

LE PROSPETTIVE DELL'INDUSTRIA E DELLA FILIERA AEROSPAZIALE PIEMONTESE
Thales Alenia Space Italia S.p.A.

INCONTRO SULL'AEROSPAZIO E PROPRIETÀ INDUSTRIALE – TORINO 16 APRILE, 2024


Valter BASSO: Research Technology & Product/ Exploration and Science + TASI IP Manager

JOINT VENTURE

ThalesAlenia
a Thales / Leonardo company **Space**

THALES (67%)
LEONARDO (33%)





The infographic illustrates various satellite orbits around Earth. It features several concentric arcs representing different orbital altitudes. On the right, the Earth's surface is shown with city lights and a satellite in low orbit. Moving outwards, there are arcs for 400 KM, 700 KM, 800 KM, 8000 KM, and 36000 KM. Various satellite types are depicted at these altitudes, including small cubesats, larger communication satellites, and deep space probes like Mars rovers and lunar landers. A purple nebula is visible in the background.

FROM EARTH TO DEEP SPACE...

36000 KM

8000 KM

800 KM

700 KM

400 KM

A JOINT VENTURE BETWEEN TWO LEADERS

A WORLD PLAYER IN EACH OF THE SPACE MARKETS



TELECOMMUNICATIONS

FIXED / MOBILE
BROADBAND
DUAL / MILITARY
SECURED



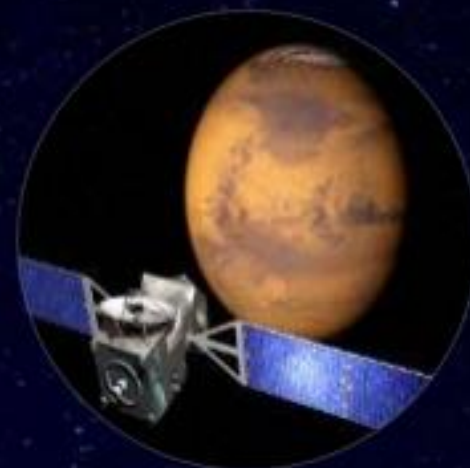
OBSERVATION

CLIMATE CHANGE
METEOROLOGY
OCEANOGRAPHY
INTELLIGENCE
SURVEILLANCE



NAVIGATION

LOCALIZATION
AERONAUTICAL
COMMUNICATIONS
DATA COLLECT



EXPLORATION
/ SCIENCE

PLANETOLOGY
FUNDAMENTAL PHYSICS
ASTRONOMY
HUMAN SPACEFLIGHTS
SPACE TRANSPORTATION
SYSTEMS

TORINO

Human Space Exploration Scenario



Months



Days



Hours

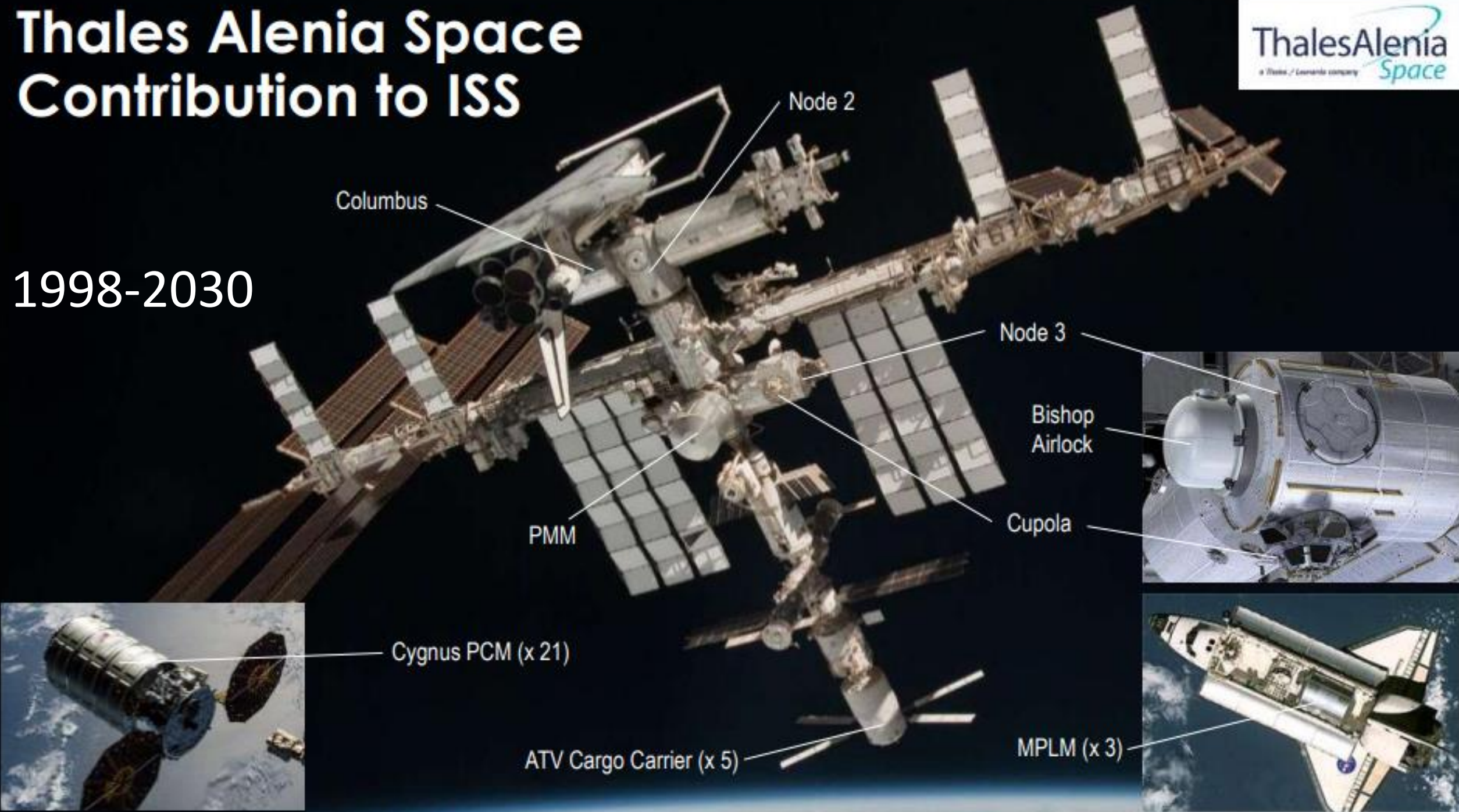


HUMAN SPACEFLIGHT MARKET
WORLDWIDE = 18,3 B€

Thales Alenia Space Contribution to ISS



1998-2030



Columbus

Node 2

Node 3

PMM

Bishop Airlock

Cupola

Cygnus PCM (x 21)

ATV Cargo Carrier (x 5)

MPLM (x 3)



