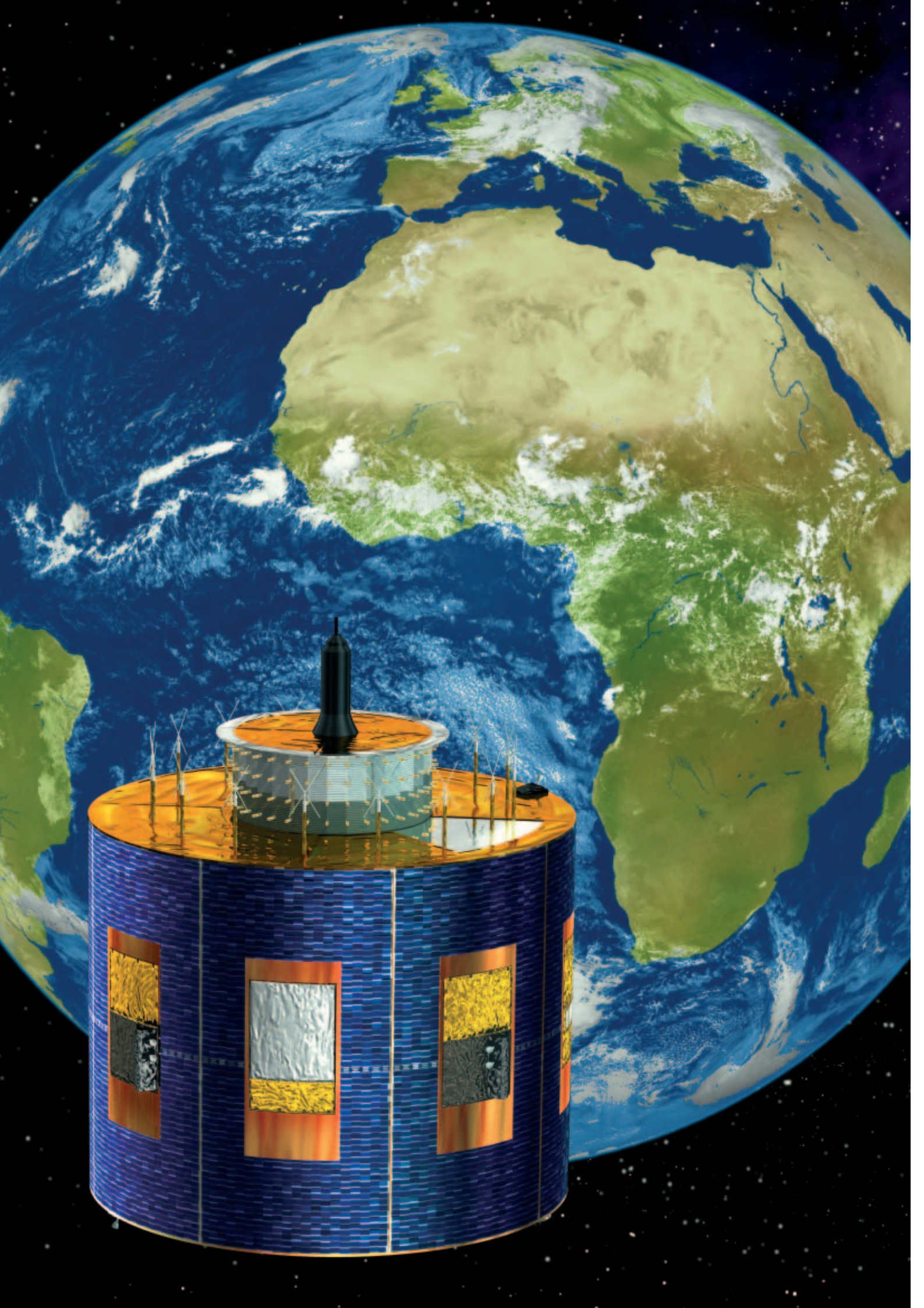

Meteosat Second Generation (MSG)

– A successful ESA-Eumetsat partnership

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ESA will shortly celebrate the 25th Anniversary of the launch of the first European Meteosat meteorological satellite. The weather-pattern images provided by the Meteosat series of satellites from their geostationary position above the Greenwich Meridian, together with added-value products, such as wind vectors, derived from the raw images, gradually became familiar to professional meteorologists, who started to exploit them in their daily work. When these same images also began to be included in weather reports and forecasts on television and in the newspapers, Meteosat began to be as well known as the presenters.

