Image Processing Software for collaborative work with thematic maps

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The aim of this research is development of an online conference system that supports collaborative works on planetary missions. This system has an applicability on collaborative analysis of planetary remote sensing data, and productions of thematic maps from these data by researchers remotely placed at their own home institutes.

Many lunar explorations are planned to be launch in and after 2007. Japan also will launch SELENE (Selenological and Engineering Explore) in the summer of 2007. These missions will obtain a large amount of remote sensing data. For example, raw image data from cameras on SELENE will be over 2 TB, and the amount of derived data products such as digital terrain models, mineral maps, and element distribution maps will be over 20 TB. Although the derived data sets are calibrated and georeferenced, they are not final products of the project. Many kinds of thematic maps will be produced after analysis and discussions on the data. Usually, the thematic maps are products of face-to face discussions and conferences. Researchers gather with tentative results of their analysis, and discuss on key issues of their specific projects. Finally, the results of the discussion are summarized as a thematic map. Online conference could be an alternative that replaces this traditional style of scientific discussion. Participants of the online conference can join a discussion at their own home institute without any waste of time and travel expenses.

There are many existing systems or software solutions of the online conference from simple instant messaging tools to large video conference systems. However, they are developed to satisfy a general purpose of common meetings, and not adequate for the scientific online discussions on the planetary remote sensing data. On the other hand, most existing applications for image data analysis are stand-alone software, not supporting the online collaborative operation. Here we propose a new communication system that is particularly focused to support collaborative analysis and discussion on the planetary research field.