



## PRoVisG - Planetary Robotics Vision Ground Processing

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## D4.1 PRoViP Detailed Design Document

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**Dissemination level:** Restricted to other programme participants (including the Commission Services)

### EXECUTIVE SUMMARY

The PRoVisG research project aims to develop a framework for planetary robotic vision processing bringing together the European space community. Through the better processing and visualisation of data products from robotic missions, reductions in the operational cost and increases in data output can be realised. The project also aims to increase public awareness and provide procedures to effectively distribute mission data and information to the scientific community and general public.

This document presents the design of PRoViP (*Planetary Robotics Vision Processing*), which is the core processing engine in PRoVisG. In an initial step the requirements identified in WP 2 have been classified as either a task for PRoViP or PRoGIS. The requirements belonging to PRoViP can be split into two categories:

1. Requirements with direct impact on the overall software design and architecture
2. Requirements defining the functionality of PRoViP

The following components are described in detail in this document:

- a) **External interface** This includes the external data exchange format (Planetary Data System), the main GUI and the PRoGIS client.
- b) **Workflow design** This describes the general design and architecture of workflows within PRoViP (workflows vs. processing steps). Also the interface between workflows and processing steps is addressed.
- c) **Individual workflow description** As an example for an actual workflow, the DEM reconstruction including data classes is described using UML diagrams.
- d) **Processing environment** Description of the PRoViP meta data format (RSX/PAR) and the data handling within PRoViP.
- e) **Remote processing** The key functionality to access PRoViP functions over networks is described.
- f) **History & reprocessing** The approach for processing history logging and reprocessing is described.

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