HEXAGON

Release Guide
ImageStation 2022

Contents

About This Release

This document describes the enhancements, fixes, and system requirements for ImageStation 2022.

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 product description, 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, and 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

GeoMedia Desktop 2022 and Core Components

ImageStation products are now compatible with GeoMedia 2022 and its underlying core components, including Common Raster Platform and Common Coordinate Systems.

MicroStation CONNECT Edition and OpenRoads Designer CONNECT Edition

ImageStation Stereo Display, ImageStation Feature Collection, ImageStation DTM Collection, and ImageStation Automatic Elevations have been updated to work with MicroStation CONNECT Edition and OpenRoads Designer CONNECT Edition. These products will no longer install and run on earlier versions of MicroStation V8i. ISSD, ISFC, and ISDC are all now 64-bit applications.

Impacts

ISFC and ISDC Changes

The Generate Symbology Definitions command has been moved from ISDC and placed with the Feature Table commands in ISFC. Also, the CADMap commands have been deprecated from ISFC.

ISSD Change

The option on the Select Model dialog to add stereo mates to the ImageStation project's model file has been removed, as the Generate Stereo Mate program has been deprecated.

Project Compatibility

Changes have been made in how orientation parameters are stored and used that affect compatibility between the 16.6 and 16.7 versions.

- Aerial frame projects (including ADS, UAV, and VisionMap projects) are forward and backward compatible between 16.6 and 16.7 versions.
- RPC satellite projects triangulated on the 16.6 version will need to be run through the Generate Stereo Drives command on a 16.7 version before the projects can be used with the 64-bit 16.7 stereo applications (ISSD, ISAE DSM). The 32-bit 16.7 stereo applications (ISSG and ISAE), plus ISOP, will work as-is without any additional processing. However, better accuracy can be achieved by running the project through the bundle adjustment process on the 16.7 version.
- RPC satellite projects triangulated on the 16.7 version will need to be run through a bundle adjustment (PhotoT or PhotoTX) and the Generate Rational Functions command on a 16.6 version before the projects can be used in any downstream 16.6 stereo applications. ISOP users will only need to run the bundle adjustment.
- Any RPC block of multi-segment scenes adjusted in PhotoTX 16.7 cannot be re-triangulated in PhotoT (16.6 or 16.7) due to lack of support for collinear rays in segment-to-segment ties along a single scene (i.e., orbital push-broom strips).

New Technology

Licensing

A new product license is required for the 2022 release. The latest licensing 2022 application should be downloaded and used for this release.

Increased Level Number Limits in ISDQ

The Level number field on the Edit Filter dialog available when using Format > DGN was changed from a picklist to a key-in field, and the limit was increased from 255 to 99999.

Support for 2048 Tile Size in ISRU, ISIF, and ISOP

ISIF, ISRU, and OrthoPro were modified to handle tile sizes up to 2048, which makes it possible to support larger JPEG2000 format files because it reduces the overall number of tiles in the file.

ISRU Converted to 64-bit

ImageStation Raster Utilities has been made a native 64-bit application for increased memory capacity and performance.

ISRU Format Updates

The user interface for Extract Overviews, Delete Overviews, and Many/Raw File Converter were updated. The Intergraph output option has been removed, and BigTIFF format was added to Extract Overviews and Delete Overviews. The Intergraph output option was removed from Many/Raw File Converter (BigTIFF was already on

the user interface). The Intergraph output option has not been removed from the command line for the odd case in which someone really needs to create files in that legacy format.

Bit Depth Change Capability Added to ISIF

The ability to change the bit depth of images has been added to ISIF. Output bit depth options are *Unchanged* (default), *8-bit*, *12-bit*, or *16-bit*. The pixel values are linearly scaled from the specified input minimum and maximum values to the range of the specified output bit depth: 0-255 for 8-bit, 0-2047 for 12-bit, and 0-65535 for 16-bit output.

NGS GEOID18 Grid Files

The NGS GEOID18 grid files are now delivered with ImageStation in addition to the GEOID12B grid files. These grid files are used to convert heights from NAD 83 to regional vertical datums (e.g., NAVD 88). GeoMedia does not deliver these files, so they should be copied from one of the ImageStation locations such as *C:\Program Files (x86)\Common Files\ImageStation\PrivateAssemblies\Config\NGSGEOID* (along with the area.ini file) to the GeoMedia location *C:\Program Files (x86)\Common Files\Intergraph\GeoMedia \Program\PrivateAssemblies\Config\NGSGEOID*. The area.ini should be edited to use either the GEOID12B or GEOID18 grid files.

Support for NITF with ICHIPB from BLK Files in ISPM

Added support to the Import IMAGINE Photogrammetry and Reformat Satellite Images commands to be able to ingest BLK files that have NITF files with ICHIPB data with offsets into the ImageStation project.

Better Import of BLK Files for Satellite Projects in ISPM

The Import IMAGINE Photogrammetry command was modified to read the "Calibration" parameters of the input BLK file, which is where adjusted RPC values are stored. This eliminates the need to re-run the bundle adjustment in ISAT after importing a satellite project from IMAGINE.

