OHB SWEDEN

SATELLITE SYSTEMS

INNOSAT SML series

Micro Satellite Platforms

INNOSAT SML series

MICRO SATELLITE PLATFORMS

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OHB Sweden's InnoSat SML microsatellite platform series offer a highly integrated, capable satellite platform intended for a wide range of LEO applications such as earth observation, telecom and scientific research in the satellite range of 40-200kg. It is designed to provide high performance in pointing, power and data downlink for the lowest cost/reliability ratio. The platform is designed to interface with multiple types of payloads and can easily be tailored to the customers' requirements.

All InnoSat platforms are built and designed around a set of re-usable core elements both hardware and software and come in three standard series:

Small: A simple body-mounted SA and a full hemispherical payload view for a wide variety of orbits.

Medium: Body-mounted solar array, optimized for Dawn-Dusk SSO's and nadir-pointing payloads.

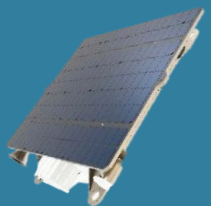
Large: Suitable for all SSO's with deployable solar array. Expandable in power and size.

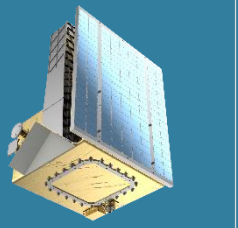
InnoSat MATS during AIT

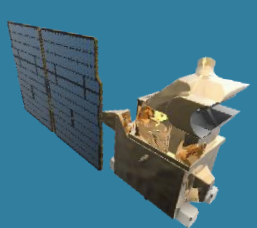
General	Orbit	Low Earth Orbit
	Launch vehicles	F9,Electron,PSLV,Soyuz,Vega/A6
	Launch mass	<40kg(S),40-70kg(M),70-200kg(L)
	Design lifetime	5 years
	Delivery time	12-24 months
Payload	Type	Telecom, EO, Science
	Mass	<20kg(S), 20-30kg(M), 30-80kg(L)
	Power (EOL OA)	30-40W (S/M), 50-60W (L)
	Supply	28V unregulated
	Downlink	X-band (< 200 Mbps) and/or S-band (< 4 Mbps)
	Data interfaces	CAN, RS422/485, SpaceWire, PPS
	Data rate (write)	< 200 Mbps
	Storage	56-128 GB
AOCS	Type	3-axis Control
	Pointing	APE < 290" (2σ) (any axis) AKE < 190" (2σ) (any axis)
	Positioning	< 10 m (GPS)
	Timing	< 20 µs (GPS)
	Slew rate	> 10/7/3 deg/min (S/M/L)
	Orbit control	EP (Orbit maintenance, CAMs, deorbit)
Options	High pointing	APE < 10" (2σ), AKE < 5" (2σ) (Any axis)
	High slew rate	< 25 deg/min
	High power	Expandable up to 120W EOL OA
	Comm	ISL, L-band
	Secure comm	Authentication/encryption (AES)

InnoSat SML series Status and heritage

	Small	Medium	Large
Development status	In-Orbit since 2021	Launch 08/2021	Launch Q1 2024
Heritage Missions	GMS-T	MATS	AWS







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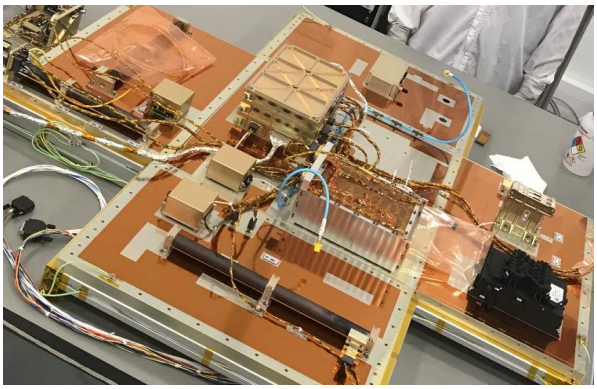


InnoSat M - MATS platform integration

InnoSat philosophy

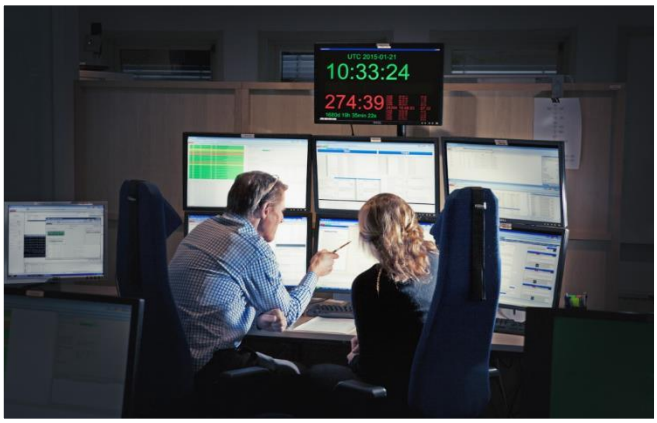
- Low-cost, New-Space
- In-house responsibility for all subsystems
- Selective redundancy
- Unobstructed payload accommodation volume providing maximum operational envelope
- Envelope optimized for piggyback launches
- Fault Tolerant COTS approach
- Radiation tolerant avionics
- Fully qualified and flight proven equipment
- CCSDS compliant communications
- ITAR free

Facilities

Close to Stockholm Arlanda Airport, OHB Sweden features a large variety of facilities used throughout the entire lifecycle of InnoSat from design to operations including:

- Large ISO8 cleanroom (upgradeable to ISO5), suitable for small constellations
- 3.5m^3 TVAC (in collaboration with KTH)
- Mission Control Center (MCC)

OHB Sweden main cleanroom in Kista



OHB Sweden MCC with RAMSES operating system

RAMSES

The baseline for all InnoSat's is the re-use of OHB Sweden's RAMSES control system, which is used during the development and testing phases of the spacecraft and the actual operations resulting in an efficient transition between AIT and ops.

The system architecture is designed for multi-satellite missions and is scalable. OHB Sweden's operation center is located at the OHB Sweden offices in Kista, Sweden. RAMSES is ECSS PUS based.

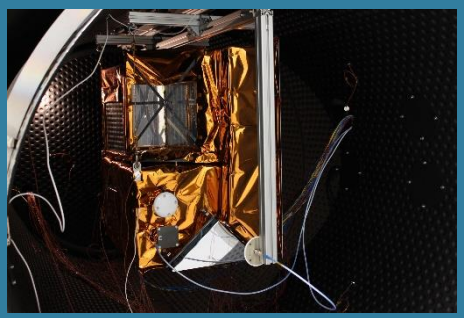
InnoSat as a service

in the following versions

- **Avionics**
- **Platform** + Platform AIT
- **Satellite** + System AIT
- **Satellite** + LEOP/IOC
- **Mission** + Operations
- **Mission** + PDC

MATS

"Mesospheric Airglow/Aerosol Tomography and Spectroscopy" (MATS) will use optical measurements techniques to study the mesosphere.



InnoSat M - MATS during TVAC 2020

AWS

"Arctic Weather Satellite" (AWS) will use a passive microwave radiometer providing global measurements of the atmosphere.

InnoSat L- AWS constellation artist impression

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SATELLITE SYSTEMS

About OHB Sweden AB

OHB Sweden AB is a subsidiary of OHB SE, one of the three leading space companies in Europe. At OHB SE around 2,400 specialists and system engineers work on key European space programs.

OHB Sweden AB specializes in high-tech solutions for satellite systems. These include amongst others small satellites, AOCS and propulsion subsystems.

Certified against ISO 9001:2015

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