



China Scientific Data Sharing Program

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Ministry of Science & Technology**



SDSP

科学数据共享工程

China-SDSP

- **General considerations and objectives**
- **Framework and architecture**
- **Major tasks**
- **Program work plan**
- **Current status and progress**

- **China-SDSP** should be developed under comprehensive planning at the national level.
- It should collect and re-organize all possible data from government agencies, institutes, programs, and individual investigators while making full use of international scientific data resources through cooperation.
- China-SDSP should make all these data accessible to all interested users at an affordable cost, or free if possible.
- China-SDSP is to form a multi-tiled, distributed scientific data sharing system that bridges the gaps between different agencies, institutes, and geographical regions.

China-SDSP under the overall planning and macro-management of the national government, effectively

- collect and integrate the scientific data resources scattered in different sectors and units, utilizing the nation's public network infrastructure, through making related policy and statute, perfecting management system, service system and operating mechanism,
- establish the highly unified and rationally structured national scientific data sharing service system,
- make over 80% of public- beneficial and fundamental data resources accessible to the whole society,
- make the accumulation and share of scientific data basically meet the needs of S&T innovation and national development.

2020 Goals

- Build a more user friendly scientific data management and sharing system
- Develop a set of supportive policies, laws and standards
- Build up a professional service group with career reward mechanism
- 80% of scientific data available to the general public

Objective specification:

- To complete and perfect policies, laws and regulations and management system for data sharing, build related institutional system
- To integrate and build around 300 master database, and about 40 scientific data center/network
- To form the mechanism of the exchange, management and share of scientific data derived from national S&T program
- To bring in international data resources, advanced management experiences and related techniques
- To establish technical standardized criteria system
- To cultivate management and technical personnel for data sharing service

Constructional Principle

- Overall planning and resources sharing**
- Cooperative constructing and unified standards**
- Demand-oriented and guaranteeing security**
- Priorities stand out and pilots go first**

Framework and Architecture

1. Logical Framework of China-SDSP

China-SDSP is a three-tiled system: master databases, scientific data centers or networks, and Gateway Web site

