



PHOTOGRAMMETRY – AGISOFT METASHAPE

Downloading and Installing Agisoft Metashape on
Desktop (Standard Edition) (04.03)

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ABOUT AGISOFT METASHAPE

[Agisoft Metashape](#) is a stand-alone software product that performs photogrammetric processing of digital images and generates 3D spatial data to be used in GIS applications, cultural heritage documentation, and visual effects production as well as for indirect measurements of objects of various scales. This software provides a platform for cultural heritage specialists to create virtual reality scenes, textured 3D meshes, orthographic projections, geo-referenced maps and much more from images and/or laser scans completely automatically.

This **ASOR Tutorial (04.03)** will cover how to download and install Agisoft Metashape on a Windows desktop.

RECOMMENDED COMPUTER SETTINGS

Before installing Metashape on your computer, you should ensure that your computer has the necessary capabilities to run the program. An inadequate hardware setup will result in your Metashape software stalling or crashing when attempted to process large renderings. The primary considerations are:

1. **RAM** – 8GB of RAM or higher is recommended for using Metashape and avoiding system crashes.
2. **CPU Speed** – Higher than 1.9 GHz is recommended, although not required. Metashape might run slow at lower levels.
3. **Hard Drive Storage** – This is dependent on your datasets, but 1GB or more of storage would provide ample space.

To check hardware for Windows 10 users:

1. Click on the Windows Start button
2. Click on Settings (the gear icon)
3. In the Settings menu, click on System
4. Scroll down and click on About
5. On this screen, you should see specs for your processor, Memory (RAM), and other system info, including Windows version

To check hardware for Windows 7 users:

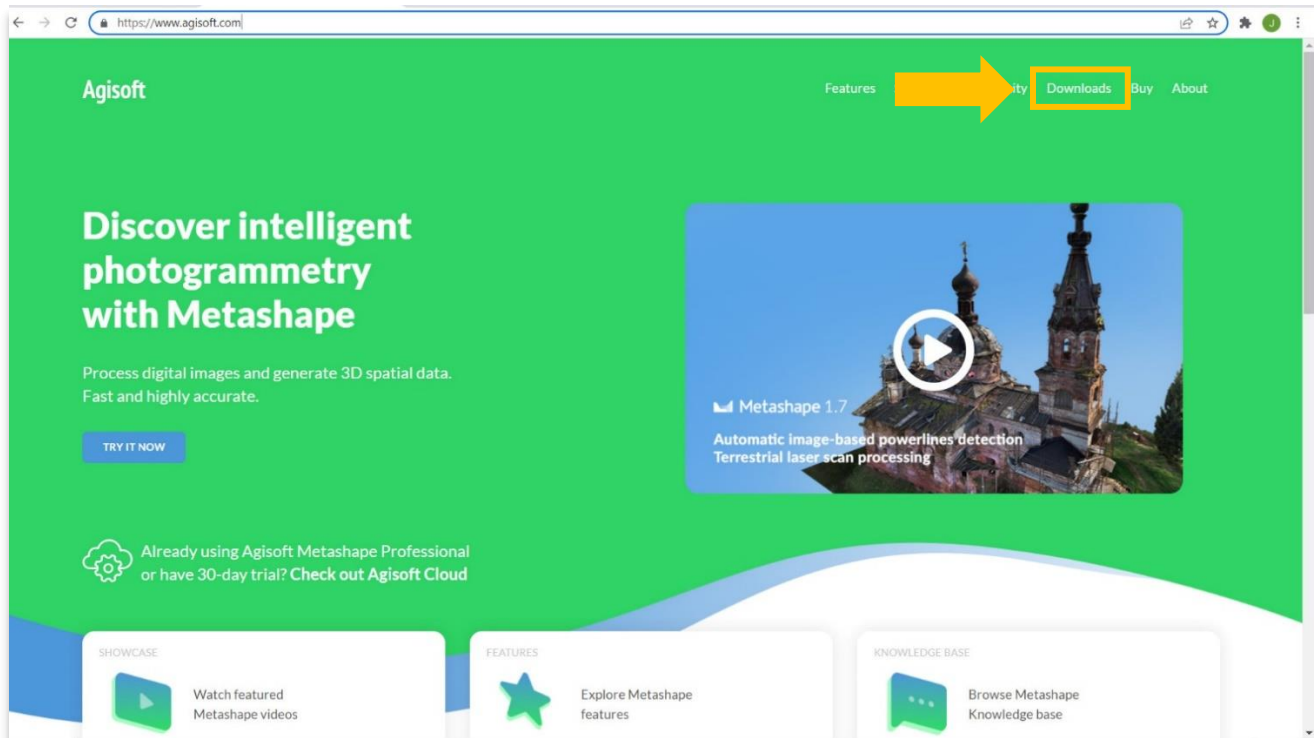
1. From the desktop find the icon that is labeled “My Computer”. Right-click on this and select Properties.
2. A window should appear summarizing your PC hardware specs including processor, Memory (RAM), and other system info, including Windows version.

