

Rainwater storage facilities

Development of facilities for target rainfall

Planned discharge in pump drainage areas

City	Discharge area	Planned discharge
Yokohama	Tsuzuki	17m ³ /s
	Kouhoku	142m ³ /s
	Hokubu	189m ³ /s
Kawasaki	Kase	55m ³ /s
Total		402m ³ /s

Planned storage of major facilities

City	Storage facility	Planned Storage
Yokohama	Shin hasue trunk line	410,000m³
	Kozukue chiwaka trunk line	256,000m³
Kawasaki	Shibukawa rainwater storage tube	144,000m³
	Egawa rainwater storage tube	81,000m³

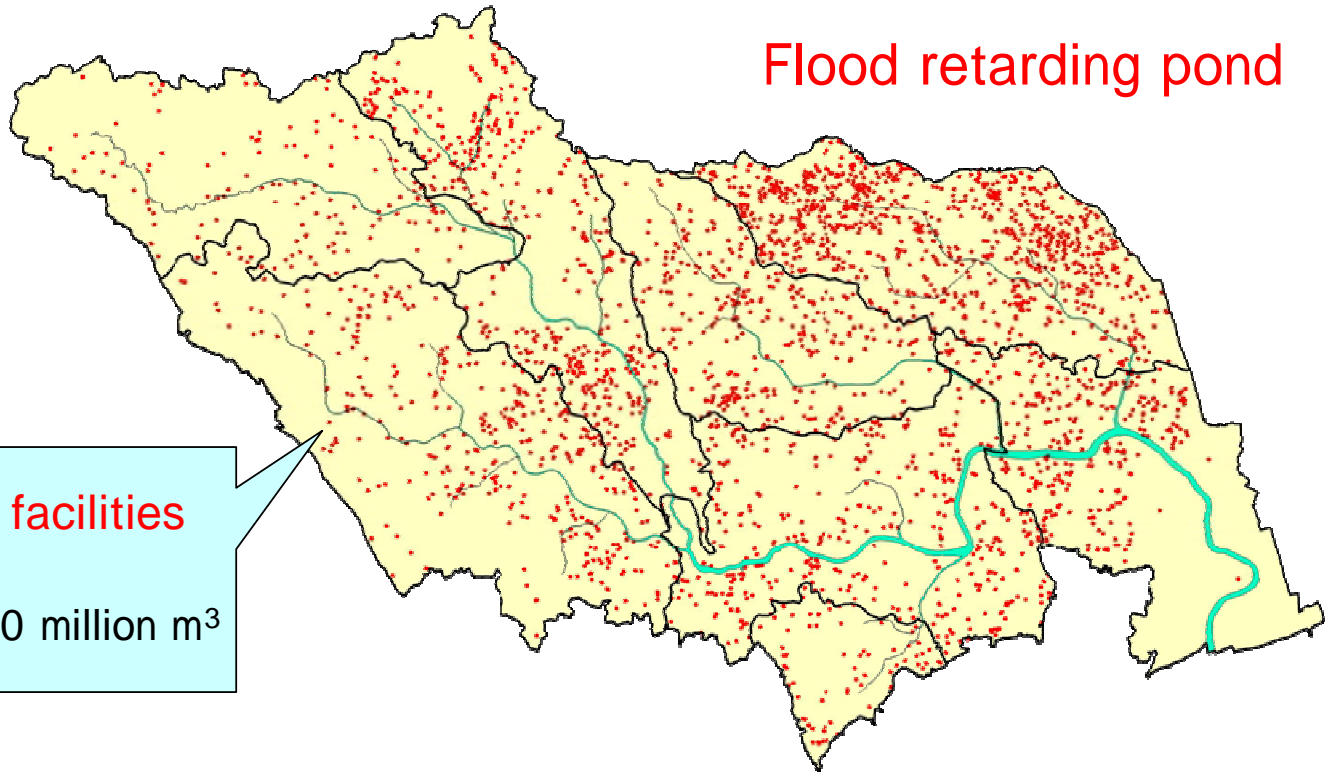
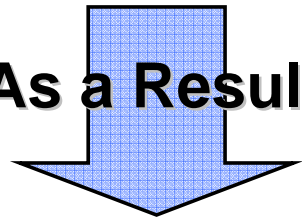


