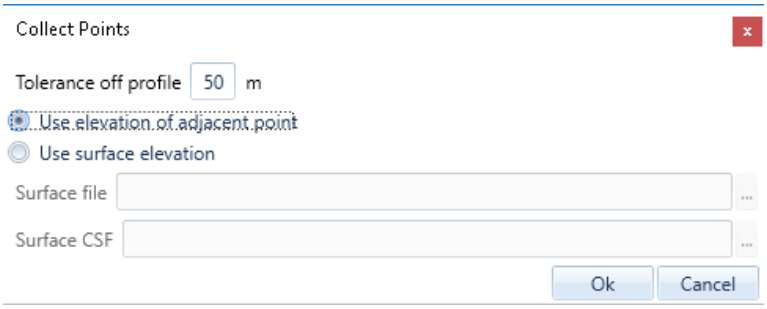
Custom Edit Commands Change Point Classification

The Custom Edit commands in ISSG were modified to update the classification of auto-generated points from ISAE to regular mass points due to the points being edited with either the Flatten or Change Elevation custom edit commands.

Manual DTM Point Collection in ISSG

Two new commands were included in the ISSG Insert Feature menu list: Generate Uncollected Points and Collect Points. These commands allow users to create a user-defined grid of points for manual collection which can then be used with ISDG commands to generate surfaces.





Roam Performance Improvements in ISSD and ISSG

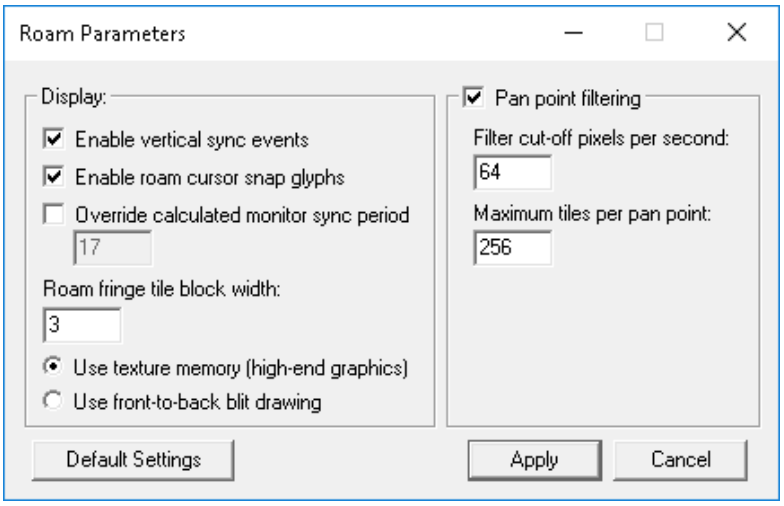
Improving roam performance within the limitations imposed by current operating systems, graphics cards, and drivers was a priority. A new command called Roam Parameters was applied to both ISSD and ISSG along with several updates to the software to resolve performance issues.

Although general roam performance, and roam performance when placing linear features was improved, roam performance when placing complex cell or symbol features with ISFC can result in reduced roam performance in ISSD. To address this, the new *fc point dynamics off* key in command was added to ISFC to disable the display of dynamic vector data when placing cells and symbols, allowing for smoother roam when moving between features to be mapped.

Note: If dynamics are disabled while capturing 2-point cells or symbols, it will be automatically re-enabled after the first *DATA* point is pressed so the user can properly define the radius or diameter of the feature being mapped. Once the feature is completed with the second *DATA* point, dynamics will be disabled again. Users can use *fc point dynamics on* or *fc point dynamics toggle* to re-enable dynamics again.

Roam Parameters Command in ISSD and ISSG

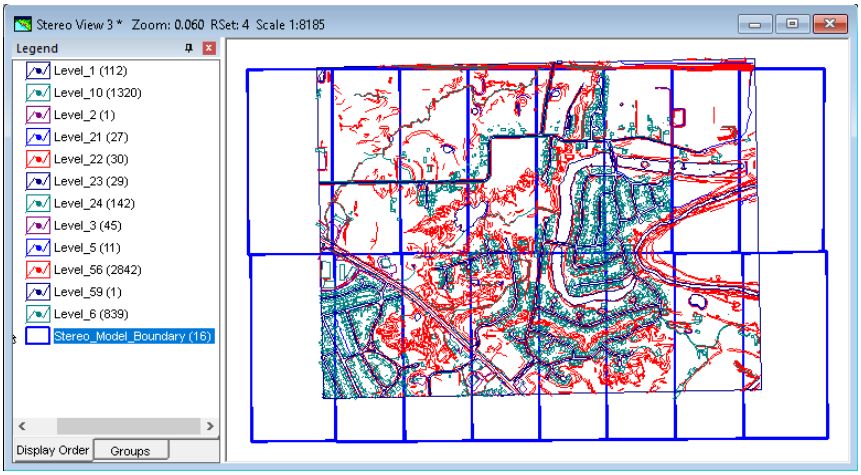
The command Roam Parameters was added to ISSD and ISSG, allowing users to calibrate various settings associated with roam mode operations to adjust the processing for custom system configurations. Default settings are optimized for the units tested at Hexagon, but user needs may vary.



New Model Boundary Generation Method in ISAE-Ext, ISSD, and ISSG

A new method for generating the stereo model boundaries was implemented in ISAE-Ext, ISSD, and ISSG. This new method produces more rectangular-shaped polygons that more closely approximate the neat model area as opposed to “chevron-shaped” polygons that are often seen using the older method.

Note that this new method can result in small gaps if there is a lot of crab along flight lines or if models intersect at odd angles, but typically does not affect the size of the computed minimum bounding rectangle used by ISAE-Ext for processing. The older method remains in use for ISAE to prevent gaps in coverage for that product as it does not use an MBR for computation.

