

# Ephemerista open-source Satellite Communications simulator tool

*Saturday 25 October 2025 16:00 (30 minutes)*

As the space industry rapidly evolves, the need for accessible, collaborative, and powerful mission analysis tools has never been greater. Ephemerista is an open-source, satellite communications simulator tool funded by the European Space Agency (ESA) and developed by the Libre Space Foundation. Ephemerista provides a comprehensive suite of tools for satellite constellation design, orbit propagation, and telecommunications analysis. This workshop will provide an introduction to the Ephemerista ecosystem, highlighting its core functionalities and open-source philosophy. Attendees will learn how to leverage Ephemerista's Python API to perform key tasks, such as defining spacecraft orbits, modelling ground stations, and conducting link budget analyses. We will also demonstrate the intuitive web-based GUI, which allows for 3D visualisation of space assets and facilitates collaborative design efforts. The workshop will cover practical use cases, from single-satellite mission planning to large-scale constellation simulations. By the end of this session, participants will have a foundational understanding of how to use Ephemerista to streamline their space mission design and analysis workflows, fostering a more collaborative and innovative approach to space exploration.

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**Session Classification:** Ephemerista Workshop