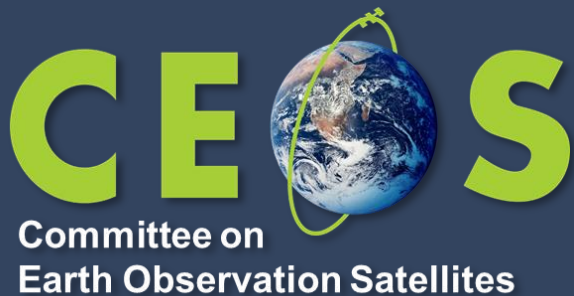


# ***Marble Imaging: Contributing to CEOS via CCM***



**Dr. Gopika Suresh**

**Agenda Item 3.10**

**LSI-VC-18**

**Ispra, Italy**

**2-5 September, 2025**

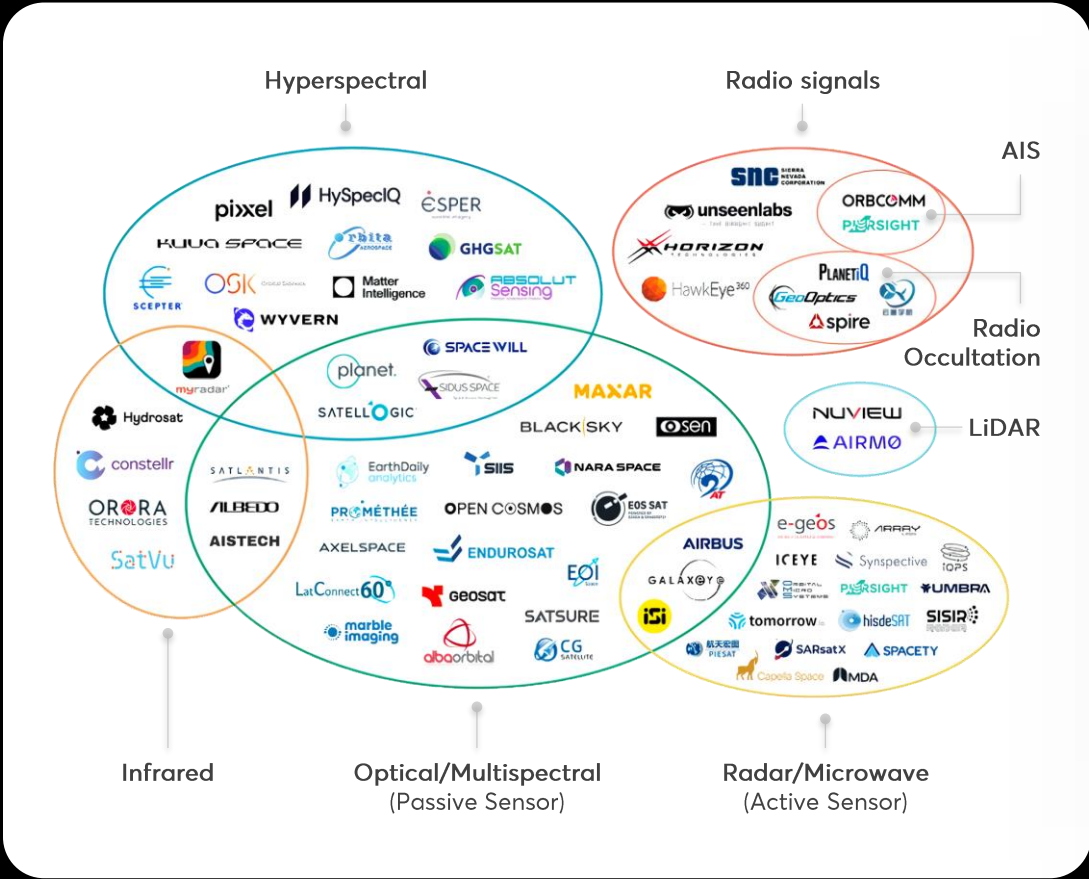
## Our Team, Mission & Achievements

- Founded in **2023** and headquarters in **Bremen, Germany**
- Developing a **very high-resolution satellite constellation** for **near real-time Earth Observation and Geospatial Intelligence**
- Already offering **AI supported EO analytics** for situational awareness & community resilience in rapidly evolving environments worldwide
- Fostering **European resilience and strategic autonomy**, ensuring **security for people and critical assets**
- **Contributor to ESA CCM cat-1**

