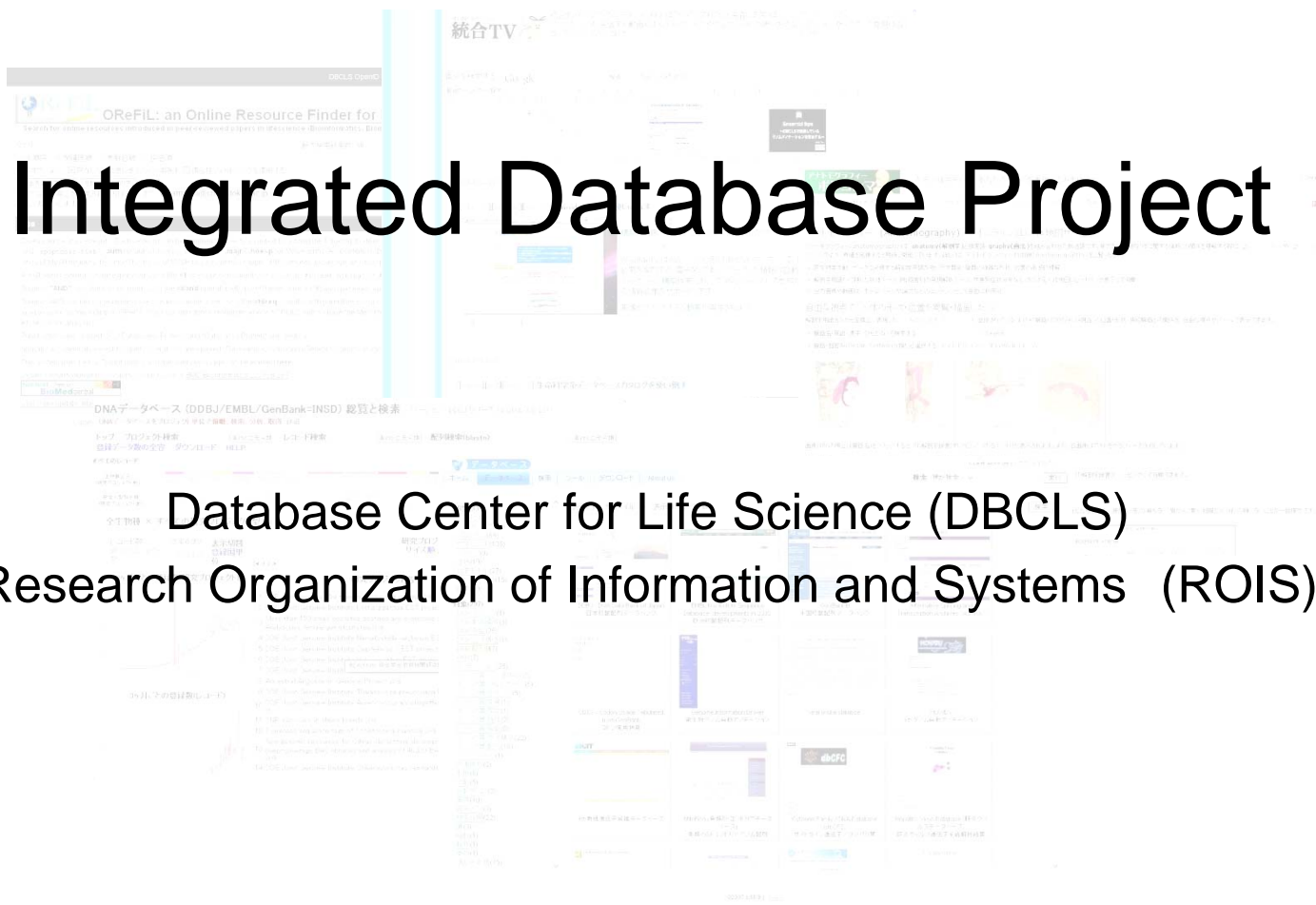# Integrated Database Project

Database Center for Life Science (DBCLS)
Research Organization of Information and Systems (ROIS)

What are the problems of Life Science Databases in Japan?