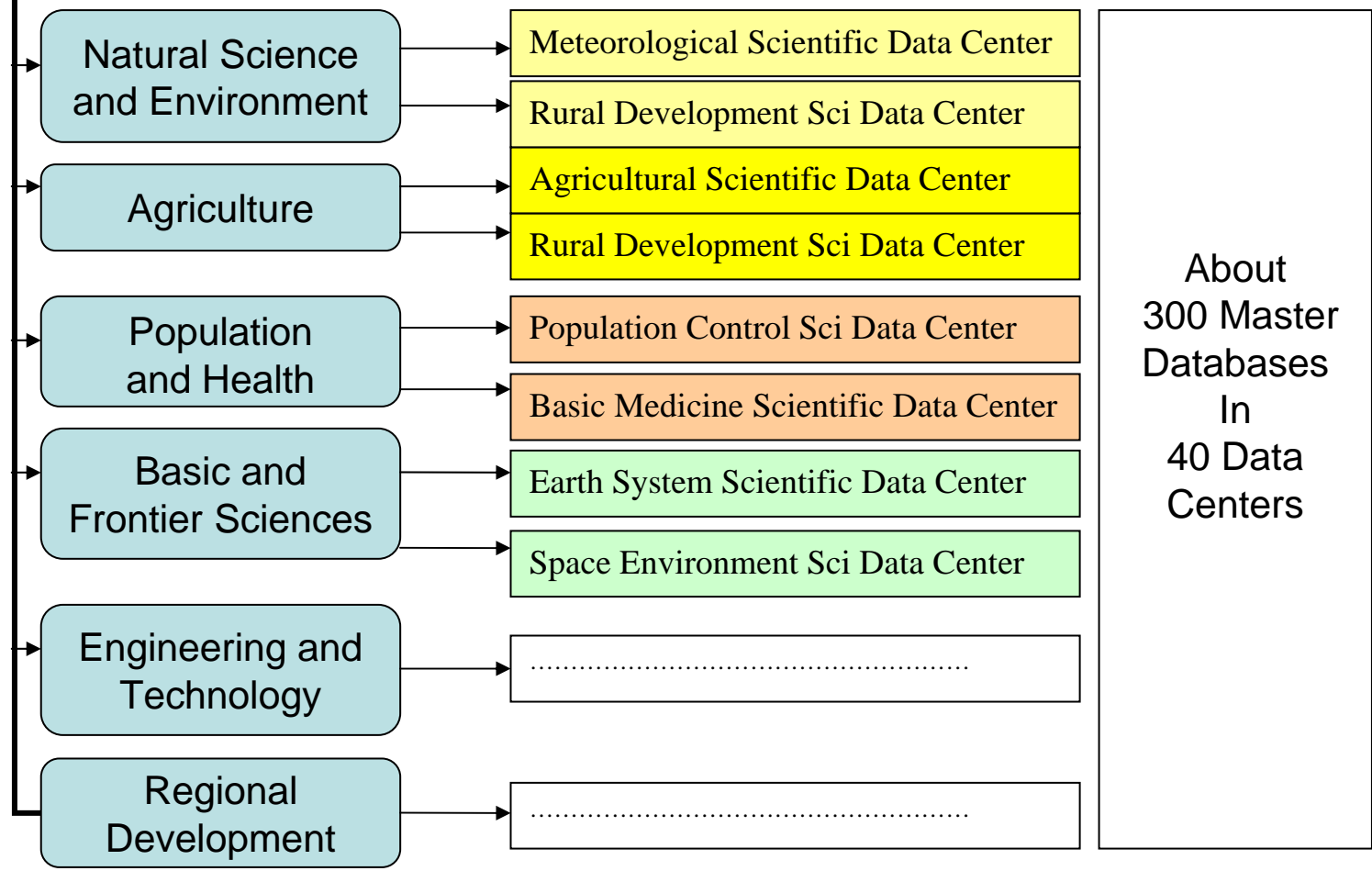
2. Scope of Data Sharing Supported by China-SDSP

China-SDSP also functions as a catalyst. Its original purpose is to integrate publicly funded data resources, but its long-term goal is to leverage all possible data resources from government to the private sectors, and make them available to the general public.

3. Service Architecture of China-SDSP

China-SDSP may provide services in various ways: facilitating the consistent management of distributed databases; providing a content service and data service, as well as other services mentioned.

