Committee on Earth Observation Satellites

Statement from the Committee on Earth Observation Satellites (CEOS) for the Committee on the Peaceful Uses of Outer Space (COPUOS), 65th Session, 1 - 10 June 2022, Vienna, Austria

The Committee on Earth Observation Satellites (CEOS), an Observer Organisation to the Committee on the Peaceful Uses of Outer Space (COPUOS) since 2002, is honoured to provide to this 65th session an overview of salient CEOS priorities and activities.

CEOS was established in 1984 to ensure international coordination of civil space-based Earth observation programmes and to promote exchange of data to optimise societal benefit and inform decision making for a prosperous and sustainable future for humankind. For well over three decades, CEOS, which today consists of 34 Members and 29 Associates, substantively advances space-based Earth observation endeavours that no one country can do alone. As the challenges affecting the planet become more pronounced, more frequent, and more acute, this international cooperation continues to elevate societal benefit at multiple scales in support of the Sendai Framework for Disaster Risk Reduction, the 2030 Agenda for Sustainable Development, and the 2015 Paris Agreement, in line with the Space 2030 Agenda and its overarching objectives. A key partner for CEOS in addressing these important global agendas is the Group on Earth Observations (GEO). As the "space arm" of GEO, CEOS influences and supports the space segment of the Global Earth Observation System of Systems (GEOSS) through active collaboration across the GEO Work Programme.

CEOS has recently mounted a major effort to support the United Nations Framework Convention on Climate Change (UNFCCC)'s Global Stocktake (GST) process. CEOS Members and Associates recognise the value and critical role of satellite Earth observation to track progress toward the achievement of Nationally Determined Contributions (NDCs) and for stocktaking. CEOS is investing significant time and expertise to define the strategic contribution of satellite Earth observation in the GST process and, within the broader context of the comprehensive *CEOS Strategy for Carbon Observations from Space*, CEOS is advancing multi-year efforts to better constrain the natural background carbon fluxes and to ensure that space-based observations are an integral and facilitating contribution to the GST process.

Since 2014, CEOS has been developing a Recovery Observatory (RO) to increase the contribution and impact of satellite data to recovery efforts after major disaster in response to the Sendai "Build Back Better" recommendation. Beginning in 2020, a series of Recovery Observatory demonstrators were deployed to provide comprehensive geospatial coverage to support damage assessment and early planning for recovery frameworks. Recognition of these CEOS advances by the UN General Assembly in the Space 2030 Agenda (November 2021) provided further impetus for action to implement sustainable Recovery Observatory activities.

CEOS Members and Associates continue to advance systematic observation of the Earth's climate system, now over several decades, amplifying scientific knowledge and understanding of the Earth as an integrated system. Through international cooperation, CEOS is proactively generating datasets and products on the Earth's changing climate, thereby sustaining provision of knowledge-based information to climate services and supporting informed decision making worldwide and on a

sustained basis. CEOS Agencies are doing this by implementing the *Strategy Towards an Architecture for Climate Monitoring from Space*, which was developed in 2013. This climate science milestone involves the identification of existing and potential future gaps in the provision of the climate data requested by the UN's Global Climate Observing System Programme (GCOS). The Space for Climate Observatory (SCO) is yet another example. Its main goal is to study and monitor the impacts of climate change at local scales and to provide tools for decision-making on preparedness, adaptation, and resilience to climate change and its impacts through yearly selected short-term projects.

A key priority for CEOS across all its work is the provision of satellite Earth observation data that is free, open, and easily accessible to user communities worldwide. To promote full and successful utilisation of space-based data to all, CEOS is focusing on access to Analysis Ready Data (ARD) products, which are satellite data that have been processed to a minimum set of requirements and organised into a form that allows immediate analysis with a minimum of additional user effort and interoperability both through time and with other datasets.

CEOS Members and Associates remain dedicated to building capacity for the utilisation of space-based Earth observation data. The CEOS Work Plan spans the full range of the Earth observation data information life cycle, from the requirements and metadata definition for the initial ingestion of calibrated and validated satellite data into archives, through to the incorporation of derived and fully traceable information into end-user applications. To promote the use and application of these extensive data resources, a network of networks, known as the Earth Observation Training, Education, and Capacity Development Network (EOTEC DevNet) was initiated by CEOS in 2021 and Includes representatives from the CEOS Working Group on Capacity Building and Data Democracy (WGCapD), the Coordination Group for Meteorological Satellites (CGMS), the GEO Capacity Development Working Group (CD-WG), the United Nations Office for Outer Space Affairs (UNOOSA), and the World Meteorological Organisation (WMO). EOTEC DevNet is initially focused on making Earth observation-related capacity building more accessible and relevant, with the specific goal to increase the use of Earth information in decision-making for climate change, disaster management and sustainable development.

