

APPENDIX D

Appendix D—Data Exchange Principles

CEOS has adopted two sets of data exchange principles:

- 1) Satellite Data Exchange Principles in Support of Operational Environmental Use for the Public Benefit; and
- 2) Satellite Data Exchange Principles in Support of Global Change Research.

I. SATELLITE DATA EXCHANGE PRINCIPLES IN SUPPORT OF OPERATIONAL ENVIRONMENTAL USE FOR THE PUBLIC BENEFIT

At the Eighth CEOS Plenary meeting held in Berlin on September 26–28, 1994, the following data provision principles were adopted, with EUMETSAT abstaining. They were developed at an *ad hoc* Data Policy Meeting in Washington, DC on April 18–19, 1994, hosted by NOAA and NASA.

**Resolution on Principles of Satellite Data Provision
in Support of
Operational Environmental Use
for the Public Benefit⁵**

RECOGNIZING that CEOS agencies are actively involved in supporting national, regional, and international operational environmental efforts for the public benefit, as well as pursuing other uses of Earth observation satellite data;

RECOGNIZING the investments made in particular by governments and international agencies in support of operational environmental efforts for the public benefit;

RECOGNIZING that both satellite and non-satellite data have potential economic and social value, that both forms of data are important to operational environmental activities, and that the sustained acquisition, processing, and supply of data involve investments and costs;

RECOGNIZING that, in various national and international contexts, the sustainability of the observing systems and the end-to-end services to the users is a prerequisite to full operational environmental use for the public benefit;

RECOGNIZING that data provision should take into account the benefits of expanded data use, as well as investments and costs;

RECOGNIZING that Earth observation data, especially satellite data, are essential to governments and public authorities and relevant international organizations in fulfilling certain man-

⁵These principles apply to satellite data unless otherwise explicitly stated; other relevant data (e.g., in situ and airborne data) may be considered at a later time. EUMETSAT abstained from voting on these Principles.

dates, such as the protection and preservation of human life, the Earth, and property from the effects of natural disasters, severe weather, and environmental emergencies, and support for improved environmental management;

RECOGNIZING more than 100 years of cooperation within the international meteorological community in the free and unrestricted exchange of basic meteorological data;

ANTICIPATING the emerging operational requirements from global observing systems, such as the Global Climate Observing System, the Global Ocean Observing System, and the Global Terrestrial Observing System;

RECOGNIZING the value of user feedback to improve responsiveness of data suppliers;

RECOGNIZING the existence of various legal regimes for data provision and different policies for pricing and data ownership;

ANTICIPATING the potential benefits of compatible policies and mechanisms for data provision in obtaining access to data for operational environmental use for the public benefit;

REAFFIRMING the commitment of CEOS Members to the general principle of non-discriminatory access to data;

RECOGNIZING the common goal of providing data for operational environmental use for the public benefit from all appropriate missions;

RECOGNIZING also that the constraints of mission operations and of available resources may require different mechanisms for data provision for different programs;

CEOS Members endorse the following principles relating to data provision in support of operational environmental use for the public benefit and agree to work toward implementing them to the fullest extent possible within available resources:

- 1) Criteria and priorities for data acquisition, processing, distribution, preservation, archiving, and purging should be harmonized to take into account the needs of users of data for operational environmental use for the public benefit.
- 2) Real-time and/or archived data for operational environmental use for the public benefit should be made available on time scales compatible with user requirements and within agency capabilities.
- 3) CEOS data suppliers should provide, e.g., through the CEOS International Directory Network, easily accessible information about the data and related mission parameters, including quality assessments, supporting ancillary information, and guidance and aids for locating and obtaining the data.
- 4) Recognized standards, to be defined and developed in common, including those generated by CEOS Working Groups, should be used to the greatest extent practical for recording/storage media and for processing and communication of data sets.
- 5) To optimize the use of data for operational environmental use for the public benefit, CEOS members should establish appropriate data provision mechanisms.
- 6) Programs should have no exclusive period of data use except where there is a need to provide for data validation. An initial period of exclusive data use should be limited and explicitly defined. The goal should be the release of data in some preliminary form within three months after the start of routine data acquisition.

DEFINITIONS

Data provision

- Distribution of data among CEOS agencies and dissemination of data by CEOS agencies to the user community.

For the Public Benefit

- The pursuit of social and equitable objectives, directed by government or public authority.

Non-discriminatory

- All users in a clearly defined category obtain data on the same terms and conditions, and the categories are defined in such a way that all potential users will be included in categories with access to data.