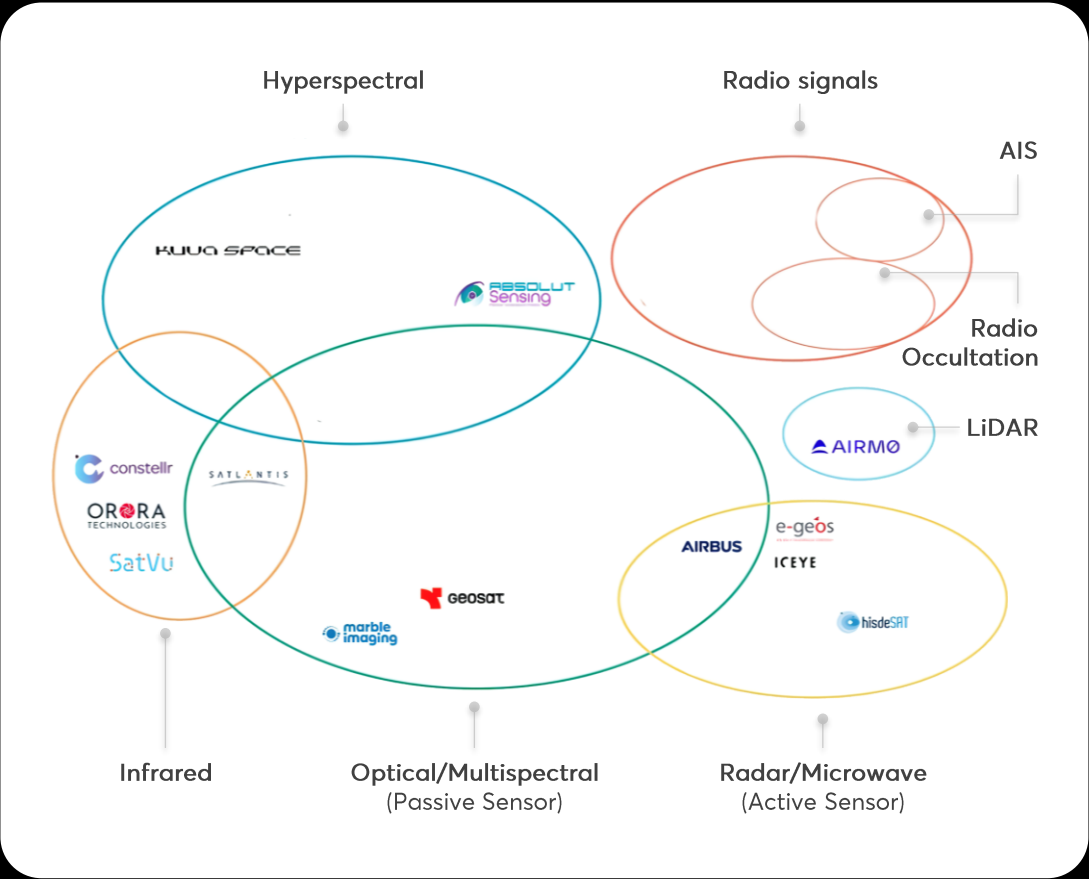
## Our Industry Partners



# Commercial EO Market



Global EO Data Market



European EO Data Market – Competition in the <1m Multispectral Data Domain

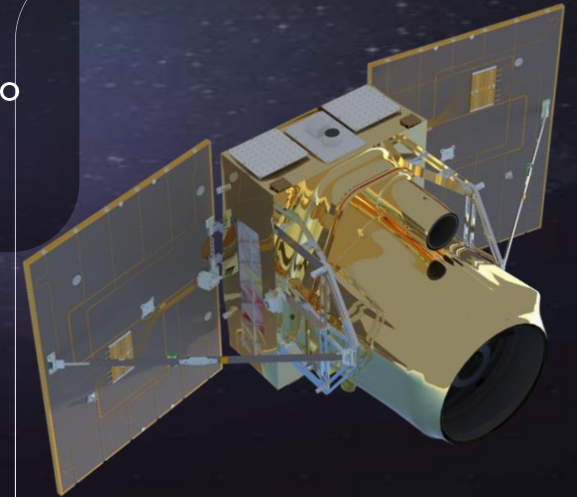
Sources: The State of Commercial EO Satellites, 2025 | TerraWatch Space



