

# **Scientific Data: The Engine of Innovation**

## **– New Opportunities and Challenges for CODATA**

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New Scientific and technological innovations are taking many forms. Frontier and emerging sciences are expanding; information, knowledge and innovative research results are being mobilized at a faster pace, and solutions to important scientific issues, including global change, human health, natural disasters, energy and resources rely on integrated research. All of these are in high demand for active sharing and intensive applications of scientific data. On a daily basis, mega science facilities, ubiquitous advanced sensors, new equipments and computer simulations produce large amounts of scientific data, which has resulted in scientific research in the 21st century becoming data-intensive. Questions arise when large amounts of data are used and shared by scientists.

For over 40 years, CODATA has played a lead role in the scientific data community. Today, CODATA is facing new opportunities and challenges from the demands of science and technology, and the generation of new scientific data. It is critical that CODATA take the lead in the effective management, extensive sharing and intensive application of this data. It is also important that CODATA develop into the most dynamic and creative organization in this field. Based on SWOT analysis, this paper puts forward future vision for CODATA's development. It presents strategies, suggestions and calls for action for intensive research; connecting scientific data with key global scientific issues; improving its worldwide service ability and capacity building; improving the international cooperation mechanism and program; and increasing and creating resources. It will help to make the knowledge of data accessible to every corner of the world for the benefits of all people.

Scientific data is the endless fuel of creativity. CODATA has the ability to tap the endless potential of scientific data for the benefits of science innovation and social development. It will play a more important leading role around the world and have a more spectacular future.