Geophysical Research Abstracts,
Vol. 10, EGU2008-A-02785, 2008
SRef-ID: 1607-7962/gra/EGU2008-A-02785
EGU General Assembly 2008

Semi-automation of LEB/REB quality control tasks at the IDC

F. Kebede, K. Koch and J. A. Carter

CTBTO PrepCom, Provisional Technical Secretariat, Vienna International Centre, P. O. Box 1200, A-1400 Vienna, Austria (Fekadu.kebede@ctbto.org/ +43-1-260305973)

Within the quality management activities of the Provisional Technical Secretariat (PTS) of the Comprehensive Nuclear Test-Ban Treaty Organization (CTBTO), performance monitoring through the evaluation of Key Performance Indicator (KPI) parameters at various time scales plays a central role. The International Data Centre (IDC) monitors quality of its reviewed products, the LEB/REB, by comparing them with high-quality reference bulletins such as those from ISC and NEIC. As this task is performed repetitively as well as in a timely manner, bulletin comparisons have been semi-automated. This semi-automation allows an easy and quick determination of the relevant KPIs (statistics on average event mislocation, identification of highly mislocated events, quantification of error ellipse intersections for matched events, and identification of large unmatched/ missed events). Automation streamlines the quality control functions of the IDC by quickly spotting bulletin quality problems that can then be thoroughly investigated on an event-by-event basis. The automation also provides easy access to the KPIs by authorized users.

To accomplish this task, a set of scripts automatically download data, prepare the input data for the bulletin comparison tools and extract relevant quality control (KPI) parameters from the output of the comparison stage. For the agencies providing the reference bulletins (e.g. NEIC PDE Weekly/Monthly Listings) the scripts are designed, whenever possible, to periodically download the bulletins and archive them for use in performance monitoring. The corresponding data from the IDC data base are obtained using the bulletin extraction tools included in the IDC application software.

The current focus of our development is on automating comparisons with the NEIC bulletins. In this case, preparation of input data includes selection of data from the original bulletin files for the chosen time interval and reformatting for input to the bulletin comparison (*BULCMP*) software. This process extracts only those events that were located by NEIC or for which NEIC estimated a magnitude. The prototype scripts developed for extraction of KPIs draw on the output of the *BULCMP* comparison program. They provide GMT plots of the geographical distribution of matched, unmatched IDC and reference bulletin events; and generate several tables designed for import into graphical displays of KPI parameters (e.g. by *Excel* or web-based graphics). The concept of the semi-automated bulletin comparison system and the application of the prototype scripts for the evaluation of the IDC REB bulletin via the NEIC Weekly Listings for the year 2007 will be presented.