

A teal-colored L-shaped line that starts on the left, extends vertically down, then turns 90 degrees to the right and extends horizontally across the bottom of the slide.

C  T  L Y S T

EARTH DATA, SIMPLIFIED.

A PCI GEOMATICS ENTERPRISE INC. BRAND



EARTH DATA, SIMPLIFIED

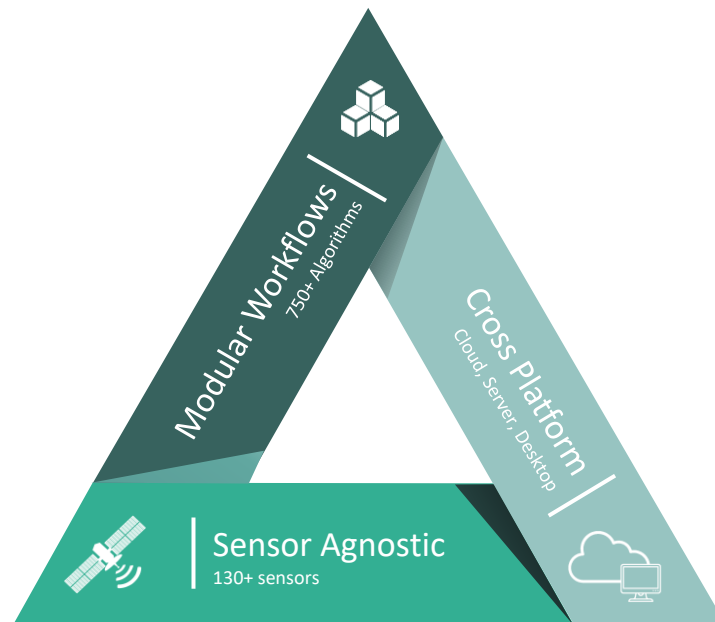
We're making actionable earth observation intelligence available to decision makers that seek to ensure a sustainable and manageable planet

CATALYST
EARTH DATA, SIMPLIFIED.

Robust Science That Adapts to Your Needs

- PCI Geomatics was founded in 1982
- PCI Geomatics Inc 're-branded' to CATALYST in 2020
 - CATALYST is a brand of PCI Geomatics
 - Coincided with a transformation in the business to move beyond desktop software solutions and into the cloud
- CATALYST's core development principles
 - Modular Workflows
 - Cross Platform
 - Sensor Agnostic













catalyst.earth



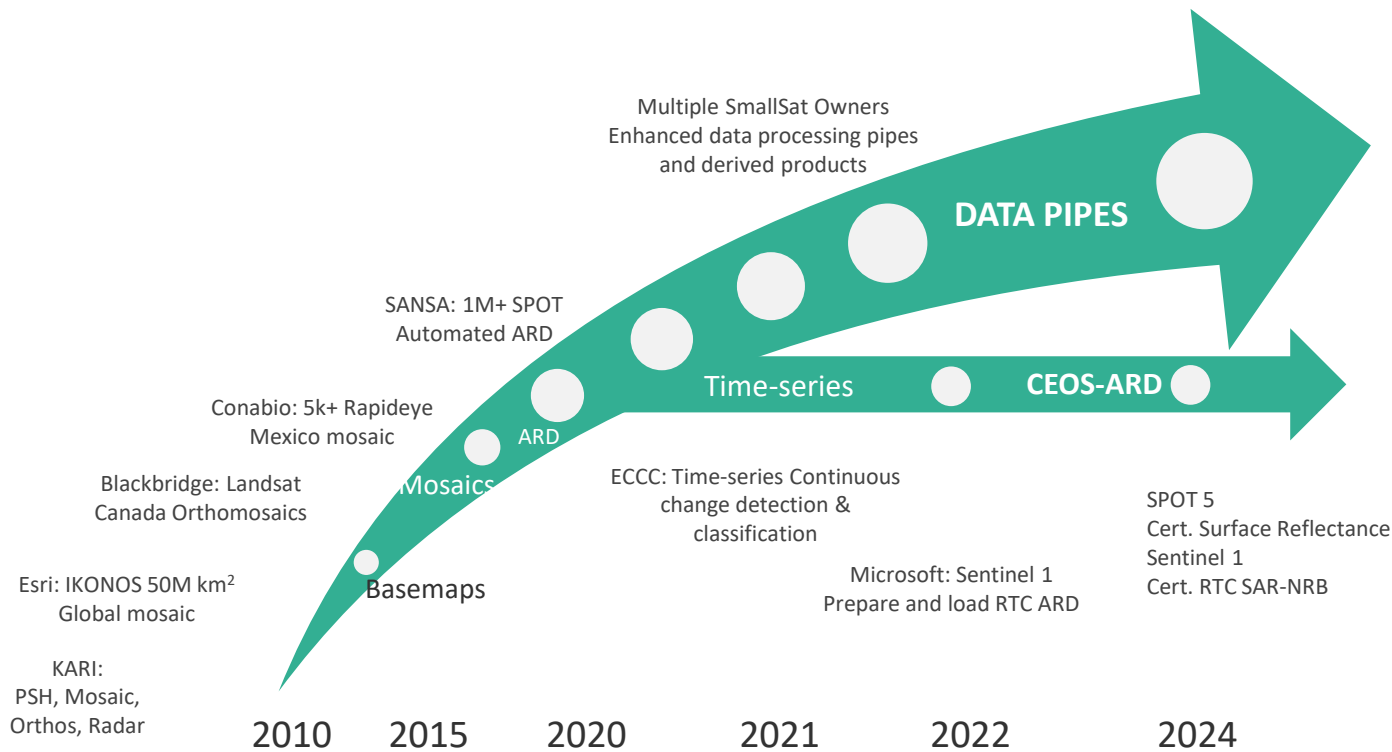
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CATALYST Overview

