The challenge of utilizing social media for evacuation and sheltering support

- Application example during natural disaster in Japan and new development of chatbot for disaster resilience-

SCIENCE FOR RESILIENCE
生きる、を支える科学技術

国立研究開発法人
防災科学技術研究所
National Research Institute for Earth Science and Disaster Resilience

USUDA, Yuichiro, Ph.D.
Director General,
Center for Comprehensive Management of Disaster Information, NIED, Japan

Outline

1. NIED
   - National Research Institute for Earth Science and Disaster Resilience in Japan
2. SIP4D
   - Shared Information Platform for Disaster Management
   - *ISUT*
     - *Information Support Team for Disaster Management*
3. CPS4D
   - Cyber-Physical Synthesis for Disaster Resilience
4. SOCDA (Chatbot)
   - SOCial-dynamics observation and victims support Dialogue Agent platform for disaster management
   - *DISAANA/D-SUMM*
     - *DISaster information ANAlyzer / SUMMeriser using SNS*
5. Summary

About NIED


National Research Institute for Earth Science and Disaster Resilience
DISASTER RESPONSE
RESILIENT SOCIETY
SEISMOLOGY::METEOLOGY::HYDOLOGY::ECOLOGY::SOCIOLOGY::ECONOMICS::ENGINEERING::INFORMATION SECURITY
DISASTER EDUCATION

About NIED

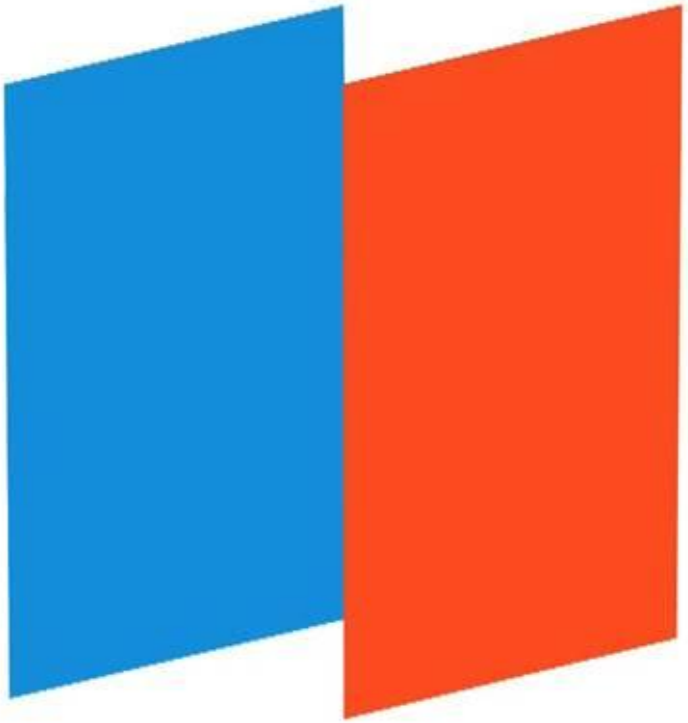
- The **mission** of the National Research Institute for Earth Science and Disaster Resilience (NIED) is to improve the level of "science and technology for disaster risk reduction and resilience" by conducting "basic studies" and "fundamental research and development" in a comprehensive manner

Established: 1963.
Presided by: Ministry of Education, Culture, Sports, Science and Technology (MEXT).
Current staff members: 274
Location of HQ.: Tsukuba-city, Ibaraki pref.

SCIENCE FOR RESILIENCE

Earthquakes, tsunami, volcanoes, violent winds, heavy rains,
snowstorms, floods, and landslides are
natural threats that will always exist.
However, at NIED, we believe that disasters can be reduced.
Therefore, we are constantly developing technologies and strategies
to prepare for and respond to disasters.
With better prediction, smarter prevention, and faster restoration,
we aim to protect lives and livelihoods for a sustainable future.

NIED 防災科研



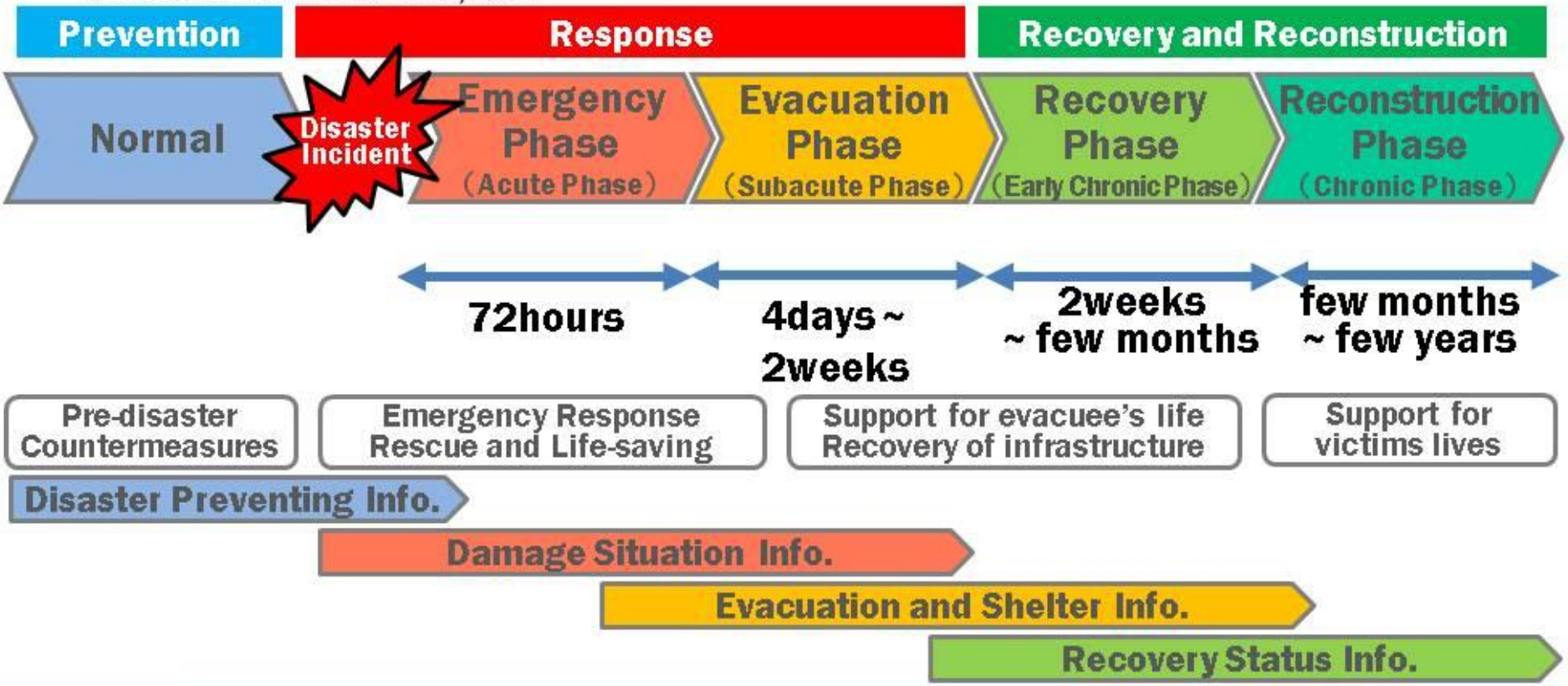
NIED's Innovative Approach for Disaster Response: "SIP4D"

Shared Information Platform for Disaster Management

SIP4D®

Disaster Response and Information

- **Disaster response activities need appropriate information.**
  - Disaster Preventing Information: Hazard maps, Evacuation maps, etc.
  - Damage Situation Information: Collapsed buildings, Casualties, Damaged infrastructures, etc.
  - Evacuation and Shelter Information: Location of shelters, Evacuees, Logistics, Water supply, etc.
  - Recovery Status Information: Recovery of lifelines, food supplies, roads, telecommunications, etc.

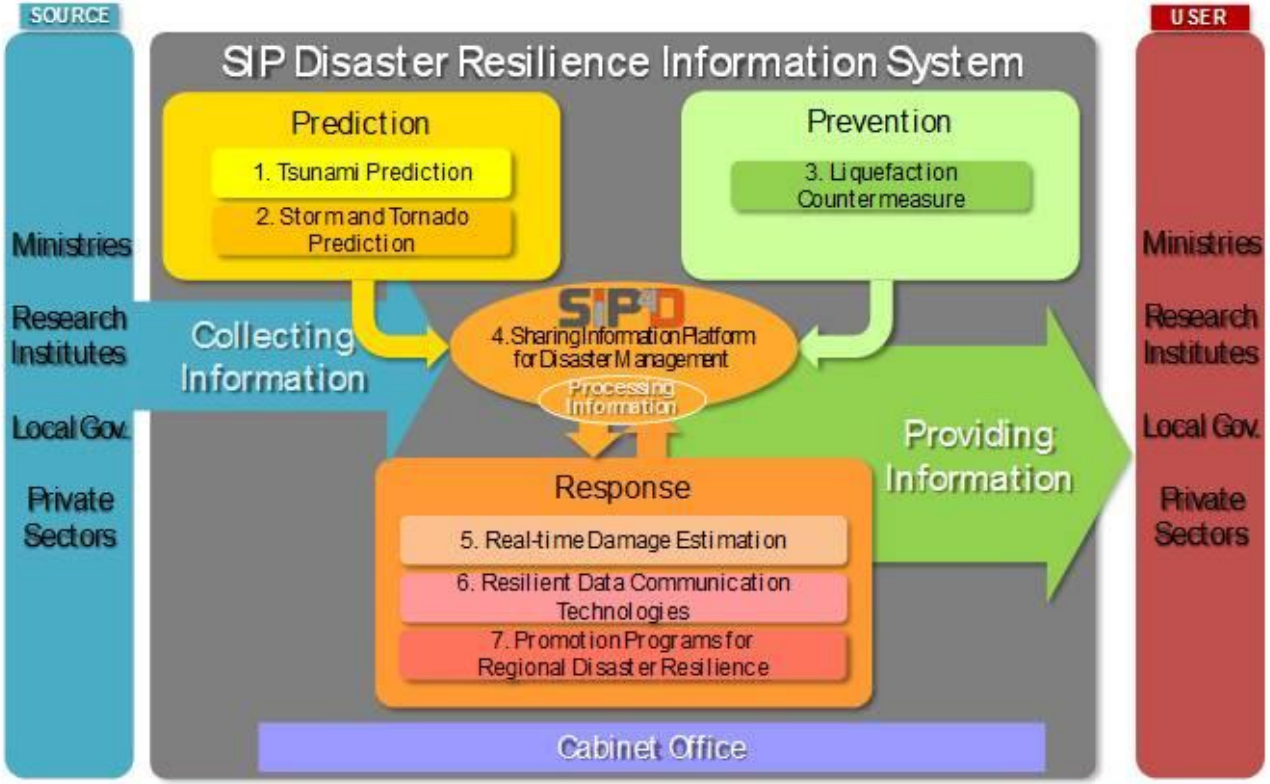


Fundamental Concept of Information sharing

- **Purpose of "Disaster-Information Sharing"**
  - To build a common situational awareness of the disaster situation between various disaster response organizations.
  - "Common Operational Picture (COP)" is the primary tool to establish a common situational awareness.

SIP: Cross-ministerial Strategic Innovation Promotion Program

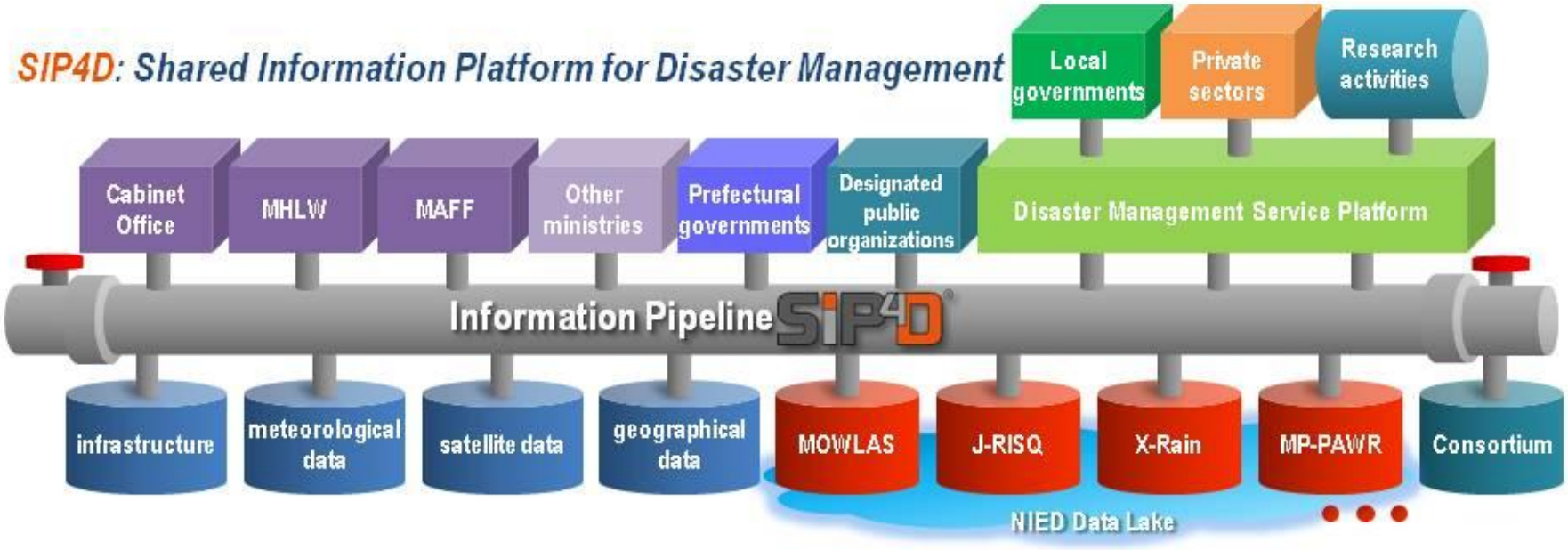
- In 2014, The Council for Science, Technology and Innovation (CISTI) launched "Cross-ministerial Strategic Innovation Promotion Program (SIP)" which is the leading R & D project of Japan.
- NIED participated SIP and was responsible for the research project of the disaster resilience information system.
- NIED has developed the "**Shared Information Platform for Disaster Management (SIP4D)**" as an outcome of the project.



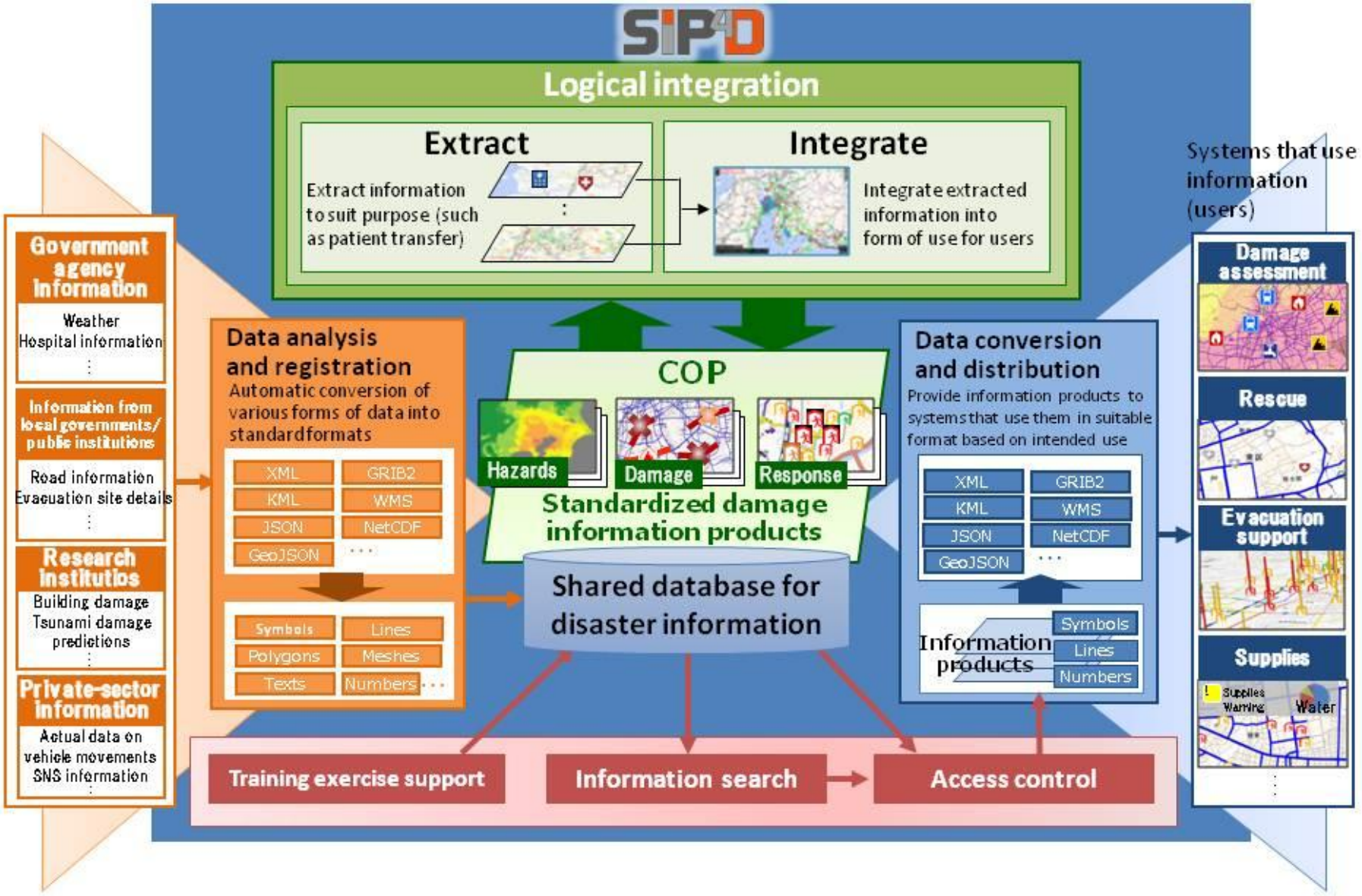
Shared Information Platform for Disaster Management: SIP4D

SIP4D is an information sharing platform that collects disaster related data from various sources and distribute them as "ready-to-use" information to disaster response organizations.

