Paris Declaration “Towards a space Climate Observatory”

- “The heads of the world’s space agencies have proposed the creation of a Space Climate Observatory (SCO) to act as a hub between space agencies and the international scientific community.”
French Government Identifies 12 key One Planet Commitments

Creation of a Space Climate Observatory
Instigated by the French Space Agency, a Space Climate Observatory has been created in order to provide States and the scientific community with all the space data necessary for monitoring the health of our planet. This initiative is supported by all European space agencies, as well as other States including China, India, Israel, Japan, Russia, Mexico, Morocco and the United Arab Emirates. Access to interoperable space-based earth observation data will be a significant step forward in the earth monitoring system.
Focus on

- **Satellite data**
  - Earth observations at global, national and local level

- **Climate change and its impacts**
  - Humankind, both as cause and as the victim of their impacts (temperature increase, sea level rise and hazards)

- **a joint Observatory**
  - A World Heritage system
Monitoring climate change
- Atmospheric CO₂ concentration,
- Global temperature, Clouds and Precipitation change,
- Sea level rise, Droughts and floods…

Tracking the impacts of climate change
- Environmental impacts
- Social and human impacts
- Biodiversity reduction
- Economical costs

Adapting to climate change
- Resources: land use, agricultural practices, relocation, water use…
- Population: Migration of people, food security…
- Socio-economic development paths
Principles

- International coordination is mandatory
  - Transparency
  - Open to any organization (beyond the space agencies ‘declaration in Paris)
  - Collaborations / Partnerships

- Complementary with the existing programs / initiatives
  - WMO-IOC-UNEP-ICSU/GCOS (ECV), CEOS, CGMS, WG-Climate, Copernicus-C3S...

- “Best effort”
  - Joint efforts
  - Sharing of capabilities (expertise, computing)

- Open access

- At international but also national level:
  - Across sectors, institutions, research community, and sub-national area (territories)
Country, sub-national / Territorial Stakes

- Climate change impacts are worldwide but there are also specific impacts at national, sub-national and territory levels

- Need to implement attenuation and adaptation policies
  - Decision Making
  - Meaningful stakeholder involvement

- Public access to data, tools and knowledge products
  - Countries level involvement
  - A need for indicators and derived space products: specific needs

- Need to marshal our forces through collaboration, partnerships, knowledge networks
  - Co-development (bilateral and / or multilateral cooperation)
Objectives

Front Office Access

Information, Outreach
Communication, Learn

Quality Control and Validation

Research & Education
Government & Society
Traditional & New Medias

Data

Specialized meta search engine
Satellite data (N2/N3)
ECV

Products & Services

Maps (past, present & future)
Toolkits and computing capacities
Space Climate Observatory

Data access

Specialized meta search engine

Space Data
- Space Agencies
- Private Providers

Archives  In flight

ECV
- GCOS
- CEOS
- CGMS

Request  Request

Front Office  Data Access

End Users
The Essential Climate Variables (ECV)

Example of sea level rise

WG Climate

WMO-IOC-UNEP-ICSU/GCOS
Requirements for Essential Climate Variables

CEOS, CGMS, Space Agency
Development and implementation of Earth observation capabilities

ECV production initiatives (e.g. CCI*)

ECV products

Current

Climate Reanalysis
Climate Modelers
Climate Services

Intercomparison

End Users

*CCI: Climate Change Initiative

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March 2018
Space Climate Observatory

Products & Services

C3S

"New" developments

Adapted at the scale of countries / sub-national areas

Co-development
- Communities of development
- Make available to others, freely
- Exchange of use, best practices

Scenario, future projections

Front Office

Products & Services Access

End Users

Feedback

Request
Space Climate Observatory

Products & Services

**Earth Observation Data**
(e.g. Data: images, atmospheric sounding, etc.)

**Model outputs**
(e.g. Research: physics, statistics, economics, socials, etc.)

**Spatial Products & ECV**
(e.g. Global or Local Products: land cover, sea level rise, soil moisture, ice thickness, atmospheric concentration, gridded precipitation, etc.)

**National, Regional and Local datasets**
(e.g. In-Situ measurements: weather, discharge, crop production, etc.)
(e.g. Statistical information: administrative areas, environmental, social and economic indicators)
Space Climate Observatory

Architecture

National
Space Research
Data Center

National
Products & Services

Space Agencies

International
Climate Organization

SCO – Front Office
Information, Data, Products & Services access

End Users
Space Climate Observatory

Schedule

- **11 Dec. 2017**
  - Paris Declaration “Towards a space Climate Observatory”
    - *Space Agencies*

- **12 Dec. 2017**
  - One Submit Planet “Creation of a Space Climate Observatory”
    - *French Government – Commitments N°5*

- **2 Feb 2018**
  - Nomination of a Head of SCO Program and Project Manager
    - *CNES*

- **Apr. 2018**
  - Nomination of a SCO Working Group
    - *Space Agencies, Organizations*

- **Jun. 2018**
  - Toulouse Space Show (TSS) - First demonstrator
    - *CNES, CNSA, CRTS, ESA, EUMETSAT and Partners*

- **Until Nov.**
  - SCO Working Group: Planning and documents

- **Dec. 2018**
  - Signature of an International Agreement or Charter on SCO
First Demonstrator

Scenario from global to local

SCO Kiosk
SCO Web
SCO Data Front office

Data

Cloud Computing

Space Climate Observatory

Toulouse Space Show

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March 2018
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THANK YOU for YOUR ATTENTION
ANY QUESTIONS?