



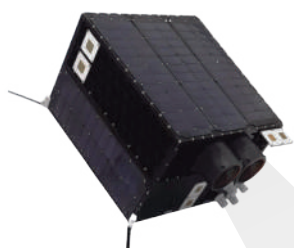
Advanced Maritime Intelligence & Awareness for Enhanced Security and Surveillance with AFR Data



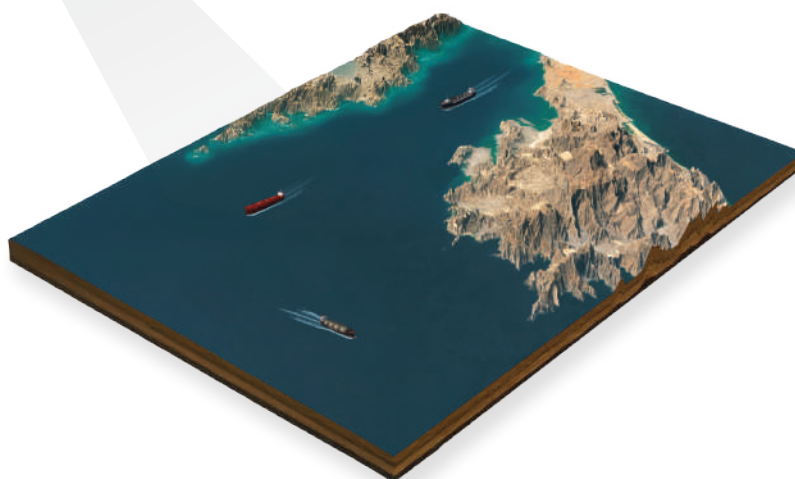
AZISTA INDUSTRIES PRIVATE LIMITED | ADVANCED PIXEL RESEARCH & INTELLIGENCE LAB

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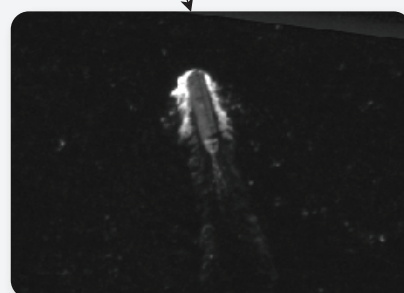
The AFR Satellite, launched on June 13, 2023, is a high-resolution multispectral satellite operating at 500 km in a sun-synchronous orbit. It is capable of delivering a 4.6m GSD Image in Panchromatic Bands, (Panchromatic + six multispectral bands), designed for high-precision naval monitoring and intelligence.



AFR's Naval Mode (Ocean Scanning) revolutionizes deep-sea surveillance, covering an extensive more than 6,000 km × 35 km in a single continuous pass. AFR's high-quality monochrome imaging ensures wide-area coverage with exceptional detail, making it an indispensable asset for maritime intelligence and large-scale observation.



Naval Strip of AFR - More than 6,000 km



Zoomed-in view



High-Resolution Ocean Scanning

4.6m sampling ensures
precise ship detection



Wide-Area Coverage

Single payload captures
6000+ km x 35 km



Cloud Cover Prediction

Intelligent satellite tasking for
maximum data utility



AI-Powered Ship Detection

Automated detection and
classification of vessels using APRIL
Image Analytics Software (AIAS)



Geospatial Data & Reports

GeoTIFF images, shapefiles,
projection data, and metadata for
seamless GIS integration



Improved Turnaround Time

Less than 9 hours for complete product
delivery from Imaging, including the
report, image, and quality check (QC)

01

APRIL Image Analytics Software
(AIAS) provides automated ship
detection over vast oceanic regions.

