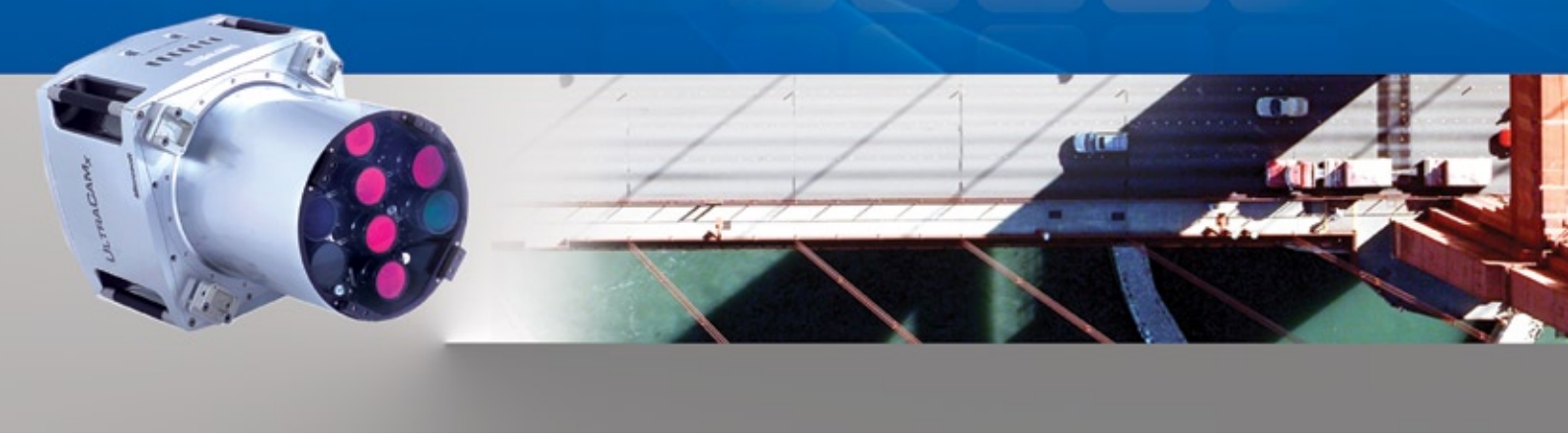
UltraCamXp

Large Format Digital Aerial Camera

The Microsoft UltraCamXp large format digital aerial camera meets operational challenges, providing mapping customers with a reliable and economical solution for producing image data of superior quality.



Overview

The UltraCamXp is the most recent product in the highly successful line of UltraCam digital aerial cameras, first offered to the public in 2004. This sensor has an even larger image format than its predecessor at 196 megapixels (17,310 across track x 11,310 along track), and a smaller pixel size at 6 µm.

By offering the largest image format available, the UltraCamXp reduces the number of flight lines, saves time, and lowers cost, without sacrificing radiometric performance. Increased onboard storage capacity allows for longer flights to take full advantage of favorable flying conditions, and the collection rate of 2.5 Gbits per second allows for collecting more data in less time. The UCXp is capable of collecting stereo imagery at a remarkable 1 inch GSD at a flight speed of 110 knots. Post-processing of the data can be started on board, and finished on the ground with a group of PCs for even faster turnaround.

The collection rate and geometric accuracy of the UCXp allows users to produce urban maps with minimal occlusions, and Digital Elevation Models (DEMs) with no spikes or holes, and to produce high-quality large-scale ortho-photos. Automated image analysis is also made possible by the superior dynamic range of the UCXp.

features

- *Largest format available (196 megapixels; 17,310 across track, 11,310 along track) means fewer flight lines, less time, and lower costs*
- *Short frame interval allows multi-ray photogrammetry even for large-scale mapping at low altitude and high aircraft speed; forward overlaps of 60% are achieved at a 1 inch pixel size at 110 knots*
- *Removable storage units provide two benefits: the length of missions is limited only by the constraints of the aircraft; ground time is minimized*
- *Maximum use of legacy environments; supports ALL standard gyro-stabilized camera mounts (PAV-30, Z/I T-AS, GSM3000) and most common GPS/IMU systems*
- *Pixel size on the ground (GSD) at flying height of 500 m is 2.9 cm (1.8 cm at 300 m flying height)*
- *1:3 pan-to-color ratio delivers stunning color and color-infrared (CIR) image quality and negligible image vignetting*