Please visit the CEOS website at https://ceos.org/, for in-depth information on our organisation, activities, and the resources we make available to data users worldwide.

Thank you for your attention.

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CEOS Members and Associates

Agence Gabonaise d'Études et d'Observations Spatiales (AGEOS), Gabon
Agencia Espacial Mexicana (AEM), Mexico
Agenzia Spaziale Italiana (ASI), Italy
Australian Bureau of Meteorology (BoM), Australia
Belgian Federal Science Policy Office (BELSPO), Belgium
Canada Centre for Mapping and Earth Observation (CCMEO), Canada
Canadian Space Agency (CSA), Canada
Centre National d'Etudes Spatiales (CNES), France
Centro para Desarrollo Tecnólogico Industrial (CDTI), Spain
China Center for Resources Satellite Data and Applications (CRESDA), China
Chinese Academy of Space Technology (CAST), China
Comisión Nacional de Actividades Espaciales (CONAE), Argentina
Commonwealth Scientific and Industrial Research Organisation (CSIRO), Australia
Deutsches Zentrum für Luft---und Raumfahrt (DLR), Germany
Earth System Science Organisation (ESSO), India
European Commission (EC)
European Centre for Medium-range Weather Forecasts (ECMWF)
European Organisation for the Exploitation of Meteorological Satellites (EUMETSAT)
European Space Agency (ESA)
Food and Agriculture Organization of the United Nations (FAO)
Geo---Informatics and Space Technology Development Agency (GISTDA), Thailand
Geoscience Australia (GA), Australia
Global Climate Observing System (GCOS)
Global Geodetic Observing System (GGOS)
Global Ocean Observing System (GOOS)
Global Terrestrial Observing System (GTOS)
International Science Council (ISC)
Indian Space Research Organisation (ISRO), India
Instituto Nacional de Pesquisas Espaciais (INPE), Brazil
Intergovernmental Oceanographic Commission (IOC)
International Ocean Colour Coordinating Group (IOCCG)
International Society of Photogrammetry and Remote Sensing (ISPRS)
Korea Aerospace Research Institute (KARI), Republic of Korea
Korea Meteorological Administration (KMA), Republic of Korea
Japan Aerospace Exploration Agency / Ministry of Education, Culture, Sports, Science and Technology (JAXA/MEXT)
Malaysian Space Agency (MYSA), Malaysia
National Aeronautics and Space Administration (NASA), USA
National Institute of Environmental Research (NIER), Republic of Korea
National Oceanic and Atmospheric Administration (NOAA), USA
National Remote Sensing Center of China (NRSCC), China
National Satellite Meteorological Center / China Meteorological Administration (NSMC/CMA), China
National Space Research Agency of Nigeria (NASRDA), Nigeria
Netherlands Space Office (NSO), Netherlands
Norwegian Space Centre (NSC), Norway
Polska Agencja Kosmiczna (POLSA), Poland
Portuguese Space Agency (PTSpace), Portugal
Russian Federal Service for Hydrometeorology and Environmental Monitoring (ROSHYDROMET), Russia
Roscosmos State Cooperation for Space Activities (ROSCOSMOS), Russia
Scientific and Technological Research Council of Turkey (TÜBITAK---Uzay), Turkey
South African Council for Scientific and Industrial Research (CSIR), South Africa
South African National Space Agency (SANSA), South Africa
State Space Agency of Ukraine (SSAU), Ukraine
Swedish National Space Agency (SNSA), Sweden
United Arab Emirates Space Agency (UAESA), UAE
United Kingdom Space Agency (UKSA), UK
United Nations Economic and Social Commission for Asia and the Pacific (ESCAP)
United Nations Educational, Scientific and Cultural Organization (UNESCO)
United Nations Environment Programme (UNEP)
United Nations Office for Outer Space Affairs (UNOOSA)
United States Geological Survey (USGS), USA
Vietnam Academy of Science and Technology (VAST), Vietnam
World Climate Research Programme (WCRP)
World Meteorological Organization (WMO)