CAMS 95: Use cases

Description

Atmospheric particles coming from various sources such as in desert dust, biomass burning emissions or volcanic ashes can cause significant problems in aviation such as rerouting due to poor visibility, disturbance in airport operations, massive cancelling of scheduled fights and mechanical problems such as erosion, corrosion or abrasion (engine flame out in flight). Remember the Eyjafjallajökull eruption in Iceland in April 2011, for which the estimated costs linked to the disturbances caused by this unprecedented event were considerable. In six days, eruption damaged over 90 aircrafts after flying through volcanic ash plumes, proceeded to the cancellation of 67 000 flights across Europe affecting 5.5 million passengers, associated to a loss of ¬ 1.3 billion to the airline industry worldwide with a severe impact to industry depending on air-freighted imports and exports.

More recently, as shown in news from October 16th, 2017: flight from Spain forced to make emergency landing in UK due to storm Ophelia and Sahara dust, as it headed towards Manchester Airport. The flight problem was believed to be caused by dust getting into aircraft engines - after skies across the country took on an orange colour caused by a combination of Storm Ophelia, dust from the Sahara and debris from wildfires burning in northern Spain and Portugal. The same day another flight declared an emergency as it landed at Liverpool Airport, and returned to Liverpool for the same reason. Copernicus Atmosphere Monitoring Services (CAMS) are the Copernicus Services dedicated to atmosphere monitoring and offer new information with new opportunities for new services closer to the market. Those services cover various aspects of atmosphere monitoring: air pollutant impacts applied to civil aviation sector appears to be one of more relevant and most promising in terms of economic impact. Our solution led by Capgemini Technology Services in collaboration with INERIS and the Barcelona Supercomputing Center will promote the use of Copernicus Atmospheric Monitoring Services (CAMS) products in the purpose of improving the aircraft maintenance via the related impact of particles on aircraft during flights and on parking.

Barcelona Supercomputing Center - Centro Nacional de Supercomputación