CATALYST is focused on two key earth observation segments – data creation and actionable intelligence

	Image Processing	Actionable Intelligence
Service Offerings	<p>On-prem software: create analyses and imagery products from satellite and aerial data, individually or in high-volume production</p> <p>Microservices: cloud-based image processing algorithms customers embed within their environments to power mission-critical workflows</p>	<p>Browser and DaaS: wide area satellite monitoring services for owners and operators of critical infrastructure and assets.</p> <p>Actionable insights that combine with ground-based monitoring and inspection to better understand risk and condition</p>
Client Needs	<ul style="list-style-type: none"> Process high volumes of data to generate images, DEMs and analyses Greater quality, pace and capacity Support diverse satellites, airborne sensors, business systems and workflows Reduce project risk and cost 	<ul style="list-style-type: none"> Monitor large areas with complex risk and access challenges Actionable insights to inform safe, efficient operation and investment Monitor ground movement, failure risk, vegetation hazard, ... Reduce operational risk and costs
Solutions	<div>  <p>CATALYST PROFESSIONAL</p> </div> <div>  <p>CATALYST ENTERPRISE</p> </div> <div>  <p>CATALYST ONBOARD</p> </div>	<div>  <p>CATALYST INSIGHTS</p> </div>
Markets	<div>  <p>Earth Observation & Aerial Services</p> </div> <div>  <p>Satellite imagery provider</p> </div> <div>  <p>Government/ Public Sector</p> </div>	<div>  <p>AEC & Infrastructure</p> </div> <div>  <p>Insurance</p> </div> <div>  <p>Mining</p> </div> <div>  <p>Utilities</p> </div> <div>  <p>Asset Management</p> </div>

CATALYST Data Processing Projects



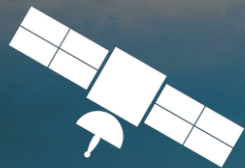
CEOS-ARD

- Developed an ARD production workflow for SANSA to convert their SPOT 1-7 archive into ARD (CARD-4L) compliant products
- Following CEOS's guidelines for the [commercial sector](#), CATALYST are contributing to CEOS Virtual Constellations
- Building CEOS ARD compliant workflows



Accuracy & Quality Assessment

Example subset from SANSA project – 727 Commercial Satellite images



SPOT 1-7
(1990 – 2020)



