

# Taking weather forecasting into the future

May 21 2014

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Building on the current series of MetOp weather satellites, the family of MetOp-Second Generation missions will comprise three pairs of satellites to secure essential information for weather forecasting through the decades beyond 2020. Credit: ESA–P. Carril

The first documents signalling the go-ahead for Europe's fleet of MetOp Second Generation weather satellites were signed today in the presence of the German Chancellor Angela Merkel at the Berlin Air Show.

Set to debut in 2021, this next generation will comprise three pairs of

satellites to secure essential information for weather forecasting through the decades beyond.

Not only will MetOp Second Generation (MetOp-SG) offer continuity of the current MetOp series, today the main source of global weather data, they will also provide better data as well as introducing several new measurements.

Volker Liebig, ESA's Director of Earth Observation Programmes, who signed the documents on behalf of ESA, said, "The signature represents the first step in the implementation of the new MetOp-SG satellites.

"This new generation will continue and significantly improve essential meteorological and climate observations provided by the current satellites.

"They will maintain Europe's leading edge in the development of meteorological systems, instruments, technologies and applications, as well as the provision of weather forecasting and monitoring services."

François Auque, Head of Space Systems at Airbus Defence and Space, added, "MetOp-SG will further increase the benefits of accurate weather prediction based on state-of-the-art European technologies under the prime contractorship of Airbus Defence and Space.

"The current MetOp satellites we built are already the largest provider, worldwide, of measurement data for [weather forecasts](#) and, thus, contribute to socio-economic benefits worth several billion euros for European citizens every year."

MetOp-SG is a cooperative undertaking between ESA and the European Organisation for the Exploitation of Meteorological Satellites, Eumetsat.

ESA funds the development of the first satellites and procures, on behalf of Eumetsat, the repeat satellites. Eumetsat then funds the repeat satellites, develops the ground segment and carries out the [satellite](#) operations and data processing.

The first MetOp satellite, MetOp-A, was launched in 2006, followed by MetOp-B in 2012. MetOp-C will be added in 2018 to guarantee the continuous delivery of readings for medium- and long-term weather forecasting and for climate monitoring until the launch of the MetOp-SG satellites.

As with the first generation, MetOp-SG will deliver crucial information on atmospheric temperature and water profiles, cloud detection and analysis, and sea-surface temperature and winds, extending to trace gases and air quality.

New instruments observing an extended spectral range will allow the collection of new environmental measurements.

Complementing the Meteosat family of satellites in geostationary orbit, 36 000 km above the equator, the MetOp satellites orbit Earth closer to home, at an altitude of approximately 834 km, and from pole to pole to provide global coverage.

MetOp-SG comprises two series of satellites. The type 'A' satellites mainly carry optical instruments while the type 'B' satellites focus on microwave sensors.

With the first contractual documents now signed, the 'A' satellites will be developed and built by Airbus Defence and Space in Toulouse, France, while the 'B' satellites will be developed and built at the company's facilities in Friedrichshafen, Germany. However, under the leadership of Airbus Defence and Space, a large industrial consortium of many

different companies around Europe will be involved.

Each satellite will be launched separately. It is envisaged that the first, an 'A' satellite, will liftoff in 2021, followed by the first 'B' satellite in 2022.

Provided by European Space Agency

Citation: Taking weather forecasting into the future (2014, May 21) retrieved 27 April 2024 from <https://phys.org/news/2014-05-weather-future.html>

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