



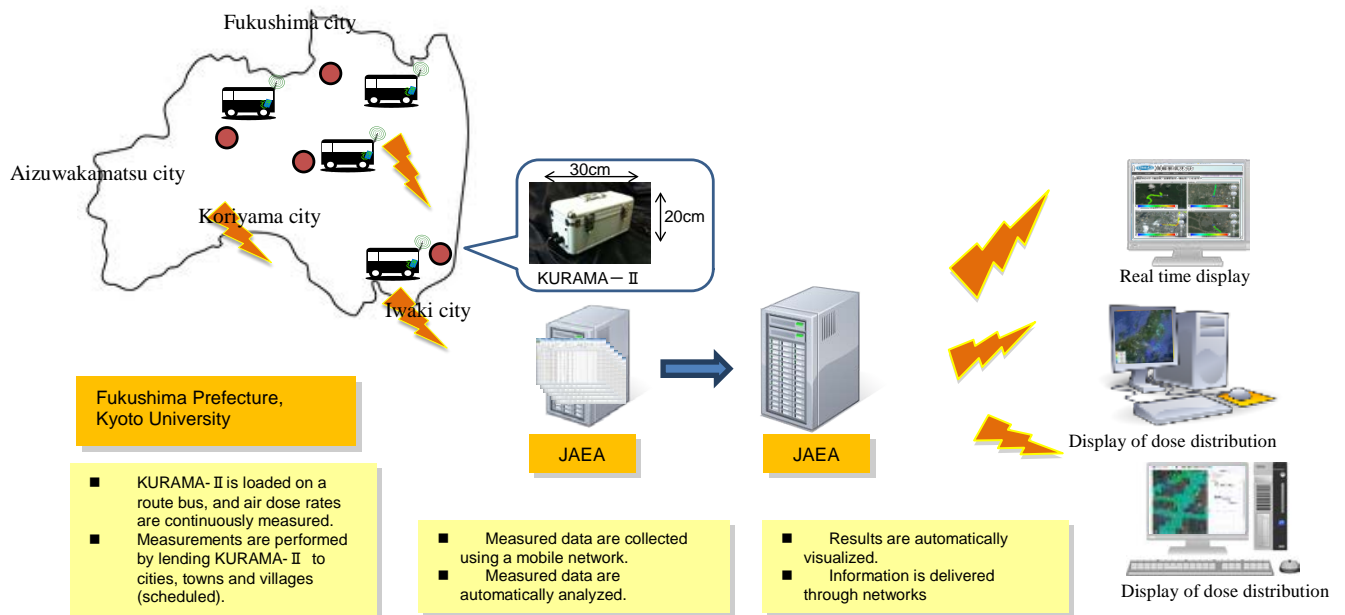
Dr. Hiroshi Takemiya, Senior Principal Researcher, Center for Computational Science & e-Systems, JAEA (At the NBF Unix Building 1F in front of Fukushima Station)

Display radiation dose rates in Fukushima Prefecture at real time

Radiation monitoring systems are loaded on route buses running in 41 cities, towns and villages.

The Japan Atomic Energy Agency (JAEA) has started a project which releases the data of air dose rates measured using 32 route buses in Fukushima Prefecture. The measured data are displayed at real time on a large-sized screen in the building in front of Fukushima Station (= top photo).

This project began in August, 2013. At that time, the real-time data from four route buses in four cities (Aizuwakamatsu, Iwaki, Koriyama, Fukushima) were displayed on the screen. Thereafter, Fukushima Prefecture provided additionally 28 measuring devices and expanded the project to the prefecture level. At present, the measuring area covers 41 municipalities (13 cities, 18 towns and 10 villages) among total 59 municipalities in Fukushima Prefecture. Along with the expansion of the area, the large-sized screen has widen the areas to display so as to cover the entire Fukushima Prefecture.



Process of displaying data obtained by route buses

Automatic radiation measurement system “KURAMA-II” interlocked with GPS



Dr. Tanigaki, Assistant Professor of Kyoto University Research Reactor Institute.

“KURAMA-II” (Kyoto University Radiation Mapping System) is an automatic radiation measurement system linked with GPS, which is loaded on route buses in order to automatically measure air dose rates on a daily basis. The system was developed by Dr. Minoru Tanigaki, Assistant Professor of Kyoto University Research Reactor Institute and co-workers.

