Recently two large-scale on-surface explosions of 10 tons and 100 tons of ANFO were successfully conducted by the Geophysical Institute of Israel (GII) at Sayarim Military Range, Israel. The charges of ANFO in Big Bags were assembled as a hemisphere on the soft sediment surface, and detonated in the upward direction.

The experiment was initiated by the CTBTO, Vienna, and extensive observations were performed in close cooperation of Israel, European and Middle East countries and the USA. The main goals of this experiment - to provide fully controlled infrasound sources, the strongest since establishing of the International Monitoring System (IMS) network, for calibration of IMS infrasound stations, located in Europe, Eastern Mediterranean, Middle East and Asia, contribute to understanding of the infrasound propagation in the atmosphere, under winter conditions, when stratospheric winds are different from those that prevail in summer, and thus improve IMS capabilities for monitoring nuclear tests.

The infrasound signals from the 100 tons shot were observed at IMS infrasound stations in Russia, Kazakhstan and Mongolia.

In the similar explosion, that GII conducted at the same site in August 2009 under summer weather conditions, clear infrasound signals were recorded at many regional and IMS stations to the West and North-West, up to a distance 3,500 km.

The unique experiment of the pair of large-scale explosions in different seasons demonstrated a clear favorable infrasound propagation to the West and the East.