NOVELSAT

BOOSTING EARTH OBSERVATION CONNECTIVITY

Powerful EO ground-segment for maximizing downstream speed, agility, and efficiency

CONNECTING THE VISION TO THE MISSION

Knowledge and insights about our planet enable governments, organizations, and businesses to understand our changing world and to make smarter, better, faster decisions about what to do next. From weather forecasting to biodiversity mapping, from environmental monitoring to signal geolocation, from asset tracking to defense intelligence, earth observation provides invaluable data, helping us see the changes and take better actions for making our planet a safer, cleaner, and a more prosperous place.

MEETING THE DOWNSTREAM CHALLENGE

Increasing number of Earth observation satellites, growing number of sensors on board, improving sensor resolution and higher revisits, are generating massive amounts of remote sensing data. But this ever-increasing wealth of information also presents new challenges in downloading the data from space to Earth. Answering the need for speed, agility, and efficiency, NOVELSAT offers a unique and powerful solution for Earth observation networks with NOVELSAT Xstream multi-purpose gateway. Leveraging software-defined ground segment, highest transmission performance, and service-based traffic and network management, NOVELSAT Xstream delivers superior space-to-cloud performance, boosting Earth observation connectivity.

HIGHLIGHTS

- **Software-defined ground segment for EO networks**

- **State-of-the-art satellite receivers for greater download speeds**

- **Adaptive earth observation connectivity**

- **Transparent cloud connectivity**

- **High performance satellite transmission with NOVELSAT NS4™ technology (optional)**

- **High density design for cost and operational efficiencies**

- **Carrier grade management functionalities**

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DELIVERING GREATER DOWNLOAD SPEEDS

NOVELSAT Xstream features state-of-the-art satellite receivers, delivering exceptional receiver sensitivity and phase noise resiliency, as well as outstanding Doppler shift and rate resiliency and frequency lock time. These superior receiver performances enable to expand effective reception time per satellite pass, as well as to download higher data volumes in each pass over the Earth station.
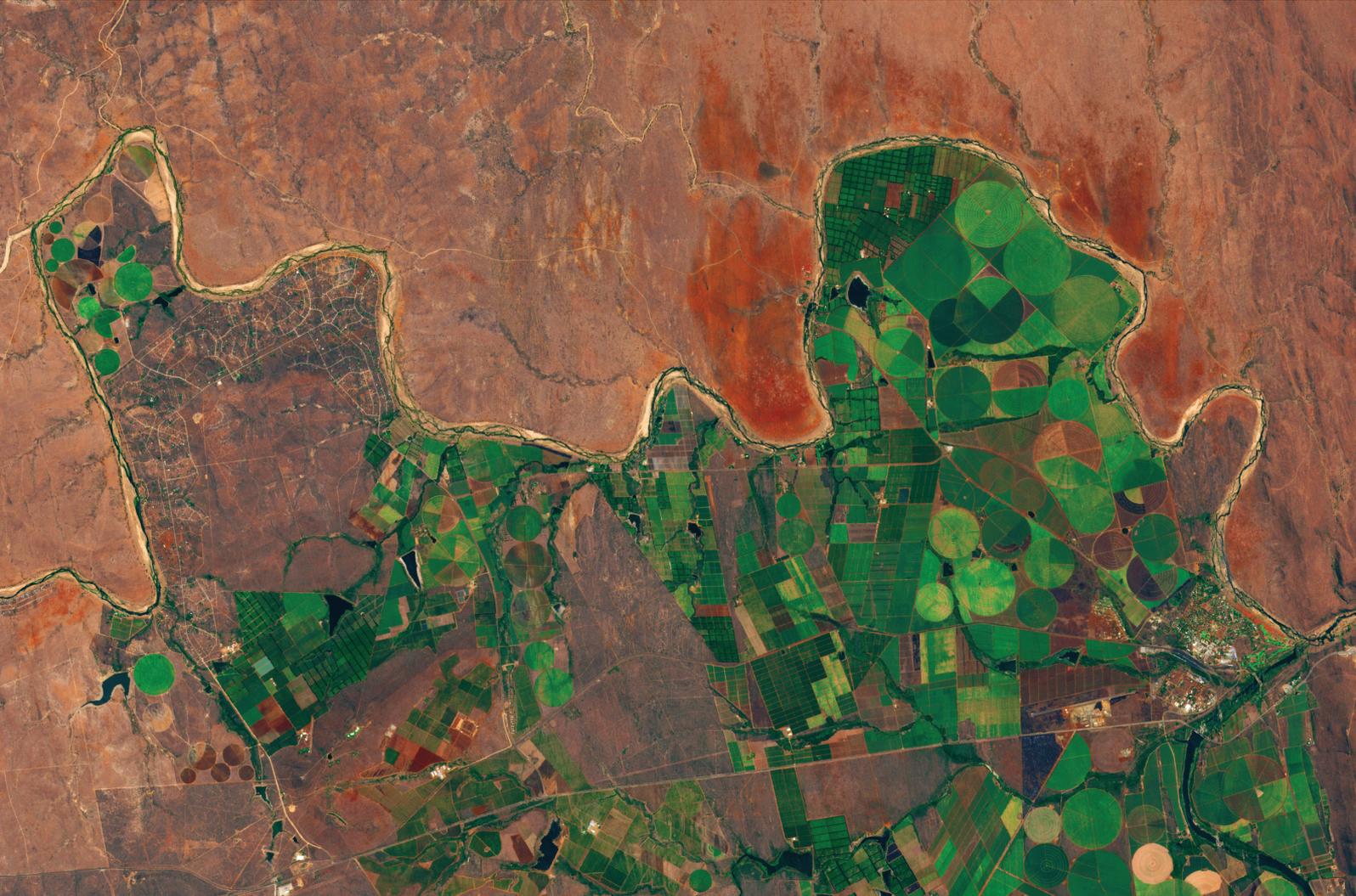
INNOVATING ADAPTIVE EARTH OBSERVATION CONNECTIVITY