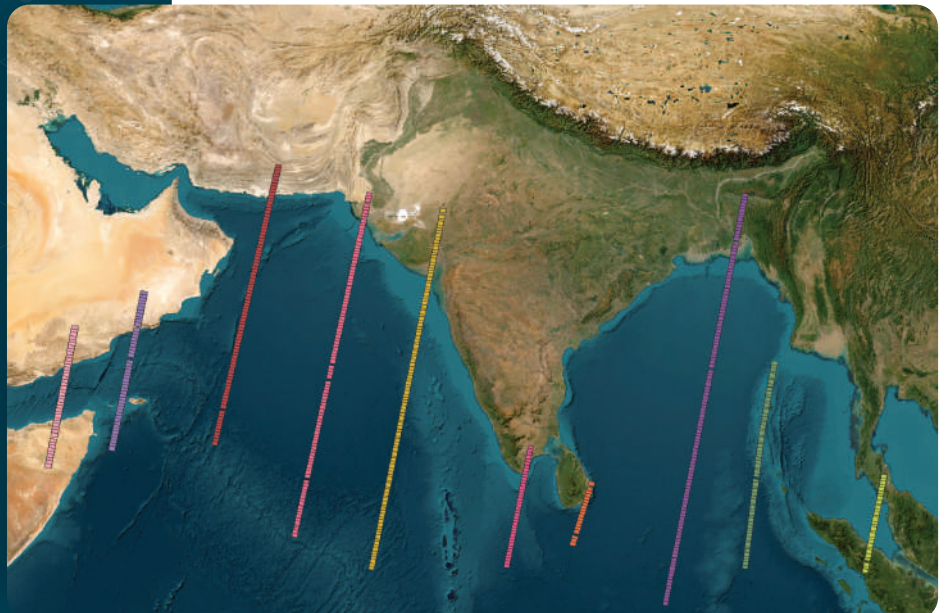
02

Batch Processing Mode enables rapid
analysis of multiple frames, ensuring
near real-time maritime intelligence.

03

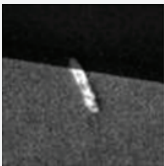
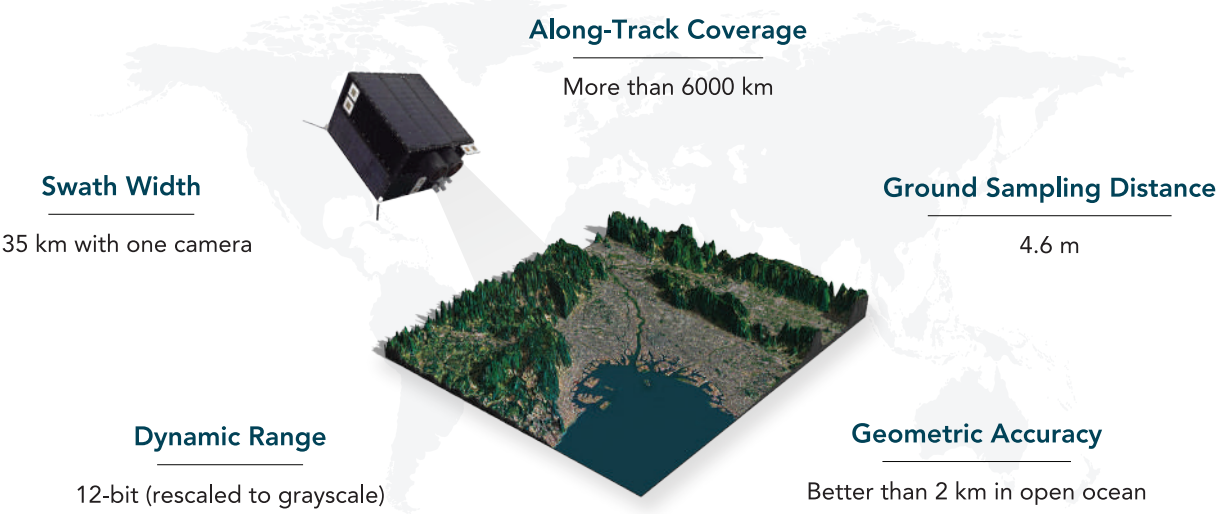
Comprehensive Reports include
detailed ship locations, dimensions
and movement patterns for operational
efficiency.