Gateway to China Scientific Data Sharing Program



Disciplines

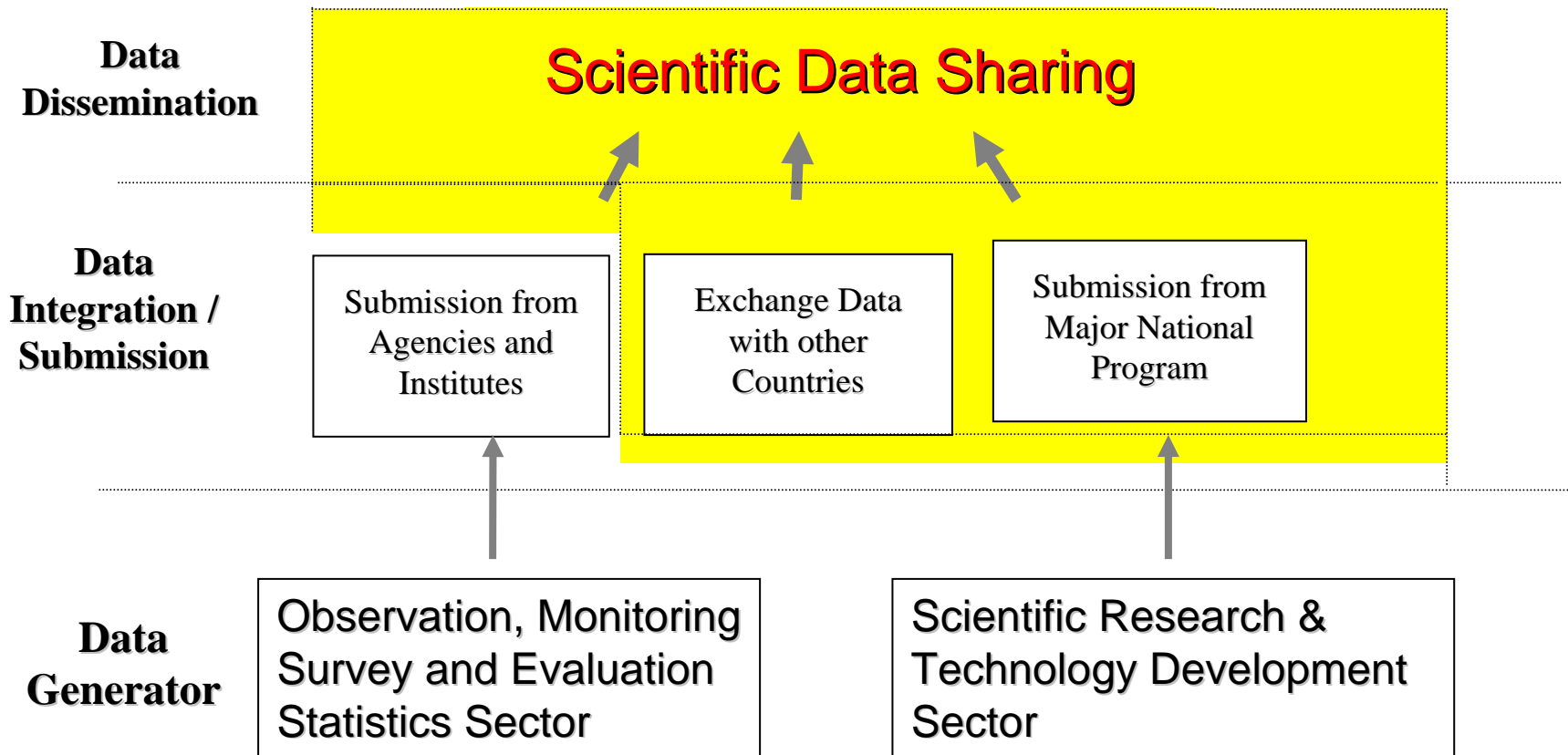
Data Center / Networks

Master Database



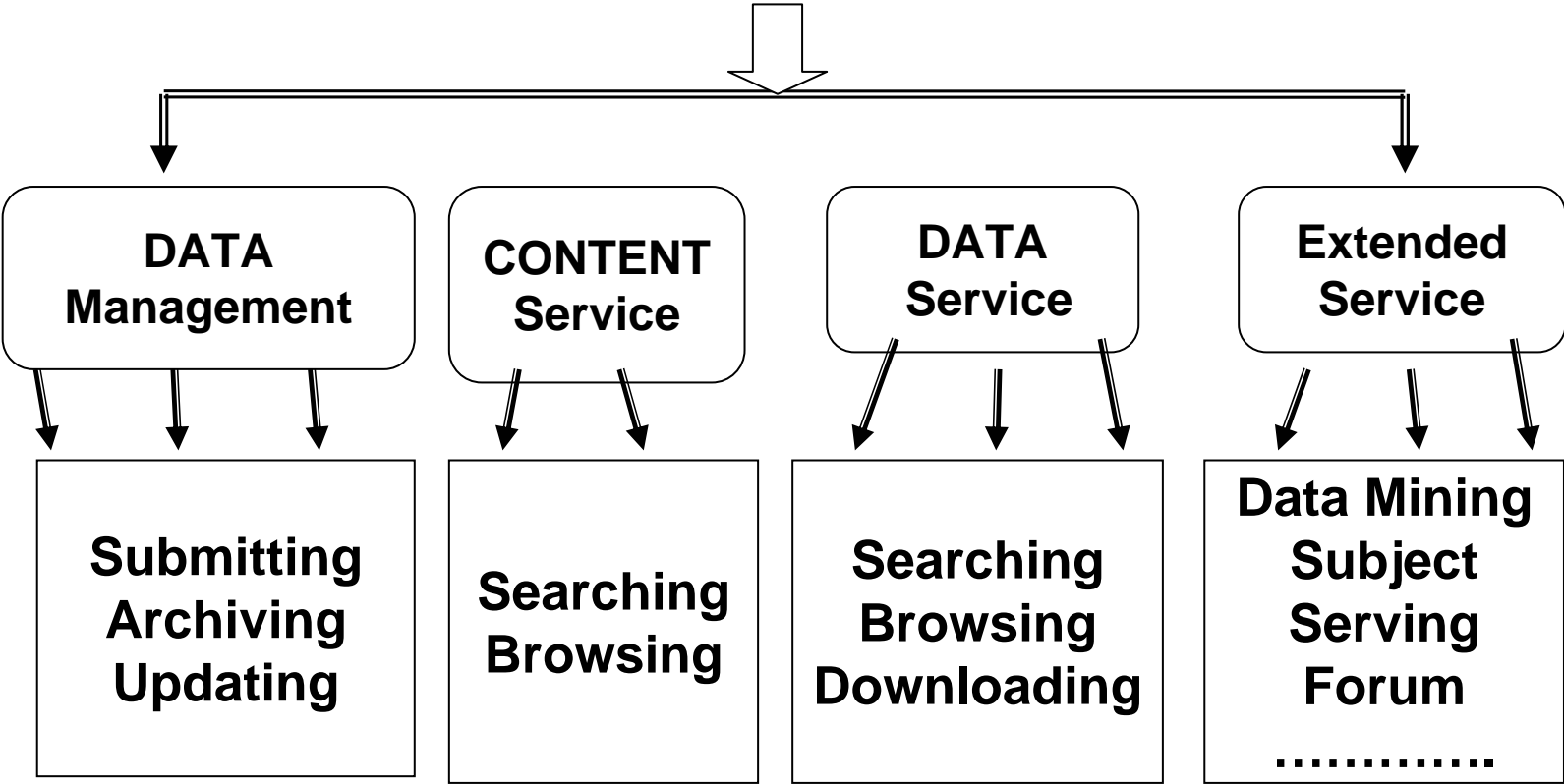
Data Users

Architecture and Framework of China SDSP



Scope of Scientific Data Sharing Project

Classes of Scientific Data Service



Service Functionality of China Scientific Data Sharing Program

Major Tasks of China-SDSP

- **Architectural Development of Data Sharing and Management System**
- **Standardization**
- **Policy and legal framework**

Architectural development of data sharing and management system

- **Distribution of data center/network in different fields of science**
 - resource and environment science
 - agriculture
 - population and health
 - basic science and frontier science
 - engineering and technology
 - comprehensive regional science
- **Resources Development of Scientific Data**
 - re-editing existing data resources
 - development of master database for large research programs funded by government
 - introduce international data resources
 - integrate multi-source data and conduct value-added research

- **Construct data submission and integration system**
 - operational regulation and management method
 - hardware and software platform
 - technical platform
 - distributive databases steered by metadata
- **Developing technological platform for data sharing**
 - overall design
 - data exchange technology among centers/networks
 - comprehensive management system
 - scientific data service system
 - technologies to guarantee the security of data and networks
 - extended service

Standardization

- Standardization is the prerequisite for scientific data sharing in the digital era.
- Based on the existing criteria in china as well as international standards, conducting research on the three aspects of guiding standard, general technical standard and specific standard, in an effort to form a complete ystem of standardized criteria for SDSF.

Policy and legal framework

- **To strengthen the research on basic issues and problem-solving**
 - **rights and interests**
 - **sharing mechanism and structure**
 - **reinforcement mechanism**
 - **performance evaluation and supervision system**
 - **technical criteria**
 - **security regulation**
- **To do researches on the development of laws and regulation system, speed up the legislation process, form supporting legal system by the end of 2010**

Present tasks

- **Management method on data submission and integration**
- **Method on data classification and dissemination**
- **Performance evaluation method**
- **SDSP management method**
- **Operational criteria**
- **SPSD regulation**

