AeroP a maP Technology Systems

DAT/EM ® Systems Middle East

ICAROS
Imagery Made Simple
OneButton™
Standard Edition

Enabling better business decisions from high resolution aerial imagery

Fueled by worldwide Unmanned Aircraft Systems (UAS) market growth, and miniaturized inexpensive sensor evolution, aerial imagery is now cheaper and easier to capture than ever before. The processing of that imagery into GIS (Geographic Information System) compatible maps is also evolving rapidly and dropping in cost. These developments have combined to provide a broad range of new applications and decision support capabilities.

The Icaros OneButton™ software is by far the industries' easiest-to-use image processing product. By utilizing the most advanced photogrammetric and computer vision algorithms, OneButton™ lets you easily and automatically create fully georeferenced products in 2D and 3D, while combining highly optimized performance to produce exceptionally fast and accurate results.

Outputs that can be produced from OneButton include traditional orthomosaics, true orthomosaics, multispectral band orthomosaics, DEMs (Digital Elevation Models), true color 3D point clouds, and photomesh. Icaros also offers a separate product, called Inspect and Measure

Tool™ that can be used to display processed images, including obliques and thermal images, and perform accurate measurement and analysis.

OneButton™ orthomosaics are produced from overlapping aerial images that it stitches together and geometrically corrects ("orthorectifies") to give them a uniform scale. This process removes perspective distortion from the aerial images, making the resulting "mosaic" a map that can be accurately measured and analyzed.

Processed georeferenced and orthorectified imagery products are output in a form that can be automatically ingested into Geographical Information Systems (GIS) and analytics packages such as MapInfo, ArcGIS, MapBox and ENVI, supporting complex analytics for applications including precision agriculture; pipeline inspection; real estate visualization; construction, engineering projects; and many others.

Regardless of your experience, OneButton™ lets you immediately increase ROI and begin building exciting new applications, and dramatically lowers *(Continued)*

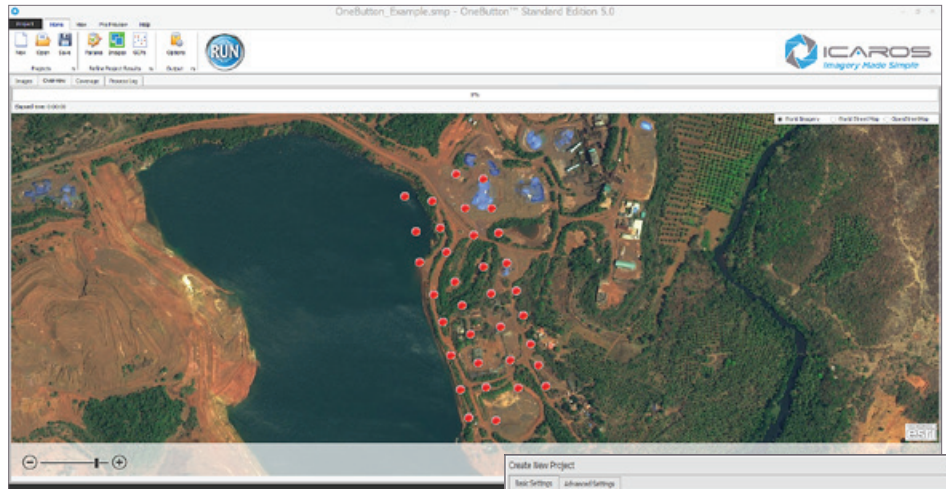the cost of ongoing data collection and processing for existing applications.

OneButton™ Standard Edition Features and Benefits

The following are some of the key features and benefits of OneButton™:

- Extremely easy to use saving both time and money, and leveraging your workforce for better productivity and growth

- Options for various project types which optimizes the photogrammetric process for your project's type of imagery and the outputs desired

- Go from collected images to seamless ortho-rectified, geospatially accurate products (digital elevation models, orthomosaics, 3D point clouds) within minutes

Easy to setup project screeen on the right and above project overview window with basemap and camera positions shown (red dots)
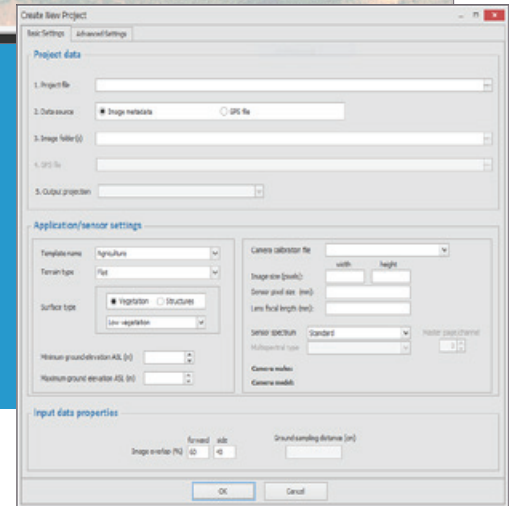
- Fully automated image-stitching, feathering, light and color balancing for exceptional results

- Supports entry (or import) of ground control points (GCPs) for high geolocation accuracy projects such as engineering and construction.