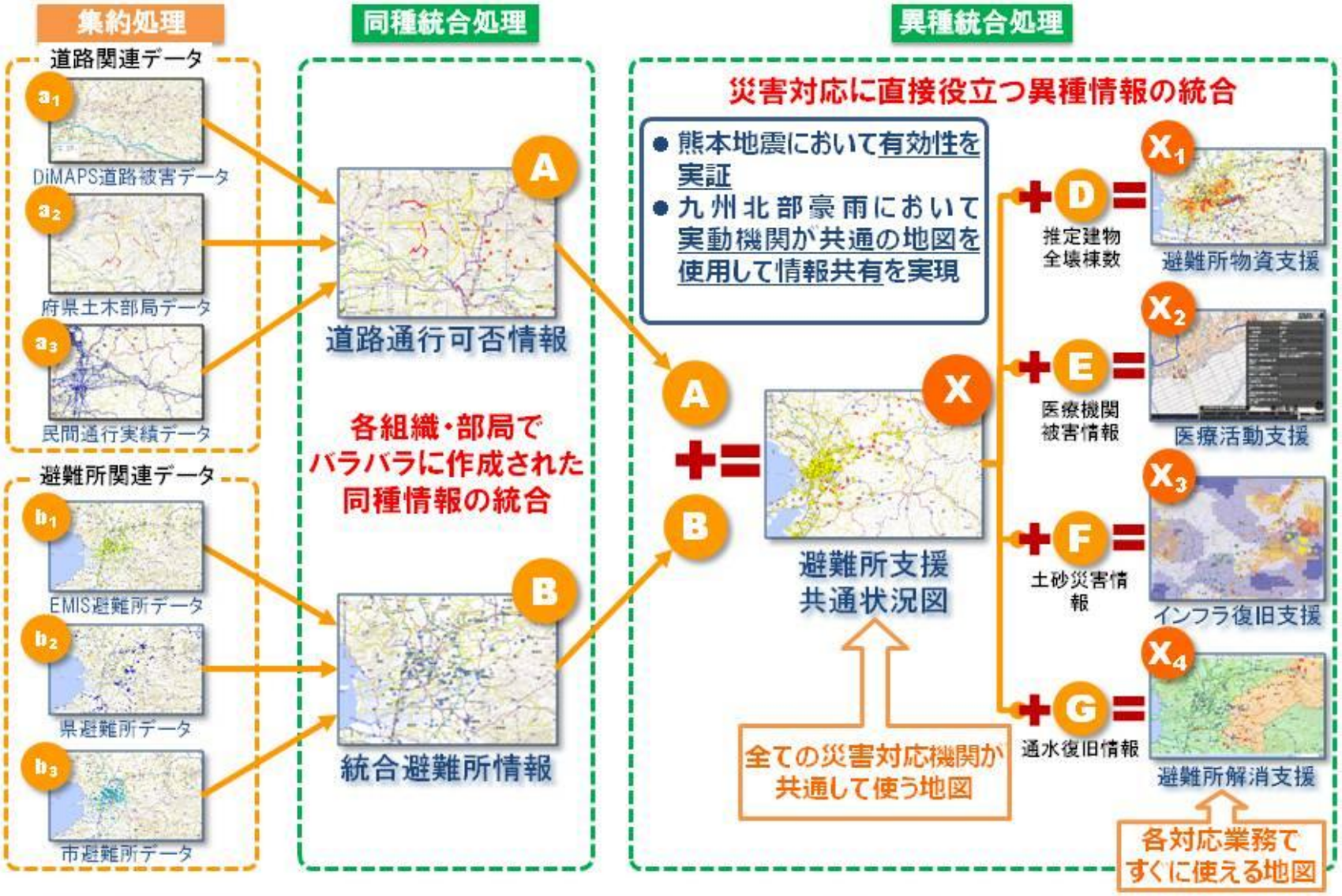
Core competence 1: "the mediate-operability"
Core competence 2: "the disaster information synthesis"



SIP4D (Shared Information Platform for Disaster Management)

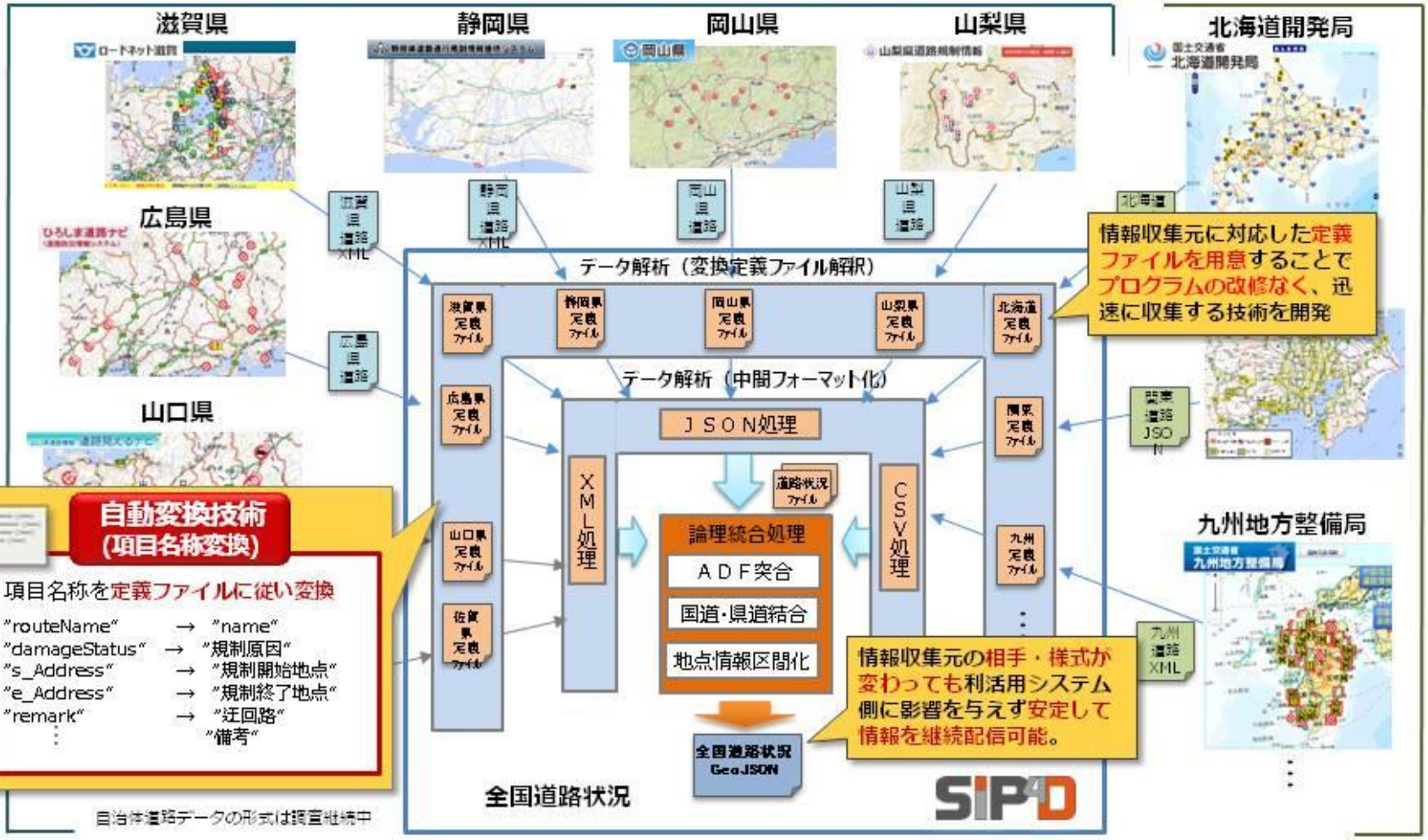


論理統合化機能とユースケースの具体例



論理統合処理：道路情報の全国統合の仕組み

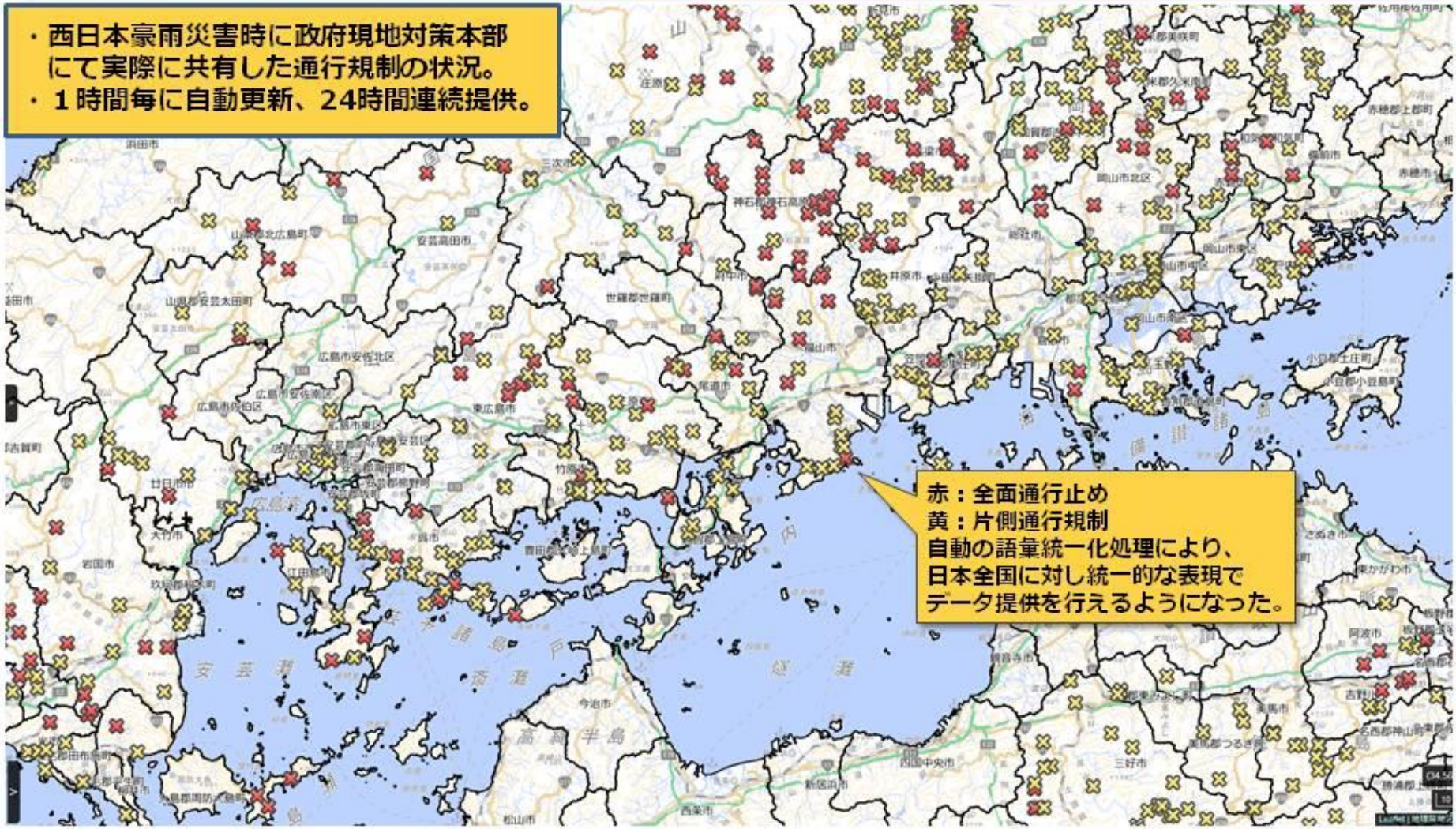
・災害対応現場でニーズの高い道路情報の充実化のため、国交省が管理する高速道路・直轄国道、都道府県が管理する補助国道・県道の、全国で現在入手可能な国道・県道データを一括し論理統合化。
・変換定義ファイルを作成し処理の共通化を図ることで、容易に・素早く連携先の追加が可能な仕組みを開発。利活用システム側はインタフェースの変更無しに、連携先の追加が自動で行われることとなる。



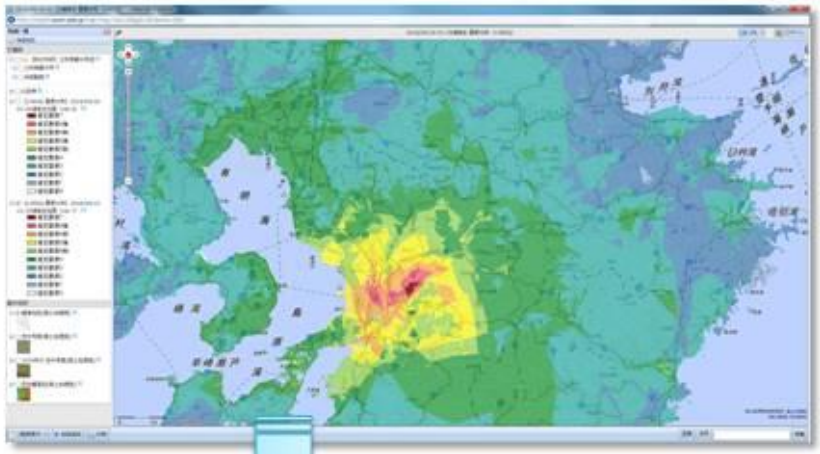
論理統合処理：通行規制情報の統合化と実災害における活用

7/7～西日本豪雨災害から、「全面通行止め」「片側通行規制」等の語彙統一を行い、現地災害対策本部・災害対応機関向けに統一的な情報として提供開始。

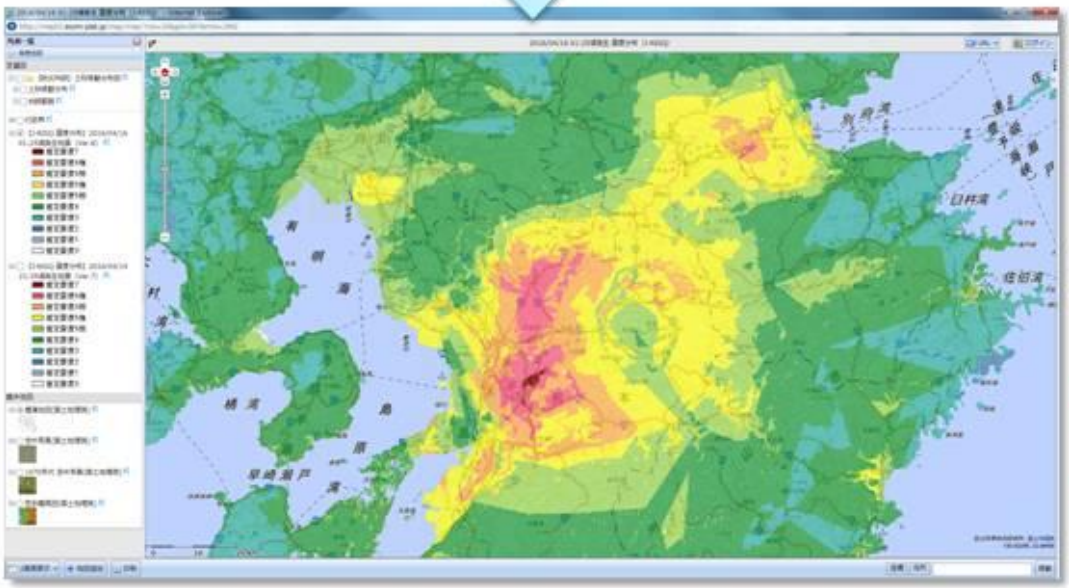
- 西日本豪雨災害時に政府現地対策本部にて実際に共有した通行規制の状況。
- １時間毎に自動更新、24時間連続提供。



The Kumamoto Earthquakes in April 2016



- **Foreshock**
  - Date: April 14,2016
  - Time: 21:26 (JST)
  - Mw: **6.5**



- **Main shock**
  - **Date: April 16,2016**
  - **Time: 01:26 (JST)**
  - **Mw: 7.3**

- **Dead: 228**
- **Injured: 2753**

(April 13,2017)

Kumamoto Earthquake 2016

More than 155,000 building had damaged


Kumamoto Earthquake 2016
Over 180,000 evacuees

Outline of Emergency Disaster Response for Kumamoto

- NIED dispatched the liaison officer (LO) at soon after the first earthquake on 14th April.
- LO entered the Disaster Countermeasure Headquarter established in the prefectural government of Kumamoto in the next day.
- LO began to collect the disaster information, particularly the information regarding road status and shelters in the affected areas.

The Emergency Operation Center (EOC) of Kumamoto local government.

Outline of Emergency Disaster Response for Kumamoto

- In order to grasp the situation in the disaster area, a government investigation team headed by the Minister of State for Disaster Management was dispatched.
- Since quick and swift actions were needed to be taken with overall coordination of emergency activities on site, the government established the onsite headquarters for disaster response.

NIED Researcher briefs the damage situation of the earthquake to the Minister of State for Disaster Management.

The governmental onsite headquarter for disaster response (in the Kumamoto prefectural government)

Disaster-Information Sharing by SIP4D in Kumamoto

Collect observation and survey data, etc. → Process and synthesis the collected data → Visualize and provide the information products → Deliver the information products to many organizations

NIED Emergency Mapping Team

Automatically acquisition of NIED's and the relevant organizations' data

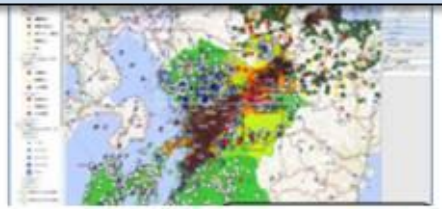
Create maps from collected data by NIED experts

SIP4D®

NIED-CRS

Collect legacy-style disaster information from prefectural gov.