To check hardware for MacBook users:

1. Click the Apple icon and choose About This Mac.
2. The Overview tab will provide the operating system version, processor, and memory information

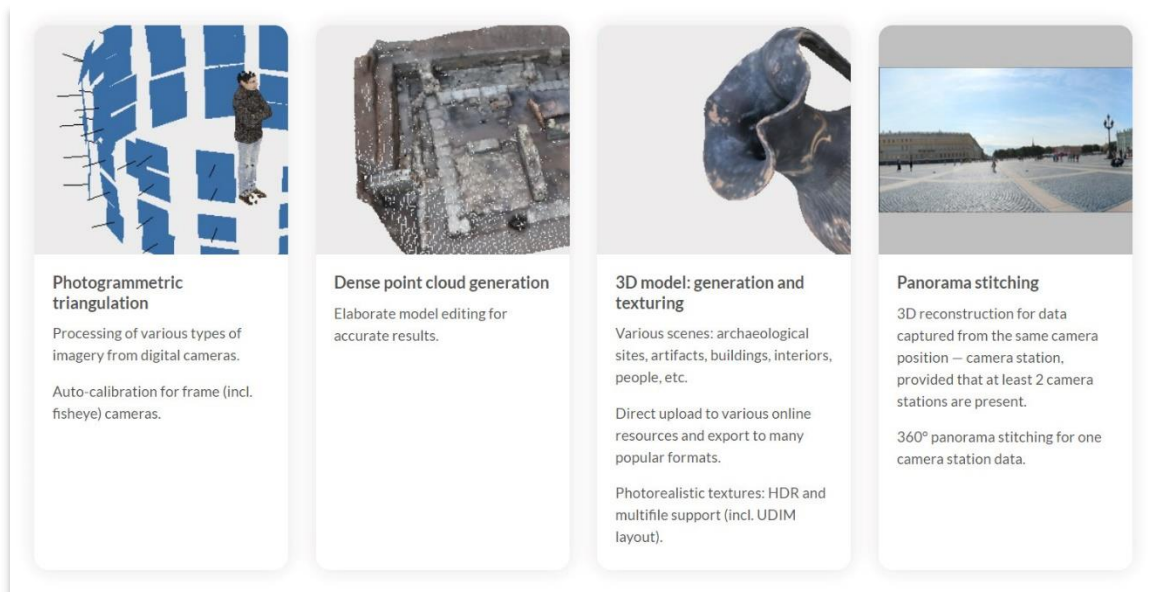
WORKFLOW

1. Open the Agisoft Metashape website through a web browser (recommend using chrome for this step): <https://www.agisoft.com/>. Click the **Download** link from the top menu bar.



2. You will be directed to the Downloads page. You can choose either the **Standard Edition** or the **Professional Edition**. The Professional version includes many more features that help with aerial mapping and landscape surface construction, which depending on your project may not be necessary. Here are some of the differences between the two programs:

STANDARD EDITION



PROFESSIONAL EDITION FEATURES



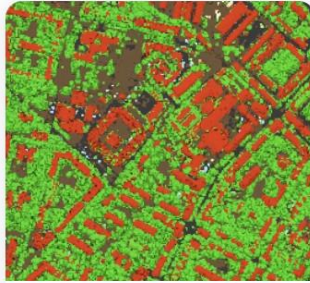
Photogrammetric triangulation

Processing of various types of imagery: aerial (nadir, oblique), close-range, satellite.

Auto calibration: frame (incl. fisheye), spherical & cylindrical cameras.

Multi-camera projects support.

Scanned images with fiducial marks support.

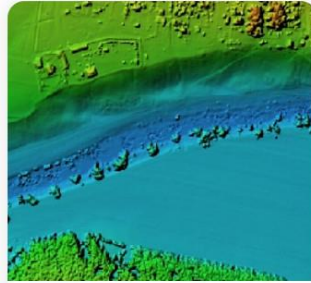


Dense point cloud: editing and classification

Elaborate model editing for accurate results.

Automatic multi-class points classification to customize further reconstruction.

Import/export to benefit from classical point data processing workflow.



Digital elevation model: DSM/DTM generation

Digital Surface and/or Digital Terrain Model – depending on the project.

Georeferencing based on EXIF meta data/flight log, GCPs data.

EPSG registry coordinate systems support: WGS84, UTM, etc.

Configurable vertical datums based on the geoid undulation grids.



Georeferenced orthomosaic generation

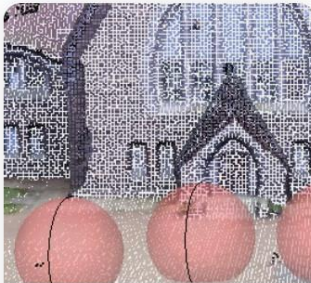
Georeferenced orthomosaic: most-GIS-compatible GeoTIFF format; KML files to be located on Google Earth.

Export in blocks for huge projects.

Color correction for homogeneous texture.