ImageStation Automatic Elevations DSM

ImageStation Automatic Elevations DSM (ISAD) is a new product that replaces ImageStation Automatic Elevations-Extended (ISAE-Ext). Users must uninstall ISAE-Ext in order to install ISAD. ISAD fixes many problems associated with the previous product, is two to three times faster, uses a fraction of the memory, provides more control for the creation of thinned point clouds, and supports satellite and scanned film projects as opposed to just digital aerial frame projects. ISAD was initially released as an update to the 2020 release. This release of ISAD includes new options to specify terrain type as sharp, large-parallax detail or smooth, small-parallax detail; and to enhance dark areas to provide more detail for matching in dark/shadowy areas.

Better Error Reporting for ISAE and ISAE DSM

Errors that occur while processing large projects are often hard to locate, especially when running the jobs through HTCondor. ISAE and ISAE DSM have been modified to write a separate log file for each model to the ISAE_Errors folder of the project directory if any errors occur. The error number and command line are reported to make it easier to re-run the faulty process for trouble-shooting purposes. If no errors occur, the folder will remain empty.

Generate Symbology Definitions Includes CIRCLE Features in ISFC

The Generate Symbology Definitions (which has been moved from ISDC to ISFC) has been updated to also create entries in the output .ini file for geomorphological features that are created as CIRCLE features.

New Level Pickers for ISSD, ISFC, and ISDC

The level pickers for ISSD and ISFC have been updated to list level names as well as numbers to make it easier to define the desired levels for features. The level pickers have also been added to the ISDC View commands, which previously would only accept a level number key-in. The new level picker was also added to the Import Surface from Graphics command and allows users to multi-select levels from the dialog.
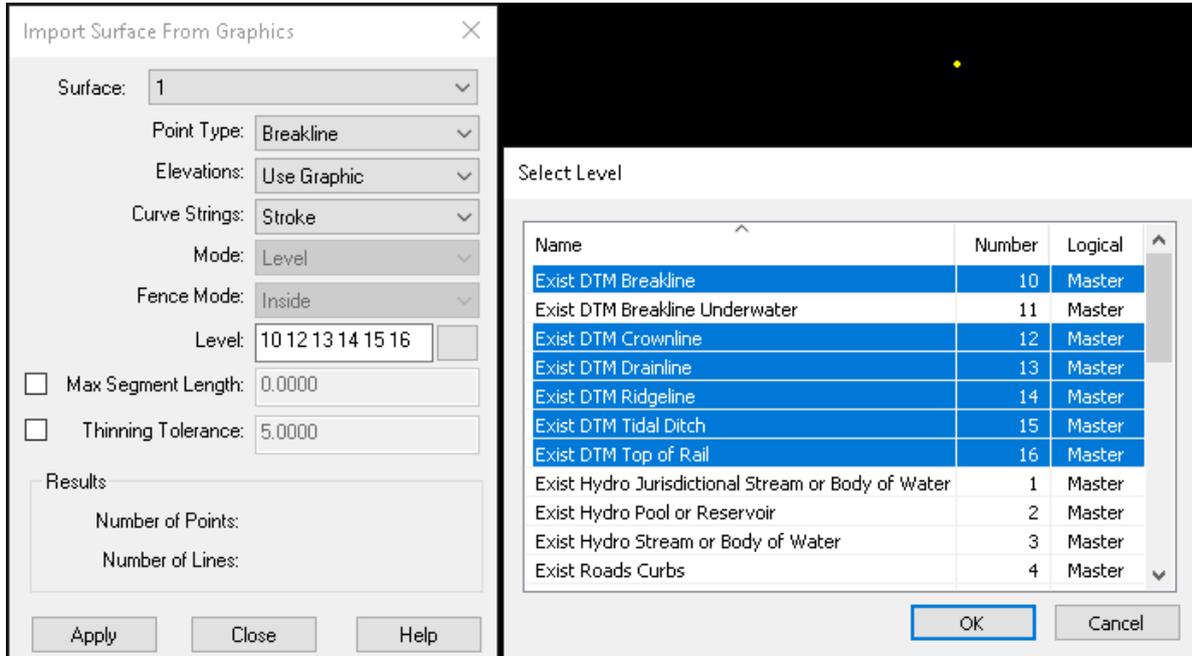
More Lens Distortion Options in ISPM

