



Project Overview

Improving the precision of forecasts of unpredictable natural disasters such as torrential downpours and tornadoes. Ensuring safety by providing accurate information to the public.

Social Landscape / Social Agenda

Torrential downpours and mega-typhoons have become extraordinarily powerful in recent years. More than ever before, they have caused serious floods and landslides. In particular, the threat of severe floods hitting the metropolitan area highlights the urgent need to create a more resilient social structure.

Long-term Vision

Protecting the population from extreme natural disasters by improving forecasts of intense rainfall and tornadoes

During the Tokyo Games

Enabling safe operation of the Games and ensuring visitors' safety by providing accurate and prompt information on extreme weather conditions, including torrential downpours

Three Priorities

1 Social Impact

Publicizing to the world that various measures will be taken against natural disasters to ensure safety during the Games

2 Hospitality during the Games

Providing forecasts of extreme weather conditions to ensure a safe Olympics and allow organizers to assist visitors in the event of evacuation

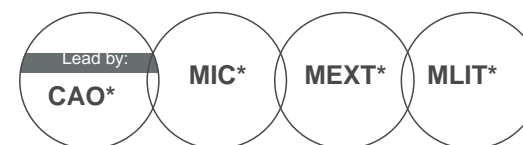
3 Shared Value

Implementing forecast technologies verified in Tokyo in other areas, promoting resilient disaster management measures

Concept for 2020

Weather Forecast Innovation 2020 Advanced forecasting of torrential downpours and tornadoes

Public notification of torrential downpours before they start to fall



* CAO : Cabinet Office
* MIC : Ministry of Internal Affairs and Communications
* MEXT : Ministry of Education, Culture, Sports, Science and Technology
* MLIT : Ministry of Land, Infrastructure, Transport and Tourism

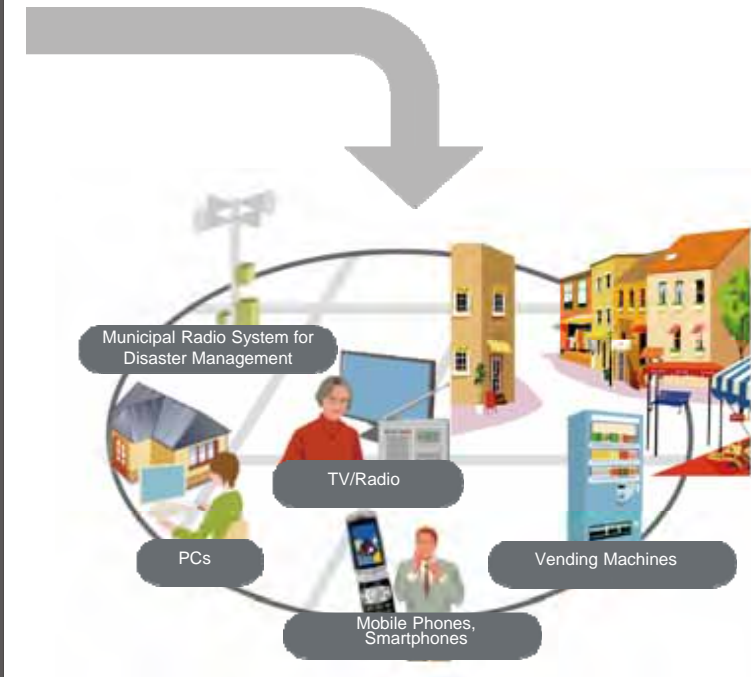
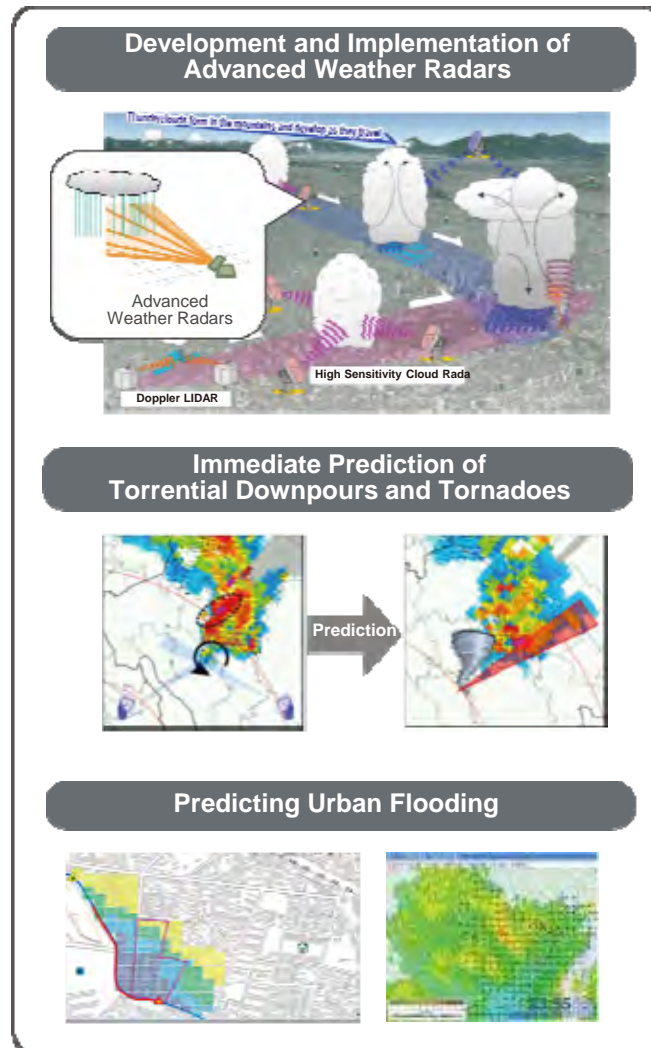


