

Research Laboratory for IDEA

Members

14 Researchers:

Yutaka Genchi, Kenichiro Tsukahara, Shiniciro Morimoto, Hiroki Hatayama, Tomonori Honda, Yoon-Young Chun, Hiroaki Hatori, Tatsuo Yagishita, Keijiro Masui, Mitsutaka Matsumoto, Yoshikazu Satou, Kensuke Kobayashi(Guest), Ichiro Daigo(Guest)

14 Contract/Temporary Employees

Director:
Kiyotaka Tahara
Tsukuba West



Research Laboratory Outline

On April 2017, the Research Laboratory for IDEA was established at the Research Institute of Science for Safety and Sustainability. Research projects at the laboratory are conducted by members across the entire organization of AIST. The Research Laboratory has 14 researchers and 14 contract and temporary staff. The Mission of the Research Laboratory for IDEA consists of the development and implementation of IDEA (Inventory Database for Environmental Analysis), the establishment of methodologies for technology assessment, and the promotion of international/domestic cooperation. The Research Laboratory is operated by two teams: the maintenance and management team and the methodology development team.

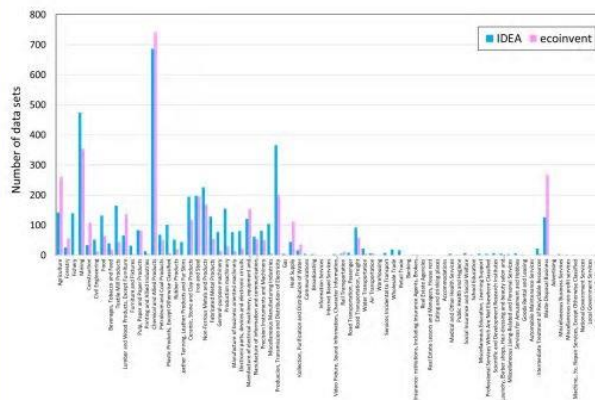
IDEA, the inventory database published by the Research Laboratory is the largest database in Japan, with over 4,700 product and service processes covering all kinds of products and services in Japan. In order to sustainably distribute this database to industry and R&D sites, we established the "LCA Promotion Consortium," and we are aiming to build a system that can contribute to reducing environmental impact by utilizing LCA to realize a sustainable society.

Research Highlights

Development of the IDEA Inventory Database

Outline of IDEA

IDEA is being developed to guarantee comprehensiveness, reliability, completeness, and transparency. In particular, regarding comprehensiveness, IDEA covers almost all of the economic activities of businesses in Japan. Representativeness is assured by using statistical averages for the data on manufacturing processes and services of Japan.



Number of datasets in IDEA (comparison with ecoinvent)

Evaluation of New Materials and New Technologies

We are developing an evaluation method that quantitatively determines the effects of material substitution with a view to the future society in the Innovative Structural Materials Association (ISMA) project. The aim of this project is to establish a new method "Consequential LCA" that can evaluate the entire life cycle of materials, taking into account material flow and recyclability.

Establishment of the LCA Promotion Consortium

- We will maintain and manage the latest "IDEA" that support appropriate evaluation and visualization.
- We will develop and promote evaluation tools using databases that make use of our experience and knowledge.
- Toward the realization of a sustainable society, we are building a system that enables various companies to use LCA to contribute to the reduction of GHG emissions and other environmental impacts.
- By deepening understanding of LCA and inventory databases, we will be able to provide consistent and reliable environmental information.
- We aim to improve LCA skills by holding seminars and lectures for members.

Toward Sustainable Management



Consolidation of International Inventory Database

We are expanding the database into regions in Asia in order to address the global supply chain analysis. Using the process data in IDEA, we customize the inventory data to each region by applying the situations of each region in terms of type of fuel and amount of energy used in product manufacturing.



12 countries

IDEA Overseas edition

■ Research Institute of Science for Safety and Sustainability,
Department of Energy and Environment, AIST
LCA Promotion Consortium
Secretariat: Kiyotaka Tahara, Yoshikazu Satou
Email : lca-consortium-ml@aist.go.jp
<https://riss.aist.go.jp/lca-consortium/>