Seminar in Tallinn: Cooperating through CoClass

"Topical news about harmonizing information management in construction in Finland"

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General info about harmonization in Finland

Ministry of the Environment

Discussion in Finland

- **Built environment sector is under the Ministry of the Environment.**
- **Discussion is going on to develop a national level register for digital built environment including plans and buildings (information model based on open data) in administration level.**
- **The compatibility work is going for the built environment sector (RYYTI work).**
- **There are also common boundaries as information security, privacy and safety.**

Discussion in Finland

- **It has been pointed out the administrative digital development should also support local and inner markets in EU and in the Nordic countries.**
- **Digitalisation and its utilisation is an important issue in development of the legislation.**
- **In Finland there is going on Revision of Land use and Building act and in this context there is a working section specially for the digitalization in the Ministry of the Environment.**
- **This whole will be in intensive process in coming years.**

Digitalisation Principles of Built Environment

1. Customer-oriented solutions and services

Solutions and services are above all made for the users. We test what the users want to achieve with the solution.

2. No unnecessary steps in the process

Communication between the companies and organisations is streamlined and eased. In the first place the customer has the opportunity to use electronic services.

3. The services built are safe and easy to use

Services are easy and safe to use with different devices. Specific needs of individuals, companies and organisations are taken into account.

4. Fast benefits to the customers

We find the most valuable features for the customer and start the development from these. Feedback on the service comes quickly. Time and money is saved. We learn by doing and testing.

5. Preparedness for emergencies and exceptional situations

We communicate on these clearly and accurately.

Digitalisation Principles of Built Environment

6. Making use of existing data and electronic services

We ask for new data only once. The development of services is cost-efficient. Among the services used is the National Architecture for Digital Services. We ensure that our services are available for others to use.

7. Data and interfaces are open to companies, organisations and individuals

As a rule data and interfaces are open, unless there are specific reasons for limiting the access. Data is shared to enable the creation of new, innovative services. Open access benefits everybody!

8. Data has a designated owner

During its whole life cycle data on the built environment has a designated owner who is responsible for keeping the data up-to-date and enables dialogue between various stakeholders.

9. International standards are followed

International standards are the basis for all development.

10. Legal force of decisions is linked to digital access

A zoning plan or decision will not gain legal force until it has been published in standard form through an open interface.


RAKENNUSTIETO
Building Information Foundation

Purpose of Building Information

The purpose of the Building Information Group is to promote good planning, construction and facilities management.

Values

- Reliability
- Impartiality
- Expertise
- Quality
- Customer focus

1 Appreciation of customer value

2 Social impact

3 Financial profitability

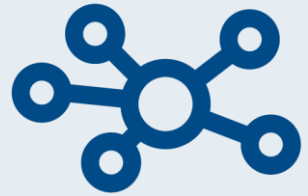
COMPREHENSIVE STRATEGIC PERSPECTIVES

STRATEGIC OBJECTIVES

Reforming the industry in cooperation

Pioneering proactiveness

Promoting business with wellness and ecology products



Active advocate of digitisation

METHOD

Developing corporate culture, processes, staff competence and leadership.

1 Appreciation of customer value

2 Social impact

3 Financial profitability

COMPREHENSIVE STRATEGIC PERSPECTIVES

STRATEGIC SETS OF MEASURES

Reforming the industry in cooperation

We are pioneers of data management standardisation on built environment

We make Building Information a key actor in the digital information ecosystem

We actively collaborate with other actors in the field to develop the industry

Pioneering proactiveness

We upgrade the content creation organisation and processes

We establish a research unit to support the Building Information strategy

We develop customer cooperation and profile customers

Promoting business with wellness and ecology products

We are a key player in reducing climate change damage

We generate a comprehensive environmental data ecosystem in cooperation with partners

We improve the preconditions for realising a built environment that promotes health and well-being

Active advocate of digitisation

We set up database-supported information generation and distribution

We incorporate Building Information products in BIM-based construction and maintenance

We utilise the information accumulated to create new products and services to serve our customers' needs

METHOD

Developing corporate culture, processes, staff competence and leadership.

