A tall, slender metal tower stands in a grassy field. At the top is a white, cylindrical sensor. Below it is a solar panel, and further down is a white control box. A camera is mounted on a horizontal arm extending from the tower. The background shows a body of water, a town, and mountains under a clear blue sky.

Linking IoT water level sensor to camera system: For better management of urban flood disaster

Company Profile



**Midori Engineering
Laboratory Co., Ltd.**
(MEL) since 2004



Original PCBs



Secure data storage

Field Data Transmission Service

SESAME

Sensory data transmission service
assisted by Midori Engineering Lab.



Sensors



Web apps

SESAME Systems in ASEAN Countries

~1,000 in Japan

WL/Rainfall/WQ along the irrigation network
(Vinh, Vietnam)

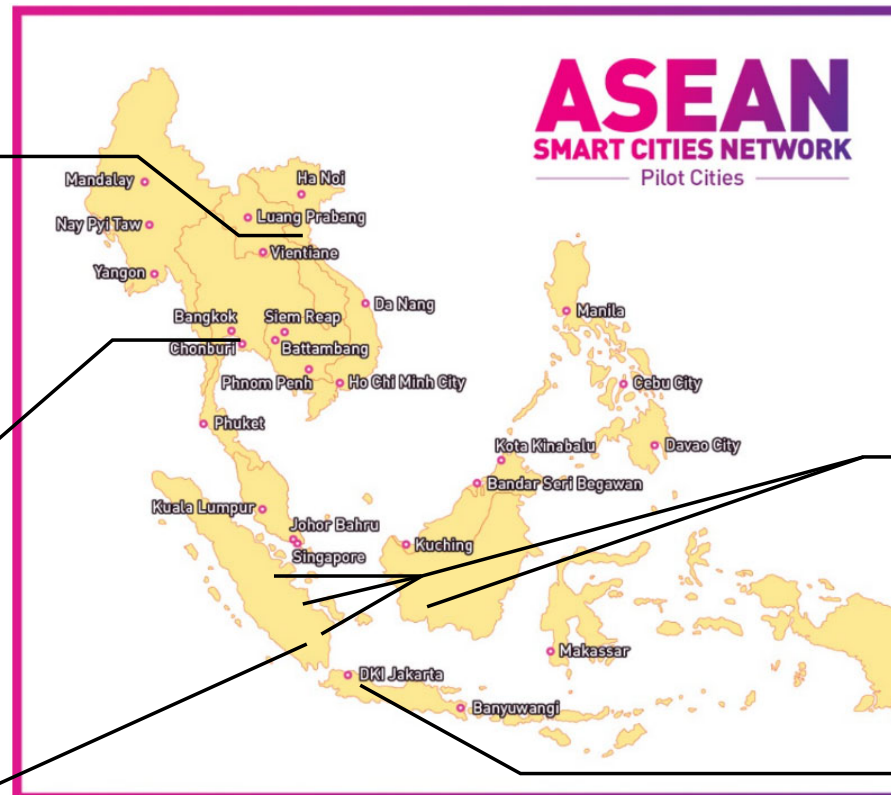
32

WL & WQ in Bangpra Lake & inflowing rivers
(Chonburi, Thailand)

7

WL & Rainfall along an agricultural irrigation canal in Metro
(Lampung, Indonesia)

7



WL/Rainfall/Soil water in tropical peatlands in Riau/Jambi/Sumsel/Karbar/Karteng
(BPPT/BRG, Indonesia)

38

WL/Rainfall/Weather/WQ along the irrigation network in eastern Jakarta including Jatilufur Dam
(PJT2, Indonesia)

50

(asean.org/our-communities/asean-smart-cities-network/)

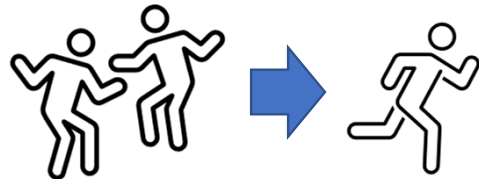
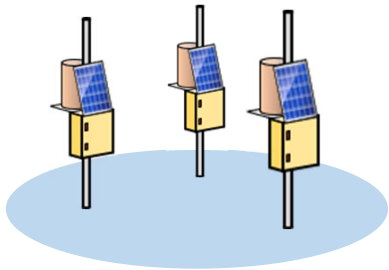
Challenges in IoT System for Urban Flooding

Tasks of the local government

Local Government

How to collect
WL in real-time

How to prompt
residents to
evacuate



"Seeing is Believing"

WL value only

River: AAA
Bridge: BBB
WL **9.99** m
DANGER!!