Transform legacy information into the standardized data



Printed Maps

National government disaster response headquarters

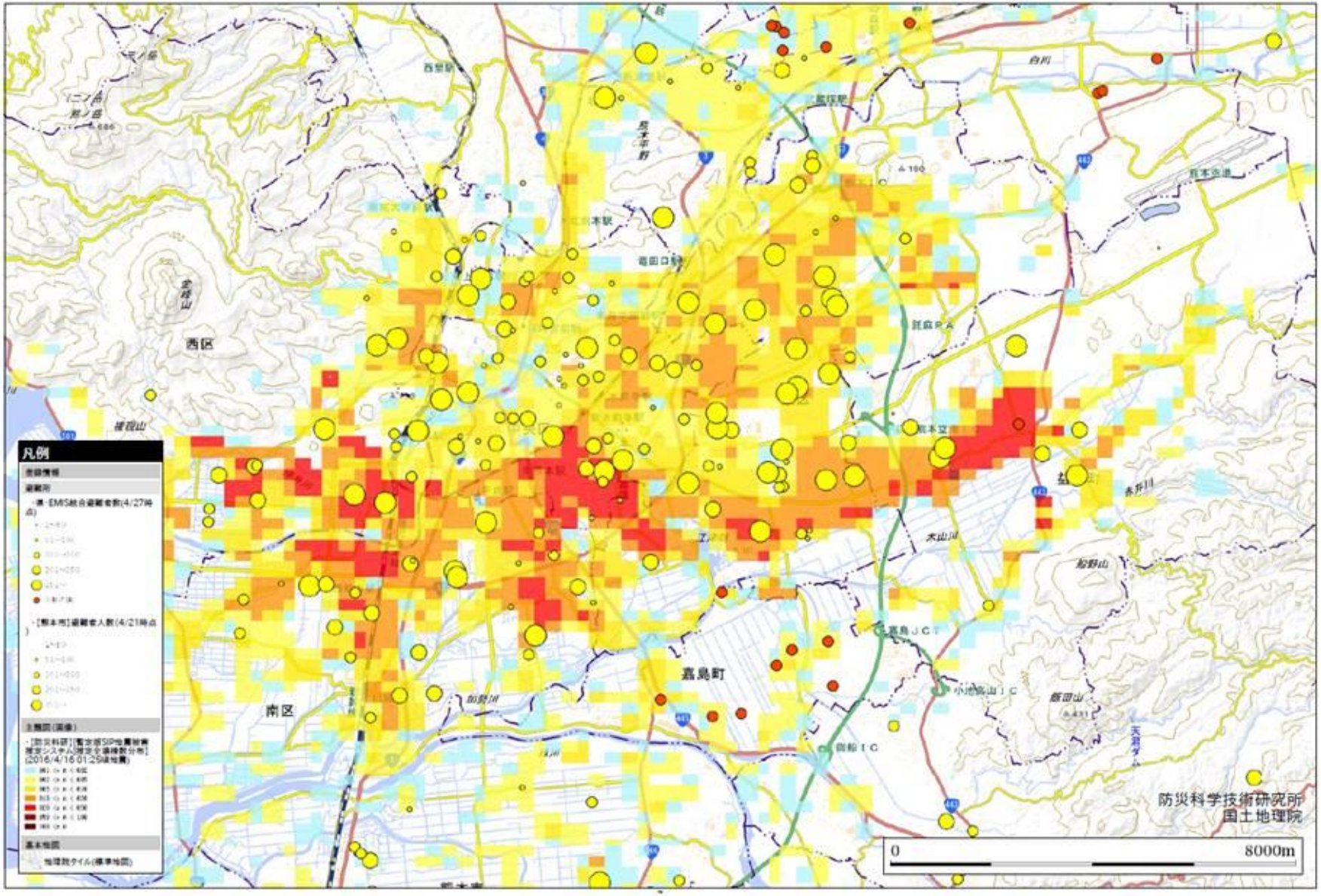
Kumamoto Prefecture disaster response headquarters

Disaster response agencies and organizations

Various support groups

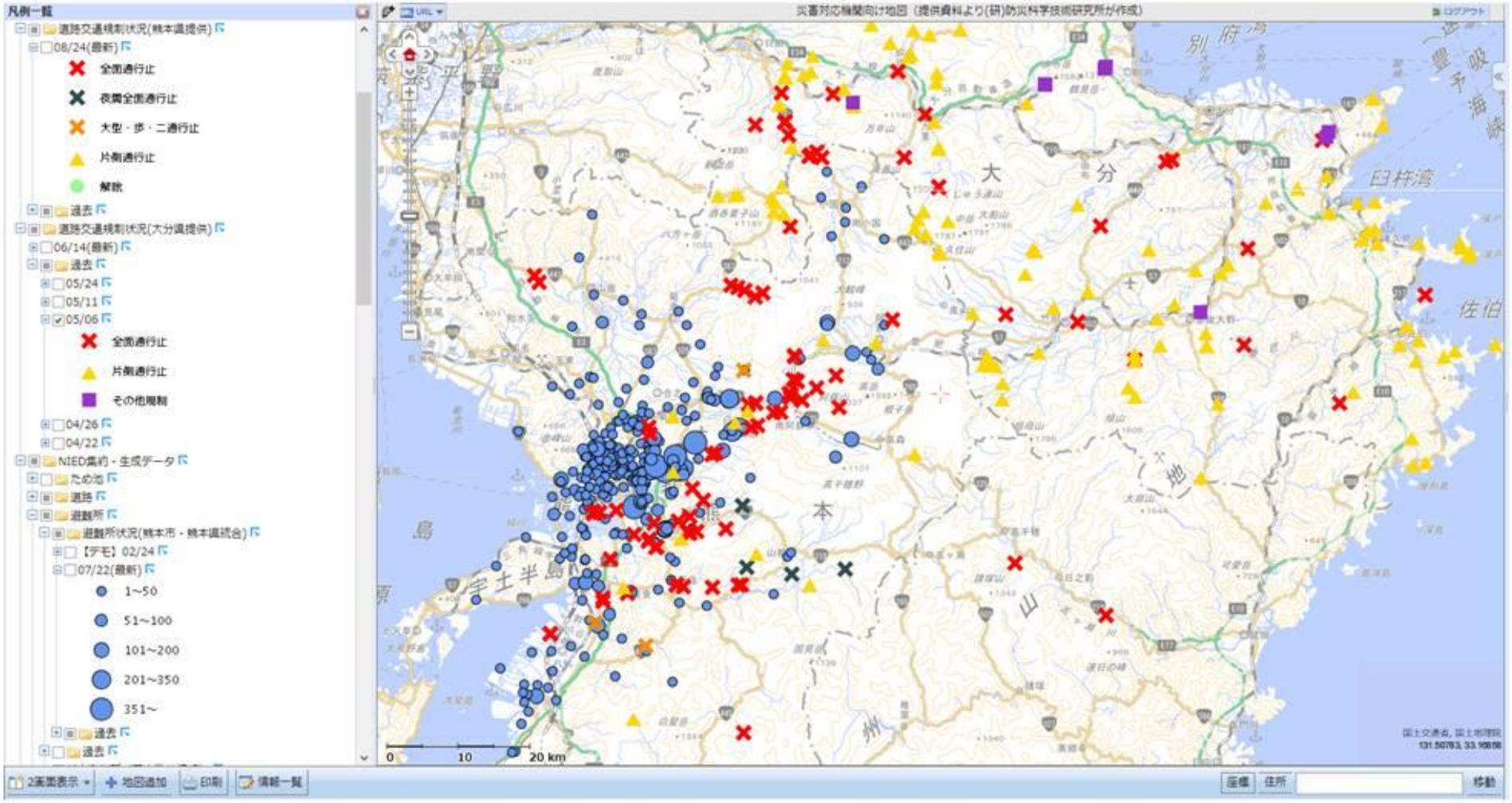
Operational Map: Shelters & Building Damages

- Shelters' location + Estimated number of collapsed buildings

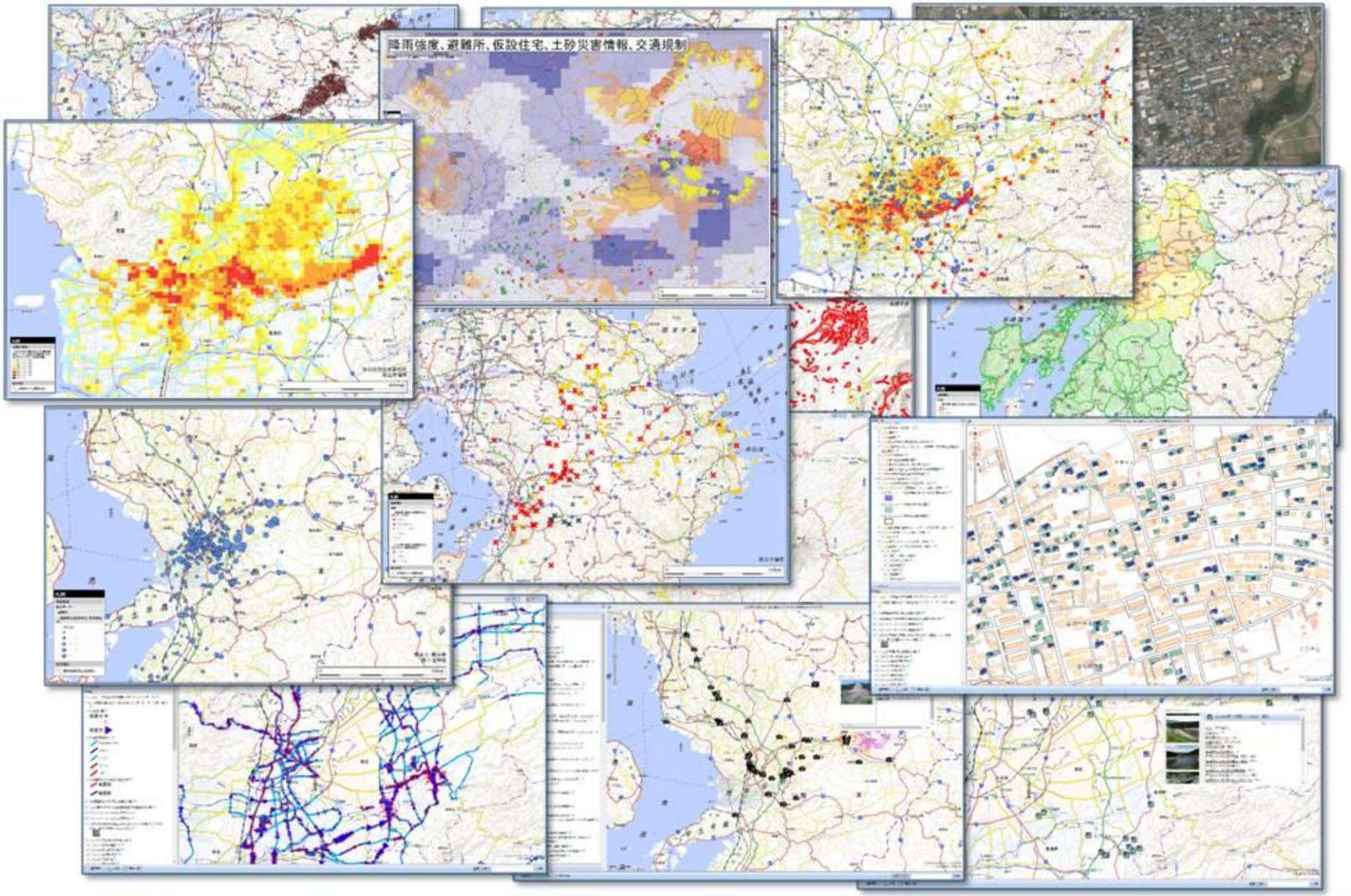


COP: Road Traffic Status & Shelters

- Shelters + Road traffic restriction (Kumamoto Pref. & Oita Pref.)



Disaster Information Products



Printed Maps on the wall in the corridors

Photographs in the Disaster Countermeasure Headquarter

- **Photographs of explaining the situation of the disaster to responders**

- **Photographs of using maps in various situation**

Total number of the dataset provided and the clients

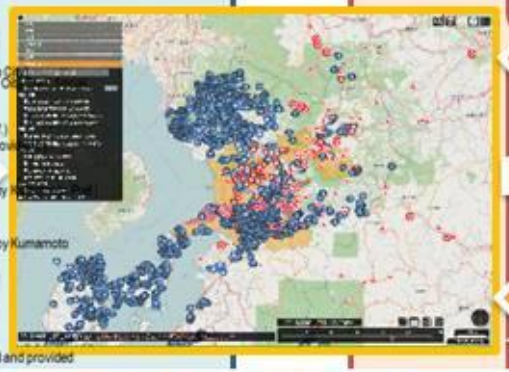
Dataset N=631

NIED original data
- Site survey photos
- Earthquake
  - Hypocenter distribution (before April 14)
  - Hypocenter distribution (after April 14)
  - Seismic intensity distribution
    - 4/16/2016 1:25:00
    - 4/14/2016 21:26:00
  - Earthquake rupture process (April 16)
  - Distribution of the estimated number of totally destroyed structures
    - 4/16/2016 1:25:00
    - 4/14/2016 21:26:00
  - Sites of ground liquefaction (result of site surveys, updated on June 6)
  - Sites of ground liquefaction (result of site surveys, provisional as of May 23)
- Volcano
  - Mt. Aso eruption alert level (provided by the JMA)
  - Observation points
  - Volcanic disaster prevention map for Mt. Aso (provided by Kumamoto Pref.)
- Water, earth, rocks
  - Effective rainfall, total precipitation (updated every 5 min.)
    - Real-time precipitation intensity
    - 1.5-hour half-life effective rainfall
    - 72-hour half-life effective rainfall
    - 24-hour total precipitation
  - Distribution map of earth and rock movements
    - Distribution map of earth and rock movements, Ver. 3 (updated on June 27)
    - Distribution of earth and rock movements (5/30/2016 – 5/31/2016)
    - Distribution of earth and rock movements: Mt. Aso central volcanic cone (4/29/2016)
    - Distribution of earth and rock movements (4/18/2016 – 4/20/2016)
    - Ver. 2 (coverage area extended from Ver. 1; prepared on May 2)
    - Ver. 1 (prepared on April 23)

Data released by external organizations
- Map of previous road traffic (ITS Japan) * Release ended on May 10
  - Previous passenger car traffic (line, updated daily)
  - Previous passenger car traffic (point, updated daily)
  - Previous small truck traffic (point, updated daily)
  - Previous large and medium-sized truck traffic (point, updated daily)
- Map of the distribution of ground surface cracks (Geospatial Information Agency)
- Map of active faults (MEXT Earthquake Research Promotion Office)
- Post-event aerial photos (Geospatial Information Authority)
- Light-colored map (Geospatial Information Authority)
- Standard map (Geospatial Information Authority)
- Aerial photos (Geospatial Information Authority)
- Aerial photos, 1970s (Geospatial Information Authority)
- Colored elevation map (Geospatial Information Authority)
- Aerial photos (GEOSPACE CDS)
- Map (GEOSPACE CDS)
- Blank map (Geospatial Information Authority)
- Aerial photos, around 1945-50 (Geospatial Information Authority)
- Aerial photos, around 1
- Google Maps (maps an
- Google Maps (maps)
- Google Maps (photos)

Data gathered and created by the NIED
- Ortho-corrected images of the central volcanic cone of Mt. Aso
- Reservoir (NARO)
- Road
  - Road damage information (provided by DiMAPS)
  - Status of road traffic restrictions (provided by Kumamoto Pref.)
  - Status of road traffic restrictions (provided by Oita Pref.)
- Evacuation shelter
  - Status of evacuation shelters (integrated; Kumamoto City and Kumamoto Pref.)
  - Status of evacuation shelters (provided by the EMIS)
  - Status of evacuation shelters (provided by Kumamoto City)
  - Status of evacuation shelters (provided by Kumamoto Pref.)
  - Designated evacuation shelters (National Land Numerical Information)
- Landslide information for Kumamoto Pref. (released by Kumamoto Pref. on 5/13/2016)
  - Landslide-related emergency inspection performed
  - Locations with landslide risk
  - Landslide special alert areas
  - Landslide alert areas
- Landslide information for Kumamoto Pref. (updated by Kumamoto Pref. on 7/6/2016)
  - Landslide-related emergency inspection performed
  - Locations with landslide risk
  - Landslide special alert areas
  - Landslide alert areas
- Water supply restoration (provided by Kumamoto Pref. and
- Disaster relief volunteer centers (provided by Kumamoto Pref. and the C
- Welfare Council)
- Temporary emergency housing
  - Temporary housing construction sites (provided by Kumamoto Pref.)
  - Number of temporary emergency housing, by local governm (provi
  - Kumamoto Pref.)
- Support for disaster victims' life-rebuilding efforts
  - Status of disaster victim certification (structural dama by K
- Medical organizations (provided by the EMIS)
- National census (2010, provided by the MIC and MLIT)
- Distribution map of earth and rock movements (1990, 2012; provided by Kumamoto Pref.)

