



**GEOSPATIAL OFFICE SOFTWARE**  
**NOVEMBER 2020, V 11.0.0**  
**DECEMBER 2020, V 11.0.1**  
**FEBRUARY 2021, V11.0.2**  
**JUNE 2021, V11.0.4**

## Release Notes for UASMaster 11

### Trimble UASMaster Version 11

Trimble announces the major release 11 for all Inpho software products including UASMaster.

Note: These Release Notes are updated for version 11. We highly recommend always updating to the latest software release.

Users with valid maintenance will receive an update file for their license

### More information

For more information, contact your Trimble Inpho Support Team at [imaging\\_support@trimble.com](mailto:imaging_support@trimble.com). The software is available for download on <http://geospatial.trimble.com/uasmaster-download>



<https://geospatial.trimble.com/products-and-solutions/inpho-uasmaster>

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## Highlights in UASMaster 11

### New Unified Matching Engine in UASMaster

Trimble UASMaster version 11 offers a new matching engine which is integrated and unified in both aerial and close range scenarios. This engine empowers the matching geometry and tie point generation, specifically for challenging UAS projects in aerial scenarios. The main strengths of this engine are:

- Outstanding better performance in processing of the Close Range 3D scenarios (5x faster)
- Simplification in the beginning steps by no need to import navigation information (GNSS/IMU) and Ground Control Points (GCP's) for image matching
- Even more stable processing for aerial scenarios with challenging flight situation (e.g. windy atmosphere)
- Supporting more platforms and sensors based on strong image matching for complex imagery with oblique and rotating cameras (e.g. S.O.D.A. 3D)
- Increasing the quality and efficiency of adjustment by stronger block geometry based on the smart tie point selection and better connectivity
- Simplification in the workflow for choosing the appropriate matching strategy within scenarios

### High quality true orthophotos

In UASMaster version 11 a higher quality true orthophoto can be generated based on the Semi-Global-Matching (SGM) algorithm. This product offers true orthophotos with more crispy edges along the buildings, better overall color balancing and better separation of complex objects like tree crowns from neighboring environments.

More information can be found in the Release Notes and on the Website:

<https://geospatial.trimble.com/products-and-solutions/trimble-inpho-uasmaster>

New users can contact their regional sales managers for purchasing/updating new licenses or requesting for evaluation licenses:

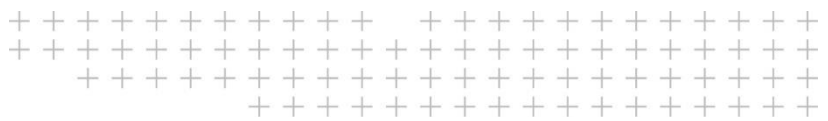
<https://geospatial.trimble.com/where-to-buy>



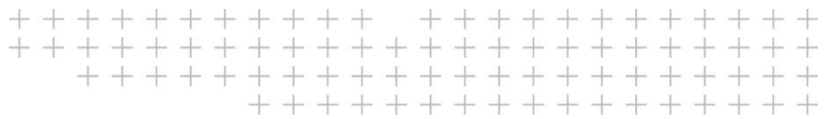
# List of Changes

## Main window and project handling

Change	Description
<b>WIBU Codemeter vulnerabilities</b>	<p>The security advisories from WIBU systems are published to notify customers about security vulnerabilities.  <a href="https://www.wibu.com/support/security-advisories.html">https://www.wibu.com/support/security-advisories.html</a></p> <p>The problem is solved with the driver version 7.10a or higher. The bundle installer of version 11 is equipped with this driver. In case the currently installed Inpho version should not be updated or the bundle installation cannot be used we strongly recommend to install the newest driver which can be downloaded from <a href="https://www.wibu.com/support/user/user-software.html">https://www.wibu.com/support/user/user-software.html</a></p>
<b>Improvement 11.0.4: Translation update</b>	Completion of translation files and German translation
<b>Improvement and Fix 11.0.4: Geoids for Lithuania</b>	The previously saved geoid “Lit15” for Lithuania was mirrored, i.e. not correct. With version 11.0.4 the correct geoid “Lit15g” is now delivered. In addition, the geoid “Lit20” was introduced.
<b>Improvement 11.0.4: Updated installation manual</b>	The manual is revised and updated about NVIDIA 3D Vision on Windows10.
<b>Fix 11.0.4: TBC subscription license</b>	After a new installation of TBC, TBC had to be started and closed once so that UASMaster could get a license. Now it is possible to open UASMaster even without opening TBC before after a fresh installation.
<b>Fix 11.0.4: TBC – Create proper LTP-system (topocentric CRS) at UASMaster call</b>	A syntax format error in the WKT string resulted in unrecognized keywords for the project coordinate system when sending the data from TBC to UASMaster (CloseRange3D).



