➜ HERA IN A NUTSHELL

Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

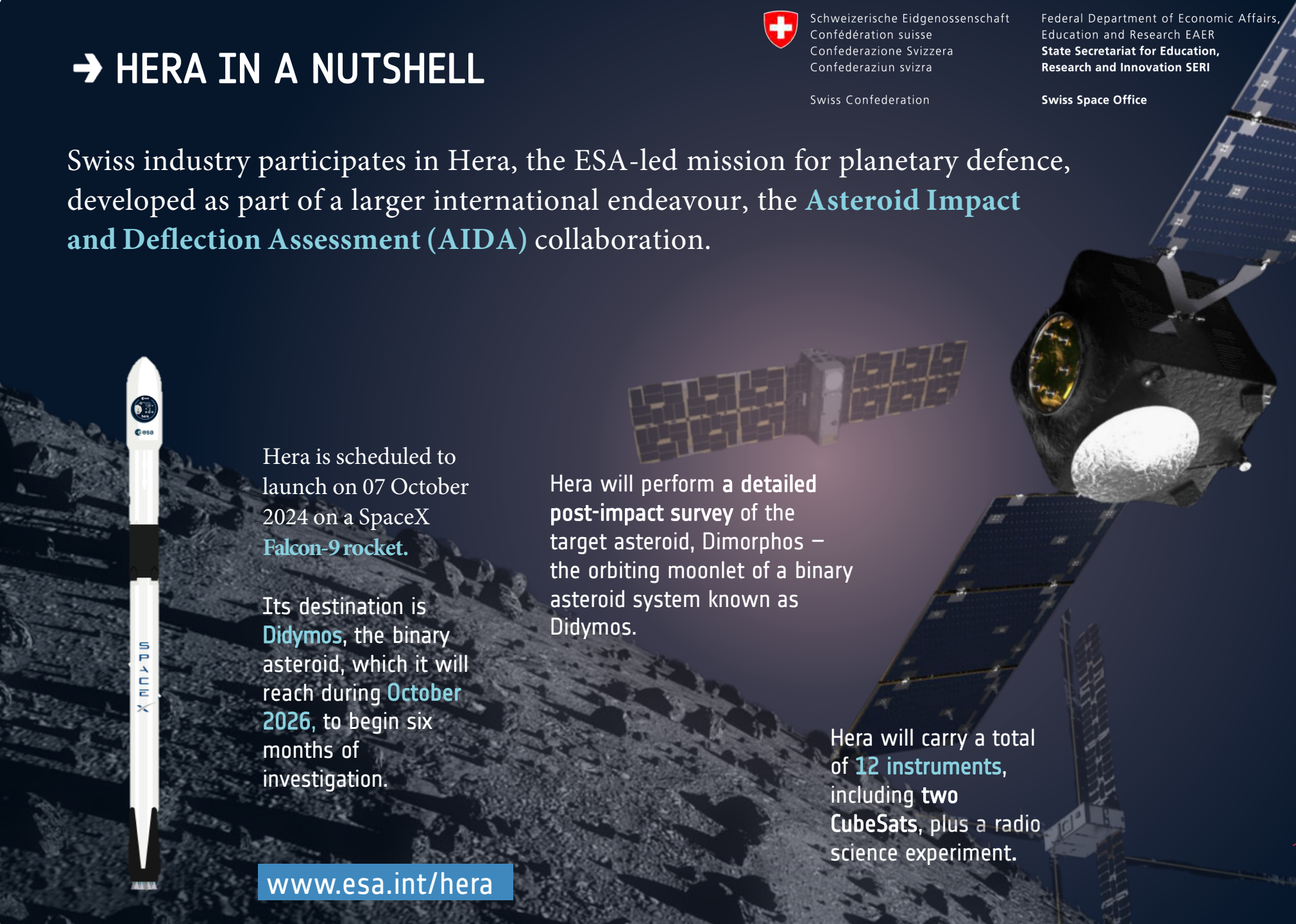
Swiss Confederation

Federal Department of Economic Affairs, Education and Research EAER
State Secretariat for Education, Research and Innovation SERI

Swiss Space Office

esa

Swiss industry participates in Hera, the ESA-led mission for planetary defence, developed as part of a larger international endeavour, the **Asteroid Impact and Deflection Assessment (AIDA)** collaboration.



Hera is scheduled to launch on 07 October 2024 on a SpaceX **Falcon-9 rocket.**

Its destination is **Didymos**, the binary asteroid, which it will reach during **October 2026**, to begin six months of investigation.

