

Relevant posters:

1. Supporting UNFCCC Objectives Through International Coordination of Long-term Satellite Records
2. Creating a Coordinated Global Atmospheric CO₂ Inventory to Support the Global Stocktake

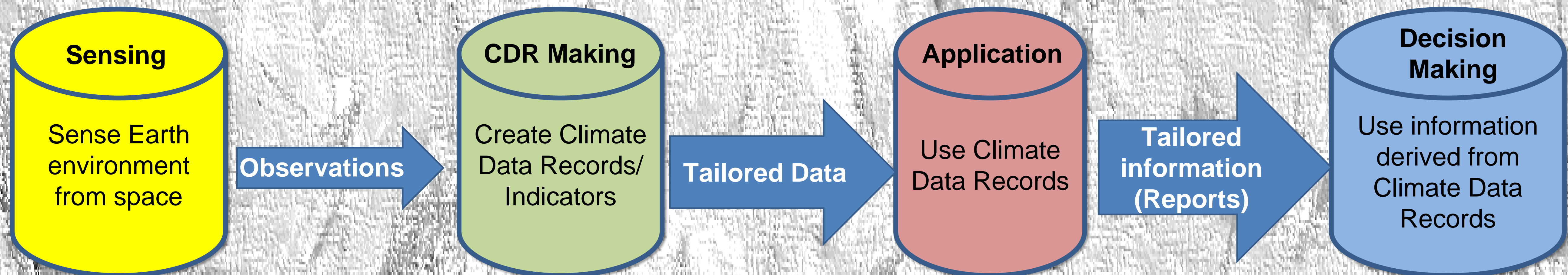
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on behalf of the Joint CEOS-CGMS Working Group on Climate and WMO

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Abstract

The joint CEOS/CGMS Working Group on Climate together with the World Meteorological Organization (WMO) is soliciting use cases that demonstrate the value of Earth Observation satellites for climate monitoring and for related policy- and decision-making (<https://climatemonitoring.info/use-cases/>). A collection of use cases will enhance awareness about the user uptake of space-based climate monitoring datasets and will help expand the user community.



Use case objectives:

- Demonstrate the value of Climate Data Records (CDRs) for decision making, including agriculture, coastal/flood management, food security, mitigation/adaptation, disaster risk reduction, energy, and protocol monitoring, etc.
- Achieve a better understanding of the application needs which can provide feedback towards the application-specific GCOS Essential Climate Variable requirement setting process.
- Provide an opportunity to examine the architecture for climate monitoring from space in the reverse order to ensure the observing system is designed for purpose and is tailored for the application and decision-making needs.
- Optimize the use of CDRs in climate service relevant applications.
- Support capacity building by providing use cases for training activities and receiving use cases from them through CEOS/CGMS and WMO capacity building activities.