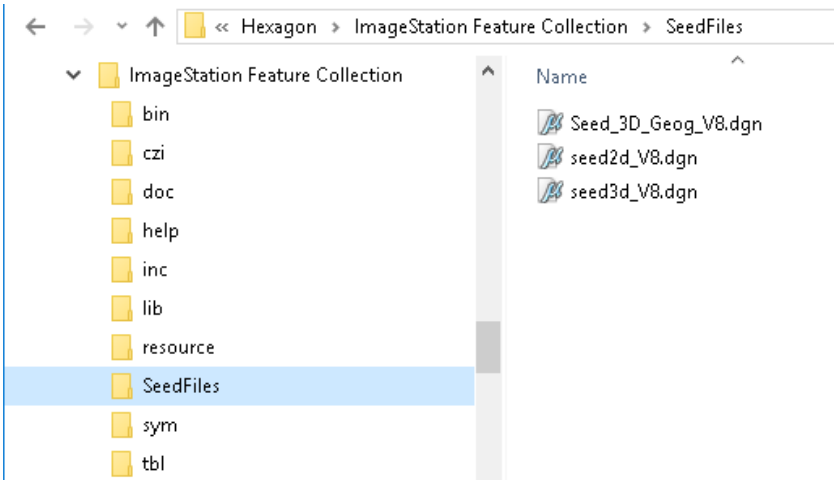


Support for SRTM Format

Support for the NASA Shuttle Radar Topography Mission (SRTM) format surface files (*.hgt) was added to OrthoPro, Generate Stereo Mate, ISSG, ISSV, and Orientations. These data are available in 1 arc second tiles at https://dwtkns.com/srtm30m/.

Seed DGN File Update for ISFC/ISSD

A new seed file was added to the ISFC *SeedFiles* subfolder, called *Seed_3D_Geog_V8.dgn*, that is properly configured for feature capture into a geographic coordinate system with satellite projects in ISSD. Note that the delivery of old V7 DGN files has been deprecated.

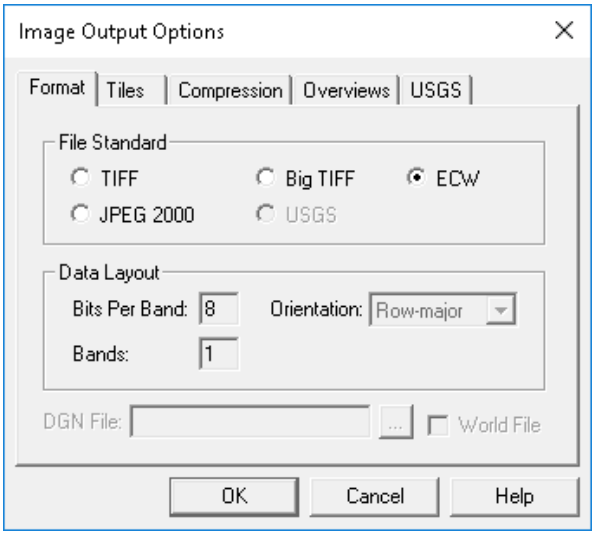


64-bit Mosaic in ISOP

The Mosaic process in OrthoPro was upgraded to a 64-bit process, allowing it to take advantage of more system memory with processing speeds **up to 14 times faster** than before.

ECW Output in ISOP

OrthoPro rectify and mosaic processes can now directly output ECW format without requiring additional software and a separate conversion step. ECW format provides exceptional compression, capable of reducing terabyte-sized files to five percent of their original size while retaining the image's full visual quality. When you compress your imagery into ECW format, the result is a much smaller single file that can be stored, sent, and displayed even on small devices.

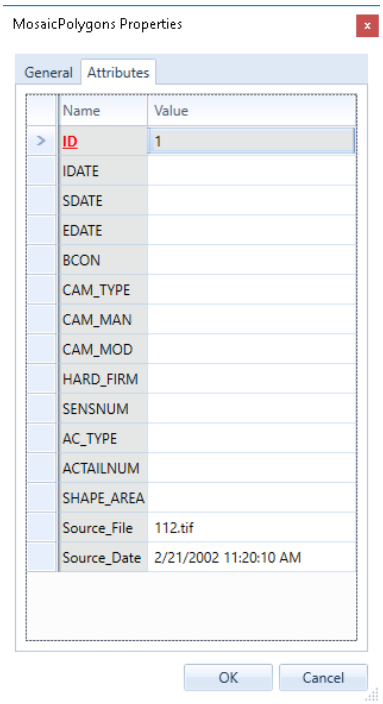


Mosaic Polygon Attribution in ISOP

Each *MosaicPolygon* feature generated by ImageStation OrthoPro (ISOP) will now have two attributes that are populated when the feature is assigned input images: *Source_File* and *Source_Date*.

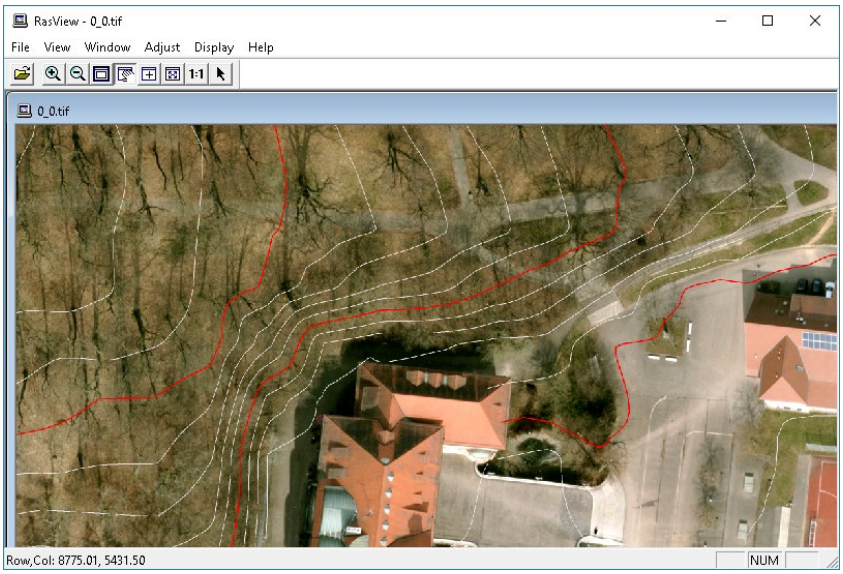
If an ImageStation Photogrammetric Manager (ISPM) project is used as input, the *Source_File* value indicates which *Photo* image file from the ISPM project was used to create the input ortho of the polygon. The *Source_Date* value is derived from the *TIFFTAG_DATETIME* metadata of the input file if the TIFF tag exists, otherwise, it will use the *Modified* timestamp of the file on disk as returned from the Windows operating system.

If an ISPM project is *not* used as input, then the *Source_File* and *Source_Date* are derived from the *imported* orthos that are used to populate the polygon.