WL graph

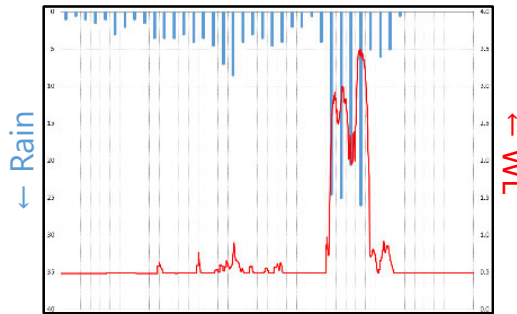
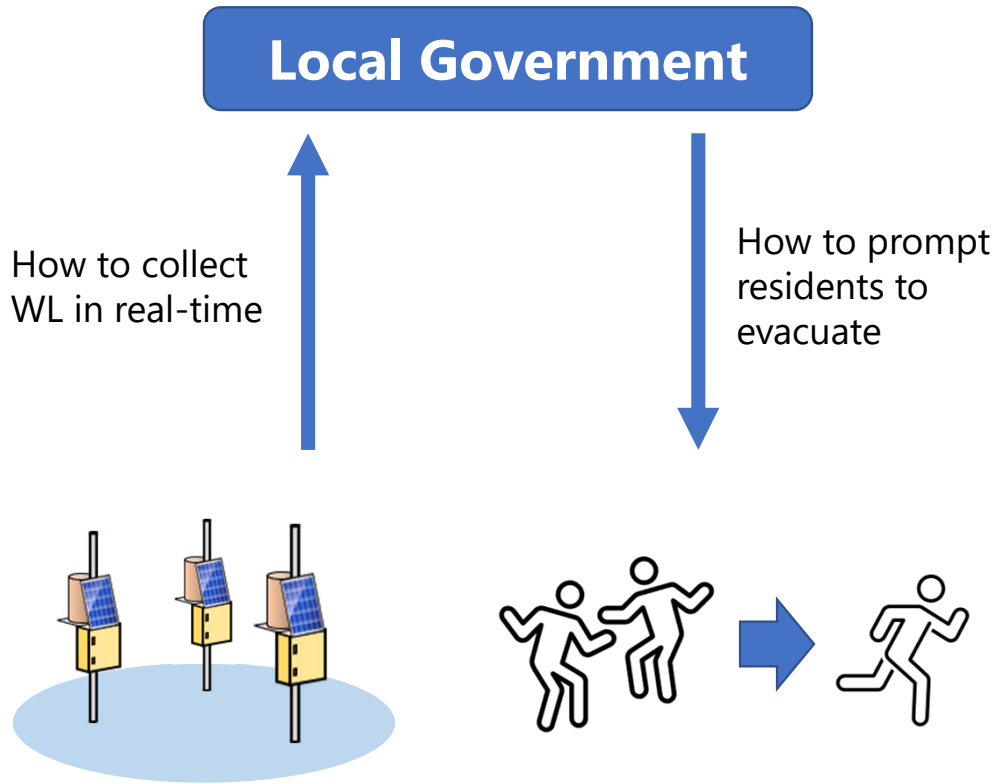