Present status and problems

-Present status of River Basin Management (Present status of flood control reservoir) -

Tsurumi river was designated as the first Comprehensive Flood Control River in 1979 to cope with rapid urbanization of river basin

As a Result



About **3,300 facilities**

Total volume 270 million m³

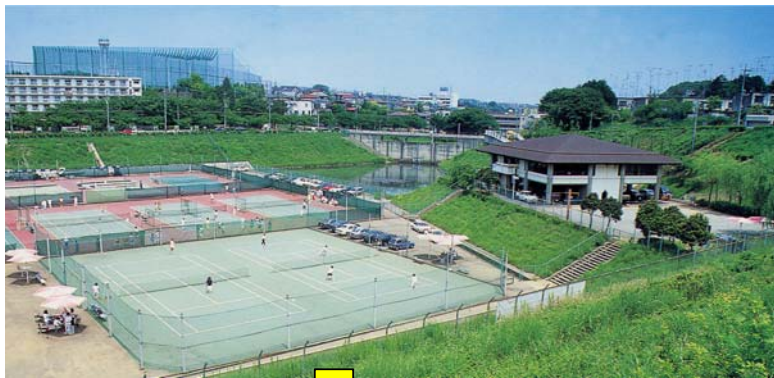
But more retarding ponds are necessary

Storage, infiltration and forest conservation

Development of rainwater storage and infiltration facilities,
conservation of forested areas (Total effect by municipalities : 0.3 million m³)

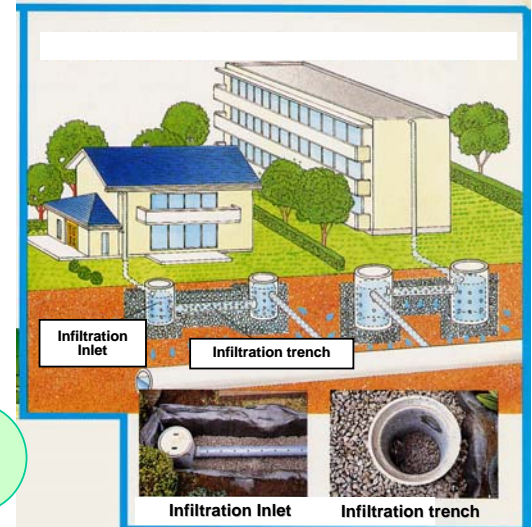
Storage

Storage facilities in schools,
parks and public houses



Infiltration

Infiltration by permeable pavement



Forest Conservation



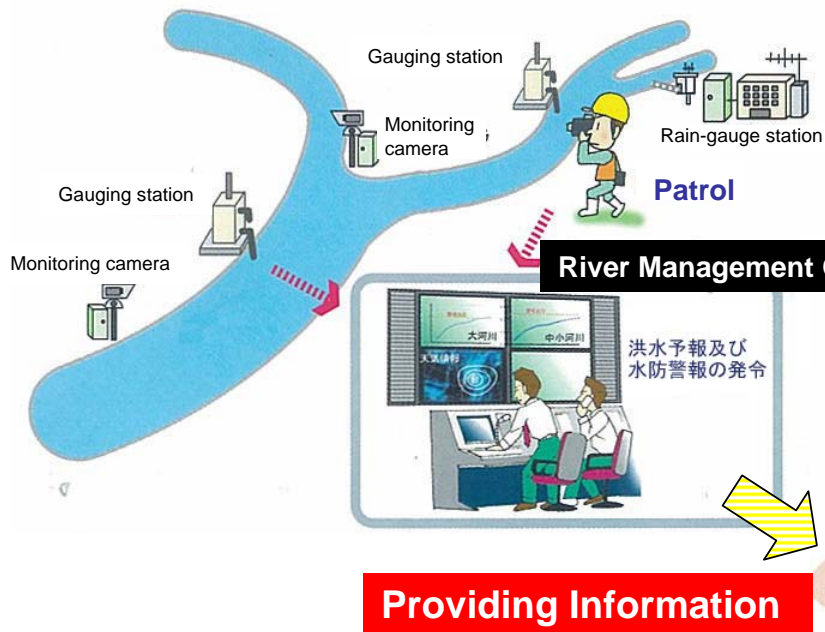
Purchase and conservation of forest in developing area

Measures against inundation damage

-Improvement of collecting and providing river information -

Providing necessary information, quick emergency response and minimizing damages in case of flood.

