GEO, GEOSS and IGOS-P: The framework of global Earth observations

Plag, H.-P.

Nevada Bureau of Mines and Geology and Seismological Laboratory, University of Nevada, Reno, UNITED STATES

The last four decades have seen an initially slow but recently increasingly rapid programmatic development in Earth observations on global scale, with the acceleration mainly being due to a growing awareness of the political and societal leaders of the need for comprehensive Earth observations in support of their quest for sustainable development. As a starting point for this development, the first World Summit in Stockholm in 1972 can be identified. Subsequent milestones preparing the ground for the current development were in 1987 the publication of the so-called Brundtland report 'Our Common Future', which revitalized the concept of sustainable development and in 1988 the establishment of the Intergovernmental Panel on Climate Change (IPCC) by several United Nations' agencies. The World Summit in Rio de Janeiro, Brazil, in 1992 emphasized again the need for comprehensive Earth observations both in its Agenda 21 and the United Nations' Framework Convention on Climate Change. Important steps following this Summit were in the early 1990ies the initiation of the Global Climate, Ocean, and Terrestrial Observing Systems (GCOS, GOOS, and GTOS, respectively), and the development towards an Integrated Global Observing Strategy (IGOS), with the latter emphasizing stable, homogeneous, long-term observations and the necessity of a transition from research to operational monitoring. It was followed in 1998 by the establishment of the IGOS Partnership (IGOS-P), which brought together most major global providers, users, and funding agencies in Earth observation.

The last five years have seen a very rapid progress: Following up the recommendations of the recent World Summit on Sustainable Development in Johannesburg, South Africa, in 2002, the first Earth Observation Summit (EOS-I) was held in Washington, DC, in July 2003. EOS-I initiated an unprecedented effort towards coordination of global Earth observation. Through its declaration, EOS-I established the ad hoc Group of Earth Observation (ad hoc GEO) with the task to draft within 18 months a 10-year Implementation Plan for the Global Earth Observation System of Systems (GEOSS). Over the next 18 months, the ad hoc GEO met six times, and the requested plan was drafted together with a reference document containing many details of the envisaged GEOSS. The work of the ad hoc GEO was guided by the Framework document adopted by EOS-II, held in Tokyo in April 2004, which identifies nine major societal benefit areas of Earth observations, including climate, water, and disasters, which heavily depend on geodetic observations. This Implementation Plan was adopted by EOS-III in February 2005 in Brussels, which also established GEO permanently. The presence is dominated by the first steps towards an implementation of GEOSS, which is to a large extent built around the nine societal benefit areas identified by EOS-II.

In parallel to this global development, IAG has developed the concept of a Global Geodetic Observing System (GGOS). As a Participating Organization in GEO, IAG was involved in designing GEOSS and contributes to the implementation of GEOSS

with the goal to develop GGOS consistently with the needs and progress of GEOSS for a maximum mutual benefit. Moreover, steps are undertaken to establish GGOS as a partner in IGOS-P and to associate GGOS to an appropriate United Nations' agency. These steps will ensure that GGOS as the umbrella for the IAG services is appropriately integrated into a rapidly developing Earth observation framework for the benefit of the global society.