Photo image

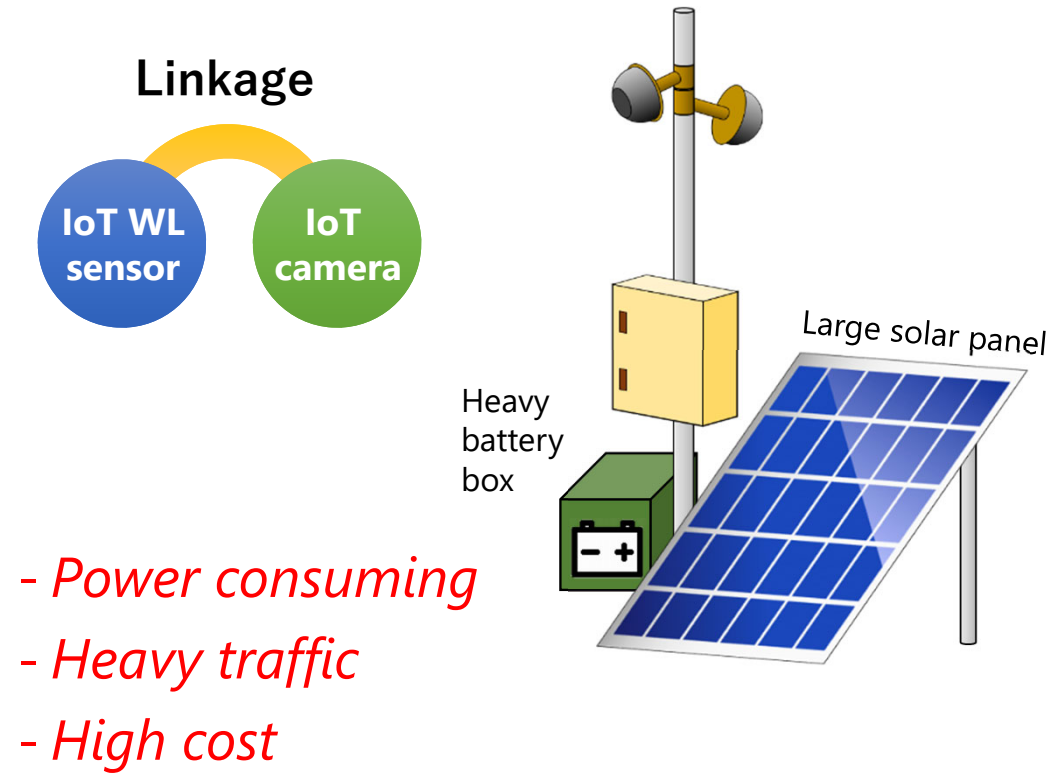


Challenges in IoT System for Urban Flooding

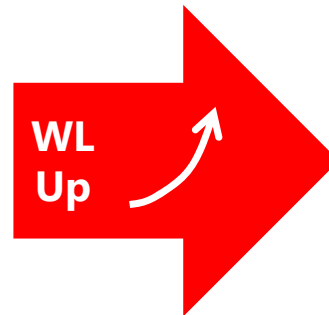
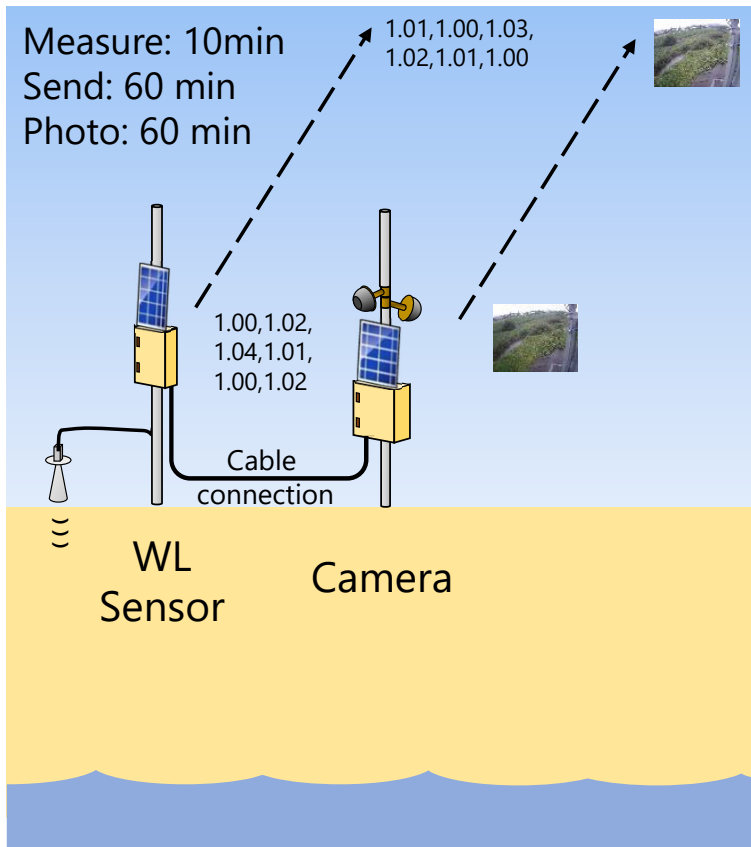
Tasks of the local government