Collecting Information

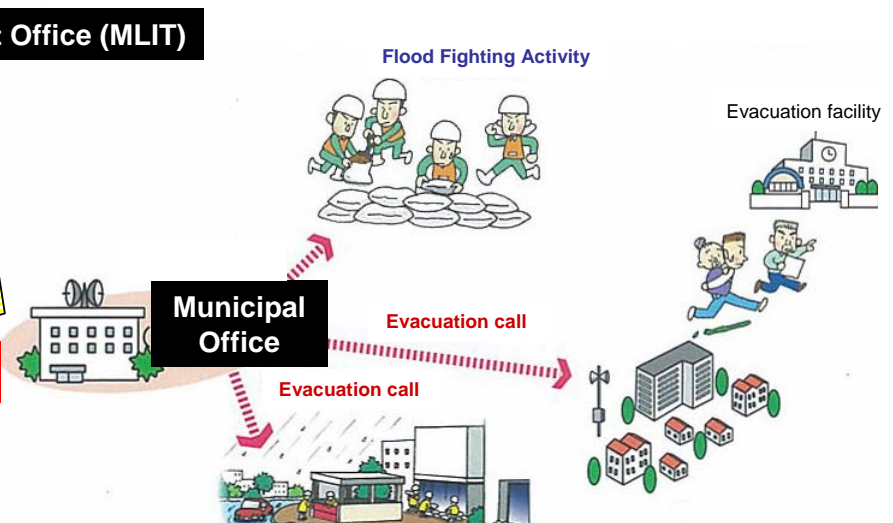


Providing information to the public

Home Page

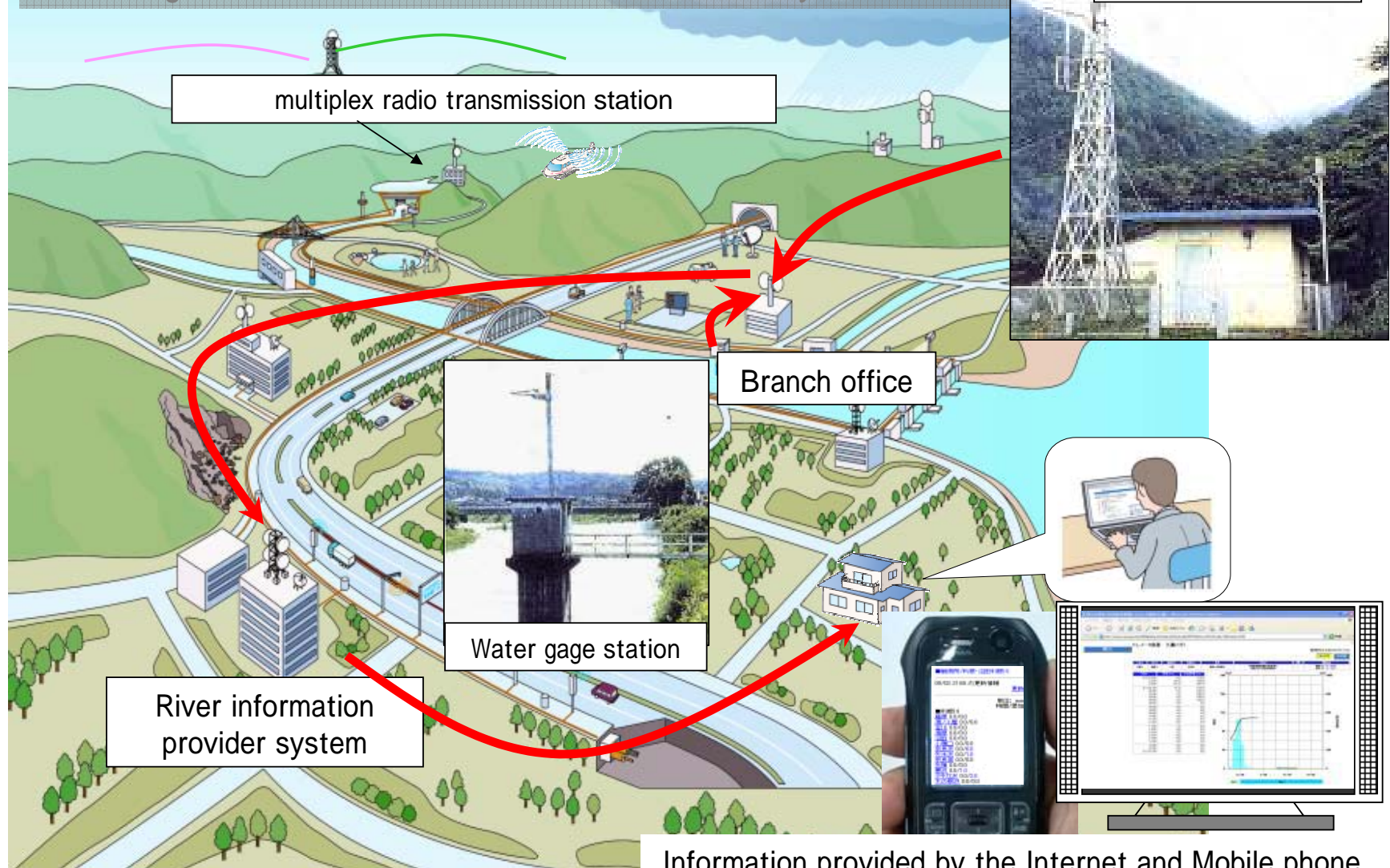