Inbuilt ghosting filter to combat artefacts due to moving objects.

Custom planar and cylindrical projection options for close range projects.



Terrestrial laser scanning (TLS) registration

Simultaneous adjustment of both laser scanner and camera positions.

Capability to combine TLS and photogrammetric depth maps.

Markers support and automatic targets detection for manual alignment of scanner data.

Masking instruments to ignore unwanted objects in scanner data.

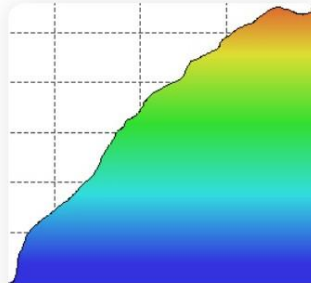


Ground control points / scale bar support

GCPs import for georeferencing and control over the accuracy of the results.

Coded/non-coded targets auto-detection for fast GCPs input.

Scale bar tool to set reference distance without implementation of positioning equipment.



Measurements: distances, areas, volumes

Inbuilt tools to measure distances, areas and volumes.

To perform more sophisticated metric analysis the products of photogrammetric processing can be smoothly transferred to external tools thanks to a variety of export formats.



Stereoscopic measurements

Professional 3D monitors and 3D controllers support for accurate and convenient stereoscopic vectorization of features and measurement purposes.

PROFESSIONAL EDITION FEATURES (CONTINUED)



3D model: generation and texturing

Various scenes: archaeological sites, artifacts, buildings, interiors, people, etc.

Direct upload to various online resources and export to many popular formats.

Photorealistic textures: HDR and multifile support (incl. UDIM layout).



Hierarchical tiled model generation

City scale modeling preserving the original image resolution for texturing.

Cesium publishing.



4D modeling for dynamic scenes

Multi camera rig data processing for creative projects in cinematographic art, game industry, etc.

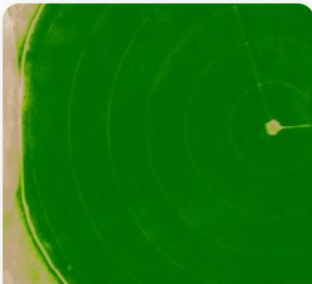
Basis for numerous visual effects with 3D models reconstructed in time sequence.



Panorama stitching

3D reconstruction for data captured from the same camera position – camera station, provided that at least 2 camera stations are present.

360° panorama stitching for one camera station data.

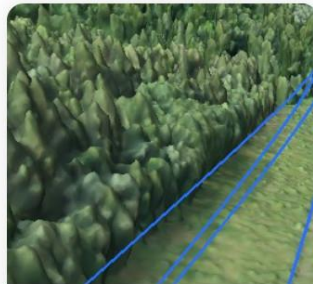


Multispectral imagery processing

RGB/NIR/thermal/multispectral imagery processing.

Fast reconstruction based on preferable channel.

Multichannel orthomosaic generation and user-defined vegetation indices (e.g. NDVI) calculation and export.

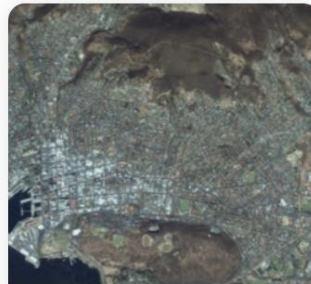


Automatic powerlines detection

Straightforward and time-efficient for large-scale projects since requires only aligned images as the input.

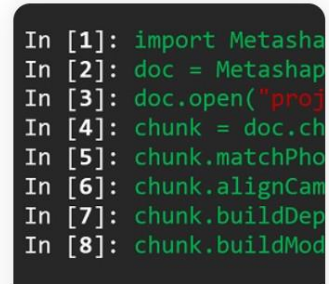
Results export in a form of a 3D polyline model for every wire.

Robust results thanks to catenary curve fitting algorithm.



Satellite imagery processing


Common processing workflow for panchromatic and multispectral satellite images is supported, provided that sufficiently accurate RPC data is available for each image.



Python and Java API


In addition to Batch processing - a way to save on human intervention, Python scripting and Java bindings suggests for sophisticated automation and customization options. Starting from the adding custom processing operations to the application GUI up to the complete job automation and integration to Python or Java pipeline.