Once Meteosat had been recognised as an indispensable tool by the European meteorological offices and services, it was clear that ESA had done its job as the satellite initiator and developer and that the meteorological community would prefer to operate the Meteosats themselves. That is how Eumetsat, the European Organisation for the Exploitation of Meteorological Satellites, came to be created back in 1986. Initially, it was a small Secretariat managing the funding from the countries contributing to commonly operate the Meteosats, gradually growing into an organisation employing over 150 staff at its Headquarters in Darmstadt (Germany). The launches of Meteosat-4 and 5 saw the foundation of a successful long-term partnership between ESA and Eumetsat, leading on to the complete handover of the Meteosat system operations to Eumetsat in December 1995, when the seventh satellite in the Meteosat series was launched.

The implementation and optimisation of a remote-sensing mission is a long process. As long ago as the early 1980s, it was evident that Meteosat could and should eventually be improved. Scientists and engineers initiated a series of workshops and meetings to define what would become the next generation of geostationary metorological satellites. Gradually, a concept to continue the Meteosat mission and enhance it was delineated at ESA in consultation with the Eumetsat 'pioneers'. This would ultimately result in the Meteosat Second Generation (MSG) satellite series.

As MSG evolved from a concept into a real project, it was time to discuss with Eumetsat the ways and means of co-operating in meeting such a challenge. The environment had changed from the early 1970s, when ESA alone committed to build Meteosat; now there was Eumetsat, a partner who represented the users' wishes and would fund an important part of the venture. It was therefore agreed that ESA, with its experience in space-system project management and innovation, would run the preparatory studies, which lasted until the early 1990s. Once the design for the system that would meet the needs of the meteorological and climate-monitoring operational communities was ready, the time was ripe to start the corresponding programmes at both Organisations.

That milestone was reached on 17 February 1994, when ESA and Eumetsat signed a Co-operation Agreement encompassing the MSG system and the MSG-1 satellite, followed by the signature of a further agreement relating to MSG-2 and MSG-3 on 16 October 1996. Under these Agreements, ESA undertook to develop and fund the prototype satellite that would become the first in the series of MSG satellites. Eumetsat committed to contribute one third of the cost of the development model and 100% of the cost of the MSG-2 and MSG-3 satellites, which ESA would procure on Eumetsat's behalf. Eumetsat, in turn, would implement the MSG system, comprising a ground segment, three satellites, their launches and in-orbit commissioning and operation of

the system for a period of 12 years. The contract to develop the three MSG satellites was subsequently awarded to a European Consortium led by Alcatel Space Industries (Cannes, F).

The MSG satellites will not only continue and improve the Meteosat mission's role in operational meteorology and climate monitoring, but will also contribute to fundamental research in many Earth-science domains. For this reason, ESA and Eumetsat jointly organised a Research Announcement of Opportunity in 1998, open to scientists worldwide, who proposed innovative projects to use the data from MSG and ESA's Earth-observation satellites. A total of 43 proposals were accepted involving almost 250 scientists.

Now that the first MSG flight model has been successfully launched on an Ariane-5 vehicle from Kourou, it is time to celebrate the success achieved by combining the complementary expertises of the two organisations and to look forward to further successful partnerships in the future.