- Indifferent to camera, lens, and external orientation parameters (auto-calibration)

- Supports small and medium, as well as large format sensors for efficient coverage of large areas

- Supports multispectral multiband imagery

- Unique bundle block adjustment for precise geo-positioning of nadir and oblique imagery

(Continued)

Orthomosaic of a residential housing subdivision shot from DJI Phantom. Total time to process was 49 minutes.

- High-performance, state of the art photogrammetric engine incorporates the latest Computer Vision and Structure from Motion technologies to produce exceptional 2D and 3D results

- View your outputs in a built-in viewer:
  - View 2D outputs (GeoTiff orthomosaic, GeoTiff terrain model)
  - View 3D outputs (LAS point cloud, PLY photomesh)
  - Create fly-through videos
  - Generate contour lines from GeoTiff terrain models

- Real time progress, auto-save and recovery capability

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**3D point cloud allowing inspection from multiple perspectives**
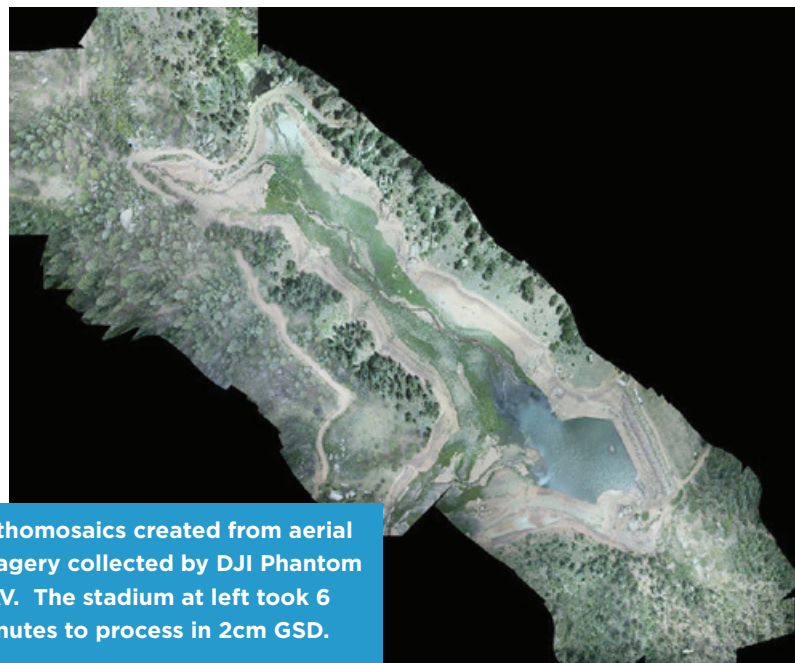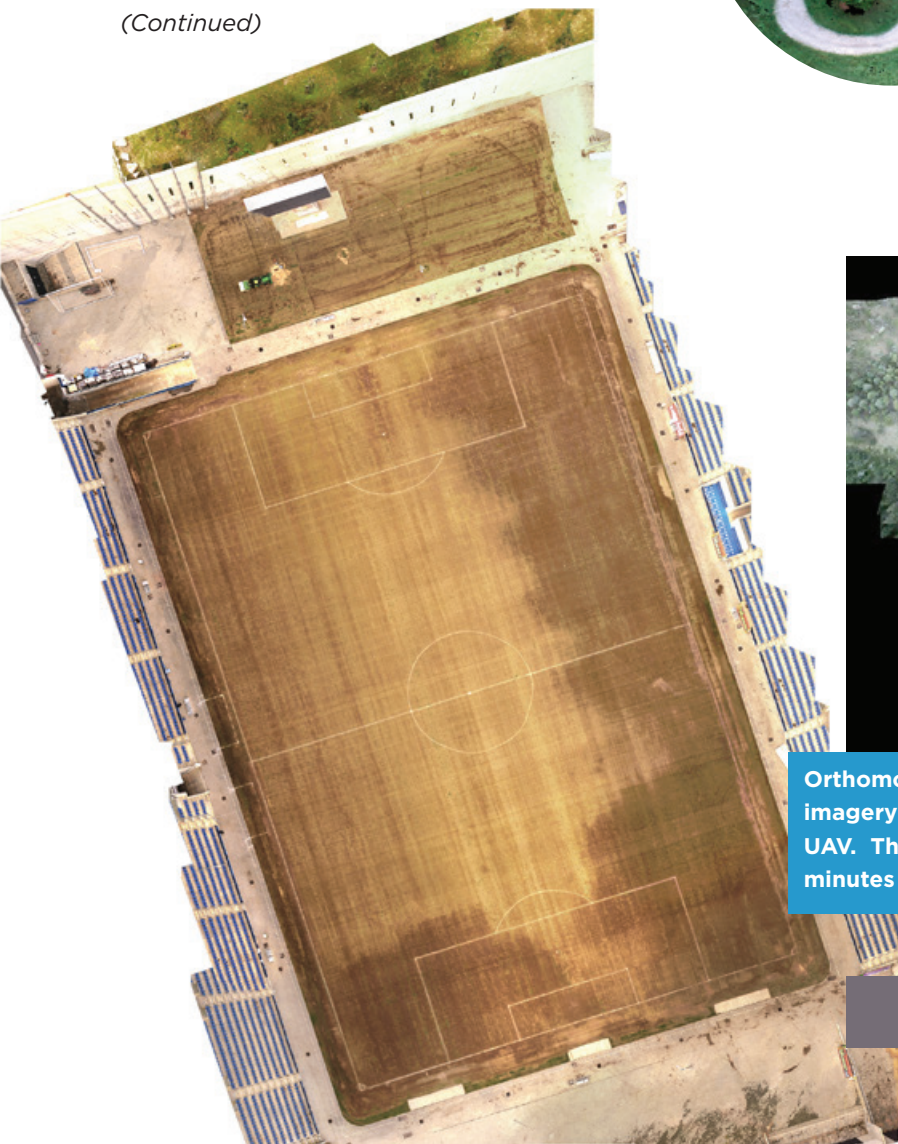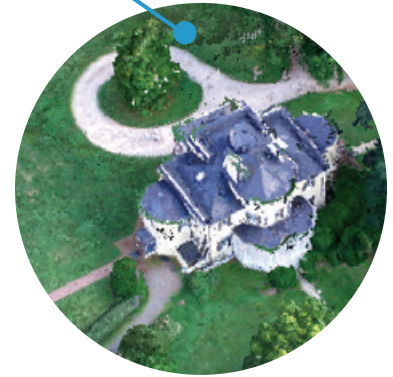
Orthomosaics created from aerial imagery collected by DJI Phantom UAV. The stadium at left took 6 minutes to process in 2cm GSD.