0.13 pixels
CEP 90

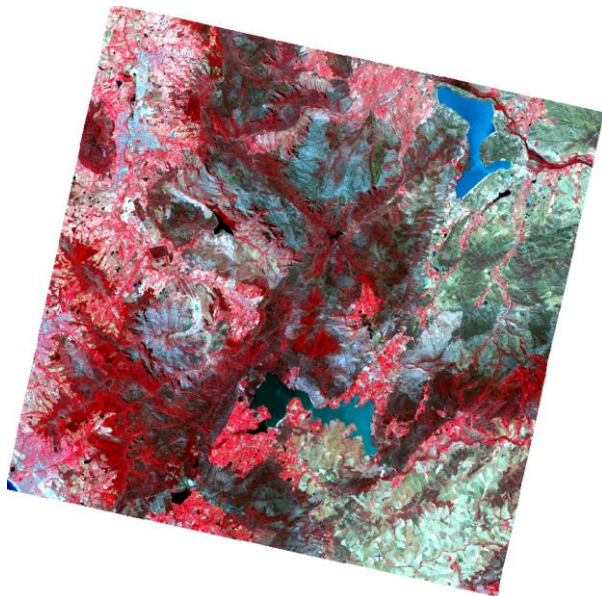


0.91
Mean R^2

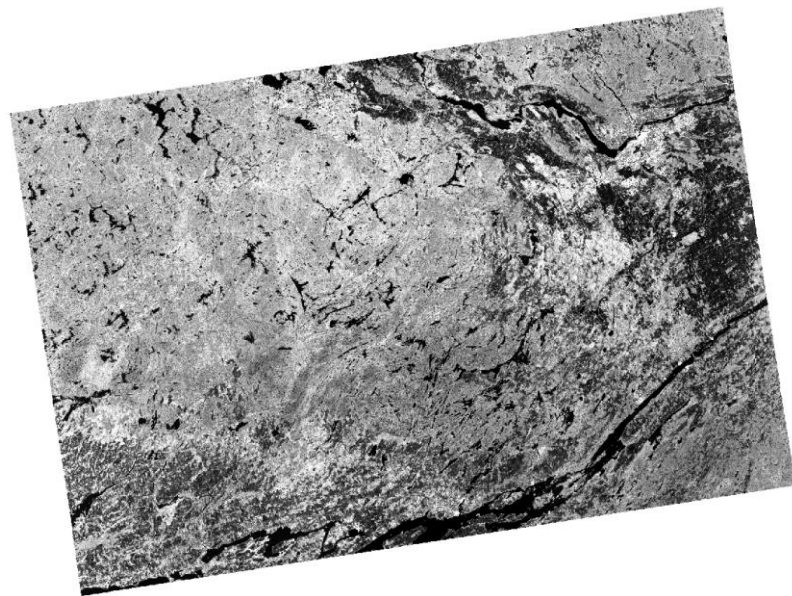
CEOS-ARD

First commercial entity to offer CEOS-ARD compliant data for both SAR NBR (Sentinel-1) and Optical SR (SPOT-5) ([Press Release](#))