Burn Features Into Raster in ISPQ

A new Burn Features command was added to ImageStation PixelQue (ISPQ) allowing users to burn vector data such as text, contours, etc., into raster images.



Usability Improvements to Pixel Clone in ISPQ

While using the Pixel Clone command users can hold the spacebar on the keyboard to enable panning in the map window while making edits. This option was modified such that while using the Pixel Clone command during Inspect Images or Review Problem Markers, and the Sync option is enabled on the Pixel Clone dockable control, both the Inspection and Auxiliary windows will pan together to synchronize both views. Also, when prompted to pick a source image during the Clone operation, and the pick quick dialog appears, ISPQ will turn off the display of other overlapping images as you move your cursor over the picklist options to easily determine which image should be used for the clone operation. This same behavior also applies when using Splice and Match Images commands.

Stealth 3D Z-Type Mouse Support

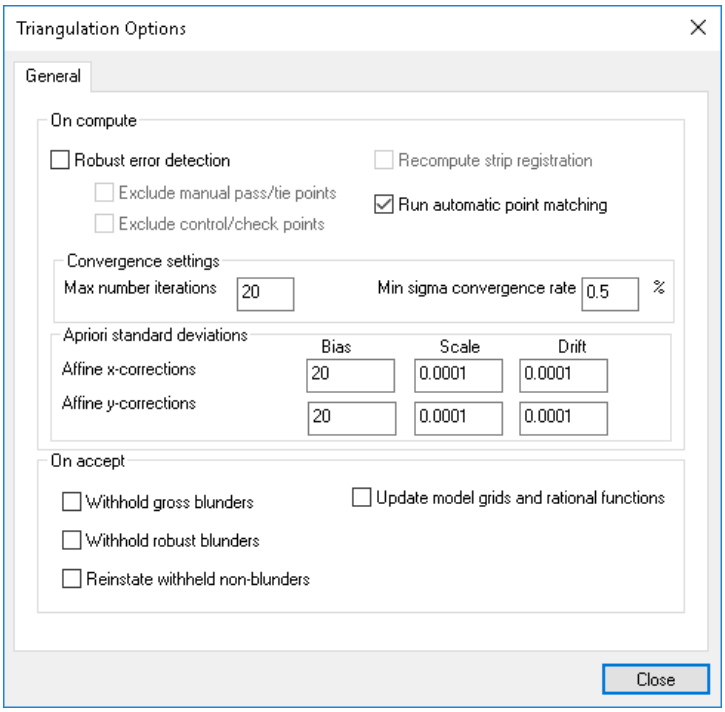
Support for the Stealth 3D Mouse Z-Type was added to ImageStation Orientations, ISSD, and ISSG. Previously, these products only supported the E-Type and V-Type.

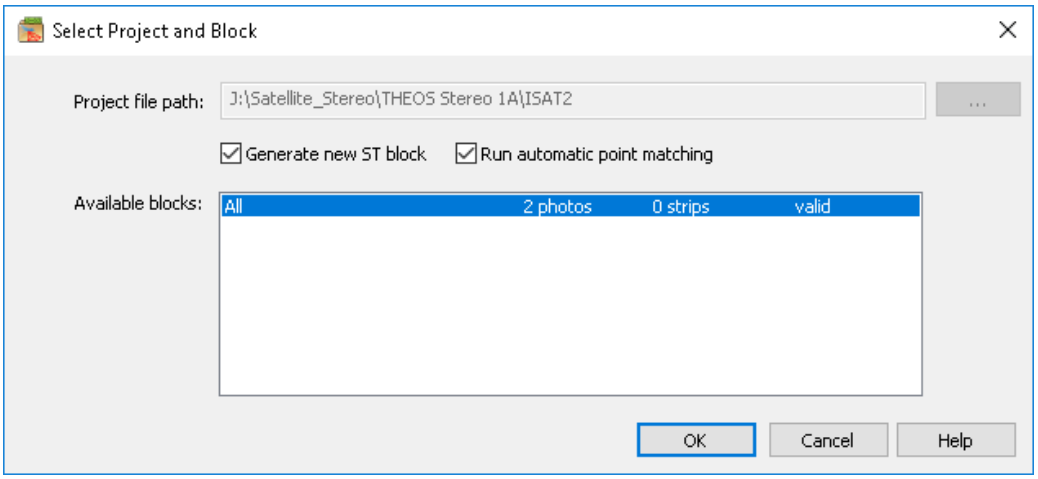
Softmouse 3D USB Mouse Support

Support for direct USB data interface to softmouse 3D input device was added to ImageStation Orientations, ImageStation Stereo Display (ISSD), and ImageStation Stereo for GeoMedia (ISSG). Previously, there was only support for the virtual serial port emulation on COM ports 1-4.

Blockwise Tie Point Matching for Satellite Projects

An option was added to PhotoTX that performs automatic tie point matching for satellite projects. The option is available from the Select Project and Blocks dialog when accessing PhotoTX, or accessed from the Triangulation Options dialog from within PhotoTX.