The Edit Camera command has been modified to accept more terms, as is typical with more of today's camera calibration reports that come from various vendors. Also, a Lens tab has been added to the Import UAV interface that allows users to import camera calibration parameters from vendors/formats such as Agisoft, Inpho, and Australis, as well as an interface for keying in distortion coefficients.
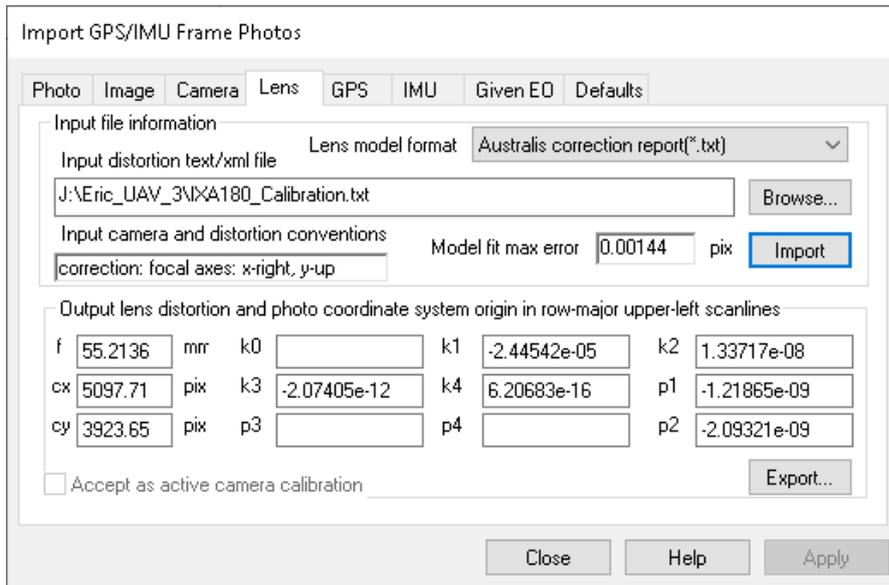
This import takes the confusion out of trying to properly define PPA and PPBS parameters and has the additional option to remove lens distortion from the images if the Reformat images option is activated on the Image tab.
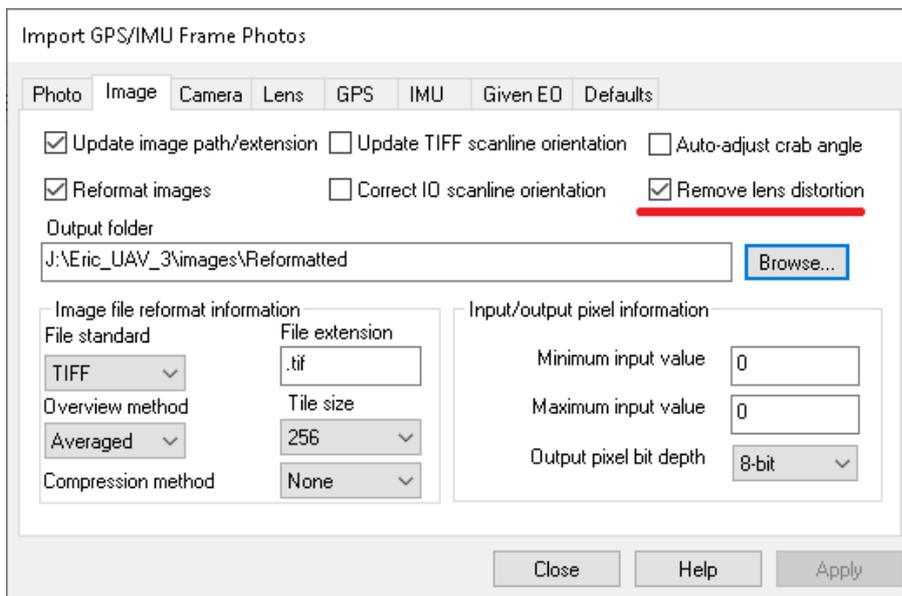
Persistent Setting on Edit Control Points Dialog in ISPM

The Edit Control Points dialog has been modified to persist the field widths of each column so they do not need to be resized each time the program is restarted.

PhotoT Graphics Display Improvements in ISAT

The Graphics option for statistical tabs in PhotoT used to have separate color delineation for the number of rays for 2, 3, and 4 or more rays per point. This list has been expanded to allow additional separate colors for

5, 6, 7, 8, and 9 or more rays per point. The Graphics option was also modified to display all points at once instead of painting them one at a time, making it much faster, and an Auto Fit option was added so that the user can keep the graphics displayed at the same scale between computations if desired.
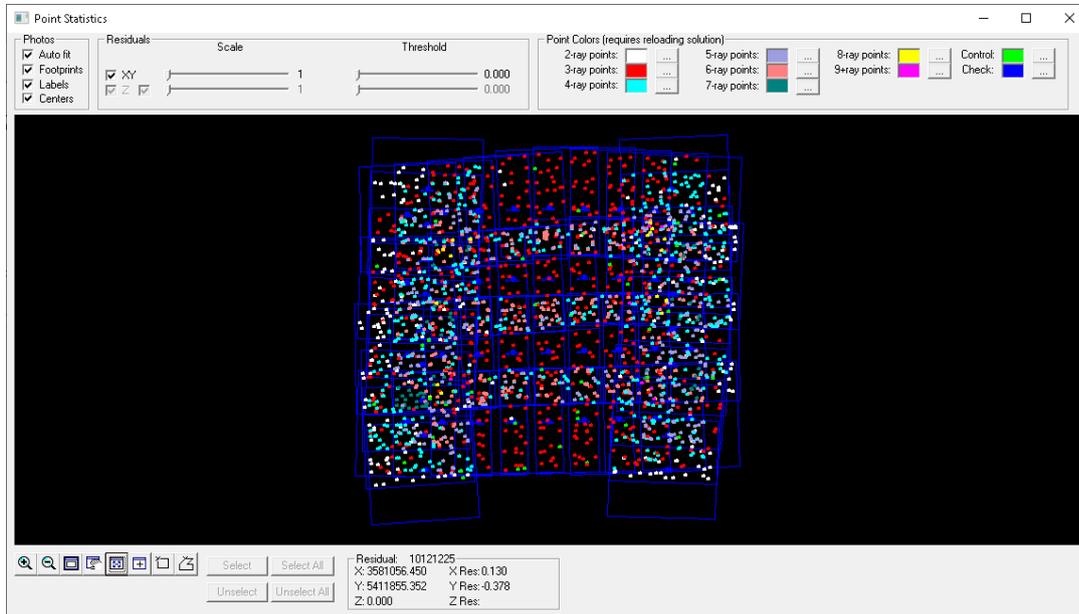
New Exclusion Areas/Points Commands in ISAT