- Whereabouts and usage of each database are difficult to find out.
  - There are lots of similar DBs and it is not easy to find out which ones meet the needs.
- Reliable annotations for database entries are scarce.
  - Human resources to construct and maintain DBs are insufficient and underestimated.
- Products of national projects are not sufficiently open to the public.
  - Updating DBs is difficult after the project ends. (including DBs which are already publically available.)
- Separately developed databases are difficult to utilize.
  - Integration based on molecular data is difficult to utilize in medicine.
  - Some databases which are constructed in English are difficult to utilize and grasp the trends of the field.

- Japan does not have a national strategy for life science databases in spite of its indispensability.

What kind of commitments have MEXT made?

- Life Science Committee
  - A working group on the improvement of databases.
  - A report was released on May 17, 2006.
  - Analyzed problems and proposed solutions.

- Funds the Integrated Database Project
  - Preliminary project in 2006FY (240M¥).
  - Full project from 2007FY to 2010FY (4,900M¥ in total).

- Established Database Center for Life Science
  - DBCLS was established as part of ROIS (April, 2007).
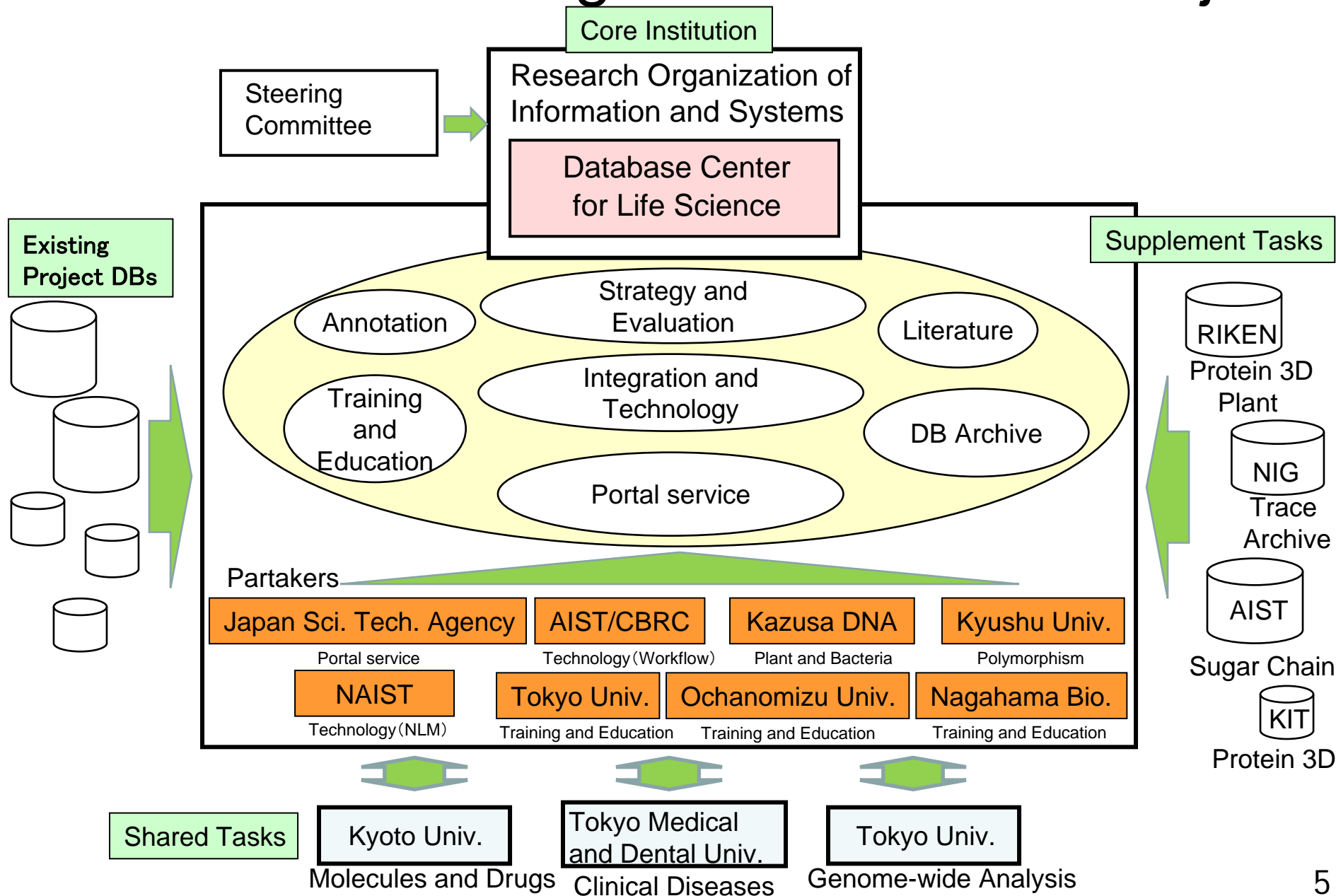 - Prof. Takagi was assigned as director of DBCLS.

