Message from Professor GUO, President of CODATA

Dear Colleagues,

As President of CODATA, the Committee on Data for Science and Technology, an interdisciplinary body of the International Council for Science, ICSU, I would like to congratulate the Royal Society on today's launch of its report,

Science as an Open enterprise: open data for open science.

Over the last five centuries, the quantitative measurement of natural phenomena, materials, and processes has played a critical role in the evolution of scientific understanding. For example, the data from Tycho Brahe's astronomical observations led to Kepler's solar system model; Galileo's measurements of pendulum swings were important in the development of Newtonian mechanics; and more recently, the global exchange of weather data has been the foundation for weather and climate prediction.

In short, science could not have advanced to its present state if data from each generation had not been **preserved** and made **open, accessible,** and **usable** for subsequent generations.

In the 1960s, leading scientists realized that new scientific methods were generating large volumes of experimental and observational data and new scientific data challenges-data management, data accuracy, data access issues-were developing alongside these changes. The need for a concerted, international effort to highlight these issues was a key reason why CODATA was created. For example CODATA's work in the area of Fundamental Constants, its interaction with policy makers at the World Summit of the Information Society, its current work on promoting data sharing within the Global Earth Observation Systems, are just some samples of its activities.

50 years later, in this new millennium, the volume of scientific data being generated continues to increase exponentially along with sophisticated new tools for their automated integration and analysis. The commitment and support of governments and international organizations to create, promote, and sustain trusted data respositories and an open data environment are essential to turn this information explosion into a positive force for the future.

This data environment must have, as its foundation, the elements of ***openness*****, accessibility and usability.** Meeting these requirements is critical to the preservation of the data and ensuring that they are usable in future to support science and informed policy and decision making. Such an open data environment is even more important because of the "**new ways**

of doing science: computational and communications technologies", as highlighted in the Royal Society's report. This "data-led science" is indeed "a promising new source of knowledge."

CODATA welcomes the report and its timely recommendations, in particular: the importance of cooperation from industry and regulators in sharing data that are in the public interest; and government recognition of the potential of open data to enhance science.

At the start of this message I said that "science could not have advanced to its present state if data from each generation had not been **preserved** and made **open, accessible,** and **usable** for subsequent generations."

As I close this message my wish is twofold.

First, I hope that scientific advancement will continue to build on the legacy of scientific data and information that we and our predecessors have worked to preserve, strengthen and expand; and second, that individual scientists, international organizations, and governments will work together to foster **openness**, **accessibility** and **usability** of the data-

Today's data will become the foundation of the products and processes of tomorrow.

In recognition of the exemplary effort that went into producing this report, I want to thank the Chair of the Working Group Professor Geoffrey Boulton and his team. CODATA is especially honoured that Professor Boulton will be joining us as a keynote speaker this October in Taipei at the 2012 CODATA conference, aptly themed **"Open Data and Information for a Changing Planet".**

Again I congratulate the Royal Society - CODATA looks forward to supporting and contributing the implementation of the recommendations of this report.