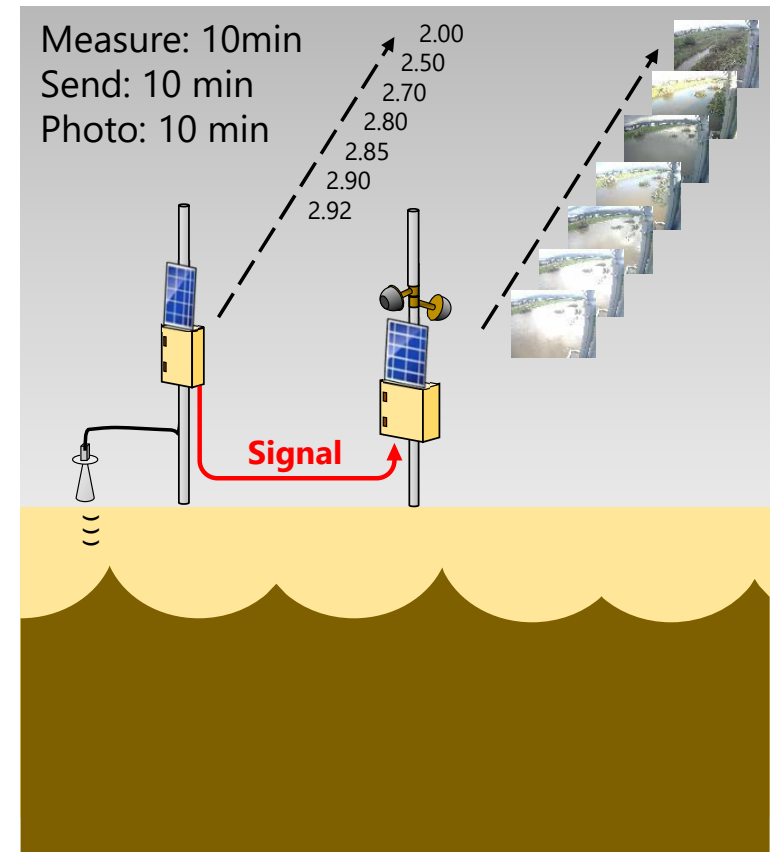
Challenges in IoT camera systems



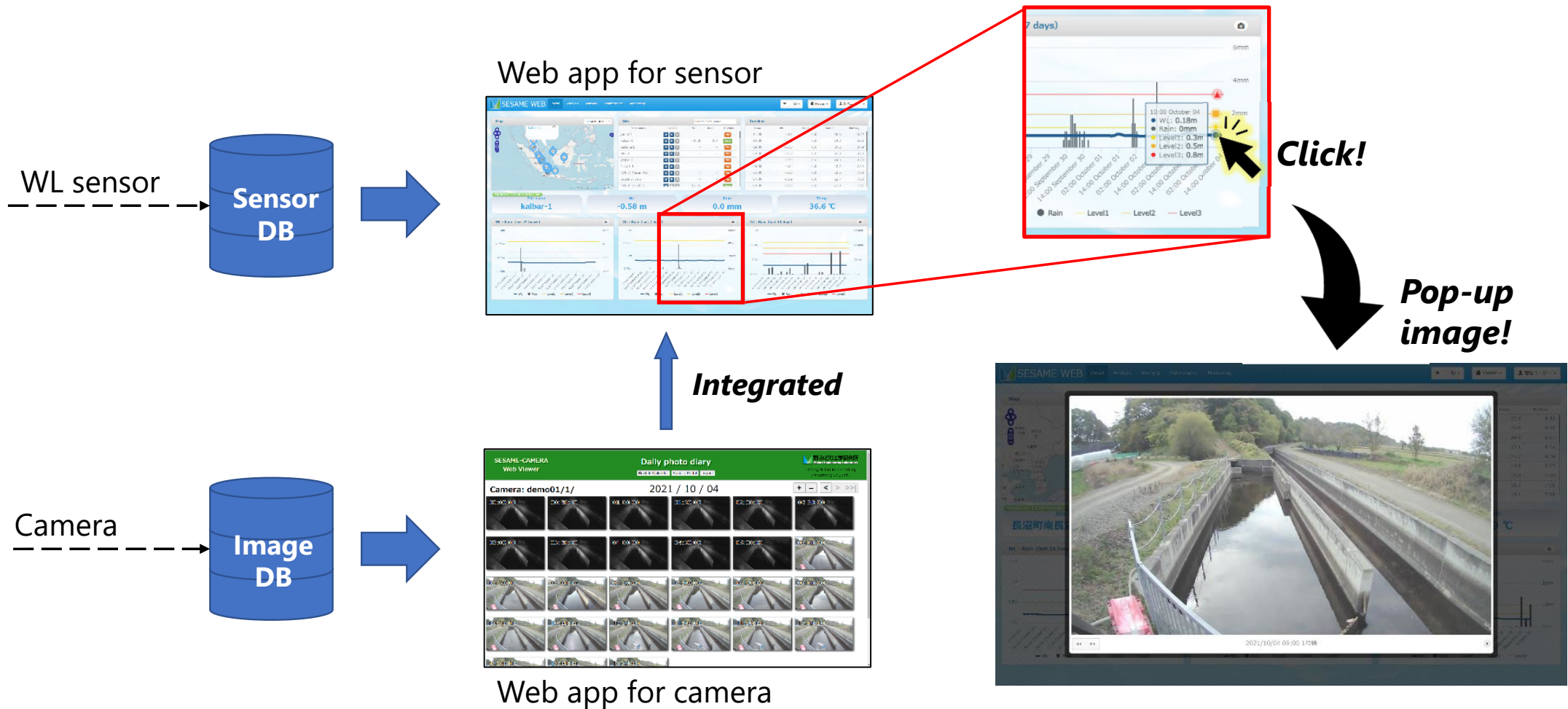
Linking IoT WL Sensor to Camera@Field



Automatic



Linking IoT WL Sensor to Camera@Webapp



Examples of Linkage: WL Sensor & Camera

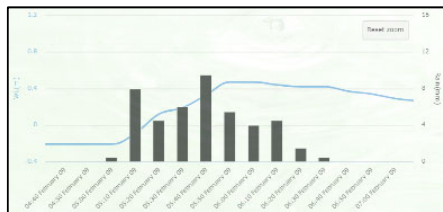
Government Office South Sulawesi (Makassar, Indonesia)



Daytime image (9-Feb-2020)



Nighttime image (infrared)

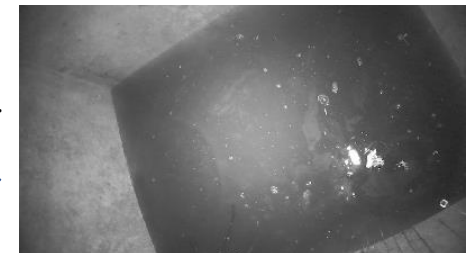


