56 Establish an unification system of robotics information for civil infrastructure

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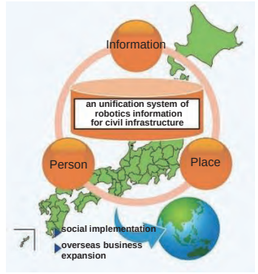
R&D Objectives and Subjects

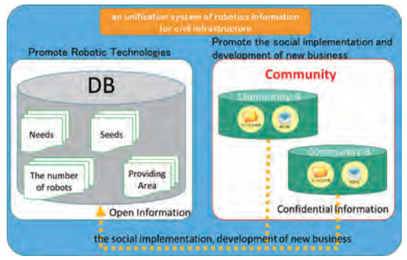
Objectives

- It is important to assume a robotic technology at the maintenance of civil infrastructure and a disaster effectively.
- This research contributes to developing robotic technology through the matching between needs and seeds.
- And more, this research supports the social implementation, Development of new business and the evolution of the global market.



Subjects

- Unification about robotic technologies for the maintenance of infrastructure and the disaster.
- Establishment of an unification system of robotics information related to civil infrastructure for robotic developers and users.
- Administration of the community for an implementation and an industrialization of robotic technologies.
- Provision of information and procurement will support Ministry of Land, Infrastructure, Transport and Tourism and local governments in time of the disaster.



Current Accomplishments (1/2)

- Running on Simple Data-Base for Infrastructure Maintenance and Disaster

- We have pigeonholed robotic technology and added search function to the system based on the evaluation results of the field demonstration which is for maintenance of bridge, tunnel,underwater structure and for disaster response including disaster investigation,disaster recovery.

The field demonstration is held by the Ministry of Land, Infrastructure and Transport project “Development and Implementation of the future generation civil engineering robotic technology”

Section	Needs	The number of Seeds
Bridges	Support/alternative of crossed-eyes	28
	Support/alternative of HAMMERING TEST	5
	Move/Approach of inspector	0
Tunnels	Support/alternative of crossed-eyes	6
	Support/alternative of HAMMERING TEST	6
Underwater	Support/alternative of crossed-eyes of Dam	11
	Evaluating bottom sediment and water of Dam	2
	Support/alternative of crossed-eyes of river	2
Disaster Investigation	Picture/topographic data of mass failure /volcanic hazard	12
	Physical property investigation/measurement of mass failure/volcanic hazard	4
	Information acquisition of tunnel collapse gas	0
	Image capture of tunnel collapse	6
Disaster Recovery	Emergency rehabilitation of excavation, dozing and banking	4
	Emergency rehabilitation of drainage	1
	Circulation of information of mechanical excavation	4

The Map Search dialog box

The Advanced Search dialog box

Current Accomplishments (2/2)

- Start the community for development of robotic & social implementation to construction site

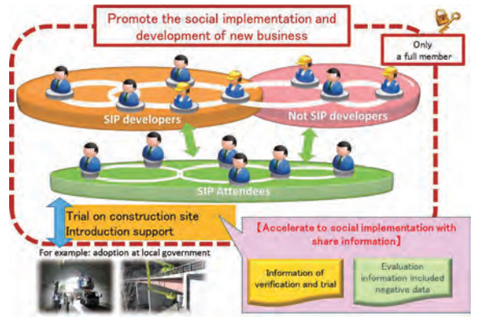
- The interchange of robotic developers and users is started on this year.

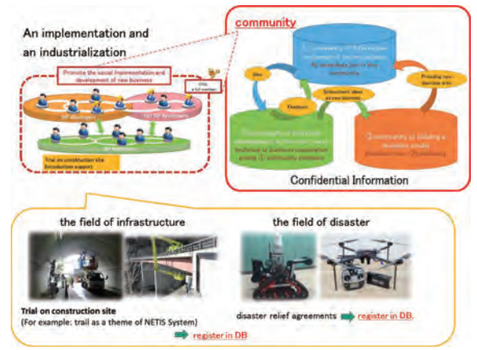
- Now, 71 attendees communicate about how-to/know-how for robotic technologies on this community.

- There are especially themes for the summary of bridge inspection;

–an application of UAV for inspection

–a development of 3D modeling technology





Overview of community

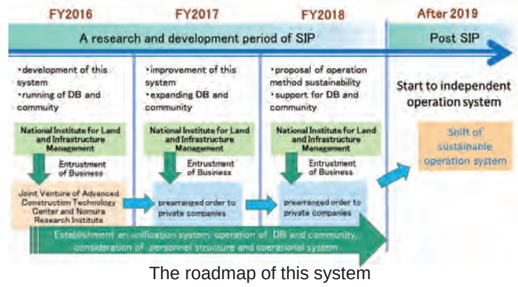
Goals

Preparation for the sustainable administration of this system

- Need more consideration of improvement, convenience, effectiveness and sustainability by using this system .
- Study for the systems management after SIP.
- Start an unification system of robotics information for civil infrastructure by the autonomous system from 2019.
- This system will become as "an intellectual information hub" for all robotics users in Japan.

Valued creation and cooperation with measure of MLIT

- After full-scale operation in 2019 will cooperate with the integration disaster information system (DiMAPS)
- Positioning as the part of the infrastructure maintenance national meeting
- Positioning as the part of WG of the i-Construction promotion consortium



The roadmap of this system

The integration disaster information system (DiMAPS)

Source: http://www.mlit.go.jp/river/bousai/bousai-gensai/bousai-gensai-4kai.html