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Advanced harmonization and sensor fusion to transform data readiness and resolution for big data analytics

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Access to data is no longer a problem. The recent emergence of new observational paradigms combined with advances in conventional spaceborne sensing has resulted in a proliferation of satellite sensor data. This geospatial information revolution constitutes a game changer in the ability to derive time-critical and location-specific insights into dynamic land surface processes.

However, it's not easy to integrate all of the data that is available. Sensor interoperability issues and cross-calibration challenges present obstacles in realizing the full potential of these rich geospatial datasets.

The production of analysis ready, sensor-agnostic, and very high spatiotemporal resolution information feeds has an obvious role in advancing geospatial data analytics and machine learning applications at broad scales with potentially far reaching societal and economic benefits.

At Planet, our mission is to make the world visible, accessible, and actionable. We are pioneering a methodology--the CubeSat-Enabled Spatio-Temporal Enhancement Method (CESTEM)--to enhance, harmonize, inter-calibrate, and fuse cross-sensor data streams leveraging rigorously calibrated 'gold standard' satellites (i.e., Sentinel, Landsat, MODIS) in synergy with superior resolution CubeSats from Planet. The result is next generation analysis ready data, delivering clean (i.e. free from clouds and shadows), gap-filled (i.e., daily, 3 m), temporally consistent, radiometrically robust, and sensor agnostic surface reflectance feeds featuring and synergizing inputs from both public and private sensor sources. The enhanced data readiness, interoperability, and resolution offer unique opportunities for advancing big data analytics and positioning remote sensing as a trustworthy source for delivering usable and actionable insights.