SPOT-5 Surface Reflectance

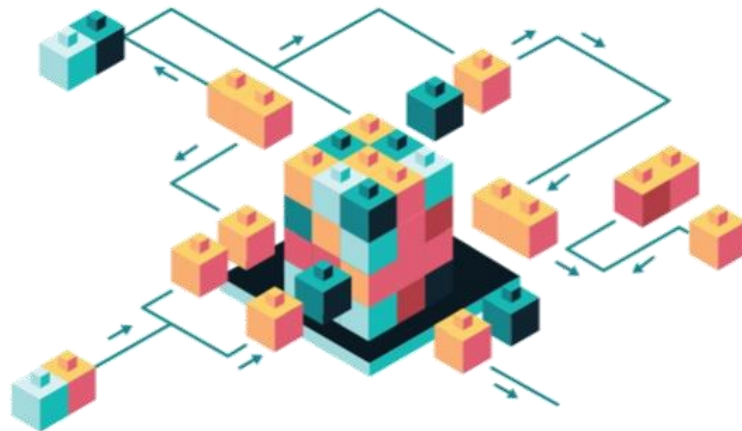


Sentinel-1 Normalized Radar Backscatter



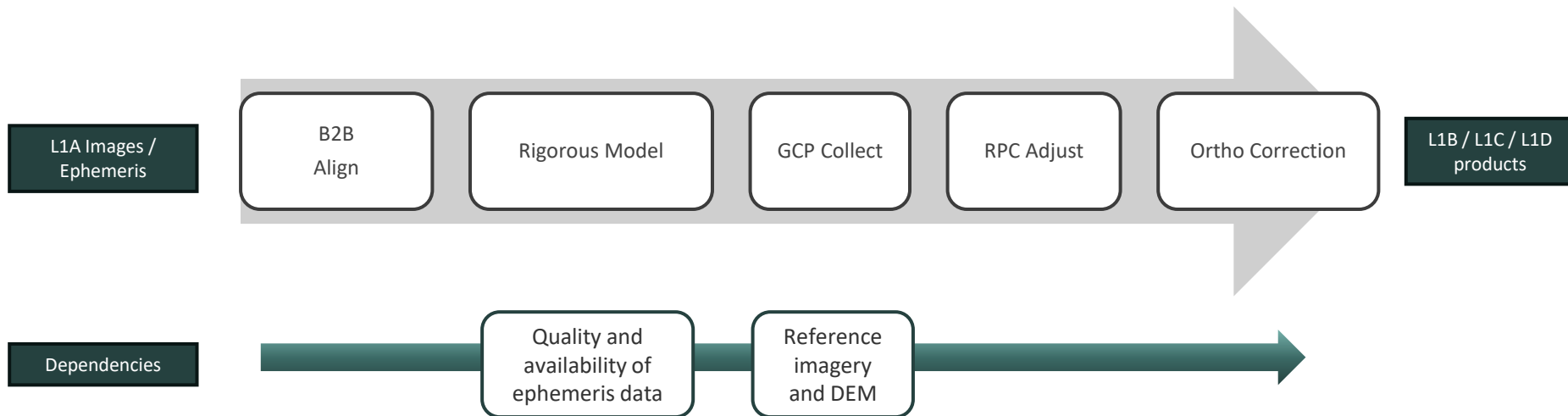
Small Sat L1D Pipelines

- Partnered with numerous industry leading Small Sat companies
- Automated & Scalable pipeline for Ortho (L1D) image production
- Processing millions of images per day



Workflow

Automated production of L1B, L1C, L1D products from L1A imagery



Sample Results

Quality assurance report samples

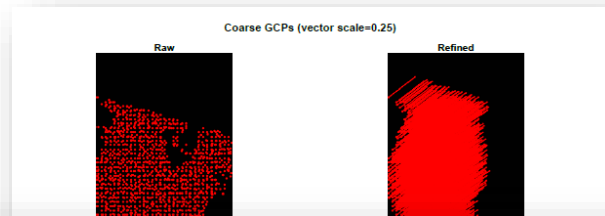
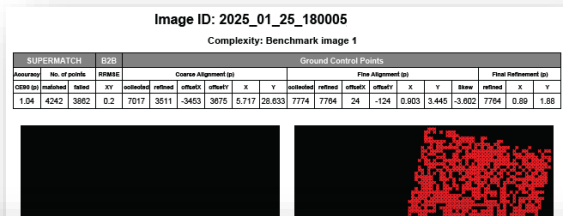
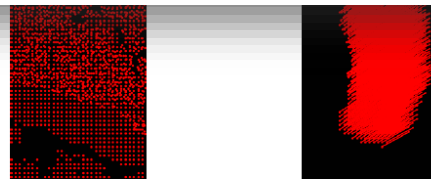
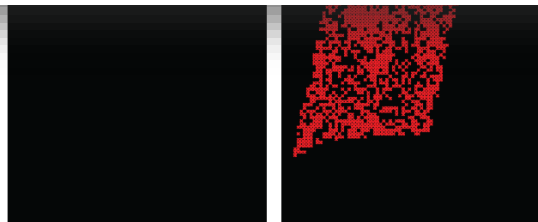