AXIOM - Commercial LEO Station



AXIOM
SPACE

ThalesAlenia
Space

TODAY AND FUTURE: ISS EXPLOITATION AND POST ISS

Orbital Reef
Blue Origin and Sierra Space



Free Flyer
Northrop Grumman



Starlab
Nanoracks and Lockheed Martin



TODAY AND FUTURE: COMMERCIAL LEO DESTINATION

ON ORBIT SERVICING



ThalesAlenia
Space

ON ORBIT RECYCLING



ThalesAlenia
Space

ON ORBIT MANUFACTURING



ThalesAlenia
Space

ATMOSPHERIC RE-ENTRY VEHICLES



IXV – INTERMEDIATE EXPERIMENTAL VEHICLE

ThalesAlenia
Space



EXPERT



SPACE RIDER



ThalesAlenia
Space



REV1 – SPACE CARGO UNLIMITED



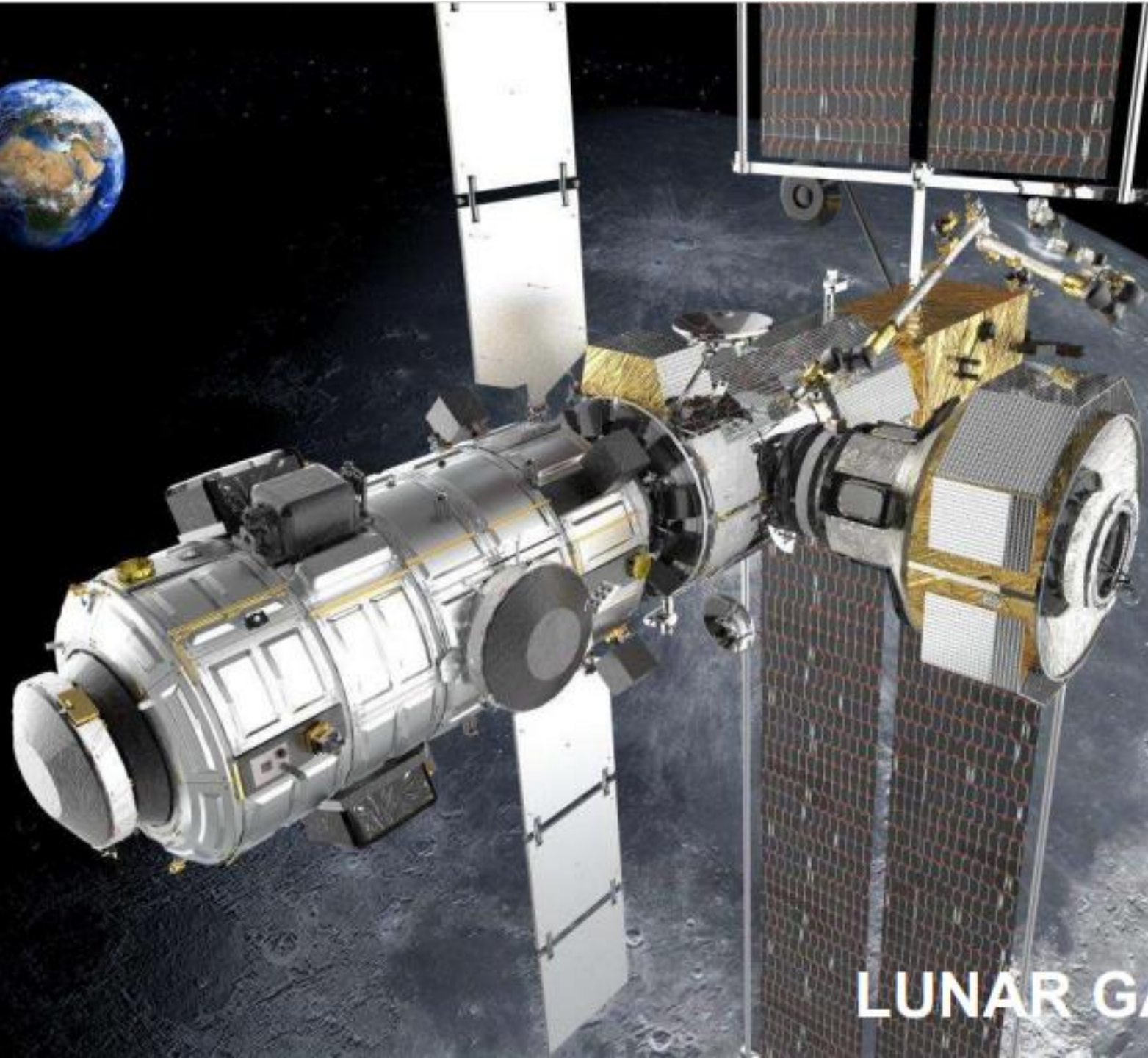
COMMERCIAL ON-ORBIT SCIENCE

RADIAN



Daily Flights To and From
Low Earth Orbit

HALO
i-HAB
ESPRIT



LUNAR GATEWAY

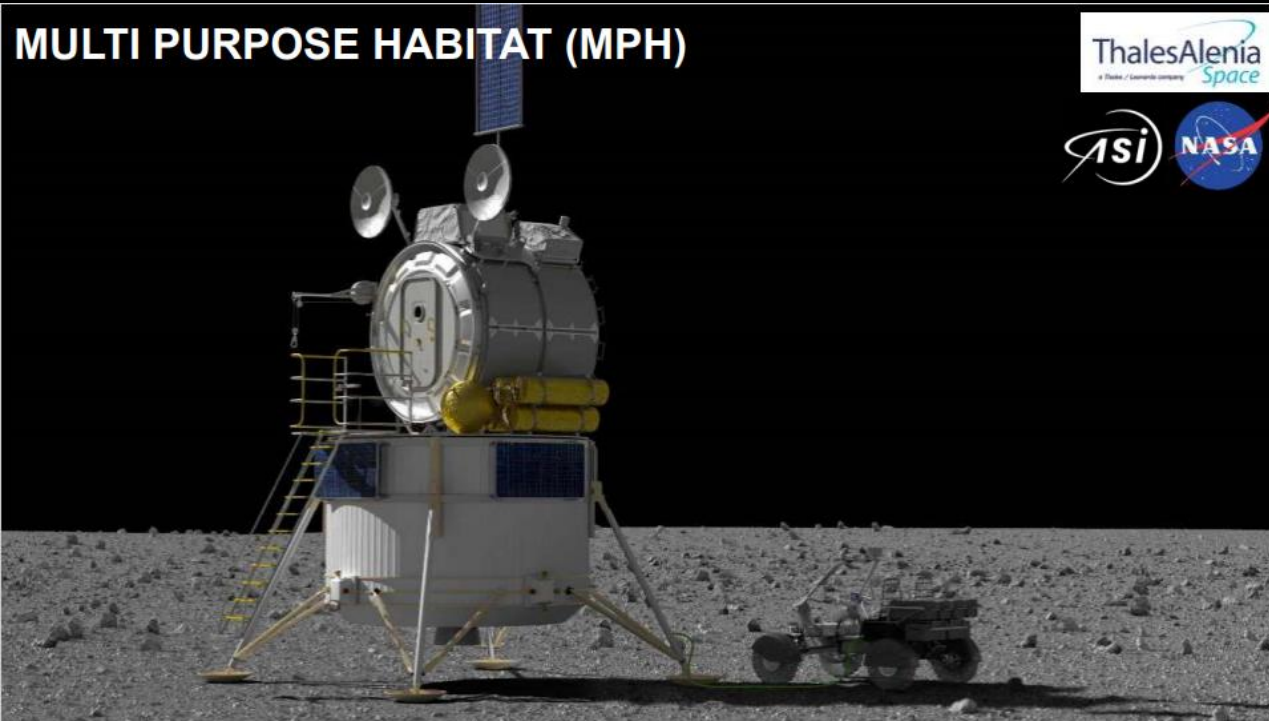


NORTHROP
GRUMMAN

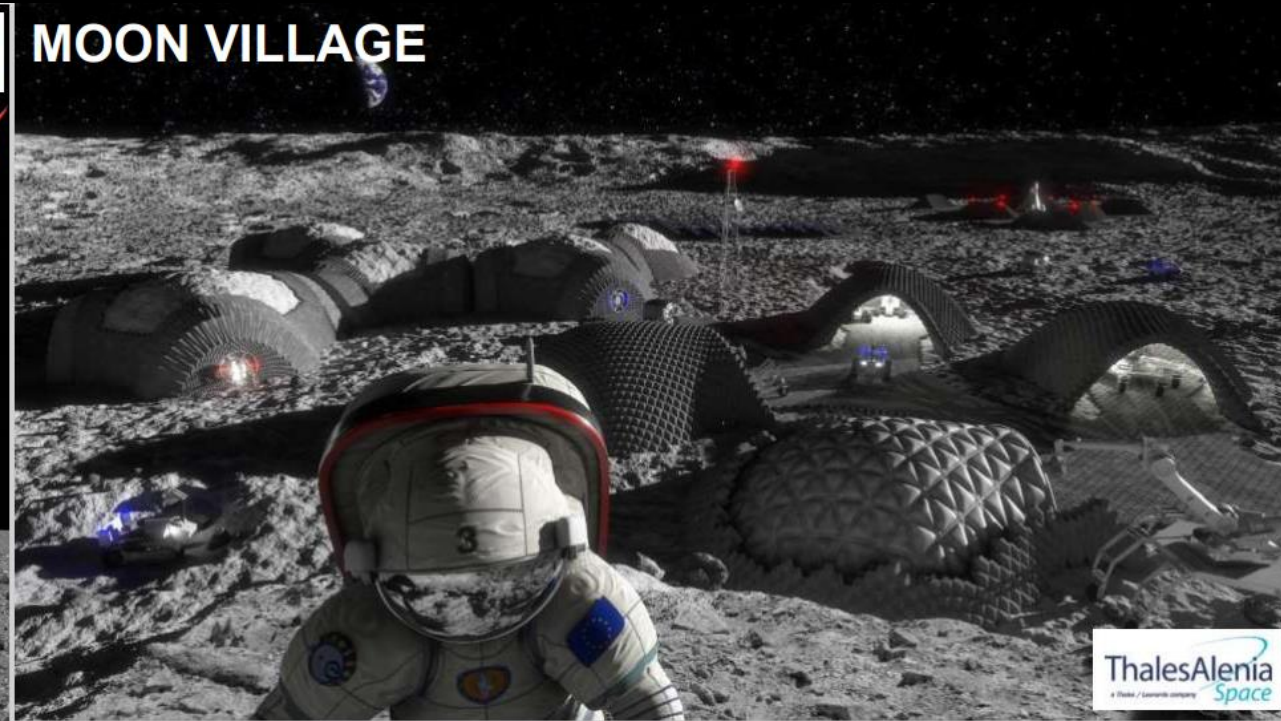
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MOON