Two new commands have been added to Orientations. The Exclusion Areas command has been added to the Edit pull down menu, which allows users to add shapefile polygons to the ImageStation project. These are then referenced with the Exclude Points command, which is accessed from the ISAT pull down menu. When executed, the command will locate pass/tie points that were autogenerated with ISAT that fall into undesirable areas, such as areas of water, and remove them from the *photo* and *triang* files. These exclusion area features have also been added to the Footprint Viewer for display only, and to the Graphics display in PhotoT on the Point Statistics tab, which can be used to interactively select points for editing.

Additional Button Assignment for Stealth and softmouse 3D Input Devices in ISSG

A new button assignment, Context Menu (right-click), has been added to the button maps for the Stealth 3D Mouse and the softmouse 3D input devices. This gives users the ability to place features with the arc fillet and curve point modes when using ISSG. Previously this was not possible, because these devices do not have a separate Context Menu button like the Z/I Mouse or TopoMouse. See the "ISSG Help > The ISSG Environment > Using Input Devices > Using the softmouse 3D" and "Using the Stealth Mouse" topics for more information.

Slew/Parallax Mode Toggle Added for Stealth 3D Mouse in Orientations

Orientations has been modified so that pressing the number 8 + 7 buttons will toggle between the Slew and Parallax modes in Orientations to make it easier for clearing parallax in the stereo views.

New Mirror Feature Command in ISSG

A new editing command has been added to ISSG that allows users to create mirrored copies of one or more features for quick placement of like features.

JPEG Compression Performance Improvements

Performance of JPEG compression and decompression has been improved by utilizing Single Instruction Multiple Data (SIMD) instructions. How much improvement is dependent upon many parameters, such as the tile size and bit depth. For example, 3-band, 8-bit, 256 tile size, JPEG compressed raster can be written as fast or faster than uncompressed. That is more than twice as fast when compared to the previous version.

3D PluraView Stereo Monitors

Roam performance with 3D PluraView passive stereo monitors has been optimized for the Full HD (1920 x 1080), Quad HD (2560 x 1440), and 4K (3840 x 2160) models.

System Requirements

Computer/Processor	• 64-bit: Intel 64 (EM64T) 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 2017 or 2019 (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.** The 2022 licensing application is required for setting up a concurrent license server for concurrent licenses and is optional for activating node-locked licenses. This is included in the ImageStation setup under Supporting Software. Licensing 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 • Spatial Modeler RTE 2022 required for importing satellite RPC and IMAGINE Photogrammetry projects. This is included in the ImageStation setup under Project Management/Orientations and also under Supporting Software. • ImageStation Image Formatter recommended. Licenses to run ISIF are included with ISPM.

	• NVIDIA Quadro graphics recommended. See the specifications below.
	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 Automatic Elevations and ImageStation Automatic Elevations DSM
	• MicroStation CONNECT (Update 13, 14, or 15) or OpenRoads Designer CONNECT (R2 or R3) required for writing data to DGN format, and must be installed first.
	ImageStation DTMQue
	• Spatial Modeler RTE 2022 required for using ImageStation DTMQue Spatial Models (ISDQSM). This is included in the ImageStation setup under DTM Collection/Editing and Supporting Software.
	ImageStation Stereo Display and ImageStation Feature Collection
	• MicroStation CONNECT (Update 13, 14, or 15) or OpenRoads Designer CONNECT (R2 or R3) 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 CONNECT (Update 13, 14, or 15) or OpenRoads Designer CONNECT (R2 or R3) is required.
	• ImageStation Stereo Display and ImageStation Feature Collection are recommended.
	ImageStation Stereo for GeoMedia
	• GeoMedia Advantage or Professional 2022 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 2022 is required.
	• NVIDIA Quadro graphics, stereo-capable monitor, and stereo glasses required. 3D pointing device recommended. See specifications below.
	ImageStation DTM for GeoMedia
	• GeoMedia Essentials, Advantage, or Professional 2022 is required.
	• GeoMedia Advantage or Professional 2022 and ImageStation Stereo for GeoMedia are recommended.
	• SQL Server or SQL Server Express 2017 or 2019 (64-bit) is required.
	ImageStation OrthoPro and ImageStation PixelQue
	• GeoMedia Essentials, Advantage, or Professional 2022 is required.
	ImageStation Image Formatter and ImageStation Raster Utilities
	• No prerequisites.
Graphics Boards	• See table "Currently Qualified Graphics Boards for Stereo Viewing."
Graphics Displays	• See the NVIDIA Driver Configuration Instructions document for a list of supported monitors.
Peripherals	3D pointing device (Z/I Mouse, softmouse 3D, Stealth 3D Mouse [E-Type, V-Type, or Z-Type], or TopoMouse) required for ISSD and ISSG, and recommended for ISSV and ISAT.
	Software security 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[5]	yes	yes	yes[3]

Quadro RTX4000	yes[3]	yes[3]	yes[4]
Quadro P6000[5]	yes	yes	yes[3]
Quadro P5000[5]	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]

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 version, installation, and stereo configuration instructions.

