Workshop on Strategies for Open and Permanent Access to Scientific Information in Latin America: Focus on Health and Environmental

South America Remote Sensing Data Integration Based in Web GIS for Environmental Applications and Severe Storm Warning.

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South America has many environmental data that is not integrated in an open system. For instance, Brazil has around 23 weather radars but this information is not available to the large user community like Civil Defence or emergency management groups. Many others kinds of data like lighting, nowcasting models and weather stations are recorded but the information is not available on real time and cannot be easily interpreted and understood. This paper describes the effort to integrate remote sensing information from different agencies and satellites over the SIGMA (Sistema de Informação Geográfica Aplicado ao Meio Ambiente - Geographic Information System Applied to the Environmental) a useful tool to interpret and integrate the environmental information. This paper also describes how this information can be available to a large community by using the GEONETcast system combined with SIGMA.

SIGMA is a web based Geographic Information System currently being developed and running at the Weather Forecast and Climate Studies Centre (CPTEC) of the Brazilian Institute for Space Research (INPE). SIGMA is totally dedicated to environmental applications and was designed to integrate different types of data related to the environment. SIGMA assimilates meteorological satellite data generated at the CPTEC in real time, as well as weather radar, lightning and rain gauge data and convection nowcasting. Satellite data consist of GOES, MSG, NPOESS, MODIS and derived products, such as precipitation, surface temperature, lightning activity, burning occurrences, NDVI, ultra violet, ozone concentration maps, etc. SIGMA incorporates basic functions like zoom, pan, query builder, measuring tool and others to support users in visualizing and doing spatial analysis. Complementary layers as road maps, cities, counties, rivers, airport location and a Landsat mosaic are also available from the SIGMA. Digital Elevation Model derived from the Shuttle Radar Topography Mission (SRTM).

All this information is available in the Web in real time. Large effort should be done to integrate more information like the 10 Amazon weather radar and the others south America radars and weather station. The main idea in the future is to prepare a open SIGMA version to work connected to the GEONET to improve the use of environmental data.