Mobile Phone

Information Board



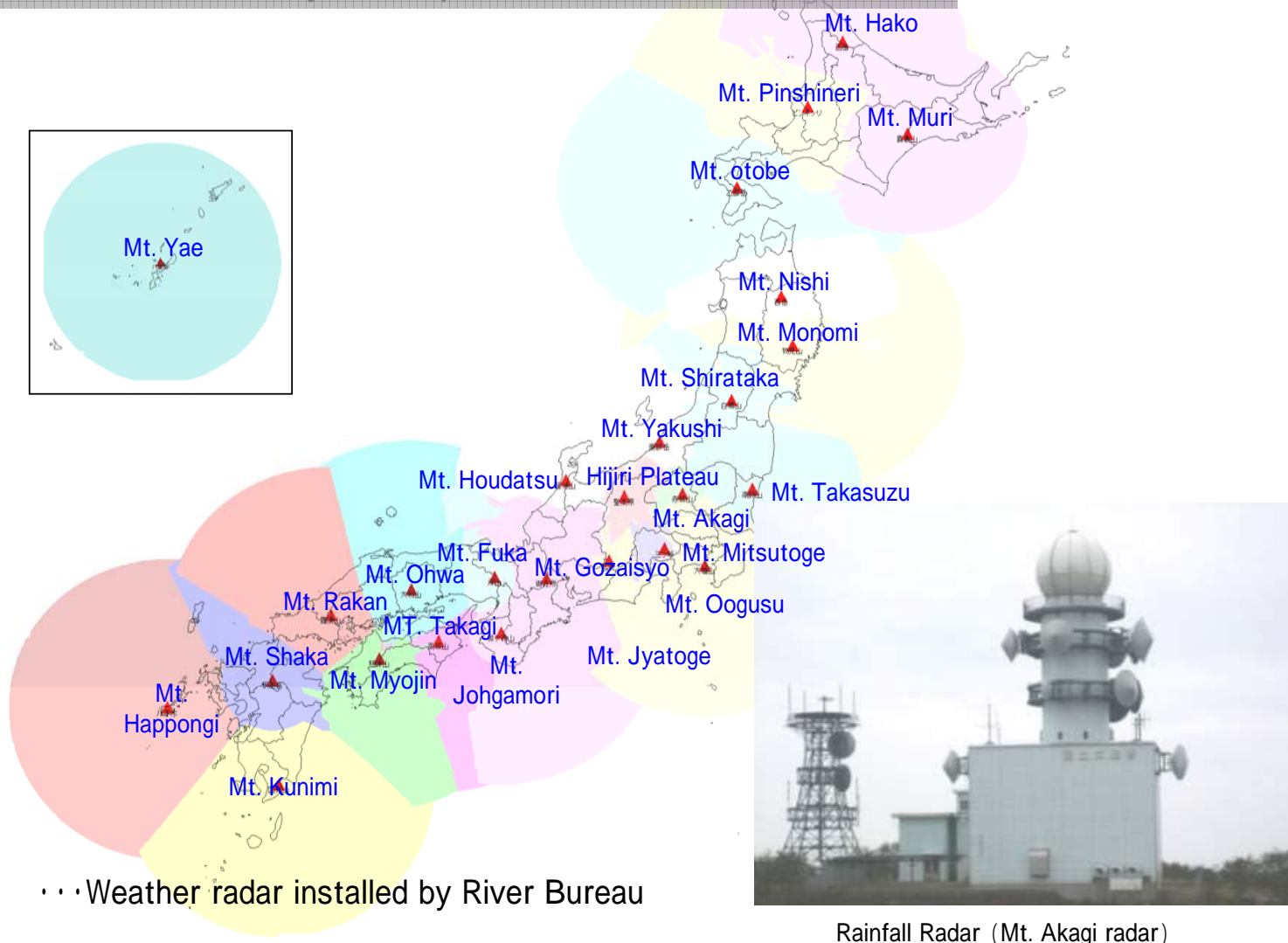
Water level and Rainfall observation by Telemeter

Providing Water level and