What are the missions of the project?

- Aims to be a national center.
  - Endeavors to integrate the databases distributed among the four ministries.
  - Has a function partly similar to the NLM and genome centers.
  - The steering committee will consist of various stakeholders.

- Provides service, but does not conduct research.
  - Contributes to promote Japanese life sciences.
  - Shares data among scientists and engineers.
  - Aims to be comprehensive, user-friendly and sustainable.
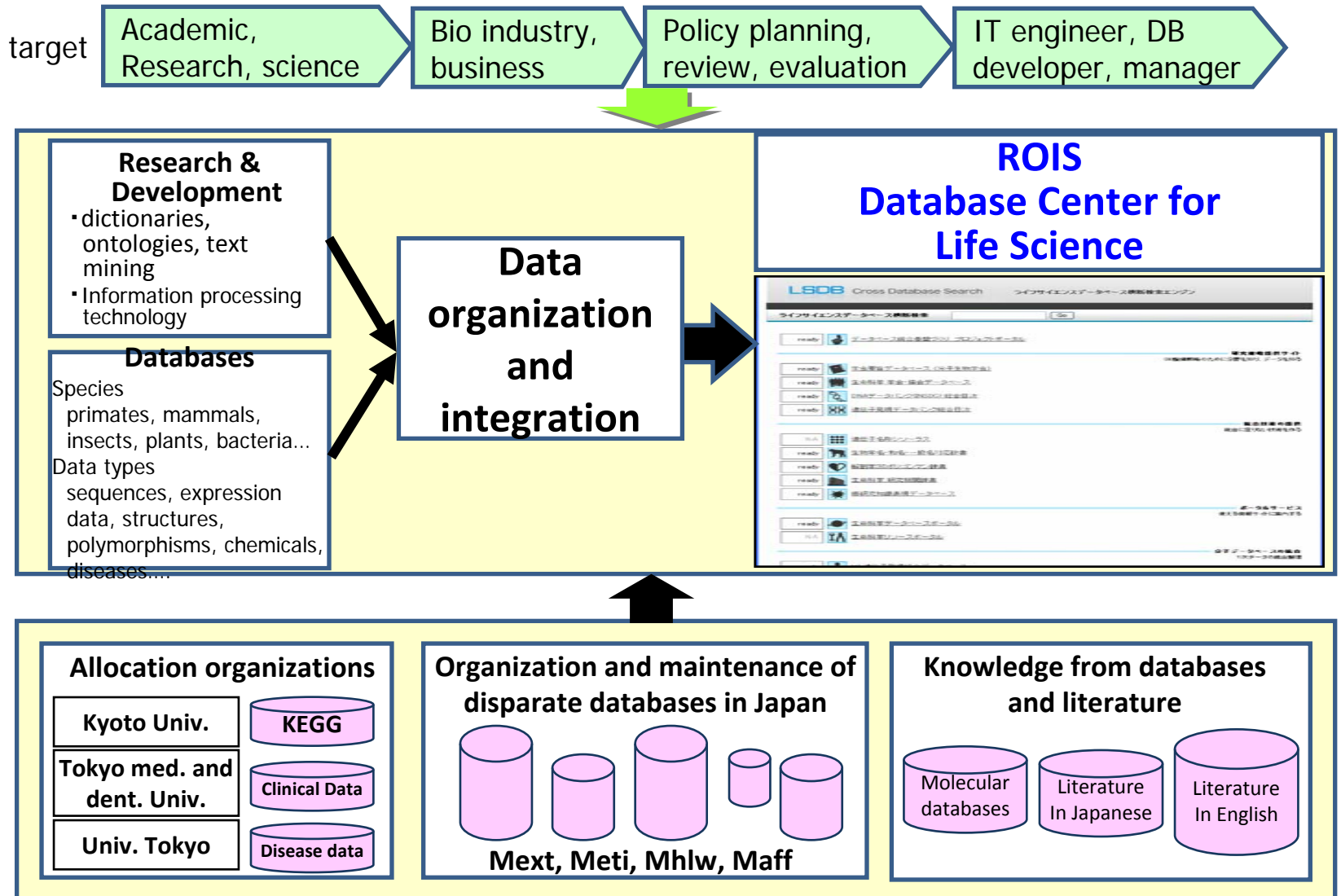 - Will not undertake value-added research.

