Real time processing of environmental gamma ray spectrometry data

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Abstract

Nowadays radioactively contaminated land is a pressing issue**.** Scottish Environment Protection Agency (SEPA) pays attention to monitor radioactivity. There are several detector manufacturers in the world. Such as ORTEC, Radiation Detection Company (RDC) and CANBERRA company. But they all pay more attentions to the detector and lost sight of the usability of the software. The functions design is not satisfy with users demand.

This project developed a JAVA application to implement function extension of software "ORTEC MAESTRO-32". It is a software based on MAESTRO-32 and implements some functions more.
What I want to achieve: The software uses dynamic rainbow graph to represent the data information. When the graph displaying there is a geographical position value with it. The software should allow users to see designated range of rainbow graph.
How to address problem: Using .JOB function in MAESTRO-32 to gain data, then utilize data to display graph on the basis of users' professional requirements.

The main part of the project is to collect the data from detector and display method. The application uses .JOB function in MAESTRO-32 to run a JOB task. The task asks MAESTEO-32 to automatically save data file in users' designated folder. Then application uses the data to represent as dynamic rainbow graph.

The objective of the project is achieved. Most Functions are achieved. The software can gain the data correctly then use the data to display dynamic rainbow graph. The graph can real time represent the correct data information. The software provides a warning record function and GPS position function. It has great practical significance and can be used in the radioactivity detection.