PROFESSIONAL EDITION FEATURES (CONTINUED)



Network processing

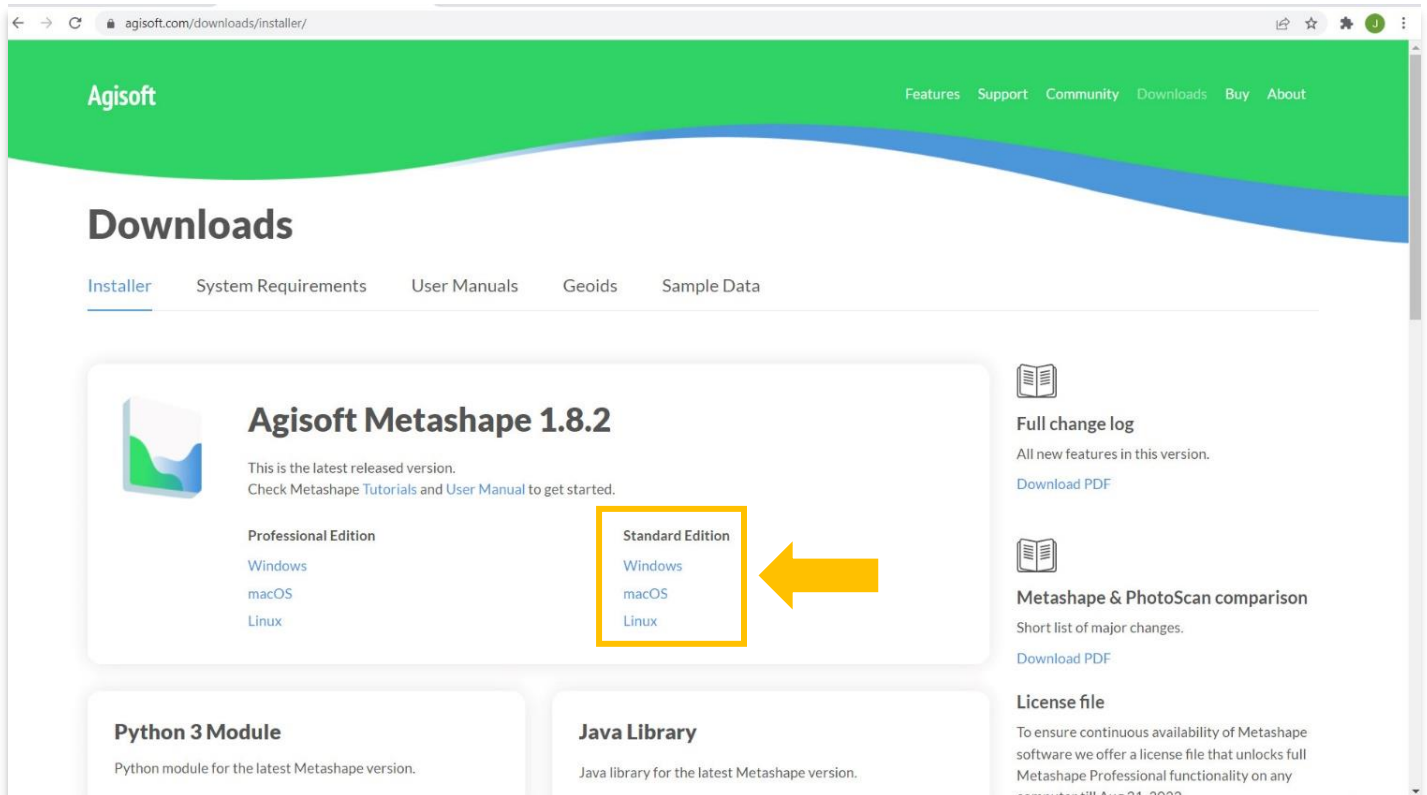
Distributed calculations over a local computer network to use combined power of multiple nodes for huge data sets processing in one project.



