RADIATION MONITORING SYSTEM

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Mobile monitoring systems are one of the main systems for surveillance for nuclear materials of any types and any sources. Such systems can provide strong and reliable safety for the country or any local places. They are using to several purposes:

‒ Environmental: Lost Sources, Contamination
‒ Emergency Response: Nuclear Incident Response Teams
‒ Security: Customs, Military
‒ Geophysical, Uranium, Gas & Oil Exploration and so on.

The primary function of such systems is to equip any vehicle (motor vehicle, helicopters and so on) with necessary components for the specific systems and do constant and periodic monitoring of controlled territory.

The idea of our project was to make our own radiation detection system with some several unique features, and make the system more independent for their components, highly scalable and flexible platform. We develop programs for collecting and displaying the gamma data on the plot from all of the connected detectors to the system and record it for further post-processing, and displaying it to user as a breadcrumb on the map.

Radiation Detection system (RDS) is a standalone mobile radiation detection system for monitoring gamma-ray and x-ray emissions from any source from a motor vehicle, helicopters or fixed location that provides real-time search, surveillance and data recording. A global positioning system (GPS) records the exact position of the detected radiation.

The main differences between our platforms and others are the following:

‒ Unlimited number of controlled detectors. You can add any number of detectors that you want, and how many slots you have got on your router.
‒ Independent from detector type (OSPREY, digibase-E or any others). For now, we have support only for Osprey detectors [1], but due to highly scalable structure of the RDS software that we developed, we can add support for any type of detectors.
‒ Independent for GPS-receiver. You can use any GPS-receiver [2] that you want. The main condition that such devices should support COM interface and NMEA-0183 protocol.

REFERENCES

1.Osprey™ Universal Digital MCA Tube Base. User's Manual. – 2011
2.NAISS Mobile Radiation Monitoring System. Software user's manual. (2011) Canberra Industries, Inc. – ORTEC Part No. 931022.