

Enhancements to the CTBTO IDC Radionuclide Processing Pipeline for Particulate Samples Achieving Significant Improvement of Automatic Products

Software development efforts at the CTBTO International Data Centre (IDC) for particulate data processing over the recent years focused on boosting the consistency of automatic results and reducing the work load on Analysts in interactive mode. The presentation compiles the key enhancements and new features of the software modules for particulate sample data as deployed in IDC Operations and released in NDC-in-a-Box package. Deployed improvements covered various components of the radionuclide pipeline: automatic processing software application, interactive review tools as well as database schema and configuration. IDC products are also enhanced accordingly. The first part of the presentation aims at introducing the key enhancements: (a) a new feature for automatic discrimination between Tc-99m and Ge-75m, (b) a new module for automatically commenting out non-sample peaks, (c) optimizing the key lines of several CTBT relevant radionuclides in the IDC database library, and (d) implementation of a new module for automatic subtraction of background contribution to sample spectra. The second part of the contribution illustrates the way these software solutions have considerably improved the overall picture in terms radionuclide background characterization at particulate stations of the International Monitoring System (IMS) network.

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