Cloud processing

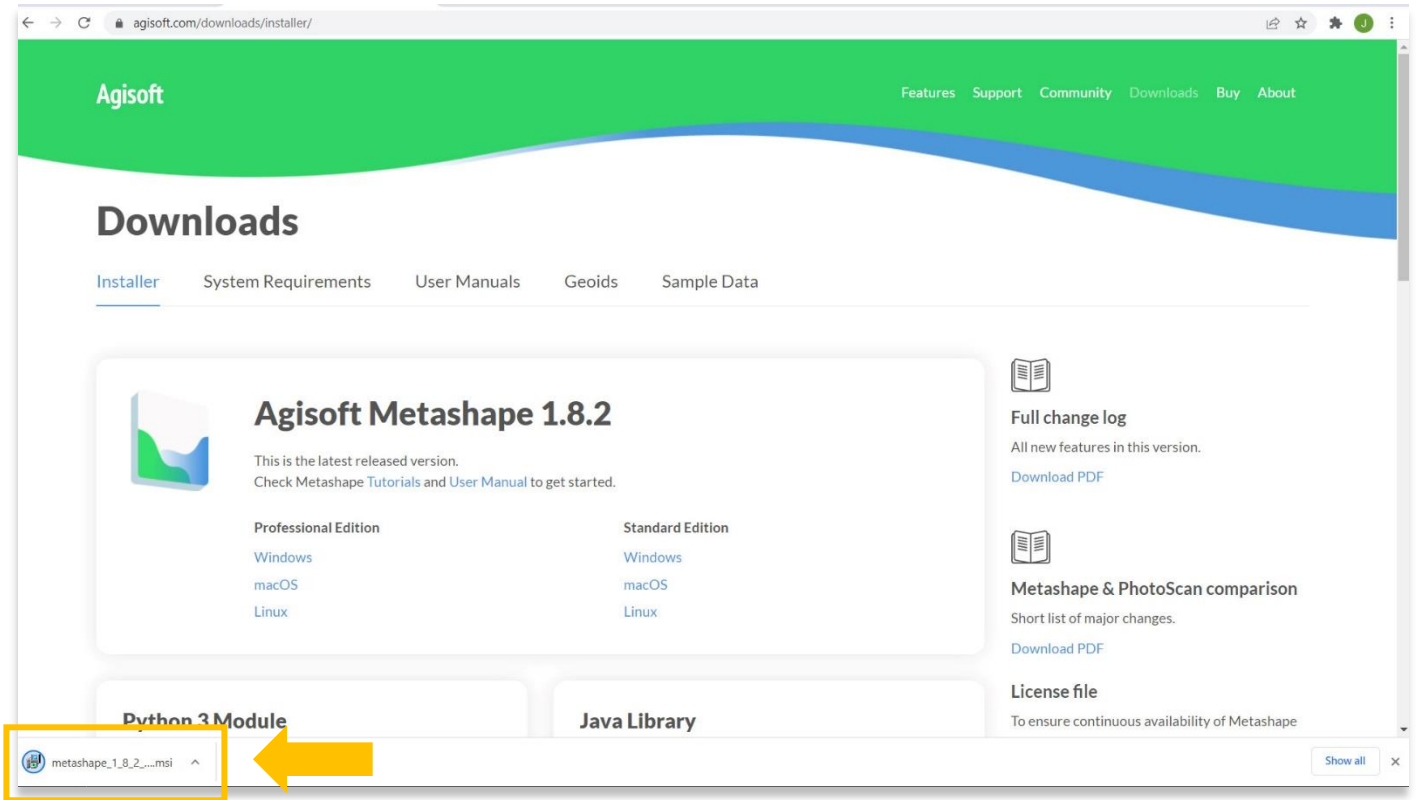
Cloud processing interface allows to save on the hardware infrastructure for photogrammetric pipeline, with further option to visualize and share the variety of the processing results online with colleagues or customers, as well as to embed published projects in your own web platforms.

3. You will be directed to the **Downloads** page. Select the **Windows** version under **Standard Edition**.

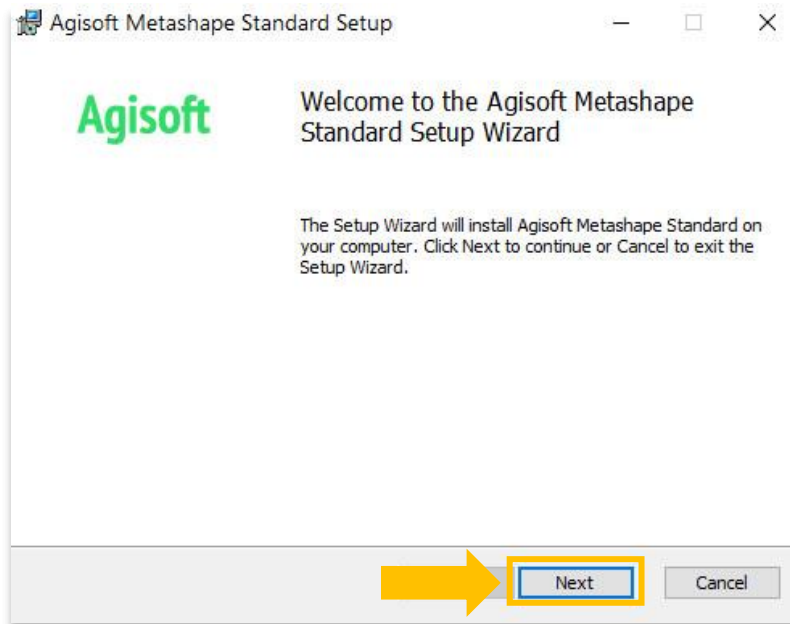


The screenshot shows the Agisoft website's Downloads page for Metashape 1.8.2. The main heading is 'Downloads' with sub-links for 'Installer', 'System Requirements', 'User Manuals', 'Geoids', and 'Sample Data'. The primary content area features 'Agisoft Metashape 1.8.2' with a note that it is the latest version. Underneath, there are two main categories: 'Professional Edition' and 'Standard Edition'. The 'Standard Edition' category is highlighted with a yellow box and a yellow arrow pointing to the 'Windows' option. Other options listed include 'macOS' and 'Linux'. To the right of the main content, there are links for 'Full change log', 'Metashape & PhotoScan comparison', and 'License file'. At the bottom, there are sections for 'Python 3 Module' and 'Java Library'.

