

IAF EARTH OBSERVATION SYMPOSIUM (B1)
Future Earth Observation Systems (2)

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ENMAP, THE HYPERSPECTRAL EARTH OBSERVATION SATELLITE: OVERVIEW AND
CURRENT STATUS**Abstract**

The Environmental Mapping and Analysis Program (EnMAP) is a German space borne science mission that aims at characterizing the Earth's environment on a global scale. The single payload of the satellite is the hyperspectral imager (HSI). The hyperspectral instrument covers the wavelength range from 420nm to 2450nm using a dual spectrometer layout. In that spectral range it is capable of measuring the solar radiance reflected from the Earth's surface as a continuous spectrum, with a spectral sampling of 6.5nm (VNIR) and 10nm (SWIR). The EnMAP swath of 30km is sampled in spatial direction with 30m.

The scientific topics addressed by EnMAP cover a broad application range, from climate change impacts, land cover changes, biodiversity processes, and natural resources, to geohazard and risk assessments. With a substantial improvement in terms of signal-to-noise and a remarkable spectral resolution, EnMAP will advance space borne hyperspectral Earth observation and will allow for unrivalled measurements and quantification of key science parameters of the Earth with a huge potential for several future commercial applications.

In the IAC paper, we give an overview on the design and the current status of the integration, with focus on the instrument. The program is currently in the middle of Phase D. Qualification on subsystem/unit level has been successfully performed for the vast majority of the constituents. The optical sub-assemblies have been already finished and integrated into the instrument, the telescope is completed, and both, VNIR and SWIR, spectrometers, are integrated and characterized, with the expected performance reached. Telescope assembly and spectrometer unit are now approaching their mating, as well as the integration of the functional subsystems incl. the cameras. Remaining flight hardware is close to delivery. In parallel to the integration of the instrument, the platform is also in the middle of integration and test, readying the mission for a launch in 2020.

DLR German space agency entrusted OHB System AG as system prime for all space segment. While the spacecraft bus has been designed at OHB Bremen, based on an in-orbit proven platform, the instru-

ment is constructed by OHB Oberpfaffenhofen, with both modules, bus and instrument, being assembled, integrated and tested at OHB Oberpfaffenhofen.

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