Rainfall collected of by Telemeter



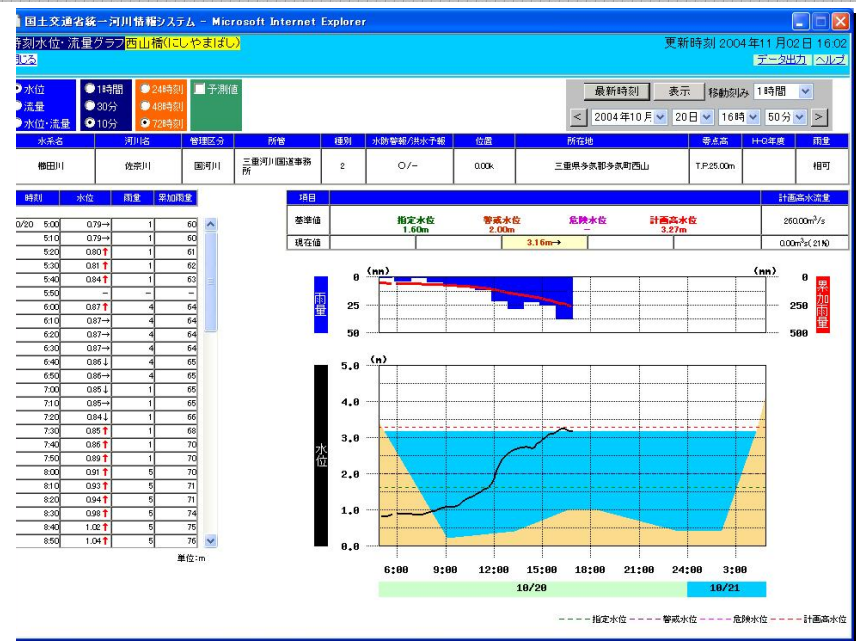
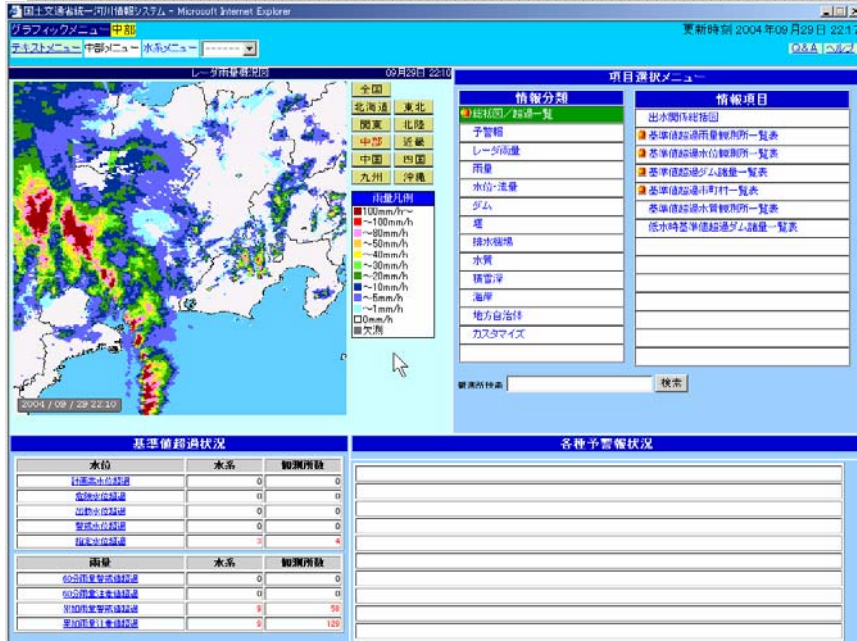
Location of rainfall observation radar