Data prepared by NIED partners
- Landslide (provided by the DiMAPS)
- Damage status of riverine facilities (provided by the DiMAPS)
- Automatic identification of houses covered by blue sheets (created and provided by PASCO)
- Surveys of reservoirs (created and provided by PASCO)
- Free cellular phone charging service (created and provided by
- Bathing facilities (created and provided by PASCO)
- Statistical data (created and provided by PASCO)
- Measurements of road gaps and road flatness (created and p
- Recorder)
- Basic data (created and provided by Kyushu University)
  - Facilities (government buildings, public facilities, community facilities)
  - Municipal jurisdictional boundaries
  - Classification of regional promotion bureaus



SIP4D®

Clients N=40

National government disaster response headquarters

CAO	METI
MIC	MOE
MLIT	JCG
MHLW	GSI
MAFF	JGSDF
MEXT	

(11 ministries, agencies, and relevant organizations)

Kumamoto Prefecture

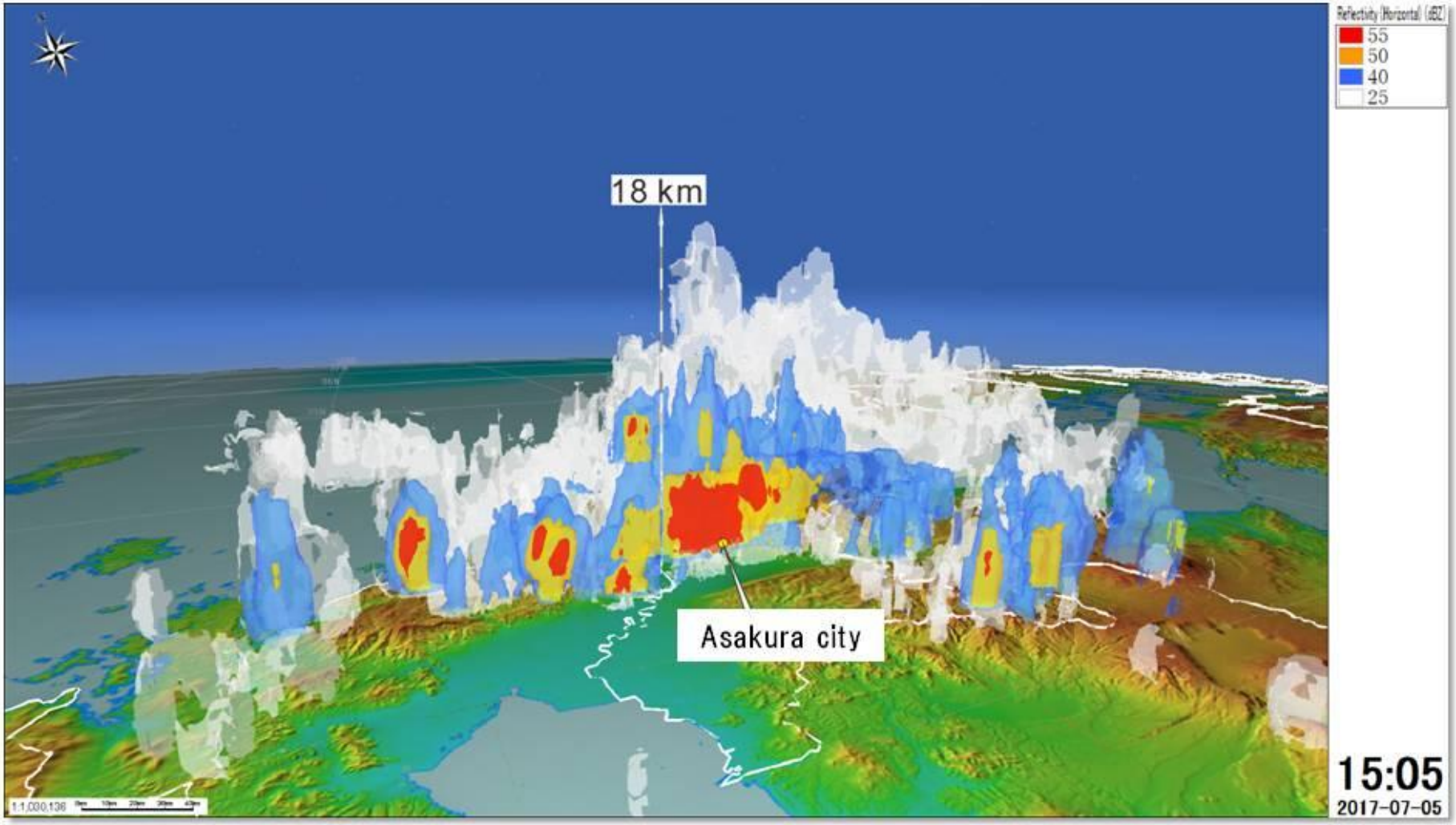
- Division of Risk Management and Disaster Prevention
- Public Relations Division
- Road Safety Division
- River Management Division
- Sewer Systems Division
- Sand Management Division
- Urban Planning Division
- Housing Division
- Building Division
- Health and Welfare Policy Division
- Health Promotion Division
- Fire Safety Division
- Municipality Division
- Farmland Development Division
- Transportation Policy Division
- Tourism Division (16 divisions)

Others

631 types of disaster information shared with 40 organizations

The Northern Kyushu Heavy Rainfall, July 2017

- The Linear Precipitation Zone emerged above Asakura city, Fukuoka Pref.
- The Flood and Sediment disaster occurred in Fukuoka and Oita Pref.



Original Data Source: MLIT, Visualization: NIED

Death 36 people, Missing 5 people
More than 1,000 buildings damaged

Source: the Fire Defense Agency
As of August 2,2017

(Photo : Asia Air Survey Co., Ltd.)

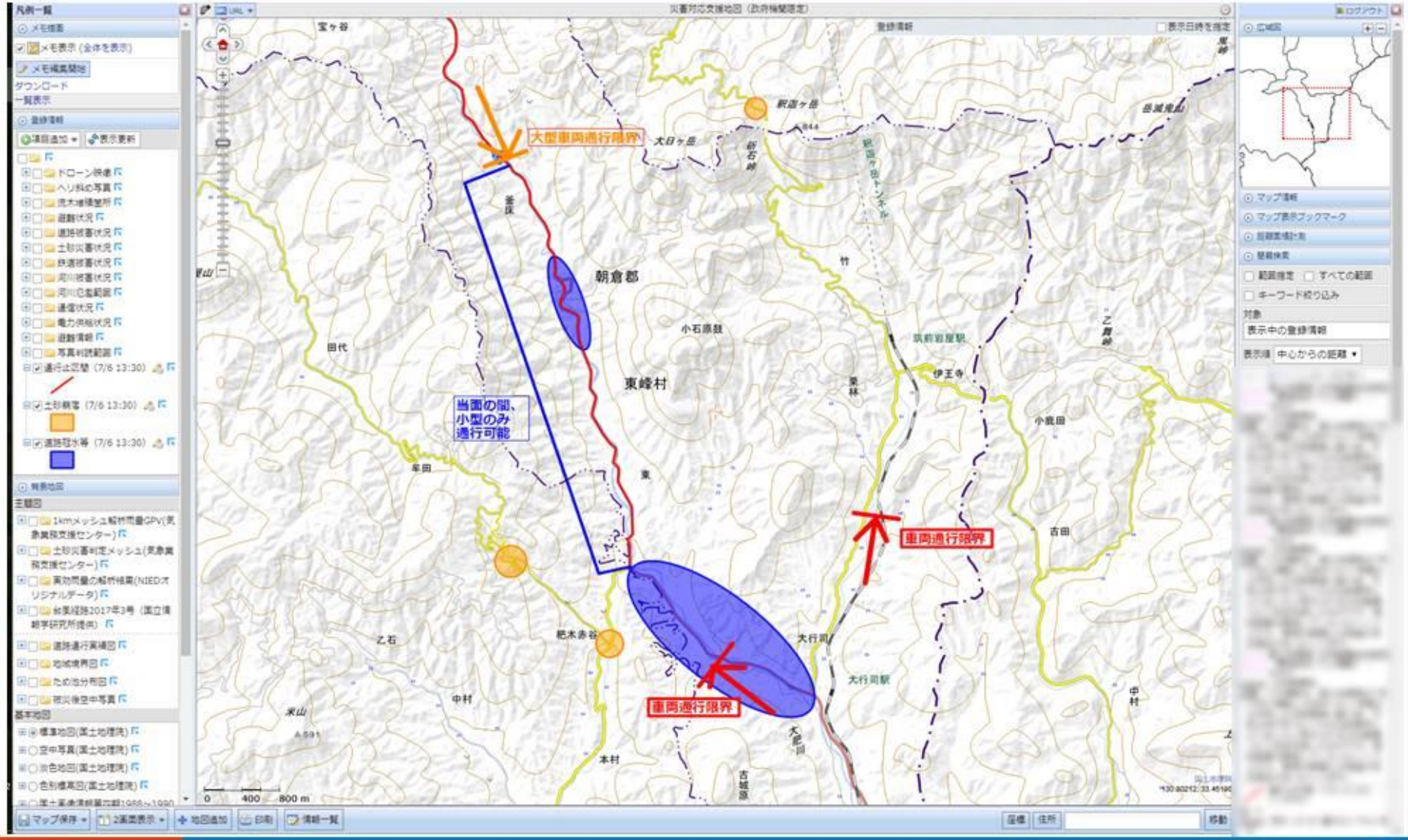
(Photo:NIED)

The Disaster Response Command Post in Fukuoka Prefecture

Legacy mapping operation by the dispatched teams

Legacy maps was transformed to digital maps by NIED

Digitized COP powered by SIP4D



Printed COP handouts

COP: used by different Dispatch Teams

無法顯示圖像。您的電腦可能沒有足夠的記憶體來開啟圖像，或圖像可能已毀損。請重新啟動您的電腦，並再次開啟檔案。如果仍然出現紅色 x，您可能必須刪除圖像，然後再次插入圖像。

Ideal form of information sharing

The achievements of SIP4D in disaster responses

NIED 防災科研

Kumamoto Earthquake 2016

Supported the information sharing among the ministries and the prefectural governments

The Northern Kyushu Heavy Rainfall

Contributed to the rescue and the searching by establishing the common situational awareness

SIP4D Demonstrated the effectiveness of sharing the common situational awareness.

Information support team for disaster response

- The Cabinet Office launched the trial project of "Information Support Team for Disaster Response (ISUT)" in 2018.
- ISUT aims to support organizing disaster information for the affected local governments at the time of heavy disaster.
- NIED is a core member of ISUT, especially supporting disaster information mapping using SIP4D.

ISUT as a Member of National Response Team

2018.6 Osaka earthquake

ISUT First Trial

2018.7 Western Japan Heavy Rain

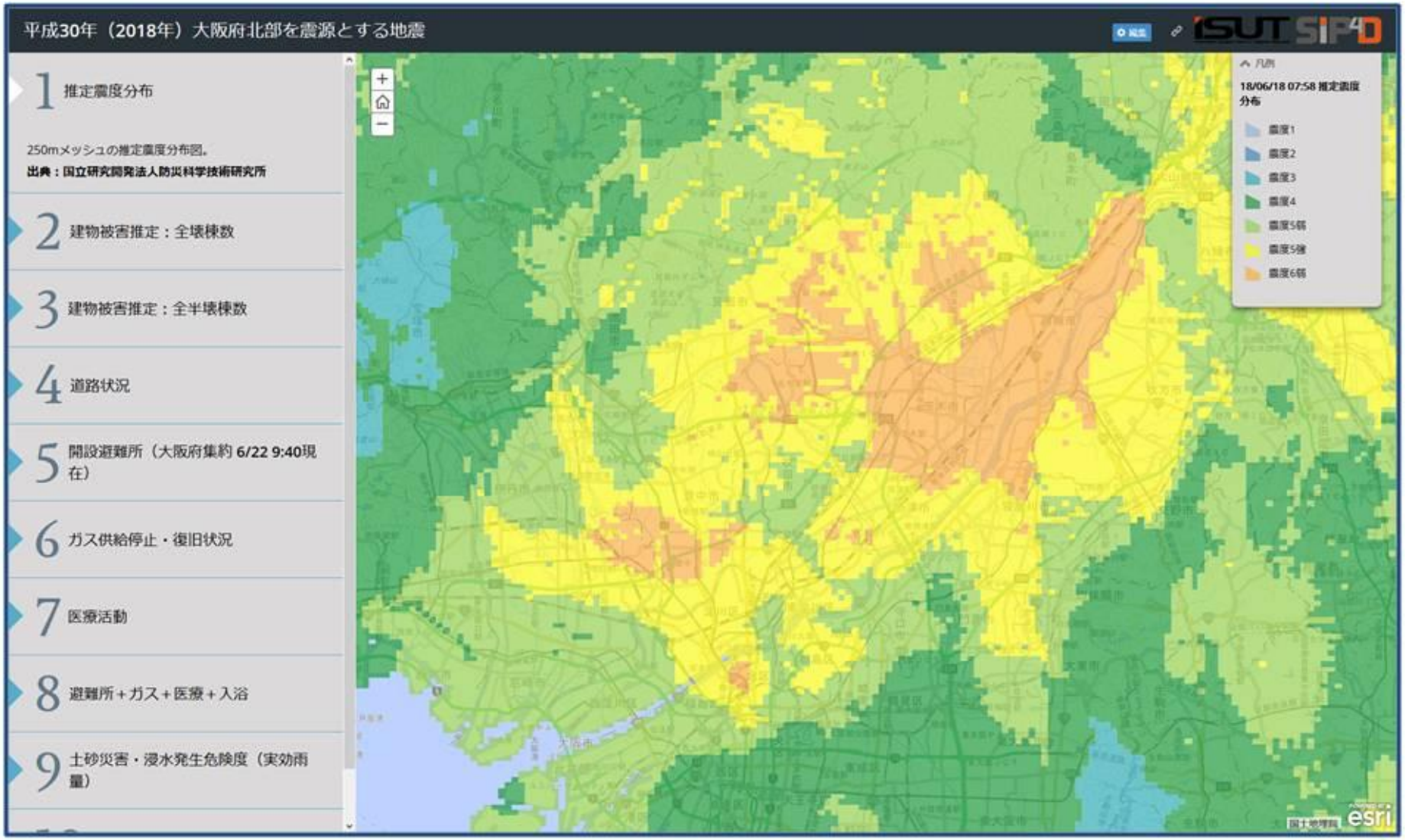
Wide Area Disasters: Actions in three Prefectures

2018.9 Hokkaido earthquake

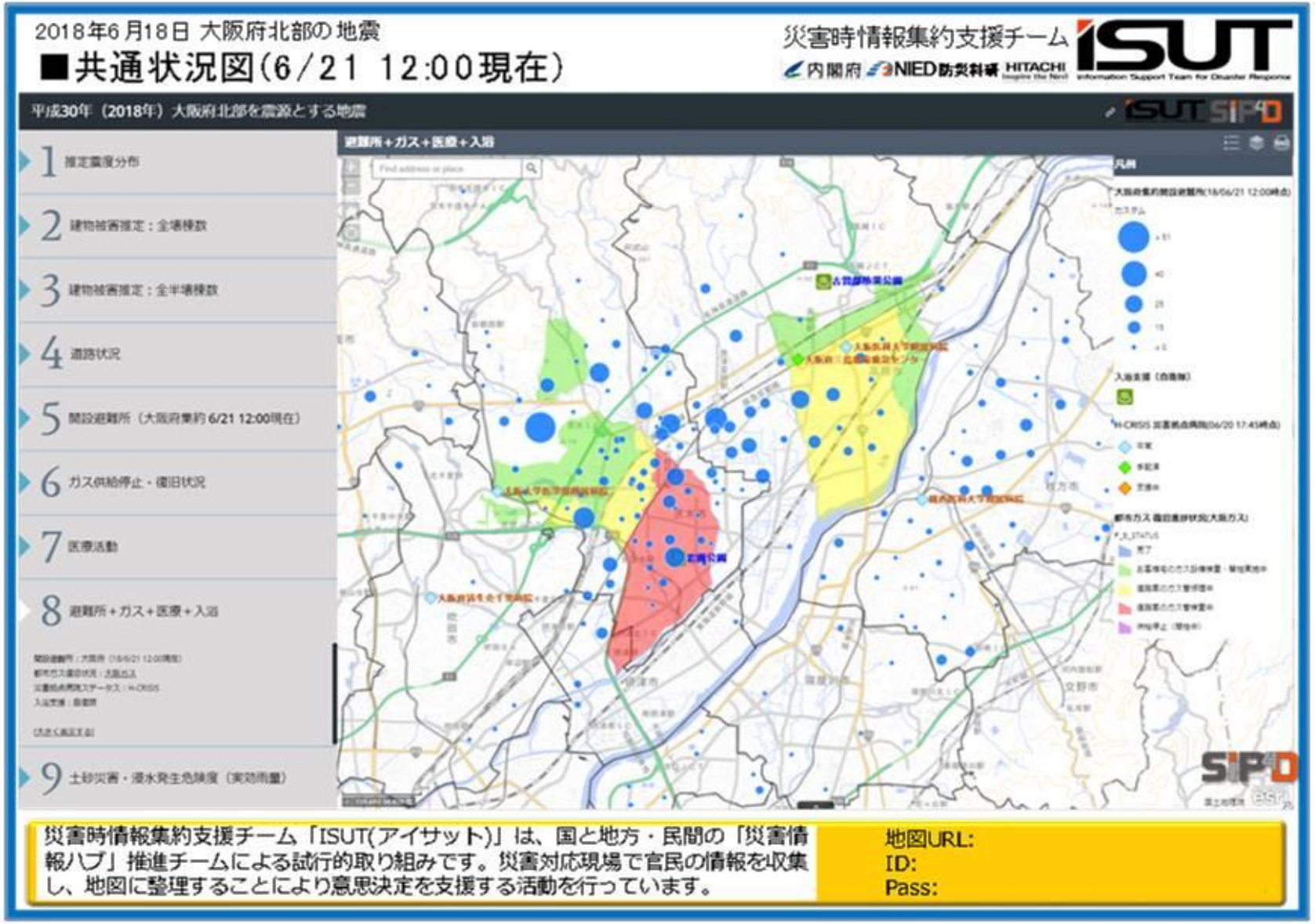
ISUT started from Day 1

ISUT (Information Support Team) is a National Response Team to help creating common operational picture for effective disaster response, which stationed at EOC of impacted prefecture. NIED is a member organization of this team.