Further increasing download speeds, NOVELSAT Xstream offers Adaptive Coding and Modulation (ACM) operation over the downlink transmission. Leveraging the satellite telemetry channel as an ACM return channel, NOVELSAT Xstream extracts and returns SNR and MODCOD information to enable real-time adaptation of the data transmission's modulation and coding schemes. Dynamically varying the modulation in an errorless manner improves link margin by up to 2db, thus increasing effective reception time and maximizing downlink throughput across the horizon-to-horizon satellite pass.

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ACCELERATING SPACE-TO-EARTH TRANSMISSION

NOVELSAT Xstream incorporates multiple satellite transmission technologies, supporting standard DVB-S2 and DVB-S2X transmission, as well as NOVELSAT NS4™ - the highest performance waveform. When integrated onboard Earth observation satellites for downlink transmission, NOVELSAT NS4™ delivers unmatched bit/Hertz performance for higher than ever transmission speeds, as well as superior resiliency to interference, jamming and weather fluctuations.


TRANSPARENT CLOUD CONNECTIVITY

More and more data from earth observation satellites is being sent to big cloud networks, making satellite data easier to access and process. Addressing data cloud connectivity, NOVELSAT Xstream offers open and flexible NFV-based cloud connectivity solution. Decoupling decoding and decapsulation functionalities, NOVELSAT Xstream enables virtualized connectivity agnostic to satellite transmission standards and proprietary implementations, streamlines data cloud satellite connectivity.