AI-DRIVEN SHIP DETECTION AND REPORTING

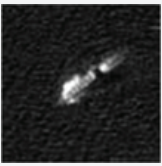


Sample Acquisition for Maritime Domain Surveillance

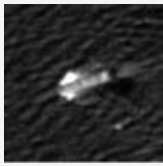
TECHNICAL SPECIFICATIONS
OF IMAGING MODE



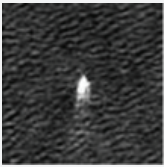
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Longitude: 54.003891 °
Heading Angle: 337.8 °



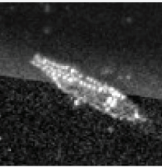
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Heading Angle: 51.6 °



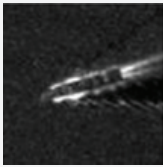
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Longitude: 53.204362 °
Heading Angle: 247.4 °



Length(m): 57
Width(m): 18
Latitude: 14.106702 °
Longitude: 53.255268 °
Heading Angle: 182.7 °



Length(m): 376
Width(m): 95
Latitude: 26.503038 °
Longitude: 35.370723 °
Heading Angle: -60.3 °



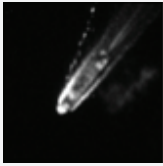
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Heading Angle: 254.6 °



Length(m): 405
Width(m): 65
Latitude: 4.296323 °
Longitude: 105.932294 °
Heading Angle: 239.7 °



Length(m): 309
Width(m): 64
Latitude: 3.923282 °
Longitude: 105.917064 °
Heading Angle: 46.9 °



Length(m): 245
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Latitude: 3.853829 °
Longitude: 105.825914 °
Heading Angle: 218.5 °



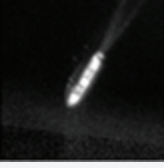
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Longitude: 106.000159 °
Heading Angle: 234.3 °



Length(m): 405
Width(m): 63
Latitude: 4.426204 °
Longitude: 106.074316 °
Heading Angle: 44.9 °



Length(m): 144
Width(m): 33
Latitude: 3.717413 °
Longitude: 105.737891 °
Heading Angle: 33.6 °



Length(m): 200
Width(m): 33
Latitude: 3.809653 °
Longitude: 105.718219 °
Heading Angle: 213.0 °



Length(m): 176
Width(m): 29
Latitude: 3.761016 °
Longitude: 105.705126 °
Heading Angle: 31.9 °



Length(m): 169
Width(m): 56
Latitude: 23.075641 °
Longitude: 67.807892 °
Heading Angle: 280.4 °



Scan QR code to
view detailed report.

IMAGE TASKING PLATFORM

Data requests can be sent to control software via 2 interfaces (Web-UI and Curl Requests). Authentication key is provided to authorized users and acceptance notifications are sent back. For Further details, Contact Azista.

