

EARTH OBSERVATION SYMPOSIUM (B1)
Earth Observation Data Management Systems (4)

Author: Mr. Soeren Schwartz
Werum Software & Systems AG, Germany, schwartz@werum.de

Mr. Chris Böhme
Pinkmatter Solutions, South Africa, chris@pinkmatter.com

Mr. Wolfgang Lück
South African National Space Agency (SANSA), South Africa, wolfluck@mweb.co.za

Mr. Mario Schomakers
Werum Software & Systems AG, Germany, schomakers@werum.de

Mr. Philip Bouwer
Pinkmatter Solutions, South Africa, philip@pinkmatter.com

AUTOMATED LANDSAT PRODUCT GENERATION: INTEGRATING THE USGS'S OPEN SOURCE
LPGS SYSTEM WITH A MULTI-MISSION ORDERING AND PRODUCTION SYSTEM**Abstract**

With the release of the Landsat Product Generation System (LPGS) into the open source domain by the US Geological Survey (USGS), a high quality level 1 processing system for Landsat data became readily available to receiving stations worldwide. The USGS's LPGS is capable of producing orthorectified Landsat 1-7 products with a very high geometric and radiometric accuracy. Since its open source release, LPGS became an attractive alternative to the previously used closed-source systems at the South African National Space Agency's Earth Observation Centre (SANSA's EOC). With the expertise of Pinkmatter Solutions who have also successfully implemented the LPGS at Geoscience Australia, the LPGS became a highly capable Landsat production system that could be used independently from the USGS's infrastructure. SANSA EOC's aim was to combine online ordering with automated just-in-time or systematic production to allow fast and efficient Landsat product delivery with a minimum of human interaction. This was accomplished by integrating LPGS with a scalable, multi-mission production system originally devised at the German Aerospace Centre's Remote Sensing Data Centre, the DLR's DFD. This endeavour forms part of the new South African Earth Observation Strategy funded by the Department of Science and Technology (DST). This end-to-end ordering and production system, known as DIMS-EO (Data and Information Management System for Earth Observation), has been productized and further developed by Werum Software and Systems and has a proven track record with readily available support. DIMS-EO handles online product ordering, multi-tiered short- and long-term product archiving as well as automated production and delivery for multi-mission data products. It also provides standardised OGC interfaces to interact with external catalogues like SANSA EOC's own catalogue service. DIMS-EO is a modular system that allows different processing systems to be plugged in and managed. The LPGS is the fourth processing system now integrated with DIMS-EO at SANSA's EOC. This paper examines the challenges faced and the benefits gained of an integration between LPGS and DIMS-EO and provides the reader with a unique insight into the structure of a streamlined end-to-end Landsat production system.