<p><b>Improvement 11.0.2: Updated Manual</b></p>	<p>The Georeferencing section of the Reference Manual UASMaster is updated.</p>
<p><b>Fix 11.0.2: Image Commander – “Disk full!” message</b></p>	<p>Starting the pyramid generation in the Image Commander for images loaded from a UNC path could show a “Disk full!” message although there is enough space available. The message is now suppressed on file systems where the remaining disk size cannot be determined. The caveat is that this disables disk space checking on UNC paths completely.</p>
<p><b>Fix 11.0.2: Project Editor, Image Viewer crash</b></p>	<p>A problem reading the XMP and EXIF information of JPEG images is corrected.</p>
<p><b>Fix 11.0.1: Issue with 4k displays</b></p>	<p>In some cases the user interface was not displayed. When changing the scale in the Windows Display settings, it could be that black bars appeared on the interface.</p>
<p><b>Fix 11.0.1: Manual strip generation</b></p>	<p>In the Project Editor a problem during manual strip generation was fixed.</p>
<p><b>Fix 11.0.1: Select orphans</b></p>	<p>A malfunction in the Select orphans function (GNSS/IMU dialog) was corrected.</p>
<p><b>Fix 11.0.1: Exif2Gps tool</b></p>	<p>Using Exif-&gt;GPS for USft projects did not work correctly. The transformed heights were wrong and the interface did not show the correct units. This is fixed.</p>
<p><b>Fix 11.0.1: TBC Coordinate systems</b></p>	<p>UASMaster projects that were converted with the functionality Send to UASMaster from TBC are utilizing the TBC coordinate system database. The registry entry to access this database has changed. This change is now also considered in UASMaster. In case UASMaster cannot open the project file after using the Send to UASMaster function, please install version 11.0.1.</p>
<p><b>Improvement 11.0.0: Camera database</b></p>	<p>The following entries of the camera database were updated and corrected: DJI Mavic Air, DJI Phantom 4, DJI Zenmuse X5</p>
<p><b>Improvement 11.0.0: Check dewarp parameter of xmp header</b></p>	<p>DJI drones can offer rectified images. This information is part of the xmp header of the images. In case the images are rectified, a distortion from the camera database should not be applied. The images are treated as being free of distortion.</p>



<b>Improvement 11.0.0: Browse button visibility</b>	The browse button was represented with 3 small dots only and was therefore difficult to see in some cases. This has been changed so that the appearance is enhanced.
<b>Improvement 11.0.0: EXIF import</b>	The user can decide now if it is necessary to read the EXIF header of the imported images. This saves a lot of time when loading thousands of images without important information in EXIF header.
<b>Fix 11.0.0: Export to SummitEV does not transfer the file name</b>	Exporting a project to SummitEV was creating the .smtxml and the .con files without the file name.
<b>Fix 11.0.0: Remote Desktop Connection</b>	A workaround was introduced that prevent the software from crashing in case a Remote Desktop Connection is used.
<b>Fix 11.0.0: Display problems</b>	Several issues with dual monitor usage and 4k monitors are fixed in this version.
<b>Information 11.0.0: Scaling in 3D View</b>	The scaling of points in the 3D View can now be changed with the shortcut: Shift + mouse wheel.