KIRA-digi

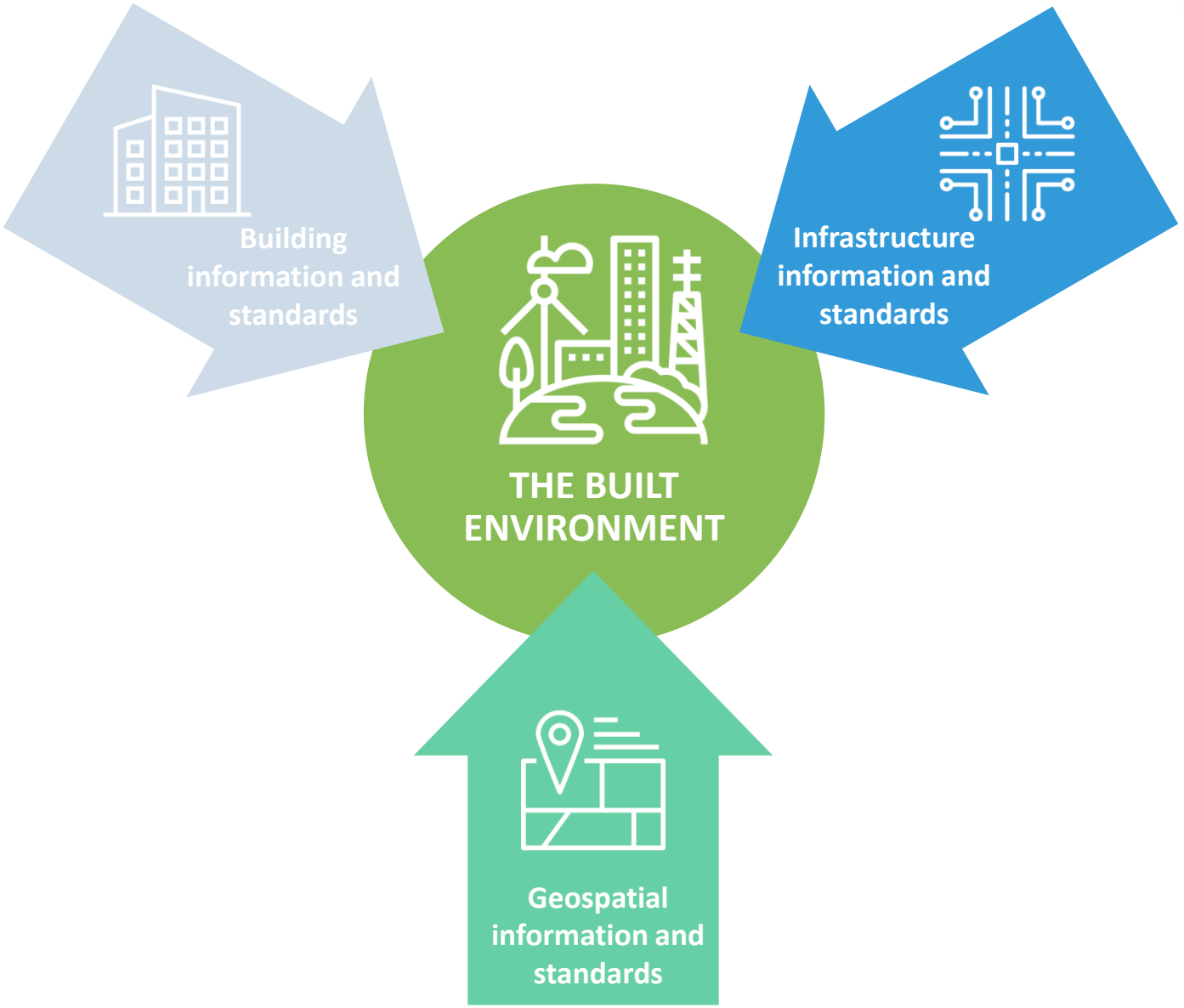
HALLITUKSEN KÄRKIHANKE

buildingSMART FINLAND

RASTI

The RASTI Project – A national strategy and road map for information management standardization in the built environment

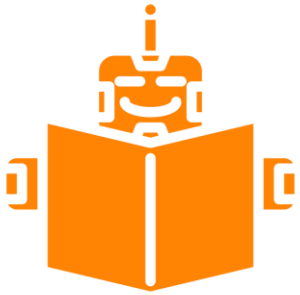
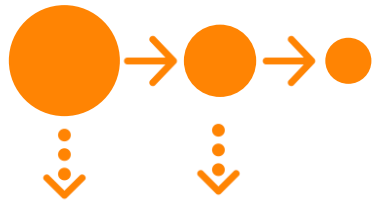
https://rastiprojekti.com



Digitalization makes the built environment disciplines converge.

Urbanization is the driver of the convergence.

