

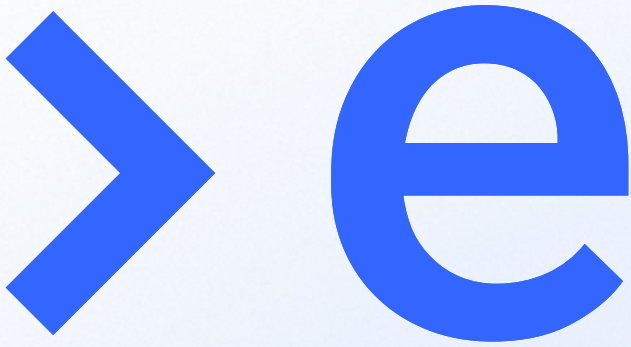
> valkyr

See what is
happening in orbit.
Decide what happens
next.

Persistent intelligence for decision superiority
in the space domain.

> ecosmic





ABOUT US/

Ecosmic is a space intelligence company founded in 2024 with the goal of enabling continuous, comprehensive awareness of objects and activities across all orbits to **secure space operations**.

Space systems are **critical infrastructure**. That infrastructure, however, is increasingly threatened by a degraded orbital environment and the development of ever more sophisticated counter-space capabilities. Operators need Space Domain Awareness to monitor an evolving threat landscape and keep custody of critical assets.

Our solutions integrate Space Domain Awareness data from a network of ground- and space-based sensors, perform data fusion, and deliver a **continuously updated picture** of the space domain.

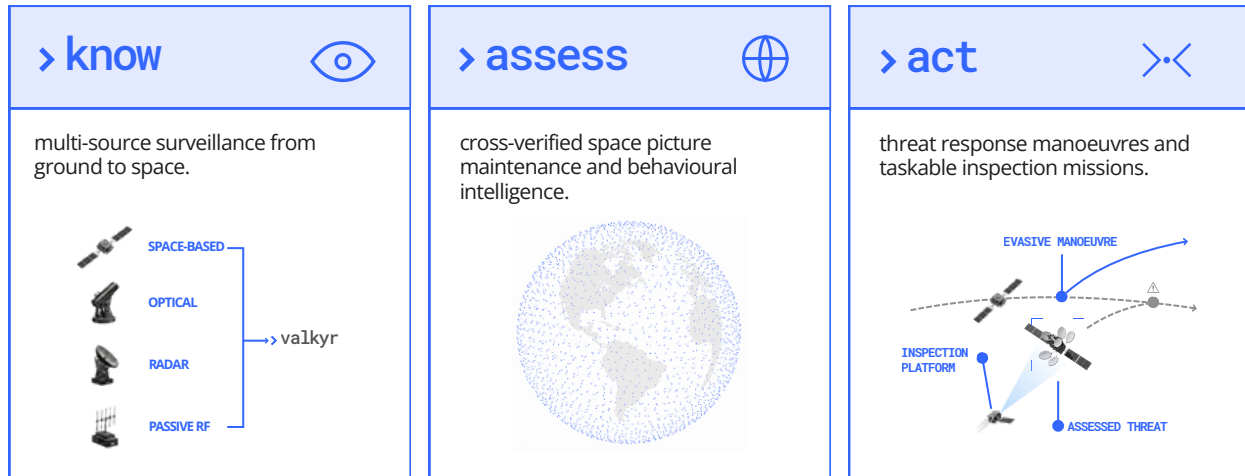
This includes identifying patterns of life, detecting manoeuvres, assessing the implications of those manoeuvres for operations in other domains, and conducting complete space-object characterisation to support mission identification and **attribution**.

Ecosmic's products federate the Space Domain Awareness value chain to deliver the decision superiority operators need to establish **credible deterrence across all orbits**.

Discover more at www.ecosmic.space

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A decision superiority platform for the space domain



> introduction

VALKYR is Ecosmic's end-to-end decision superiority platform for Space Domain Awareness (SDA) and Command and Control (C2), designed for national space operations commands, defence organisations, alliances and mission-critical satellite operators.

The platform integrates surveillance, reconnaissance, characterisation, attribution, indications and warning, and action support capabilities, enabling users to monitor the space domain, establish credible deterrence, and secure freedom of action in orbit.