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SOFTWARE-DEFINED, HIGH-PERFORMANCE ARCHITECTURE

NOVELSAT Xstream, a new take on ground segment architecture for satellite connectivity, features the latest in software-defined networking. Built on off-the-shelf servers with modular architecture and carrier grade management system, NOVELSAT Xstream maximizes earth observation network flexibility and scalability. Integrating multiple satellite connections and network interfaces, NOVELSAT Xstream allows for multiple configurations and service options, adapting to any network architecture and allowing future upgrades and expansions.
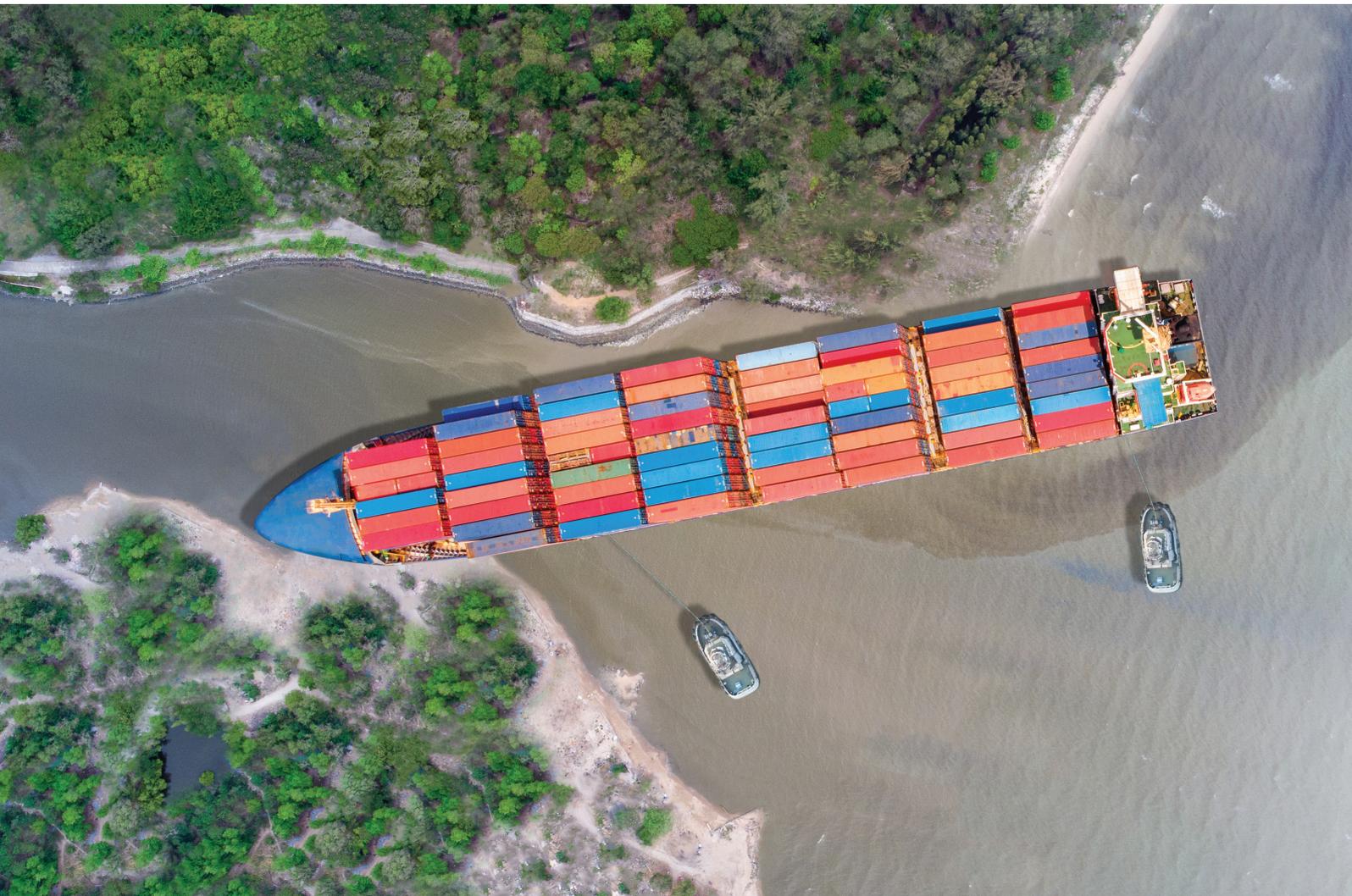
VERSATILE, HIGH-DENSITY DESIGN

NOVELSAT Xstream features high density architecture, utilizing compact chassis to support multi-signal reception. Multiple modules are supported and can be further aggregated to cater to any network size. The advanced high-density design minimized rack space and power as well as eases deployment and operation.

