Considering typical development cycles for complex space systems, it is proposed to start planning for the followup Meteosat Third Generation (MTG) system. MTG will be the latest extension of the European geostationary meteorological satellite system and will further improve weather forecasting and environmental monitoring.

The satellite system will consist of a twin configuration of 3-axis-stabilised satellites: the Imaging mission satellite (MTG-I) and the Sounding mission satellite (MTG-S).

The current satellites of the Meteosat Second Generation (MSG) system will deliver observations and services until at least 2018. MTG will continue services beyond this date and address future challenges in weather forecasting and other services for European citizens, such as improved air quality or UV-radiation warnings, as well as climate and atmospheric chemistry monitoring.

The proposed approach is based on two decision steps:

(i) the Ministerial Council in November 2008, for approval of the overall concept plus funding for the development; and

(ii) a decision by Eumetsat council (June 2010) on its contribution to the ESA development programme and approval of Eumetsat’s part of the programme.
Who will implement it?

Eumetsat will specify and consolidate the end-user requirements, the overall mission requirements, the space-to-ground requirements, and the ground segment requirements. In addition, Eumetsat will be responsible for the overall mission and system engineering and ground segment design and development. Further along it will fund the procurement of the recurring satellites, the launch services and launch and early orbit phases, and also execute commissioning and operations.

ESA will be responsible for the development and implementation of the space segment technologies and the first MTG twin satellites. ESA will fund the related cost, apart from 30% to be contributed by Eumetsat. ESA will procure all recurring satellites as part of the Eumetsat development and operations programme.

What are the benefits?

The economic and social benefits of accurate weather forecasts include improved efficiencies in agricultural systems and optimised planning of transportation and energy, as well as improved safety.

Severe and sudden changes in weather can cause enormous damage and loss of life. While MTG will not prevent such occurrences, the populations of Europe, Africa, and neighbouring continents will be better advised by forecasters due to the improved data streams, and emergency authorities will be able to take action more quickly.

Better weather forecasts also result in economic improvements. Airports can look ahead and plan for impending fog, snowfall or hazardous winds. Aviation is safer, because forecasts allow better optimisation of flight routes. Local authorities know with greater precision when to grit roads before cold weather, while farmers, construction companies and others can plan ahead more accurately.

Location planning of future renewable energy plants to exploit wind and solar power will be improved through long-term statistical information on solar irradiation and average wind speed and direction, and operations will be optimised.