

LOOKING BEYOND

ITALIAN SPACE RESEARCH

LOOKING BEYOND is the result of a partnership between the Italian Ministry of Foreign Affairs and International Cooperation, the Italian Space Agency and Telespazio S.p.A. / e-GEOS. The exhibition, curated by Filippo Maggia, one of the most renowned Italian experts in the field of contemporary photography, aims at raising awareness of the multiple uses of satellite detection technologies to protect the planet.

LOOKING BEYOND offers a selection of 25 images acquired by the satellites of the all-Italian COSMO-SkyMed constellation, coming from the Italian Space Agency and Telespazio / e-GEOS database. The exhibition intends to help visitors expand their gaze on the world: it does so by focusing on what non-human eyes observe every day, every hour, under any type and in different climatic conditions. It is a gaze from above, which observes and makes evident and understandable phenomena that, otherwise, would be almost unperceivable in their effective extent.

The exhibition itinerary is divided into six sections, each of which is marked by symbols in different colours identifying the corresponding theme:

- ⌚ AGRICULTURE
- ⌚ CITIES
- ⌚ CLIMATE CHANGE
- ⌚ DEFORESTATION
- ⌚ NATURAL DISASTERS
- ⌚ WATER

LOOKING BEYOND therefore aims at offering an opportunity for collective and individual reflection on very current and urgent topics such as sustainable development and the protection of cultural and natural heritage. It is a narration where contemporary photography and technology, Italian innovation and the artistic sense interact with each other to help us go beyond the partial, limited and anthropocentric vision of the world and favour a wider perspective and reflection on the interaction between human beings and the environment.

The staging of the LOOKING BEYOND exhibition in Norway was curated by the Italian Embassy in Oslo and the Italian Cultural Institute, with the support of Vår Energi.



Ambasciata d'Italia
Oslo



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Every time we look up the sky, at night, when it's dark, we can observe different bright dots that move by following trajectories which are sometimes unlikely and different from the straight ones that are usually traced by aircrafts.

They are satellites, thousands of satellites which, especially since the '90s, have been exponentially growing and populating the terrestrial orbit with diversified applications ranging from meteorology, with which all of us are familiar just by looking at the weather forecasts broadcasted by TV networks, to agriculture and the modifications to the territory that can be monitored as the years go by, to the exploitation and maintenance of biodiversity, such as forests for example, and the development of large metropolitan cities and its consequences in terms of urban and environmental changes. Last but not least, although this is inscrutable for most of us, these instruments navigating in space around the terrestrial globe are strategic for military intelligence.

However, this exhibition, promoted by the Ministry of Foreign Affairs and International Cooperation along with the Italian Space Agency and Telespazio / e-Geos, doesn't aim at dealing with their use or their technical characteristics, that can change especially when we talk about resolution for remote sensing; rather, it aims at dealing with their unexpected, intrinsic and mysterious beauty. Satellite images, once they have been processed and played in big format, that is needed to return the many details animating them, attract and almost enchant the observers, who find themselves in front of pieces of the world that wouldn't be visible otherwise, according to a perspective, the aerial one, prompting us to observe in order to discover.

Terrestrial fragments, coloured with tones covering almost all the chromatic range, each of them with its specific meaning, and which compose different patchworks and mosaics: testimonies of the life of a city, of the activity of a volcano, of the history of a lake or a glacier, a forest or a desert, of an atmospheric phenomenon or a desertification process, until revealing to us the existence of "hidden" places, as it happens in the case of sensing for studies and researches in the archaeological field. As it happens when we find ourselves in front of the works by contemporary artists, we remain fascinated by observing these images of the Earth coming from space and we look at the world as if it was a work that we need to discover and interpret, beyond what can be immediately perceived.

Curated by
Filippo Maggia

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COSMO-SKYMED CONSTELLATION

THE MOST ADVANCED SAR SATELLITES

The **COSMO-SkyMed system** is a constellation of five radar satellites (3 first generation and 2 second generation) for Earth Observation; it is funded by the Italian Space Agency and the Italian Ministry of Defence. COSMO-SkyMed is at the forefront of technology and uses **high-resolution radar sensors** to observe the Earth day and night, regardless of weather conditions.

Its purpose is to monitor the Earth for the sake of emergency prevention, strategy, scientific and commercial purposes, providing data on a global scale to support a variety of applications among which **risk management, forest & environment protection, natural resources exploration, land management, defense and security, maritime surveillance, food & agriculture management**.

The COSMO-SkyMed Second Generation is at the forefront of radar technologies and ensures improvements and guarantee continuity with the **first generation satellites, preserving the high quality and the highest precision features, both required for the interferometric activities**.

The programme is funded by **Agenzia Spaziale Italiana (ASI), the Italian Ministry of Defence and the Italian Ministry of Education, Universities and Scientific Research**. Thales Alenia Space is the prime contractor responsible for the construction of two satellites, while Telespazio provides the ground segment and offers integrated logistics for operations.

e-GEOS is the world-wide exclusive distributor of COSMO-SkyMed and operates, on behalf of ASI, the IC-UGS (Italian Civilian User Ground Segment) at the Matera Space Center.

The COSMO-SkyMed satellite main payload is an **X-band, multi-resolution and multi-polarisation imaging radar**, with various resolutions over a large access region. It is equipped with a fixed antenna, having electronic steering capabilities that can manage a large number of operative modes for the image acquisition and for internal calibrations.