The Challenge

150 +  +  = 

Number of domestic and international built environment information management standards, some of which are overlapping

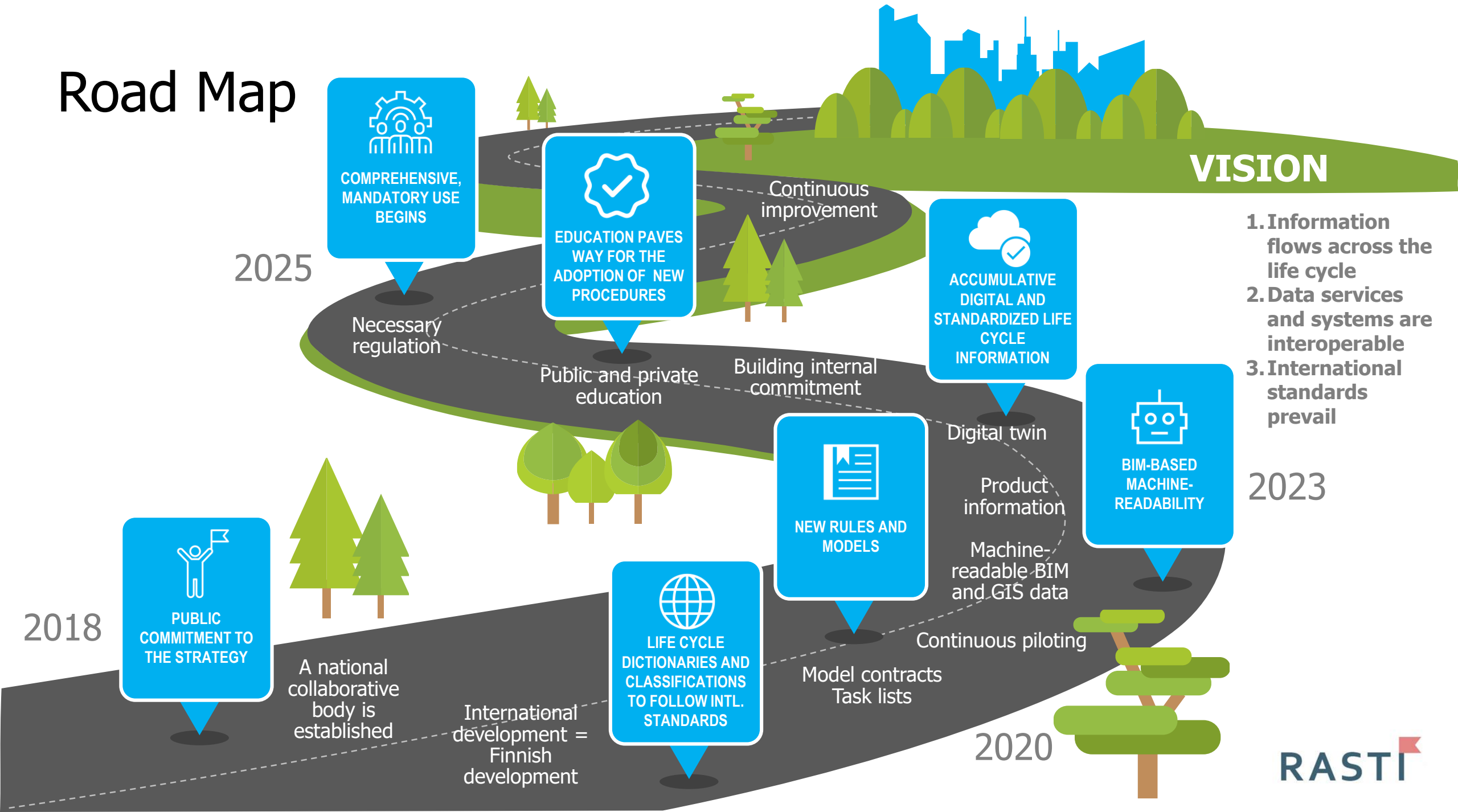
Built environment data is predominantly not machine-readable, which makes process automation difficult

Data exchange requires manual work and human interpretation, which is inefficient and prone to errors

Data does not flow across parties, processes, and the life cycle, and that leads to re-creation of the same data over and over again

Goal: Information Flow across the Life Cycle

Road Map


VISION
1. Information flows across the life cycle
2. Data services and systems are interoperable
3. International standards prevail
2023
2025
2020
2018
COMPREHENSIVE, MANDATORY USE BEGINS
EDUCATION PAVES WAY FOR THE ADOPTION OF NEW PROCEDURES
ACCUMULATIVE DIGITAL AND STANDARDIZED LIFE CYCLE INFORMATION
BIM-BASED MACHINE-READABILITY
NEW RULES AND MODELS
LIFE CYCLE DICTIONARIES AND CLASSIFICATIONS TO FOLLOW INTL. STANDARDS
PUBLIC COMMITMENT TO THE STRATEGY
Continuous improvement
Necessary regulation
Public and private education
Building internal commitment
Digital twin
Product information
Machine-readable BIM and GIS data
Continuous piloting
Model contracts
Task lists
A national collaborative body is established
International development = Finnish development
RASTI