[3] DP to DVI-D dual-link adaptor required for monitors using DVI ports.
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.

Active stereo displays require stereo glasses and an emitter. Since NVIDIA has discontinued its 3D Vision Kit, an alternative kit must be used. Alternative kits are available from Stealth International, 3DTV Corporation, and Amazon. See the discussion topic on the Hexagon Geospatial Community for more information.

Issues Resolved

ImageStation Orientations (ISPM, ISAT, ISST)

Support Ticket	Description
IG-21448	Need checks for dialog startup locations. The list of commands below have dialog boxes whose startup locations are stored in the registry under HKCU. The problem with this is if a user moves the dialog to a second monitor and that monitor is later removed, ISPM/ISAT cannot display the dialog and will appear to be hung. We need a check when opening these dialogs if the target location is not available and then display the dialog at an appropriate default position, such as center or upper left of the active monitor. • File > Export Project Components • Edit > Blocks • Orientations > Multiphoto • Orientations > Photo Triangulation > Photo Triangulation Results • Orientations > Digital Stereo Comparator • ISAT > Merge Block Measurements • Tools > Footprint Viewer • Tools > Project Review • Tools > Project Overview
IG-21188	ISPM - Save Project As needs to copy Stereo\Models folder. The **File >> Save Project As** command needs to be modified to copy the *Stereo/Models* folder from the existing project location to the new project location. The **File > Save Project As** command needs to be modified to copy the *Stereo\Models* folder from the existing project location to the new project location.
IG-17304	ISPM - Modify Strip reads photo list twice. Whenever you open the Edit >> Modify Strip command, it reads through the entire Photo list twice, which is annoying and very time consuming for large projects. Whenever you open the **Edit >> Modify Strip** command, it reads through the entire Photo list twice, which is time consuming for large projects. For efficiency reasons we need to eliminate one of the reads.

00070148 IG-22781	Delay when loading or updating images on newer AMD or Intel Core i9 processor systems. Each time an image is loaded into the display or updated in any fashion it can take up to about 30 seconds to complete. This only happens on systems with newer AMD or Intel Core i9 processors.
IG-23804	ISAT - PhotoTX point editing fails. Can't can't get PhotoTX to successfully withhold or delete the problem point and compute a new solution properly.
IG-23803	ISAT - PhotoT throws error if deleting a point measurement for satellite projects. Open any satellite project that has point measurements in it and run a bundle adjustment with PhotoT. When the solution finishes, go to the point tab and select any point and press **Delete**. The point is removed from the Point ID list, but it never gets taken out of solution and it throws the error.
IG-25814	ISPM - Import UAV crashes with particular data set. Import UAV crashes with a particular data set. I can use the **ISPM >> Translators >> Import EO/GPS** command to read in the data as a workaround.
IG-24317	ISAT - Bundle adjustment diverges if Block Shift is applied to GPS but not INS. If you run the bundle adjustment with Block Shift enabled for just the GPS but not also the INS then the solution gets really bad and may even completely fail depending on the weighting scheme.
IG-18638	ISAT – Point Graphics needs to stop refitting the display. While taking measurements in Multiphoto Orientations, the user can click **More** to open the Photo Triangulation Results dialog, and then click the **Graphics** button on the Photo Stats tab to open a footprint view of the project along with all the measured points. As each point is measured the point list and graphics display are updated, which is fine, but each time all the photos and points are refitted to the display and the XY scale is reset to its default value. We need to change this so that the window area remains the same as it was before the measurement/computation and leave the XY Scale alone.

ImageStation DTMQue (ISDQ)

Support Ticket	Description
IG-20734	IMG2DTM needs to ignore void values. While importing .img format surface files, void areas are getting written into the output DTM file as NaN, causing the rest of the ImageStation applications to fail to properly read the files. While importing .img format surface files, void values are getting written into the output DTM file as

	NaN (Not a Number - undefined or unrepresentable), causing the rest of the ImageStation applications to fail to properly read the files.
	While taking measurements in Multiphoto Orientations, the user can click More to open the Photo Triangulation Results dialog, and then click the Graphics button on the Photo Stats tab to open a footprint view of the project along with all the measured points. As each point is measured the point list and graphics display are updated, which is fine, but each time all the photos and points are re-fitted to the display and the XY scale is reset to its default value. We need to change this so that the window area remains the same as it was before the measurement/computation and leave the XY Scale alone.

