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SOFTWARE FRAMEWORK FOR BUILDING MODERN EARTH-OBSERVATION DATA PROCESSING AND ARCHIVING ENVIRONMENTS

St. Recher [a, *], P. Scheidgen [b]

[a] SCISYS Deutschland GmbH, Space, 44894 Bochum, Germany – stephan.recher@scisys.de
[b] SCISYS Deutschland GmbH, Space, 44894 Bochum, Germany – peter.scheidgen@scisys.de

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ABSTRACT:

The efficient and reliable management of Earth observation data is a fundamental basis for the successful operation of payload data ground segments and satellite user stations. In this context, the acquisition, processing, dissemination and archiving of data by means of flexible and user orientated data services represent major challenges. For more than 25 years, SCISYS is acting successfully in the business of Earth Observation and meteorological user stations as a supplier of flexible and scalable solutions for satellite image acquisition and processing. The presentation will give an overview of the re-design and upgrade of the existing processing software by using recent software technologies and following modern design principles. The new processing software framework provides platform-independent software components allowing deployments on LINUX, UNIX and WINDOWS platforms. Its core components create a powerful generic image data processing engine with better integration of image processors, with support for distributed processing and offering enhanced monitoring and control capabilities. One goal of the design was to allow for deployments of software modules as stand-alone units or as completely integrated, dynamic service bundles in service platforms following the OSGi specification. Professional tools for data ingestion, product dissemination and editors for system configuration complete the data processing software framework. The scalability of the framework supports various deployment scenarios: from single-node deployments to multi-node, virtualized processing infrastructures – always delivering a 24/7, fully automated image processing service with high levels of system availability and reliability. The presentation will also show the easy integration of Apache™ Hadoop® file system as a possible data storage backend for flexible data archiving.

* Corresponding author.