## Georeferencing

Change	Description
<p><b>Improvement 11.0.4: Report file – Histograms</b></p>	<p>The histograms for analyzing the number, distribution and accuracy of the tie points are now highlighted in color for easier understanding.</p>
<p><b>Improvement 11.0.4: Possibility to extent the report file</b></p>	<p>Some customers wanted the listing in the PDF report not to be limited to one page for analyzing points in Gruber positions. Version 11.0.4 now offers the possibility to get a “long report” through the following settings in the registry:</p> <p>Set the registry entry LongReport == true  The registry entry has to be set in  HKEY_CURRENT_USER\Software\Trimble\UASMaster&lt;version&gt;\global\Reporting\</p>
<p><b>Improvement 11.0.4: UASMaster (CloseRange3D), problem to identify selected image during point measurement.</b></p>	<p>The active photo in the stamp bar during point measurement was almost invisible for images with blue and white content. Now the selected image is marked with an extra frame and can be recognized easily.</p>

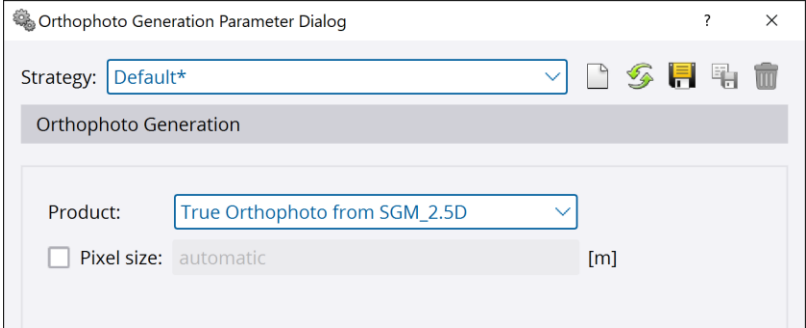


<p><b>Fix 11.0.4: Display colors of points in UAS Measure</b></p>	<p>The display colors of the “measured”, “unmeasured”, “estimated” and “calculated” point positions are again shown in different colors and are not overlaid by one color.</p>
<p><b>Fix 11.0.4: UASMaster (CloseRange 3D) - 3D Reconstruction failed for projects without GNSS data</b></p>	<p>For projects without GNSS information the 3D Reconstruction ended with the error message “WRK_CRS is neither not-LSR nor LTP system” if the ground control points were not measured first. With this version, it works again when starting the 3D reconstruction before the ground control point measurement.</p>
<p><b>New Feature 11.0.0: Unified tie point extraction</b></p>	<p>The algorithm for the tie point extraction (3D Reconstruct) was completely revised and unified for Area Mapping and Close Range 3D projects. This ensures a better tie point geometry and distribution, which improves the results especially for the camera calibration.</p>
<p><b>Improvement 11.0.0: Point filter - <i>automatic</i></b></p>	<p>The UAS Measurement offers now the option to filter the tie-points based on the measurement method <i>automatic</i>. When creating a new <i>Point List Filter</i> you can create a new <i>Filter Condition</i> and Add the Field <i>PointMeasureModeFilter</i>. Set the CompOp to “==” and the Value to <i>TPG</i> and you will only see automatic generated points.</p>
<p><b>Fix 11.0.0: Balanced radial distortion</b></p>	<p>An issue in the camera calibration with the balanced radial distortion parameters is fixed.</p>



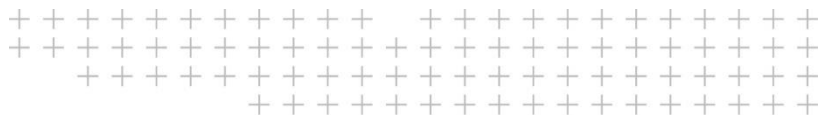
## Surface and Orthophoto Generation

Change	Description
<p><b>Improvement 11.0.4: Update of library</b></p>	<p>The update contains improvements and bug fixes</p> <ul style="list-style-type: none"> <li>&gt; improved Cesium mesh export</li> <li>&gt; improved performance in the analysis step for extremely large projects</li> <li>&gt; the DSM point color results are now always using 16-bit colors</li> <li>&gt; fixed an issue where the DSM step would not finish in some situations</li> <li>&gt; fixed an issue where disabling the export of additional .tfw file led to a “file not found error in the DSM step</li> <li>&gt; point clouds now contain a georeference also if the project uses an area shape file</li> <li>&gt; fixed an issue where the number of processed tiles reported in the DSM step was incorrect</li> <li>&gt; fixed an issue where the mesh results could contain noise consisting of small triangles</li> <li>&gt; fixed an issue which led to increased memory usage</li> <li>&gt; the red and blue color channels are no longer swapped in the DSM cloud results for datasets using 16-bit colors after running just the DSM and not the true ortho step</li> <li>&gt; fixed an issue where the DSM workflow failed with an “image have differing types” error</li> <li>&gt; fixed an issue where the dense matching step could fail without an error message</li> </ul>
<p><b>Fix 11.0.4: Endless loop</b></p>	<p>It could happen that the 3D point cloud filter ended in an endless loop. This is fixed with version 11.0.4.</p>
<p><b>Improvement 11.0.2: Image format after rectification</b></p>	<p>When using JPEG compressed images the Image Rectifier produces now also compressed images for the usage during point cloud generation with SGM. Until now uncompressed images were generated which increased the required disc space unnecessarily.</p>