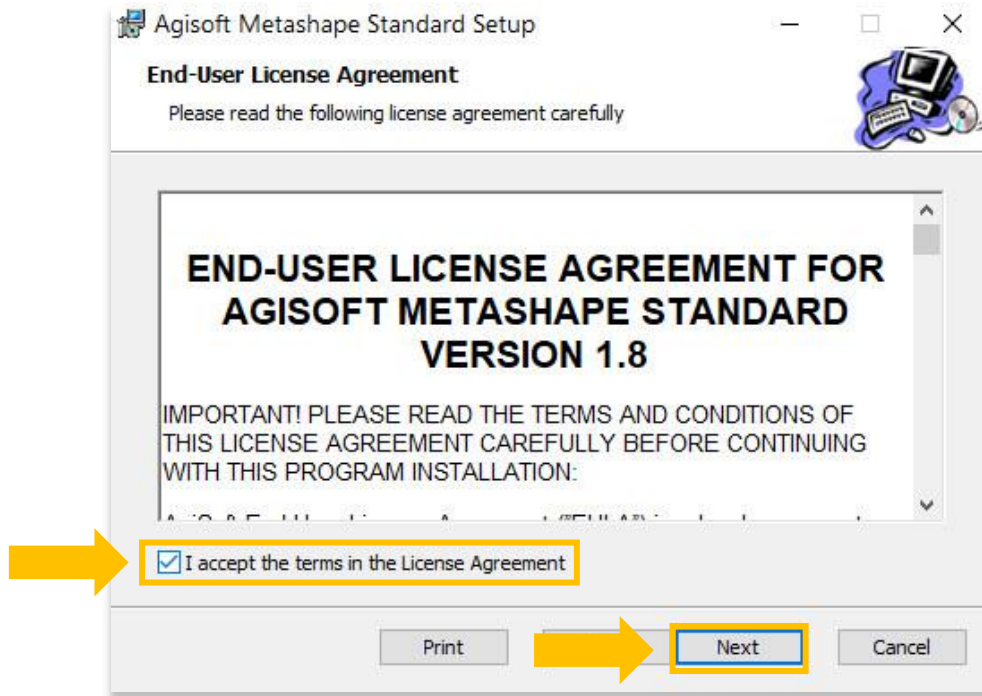
- The software installer will automatically download to your computer. Look for the file (.msi file type) at the bottom of your browser or in the local file directory on your computer. Begin the installation by double-clicking on the installer file.



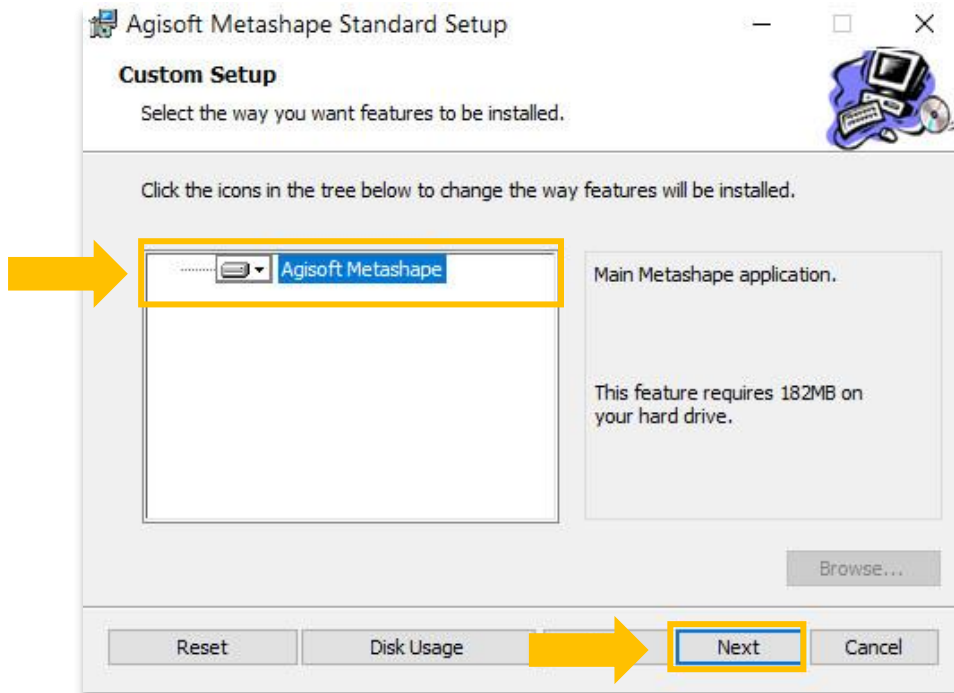
- Once the installer opens, select **Next** to begin the installation.



