

CHEOPS - Consortium for Hall Effect Orbital Propulsion System

CHEOPS SOLUTIONS

CHEOPS is a challenging space project that proposes to develop **three different Hall Effect Thruster (HET) Electric Propulsion Systems (EPS)**, in order to serve different application fields or orbits:

- a low power for Low Earth Orbit (LEO) applications;
- a dual mode EPS for GEO/NAV applications;
- a >20 kW high thrust EPS for exploration applications.

CHEOPS OBJECTIVES

CHEOPS aims also at:

- demonstrating an EPS total cost reduction at platform level of at least of 30%;
- assessing a trade-off analysis of alternative cheaper propellants;
- estimating the system lifetime;
- establishing a HET performances measurement standard;
- developing advanced, non-intrusive tests for measuring thruster erosion.

CHEOPS project has been proposed in line with the H2020 Strategic Research Cluster (SRC) Roadmap for "In-space Electrical Propulsion and Station-Keeping" prepared by the Programm Support Action (PSA) EPIC.



<http://epic-src.eu>

CHEOPS APPROACH

The **CHEOPS** approach integrates costs reduction, improved performances, new functionalities and mission scenarios.

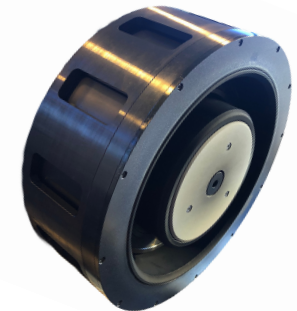
Achieve a **TRL5-6 for a dual mode EPS** (optimised both for high thrust for orbit raising and high Isp for station keeping)

Each of the proposed HETs will be developed according to market needs and drivers applying incremental technology changes to existing EPS products.

CHEOPS will achieve the following developments, within the end of the current project and launch the **CHEOPS Phase II** aiming at demonstrating by 2023:

- a) the **dual mode HET EPS TRL7-8**;
- b) the **low power HET EPS (200-700W) TRL7-8**;
- c) **high power HET EPS TRL6**.

Reach a **TRL4-5 for a high power (>20kW) EPS**.



SITAEL
HT 20K

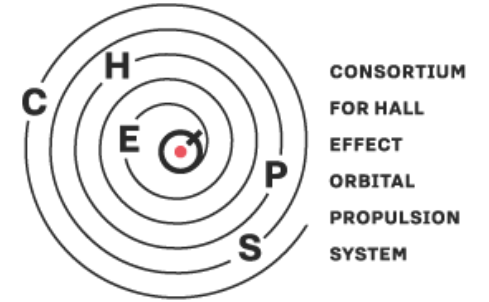


SAFRAN
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CHEOPS PARTNERS



The **CHEOPS Consortium** is led by **Safran Aircraft Engines** and is comprised of representatives of the biggest European Prime satellite makers (**Airbus Defence and Space, OHB System, Thales Alenia Space**), the full EPS supply chain (**Advanced Space Technologies, Bradford Engineering, Deutsches Zentrum fuer Luft - und Raumfahrt (DLR), SITAEL**) and supported by academia and research centres (**Centre National de la Recherche Scientifique, Chalmers Technology University, SME4SPACE, Universidad Carlos III de Madrid**).



H2020 CHEOPS - Consortium for Hall Effect Orbital Propulsion System

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H2020 CHEOPS
Consortium for Hall
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Propulsion System

*The future of electric
propulsion for in-space
operation and transportation*

 @CHEOPS_H2020

 www.linkedin.com/company/cheops-h2020

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Acknowledgment: Cambridge Astronomical Survey Unit.
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The CHEOPS project has received funding from the European Union's Horizon 2020 research and innovation programme under Grant Agreement No 730135.