New Frontend Implementation for the Mars Mapserver Prototype based on the Open Source p.mapper/MapScript Framework

Sebastian Walter and Gerhard Neukum

Freie Universitaet Berlin, Planetology and Remote Sensing, Berlin, Germany (sebastian.walter@fu-berlin.de)

In previous work, a mapserver backend was implemented for serving HRSC/SRC image data, HRSC/SRC footprints as well as other instrument's data of planetary missions to Mars. In this work, we present a new frontend for the existing data sets served by the mapserver. This new frontend is based on the *p.mapper/MapScript* [1] framework and includes improved functionality together with an advanced dynamic user interface.

The architecture of the mapserver's backend has been described in [2] and [3]. In this work, we extend our previous work by the integration of an advanced *PHP*-based frontend using MapServer's *MapScript* engine. The aim here is to use common Open Source software to achieve low development costs and long-term archiving availability. The p.mapper/MapScript framework enables the system for dynamic content creation of the data such as user-customizable queries and different data export varieties.

To faciliate the setup of a MapServer application based on PHP/MapScript, the p.mapper framework offers broad functionality and multiple configurations. It includes a dynamic HTML (DHTML) zoom/pan interface, query functions (identify single features, select multiple features, search for feature attributes), a flexible layout of query results via JavaScript templates, print functions, pop-up windows and dialogs, the possibility to add points of interest with labels on the map and a comprehensive plugin API to add custom functionality. The configuration of the layout and behaviour is defined in XML files, the configuration of the map layers is defined in a MapServer map file.

The use of the p.mapper framework as a frontend enables the Mars Mapserver prototype for a variety of features. Image or vector layers can be switched on or off, attributes of features can be queried. The query results are displayed in a moveable DHTML window on top of the map. The search for specific orbits or orbit properties is enabled by a search input field. A hyperlink to the according archived science data product is included in the query result table, by its activation the resulting data product page is opened in a new browser window.

References

[1] p.mapper: A MapServer PHP/MapScript Framework, http://www.pmapper.net

[2] Walter et al., LPSC 2009, http://www.lpi.usra.edu/ meetings/lpsc2009/pdf/1609.pdf

[3] Walter et al., EPSC 2009, http://meetingorganizer.copernicus.org/EPSC2009/EPSC2009-540.pdf