

Executive Summary Report

Project Name

Queue Commanding for Navigation Cameras

Contract Number

4000126620/19/NL/BJ/va

Summary

The Max Planck Institute for Solar System Research (MPS) has developed and operated the imaging systems used for navigation and science in the Rosetta and Dawn missions.

The objective of this project was to use recent lessons learned and competences acquired from these missions to develop a queue server and external commanding capability for future onboard image acquisition and image processing systems supporting advanced onboard autonomous navigation.

A software was developed that is capable to command multiple flight hardware units in parallel, using one integrated command file based on the Integrated Timeline (ITL) format. The software was validated by commanding the Asteroid Framing Camera (AFC) for Hera and, in concurrence, Optical Ground Support Equipment (OGSE) under laboratory conditions.

The software will be used for commanding the AFC cameras in testing and calibration at MPS. It is based on a plugin design for an extension to other hardware.

An extension of this work is currently not foreseen. It is however possible to extend the software for a broader use, also for integration on spacecraft.