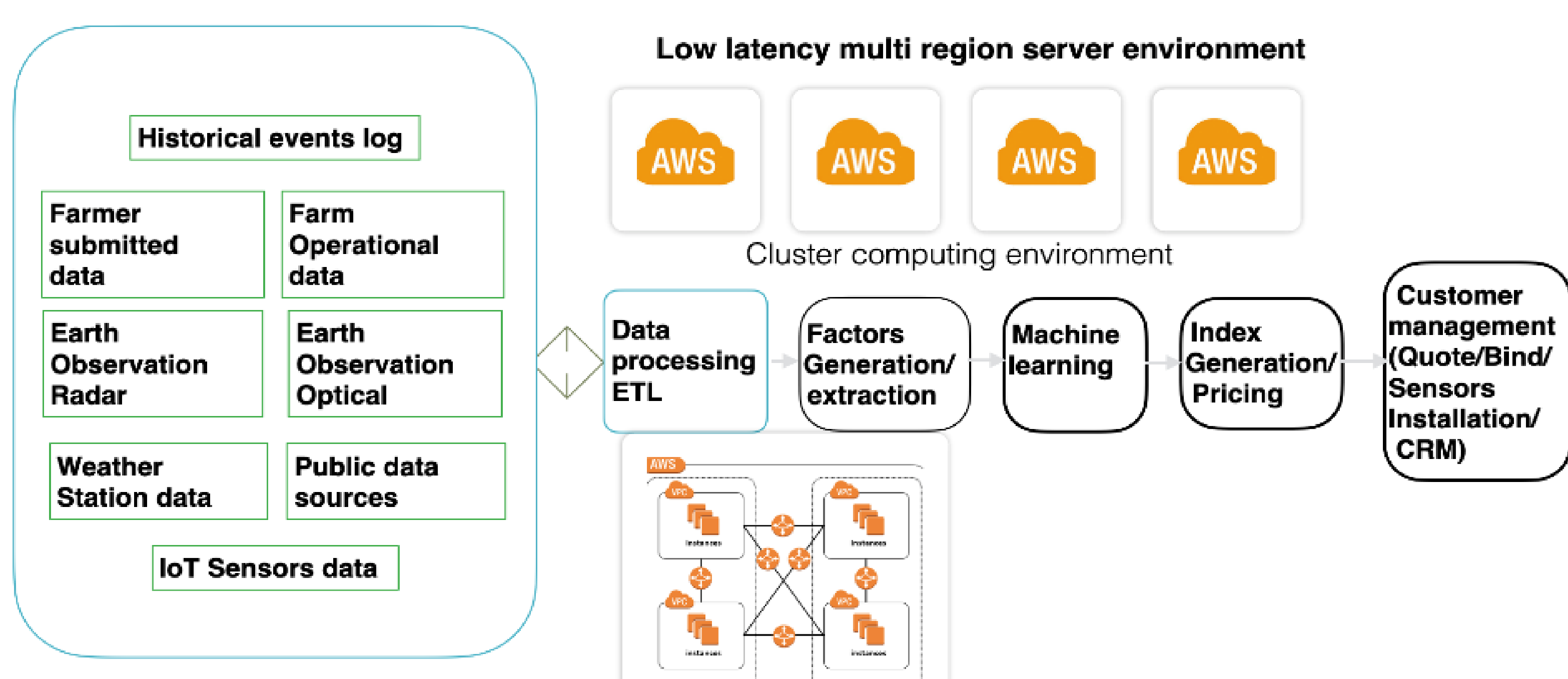
Use case received:

1. Parametric insurance for agricultural communities using weather and climate information
2. Coastal Risk Information Service (C_RISe)
3. Satellites remote sensing monitoring of the agricultural situation in the main producing region of winter wheat of China
4. NOAA Climate Data Record informs food security decisions to manage global famine
5. Alaska Disasters: Development of a Snowmelt Monitoring Tool Using NASA MODIS and NOAA Climate Data Records to Aid Wildfire Managers in Alaska
6. Space-based Weather and Climate Extremes Monitoring (SWCEM)



Example from use case: Parametric insurance for agricultural communities using weather and climate information

Agvesto's Information flow and Pipelines



Agvesto provides insurance coverage using their parametric insurance program by partnering with brokers and insurance companies. Long-term Earth observation datasets (soil moisture, precipitation, soil water index, and vegetation index) are combined with weather station data to aggregate peril-specific (such as droughts or heatwaves) data for a given region. These datasets are then fed through the Extraction-Transformation-Load (ETL) framework to extract meaningful information, which forms the basis for the risk factors generation module. For a given georeferenced region, a set of factors related to local weather stations, Earth observations and farmer submitted data is obtained using machine learning techniques. These factors are then fed to the index generation module to derive the thresholds needed to generate a quote and payout.

We invite the Earth observation and the user communities to submit their use cases through <https://climatemonitoring.info/use-cases/> to demonstrate the value of Earth observation in climate monitoring, climate service, food security, disaster risk reduction, agriculture, capacity building, decision making, adaptation, mitigation, etc. Please contact Wenyng.Su-1@nasa.gov and wbalogh@wmo.int if you have any questions.