> architecture

VALKYR is structured across three interconnected layers: the data layer provides comprehensive multi-sensor coverage, the intelligence layer transforms observations into object and mission characterisation, and the reaction layer converts that intelligence into operational response options.

All three layers interact with each other to contribute to VALKYR's core decision superiority function: enabling users to **know**, **assess**, and **act** in the space domain better and faster than the adversary.



> capabilities

VALKYR integrates ground- and space-based data across optical, radar, and passive RF modalities to deliver comprehensive and continuous custody of objects and events in the space domain, enabling:

> comprehensive space surveillance

VALKYR leverages multiple sensors to increase surveillance coverage, close observation gaps, and exploit complementary sensing modalities to obtain a richer and more comprehensive picture of the space domain, overcoming the limitations of unimodal architectures.

> object characterisation

Users can task ground-based observations, high-resolution space-based imaging, and inspection missions to fully characterise the state, physical characteristics and functional capabilities of space assets.

> sensor federation support

Through VALKYR, users can automatically integrate novel data sources, supporting the federation of national sensing infrastructure, commercial assets, and multinational sensor networks.



> capabilities

VALKYR catalogues objects and events in a continuously updated recognised space picture, then applies proprietary algorithms to provide intelligence and threat alerts to the end-user, enabling:

> recognised space picture maintenance

Users can access a coherent, near-real-time catalogue of space objects including satellites, debris, and new launches to maintain comprehensive awareness of the space domain. For each object, VALKYR provides the following information:

/physical state

- > Size, shape, and appearance;
- > Ownership and operator;
- > Propulsion systems;
- > Payload and subsystems.

/operational state

- > Manoeuvrability;
- > Attitude and stability;
- > Health status;
- > Communication activity.

/behavioural state

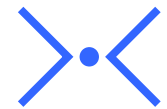
- > Ground track history;
- > Pattern of life and mission evolution;
- > RPOs and interaction history;
- > Mission type.

> full intelligence profiling

VALKYR runs pattern-of-life analyses on objects of interest, combining historical behaviour with sensor observations to assess and attribute each object's provenance, capabilities, and purpose.

> indications and warning

VALKYR identifies manoeuvres and anomalies involving objects of interest, assesses their impact and risk level, and disseminates alerts to users and connected systems.



> capabilities

VALKYR empowers users to act in space to pre-empt and respond to both imminent and potential threats, enabling:

> responsive manoeuvre suggestion

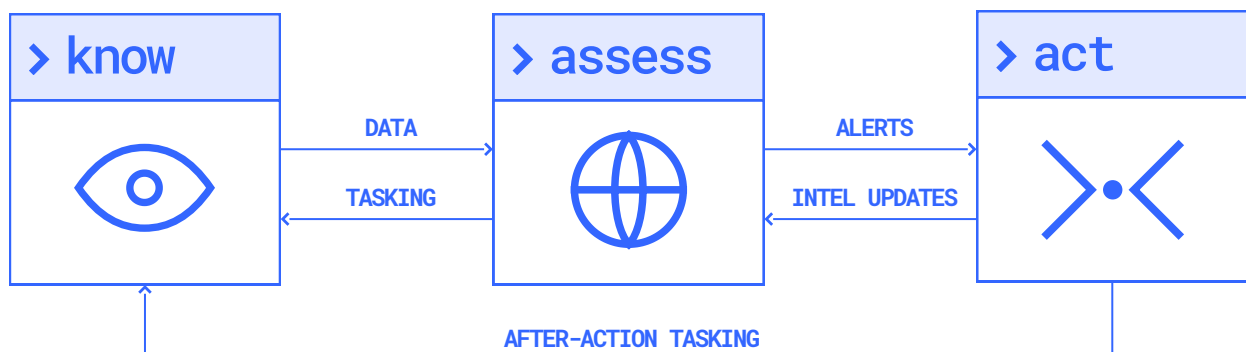
VALKYR provides users with optimised manoeuvre plans to evade active threats while minimising mission disruption and propellant expenditure.

> proximity operations tasking

Users can task VALKYR's federated highly manoeuvrable platform fleet to approach and investigate potential threats, feeding back into the data layer while establishing credible deterrence.

> closing the loop

Following an operational response, VALKYR collects after-action telemetry and observations and updates the object and mission assessments, closing the **know-assess-act loop**.



Discover more

www.ecosmic.space

Discuss your operational requirements with our defence team

defence@ecosmic.space