WL & Rainfall (10min)

Sensor data & photo image sent from sewage pipe (Japan)



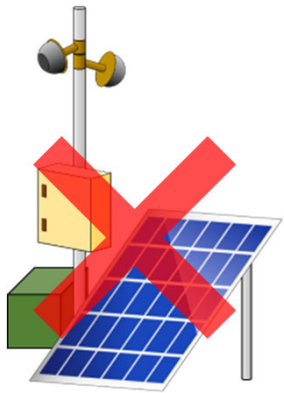
10 min.



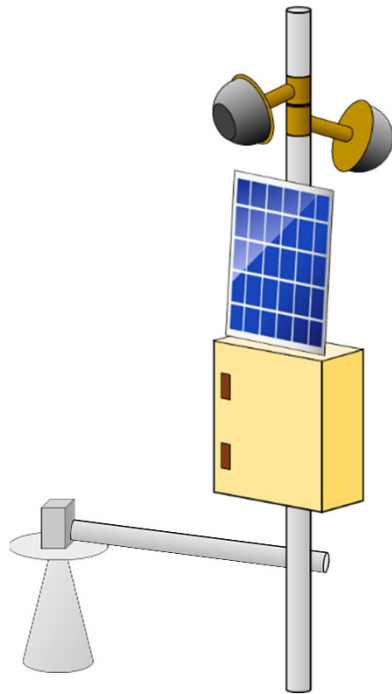
WL in sewage pipe rapidly increased.

Effect of Sensor-Camera Linked System

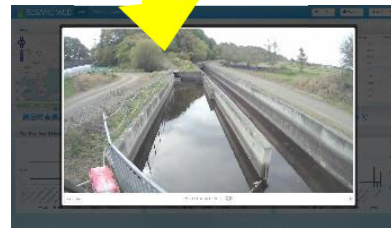
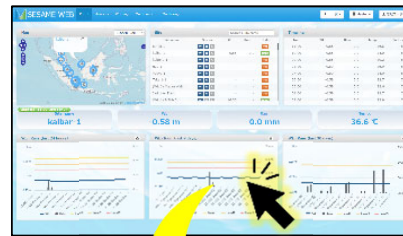
Maintenance



- *Low power*
- *Low traffic*
- *Low cost*



Local government



Informative



Residents