Objective and Conceptualization

Enabling safe operation of the Games and ensuring visitors' safety by providing accurate and prompt information on extreme weather conditions, including torrential downpours

Developing new technology to predict when and where torrential downpours will occur and to identify places at risk of urban flooding. The technology will incorporate next generation observation systems that can monitor weather conditions at intervals of less than a minute.

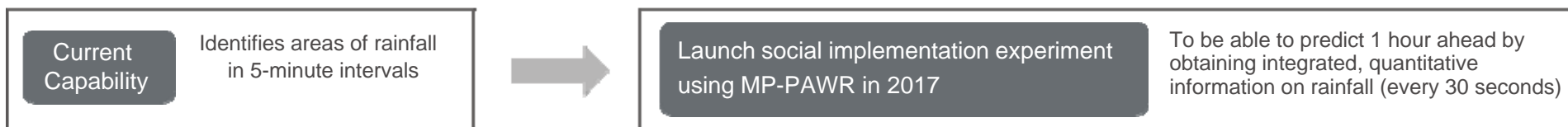
The information will be useful during the Games, especially for the safety management of sports and events that are easily affected by the weather. It will help organizers decide when to interrupt programs and evacuate people and when to resume an event. The information will also be used by local governments and transportation companies to issue evacuation alerts and manage transportation systems. As a whole, it will help in assisting visitors and preventing confusion.



Community Network
Wi-Fi / Community Broadcasting / CATV
/Municipal Radio System for Disaster Management

Course of Action Toward 2020

Improving precision of forecasts of torrential downpours and tornadoes through the development of the Multi-Parameter Phased Array Weather Radar (MP-PAWR) system. Promoting the development and implementation of technologies to observe, analyze, and predict floods.



Improving Prediction Capability (Qualitative → Quantitative)

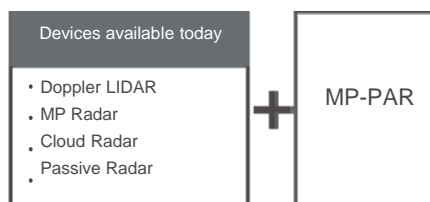
Disaster Response



Quick, quantitative prediction of torrential downpours
Monitoring water vapor to quickly identify thunderclouds



Utilizing observation devices



- Utilization of data by river administrators, railway operators, local governments
- Feeding information into a data-sharing system



Simulated prediction map of flooding involving railways

Application Examples



Flooded road alerts



Counter-measures for urban flooding



Evacuation app



Distributing information to visitors and Games participants



Initiatives and Partners

Initiatives	Cooperating Organizations	Details
Research and Development		
Developing MP-PAWR and passive radars	National Institute of Information and Communications Technology (NICT) Osaka University, Toshiba Corporation	To enable early prediction of torrential downpours and tornadoes, it is crucial to accurately observe the developments of thunderclouds, which can change dramatically over a short span of time. These initiatives will improve prediction technologies by developing new observations devices, such as the MP-PAWR, to be used in addition to existing methods. MP-PAWRs can quantitatively observe weather conditions with 10-times better temporal resolution.
Developing technology to predict and observe thunderclouds that cause torrential downpours	National Research Institute for Earth Science and Disaster Resilience (NIED) Japan Weather Association	
Developing measures to mitigate damage caused by torrential downpours	Railway Technical Research Institute, Université de Saitama	Enabling real-time, localized flood-hazard information and alert system by utilizing advanced data on rainfall and improving methods to predict river levels and flooding
Developing and implementing technologies to observe, analyze, and predict flood hazards	MLIT* National Institute for Land and Infrastructure Management (NILIM)	

Initiatives	Cooperating Organizations
Regulatory and Systems Reform	
No need to reform the regulatory system at this time	None

Initiatives	Cooperating Organizations
System Design	
Verification tests for the implementation of an integrated service bringing various systems together	Relevant ministries and agencies, Tokyo Metropolitan government, Tokyo Organising Committee of the Olympic and Paralympic Games

*MLIT : Ministry of Land, Infrastructure, Transport and Tourism



Timeline

