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New Worlds - Non-Traditional Space Education and Outreach (7)

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DISCOVERING GALILEO GNSS VIA AN ANDROID APP "CALLISTO - GALILEO'S SPACESHIP"

Abstract

Callisto - Galileo's spaceship is the title of an Android app developed in 2018 as a part of the inaugural year of European Space Agency's Galileo App Competition. Callisto allows users to compute and visualise their position based on measurements coming purely from the Galileo GNSS, and to compare it with the corresponding GPS result.

In addition to highlighting the difference between the positioning solutions calculated by the two constellations, Callisto allows the user to display which specific GNSS satellites are visible from their current location and what the strengths of their signals are. To gamify these insights and make them more intuitive to understand for a broader base of users, the app features a position-based obstacle game as well as an informational section explaining the basics of GNSS and the different constellations.

This paper summarises the current feature set, the development process as well as its evolution after the end of the competition. Additional features were added to the app since the conclusion of the competition and an open-source development campaign was started in 2023 to incentivise crowd-sourced bug fixes, optimisation, and feature development.