KURAMA was developed in a short period of time in April 2011 in order to easily visualize radiation map at real time with low cost, replacing conventional monitoring cars. Then, miniaturized and fully automated KURAMA-II was completed aiming at continuous monitoring of air dose rates in residential area.

KURAMA-II consists of a cesium iodide (CsI) radiation detector, a frame with CPU, and 3 G/GPS modules inserted in the frame. KURAMA-II can continuously measure the intensity of radiation (air dose rates) while moving, and obtain the accurate position of the measurement spot by GPS. Relation between an air dose rate and its position can be recorded closely. Measurements

are performed every three seconds, and the measured data are transmitted to a server every 30 seconds through 3G network of mobile phone. When a route bus starts, the measurements are automatically performed without troubling a driver.

Local buses are quite suitable for this kind of routine measurement because the buses periodically run on fixed routes in residential areas. Dr. Tanigaki hopes to extend the application of this system to other vehicles moving in residential areas, based on the experiences and results obtained through the measurement with local buses.

Areas of measurement by route buses with KURAMA-II were expanded to cover the entire of Fukushima Prefecture

In Fukushima Prefecture, KURAMA-II is used in order to monitor the distribution of air dose rates in detail. With the cooperation of three companies operating route buses, 28 buses were added to this project in November 2013 and are regularly used for the measurement. All of the data are posted about one week after the measurement on the website of Radiation Monitoring Unit, Fukushima Prefecture.

<http://www.pref.fukushima.lg.jp/sec/16025d/soukou.html>

(in Japanese)

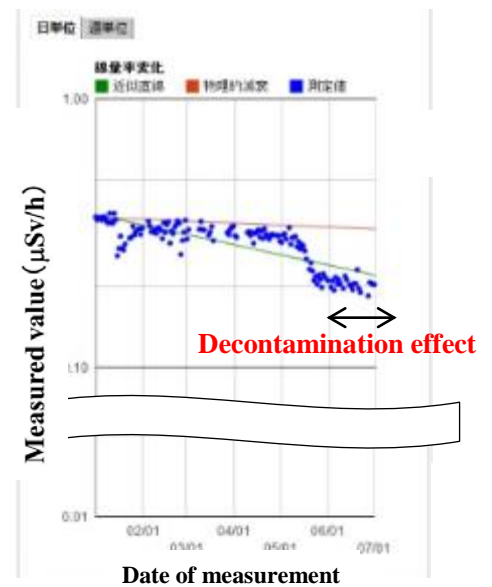
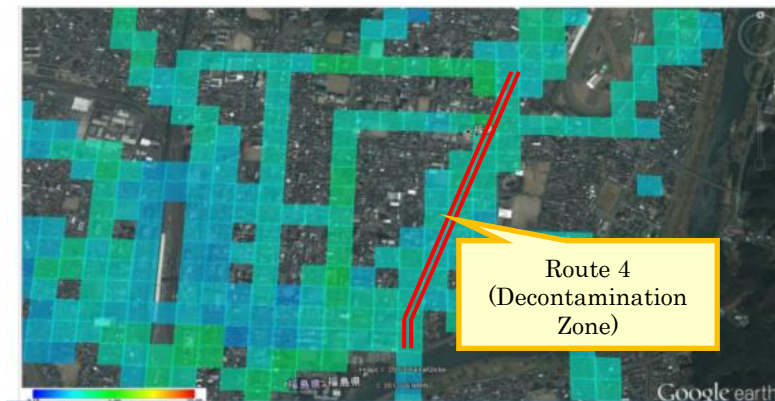


Mr. Ito, Desk Chief of Radiation Monitoring Unit, Nuclear Power Safety Division, Social Affairs and Environment Department, Fukushima Prefecture

Air dose rates are displayed at real time on a map

JAEA has developed a technology which assembles and visualizes the data obtained by KURAMA-II. The data can be seen at real time on the large-sized screen in the lobby of UNIX building in front of Fukushima Station. The measurement by the buses that run regular routes allows it to show the chronological change of air dose rates at respective locations. The data are posted on the internet about one month after the measurement. It is possible to show the data on a Google Earth map, and download the monthly data from the following website.

http://info-fukushima.jaea.go.jp/joho_en/



Effect of decontamination becomes visible by showing the time-dependent change of air dose rates.

The red line of the left figure indicates the measurement region. Right figure shows the time-dependent change of air dose rate in this region. We can see the reduction in the dose rates after the decontamination.

TOPICS Fukushima No.56

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