# Marble satellite constellation



- Launch of the first satellite scheduled for 2026
- Expansion of constellation up to 20 satellites until 2028
- tasking and continuous image-capturing
- Daily collection capability of 140.000km<sup>2</sup> per satellite
- Laser terminal for secure and high volume data downlink capacity
- Spectral band structure harmonized to Sentinel-2 data



Credit: Reflex

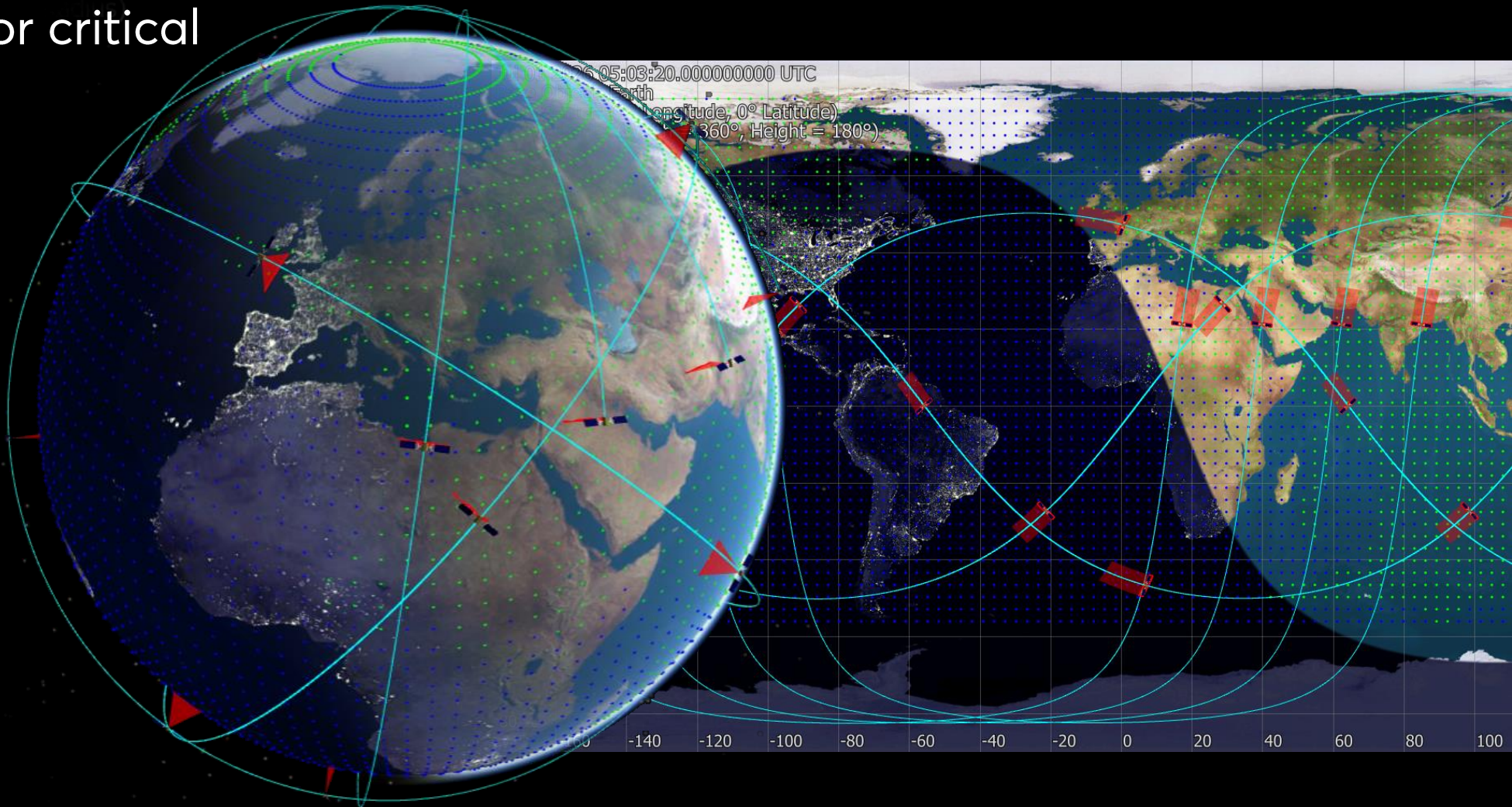


# Maximum revisits for rapid response

## Global coverage for critical events

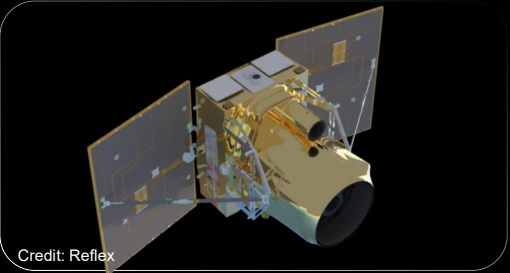
Enabling hourly revisits over the hotspots of the globe by leveraging a multi plane satellite constellation.

Satellites	Revisit rate
1	3 days
5	< 1 day
20	hourly





# Marble satellite constellation



	Band	Central Wavelength [nm]	Use case	Target Product resolution [m]
B1	Blue	493	Land cover classification	0.5
B2	Green	560	Land cover classification	0.5
B3	Red	665	Land cover classification	0.5
B4	Near Infrared	833	Vegetation health and degradation	0.5
B5	Pan-Chromatic	580	Image sharpening	0.5
B6	Cirrus	1375	Cirrus cloud correction	6
