

European environment satellite set for launch

April 3 2014, by Laurent Banguet



The image, publicly provided by the European Space Agency ESA, shows an artist rendering of a Sentinel satellite. The European Space Agency is launching the first of six satellites that will be part of a new system designed to better monitor climate change, environmental disasters and catastrophes like floods, volcanoes and earthquakes. (AP Photo/ European Space Agency, ESA)

Space technicians were preparing Thursday for the launch of the first satellite in an ambitious European project to monitor Earth for climate change, pollution and deforestation and help disaster relief.

Sentinel-1A, a satellite designed to scan the Earth with cloud-penetrating radar, is set to lift off at 2102 GMT on Thursday aboard a Soyuz rocket from Kourou, French Guiana, the European Space Agency (ESA) said.

The 2.3-tonne satellite is the first in a string of hi-tech eyes in the sky that will build on the success of Envisat, a landmark satellite in Earth monitoring, whose mission ended in 2012.

Six satellites will be built and launched under the 3.786-billion-euro (\$5.19-billion) Copernicus project, a joint undertaking of ESA and the European Union (EU).

The goldmine of data expected to be thrown up by the satellite constellation will be more accessible to the public than any previous Earth-monitoring programme.

The potential applications go beyond stewardship of the environment. They could help shipping firms, farmers and construction companies, too.

"Copernicus is the most ambitious Earth observation programme to date," ESA said.

"It will provide accurate, timely and easily accessible information to improve the management of the environment, understand and mitigate the effects of [climate change](#) and ensure civil security."

Sentinel-1A will be followed by a partner, Sentinel-1B, due to be launched towards the end of next year.

Operating 180 degrees apart, at an altitude of about 700 kilometres (437 miles), between them the pair will be able to take a radar picture of anywhere on Earth within six days.

Radar scanning has a range of uses, from spotting icebergs that could threaten shipping to rogue logging, trails of oil pollution and evidence of ground subsidence.

It also has a use in [disaster relief](#). By mapping areas stricken by flood or earthquake, it can help emergency teams identify the worst-hit areas and locate roads, railway lines and bridges that are still passable.

The others in the series are Sentinel-2, which will deliver high-resolution optical images of forests and land use; Sentinel-3, providing ocean and land data; and Sentinels 4 and 5, which will monitor Earth's atmospheric composition—the basic component in fine-tuning understanding about greenhouse gases.

Sentinel-1A is being hoisted by the tried-and-trusted Soviet-era workhorse under an agreement with Russia to provide Europe with a medium-payload launcher, alongside the Ariane-5 heavy lifter and the lightweight Vega.

It will be the seventh time that Soyuz—deployed at a specially-built facility—will be launched from Kourou.

Sentinel-1A is scheduled to separate from the rocket's upper stage 23 minutes and 24 seconds after launch.

After that, it will unfold a pair of giant solar "wings," each 10 metres (32.5 feet) long, to gain power from Sun, and deploy a 12-metre-long radar antenna.

Copernicus was previously called the Global Monitoring for Environment and Security (GMES) programme.

After the scheme's future was hammered out in a budget wrangle, it was

renamed last year in honour of the 16th-century Polish astronomer who determined that the Earth orbited the Sun, and not the other way round, as convention had it at the time.

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