BELLA IMPACT:

Latin America can tackle climate emergencies with high-speed and reliable access to vital Copernicus Earth Observation data

Scientists, citizens and organisations want to help fight climate change for a brighter future, researching, developing and implementing innovative solutions that also create employment and drive economic growth.

Policymakers and public authorities around the world need to set legislation, make well informed choices, and often take critical decisions in the event of an emergency, such as a natural disaster or humanitarian crisis.

Without high-speed and reliable access to Earth Observation (EO) data this can be a real challenge and becomes absolutely critical in times of emergencies.

For example, an emergency worker in Latin America mapping a region of 500km2 would need at least an hour to download EO data over a standard commercial internet service.

In an emergency, saving time almost certainly means saving lives.

What is Copernicus?

Copernicus is the European Union's Earth observation programme, looking at our planet and its environment to benefit all European citizens. It offers information services that draw from satellite Earth Observation and in-situ (non-space) data.

The European Commission manages the Programme. It is implemented in partnership with the Member States, the European Space Agency (ESA), the European Organisation for the Exploitation of Meteorological Satellites (EUMETSAT), the European Centre for Medium-Range Weather Forecasts (ECMWF), EU Agencies and Mercator Océan.

Vast amounts of global data from satellites and ground-based, airborne, and seaborne measurement systems provide information to help service providers, public authorities, and other international organisations improve European citizens' quality of life and beyond. The information services provided are free and openly accessible to users – that means everybody!

So, the data is there. How do scientists, citizens, organisations, policymakers and public authorities access that data in a fast and reliable way?

Without connectivity to a National Research and Education Network, an emergency worker in Latin America mapping a region of 500km^2 could wait 60 minutes to download critical data. With the completion of BELLA in 2021, high-speed NREN connectivity will deliver that same data in just 7 minutes.

Copernicus data in Latin America

Latin American National Research and Education Networks (NRENs) – such as those in Brazil, Chile, Ecuador and many others – are connected to RedCLARA, the Latin American regional research and education network. The NRENs often interconnect government agencies, ministries, academic and scientific researchers, all of whom require EO data at high speed and without the latency issues caused by the current connection route to Copernicus via North America.

RedCLARA – the Latin American research and education network – and GÉANT – the pan-European research and education network – are partners in the BELLA Consortium.

In 2021 BELLA will revolutionise Copernicus Earth Observation data access for Latin America and boost climate research collaboration with Europe.

A new direct submarine cable system between Brazil and Portugal, built by EllaLink together with the BELLA Consortium, will be completed in early 2021, reducing the current connection distance via North America by circa 300% and greatly lowering connectivity costs.

Starting at an initial 100Gbps connection between RedCLARA and GÉANT – together with an additional 100Gbps connection for Copernicus traffic, the system can scale to 4.5Tbps – enough to future proof research and education collaboration for the next 25 years.

And it's not just about speed: latency – the delay between browser and server – is greatly reduced as a result of the much shorter connection distance delivered by BELLA.

High-speed and reliable access

Now consider that same emergency worker: with a connection to an NREN, who in turn is connected to the RedCLARA backbone and via BELLA to the GÉANT pan-European backbone, that same data download time drops to seven minutes.

In a time of emergency, wouldn't you agree high-speed and reliable access to vital data is of great importance?