



 GLOBAL CITY
TEAMS CHALLENGE

Water level management for preventing flood

Nozomu Nishinaga (NICT)

Jun 13 2016



国立研究開発法人
情報通信研究機構

OKI *Open up your dreams*

NIST

 GLOBAL CITY
TEAMS CHALLENGE

 **usignite**

Project Overview

Problem

- More time for evacuation due to aging
 - ✓ Earlier evacuation order issuing
- Difficulty in long term (> 30 min) prediction
 - ✓ False alarm or “Cry-wolf”

From pyramid to kite



From http://www.economist.com/blogs/dailychart/2010/11/japans_population

Solution

- Wide-area observatory NW for monitoring the water level (river and canals) (**Deployed**)
- Predict the water level using past data (**Bigdata**)
- Publish **real time water level and rainfall data on the City web page (from June 2015)**

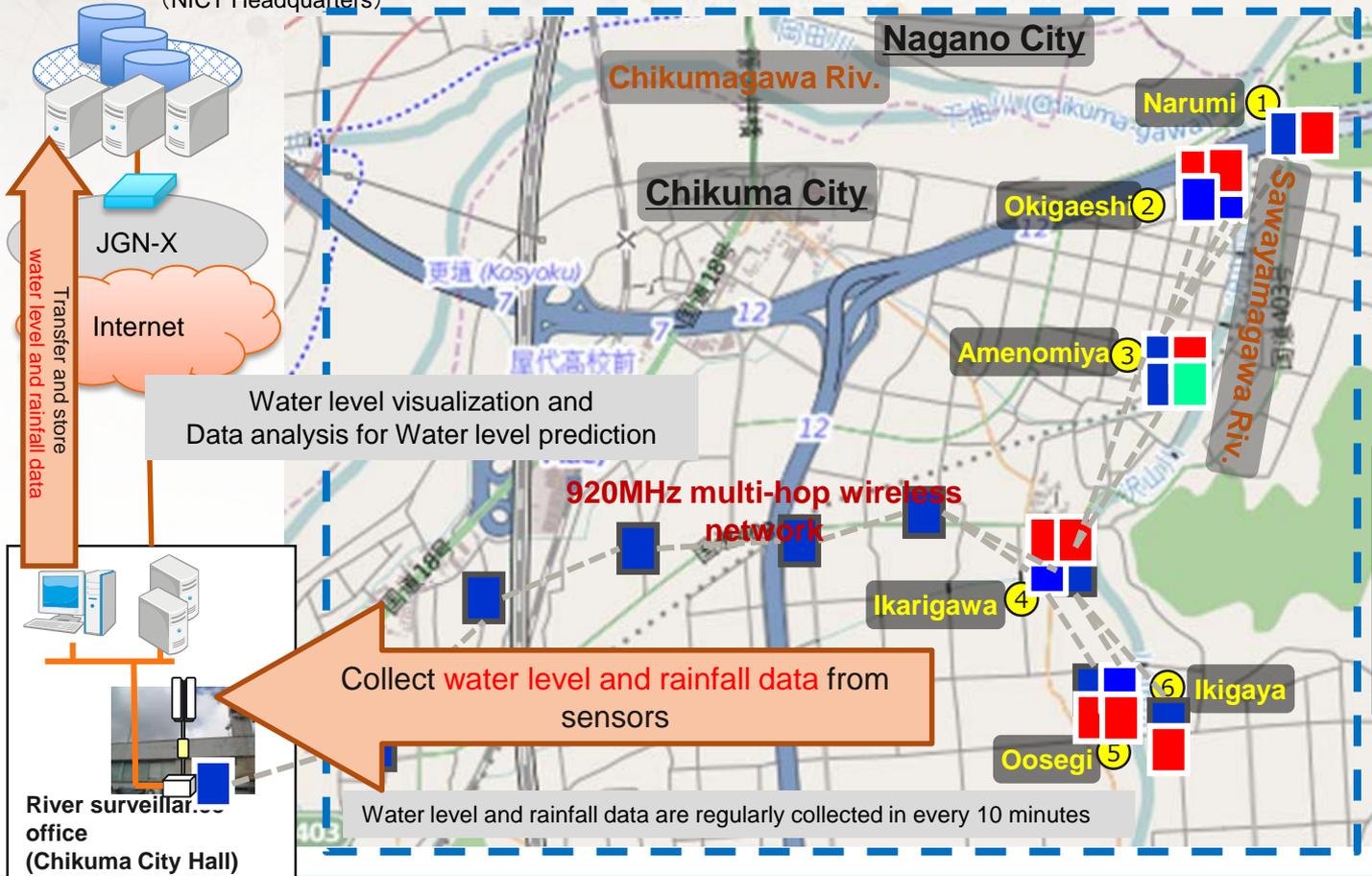
Challenge

- Predicting the water level **30 min** in advance for supporting decision for controlling water gates and **3 hours** in advance enables to support efficient planning for evacuation

Flood monitoring system configuration

Large scale storage system
(NICT Headquarters)

Sensing system with Multi-hop wireless network



Ultrasonic W/L sensor

-  : Water gate
-  : Wireless transit station
-  : Water level sensor
-  : Rainfall sensor



Thank You