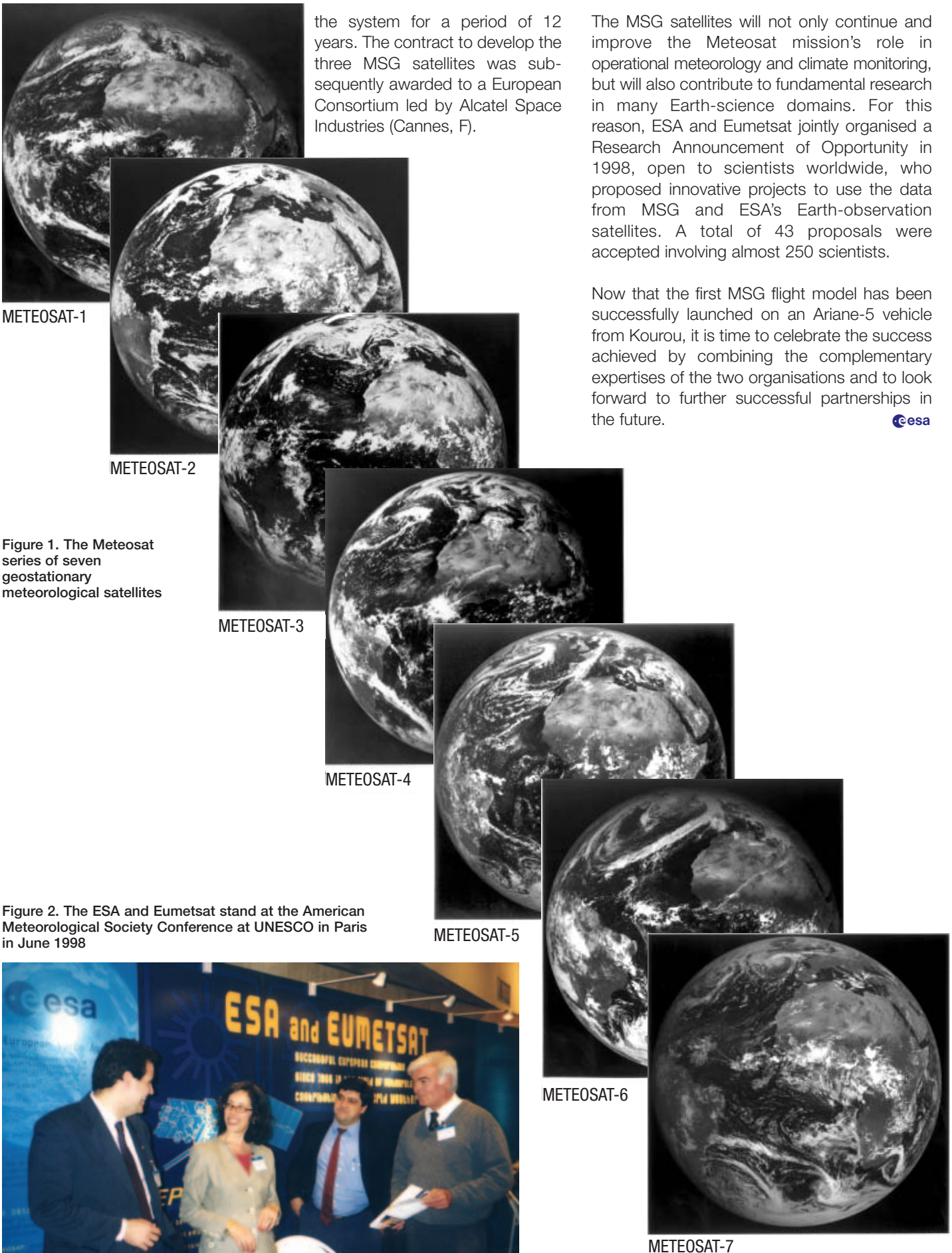

Figure 1. The Meteosat series of seven geostationary meteorological satellites

Figure 2. The ESA and Eumetsat stand at the American Meteorological Society Conference at UNESCO in Paris in June 1998