<p><b>New Feature 11.0.0: True Ortho from SGM</b></p>	<p>The SGM_2.5D process generates now a True Orthophoto directly within your UASMaster project and adds this mosaic to your project. The resulting mosaic will be written, as usual, to the mosaic.tif file in your project folder. This new feature is available in the Orthophoto Generation (UASEdit) and Batch Processing dialog:</p> 
<p><b>Improvement 11.0.0: LAZ format for processing</b></p>	<p>Drastic reduction in project size by using .laz as internal point cloud format and improved reading performance for .laz files.</p>
<p><b>Improvement 11.0.0: Image preparation</b></p>	<p>Image preparation is processed now on multiple images simultaneously.</p>
<p><b>Improvement 11.0.0: Analysis step</b></p>	<p>Reduced memory consumption and decreased runtime in the Analysis step.</p>
<p><b>Improvement 11.0.0: Performance in DSM</b></p>	<p>Significant performance improvements in the DSM step (SGM).</p>
<p><b>Improvement 11.0.0: Performance in mesh output</b></p>	<p>Significant performance improvements when exporting mesh results to SLPK, Cesium, dae, and obj.</p>
<p><b>Fix 11.0.0: Freeze during Ortho generation</b></p>	<p>A problem is fixed where in rare cases the generation of the ortho-mosaic froze.</p>



<p><b>Fix 11.0.0: Robust ortho generation</b></p>	<p>Distortion in single orthophotos due to incorrect DTM points negatively affected the quality of the mosaic. Now the generation of the single orthophotos is more robust to insufficient quality of the DTM.</p>
<p><b>Fix 11.0.0: Missing untextured mesh</b></p>	<p>In case the LOD mesh output is generated without texture, it will now be written in the mesh result folder accordingly.</p>
<p><b>Fix 11.0.0: Smooth DSM result</b></p>	<p>Fixed an issue where DSM results were too smooth when using a low-quality setting (SGM).</p>
<p><b>Fix 11.0.0: Shapefile warnings</b></p>	<p>Fixed an issue where the SGM process could crash due to too many shapefile related warnings.</p>
<p><b>Fix 11.0.0: Issue with LOD mesh</b></p>	<p>Fixed an issue where parts of the mesh were missing or included multiple times with incorrect positions in mesh results in the lod_dae and lod_obj format.</p>
<p><b>Fix 11.0.0: Gaps between DSM tiles</b></p>	<p>Fixed an issue that could lead to gaps between DSM tiles (SGM).</p>
<p><b>Fix 11.0.0: Texturing uses CPU instead of GPU</b></p>	<p>Fixed an issue where the texturing would use the CPU for compressing the textures in some situations even though a suitable GPU is available, which lead to slowdowns.</p>
<p><b>Fix 11.0.0: Crash in DSM Mesh</b></p>	<p>Fixed a potential crash that could occur after an error during the DSM Mesh.</p>
<p><b>Fix 11.0.0: GPU memory consumption</b></p>	<p>Improved the GPU memory consumption estimation in the Dense Matching step resulting in fewer CPU fallbacks.</p>
<p><b>Fix 11.0.0: Rerun project</b></p>	<p>Fixed an issue where re-running a project in the same directory could potentially lead to errors.</p>



<b>Fix 11.0.0: Error with polygon during texturing</b>	Fixed an issue that could lead to a polygon self-intersection error during texturing.
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## Point Cloud Editing

Change	Description
<b>Fix 11.0.1: Edit Mosaic</b>	The <i>Edit Mosaic</i> function was greyed out. It is available again.