(T2.1-P18)

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CTBTO PREPARATORY COMMISSION

North Korea, the analysis of the events of 09 September 2016

Ukrainian National Data Centre

- Ukrainian National Data Centre is composed of ten seismic stations located on the territory of Ukraine, the seismic station in Antarctica (Ukrainian Antarctic station Akademik Vernadsky) (Figure 1) and seismic array, which is the primary seismic station PS45 (AKASG).
- The plant is located in the North of Ukraine, near the town of Malyn, in the points with coordinates 50,701°N and 29,224°E. The station was built in 1976 - 1979. Prior to 1991 was part of the Service of special control of the Ministry of defense of the USSR. Since 1997, the station belongs to the State Space Agency of Ukraine. It is composed of 23 single-component and one three-component elements (Figure 2), which are located on the square in 500км².
- After the signing in 1998 and the ratification in 2001 of the Treaty on comprehensive ban on nuclear tests, conducted in 2001 – 2002 upgrade with 1 January 2003, works in the International Monitoring System (IMS). Data from the elements of the station are collected in a Central collection point (CF AKASG) and satellite communication channel (GCI) is sent to the International Data Center (IDC) in real-time.

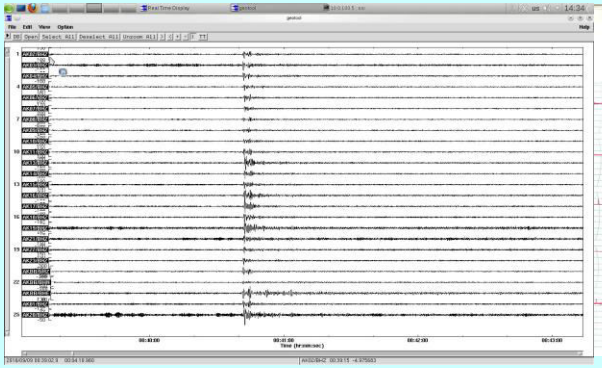

Figure 4: Introduction of P-waves on the channels of the station PS45 09 September 2016

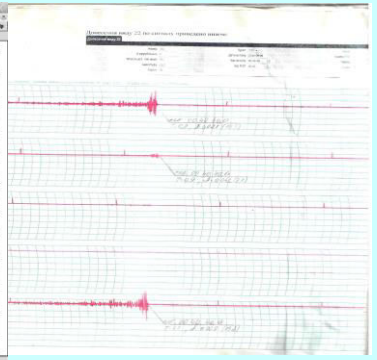

Figure 5: Introduction of P-waves on the channels of the national resources 09 September 2016

Figure 1: Location of the network of seismic stations of the Ukrainian National Data Center

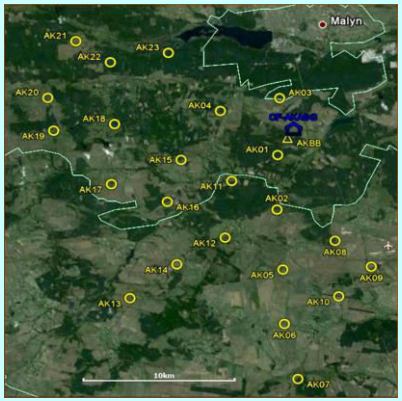

Figure 2: Location and configuration of seismic station PS45

09 Septermber 2016

09 September 2016 seismic stations of the world were recorded seismic source from the territory of the Democratic People's Republic of Korea (DPRK).

This source of recorded seismic stations of the Ukrainian National Data Centre at 00:40:40 (UTC). At first source was determined automatically according to the station PS45 with the following parameters: time in the event 00:30:01 (UTC) and the coordinates of 41.31°N and 129.02°E, which indicated the location of the North Korean nuclear test centre. At that, there was the arrival of the P-waves at 00:40:40 (UTC) on all channels of the station ps45 (Figure 4), as well as the introduction of P-waves at the other stations of the Ukrainian NDC (Figure 5).

Interactive data processing PS45 and data from other national stations with the help of software Geotool, which was granted to the national center of the International Data Centre, also point to the location of the source of the events in North Korea, in an area where previously conducted underground nuclear tests. The epicenter of the source was near the settlement, located 20 kilometers from the nuclear test site of Pangiri. The explosion power was from 10 to 30 kT, the magnitude was 5.3.

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