Hera will perform **a detailed post-impact survey** of the target asteroid, Dimorphos – the orbiting moonlet of a binary asteroid system known as Didymos.

Hera will carry a total of **12 instruments**, including **two CubeSats**, plus a radio science experiment.

As well as serving **planetary defence**, Hera will also demonstrate **new European technologies** in deep space – including **autonomous vision-based navigation and inter-satellite links** connecting the three spacecraft.

Hera is the European contribution to an international double-spacecraft endeavour with NASA.

www.esa.int/hera

HERA: MADE IN EUROPE

Hera's overall mission cost is **€350 million** which includes spacecraft and payload development, launcher procurement and operations. Around **100 European companies and institutes across 18 ESA Member States** are involved in making Hera happen. Here are the leading contributors by country in the consortium, working with multiple subcontractors in turn:

→ **Germany - OHB** led Hera's industrial consortium for ESA, including responsibility for the overall spacecraft design, development, assembly and testing. **HPS** has produced Hera's High Gain Antenna, with **INVENT** making its main reflector dish and spacecraft composite panels. **DSi Aerospace** made Hera's Mass Memory Unit, storing instrument and computer data. **Jena-Optronik** produced Hera's Asteroid Framing Cameras while Azur Space supplied Hera's solar cells.

→ **Italy - OHB Italia** developed the electrical power subsystem and led the spacecraft harness design. **Avio** was responsible for integrating and testing Hera's propulsion subsystem while **Leonardo** integrated Hera's photovoltaic assembly. **Tyvak International** designed, developed, assembled and tested the Milani CubeSat, while INAF developed its dust detector. **TSD Space** developed Hera's Spacecraft Monitoring Camera.

→ **Belgium - Redwire Space** led the data handling subsystem including Hera's onboard computer while **SPACEBEL** developed the spacecraft central software, various simulation systems and the Cubesats' Mission Control Centre. **Thales Alenia Space** Belgium developed the power distribution and control unit as well as components for the communication subsystem. The **Royal Observatory of Belgium** developed Juventas' CubeSat GRASS gravimeter.

→ **Spain - GMV** led Hera's guidance, navigation and control system, with **EMXYS** developing Juventas's GRASS gravimeter electronics. **SENER** produced Hera's low-gain antennas while **Thales Alenia Space** Spain led the communications subsystem design.

→ **Czechia - OHB Czechspace** led the spacecraft structure subsystem design while **GLE** manufactured Hera's harness – its subsystem-and-component-connecting wiring.

→ **Luxembourg - Gomspace** had responsibility for the Juventas CubeSat design, integration and testing, with **Emtronix** developing the CubeSat's JuRa payload.

Juventus

IRELAND

Innalabs supplied Hera's gyro unit, providing additional orientation information.

NETHERLANDS

Cosine has produced Hera's HyperScout instrument, while **ISISpace** manufactured the CubeSats' Deep Space Deployers.

DENMARK

Gomspace Denmark contributed to the Milani CubeSat and **TERMA** producing Remote Terminal Units for data handling.

FINLAND

Kuva Space made the Life Support Interface Board for the CubeSats' Deep Space Deployers. **VTT** developed Milani's multispectral imager.

JAPAN

Japanese space agency JAXA is supplying Hera's TIRI thermal infrared camera (based on a similar instrument aboard JAXA's Hayabusa2 asteroid mission).

POLAND

N7Space supported software development and validation while **Astronika** developed Juventas' radar deployable antennas.

AUSTRIA

Beyond Gravity Austria developed Hera's Solar Array Drive Mechanisms, lining up its solar arrays with the Sun.

LATVIA

Eventech made Hera's time measurement module used by the PALT laser altimeter.

HUNGARY

Huld performed verification for mission software.

PORTUGAL

Tekever provided the inter-satellite link technology linking Hera to its CubeSats, with **GMV** Portugal contributing to Hera's guidance system. **FHP** oversaw Hera's thermal insulation and **Efacec** contributed its PALT instrument.

SWITZERLAND

Beyond Gravity produced Hera's solar array wings and central tube.

ROMANIA

GMV Romania developed an innovative image processing unit for Hera's autonomous guidance system, while **HPS** contributed to Hera's high-gain antenna.

FRANCE

SAFT supplied Hera's batteries while **SODERN** produced its startrackers. **Anywaves** produced the antennas for the inter-satellite links. **IPAG** in Grenoble designed the JuRa radar.

ESA Launch kit

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