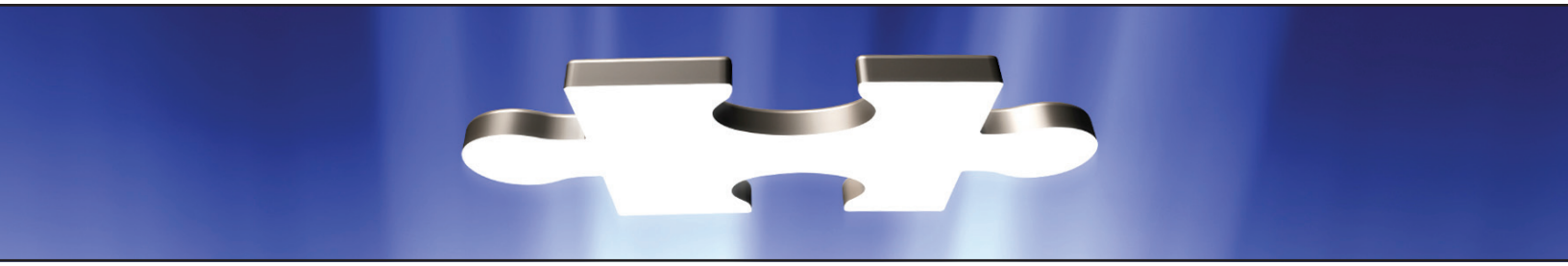
Ortho XL for GXL

PCI Geomatics

High-performance satellite orthorectification for the GeoImaging Accelerator



By moving to the GPU-based GXL architecture, satellite orthorectification, pansharpen and mosaics have gained remarkable speed and performance boosts. This automated ProLine provides Rational Function model calculation and orthorectification within the GPU-based, load-balanced, distributed GXL architecture.

New speed and flexibility

With the launch of the GeoImaging Accelerator (GXL), a high-performance, hardware-optimized image processing system, PCI Geomatics is fielding a powerful competitor in the photogrammetric pre-processing and value add segments. Based on off-the-shelf hardware components and industry standards such as nVidia CUDA, the GeoImaging Accelerator provides a framework for high-speed image processing through automation and technical expertise, including:

Ortho Metrics – Dual GPU

Product Type	Dataset	Resolution [m]	Volume [GB/min]	Volume [TB/Day]	Area [km²/day]
SPOT5 - Level 1A 2.5 meter	8U Pan	2.5	1.42	2.00	13.7 Million (Europe: 10.1M)
IKONOS - Geo Ortho Kit	16U Pan Ikonos	1.0	2.09	2.94	1.62 Million (Saudi Arabia: 1.96M)
WorldView-1 and Quickbird Level 1B	16U Pan	0.5	2.32	3.26	448k (Sweden: 450k)
Quickbird - OrthoReady - 4 channel PS	16U Multispectral	0.6	2.50	3.52	174k (Florida: 170k)
Quickbird - Level 1B	16U Multispectral	2.4	3.25	4.57	3.62 Million (India: 3.17M)

► **GPU chipsets:** Graphical Processing Units are uniquely suited to complex mathematical transformations with greater speed and precision than traditional CPUs.

► **Cloud processing:** The Job Processing System (JPS) defines and, through a web interface, manages the job capability and workload of each CPU/GPU in an n-node distributed environment.

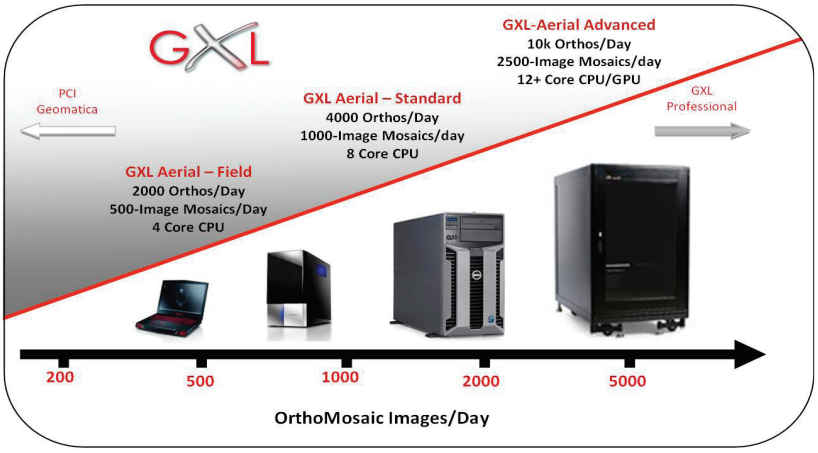
► **Modular workflows:** Image processing jobs can be chained together, run with multiple parameter sets, and components re-used to reduce migration and update costs.

► **Knowledge:** Built on over 25 years in the industry and proven OrthoEngine pedigree, the GeoImaging Accelerator raises the bar for earth imaging processing and performance.

Ortho XL Capabilities

- **Automatic Rational Function Model Calculation**
  High-accuracy, fully automated model calculation with or without additional ground control

- **High Speed Satellite Orthorectification**
  Calculate your satellite orthos at full 1:1 sampling faster than ever before, thanks to nVidia GPU processing
- **Full Sensor Support**
  For satellite sensors including GeoEye-1, IKONOS, KompSat-2, LANDSAT 7, OrbView-3, QUICKBIRD, RapidEye, SPOT 5 and WorldView-1 and 2.



Ortho XL ProLine takes full advantage of the GXL architecture

- **Distributed cloud computing**
  Flexible processing nodes on standard hardware report their availability and optimize their workloads.
- **Job and process management**
  Included in the GXL is the Job Processing System for defining and automating job classes, user permissions, priorities, and node management.
- **Sustainable growth**
  Using standard hardware and new, expanded ProLines, the GXL will scale in throughput and capability as your projects do.
- **Ortho speed and performance**
  Orthorectification results show significant gains, even from a conservative desktop system using dual nVidia GTX 280 GPUs and 7200RPM HDDs.
- **Integrated workflow**
  Due to the flexible combination of GXL and ProLines, additional steps can be added to complete your project, including Mosaic XL:
  - ▶ Automatic tie-point collection
  - ▶ Automatic GCP collection using image-to-image registration
  - ▶ Automatic color-balancing
  - ▶ Automatic cutline selection
  - ▶ Mosaic preview generation for manual QA/QC
  - ▶ Formatting, clipping, tiling, and reprojection

> "COTESA has considered the wide spectrum of image processing products in the marketplace and has chosen PCI Geomatics due to the high quality of the results provided by Geomatica's algorithms and the substantial increase in processing capability acquired with the solution implemented."
>
> - Dr. Francisca Gómez head of COTESA's Environment Department

About PCI Geomatics

PCI Geomatics is a world-leading developer of hardware/software systems for geo-imaging solutions. Since 1982, we have specialized in remote sensing, digital photogrammetry, spatial analysis, cartographic production, automated production systems, image management and on demand mapping solutions. PCI Geomatics' advanced hardware/software systems address a wide variety of industry applications including the environment, agriculture, security and intelligence, aerospace & defense, and satellite receiving stations. We have the expertise and know-how to turn images into useful information.

PCI Geomatics

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