SDSP Program Work Plan

- **Experimental phase 2001-2005**
 - Overall planning and design
 - Legislative framework and research initiated
 - Relevant policies and regulations issued
 - Setting technology and standards
 - Data centers (networks) established, data sharing pilot launched
 - Optical mechanisms for legacy data consolidation and sharing

- **Implementation phase 2006 – 2010**
 - Reinforce data sharing technology, policy and legislation
 - Data centers or networks operational and extended
 - Gradually improve technology and standards
 - Reinforced cooperation among data centers in different research areas
 - Enhanced capacity to develop high-level data products and services
- **2010: Efficient submission and information delivery mechanisms established**

Current Status and Progress of China SDSP

- **General planning and design finished**
- **Pilot projects for data sharing**
- **Law, policy, and standard**

General Planning and Design Finished

In June 2003, a Coordinating Group and a Scientific Group were established for scientific data sharing. The main task of these groups was to develop the “Planning of China Scientific Data Sharing Program” (China-SDSP). In May 2005, general planning was finished.

There are six major components to China-SDSP: current status and major national requirement; overall considerations; principle and objectives; strategic arrangement and tasks; implementation and measurements; supporting conditions and facilities.

Pilot Projects for Data Sharing

In 2001, the meteorological data sharing project was launched, which heralded the start of the scientific data sharing program in China.

By the end of 2002, another 5 data centers and 3 networks had joined the pilot project:

- Survey data center
- Hydrology and Water Resources data center
- Seismetic data center
- Forestry data center
- Agriculture data center
- Earth System Science data center network
- Modern Agricultural Technology and Rural Development network
- Sustainable Development information network

Legislation, policy and standards

- **Policy-making: established a working group for data sharing; investigated current status and trend of data policy both home and abroad; compiled relevant materials and information; Established the "Guidelines of Data Submission from Major National Programs" and its interpretation; set up a framework of relevant law and policy; finished the conceptual design for data classification for sharing.**
- **Standardization: established a research group for data standard; investigated current status and trend of data standard both home and abroad; compiled relevant standard; Drafted the framework and guideline for data sharing management.**

- **Directed by Guideline for SDSP standardization, the files of metadata criteria, data classifying and coding criteria, meta-criteria and guideline for the development of SDSP are undergoing amendment.**

Portal

- **The SDSF Portal is the users' access point and key information center**
- **Portal construction has started:**
 - **Framework and functions designed**
 - **Homepage completed**
- **<http://www.sciencedata.cn>**



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- 首页
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 - 组织机构
 - 工作简报
 - 政策法规
 - 标准规范
 - 专家论坛
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科学数据保护与共享战略国际研讨会在京召开



为探讨我国科学数据保护与共享的发展战略，进一步提高我国科技创新能力，由科技部、CODATA（国际科学技术数据委员会）发展中国家科技数据保藏任务组、CODATA中国国家委员会和CODATA美国国家委员会联合...

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International cooperation

- Workshop 'Scientific Data Strategy', Beijing 2004-06-22

100 experts from 12 countries (China, USA, Great Britain, France, Japan, ...), Keynote speech by Prof. Cheng Jinpei, Vice Minister of Science, on Scientific Data Sharing as a strategic choice.

- SDSP Study tour to USA, June 2002 and November 2004

International Workshop on Strategies for Preservation of and Open Access to Scientific Data

科学数据保护与共享战略国际研讨会

北京 2004 年 6 月 22-23 日

Beijing June 22-23, 2004



Future Work

- To promote and publicize SDSP to the public, transform the traditional conception of data ownership, break down information barriers
- To establish laws and regulation system and develop standardized criteria system to be conducive to the sound development of SDSP
- To promote pilot project, explore data sharing module, strengthen the cooperation and exchange among different department and institution
- Enhance the overall integration of SDSP

Conclusion

- The sharing service of basic scientific data for public benefits belongs to public utility and is under governmental control and supervision. The nation will benefit in the macro cycle of S&T innovation and economic growth. The implementing and developing of SDSF need the common efforts of the whole society.
- In general, China-SDSF is still in the phase of accumulating the experiences of technology and policy making, as well as overseeing pilot data sharing projects.

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