**CEOS Applications Round Table – November 4th, 2013, Montreal**

DRAFT Summary of the meeting

The CEOS Applications Round Table brought together participants with the objectives to informally share national and Agency approaches to the exploitation of Earth Observation missions and data. For example:

* Programmes aimed at science, policy or commercial user uptake
* Infrastructure or services to support user uptake
* Associated measures of success used by Agencies.

There were 29 participants including 3 via phone.

The meeting opened with presentations and talks from UK, NASA, CSA, WGISS, Norway, Netherlands, ESA, Australia and JAXA. (Presentation materials are available on the CEOS plenary website).

Overall, the speakers and attendees collectively identified a growing interest in their agencies and/or countries on applications of Earth observations. The talks reflected some diversity in the programmatic approaches in supporting or developing applications. The talks also identified a number of issues that several organizations face.

Common interests and approaches emerged. For example:

* Strong interest in (and recognition of the difficulties associated with developing economic business cases for Earth observation investments, and in capturing the value and opportunities in downstream applications: scientific, commercial and government. Arguing the value proposition for Earth observations is a common problem. Several agencies have been taking steps to try to ensure that the impact of EO data is maximised through business paths. This includes ESA work to develop Copernicus Services which has been a large investment through a formalised process. The Netherlands have also made investments to stimulate business uptake. NASA is encouraging the development of quantitative impact analyses on projects applying Earth observations; NASA has produced a primer on *Measuring Socioeconomic Impacts of Earth Observations* to encourage familiarity in the Earth science community with terms and approaches used to substantiate economic benefits. Norway noted that applications have always driven investment in that country given the importance and size of the maritime zone and the advantage of being at high latitude. Some Agency’s have much stronger ‘user pulls’ e.g. from government users, whilst many Agencies felt they were still in ‘push’ mode.
* Data policy, cost and accessibility. This set of issues is seen as a key determinant in growing the user base for EO data and it is clear that further progress toward open data is thought to be required for applications to flourish through ‘*fluidity of access to data*’. WGISS outlined the work they do to support data interoperability and discovery, and highlighted they are considering what the upcoming major issues will be (eg big data and cloud computing). The work of WGISS has wide relevance to underpin applications programmes. JAXA announced that new data open data policies for low resolution data is expected. There was a strong interest in better networking and coordinating between national and Agency data holdings, and the users need to develop products from multiple data sources was noted. Attendees noted some recent studies (sponsored by Google) on the geospatial services industry (globally and in United States); the studies identified that “Government investment and policy support of geo-data collection” and “Clear open data policies and effective geo-infrastructure” as key success factors for current high-growth and continued strength of the geospatial services industry.
* The general concept of *applications readiness* appears to be important, and can be applied at various points in the EOS supply chain. NASA has developed an Applications Readiness Level classification scheme that may be a useful model for others. The long lead time from concept to operational service (15 years in the case of Europe’s CleanSeaNet) was noted more than once. There was a common need to understand what applications are available so our national programmes are not redeveloping applications already available or used elsewhere. The ARLs can be used at a project level to track maturation, at a portfolio level to assess portfolio balance, and as a diagnostic tool to identify where projects tend to experience difficulties (especially in traversing multiple valleys-of-death).
* National applications programmes have been designed to address target markets (eg scientists, commercial users, government users, international development communities); to exploit specific Missions (eg NASA SMAP mission has built user interests in from the earliest stages); or address specific topic areas (forestry, land cover, agriculture etc).
* Developing Business models. Several Agencies highlighted the tensions that sometimes arise between public applications programmes and those developed through commercial routes. Many Agencies were seeking to support growth in private sector exploitation. There were common difficulties in breaking out beyond the traditional ‘space sector’ companies, and it was suggested that stronger links to the maturer geospatial and location based services sector may help uptake.
* It emerged that several Agencies are working with common users independently of each other. The most notable being the development banks (which are major applications-focussed bodies) and also the reinsurance sector.
* The need for trusted high quality data and services was mentioned several times, and the need for common approaches to certification or validation.

In discussion the meeting:

* Was strong interest in identifying and/or compiling economic reports on the impact and value of Earth observations; there were proposals for CEOS to examine a means to share such reports, possibly through CEOS website or through existing GEO activities focused on socioeconomic impacts.
* Was supportive of JAXA’s wish, during its time as Chair, to lead a CEOS special report on data applications and services, covering developments in data policy, business models, and benefits to stakeholders. This report should have a strong forward component outlining common challenges (as well as reflecting the substantial changes of the past decade) and could provide a vital statement to inform country policies and CEOS priorities. Such a report would follow CEOS’ applications-oriented reports published in 1993 and 2003. Attendees also suggested that such a report could capture programmatic approaches across CEOS as well as provide baseline information for CEOS and its Members/Associates to do strategic planning.
* Supported the idea that CEOS agencies should seek to coordinate their approaches to major intergovernmental customers such as the various Development Banks.
* The role of WGISS in providing horizontal underpinning activities to support applications was acknowledged. Many CEOS Agencies are not resourced to participate in WGISS activities but there is a clear desire to improve interaction between Agencies and WGISS to mutually inform and support work.
* The ‘round table’ approach to informally share information and discuss priorities was seen as useful. The CEOS systems engineering office may be able to provide a leadership role to support virtual networking and information sharing between CEOS agencies, addressing common problems especially in regard to applications.