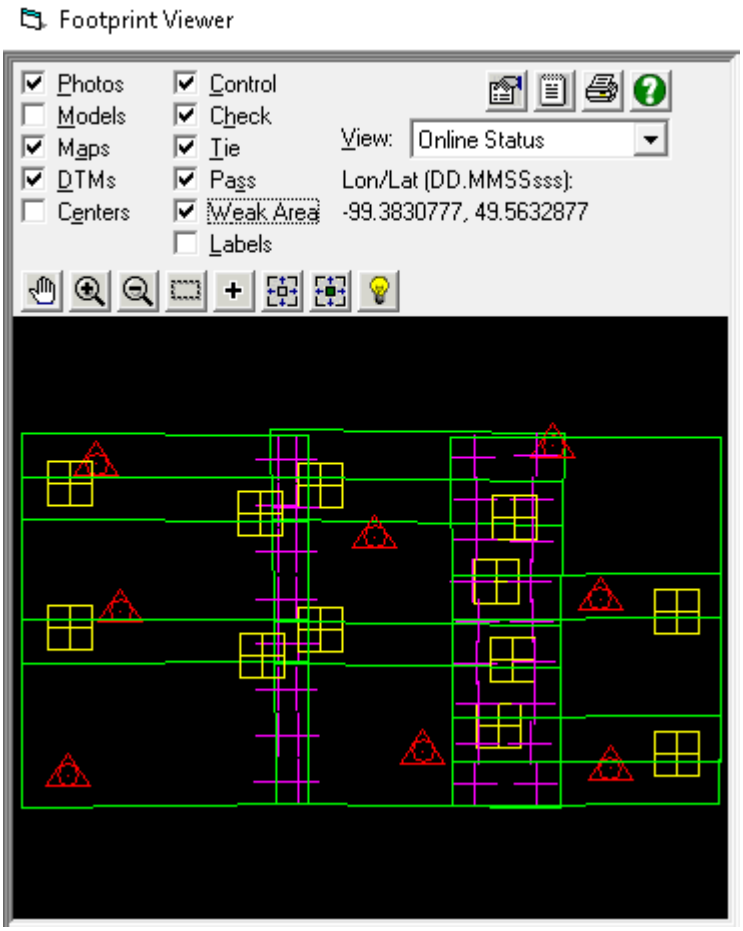


PhotoT Allows GPS Corrections Without Time Stamps

The PhotoT bundle adjustment now allows users to calculate blockwise and stripwise GPS corrections even if no timestamps are available; the process assumes that all photos are one continuous block.

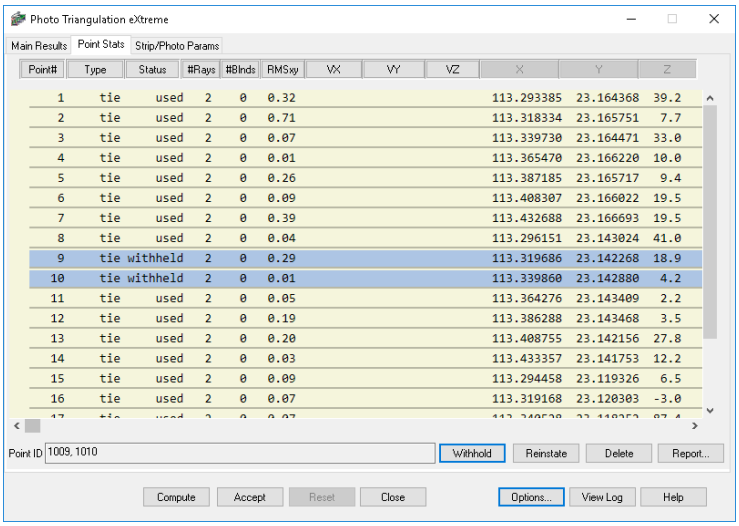
New Bundle Adjustment Method for Satellite RPC Projects in ISAT

Existing functionality in PhotoT does not support adjustment of multi-segment satellite scenes with non-parallax points matched along a single scene between segments, so PhotoTX was enhanced to support the adjustment of these multi-segment blocks after automatic point matching, which is built into the same process.



Point Editing for Satellite Projects in PhotoTX

The Point Stats tab now has options to Withhold, Reinstate, and Delete point measurements. Previously users had to use Multiphoto Orientations or PhotoT to perform point editing.



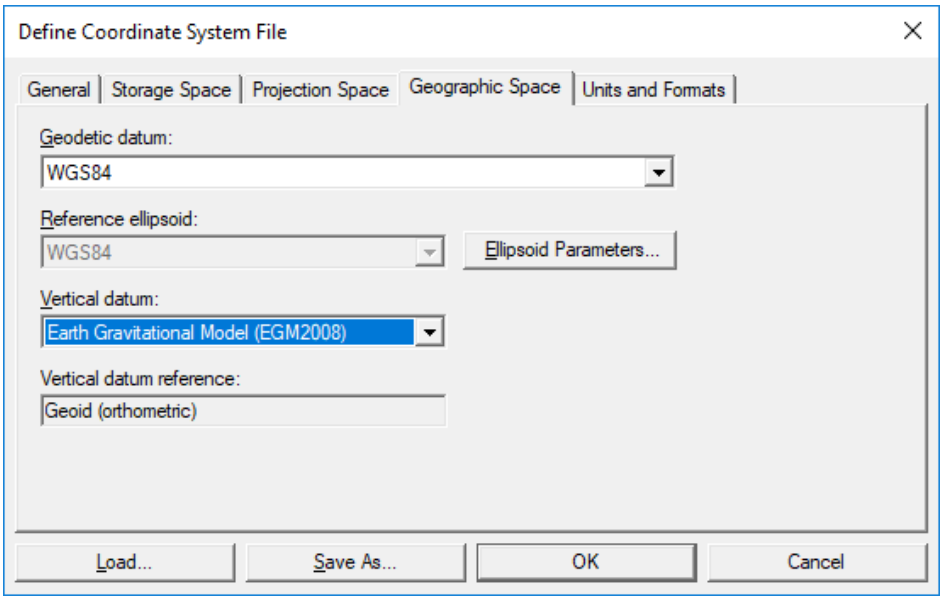
Additional Vertical Datum Support

EGM2008

Support for the Earth Gravitational Model 2008 (EGM2008) vertical datum was added. Use of this datum requires the presence of the *egm2008ww1mgh.bin* grid shift file in the following locations, depending on the application in use:

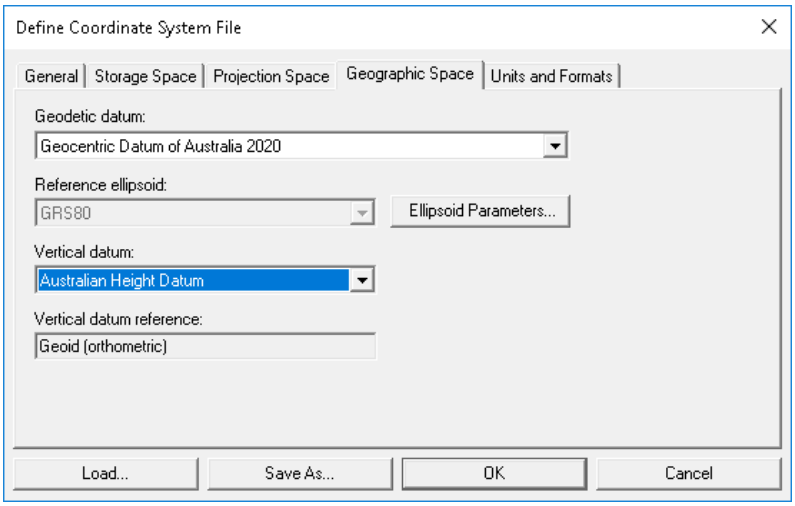
- *C:\Program Files (x86)\Common Files\ImageStation\PrivateAssemblies\Config\NGSbin*
- *C:\Program Files\Common Files\ImageStation\PrivateAssemblies\Config\NGSbin*
- *C:\Program Files (x86)\Common Files\Intergraph\GeoMedia\Program\PrivateAssemblies\Config\NGSbin*

This file is used to transform between coordinate systems when one system is defined using the Earth Gravitational Model (EGM2008) vertical datum and the other is defined using the Ellipsoid (geometric) vertical datum. Check for the availability of this file on the Hexagon Geospatial download site (https://download.hexagongeospatial.com/).