What is meant by "integration"?

- Address institutional and technical issues.
  - Including copyright and ethical issues.

- Take a multidisciplinary and comprehensive approach.
  - An optimal environment is different for each expertise.

- Integration is a means to an end.
  - Physical integration is not practical.
  - Each research phase has its optimal form of integration.

- Contribute to the efficiency and quality of research
  - Allow rapid access to necessary data.
  - Share data with the public so that data mining is possible.
  - Provide texts, diagrams, patents as well as experimental data.

Framework of Integrated Database Project

Overview of Integrated Database Project

target

| Academic, Research, science | Bio industry, business | Policy planning, review, evaluation | IT engineer, DB developer, manager |

Research & Development
- dictionaries, ontologies, text mining
- Information processing technology

Databases
Species
  primates, mammals, insects, plants, bacteria...
Data types
  sequences, expression data, structures, polymorphisms, chemicals, diseases....

Data organization and integration

ROIS Database Center for Life Science

Allocation organizations

Kyoto Univ.	KEGG
Tokyo med. and dent. Univ.	Clinical Data
Univ. Tokyo	Disease data

Organization and maintenance of disparate databases in Japan

Mext, Meti, Mhlw, Maff

Knowledge from databases and literature

Molecular databases | Literature In Japanese | Literature In English

ポータル

生命科学系データベース カタログ　🄯 🎬

生命科学 学協会 カタログ

ゲノム・ポストゲノム主要プロジェクト一覧　🄯

DB検索

生命科学データベース横断検索 🎬

DNAデータベース総覧と検索 (DDBJ/EMBL/GenBank) 🎬

文献検索

蛋白質核酸酵素 全文検索

文科省「ゲノム」研究報告書 全文検索

OReFiL (オンラインリソースファインダー) 🎬

学会要旨統合検索

統合ツール

アナトモグラフィー（解剖整理棚）🎬

Wired-Marker（参照情報共有ツール）🎬

リソース

辞書

生物アイコン

教材・人材育成

統合TV（DBやツールの動画教材）

MotDB (教育・人材育成のサイト)

統合DB事業

国内データベースの統合（受入れ）事業

DB受入れテンプレート

共通基盤技術開発

文科省 統合データベース整備事業サイト

H18年度成果公開サイト

情報公開 (委員会などの記録)

参画分担機関・補完課題の成果

かずさアノテーション (かずさDNA研究所)

ゲノムネット医薬品データベース (京大/GenomeNet)

統合医科学データベース (東京医科歯科大グループ)

WingPro (JSTのDBポータル)

Webリソースポータルサイト （JSTのサイト）

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Examples of DBCLS Services

(Most Services are provided only in Japanese at the moment.)

Life Science Database Catalogue
Retrieves more than 400 DBs, most of which have been developed in Japan.

Cross Search of Life Science Databases
Cross searches Life Science DBs and literatures including patents.

DNA Databank Summary Organized by Projects
Retrieves resources from the enormous DNA databank at high-speed. Data are downloadable on a project by basis.

Full-text search of Japanese Literature

Retrieves Japanese review articles, conference proceedings and so forth.

Togo TV
Provides movie tutorials on how to use certain DBs and tools. The movies are available via Podcast

Allie (Search Service about abbreviation/Long Form)
Retrieves abbreviations and their long forms which appear in the literature.

BodyParts3D/Anatomography
Links anatomical terms to their 3D coordinates. A 3D drawing tool is also available.

Wired-Marker
A Firefox plug-in which marks and records texts of browsed pages.