ImageStation Stereo for GeoMedia (ISSG)

Support Ticket	Description
IG-17118	ADS model keeps refreshing the display. Attempting to load ADS models with large amounts of data such as points from ISAE causes the display to refresh over and over again. Must kill the process to escape the loop.
IG-23937	Georeferenced mode sets CurrentZ value in Registry to zero. Using the Georeferenced mode (2D) in ISSG is causing the CurrentZ value that is stored in the registry to get set to zero when there are no elevation files in use. This value gets read the next time you open a project and sets the CurrentZ value to zero which forces the user to have to hold the Z control on the 3D input device for a long time to return it to proper ground elevation. There is no reason for ISSG to update CurrentZ in the registry when using the Georeferenced mode.
IG-14640	Generate Stereo Model Boundaries throws error. If the user has already run the Generate Stereo Model Boundaries in a warehouse/workspace, ISSG throws an error indicating that the command failed "due to an unexpected error" simply because the stereo model boundaries are already in the warehouse. The command has been modifed to add to, or update the existing, model boundaries instead of erroring off.
IG-17092	Contour Label features from ISDG get mis-scaled in stereo view. When you open a workspace and enable stereo with ISSG the labels on the contours that were created with ISDG get huge. The enlargement of the text is relative to how far you are zoomed into the graphics when stereo is enabled. If you are zoomed in at 1:1 then the text gets really large. If you zoom way out so that you can see several models worth of vectors and then activate stereo then the text remains small.
00070148 IG-22781	Delay when loading or updating images on newer AMD or Intel Core i9 processor systems. Each time an image is loaded into the display or updated in any fashion it can take up to about 30 seconds to complete. This only happens on systems with newer AMD or Intel Core i9 processors.

IG-16816	Active Z keeps returning to average project elevation. Any time the stereo view is changed to non-stereo and then back to stereo again, the active Z gets set to whatever average_elev_grnd value is stored in the project file. It would be much better if it simply returned to whatever value it was at when it was taken out of stereo.
IG-25931	Does not display first run dialog. When running ISSG for the first time, it fails to display the first run dialog to allow the user to activate a license. User must use the License Administrator interface to activate the license instead.

ImageStation DTM for GeoMedia (ISDG)

Support Ticket	Description
IG-18840	Help requires .NET Framework 3.5 Attempting to open Help for ISDG will throw an error indicating that it needs .NET Framework 3.5 to open the help file. None of the other ImageStation apps require this, so ISDG shouldn't either. Help is failing to open on systems that lack .NET Framework 3.5.

ImageStation Stereo Display (ISSD)

Support Ticket	Description
00074994 IG-23580	Undo while placing orthogonal features doesn't remove last leg digitized from the display. Start ISSD with ISFC, select one of the Building features which activates the orthogonal placement mode. Begin digitizing the feature with several legs perpendicular to each other, then press CTRL-Z a couple times to undo the last two line segments. Witness that the legs that were undone do not disappear from the view like they should until the feature is ended/closed with the RESET button. These remaining segments interfere with the ability to properly replace them with new line segments.
00074994 IG-20905	Features are not removed from the display on undo. If the user digitizes one or more features, then presses CTRL-Z to undo them, the features do not disappear from the roam stereo view.
00072858	Crash or hang occurs if named styles are in use.

00080295 IG-23012	Customer provided a data set that crashes ISSD on V8i release, and causes an infinite loop in the CONNECT edition. This is caused by features that have named Styles. If I change the Style to any of the Styles delivered with MSTN, either numbered or named, it works fine.
IG-21037	Dynamic Zoom can cause Stereo Zoom or other dialogs to disappear. Clicking the DATA button to accept a zoom scale change with the Dynamic Zoom command can cause dialog boxes located at the center of the display to be dismissed because the system cursor is passing through the DATA button to the dialog.
IG-12501	Depth Index crashes for satellite projects. Depth Index does not work for satellite projects being mapped to a projected coordinate system. I believe this got broken when crdt.exe was modified to use CSS years ago.
00070148 IG-22781	Delay when loading or updating images on newer AMD or Intel Core i9 processor systems. Each time an image is loaded into the display or updated in any fashion it can take up to about 30 seconds to complete. This only happens on systems with newer AMD or Intel Core i9 processors.

ImageStation Feature Collection (ISFC)

Support Ticket	Description
IG-24555	Problems using levels that don't have level numbers. Using the attached feature table database and design file, both which are empty/void of any levels or features, perform the following steps: - Open the DGN with ISFC. It should automatically detect the feature database by the same name next to it and use that, you will get a message to create features once ISFC starts. - Use the MicroStation Level Manager to create a level named "Roads" but don't give it a level number. - Use ISFC's Feature Table Editor to create a new Category named Roads, with a new Feature named Roads. - Go to the Linear tab and use the Level Picker to select level name Roads. Note that "1" shows up in the Level field when you close the Level Picker. - Save the feature table database and exit the feature table editor. - Select the Roads feature from the ISFC Active Feature dialog and digitize an element into the DGN. If activate the Home tab you will see "Roads" displayed in the Active Level readout. - Use the Level Manager to create a new level named "One." Right-click on it and go to Properties and give it Level Number "1." - Open FTED, select the Roads feature, click on the Linear tab and note that it still shows "1" in the Level field. Open the Level Picker and note that this is now associated with Level Name "One" and that the level number assigned to roads is now "3" even though the MicroStation level Manager does not show a level number 3.