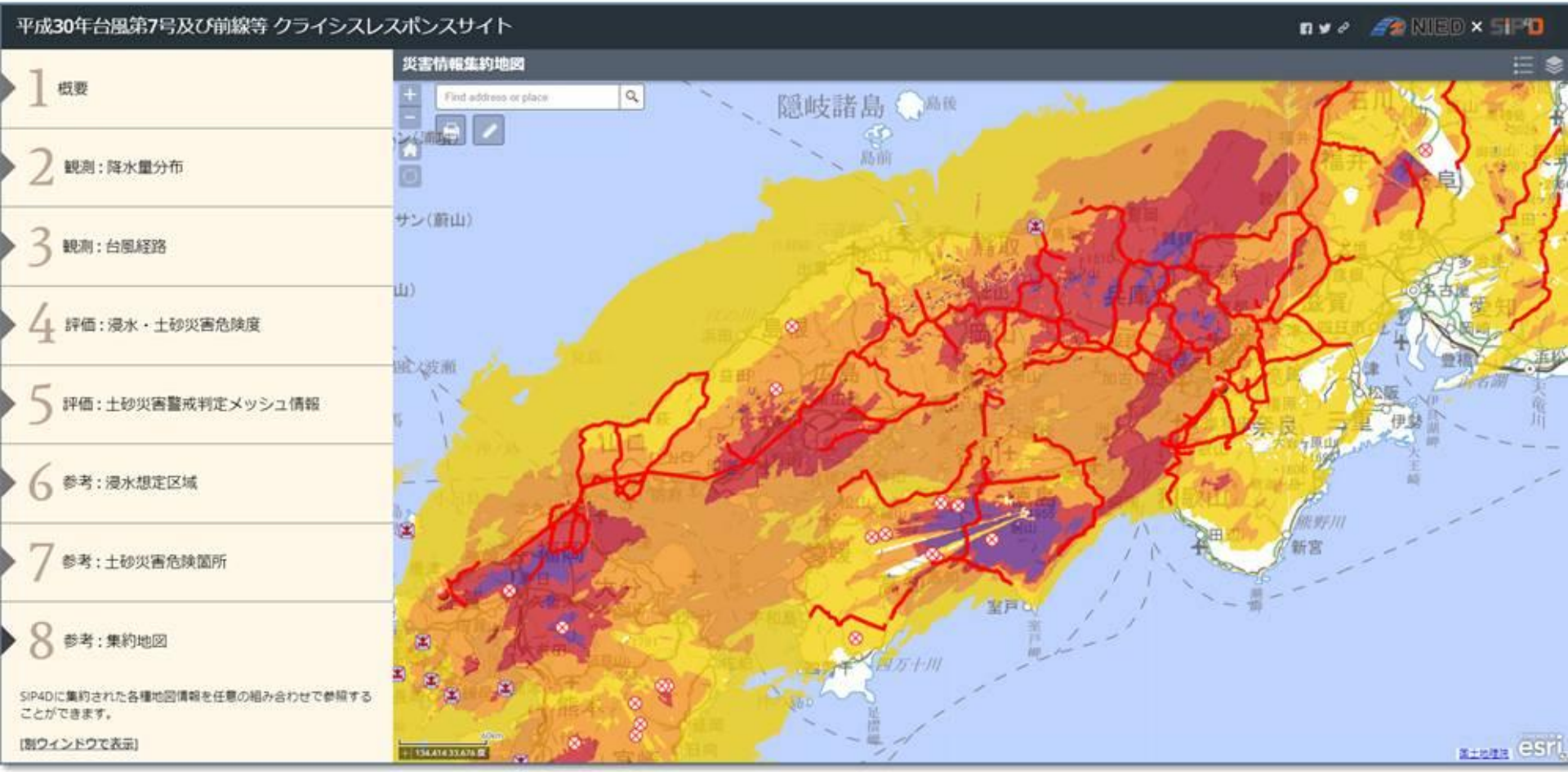
ISUT-COP for The Northern Osaka Earthquake



ISUT-COP for The Northern Osaka Earthquake (handout)



ISUT-COP for The Heavy Rainfall in Western Japan



Web map application shared by ISUT

Gathered and Shared Information

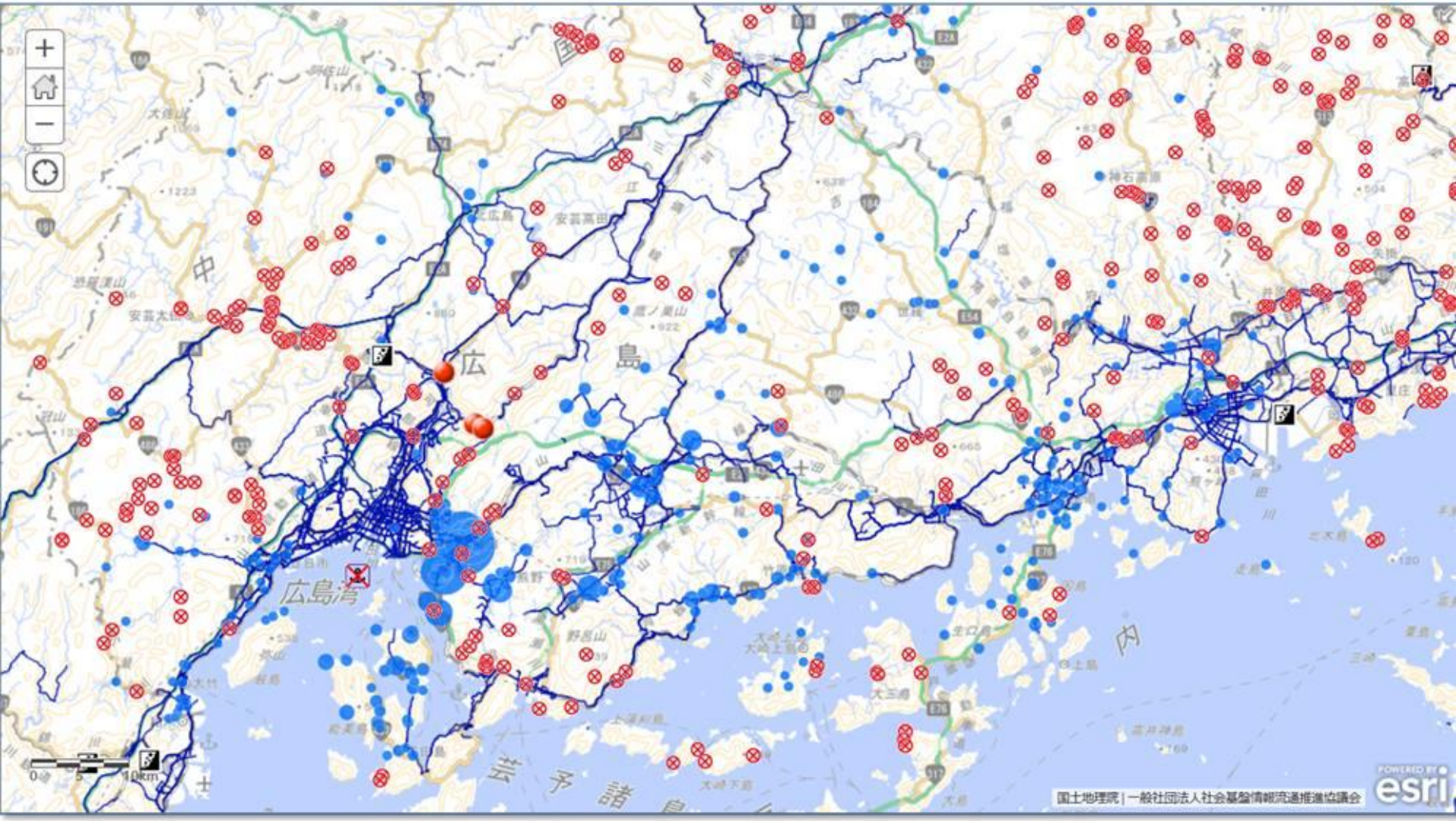
West-Japan Heavy Rainfall in July 2018

- Evacuation Shelter Status
- Road Closure
- Water outage area
- Blackout area
- Water supply spot
- Hospital status
- Communication possible area
- Relief Supply space
- Volunteer center status
- Disaster declaration
- Landslide Distribution

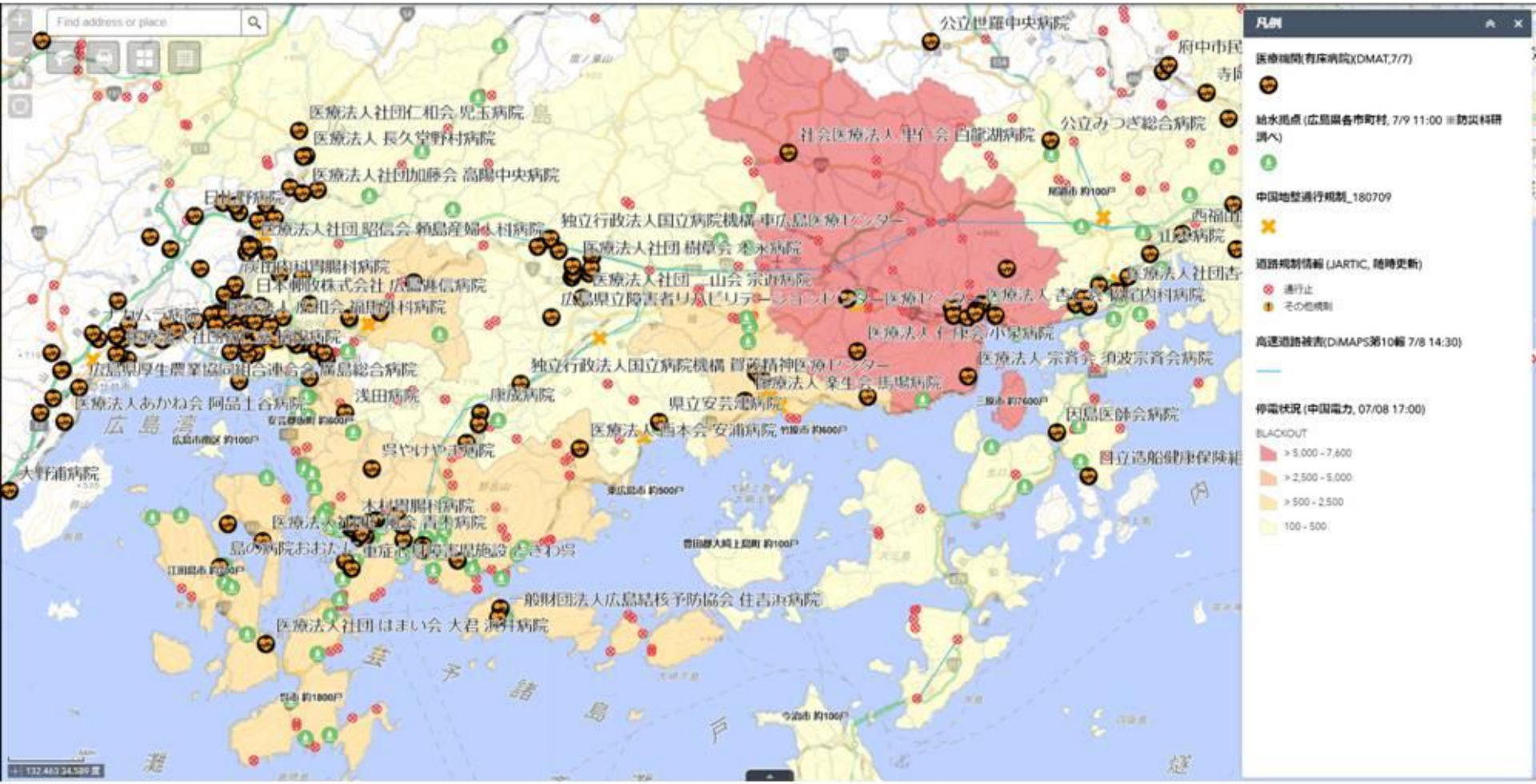
Index

Map

ISUT-COP: Road damages and shelters

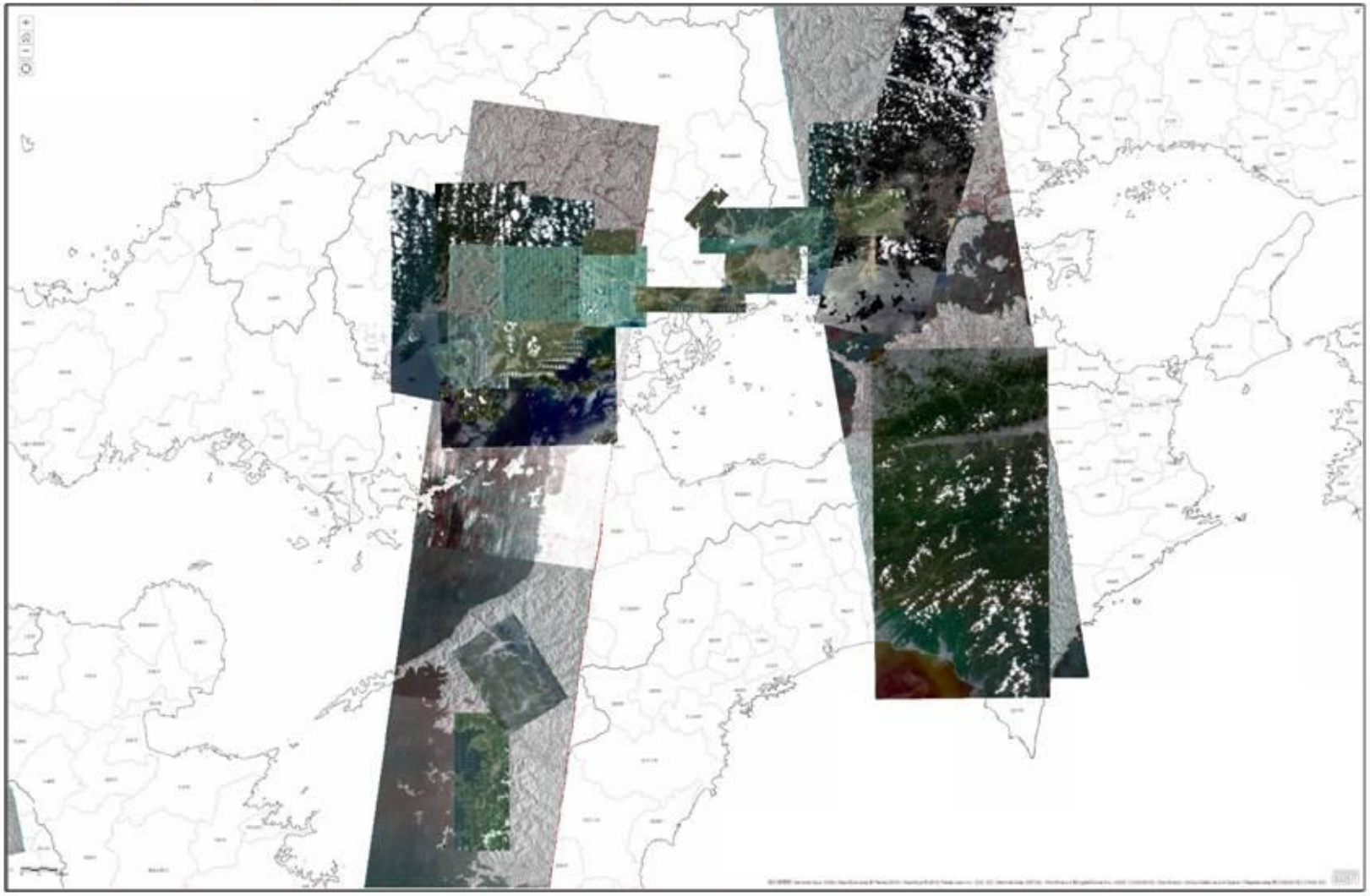


ISUT-COP: Hospitals, water outage and blackout areas



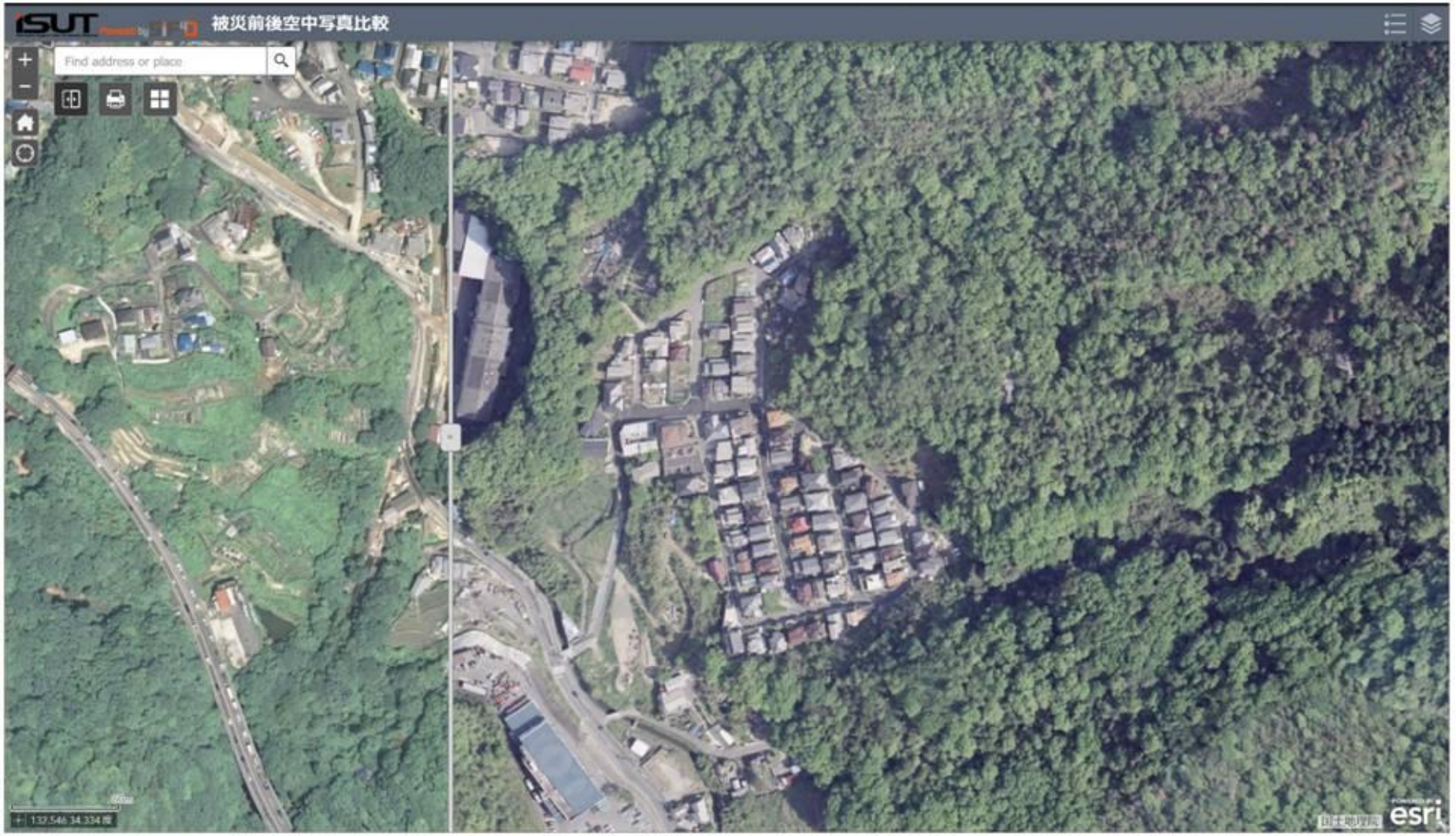
Satellite Images and Aerial Ortho Photos

- Satellite imageries were provided from JAXA and Sentinel Asia.
- Aerial ortho photos were provided from GSI (Geospatial Information Authority of Japan)