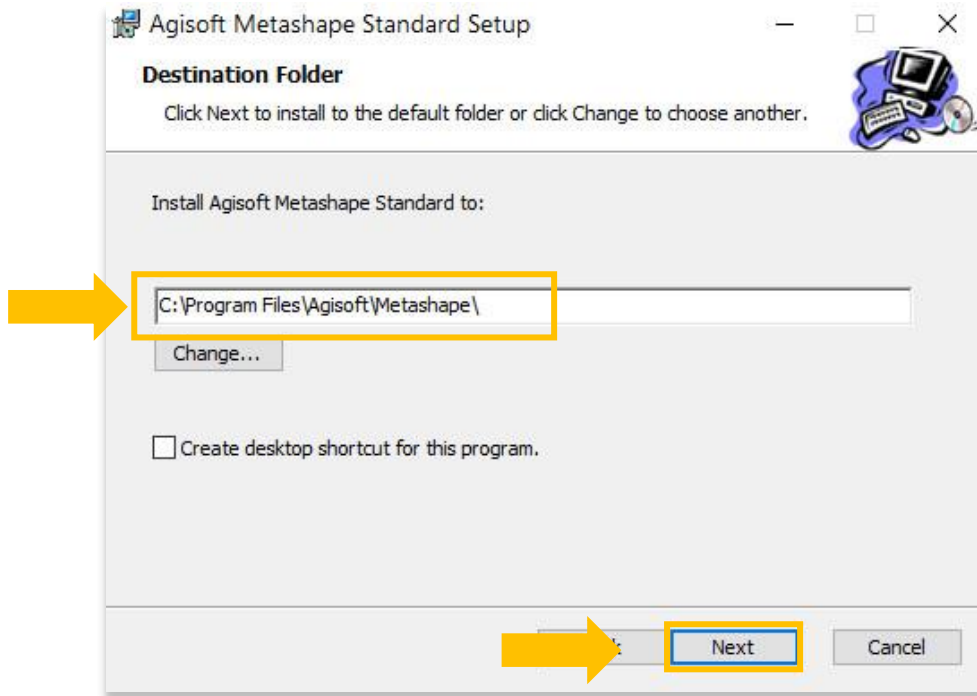
6. Read the End User License Agreement and check, "I accept the terms in the License Agreement." Select **Next**.



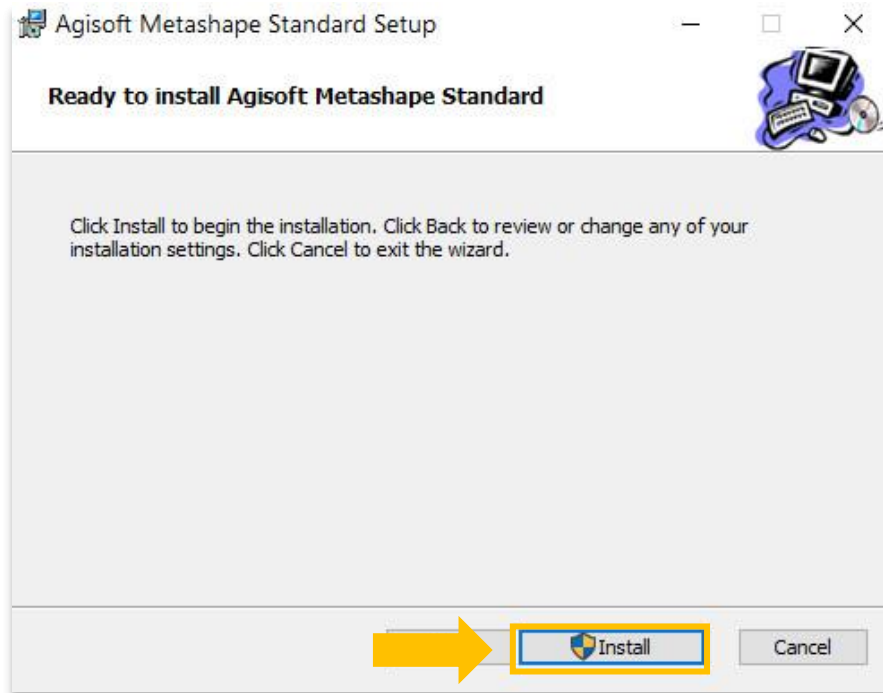
7. Highlight Agisoft Metashape from the list then select **Next**.