B7	SWIR2	1572	Soil moisture/ Vegetation/ Wildfire	6
B8	SWIR3	1661	Construction/ Fire /minerals mapping	6

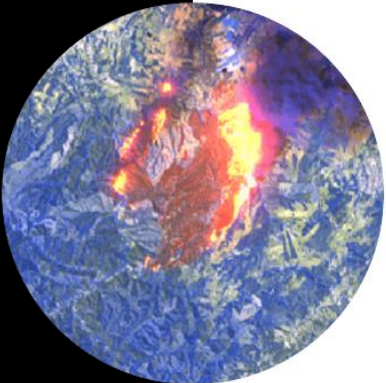


## Multispectral Camera

Visible, Near-Infrared

Resolution: **50cm** (first sat: 70cm)

Swath : **10km**



## Multispectral Camera

Shortwave Infrared

Resolution: **6m**

Swath : **10km**



Enhancing situational awareness at sea and on land, threat detection, community and asset resilience



Supporting coastal resilience to hazards and risks including climate adaptation and food security

# Marble's Value Offering

- 1 Agile small satellite technology enabling dynamic Earth observation and monitoring
- 2 Predictable acquisition planning and reliable delivery of high-fidelity EO data and services
- 3 Full operational integrity and interoperability with user systems and environments
- 4 Balance of spatial resolution, revisit frequency and cost



## Copernicus Sentinel-2

Resolution: **10m**

Cost : **0 €**



## Commercial data provider

Resolution: **3m**

Cost : **3+ €/km<sup>2</sup>**



## Marble Imaging

Resolution: **50cm** (first sat: 70cm)