AUSGeoid

Support for the AUSGeoid2020 and AUSGeoid09 vertical datums was added. To use these, set the **Vertical datum** to *Australian Height Datum* as shown below. When the **Geodetic datum** is set to *Geocentric Datum of Australia 2020,* it will cause applications to use the AUSGeoid2020 vertical datum. If the **Geodetic datum** is set to *Geocentric Datum of Australia 1994,* then the applications will use the AUSGeoid09 vertical datum.

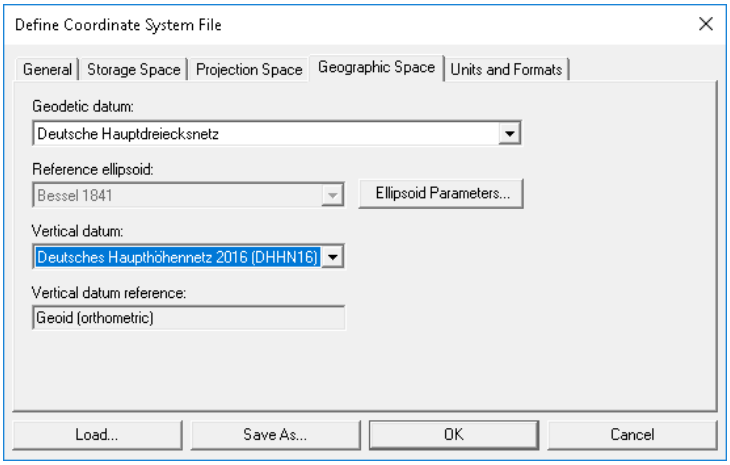


The use of these vertical datums requires that *AUSGeoid2020_20170908.gsb* and *AUSGeoid09_V1.01.gsb* be copied to the locations shown below, depending on the application in use. These files are used to transform between coordinate systems when one system has the Vertical datum defined using the Australian Height Datum and the other is defined using the Ellipsoid. Refer to the Australian Geoscience website for instructions on obtaining these files (http://www.ga.gov.au/ausgeoid/).

- *C:\Program Files (x86)\Common Files\ImageStation\PrivateAssemblies\Config\Canada*
- *C:\Program Files\Common Files\ImageStation\PrivateAssemblies\Config\Canada*
- *C:\Program Files (x86)\Common Files\Intergraph\GeoMedia\Program\PrivateAssemblies\Config\Canada*

DHHN2016

Support for defining the vertical datum in a csf file as DHHN2016 was added. However, transformation to/from this vertical is not performed.



System Requirements

Computer/ Processor	• 64-bit: Intel 64 (EM64T), AMD 64, or equivalent • Multi-core processors strongly recommended
Memory (RAM)	• 4 GB minimum
Disk Space	• 4 GB for software • Data storage requirements vary by mapping project[1]
Operating Systems	• Windows® 10 Professional (64-bit)
Database Server Engines	• Any GeoMedia-supported warehouse connection - see GeoMedia documentation for details on read-only and read-write database server connections and versions that are supported • SQL Server or SQL Server Express 2016 or 2017 (64-bit) is required for ImageStation DTM for GeoMedia
Software	**ImageStation is compatible with the following software packages and may require them, depending on the modules used.** Geospatial License Administrator 2020 is required for setting up a concurrent license server for concurrent licenses and is optional for activating node-locked licenses. Geospatial License Administrator 2020 can be installed on a single computer for a system administrator to set up and manage a concurrent license server for an organization, or it can be installed on every machine if desired. ImageStation Photogrammetric Manager • ImageStation Image Formatter recommended. Licenses to run ISIF are included with ISPM. • ERDAS Raster and Sensor Geometry required for expanded satellite support for Remote Sensor workflows. This is included in the ImageStation setup under Supporting Software. • NVIDIA Quadro graphics recommended. See the specifications below. ImageStation Automatic Elevations ImageStation Automatic Elevations DSM • MicroStation V8i, Power InRoads V8i, or Power GEOPAK V8i required for writing data to DGN format, and must be installed first. ImageStation DTMQue

	• ERDAS Raster and Sensor Geometry required for using ImageStation DTMQue Spatial Models (ISDQSM). This is included in the ImageStation setup under Supporting Software. ImageStation Image Formatter • No prerequisites ImageStation Automatic Triangulation • ImageStation Photogrammetric Manager is required • NVIDIA Quadro graphics, stereo-capable monitor, stereo glasses, and 3D pointing device recommended. See the specifications below. ImageStation Satellite Triangulation • ImageStation Photogrammetric Manager and ImageStation Automatic Triangulation are required ImageStation Stereo Display ImageStation Feature Collection • MicroStation V8i, Power InRoads V8i, or Power GEOPAK V8i is required • NVIDIA Quadro graphics, stereo-capable monitor, stereo glasses, and 3D pointing device required for ISSD. See the specifications below. ImageStation DTM Collection • MicroStation V8i, Power InRoads V8i, or Power GEOPAK V8i is required • ImageStation Stereo Display and ImageStation Feature Collection are recommended ImageStation OrthoPro ImageStation PixelQue • GeoMedia Essentials, Advantage, or Professional 2020 is required ImageStation DTM for GeoMedia • GeoMedia Essentials, Advantage, or Professional 2020 is required • GeoMedia Advantage or Professional 2020, and ImageStation Stereo for GeoMedia are recommended • SQL Server or SQL Server Express 2016 or 2017 (64-bit) is required