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POWERFUL OPERATIONS SUITE

Easy to install, configure, integrate, and operate global networks, NOVELSAT Xstream includes a service-oriented management system, enabling to rapidly introduce and modify services, as well as maintain and monitor connectivity. Service flow and connectivity grid dashboards provide an overarching centralized view for easy orientation and monitoring, while advanced network, resources and interface configuration tools simplify network setup, resource allocation, and ongoing operations. Enriching system monitoring and analyses, visual graphs track system resources and activity, and problems are classified and flagged in real-time. A REST API is also available for interfacing with other management systems.
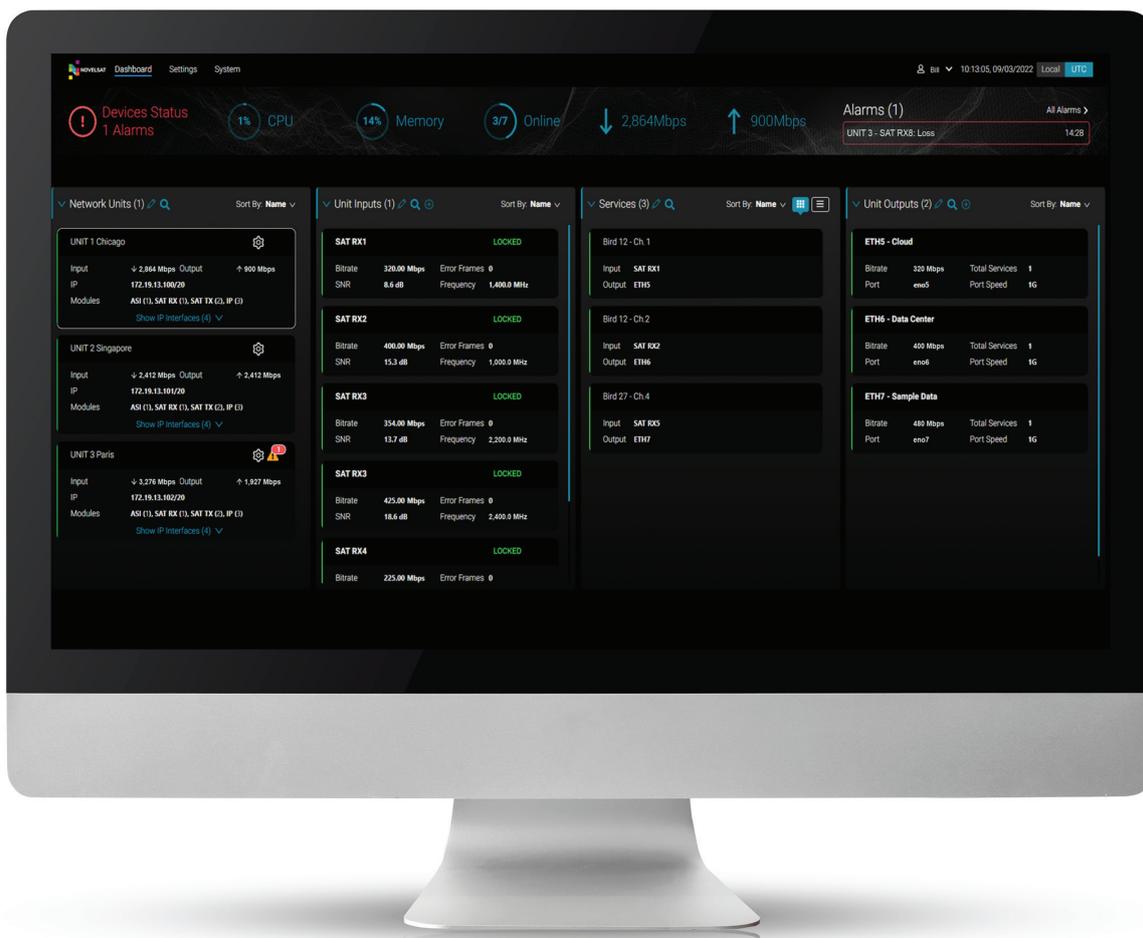
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For more information visit www.novelsat.com

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