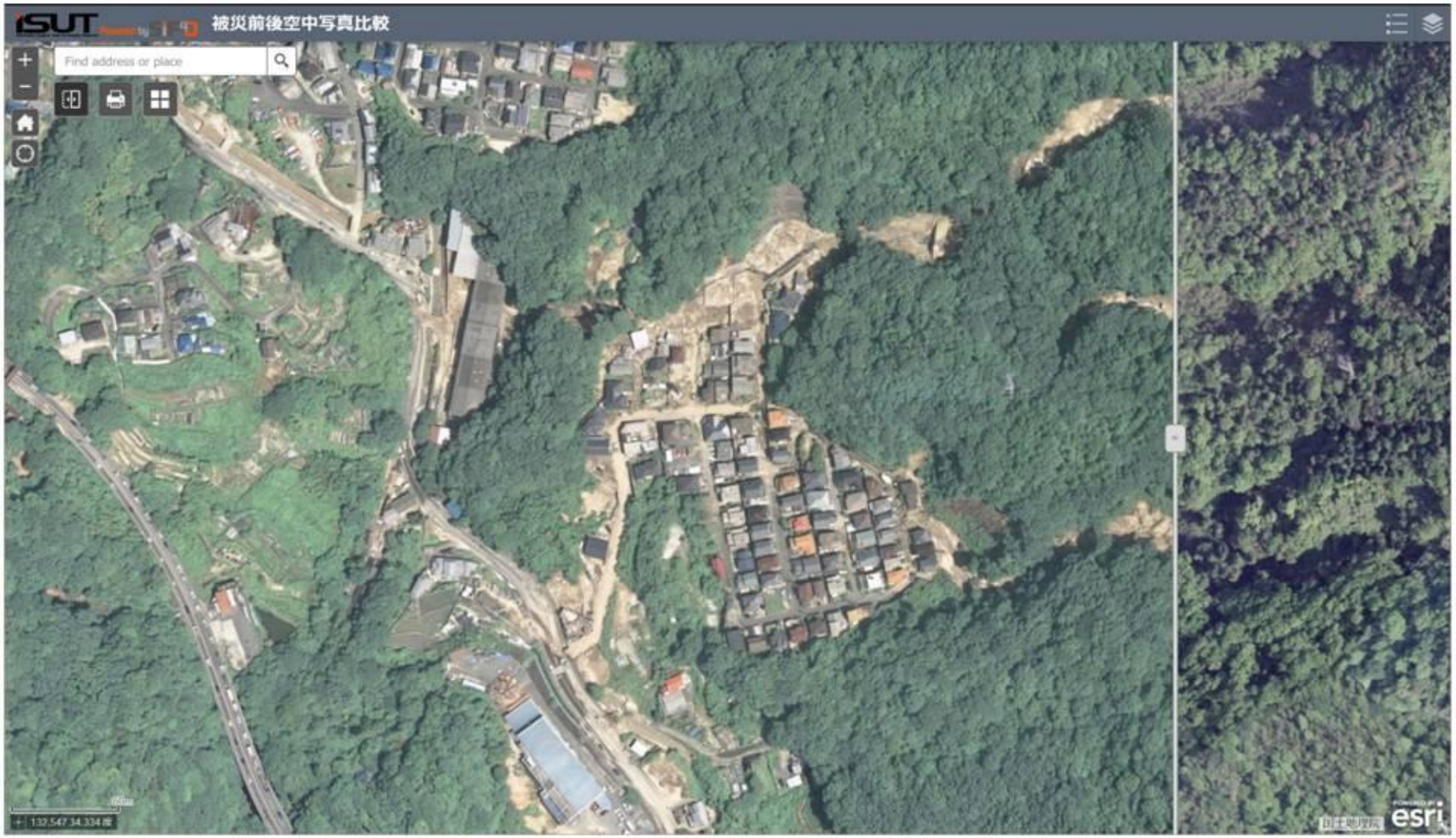
Comparing pre / post aerial photos

West-Japan Heavy Rainfall in July 2018

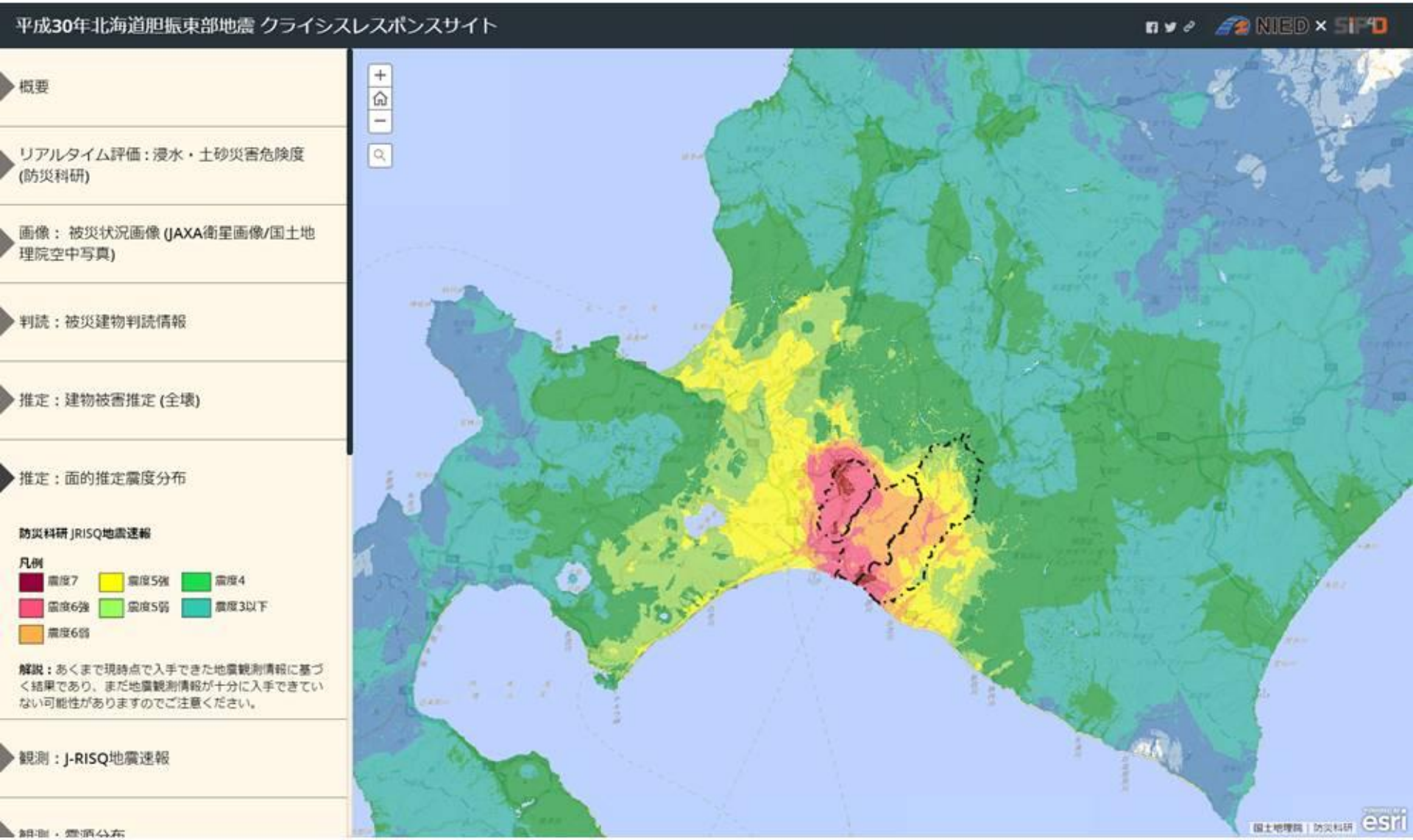


Comparing pre / post aerial photos

West-Japan Heavy Rainfall in July 2018



The Hokkaido East Eburi Earthquake

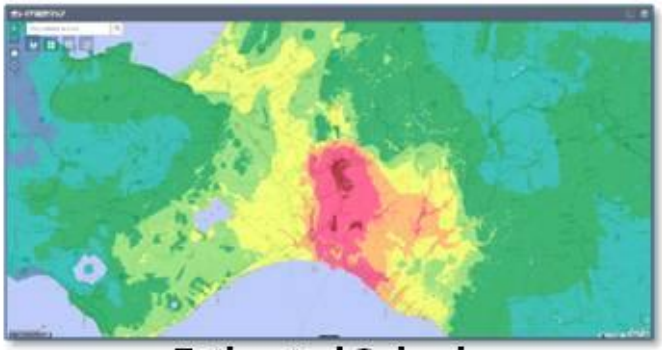


Web map application shared by ISUT

Gathered and Shared Information

- Evacuation shelter status
- Road closure
- Road traffic
- Water supply spot
- Hospital status
- Communication possible area
- Waste storage space
- Relief Supply space
- Landslide Distribution
- Movie by UAV
- Satellite images
- Aerial photographs

Earthquake in Hokkaido, Eastern Iburi



Estimated Seismic Intensity Distribution Map

Estimated House Damage Map (Each municipality)

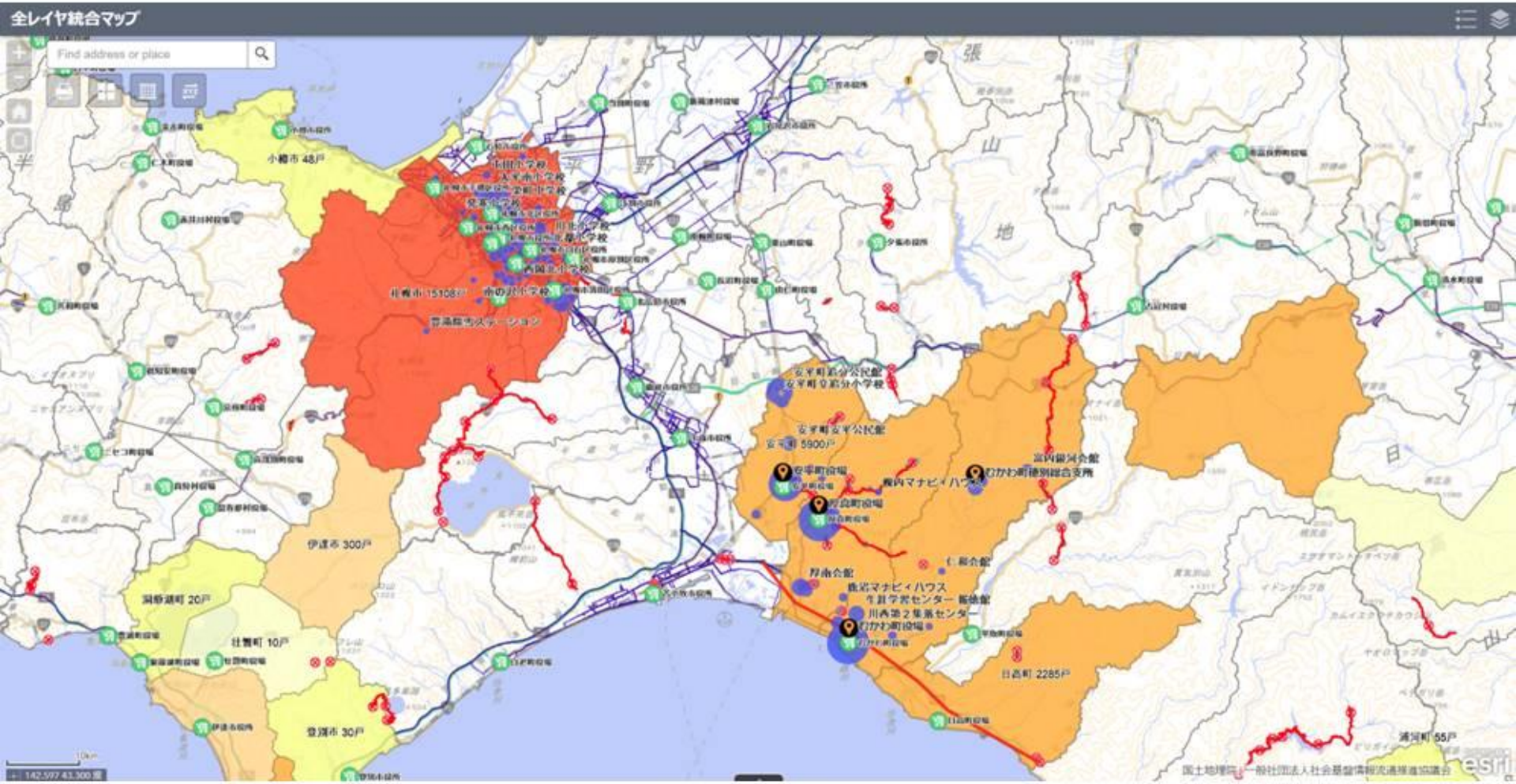
Road Closure Map

Road Traffic Map

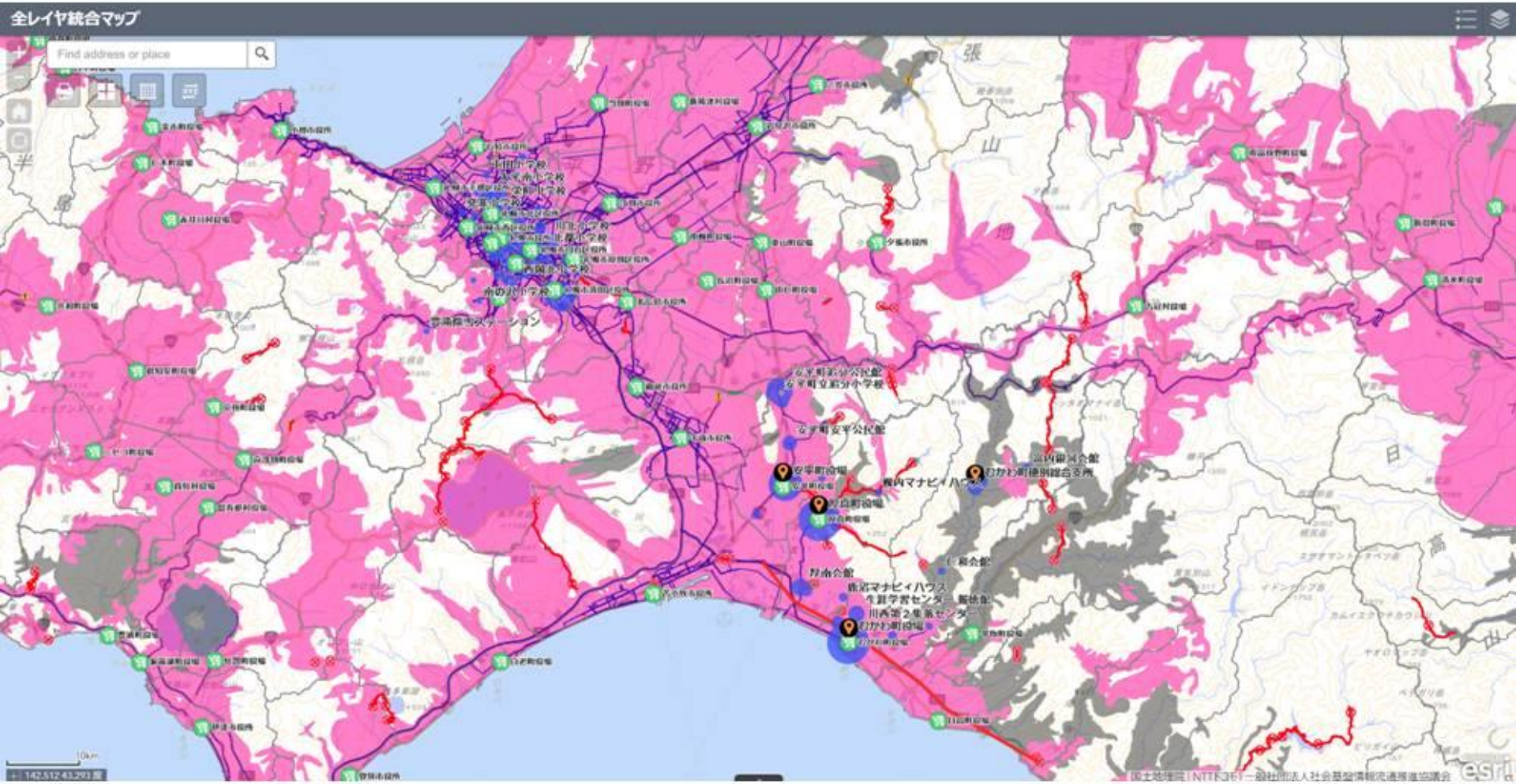
Evacuation Shelter Map

Communication Possible Area Map

ISUT-COP: Shelters and emergency water supply points



ISUT-COP: Shelters and mobile phone service areas



NIED in EOCs

● OSAKA pref.

●OKAYAMA pref.

●HIROSHIMA pref.

●HOKKAIDO pref.

New Challenge:

CPS4D,
Cyber-Physical Synthesis for Disaster Resilience

Our New Challenge

- As next step for improving disaster response activities, it is necessary to research and develop that goes one step ahead further than "To build a common situational awareness."
- We have achieved to create the information that **“Now, we are in such situation of the disaster.”**
- It is demanded to create the information that **"Now, we should be doing something like this next in such situation of the disaster"**.
- That is to say, research and development for the purpose of "decision-making support" is most important on the next stage.
- Therefore, we have launched "Research and development of the synthesis system for evacuation and emergency action support of citizen and government.

Problems bringing that were not visible in regular information sharing up by grasping the change.