MULTI PURPOSE HABITAT (MPH)



MOON VILLAGE



MARS



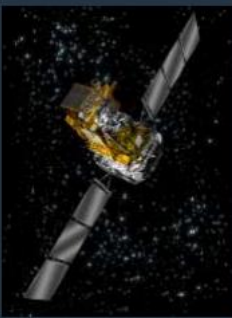
MARS SAMPLE RETURN



SPACECRAFT FOR SCIENCE: OUR HISTORY



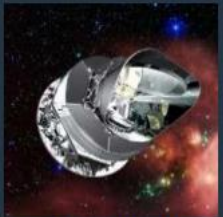
X-ray astrophysics
(BeppoSAX, ASI)



γ-ray astrophysics
(INTEGRAL, ESA)



IR astrophysics
(Herschel SVM, ESA)



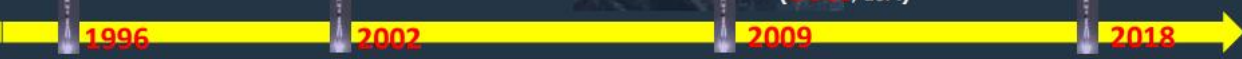
CMB mapping
(Planck SVM, ESA)



Earth gravity field mapping
(GOCE, ESA)



Mission to Mercury
(BepiColombo, ESA)



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EUCLID – M2 01/07/2023

Mapping the dark Universe geometry



Credits: ESA



ATHENA – L2 X-RAY

ADVANCED TELESCOPE FOR HIGH ENERGY ASTROPHYSICS



How ordinary matter assembles
Black holes grow and shape the universe



LISA – L3 MASTERING GRAVITATIONAL WAVES

2,5 Mkm



SPACE FOR LIFE

WE BELIEVE IN SPACE AS HUMANKIND'S
NEW HORIZON TO BUILD A BETTER,
SUSTAINABLE LIFE ON EARTH.



#spaceforlife

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a Thales / Leonardo company *Space*

THALES ALENIA SPACE ITALIA S.P.A. CON SOCIO UNICO

Patent Portfolio @ End 2023

Active Patent families: **50**: Around 50% @ TORINO;

Trademarks: **3** registered

PoA:  STUDIO TORTA

TRANSITIONS

- **INSTITUTIONAL** ➡ **COMMERCIAL MARKET**
- **ONE OF A KIND** ➡ **PRODUCT LINES**

IP Strategy: DEFENSIVE ➡ **AGGRESSIVE**

/// Most of the Knowledge is Industrial Secret of Multidisciplinary nature

/// Disclosures process through

- Patent Committee (on call)
- Publication Committee (Monthly)
- NDA with Partners, Frame Agreements with Academia

R&D BUDGET 2024: >8M€ will be doubled in 2025 ➡ **Patents increase**

MAIN TECHNOLOGIES:

Large Structures Additive Manufacturing, AI, Robotics, Edge, Quantum

THANKS FOR YOUR ATTENTION