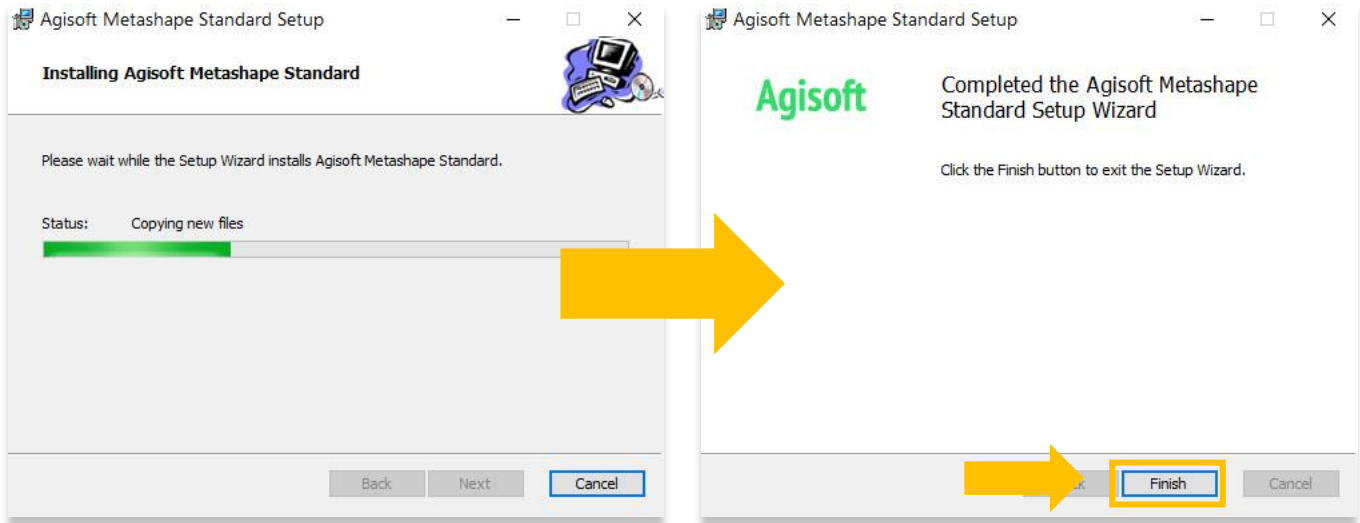
8. Choose the file directory location from your computer to install Metshape. It is recommended to choose **Program Files**. Select **Next**.



9. Click **Install**.

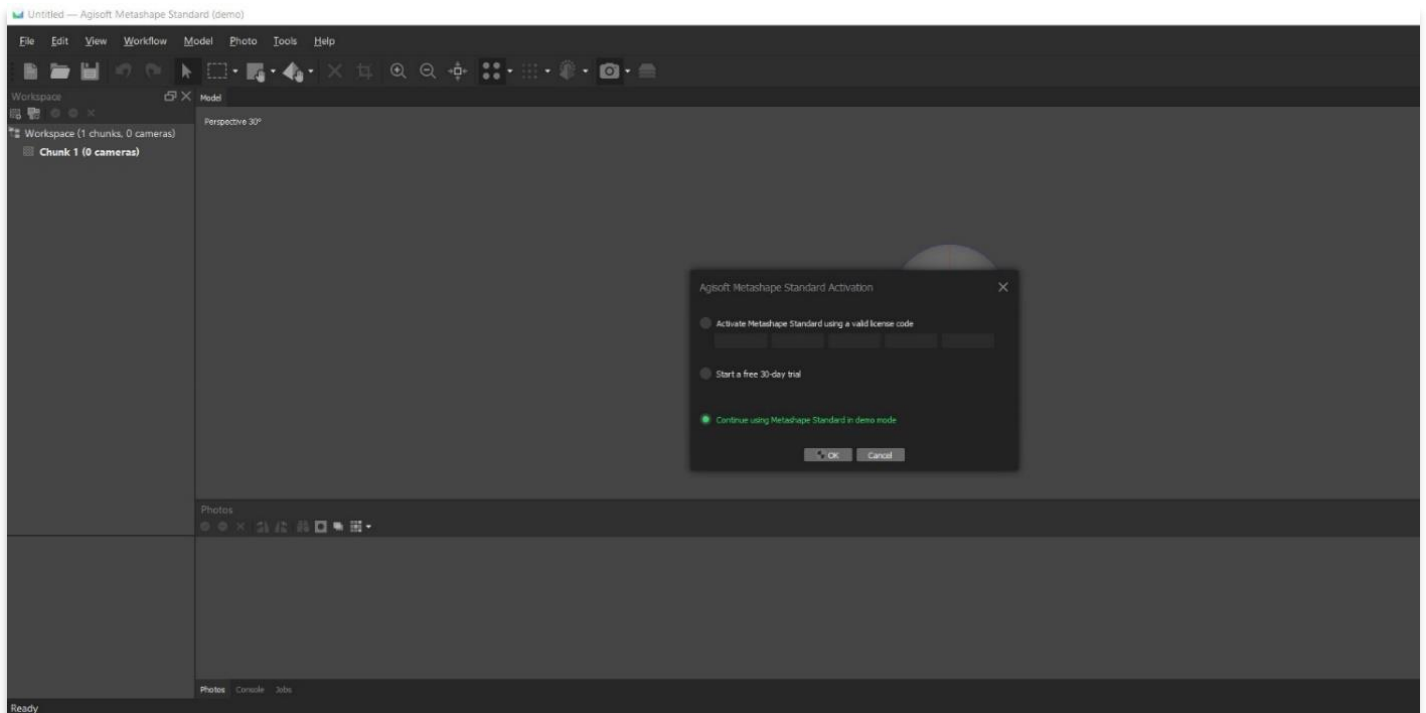


10. The installation process may take a few minutes to complete. Once finished, select the **Finish** button.



11. Once installed and opened, you will be prompted to select from one of three options:

1. Activate Metashape Standard using a valid license code (purchase on the Agisoft website and receive license code)
2. Start a free 30-day trial
3. Continue using Metashape in demo mode (cannot save projects)





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