- Processing report showing project properties, processing results, statistics, image coverage analysis, image correlation map, and automatic camera calibration results

- Utilizes GPU and multiple cores (if present) for very fast processing

- Scales to more than 10,000 images
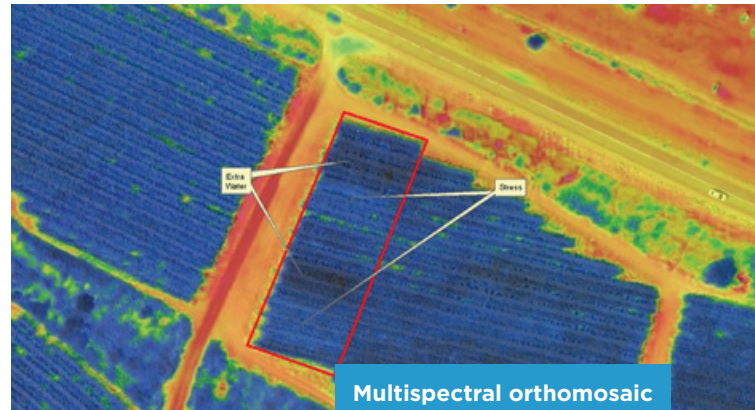
Multispectral orthomosaic showing irrigation issues

COMPUTING ENVIRONMENT REQUIREMENTS

Icaros Product	Hardware, O/S, and Esri Products Must Be Purchased Separately		
Software	Supported Esri Versions	Hardware	Supported MS Windows Versions
OneButton™ Standard	None Required	**Minimum:** 64 bit / 2-Core CPU 4GB RAM Optional: GPU: Nvidia CUDA	Windows 7, 10
OneButton™ Professional	ArcEngine or ArcMap 10.3, 10.4	**Recommended:** 6-Core CPU i7 or Dual Processor Xeon 32GB RAM GPU: Nvidia CUDA	

OneButton™ family of products is the industries' easiest-to-use image processing application yet is powerful enough to support the most advanced GIS solutions and advanced analytics.

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Icaros, Inc. is an industry-leading remote sensing technology and solutions provider, offering global clients mission-critical imagery services and software products. Since 2004, Icaros has collected and processed high-quality aerial imagery for organizations and governments around the world. The Fairfax, Virginia based company has developed advanced software for processing aerial imagery from all types of sources including RGB, multi-spectral, thermal, nadir and oblique sensors and from manned and unmanned aerial platforms. The company also develops various analytical tools to support oblique imagery and 3D data creation, as well as analytics for various vertical applications.