	ImageStation Stereo for GeoMedia • GeoMedia Advantage or Professional 2020 is required • NVIDIA Quadro graphics, stereo-capable monitor, stereo glasses, and 3D pointing device required. See the specifications below. ImageStation Stereo Viewer for GeoMedia • GeoMedia Essentials, Advantage, or Professional 2020 is required • NVIDIA Quadro graphics, stereo-capable monitor, and stereo glasses required. 3D pointing device recommended. See specifications below.
Graphics Boards	See table “Currently Qualified Graphics Boards for Stereo Viewing”
Graphics Displays	The following HD monitors are currently qualified for stereo viewing (although others may adequately perform): • Planar, model SA2311W 3D Vision™ Ready Monitor • Acer model GD235 • Samsung model 2233rz • ViewSonic model VX2268wm • ViewSonic model V3D245 (single display only) • ASUS model VG278H (single display only) • ASUS model VG278HE • BenQ models XL2420T/Z • PluraView
Peripherals	3D pointing device (Z/I Mouse, softmouse 3D, Stealth 3D Mouse (E-Type, V-Type, or Z-Type), or TopoMouse) highly recommended for ISSD, ISSV, and ISSG Software security (Hexagon Geospatial Licensing) requires one of the following: • Internet connection for online license activation • Ethernet card for offline license activation • One USB port for hardware key for offline license activation

Currently Qualified Graphics Boards for Stereo Viewing[2]

Graphics Board	NVIDIA 3D Active 1 display	NVIDIA 3D Active 2 displays (stereo/mono)	NVIDIA 3D Active 2 displays (stereo/stereo)
Quadro GP100[6]	yes	yes	yes[3]
Quadro P6000[6]	yes	yes	yes[3]
Quadro P5000[6]	yes	yes	yes[3]
Quadro P4000	yes[3]	yes[3]	yes[4]
Quadro P2000	yes[3]	yes[3]	yes[4]
Quadro M6000	yes	yes	yes
Quadro M5000	yes	yes	yes[3]
Quadro M4000	yes[3]	yes[3]	yes[4]
Quadro K6000	yes	yes	yes
Quadro K5200	yes	yes	yes
Quadro K5000	yes	yes	yes
Quadro K4200	yes	yes	yes[3]
Quadro K4000	yes	yes	yes[3]
Quadro 6000[5]	yes	yes	yes[3]
Quadro 5000[5]	yes	yes	yes[3]
Quadro 4000[5]	yes	yes	yes[3]

System Requirements Notes

[1] Disk I/O is usually the slowest task in geospatial data processing. Faster hard disks improve productivity. Reading data from one disk, writing temporary data to a second disk, and writing final data to a third disk improves performance. Disk arrays improve productivity, but some RAID options slow performance. Network disk drives are subject to network limitations.

[2] Refer to the *Installation Guide* in the ImageStation product delivery for driver installation and stereo configuration instructions.

[3] DP to DVI-D dual-link adaptor required.
Important - Be sure to get dual-link adaptors that are USB powered, such as the **BizLink XT625 (KS10014)** or the **Accell B087B-002B** (or **B087B-007B)** models. All monitor cables must be **dual-link** DVI to support stereo display.

[4] Two DP to DVI-D dual-link adaptors required.

[5] These cards are no longer tested. Information is for legacy purposes only.

[6] These cards require 8-pin PCIe power cables. Make sure your computer's power supply provides this type of power cable or use a 6-pin to 8-pin PCIe power adaptor cable.

Issues Resolved

2020 – ISAD Initial Release

ImageStation Automatic Elevations DSM (ISAD)

CR #	Summary	Description / How to Reproduce
IG-6926	Tiles missing when using Gaussian overviews	The "Airport SGM" data set that we use for testing has revealed a regression problem with XProSGM version 6.4, build 40779. The output LAS is missing tiles of data in a couple areas. The problem goes away if the Gaussian overviews are replaced with averaged overviews, or if the user JPEG compresses the image files. The new DSM module, ISAD, does not exhibit this problem.
IG-7237	Batch jobs halt the entire queue if one job fails	Individual model failure for any reason should not stop the overall batch process. The routine should step to the next model and continue. The new DSM module, ISAD, does not exhibit this problem.

2020

ImageStation Orientations (ISPM, ISAT, ISST)

CR #	Summary	Description / How to Reproduce

IG-14653	Export/Copy Project Components fails for satellite projects	Running Export or Copy Project Components on satellite projects fails because the command incorrectly looks for an “MST” folder, which is not required for certain sensor types.
IG-14699	PFProjectCmdMgr.exe will not close	After running the UAV Import command, when you exit the GUI often you cannot get the ISPM/ISAT main executable to respond. You must go to Task Manager and end the PFProjectCmdMgr process first.
N/A	Import UAV fails for customer data set	A customer provided a data set that caused the UAV Import program to fail because the EXIF data had false values in the SubjectDistance tag.
IG-13605	Orientations check for 16.0 license on startup	When starting ISPM or ISAT, the program first properly checks the license for the current version, but then checks for a 16.0 license when initializing the splash screen. It should only check for the current version to properly report the licensed user information on the splash screen.
IG-12581	ISAT - Grid Files to Rational Functions fails to write log file	The Grid Files to Rational Functions command attempts to write GridsToRFS.log file in the ...Common Files\ImageStation folder, which is write protected, and fails. This should be changed so that it writes to the active project folder instead.
IG-11938	UAV Import improperly transforms to RD (Amsfoort) projection	Attempting to use UAV Import to read imported geographic EXIF data into RD (Amersfoort) projection, the X coordinate is accurate, but the Y coordinate is off significantly, (about 65 meters) and Z is 3 times higher than it should be. Using the Import EO/GPS and Import Control commands with the EO.txt and control.txt files in the parent folder work as expected.
IG-10384	PhotoTX fails on high overlap project	The bundle adjustment is failing for projects that have high (>90%) overlap.
IG-6538	Users cannot restart ISAT if AATNT is running	ISAT users should be able to perform the following sequence: 1. Start ISAT. 2. Select block and submit job for matching. 3. Exit ISAT. 4. Restart ISAT to monitor previous jobs or work on others. Because of O/S security tightening, users are no longer able to restart ISAT. Instead, a message appears indicating that the program is unable to obtain a license and must exit.
IG-9717	Error updating camera file	Run ISAT Matching on any project, and after it completes the matching process, go to the ISAT Control Panel, click Results to display the PhotoT user interface. Then, click Options to open the Options dialog. Then click OK to return to the main user interface. An error message is displayed indicating a problem updating the camera file. Everything still seems to work as expected. If the user sets the Active Project to the Block that was just matched and runs PhotoT, this error message does not appear.