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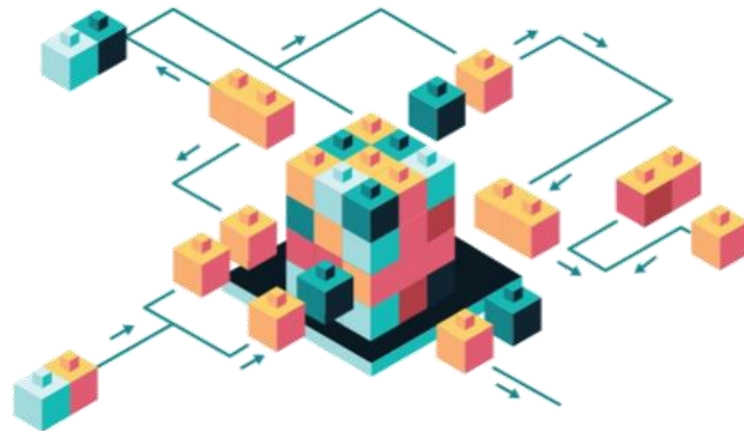
Complexity: Benchmark image 1

SUPERMATCH		B2B	Ground Control Points																
Accuracy	No. of points		RRMSE	Coarse Alignment (p)						Fine Alignment (p)						Final Refinement (p)			
CE90 (p)	matched	failed	XY	collected	refined	offsetX	offsetY	X	Y	collected	refined	offsetX	offsetY	X	Y	Skew	refined	X	Y
1.04	4242	3862	0.2	7017	3511	-3453	3675	5.717	28.633	7774	7764	24	-124	0.903	3.445	-3.602	7764	0.89	1.88

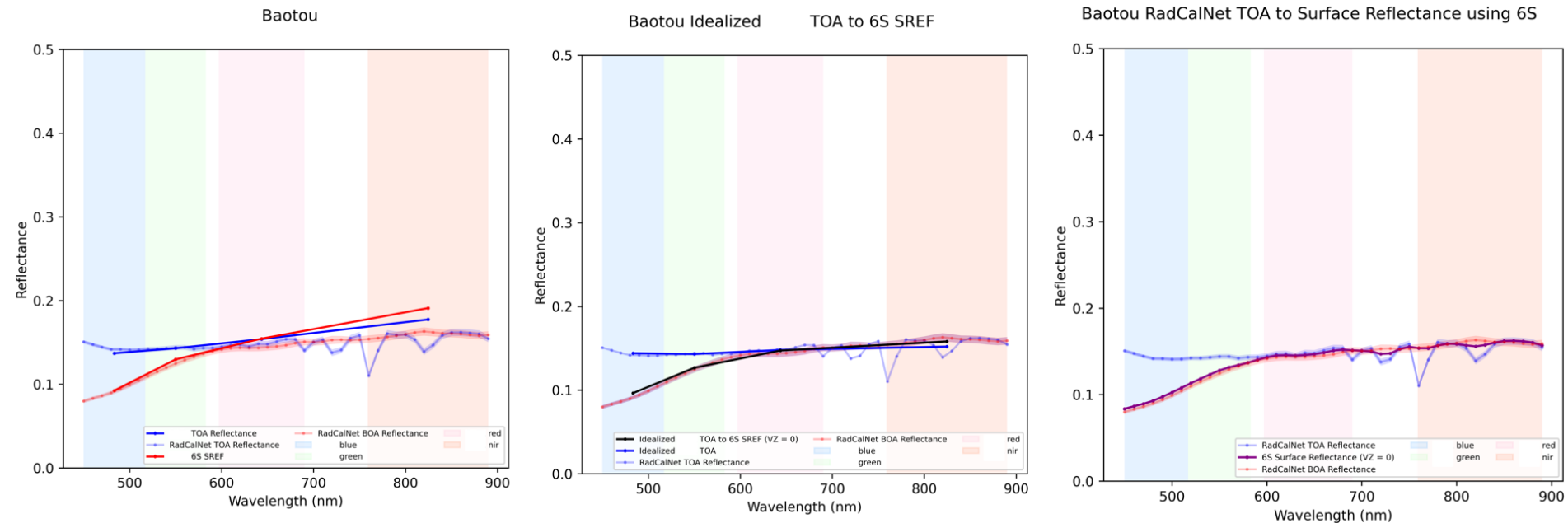


Radiometric Correction

- Spectral Normalization to MODIS for SANSA
- Developing atmospheric correction technology using 6S
- Leveraging RadCalNet sites to verify 6S correction against Small Sat imagery



Radiometric Correction Examples



Global Government Customers & Engagement

Many governments rely on CATALYST's mission critical technology to support their operations.



THANK YOU!

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