	• If you switch the level name back to Roads and then update the DGN or go place any more new features, they get placed on "Level 3" and can no longer be placed with the level name "Roads" unless you override it with the MSTN Active Level readout. NOTE: The changes for this fix also affect ISSD and ISDC.
IG-15547	Spot Height text is shifted. Using the Place Spot Height command caused the text to be shifted away from the desired target by a large amount when placing them in the stereo view.
IG-23385	ISFC fails to open feature database. Error occurs if the user attempts to open a feature table with a path that exceeds 132 characters. (Fix provided that allows up to 256 characters.)

ImageStation DTM Collection (ISDC)

Support Ticket	Description
IG-22727	Input External Data fails to read ISAE data when run within ISSD. Trying to run the Input External Data command while running ISDC within the ISSD workspace fails to locate the project's .CNT file that was generated from the ISAE process, as reported on the dialog when you open it (see attachment). When running ISDC standalone, the user is prompted to browse to the ISPM project so that it can locate the .CNT files for the project, and this all works perfectly fine. But when run from within ISSD, the process should already be able to determine the active ISPM project and locate the .CNT file(s).
IG-17135	Mass Point Eraser causes crash. Using the Mass Point Eraser command in ISDC causes ISSD to get into a bad state. You can use it for a while but after you've been in and out of roam a couple few times or change the zoom factor a few times it will get into a bad state and either hang or crash.
IG-14207	LAS2DTM converter has problems. The LAS2DTM batch converter that is delivered with ISDC assumes that the Z input value is always in meters. If you run the las2dtm.bat file you will see the output XY values are correct but the Z value is 3.2808 times larger than it should be. Additionally, the output CSF file always has its horizontal resolution for both Horizontal and Vertical set to .01, even though the input was 1.0. Having said that, this command should not require an output CSF file anyway, but it is a mandatory command line argument. **Workaround is to provide an input CSF file with the Vertical units set to meters.**

| IG-8031 | Custom Edit > Delete commands constantly update surfaces.

When using any Custom Edit commands that delete points, or when using the Mass Point Eraser, ISDC issues an Update Surfaces call every time, which is unecessary and time-consuming when working with large data sets. It should only do this if Dynamic Triangles or Dynamic Contours are enabled. |

ImageStation Image Formatter (ISIF)

Support Ticket	Description
IG-22137	Converting ECW to TIFF creates incorrect GeoTIFF info. I converted an ECW v2 file but the georeferencing information is incorrect in the output BigTIFF file.
IG-6700	Add logic to maintain georeferencing information when reformatting NITF files. A NITF file converted to TIFF, BIGTIFF, or JPEG 2000 will now contain GeoTIFF information including the raster to world matrix if contained within the NITF file.

ImageStation Automatic Elevations (ISAE)

Support Ticket	Description
n/a	

ImageStation Automatic Elevations DSM (ISAD),
ImageStation Automatic Elevations Extended (ISAE Ext, deprecated)

Support Ticket	Description
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 in ISAE-Ext 2018. 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 in ISAD does not exhibit this problem.

Support Ticket	Description
00007396 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 in ISAD does not exhibit this problem.
IG-26217	Generate subsampled point cloud fails for satellite projects. If the output coordinate system is geographic, the Generate subsampled point cloud option fails estimating nominal point sampling on satellite projects.

ImageStation OrthoPro (ISOP)

Support Ticket	Description
IG-7254	Feathering close to product boundary does not continue to adjacent tile. OrthoPro will not feather across butt-joined output tiles, meaning that if a seamline comes close to the edge of an output tile without crossing the tile, the feathering will not continue into the adjacent tile which results in the edge of the tile being visible in the output images.
00055270 IG-18263	Mosaic is crashing for some data sets, error code 0xC0000409. New seamline generation method caused some polygons to be created in the wrong direction.
00063468 IG-20328	Areas get red-filled instead of white-filled. During rectification, if the user has the void fill color set to 255, tiles that are partially filled with data and partially filled with voids come out red instead of white.
00004442 IG-10802	Rectify.exe runs out of memory if Spacing in Pixels is 1. When the pixel spacing in Rectify.exe is set to 1, memory is not utilized properly and can crash the program.
IG-4006 IG-15826	ECW raster georeferencing improvements. Reads and writes GeoTIFF style tags to ECW raster files.
00079060 IG-24510	Reading 4-band JPEG2000 untiled files causes crash. Opening an untiled JPEG2000 file with 4-bands written by older versions of GeoCompressor or ECW SDK produces a crash.

ImageStation PixelQue (ISPQ)

Support Ticket	Description
IG-19671	Select Image Bands doesn't take effect unless a LUT is loaded. Using 3-band images, add one or more of the product orthos (0_0, 0_1, etc.) to a PQ warehouse, select the images, then use Select Image Bands to change the band order to 3-2-1 and click OK or Apply. Notice nothing happens. If you use Load LUT to load 0_0.LUT from the same folder to the images then you will see the images take on the red tint that they should have to begin with. This is not a common workflow for aerial frame data, but could be more of an issue for satellite imagery.