26 radar stations collect, analyze and provide rainfall data nationwide



Outline of River Information provider system

- The integrated river information system aims at sharing and standardizing river management data including river water levels and rainfall amounts.
- River information systems were originally developed by each regional development bureau. They have been integrated into a national river information system. Regional development bureaus can customize the system based on their requirements.
- Software are separated from hardware. Improvement cost and life-cycle cost are reduced.
- The system also provides rainfall forecasts of Japan Meteorological Agency and rainfall data of the Road Bureau.



Strengthen observation of localized heavy rainfall and information service

Upgrading rainfall forecast in corporation with related organizations

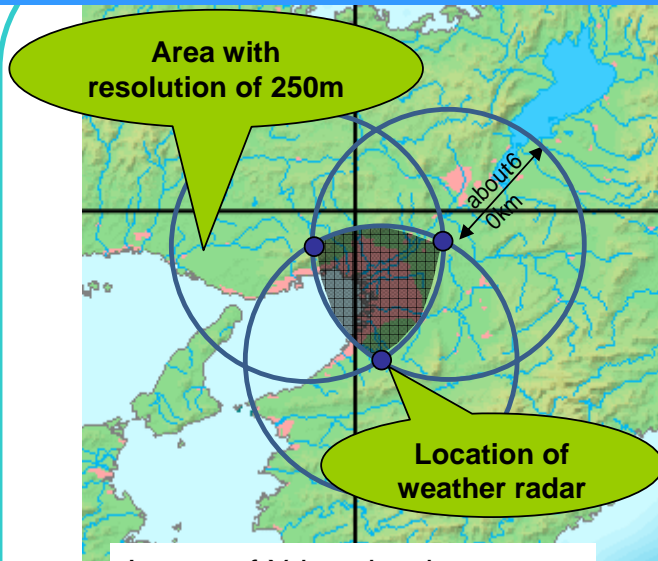


Image of X-band radar system

Aim at **early flood prediction for localized heavy rainfall** by establishment of Rainfall Prediction Model considering localized rainfall development and movement **by corporation with institutions concern**

Observation by X-band radar system

- Locate radar in a triangular shape in urban area
- High resolution and real-time rainfall observation within 60km range from radar
- Furthermore, prediction accuracy is improved by three-dimensional observation of rainfall within the triangle area

Rainfall observation by X-band radar

Rainfall observation by current C-band radar