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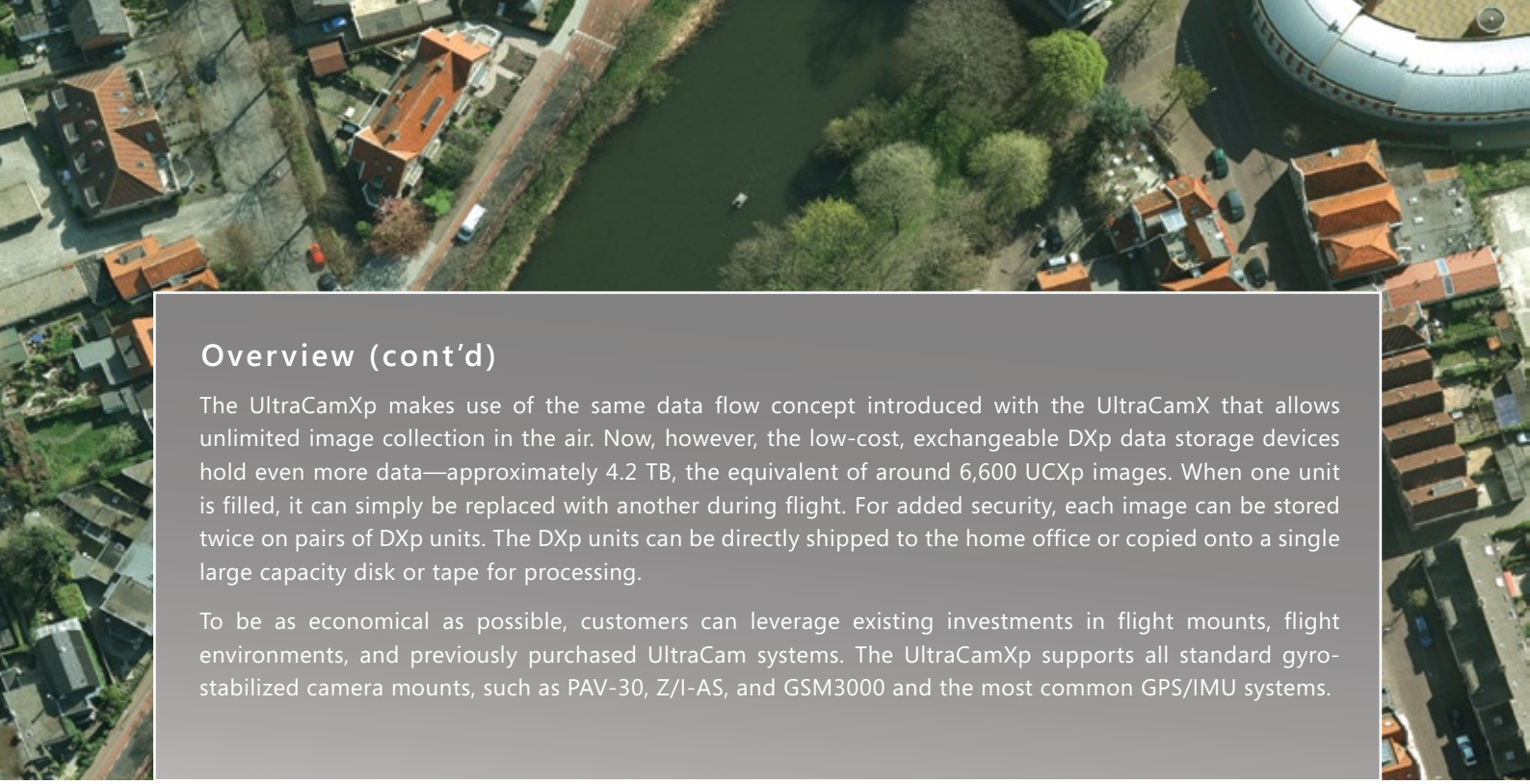

Overview (cont'd)

The UltraCamXp makes use of the same data flow concept introduced with the UltraCamX that allows unlimited image collection in the air. Now, however, the low-cost, exchangeable DXp data storage devices hold even more data—approximately 4.2 TB, the equivalent of around 6,600 UCXp images. When one unit is filled, it can simply be replaced with another during flight. For added security, each image can be stored twice on pairs of DXp units. The DXp units can be directly shipped to the home office or copied onto a single large capacity disk or tape for processing.

To be as economical as possible, customers can leverage existing investments in flight mounts, flight environments, and previously purchased UltraCam systems. The UltraCamXp supports all standard gyro-stabilized camera mounts, such as PAV-30, Z/I-AS, and GSM3000 and the most common GPS/IMU systems.

configurations

Sensor Unit (SXp)

- Simultaneously collects Pan, RGB and NIR
- Panchromatic image size 17,310 x 11,310 pixels; color and NIR image size 5,770 x 3,770 pixels
- Weight of SXp ~ 55kg
- Pixel size on the ground (GSD) at flying height of 500 m is 2.9 cm, and at 300 m is 1.8 cm

Computing Unit (CXp)

- Processes raw images on board in real time, to compute quick views and histograms
- 14 CPUs for computation of interim data products for in-the-air image quality assessment

Data Units (DXp)

- In-flight storage capacity limited only by number of DXps on board, given space and weight constraints of aircraft
- Approximately 6,600 uncompressed images per DXp unit (~4.2 TB) can be stored
- Stores mirror images of the data on two DXp units

Operational Specifications

- Post-processing can begin in the air and be completed on the ground with a laptop or group of PC's
- 11 hours of collection time per single DXp unit at 70% and 20% overlap at 20 cm GSD, 140 knots
- Image geometric accuracy is approximately +/- 2 µm

Options

- Mobile Server, high capacity storage on the ground

More Information

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