Web UI Interface for Target Requests

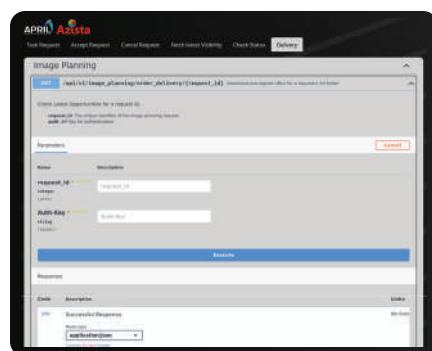
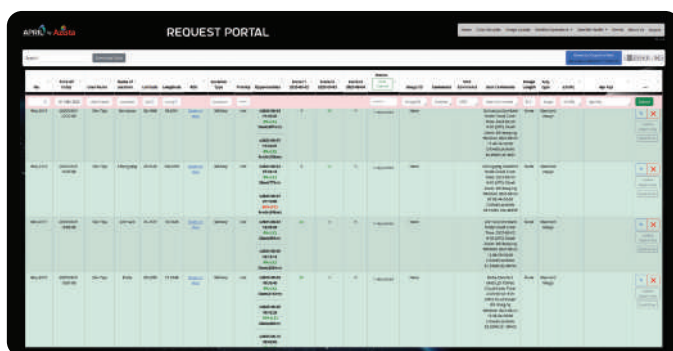
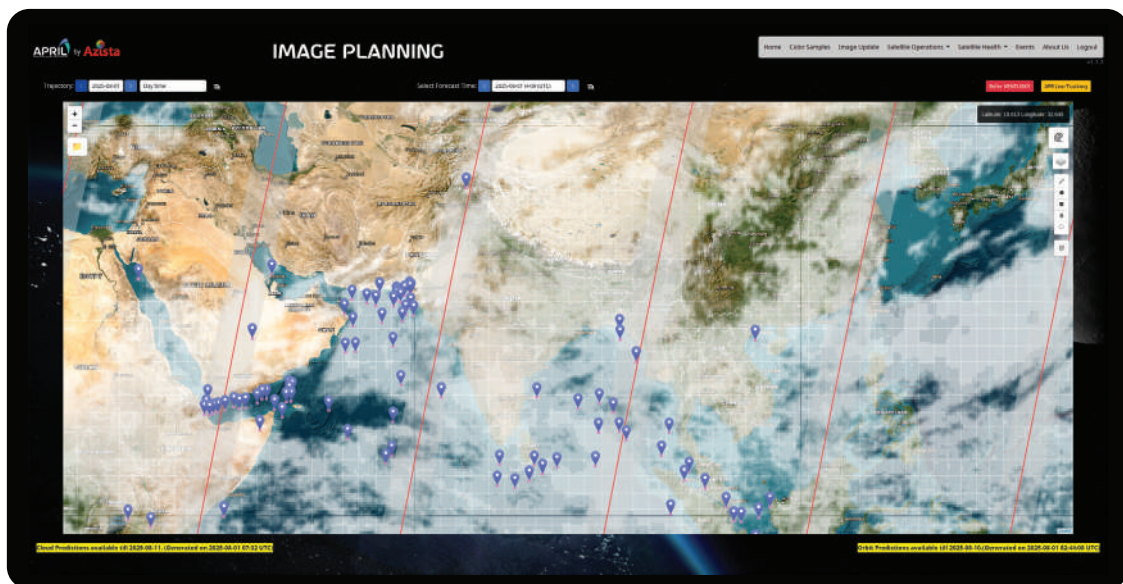