Operational environmental use for the public benefit

- Use of data to provide a regular environmental service for the public benefit;
- Carried out by public, national, or international Earth observation agencies, or other entities designated by governments or public authorities, to support public benefit mandates;
- Examples include the use of data to carry out a mandate of environmental observation and prediction or missions relating to environmental management or regulation.

Real-time

- Making data available by direct broadcast or immediately after acquisition and/or initial processing.

Sustainability

- Long-term availability (supported by an appropriate replacement strategy), affordability, and capacity to adapt to evolving user needs.

II. SATELLITE DATA EXCHANGE PRINCIPLES IN SUPPORT OF GLOBAL CHANGE RESEARCH

At the Sixth CEOS Plenary meeting held in London on December 9–11, 1992, the following data exchange principles were adopted. They represent an elaboration on the principles adopted in 1991, and were developed at an *ad hoc* CEOS Data Policy Meeting in Paris in October 1992, hosted by CNES.

Resolution on Satellite Data Exchange Principles in Support of Global Change Research

RECOGNIZING that the members of CEOS are actively involved in supporting global change/climate and environmental research and monitoring efforts of the international scientific community, as well as pursuing other uses of Earth observations data such as local/regional research, operational environmental monitoring, and commercial;

RECOGNIZING the investments made by governments and international agencies in support of global change/climate research and environmental research and monitoring and the value of non-satellite data to these programs;

TAKING INTO ACCOUNT that the acquisition, processing, and supply of data, especially space data, involve major investments, and that data have value;

RECOGNIZING that these investments and values should be respected by data suppliers and users;

RECOGNIZING the existence of various policy aims such as maximizing the use of data from all sources and shifting the funding responsibility for certain remote sensing systems to users or other sources;

AWARE that success in global change/climate and environmental research and monitoring requires a continuing commitment to the establishment, maintenance, validation, description, accessibility, and distribution of high-quality, long-term data sets, many of which rely on space-borne observations;

ANTICIPATING the potential benefits of compatible policies and mechanisms for data exchange in obtaining access to global data;

REAFFIRMING the commitment of CEOS Members to the general principle of non-discriminatory access to data;

RECOGNIZING the importance of appropriate legal regimes for the exchange of remotely-sensed data;

RECOGNIZING the common goal of providing data to global change researchers from all missions on a consistent basis reflecting primarily the cost of filling the user request;

RECOGNIZING also that the constraints of the mission operations and of available resources may require different mechanisms for data exchange/sharing to be found for different programs;

CEOS members endorse the following principles relating to satellite data exchange in support of global change/climate and environmental research and monitoring and agree to work toward implementing them to the fullest extent possible. Principles for data exchange in support of other data uses beyond global change/climate and environmental research and monitoring will be developed for CEOS endorsement as a next step.

- 1) Preservation of all data needed for long-term global change/climate and environmental research and monitoring is required.
- 2) Data archives should include easily accessible information about the data holdings, including quality assessments, supporting ancillary information, and guidance and aids for locating and obtaining the data.
- 3) International standards—including those generated by the CEOS Working Group on Data—should be used to the greatest extent possible for recording/storage media and for processing and communication of data sets.
- 4) Maximizing the use of satellite data is a fundamental objective. An exchange/sharing mechanism among CEOS Members is an essential first step to maximize use.

- 5) Non-discriminatory access to satellite data by non-CEOS Members for global change/climate and environmental research and monitoring is essential. This should be achieved within the framework of the exchange and sharing mechanisms set up by CEOS Members.
- 6) Programs should have no exclusive period of data use. Where the need to provide validated data is recognized, any initial period of exclusive data use should be limited and explicitly defined. The goal should be the release of data in some preliminary form within three months after the start of routine data acquisition.
- 7) Criteria and priorities for data acquisition, archiving, and purging should be harmonized.

In addition to the revisions to the CEOS Data Exchange Principles, the Plenary agreed that the tasks contained in the report of the October *ad hoc* meeting be implemented by the Working Group on Data. As noted in the minutes of the Sixth CEOS Plenary, a plan was presented for implementing Principle 4:

- Data providers need to submit standard product catalogs to the CEOS IDN.
- Data requirements need to be identified by *ad hoc* committees of the relevant international research programs.
- Global change researchers need to be chosen through peer review or a similar process within the context of the research priorities of relevant programs.
- Written agreements (including protection of data rights and requirements for publication) need to be signed by selected researchers and their sponsoring institutions.
- Data must be shared among selected users.