IG-13223	Opening 48-bit RGB image from UAV dataset software crash	Opening TIFF files greater than 8-bits containing color response curves or grey response curves was causing a software crash when reading the file header.

ImageStation DTMQue (ISDQ)

CR #	Summary	Description / How to Reproduce
IG-17113	Import INGR XYZ overwrites input CSF file	1. Run ISDQSM > Import > INGR XYZ command on data at \Cert_Projects\ISEU_Test\XYZ 2. Give UTM.csf for the CSF file name. 3. When you execute the spatial model the UTM.csf file is overwritten with the output DTM data instead of writing to "Regular.dtm."
IG-17115	Export Shaded Relief requires output image already exists	1. Run ISDQSM > Export >> Shaded Relief (no LUT) commands on data at \Cert_Projects\ISEU_Test\Export. 2. Attempt to key in an Output File name and tab out. 3. Witness an error complaining about the output file doesn't exist (it should not have to).
IG-17114	Export ASCII Grid doesn't honor XY spacing	1. Run ISDQSM > Export >> ASCII Grid command on data at \Cert_Projects\ISEU_Test\Export 2. Leave X Step and Y Step at default 5 m. 3. Execute the command and open the ASC file with a text editor and see that the output is always set to 10 meters.
IG-17187	File Filter text doesn't match file types being sought	Each spatial model in ISDQSM properly lists the type of file being sought, such as .csf, .las, etc., on the main GUI but the Files of type text don't match what is being browsed for. Need to edit the Port configuration FileFilter attribute to what you want it to display, such as "CSF File (*.csf)."
IG-17144	Merge/Show requires user to keyin extension	1. Run ISDQSM > Operate >> Merge/Show. 2. Enter a name for the output DTM file, note that the program requires the user to add an extension. 3. Process the job and witness that the output file has ".dtm.dtm" at the end of it.
IG-14524	ISDQ ignores point features from INI file	If the user specifies point features in the INI file other than "auto_grid_point," ISDQ will ignore them. This includes points such as "auto_grid_point_beyond_threshold" and "auto_grid_point_low_redundancy." This is not consistent with the behavior of ISDC and ISAE.
IG-14337	Fails to process DGN files if the level number is used	ISDQ will only process DGN files if the Level Name is specified, but not the Level Number. This happens if using V8 seed files that were not derived from V7 DGN files, and have default levels 0-63 defined in them.

ImageStation Stereo for GeoMedia (ISSG)

CR #	Summary	Description / How to Reproduce
IG-15642	Lag in point collection	ISSG is capturing points on the “up” phase of the DATA button pushes instead of the “down” phase. This can cause points to be captured away from their intended target if roaming quickly while capturing points.
IG-11710	Arc Fillet mode throws an error	If attempting to use the Arc Fillet mode while using ISSG Insert Feature command, an error occurs when there is a Layout Window in the workspace, and prevents the user from capturing data.
IG-14343	Depth Index fails to write an output file	Run Depth Indexing command on any project/model, click Report, enter a name and location for the output file, then click OK. The output file does not get created.
IG-2404	Make Queued Edit Window more functional with stereo views	When using ISSG to convert the Queued Edit Window to a stereo view, it won't advance to items in the queue when the user clicks on the control to do so. The user must instead convert the view back to non-stereo, advance to the next feature, then convert it back to stereo. The view should advance without having to convert the view to non-stereo each time. The change should also honor Auto Kings Move Model, i.e., change to the proper stereo model that coincides with the feature in the queue.
IG-5395	Startup interferes with batch plotting	ISSG startup should be modified to check if GeoMedia is running in batch mode and if it is then don't try to start. This should keep it from interfering with Batch Plotting.
IG-10222	Stereo views refresh repeatedly if fitted to the display and there are a lot of vectors	If there are a significant number of vectors in the stereo view, such as points from ISAE, and the user fits the vectors to the Map Window and then enables stereo, the view may refresh several times, (up to 5 times). If a second stereo view is added, the refresh attempts may be as many as 30 times.
IG-11574	Button Map labels are wrong	The button map files have several instances of incorrectly labeled buttons. All devices in all modes have "Tentative (Right Click)." The "Right Click" portion should be removed. The TopoMouse and Z/I Mouse button maps should have "Right Click" appended to the Context Menu labels.
IG-11400	Custom Edits are extremely slow	Attempts to use the Custom Edit commands to Flatten or Change Elevation have become extremely slow with the 16.5 release. Sometimes it takes as long as 3 seconds to update a single point.
IG-12477	Switching workspaces causes a crash	If you open a workspace and then start ISSG, then later change to a different workspace, ISSG/GM begins to run poorly and will eventually crash. To replicate this issue, simply X off any windows in the newly opened workspace.
IG-11577	SSE - Can't open Help from SSE Toolbar	Attempting to open Help from the SSE Toolbar causes an error to display; "SSE.chm is not a valid help file." Help can be accessed through ISSG's Help file.

ImageStation DTM for GeoMedia (ISDG)

CR #	Summary	Description / How to Reproduce
IG-11957	New DTM Project command failure	If two users run New DTM Project at the same time while connected to the same database, the command will fail on one system. The first user to click OK to create the project will have no problem, the other user gets an error message indicating that the tables already exist. If the second user simply exits the command and starts over it will work, but the check for which version tables already exist and which needs to be created should come when the user clicks the OK button rather than when the command opens/starts.
IG-2546	View Contours has issues with geographic projects	When working with satellite projects and the coordinate system is set to geographic, there are several problems related to using the View Contours command: 1. The units for *Contour Interval *and *Font Size *indicate "Deg" but are actually in meters. The label should be set to meters. 2. The *Remove contours smaller than* label indicate deg^2^, should be meters^2^. 3. The *Label Spacing * shows Deg and actually DOES require degrees, which leaves the user to try to figure out what is a reasonable value to use to get any labels to appear at all. The interface should allow the user to enter the value in meters. (For testing purposes, .03 should give a label about every 2 miles.) 4. Very few contours are labeled. If they are, the spacing is erratic and the labels along any given contour are all oriented the same way, i.e. they aren't aligned with the contour element.
IG-2367 IG-4848	Error handling needs improvement	More informative error messages need to be reported to the user if the contour interval is larger than the surface range, if the surface is not triangulated, and if ISDG_DTM_Features categories are not defined or have not been located from the input connection.
IG-5396	Startup interferes with batch plotting	ISDG startup should be modified to check if GeoMedia is running in batch mode and if it is then don't try to start. This should keep it from interfering with Batch Plotting.

