

Nanosatellite spectral imagers at VTT

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VTT has developed miniaturized hyperspectral imagers for two nanosatellites: Aalto-1 from Finland and Picasso from Belgium. Aalto-1 Spectral Imager (AaSI) was developed as a technology demonstrator to show that it is possible to adapt VTT's spectral imager technology to nanosatellite applications. The Picasso mission (PICO-satellite for Atmospheric and Space Science Observations) aims to perform scientific measurements of the atmosphere using solar occultation principle. For this mission, VTT has developed the Visible Spectral Imager for Occultation and Nightglow (VISION).

AaSI has already been integrated to the Aalto-1 satellite and the test campaign has been completed. The results from first imaging tests on ground have shown very promising results. Currently the launch date has been scheduled for early 2016. During its mission, AaSI will take images of selected targets with 6 to 20 spectral bands between 500 and 900 nm.

The engineering model of VISION was successfully integrated in October 2015, and it has passed the vibration and shock testing. Currently the thermal vacuum testing is ongoing. The mission objectives for VISION include measuring the vertical ozone profile of the atmosphere and determining the stratospheric and mesospheric temperature profiles.

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