A Case of Utilizing Results

Examples for Utilization of XRAIN Precipitation Information

YAMAJI Hideyuki, Researcher, KAWASAKI Masao, Head, TSUCHIYA Shuichi (Dr. Eng.), Researcher
Water Cycle Division, River Department

(Key words) XRAIN, X Band MP Radar, flood disaster

1. Introduction

Water and Disaster Management Bureau in the Ministry of Land, Infrastructure, Transport and Tourism ("MLIT") has worked for establishment of "XRAIN" (X-band polarimetric (multi parameter) RAdar Information Network)[1] in order to strengthen the monitoring system for water disasters that occur in various places in Japan and respond to local heavy rains and torrential rains. With the start of XRAIN operation in Hamamatsu Bureau in June 2015, all the designated cities have been covered on the whole by XRAIN. Also, with the commencement of the service for distributing river information numerical data, anyone can obtain precipitation data provided by XRAIN with high resolution and immediacy.

The NILIM has been conducting a technological study for practical use of XRAIN, including establishment of a data processing / distribution system for X Band MP Radar. This paper introduces some cases of using XRAIN precipitation information in society as a result of the technical development by the NILIM for practical use of XRAIN.

2. Examples for utilization of XRAIN precipitation information

(1) Examples for utilization in disaster response

Rokko Sabo Office in the Kinki Regional Development Bureau is using XRAIN for speedy disaster response by distributing alert e-mails to the persons concerned (see Figure) when XRAIN observes precipitation exceeding the preset value.[3] Also, in the 2011 Niigata-Fukushima Heavy Rain, the personnel of municipalities along the downstream of the Shinano River used XRAIN precipitation information as data for directing flood control activities including sandbag stacking and for determining whether to issue evacuation recommendation.

(2) Examples of utilization in other fields

Using XRAIN precipitation data, the Japan Weather Association has opened a website to indicate rainfall intensity forecast and provides a smart phone application that displays observation data overlapped with camera images by AR (Augmented Reality) function.[3] Higashi Nippon Broadcasting Co, Ltd. (KHB) started the broadcasting of XRAIN observation information in June 2012 for the first time as TV station.[3] Moreover, the Vehicle Information and Communication System Center has started in April 2015 a service using XRAIN observation data to provide information on areas in heavy rain of 50 mm/h or more, which is considered the rainfall intensity where the driver's frontward visibility falls. [4]

3. Conclusion

This paper introduced some examples for utilization of XRAIN precipitation information in society. In the future, further advanced use of XRAIN is expected, such as use for disaster response by forecasting real time inundation by inland water and river water level based on XRAIN precipitation data.

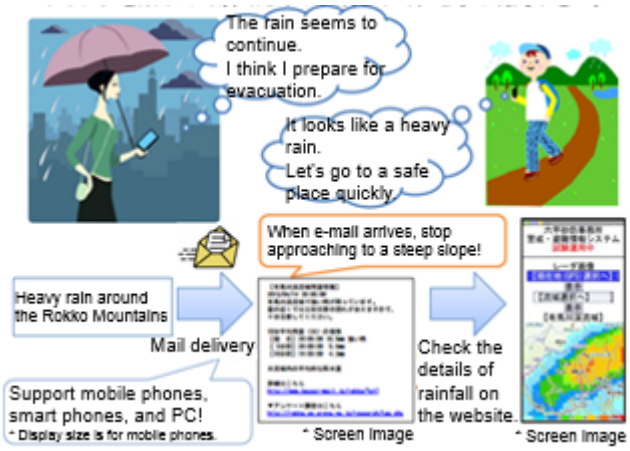

Figure: Alert mail distribution using XRAIN precipitation data
(Source: Website of Rokko Sabo Office, Kinki Regional Development Bureau)

☞See the following for details.

1) XRAIN precipitation information
http://www.river.go.jp/xbandradar/
2) River information numerical data distribution service
http://www.river.or.jp/01suuchi/index.html
3) Rokko Mountain System "Rainfall Notification System"
http://www.kkr.mlit.go.jp/rokko/camrain/pdf/rainfall.pdf
4) Ministry of Land, Infrastructure, Transport and Tourism: XRAIN (X Band MP Radar Network)
New distribution area, Press release material, July 2014
http://www.mlit.go.jp/common/001046713.pdf
5) VICS WIDE
http://www.vics.or.jp/know/wide/04.html