ImageStation Stereo Display (ISSD)

CR #	Summary	Description / How to Reproduce
IG-5123	Fix poor roam performance	The roam performance in ISSD becomes extremely jerky when placing features and dynamics are being displayed. The best way to reproduce this is to open a stereo model, activate the Utilities > Fire Hydrant Feature, load roam and then start panning about. The lower the card model number, the worse the problem becomes, but the problem exists on all cards and both Windows 7 and 10.
IG-15787	Remnant from dynamics gets stuck to end of a feature when feature is ended	While placing features with ISFC in ISSD and while in roam, when the feature being placed is ended with the RESET button, a remnant of that feature is stuck to the cursor in the highlight plane as the user moves about. When the user stops moving then the remnant will clear. This is sometimes referred to as a “ghost” feature.

ImageStation Image Formatter (ISIF)

CR #	Summary	Description / How to Reproduce
IG-15210	Element redraws constantly when placing orthogonal lines and shapes	When placing orthogonal lines or shapes with ISFC, the vectors that make up the feature are constantly being redrawn as the user moves the cursor about, giving it a flickering appearance.

ImageStation Automatic Elevations (ISAE)

CR #	Summary	Description / How to Reproduce
IG-9737	Cannot submit jobs when the path to project file has spaces. This only occurs if drive volume is set to disable 8.3 filenames.	Unable to submit jobs when the path to project file has spaces. This only occurs if drive volume is set to disable 8.3 filenames.

ImageStation Automatic Elevations Extended (ISAE-X)

CR #	Summary	Description / How to Reproduce
IG-9737	Cannot submit jobs when the path to project file has spaces. This only occurs if drive volume is set to disable 8.3 filenames.	Unable to submit jobs when the path to project file has spaces. This only occurs if drive volume is set to disable 8.3 filenames.

ImageStation OrthoPro (ISOP)

CR #	Summary	Description / How to Reproduce
IG-14077	Dodge fails if a space occurs before a dash in the input or output path	Attempting to read or write images from a path that contains a blank space before a dash in the folder name or file name causes the parsing of the file name to fail, which causes a DodgeCmd.exe error.
IG-13722	Tone Balance fails if the output is re-projected	If the output mosaicked products are being re-projected to a coordinate system that is different than the input files' coordinate system, it can cause Tone Balance to fail.

1-Y2OWBX	Can't set Pixel Fill Value for 16-bit imagery	Rectify, Dodge, True Ortho, and Mosaic user interface has too many values for the pixel fill intensity in the combo box control on the user interface when 16-bit data is used making it impossible to set the desired value.
1-RBURGZ	NAIP workflow fields not populated	Intergraph Data Packet is not imported into the NAIP product header from DMC data source. This results in loss of image ID's for NAIP shape file utility.
1-LO9650	Getting errors when pixel spacing is greater than the tile size	Getting errors when processing if the output file's tile size is greater than the pixel spacing value.
IG-5882	Rectify or Mosaic fail to process if the Tile Size is set to anything greater than 512	Setting the output Tile Size greater than 512 causes Rectify and Mosaic processes to fail.
1-TSSVM3	Missing tiles in output for "butt-matched" mosaic	Mosaic a tile grid of non-georeferenced imported ortho raster files with no overlap
IG-13322	Licensing issue found in ImageStation products	Licensing DLLs with version numbers were not being updated causing upgrade issues and license check-out to fail.
IG-11238	Windows 10 update breaks shortcuts	Start Menu programs will not start on Windows 10 after installing Windows 10 update 1709

ImageStation PixelQue (ISPQ)

CR #	Summary	Description / How to Reproduce
IG-11403	Affine command loses GeoTIFF tag	If the user runs the Affine.exe command with the -g (*.dgn or *.csf) argument, the output file is lacking the GeoTIFF tag for georeferencing the image.
N/A	Problem calculating feather distance	For some data sets, the calculation is incorrect for setting the feathering distance.

ImageStation Generate Stereo Mate (ISGS)

CR #	Summary	Description / How to Reproduce

IG-10382	Fails to process if 8dot3 is disabled	Folders created without short filenames break the Generate Stereo Mate processing. Key in "fsutil behavior set disable8dot3 1" from a CMD window prompt in admin mode to disable 8dot3 format on your file system. Set the value to 0 to re-enable it. Note that these settings only apply when a folder is created.

ImageStation Extract CSF (ISEC)

CR #	Summary	Description / How to Reproduce
IG-11961	Fails to read CSF from USGS DEM files	Run Extract CSF on USGS DEM files. Click View CSF and witness that nothing happens. Works in 16.00 release but not in 16.5.

Deprecated

Windows 7

After January 14, 2020, Microsoft will no longer provide security updates or support for PCs running Windows 7. Consequently, support for Windows 7 was deprecated. Users should upgrade to Windows 10.

SQL Server 2014

Support for SQL Server 2014 in ISDG is considered to be viable in this release, which means it is expected to work but is no longer tested, and problems that are unique to it are not guaranteed to be fixed.

Task Schedule Jobs in ISPM

The option to submit jobs later in the Generate Stereo Models and DOQ to GeoTIFF Converter commands was deprecated. The ability to submit ISAT matching jobs later is still supported.

ORIMA Setup Removed from Master Setup

ORIMA was removed from the ImageStation Master Setup. The product can be obtained from the Hexagon Geospatial download site at https://download.hexagongeospatial.com/.

Display Frame Removed from ISDG View Contours

The Display Frame option was removed from the View Contours dialog as it is now redundant with the style settings of the ContourLabel feature class.

DTM Format Change

The DTM format generated from ImageStation products (ISAE, ISDG, and ISDQ) was modified to maintain the classification of points that are generated with ISAE. Other products, such as ISDG and ISSG, now recognize this classification and use it to properly color code points for display.

IMPORTANT: This change to the DTM format structure makes it incompatible with older versions of ImageStation applications. Product versions prior to 2020 cannot use these files. Users that are required to

create files with backward compatibility for older products should use the new DTM6 to DTM5 translator that is delivered with ISDQ. No license is required to use the translator.

GEOID09 Files

The GEOID09 vertical datum files are no longer delivered.

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