Goals for 2030

Government Measures	• Data model-based administrative processing and planning permits • Digital processing and archiving of decisions and materials • Open information resources
Design	• Updated initial data models • Simulation and use of AI • Resource-wise solutions
Construction Development	• Machine-readable agreements and task lists • Uniform procurement procedures • Digital planning and construction monitoring processes
Construction	• Smooth data transfer over the construction life cycle • Internationally harmonized operating models • Deployment of machine automation and robotics
Asset Management	• Open asset management interfaces • Comprehensive and updating asset management status information • Dynamic portfolio management
Product Information	• Standardized real-time product and life cycle information • Internationally standardized product information structures

Proposed projects

TK 010	**Education and competencies**
TK 020	**Expansion and updating of BIM requirements (Building, Infra, City)**
TK 030	GeoBIM instructions for building projects
TK 040	**Common Classifications**
TK 050	**Evaluation of CoClass implementation**
TK 060	**Extension of national vocabulary project**
TK 070	**Translation of Czech classification evaluation report**
TK 080	**buildingSMART Data Dictionary study**
TK 090	**Development of building industry ontology**
TK 100	**Harmonization of building and infra classifications**
TK 110	**Requirements of IFC -based data exchange in building permit process**
TK 120	**IFC standardization (Infra)**
TK 130	**Taxonomy of design data**
TK 140	**GIS standardization**
TK 150	**Integration of CityGML to the national interoperability platform**
TK 160	**Harmonization of common property sets in BIM for building components and systems**
TK 170	**Standardization of metainformation in building industry documents**
TK 180	**Implementation of European message transaction standard**
TK 190	**The use of Nordic message transaction standard to evaluate the environmental impact of transport**

TK 050 Evaluation of CoClass implementation

NEED – Before launching a major reform for the entire built environment and construction sector, the benefits and impacts for the various actors need to be explored.

SOLUTION – Exploring the benefits for different actors, the economic impact of deployment, the differences between CoClass and the classification systems currently in use in Finland, incentives and barriers to deployment.

BENEFITS – Getting information on how well CoClass is suited to the industry's data management needs.

TK 060 Extension of national vocabulary project

NEED – The current KIRA (real estate and construction) vocabulary is not broad enough.

SOLUTION – The initial action is to identify the missing essential terms by the aid of national and international thesauruses, term lists, classifications and standards.

BENEFITS – Harmonized information management needs co-operatively agreed concepts whose meaning is co-operatively agreed and accepted.

TK 080 buildingSMART Data Dictionary study

NEED

bsDD contains information on objects and their attributes in several countries and in several languages. bsDD follows the rquirements of ISO 12006-3. The idea is to find out what the introduction of a Finnish-language library in the service would entail.

SOLUTION

A study of bsDD

- What are the benefits of bsDD from the viewpoint of harmonization?
- What are the benefits of bsDD for Finnish companies and product if the information content of bsDD is available in Finnish?
- What are the requirements of maintaining of bsDD?

BENEFITS

bsDD is open and international and it is intended for all the parties in the building process. bsDD enbles the sharing of product and project information irrespective of the language used. The Finnish-language information can be linked to several other languages, which enables data exchange in an international environment.

TK 090 The development of building industry ontology

NEED – Human information searching and automated data indexing suffer from the lack of building industry ontology.

SOLUTION – Defining the most essential terms of building industry ontology by the aid of e.g.Building Information Foundation's thesaurus that is the most comprenhensive building industry thesaurus in Finland.

BENEFITS – Ontology facilitates and standardizes the indexing of electronic services and thus improves information findability and supports the institutionalization of industry-wide common terms.

"In computer science and information science, an ontology encompasses a representation, formal naming and definition of the categories, properties and relations between the concepts, data and entities that substantiate one, many or all domains of discourse."

TK 160 Harmonization of common property sets in BIM for building components and systems

NEED– Harmonization of common property sets in BIM for building components and systems

SOLUTION – 1st phase: Charting the needs of all different sectors of the building branch and the propery sets which have been harmonized internationally.

BENEFITS – The projects serves to prioritize future actions. It helps the launching of projects aiming at machine-readable property sets.

TK 170 Standardization of metainformation in building industry documents

NEED

Every building project produces massive amounts of documents. These documents should move in the building process between organizations seamlessly.

- Documents do not move electronically and version control and editing is difficult
- Metainformation of documents varies from company to company. Not all information is passed on to the next party.

SOLUTION

- Charting of standards and best practices for metainformation and data transfer of documents
- A plan for an internationally compatible solution

BENEFITS

A more efficient information flow in the building process between different organizations.