Image Planning Platform

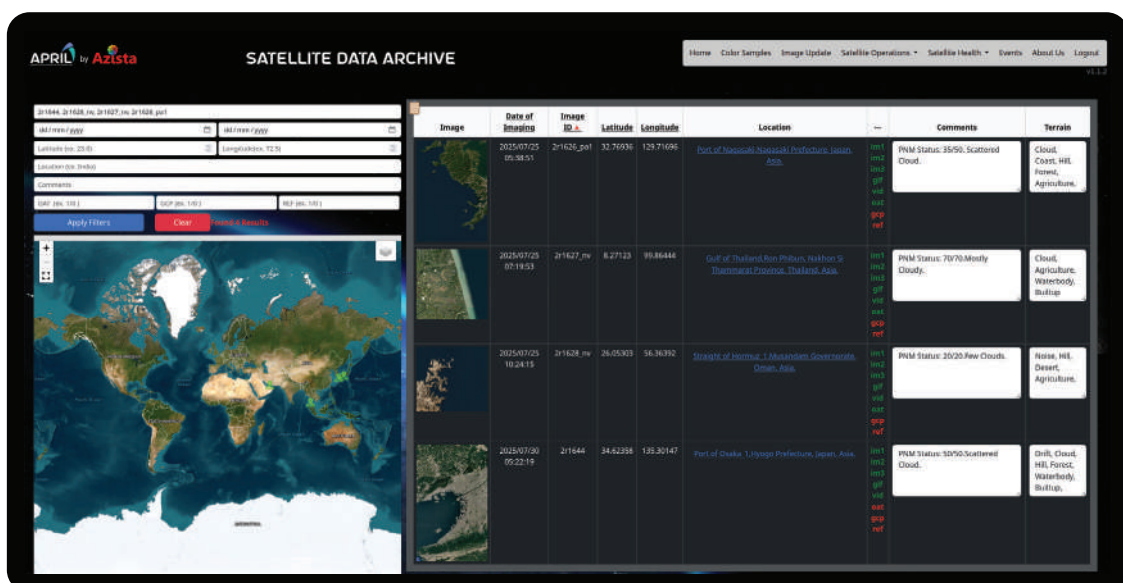


Image Archival Platform

APPLICATIONS

Naval Surveillance

Tracking and monitoring
maritime activity

Dark Ship Detection in deep ocean

Illegal Fishing, Smuggling Prevention
& Detect unauthorized vessels

Maritime Traffic & Logistics

Improve ship tracking and
navigation safety



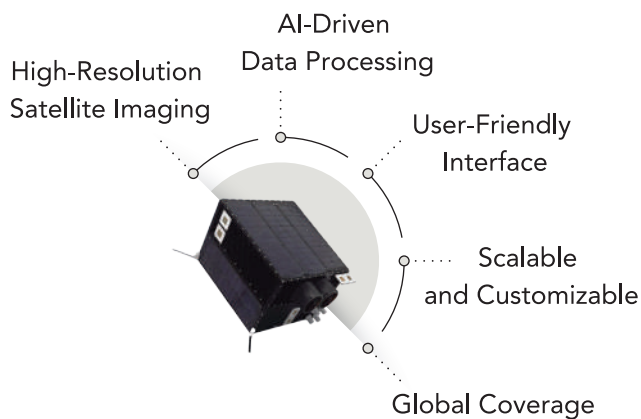
Naval Fleet Awareness

Optimize fleet positioning, route
planning & strategic decision making

Border Security and EEZ Monitoring

Enhances coastal
protection

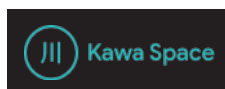
WHY CHOOSE AFR NAVAL MODE?



DATA AND REPORT FORMATS

- **GeoTIFF Images:** High-quality, georeferenced imagery.
- **Shapefiles & Metadata:** GIS-ready data with projection details.
- **Quick-Look Thumbnails:** Rapid preview of scanned regions.
- **Auto-Generated Reports:** AI-detected ship positions and analysis.
- **Customization:** User defined analytics data formats for vector and raster.

OUR PARTNERS



Enhance your Maritime Intelligence with AFR Naval Mode-surveillance Made Easy

OBSERVING DYNAMIC ACTIVITY:

GENERATING SHORT VIDEOS OF SPECIFIC REGIONS WITH AFR SATELLITE

We keep exploring innovative ways to utilize our AFR satellite for enhanced Earth observation. One such experimental mode focuses on capturing dynamic events by generating short video sequences of specific regions.

In a recent acquisition over Kuwait International Airport, we tested this approach. The AFR satellite was steered from a positive to a negative pitch at a consistent rate, maintaining focus on the airport area.

This allowed us to capture a continuous stream of high-resolution imagery at a rate of one frame per second for approximately 250 seconds.

The resulting sequence of roughly 250 individual frames can be registered and stacked together to create a short video, approximately 3-4 minutes in duration. Our initial demonstration generated a video showcasing an aircraft during its take-off sequence, reaching a speed of 300 km/h. A zoomed-in view within the video highlights the moment the aircraft lifts off the ground.

This method of generating short satellite videos of a focused area has potential for various applications:

Monitoring Specific Events

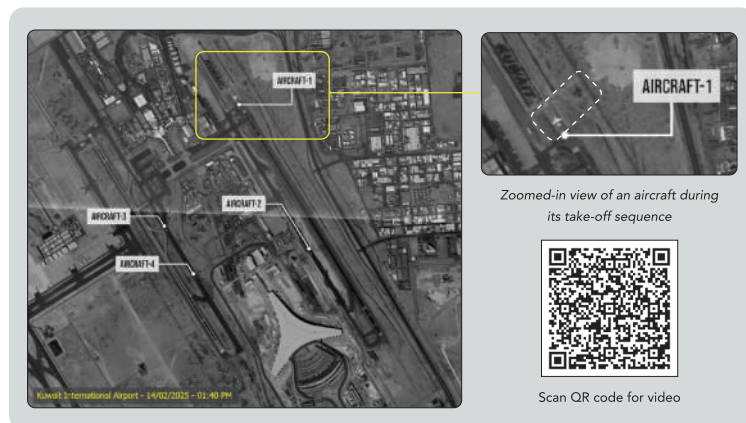
Observing activities like aircraft movements, changes in traffic patterns, or ongoing construction work within a defined timeframe.

Visualizing Temporal Changes

Providing a dynamic view of how a region evolves over a short period, offering a different perspective compared to static images.

Supporting Time-Sensitive Analysis

Offering a more intuitive way to understand activities occurring within a specific window of observation.



We have conducted multiple acquisitions to evaluate this experimental video mode. One such acquisition was carried out at Rajiv Gandhi International Airport (RGIA) in Hyderabad.

In this capture, an aircraft can be seen taking off, reaching a speed of approximately 300 km/h, with a zoomed-in view highlighting the moment of lift-off.

This exploration into generating short satellite videos represents an ongoing effort to expand the ways we can observe and understand our planet using the AFR satellite series.

Learn more about the potential of short satellite videos and the AFR satellite series.

Contact us for further information.

AFR NIGHT-TIME OPTICAL IMAGING

UNCOVERING THE WORLD AFTER DARK

Azista's AFR satellite is unlocking a new dimension in Earth observation - optical night-time imaging. Using advanced high-gain electronics and innovative processing, AFR captures detailed images in low-light conditions, offering continuous coverage even after sunset.

How It Works?

Unlike traditional optical imaging that depends on sunlight, AFR leverages ambient light sources - streetlights, building illumination, traffic lights to image the Earth at night. By enabling digital time-delay integration (TDI) and boosting the incoming signal by up to 50x, AFR generates high-clarity images in dark conditions without compromising spatial detail.

Key Highlights

24x7 Imaging

Extend monitoring into the night hours

Urban Illumination Mapping

Assess infrastructure, development levels, and activity density

Energy and Affluence Analysis

Track light-based consumption patterns for socio-economic insights

Disaster and Blackout Response

Detect power outages and monitor recovery

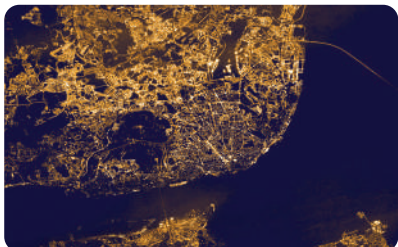
Security Applications

Night-time visibility for surveillance and situational awareness

VISUAL SHOWCASE

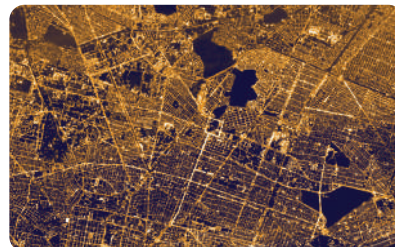
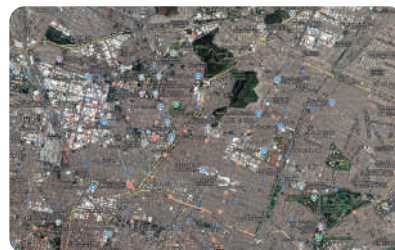
LISBON – NIGHT VIEW

Observe intricate urban features and lighting gradients captured with precision, demonstrating the power of AFR's night-time optics.



MEXICO CITY – DAY vs. NIGHT VIEW

See the transformation as AFR captures the city's vibrant activity during night, and its illuminated structure after dark.



Why it matters?

AFR's night imaging mode adds temporal depth and intelligence value to Earth observation. Whether it's urban planning, emergency monitoring, or nighttime surveillance - AFR delivers actionable data when it's needed most.

Smarter Insights Don't Sleep - Neither Does AFR

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