Topics (T)
Earth Observing Missions and Systems to Address Climate Change and Its Impacts [2] (3B)

Author: Mr. Jeffrey Apeldoorn
ICEYE, France

DISASTER RESPONSE IN A CHANGING CLIMATE - HOW THE WORLD'S LARGEST SAR SATELLITE CONSTELLATION CAN HELP US RESPOND MORE EFFECTIVELY.

Abstract

There is no doubt that climate change is impacting the frequency and severity of natural disasters worldwide. Extreme weather events of 2022, such as Hurricane Ian in Florida, the disastrous floods in eastern Australia, or the wildfires in California, were a reminder of the growing challenge for humankind in responding more effectively to natural catastrophes.

As the planet warms, it impacts multiple drivers of flooding. More atmospheric moisture results in wetter tropical cyclones and more intense pluvial and fluvial flooding. At the same time, ice melt and sea level rise contribute to greater storm surges and coastal flooding.

When it comes to wildfires, according to the National Oceanic and Atmospheric Administration, the United States alone had 20 wildfire events that caused more than 1 billion dollar in damage per event between 1980 and 2021. In addition, the proportion of burned land suffering severe damage has ranged from 5 to 23 percent of the total area burned from 1984 to 2020 (see reference: https://www.epa.gov/climate-indicators/climate-change-indicators-wildfires).

Thanks to remote sensing from space, a 'quiet revolution' is underway. By combining SAR technology with auxiliary data sources and machine learning, for the first time in history, we can provide accurate and immediate insights into the situation on the ground.

Globally available, high-resolution datasets are vital in managing systemic risks better. Owning the world's largest synthetic-aperture radar (SAR) constellation and combining earth observation with advanced data analytics, ICEYE offers insights into which properties are most exposed to a given peril and which buildings are more likely to be affected than others.

In 2022, the company analysed 48 floods worldwide and developed a wildfire monitoring solution in North America.

During this session, we will touch upon the following questions:
- How can SAR satellites help us address some of the most pressing concerns on Earth and respond more effectively to natural disasters?
- How can Earth observation and radar satellite technology help improve risk modelling and fill data gaps that optical images do not cover?
- What are the existing use cases of our New Space technology when it comes to faster assistance and enhanced disaster response for floods and wildfires?