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OMI Dutch Processing System (ODPS)

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The Ozone Monitoring Instrument (OMI) instrument flies on the AURA spacecraft (Launched on 15th July 2004), which is part of NASA's Earth Science Enterprise. Aura will continue the long term series of atmospheric chemistry measurements made by earlier missions.

KNMI is involved in the development and operations of OMI. KNMI is also responsible for the Dutch OMI science data products. In order to produce these products the ODPS has been developed as a production and dissemination facility.

ODPS has been realized using open source technologies. The usage of Linux, farm technology, Python, MySQL, OpenSSH, Nagios, RRDTool and OpenOffice contributed to the success of the ODPS project.

Scalability, stability, ease of use and monitoring were key focus points during the development phase. An extensive and successful programme was followed in conjunction with NASA for interface and end-to-end testing. In order to achieve high availability and reliability, the network, the tape storage, the databases and the processing components have all been implemented redundantly.

During the ODPS development it became clear that the OMI mission required a fully automated Trend Monitoring and Calibration Facility (TMCF). This facility has been incorporated into the ODPS during its development.

ODPS interfaces with many external parties; automatic data-transfers take care of product exchange and product generation. All is part of the fully automated system; there is no need for manual intervention during nominal operations.

ODPS has been operational since launch and has not missed one bit of data since. During the first 3 months of the AURA mission ODPS received already approximately 4 Terabytes via US-NL Internet connections. Currently ODPS produces cloud and total ozone columns, in the near future ozone profiles will be added to the production system.