→"Visualizing anomalies" of changes supports decision-making for quick handling
→"Foreseeing (forecasting) changes" can supports decision-making to preempt events that may occur

Goal: Establish "CPS4D" to lead society based on information

In order to grasp the change of disaster, only conventional observation / prediction and hazard evaluation are insufficient
→We need a system that observes "the disaster dynamics" by observing dynamics of society.
By some analyses of disaster dynamics, support for problem detection and resolution, and decision making to anticipate
→It is necessary to establish the Cyber-Physical Synthesis for Disaster Resilience

内閣府作成

内閣府HPより引用・抜粋・編集 http://www8.cao.go.jp/cstp/society5_0/index.html

1. Digital twin

Technologies to reconstruct the dynamics of the disaster in real space into cyber space

2. Resilient network

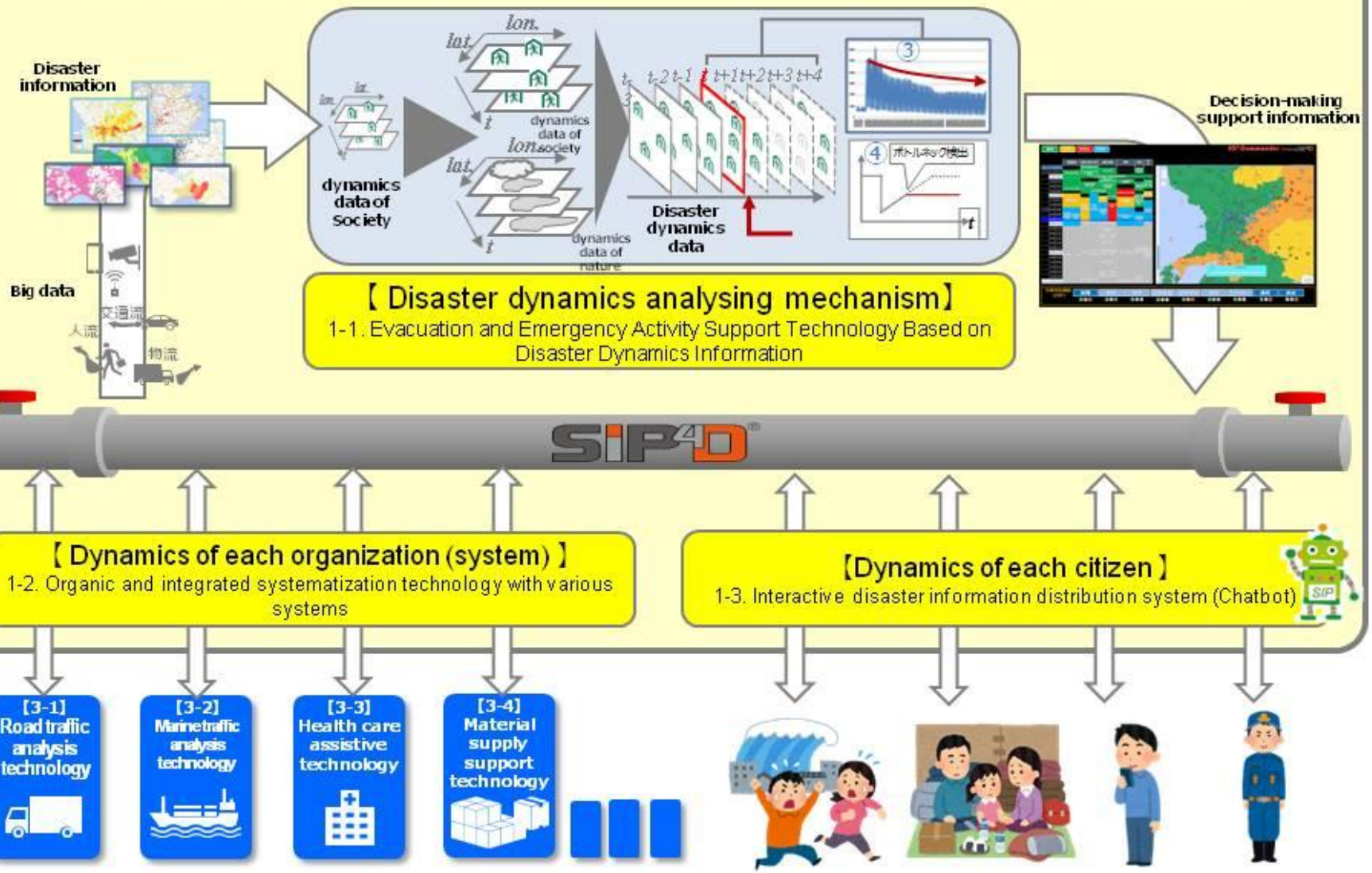
Technologies to keep connecting real space and cyber space

3. Feed-forward

Technologies to drive behavior and activity in real space by information in cyber space

quoted from : http://www8.cao.go.jp/cstp/society5_0/index.html

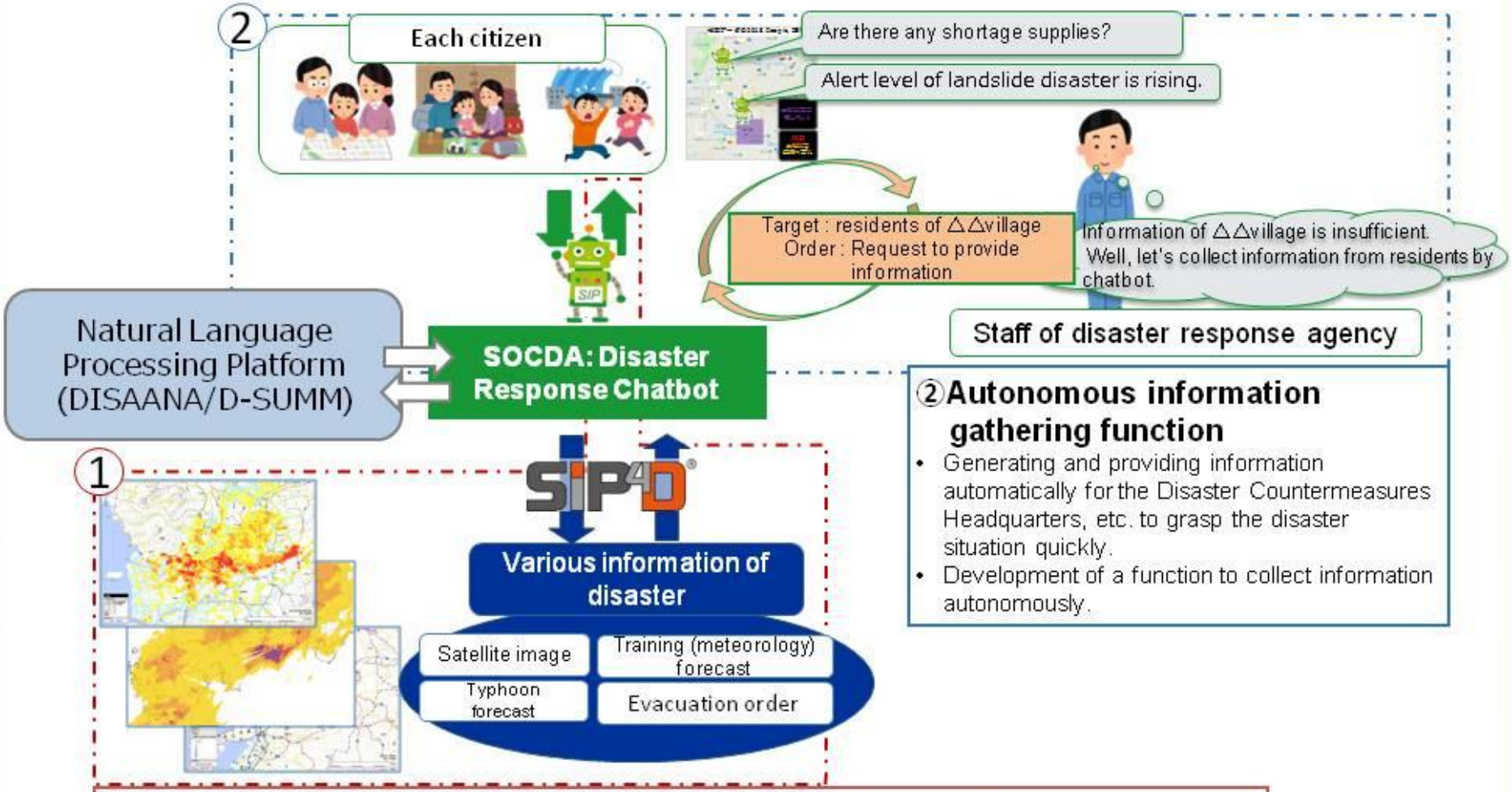
Digital twin technology based on disaster dynamics



New Challenge:

SOCDA,
SOCial-dynamics observation and victims support Dialogue Agent platform for disaster management

SOCDA's objectives



②Autonomous information gathering function

- Generating and providing information automatically for the Disaster Countermeasures Headquarters, etc. to grasp the disaster situation quickly.
- Development of a function to collect information autonomously.

①Provide evacuation supporting information for each citizen

- Providing advanced evacuation support information by fusion processing of various disaster information shared by SIP4D in accordance with each person's situation.
- Support a series of evacuation from evacuation behavior to sheltering.
- Organize the knowledge required for evacuation activities of each citizen.

National Institute of Information and Communications Technology

DISAANA and D-SUMM: Large-scale Real Time NLP Systems for Analyzing Disaster Related Reports in Tweets

Kentaro Torisawa,
DIRECT,
NICT, Japan

The problem we want to solve

lack of the food in X

【Retweet!】

【Retweet!】

I would like to confirm Mr./Mrs. X's saf

Where is the evacuation center?

lacks

heating oil lacks in X

no gasoline in X

I want to charge my mobile pho

【Retweet!

have n

You can charge a mobile phone i

refugee list is available at X

a water wagon is in X

【Retweet!】

You can use a bathroom in X

Route X is closed

u can take a bath in

evacuation center

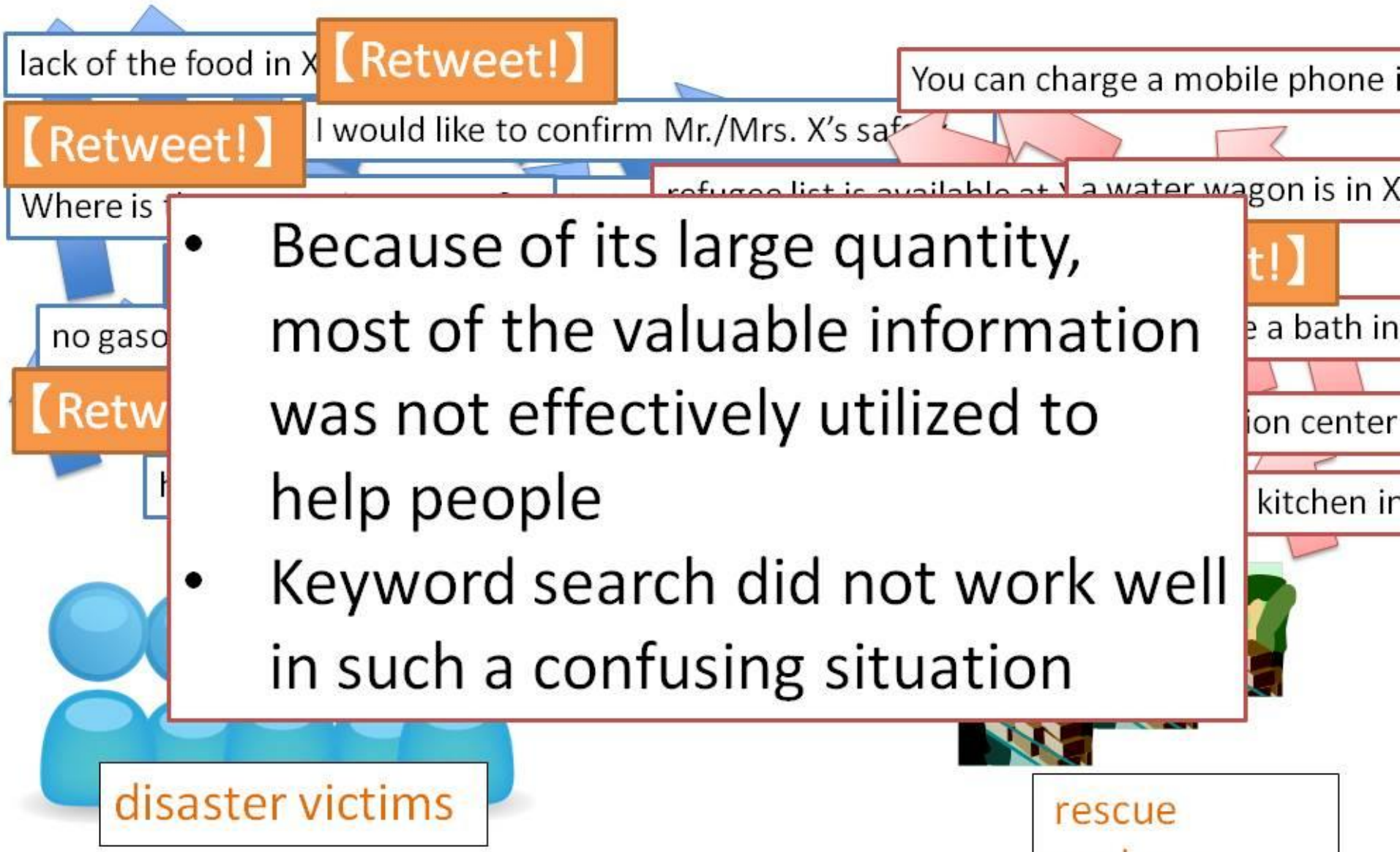
a soup kitchen in

- A large quantity of disaster related information was posted to Twitter

disaster victims

rescue workers

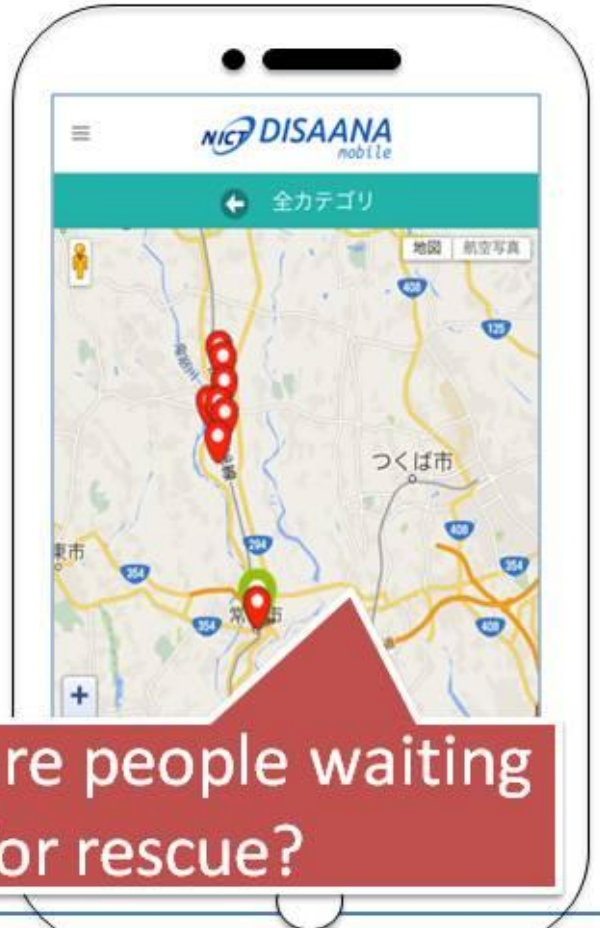
The problem we want to solve



- Because of its large quantity, most of the valuable information was not effectively utilized to help people
- Keyword search did not work well in such a confusing situation

Our Solution

- DISAANA (DISaster information ANAlyzer)
  - Basically Real-time QA service using Twitter
  - Available for public use through the Web and smartphones



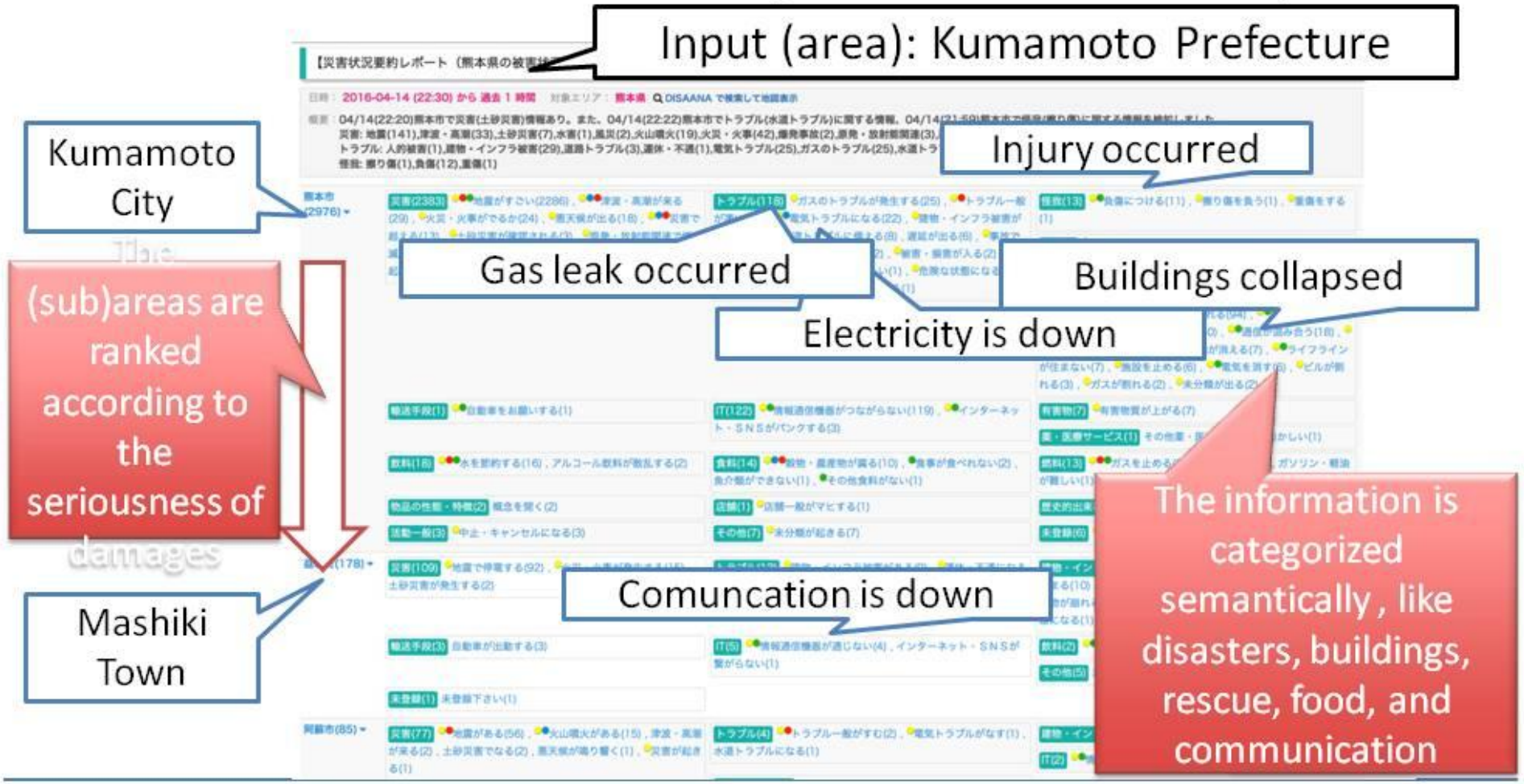
DISAANA

Disaster Information Analyzer

Resilient ICT Research Center
Data-driven Intelligent System Research Center
Universal Communication Research Institute
National Institute of Information and Communication Technology

