



ULTRACAM_x

Large Format Digital Aerial Camera

overview

Vexcel's new UltraCamX provides the same obvious advantages over film cameras as the UltraCamD, but has superior specifications and extended capabilities. The data flow is simpler, the technology is more robust, and image formatting is the world's most precise.

Taking advantage of improved CCD technology, UltraCamX employs 7.2 micrometer pixels and thus achieves an even larger image format at 14,430 x 9,420 pixels without sacrificing radiometric performance.

An all new optical system developed for the UCX by LINOS improves light fall-off over previous solutions, maintaining image sharpness and high radiometric range well into the corners of each image.

As large scale mapping applications are rapidly growing more important, the ability to deliver imagery at fast intervals has become critical. The UCX collects pixels at an astounding sustained rate of 3 GBits per second. It maintains a forward overlap of 70% at 3 cm pixels, and an 80% overlap at 5 cm pixels is feasible at normal flying speeds. The results of this improved technology include: urban mapping with minimization of occlusions, Digital Elevation Models (DEMs) with no spikes or holes, ortho-photo production from only the most central image portions, and support of automated image analysis.

features

- Largest image format available (216 megapixels: 14,430 pixels across track; 9,420 pixels along track) means fewer flight lines and the best stereo base of all digital aerial cameras
- New lens system delivers superior sharpness, a 1:3 pan-to-color ratio for stunning color and color-infrared (CIR) image quality and negligible image vignetting
- "Best in class" data generation at ~ 3 Gigabit per second
- Removable data storage units allow for unlimited storage capacity for longer missions and minimal ground time
- Maximum use of legacy environments, now supports ALL standard gyro-stabilized mounts (PAV, T-AS, GSM)
- Fully compatible with the UltraCam-D workflow including the UltraMap Server

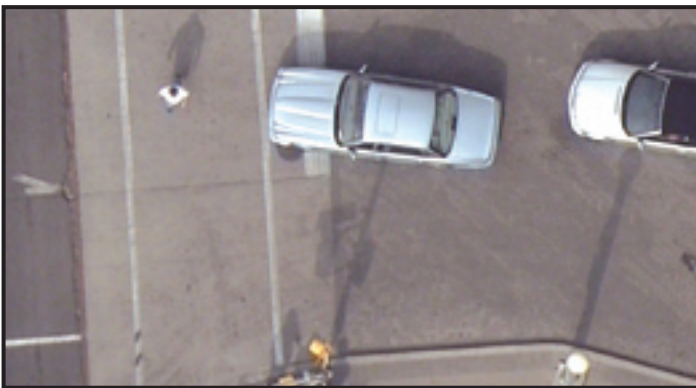


Overview (cont'd)

Because the diameter of the sensor units (SX) has been reduced to fit into all current gyro-stabilized camera mounts, customers can still maintain their old flight environment and mounts, as they continue to move to digital technology.

Camera customers will be thrilled with the entirely new data flow concept that allows unlimited image collection in the air. Low-cost, exchangeable data storage devices called DX units can hold 1.7 TBytes each. When one unit is filled (with about 4,000 UCX images), it can simply be replaced with another during flight. Five pairs of DX units can collect 20,000 images in redundant mode, each image stored twice. The DX units can now be directly shipped to the home office or copied onto a single large capacity disk or tape. Eliminating the data download from the SCU. Significantly reduces ground turn-over time.

The UCX contains the same temperature models that were introduced in the UCD in 2006. It maintains the proven UCD real-time in-air computation capability. The UCX is also completely compatible with the UCD-legacy via identical software and data structures. In fact, an existing UCD sensor unit (SU) can be upgraded to the SX sensor unit of the UCX system and maintain the same SCU-data flow. Of course, it may also be exchanged for the novel CX & DX data flow to provide unlimited in-the-air imaging capacity and no download down-time.



configurations

Sensor Unit (SX)

- Distributed parallel sensing achieved with a set of 8 optical cones to assemble a large format digital image in natural color with false color infrared
- 13 CCDs arrays (9 pan, 4 color)
- Each CCD array feeds signals into its own compact and proprietary electronics setup and data path
- The "Master Cone" provides single image coordinate system and control of geometric accuracy

Computing Unit (CX)

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

Data Units (DX)

- Each exchangeable data unit can store 4,000 images
- As many low-cost data units can be brought on board as needed

Rich Data Flow Options

- Modularity achieves flexibility and versatility
- Post-processing can begin in the air
- Post-processing can be done on the ground on a laptop computer, or faster on a group of PCs
- A powerful UltraMap Server can robotically process, archive, and manage millions of images

Options

- Full integration with UltraMap Server and WorkSuite
- Mobile Server



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