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Ice cloud imager (ICI) and microwave imager (MWI)

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The second generation of the EUMETSAT Polar System (EPS-SG) will include the Micro-Wave Imager (MWI) and the Ice Cloud Imager (ICI) conically-scanning radiometers that will be flown on the Metop-SG B satellites. MWI will have 18 channels ranging from 18 to 183 GHz. The frequencies at 18.7, 23.8, 31.4 and 89 GHz provide continuity to key microwave imager channels for weather forecasting and surface parameter retrieval. MWI includes also innovative set of channels near 50–60 GHz and at 118 GHz, sensitive to weak precipitation and snowfall. Dual polarisation is implemented up to 89 GHz, at higher frequencies only vertical polarisation will be provided.
ICI is a novel mission, the first operational radiometer of this type designed for the remote sensing of cloud ice. ICI will have 11 channels in the mm/sub-mm spectrum from 183 GHz to 664 GHz. Three sets of channels will sample the water vapour absorption lines around 183, 325 and 448 GHz and two channels are in the atmospheric windows at 243 and 664 GHz. The window channels are implemented with dual polarisation, while the other channels are vertically polarised only. The ICI will provide an innovative characterisation of clouds, with information on humidity and ice hydrometeors, particularly the bulk ice mass.
The channel and scanning characteristics of both instruments will be detailed, and the activities related to the preparation of the operational products will be discussed.

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