ImageStation Extract CSF (ISEC)

Support Ticket	Description
n/a	

ImageStation Raster Utilities (ISRU)

Support Ticket	Description
IG-18228	Opening Help > About causes the dialogs to shrink on 4K displays or when display scaling is set to greater than 100%. On 4K displays, opening Help About causes all the ISRU dialogs to shrink except for RasView. On 4K displays or when display scaling is set to greater than 100%, opening Help > About causes all the ISRU dialogs to shrink except for RasView. Update: it doesn't actually require 4K display - same issue happens if **Windows Settings > System > Display > Scale and layout** is set to something other than 100%. For example, my laptop which is 1920 x 1080 and runs at the recommended 125% scaling, exhibits the problem. If I set the scaling to 100%, the problem doesn't happen.
IG-22129	Converting ECW to TIFF does not create GeoTIFF info. I converted an ECW v2 file but the output BigTIFF file does not contain any georeferencing information.
IG-17941	Submit Later doesn't work in Overview Utility. The Submit Later option in the Overview Utility doesn't work. It needs to be modified to work with the Windows 10 protocol.

IG-17942	Resolution Calculator throws error. If you open Resolution Calculator and click OK to save the settings it will throw the following error because the file that it is trying to update is write protected in the product installation folder. The output should be redirected to the ProgramData folder. -------------------------- Error from Resolution Calculator -------------------------- Error opening: C:\Program Files (x86)\Hexagon\ISRU\etc\0409\rescalc.def. -------------------------- OK --------------------------
IG-18030	RasView and Display Header commands can't display IMG files. The RasView and Display Header commands are unable to open IMG format image files.
00022893 IG-9739	Converting a 16-bit 4-band LZW compressed file with ISIF or ISRU results in corrupt output file. Unable to display 16-bit LZW raster files (with a horizontal differing predictor) properly. The problem was not with writing the files as reported, but with reading these files.
IG-18227	Toolbar menu icons are too small on 4K displays. The toolbar menu in RasView has really tiny icons when opened on a 4K display.

Deprecated

MicroStation V8i, Power InRoads V8i, Power GEOPAK V8i

The MicroStation-based products ISSD, ISFC, ISDC, and ISAE will no longer install and run on earlier versions of 32-bit MicroStation V8i, Power InRoads V8i, and Power GEOPAK V8i, which are at end-of-life, with support from Bentley for the SELECTSeries 1-4 versions being discontinued at the end of 2020 and support for the SELECTSeries 10 version being discontinued at the end of 2021. If users need to continue to run V8i, then they should continue to use the MicroStation-based products from the ImageStation 2020/16.6 release. The MicroStation-based products in this release support the new 64-bit MicroStation CONNECT Edition and OpenRoads Designer CONNECT Edition.

Binary Project Types

The option for storing ImageStation projects in binary format has been removed. Projects are now always stored in ASCII format.

Generate Stereo Mate

This free utility program has been deprecated. The interface to add models from the program into the ImageStation project via the ISSD Select Model user interface has also been removed.

LUT Commands in ISRU

Save LUT, Load LUT, and Discard LUT were removed from ISRU for the following reasons:

- None of the LUT commands are enabled if working with anything other than 8-bit imagery.
- Save LUT doesn't take into account any changes made with the Gamma LUT or Auto Stretch options applied to the image. It only writes out whatever was applied with the Load LUT command.
- Discard LUT causes all subsequent LUT adjustments with Gamma LUT or Auto Stretch to be ignored until the image is closed and re-opened.
- Better LUT commands are available in ISDIA.

ImageStation Automatic Elevations-Extended

ImageStation Automatic Elevations-Extended (ISAE-Ext) has been replaced with ImagesStation Automatic Elevations DSM (ISAD). Users must uninstall ISAE-Ext in order to install ISAD. ISAD fixes many problems associated with the previous product, is two to three times faster, uses a fraction of the memory, provides more control for the creation of thinned point clouds, and supports satellite and scanned film projects as opposed to just digital aerial frame projects.

ImageStation Coordinate System Operations

ImageStation Coordinate System Operations (ISCSO) has been deprecated and removed from the ImageStation product delivery media. All coordinate system operations required by other ImageStation applications can be performed using CSF files.

Generate Rational Functions

The Generate Rational Functions command has been replaced with the Generate Stereo Drives command. The commands are very similar in purpose and function, but bitmap.dat files are no longer required, and SLG/SRG files are no longer generated. Any generated metadata is now stored in the stereo\models subfolder of the parent project folder.

CADMap Commands

The CADMap commands that were included with ISFC have been deprecated.

Export LAS2HPC in ISDQ

The LAS2HPC export command in ISDQ has been deprecated. Hexagon has moved to a new format for point cloud compression, HSPC.

About Hexagon

Hexagon is a global leader in digital reality solutions, combining sensor, software and autonomous technologies. We are putting data to work to boost efficiency, productivity, quality and safety across industrial, manufacturing, infrastructure, public sector, and mobility applications.

Our technologies are shaping production and people-related ecosystems to become increasingly connected and autonomous — ensuring a scalable, sustainable future.

Hexagon's Safety, Infrastructure & Geospatial division improves the performance, efficiency and resilience of vital services. Its Safety & Infrastructure solutions enable smart and safe cities. Its Geospatial software leverages the power of location intelligence.

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