

# **IAI Data and Information System (IAI-DIS): A Concept Proposal by Brazil/INPE**

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## **1. Introduction**

Global Change investigators and programs must rely on an information base that is by its own nature spread over large areas, across countries and institutions.

Research methods in recent years have evolved to take advantage of timely, reliable satellite data and of a worldwide communications system that allows information to be relayed and shared among cooperating organisms with increasing efficiency, as well as to employ massive computer power to process, digest and correlate environmental data to forecast weather and climate phenomena in regional and global scales.

Integration is a key factor in this context of surveying, extracting and combining scientific information from different sources to support and enhance Global Change research work. Nowadays, scientific institutions and even individual researchers from the First World have their computers plugged into what seems to be a hyperspace where no data lie more than a few clicks away. In developed countries, scientists are getting used to have most of the data relevant to their domain at the reach of their desktop computer or workstation.

Unfortunately, in developing countries the situation is still way behind this reality. Institutions with efficient electronic mail access are still an exception, and the ability to inquire remote databases from the personal desktop is a privilege that few individual researchers can take for granted. On the other hand, there are several instances among the American countries where local organizations keep important data holdings which are not easily accessible (and sometimes not even known) to the outside, due to reasons that can be internal or external to the institutions, or both. Currently available technology can overcome these limitations at a moderate cost, but sometimes existing personnel or infrastructure constraints make it difficult or impractical to implement effective solutions in the short run.

The nature and scope of the IAI<sup>1</sup> can aid in establishing a regional network of data and information services that would help correct this situation by allowing global change researchers of both developed and developing countries to access and utilize each others' data for the benefit of scientific work.

## **2. Basic Requirements**

The list below summarizes the main requirements envisioned for an effective IAI Data and Information System (IAI-DIS):

- Distributed archive architecture to avoid the need to move or replicate data holdings;

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<sup>1</sup> The Inter-American Institute for Global Change Research (IAI) was established with the objectives, among others, of "improving the scientific and technical capabilities and research infrastructure of the States of the region by identifying and promoting the development of facilities for the implementation of data management [...]" and "fostering standardization, collection, analysis and exchange of scientific data relevant to global change".