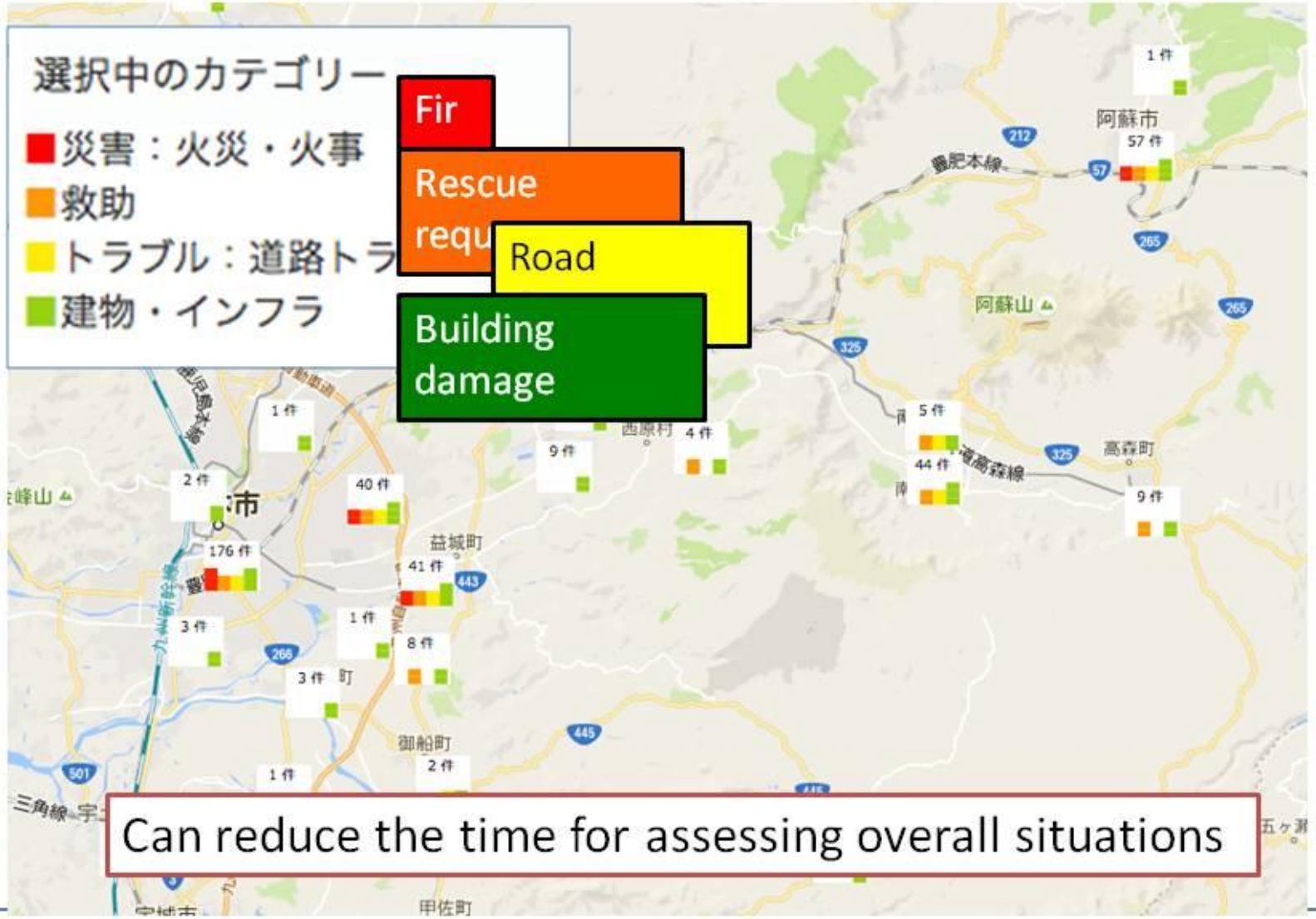
D-SUMM

- In an large scale disaster, the DISAANA often provides too much (and detailed) information
- D-SUMM summarize and organize the disaster reports



D-SUMM

- Can display the summarized information on a map



Can reduce the time for assessing overall situations

Example in a real disaster

“LINE” as the first platform of SOCDA

4大SNSのMAU/人口カバー率/アクティブ率（2019年2月時点）

	Facebook	Twitter	Instagram	LINE
Number of Users (MAU)	2,800万人※1	4,500万人※2	2,900万人※3	7,900万人※4
Population cover ratio	22.2%	35.6%	23.0%	62.5%
Activity ratio	56.1%	70.2%	84.7%	96.6%

https://www.bricoleur.co.jp/blog/archives/3420

● LINE and NIED signed "Partnership Agreement for disaster resilience using Internet / AI technology" (on 29 Sep. 2018).

NHK Broadcast

The CEO of LINE, Mr. Takeshi Idesawa

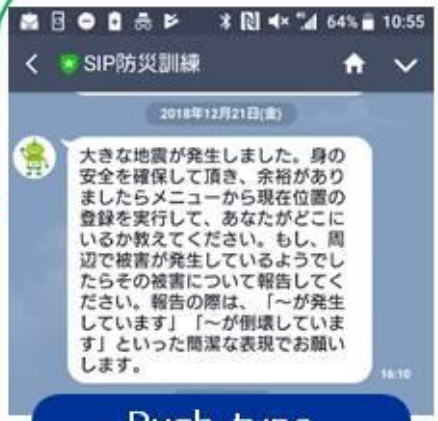
Agile Software Development

Information collected from each citizen (observation of social dynamics)
Collection of information required by disaster response agencies

Collecting disaster information and update: observation of social dynamics for contributing to disaster response

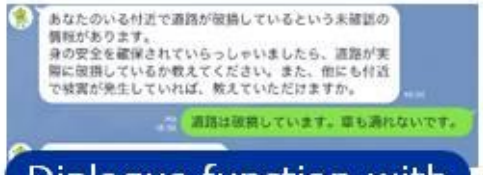
Improvement of Information reliability: improve reliability of information by confirmation to surrounding sufferers

Interactive notifying system



Push-type Disaster report request function

Visualization function of disaster report utilize D-SUMM（SIP 1st term）



Dialogue function with each and every one (manual)

Developed a part of information gathering function

Demonstration of SOCDA Chatbot

- The concept was demonstrated using a disaster prevention chatbot prototype under the development in the second phase of SIP.
- The usefulness of the disaster prevention chatbot was confirmed

(from the director of the crisis management office, "it is very easy to understand, and it seems to belong to another age from the time of the Great Hanshin Awaji Earthquake")

Summarizing and sharing of information by SIP4D

- certainly, ~ is heavily damaged and cars can not pass.

Citizen (officer)
(about 150people)

- Fire is happening at ～
- The building is collapsing at～
- Road is damaged at～
- There is a person who is buried alive at～

…

- There is information that ~ is damaged, for confirming please check and let me know if possible.
- Please let me know if there is any other damage.

official account of LINE

Disaster Prevention Chatbot

Great Hanshin Awaji Earthquake (**assumption**)

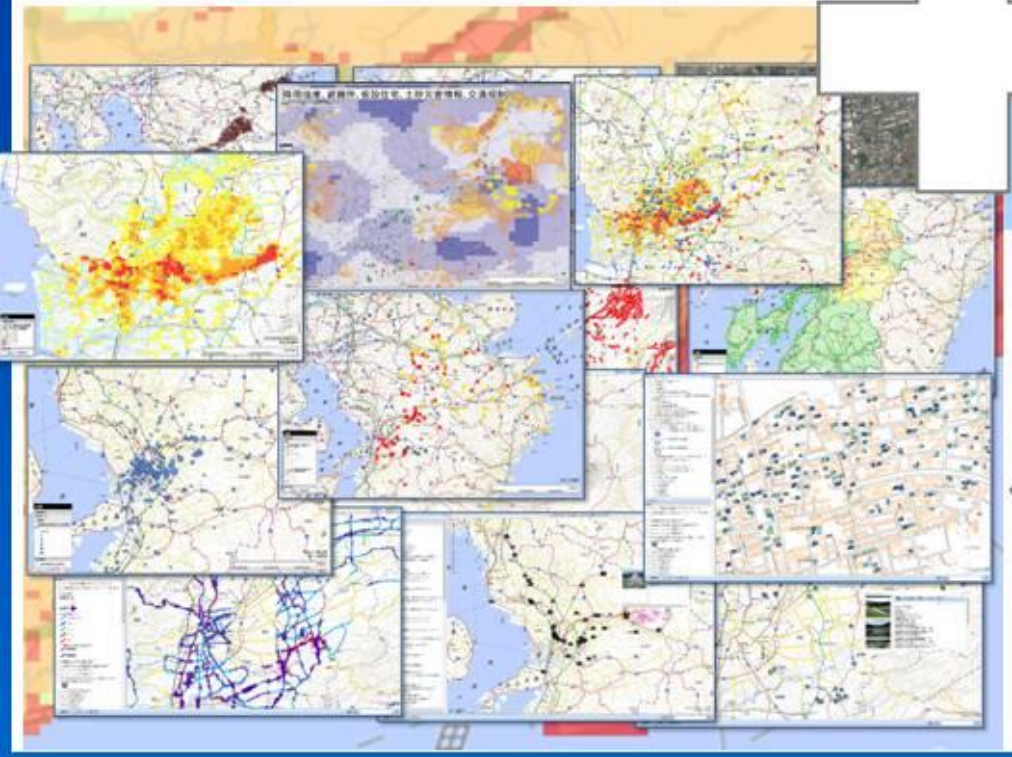
Disaster Countermeasures Headquarters

Examination based on organized and visualized results

2019. 1. 17 broadcasted on NHK special


10:00
字幕放送

Screen capture of demonstration experiment at Kobe city

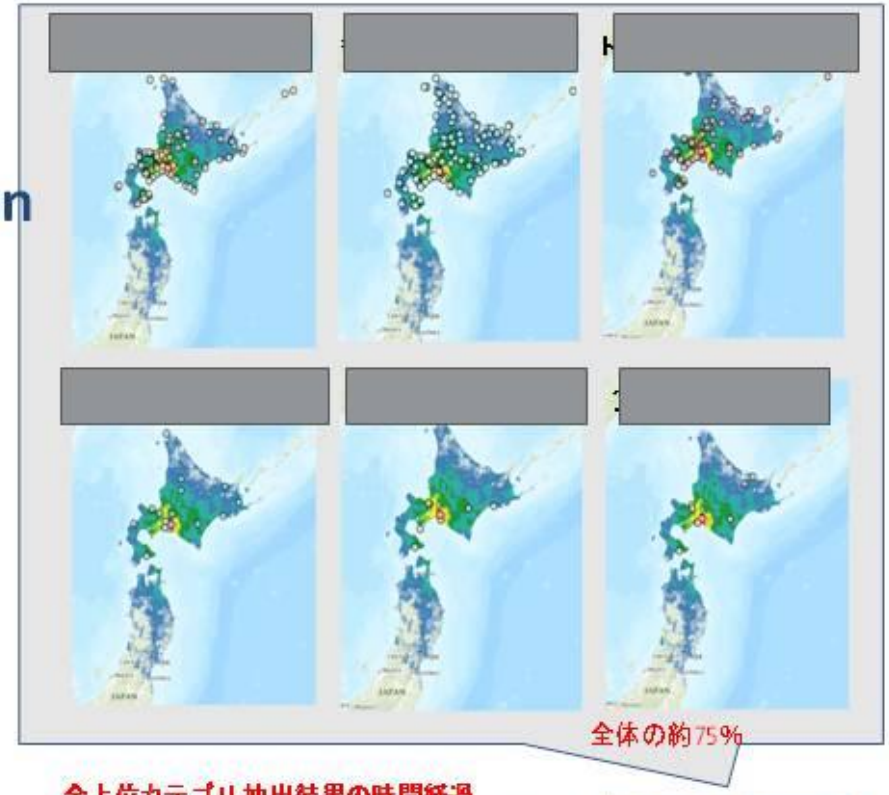


SIP4D®

Time-Series Analyses

- Narrowing the disaster information

  (Time × Area × Event)



Dynamic COP for Disaster Countermeasures Headquarters

NIED 防災科研

【01JXR／統裁】令和2年(2020年)首都直下地震 ISUT情報共有サイト

編集　Powered by SIP4D

1 地震情報（各地の震度情報）

2 建物被害（全壊建物・半壊建物）

3 人的被害（死者数・重傷者数・軽傷者数）

4 ライフライン被害（電力・水道・ガス）

ライフライン被害

ガス停止戸数(設想：東京ガス)
停電戸数(設想：東京電力)
断水戸数(設想：内閣府)
各社・内閣府より報告されたライフライン被害数

5 自衛隊　生活支援情報（給水・入浴・給食）

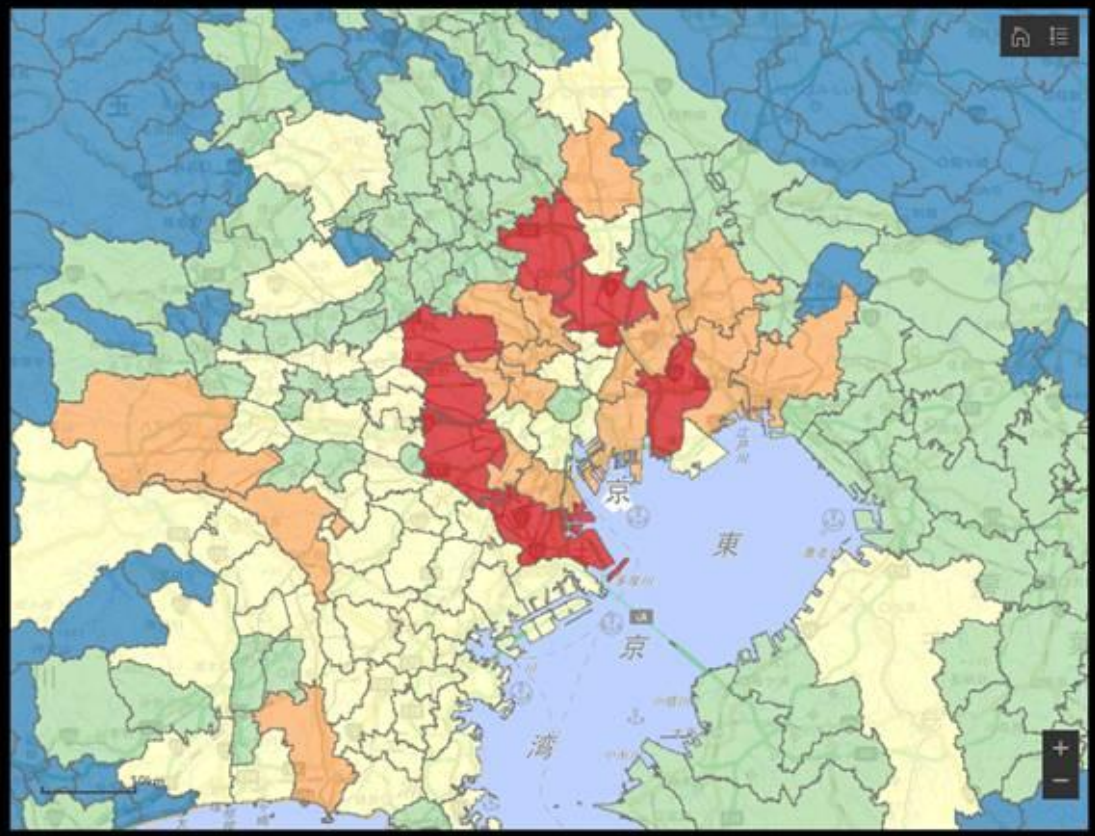
6 オリンピック施設

7 推定震度分布図(7/28 10:18)

停電_7/31 10:00　断水_7/31 10:00　ガス_7/31 10:00

市区町村別停電戸数

停電戸数_7/31 10:00時点



都道府県別停電戸数

東京都	神奈川県	埼玉県	千葉県	茨城県	群馬県	山梨県	栃木県
5,020,052	3,063,497	1,580,818	1,493,079	25,554	5,191	994	291

Council on Artificial Intelligence for Disaster Resilience (2019.6.18)

①情報収集・提供　②情報深掘り　③情報精査、表示　④情報マッピング、表示　⑤判断/指示

LINE

weathernews

国立研究開発法人 情報通信研究機構 National Institute of Information and Communications Technology NICT

NIED 防災科研

WORKS MOBILE

庁内連携の強化

独自調査情報の提供

防災情報等の提供・収集

MIT Urban RISK Lab

チャットボットの高度化

Innovation for Wellbeing SOMPOリスクマネジメント

保険情報等の追加

YAHOO! JAPAN

一般の方を中心に全方位的な情報発信

損保ジャパン日本興亜

TOKIO MARINE NICHIDO 東京海上日動

・迅速な支払判断
・需要に基づく新たな商品・サービスの開発

災害時のＡＩ、ＳＮＳ活用 共同で研究開発へ

最適な策を検討してまいります。

Summary:


National Research Institute for Earth Science and Disaster Resilience
DISASTER RESPONSE
RESILIENT SOCIETY
RISK COMMU
SEISMOLOGY::METEOLOGY::HYDOLOGY::ECOLOGY::SOCIOLOGY::ECONOMICS::ENGINEERING::INFORMATIO
INFORMATION SECURITY
ARTIFICIAL INTELLIGENCE::INFORMATION
DISASTER EDUCATION
NETWORKING::CLOUD COMPUTING::WEB::GIS::ITS::IoT::MOBILE DEVICE::BIG DATA
COMMUNITY RESILIENCE

Summing-up

- Japan is exposed various disasters year by year.
- The government has made a great deal of effort to reinforce the resilient functions of society.
- NIED aims to build up the platform for disaster-information sharing that effectively works at the time of great disasters.
- **"SIP4D"** is the first realized information-sharing platform for disaster management in Japan.
- The Cabinet Office set the Information Support Team for Disaster Response **"ISUT"** with using SIP4D.
- We launched the new project **"CPS4D"** for decision-making support.
- In this project, we are focusing to **"SOCDA Chatbot"** which uses SNS and **"DISAANA/D-SUMM."**
- Since these systems still have many issues to be resolved, we need to improve them to prepare the expected heavy disasters.

Thank you for your attention!