Cost : **6 €/km<sup>2</sup>**



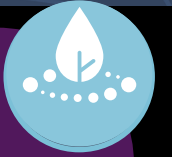
## Commercial data provider

Resolution: **30cm**

Cost : **18+ €/km<sup>2</sup>**

Source: Euroconsult



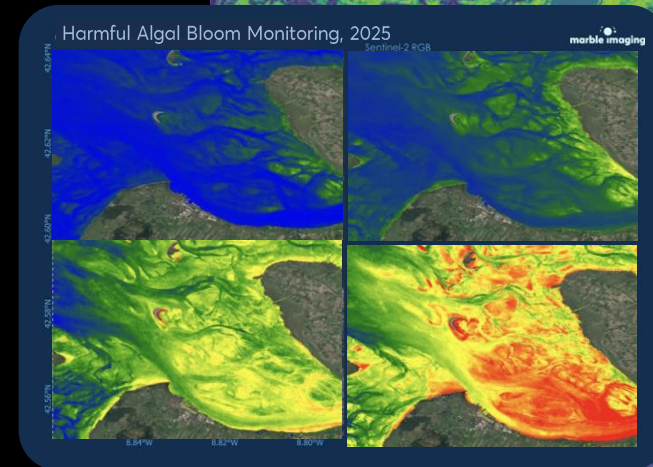


## Marine ecosystem & asset monitoring

### Proactive Coastal Monitoring

Increasing community resilience by monitoring maritime infrastructure, threats and marine ecosystems.

- 1 **Habitat change analysis:**  
Monitoring habitat changes for sustainable resources management and NbS suitability.
- 2 **Coastal risk & water quality assessment:**  
Early warning of changes & monitoring of coastline and water quality to protect coastal communities, infrastructure and resources.
- 3 **Aquaculture mapping and suitability:**  
Mapping of global aquaculture farms, due diligence for aquaculture certification and assessment of aquaculture suitability



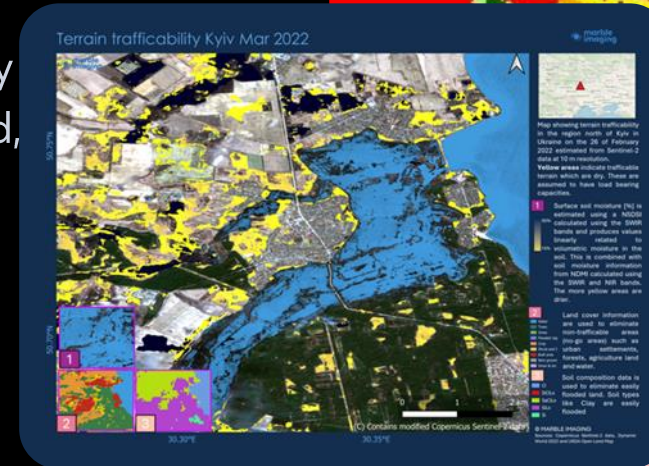


## Terrain and Trafficability Assessment

### Optimised Navigation and Route Planning

Assessment of changing terrain conditions that supports planning of relief efforts, disaster response, tactical, and security operations in challenging landscapes like off-road, undeveloped, and mobility-restrictive areas.

- Multiple terrain properties assessment:**  
Analysing soil type, soil moisture, land cover, topography and elevation that contribute to trafficability models for a comprehensive view of terrain conditions.
- Informed trafficability and routing:**  
Supporting navigation and routing by integrating trafficability information with satellite imagery and location data for rapid decision making.



### Vehicle specific Load Bearing Capacity

- Undrivable
- LW vehicle
- Light tractor
- AWD pick-up
- AWD trucks

## AI based activity monitoring

### Intelligence extraction across critical global regions

Near real-time insights enabling situational awareness for time critical events enabling rapid decision making in defence, civil security and national resilience applications.

- 1 Object detection & identification:**  
Detection, tracking and surveillance of military and industrial objects.
- 2 Threat assessment:**  
Monitoring of AOIs to detect and analyse suspicious or heightened activities, providing early warnings into hostile intentions and irregular movements.
- 3 Post-Crisis Impact Analysis:**  
Post-event severity and damage assessment to support recovery strategies and relief operations.





## Joint applications for

- 01 Tender programs
- 02 Funding opportunities
- 03 Validation and custom projects

## Actions, decisions, requests to CEOS

- How can we get involved?
- How can we tap into your expertise?
- GEO/EO4SDGs- How can we contribute?

## Access and integration of Marble data:



### Marble Simulated Data

Synthetically generated datasets that mimic future Marble satellite dataset (L1c and L2b)



### Marble Early Access Program

exclusive opportunity to access Marble EO data at a significant discount, accompanied by a free sample dataset, once commercial operations start in Q4 2026.



# Thank you!

**Dr. Gopika Suresh**

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*Head of Products*

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