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## MarsSI: Martian surface data processing service

**Mathieu Volat**, Cathy Quantin-Nataf, Patrick Thollot, and Lucia Mandon

CRNS/Université de Lyon, Observatoire de Lyon, Villeurbanne, France (matthieu.volat@univ-lyon1.fr)

MarsSI is a platform to help find and process Mars orbital data. Originally developed in the context of the e-Mars project (2012-2017) funded by the European Research Council, it was certified in 2017 as french national Research Infrastructure by the Centre National de la Recherche Scientifique (CNRS) as part of the Planetary Surface Portal (PSUP) [2].

MarsSI client interface is a web application. The user is provided a map based interface where available products are displayed as footprints. The user can browse and select data from here. A workspace view, allows the user to better review product selection individually. This is also the view where user will be able to request dataset processing.

All MarsSI proposed pipelines are fully automated and do not require user parametrization. This allows us to keep our global catalog reasonable and have only one version of a single product at a time, that is shared between all users. To retrieve a product, the user will request a copy operation to its home directory, where it will be available for 30 days through SFTP access (the product is kept can be copied again after this).

As of 2021, MarsSI indexes and give access to the optical data (visible, multi and hyperspectral) and derived products from three missions: Mars Odyssey, Mars Express and Mars Reconnaissance Orbiter. Our emphasis was to provide "ready-to-use" products in regards of calibration, refinements and georeferencing. The user will be able to visualize and interpret the data in GIS or remote sensing software.

MarsSI provides access to various optical datasets for visible, multi- and hypespectral data from the various martian orbital missions over the years. We also offer multiple Digital Elevation Model (DEM) datasets. Some of them are provided from external sources (such as those provided by the HiRISE and HSRC teams). But users can also requests med- and high-resolution DEMs generated using the Ames Stereo Pipeline software that are computed on our platform using a custom developed workflow.

MarsSI is open to the world wide scientific community. As of december 2020, we count 215 registered users across 128 institutes. Since it is a french service, 25% of the users are from France, but we also offer data to scientists from the USA, UK, India and China.

Built upon opensource frameworks and using standardized protocols, MarsSI offers the scientific communities an easy way to process data, most notably DEMs that can be derived from CTX and

HiRISE data collection.