It is my pleasure to introduce this issue of CTBTO Spectrum. This publication comes at the eve of a seminal event for the Preparatory Commission for the Comprehensive Nuclear-Test-Ban Treaty Organization (CTBTO). The Integrated Field Exercise IFE14 in Jordan in late 2014 will be the organization’s largest, most realistic and challenging on-site inspection simulation ever conducted.

In this context, it is a great honour to introduce the article by the Prime Minister of Jordan, H.E. Abdullah Ensour, explaining why hosting the Integrated Field Exercise 2014 is important for peace and stability in the Middle East. Prime Minister Ensour assured me of his country’s full support for the exercise when I met him in December 2013. His decision to contribute personally to the CTBTO’s magazine is symbolic of Jordan’s unique dedication and hospitality as the host country. I would like to express my deep appreciation to Prime Minister Ensour and to all the Jordanian authorities contributing to IFE14.

The fact that one of the largest events in cooperative nuclear arms control and verification over recent years is taking place in the Middle East is highly encouraging and relevant. I am confident that Prime Minister Ensour is correct in his assessment that IFE14, in which experts from most countries in the region will participate, will have a positive impact on regional stability and cooperation.

IFE14 will boost the CTBTO’s operational capabilities to conduct an on-site inspection (OSI) under realistic and challenging conditions. In this issue, Gordon MacLeod and Matjaz Prah, members of the project team led by Oleg Rozhkov, Director of the OSI Division, explain which elements and techniques for IFE14 are new compared to those employed in the last full-scale on-site inspection simulation, IFE08, which took place in Semipalatinsk, Kazakhstan, in 2008.

The exercise in Jordan will also help to raise the profile of the Comprehensive Nuclear-Test-Ban Treaty (CTBT) in the region, which is essential for promoting the Treaty’s entry into force. Three of the eight countries whose ratification is still required (known as Annex 2 States) are from this region – Egypt, Iran and Israel.

Yet even short of leading to further signatures and ratifications, engaging on technical issues can already create momentum. The recent decision by China, another Annex 2 State, to send data from CTBTO monitoring stations on its territory can be seen in this light. Not only do the data from these stations significantly enhance our system’s regional and global coverage, their transmission also clearly demonstrates China’s dedication to the CTBT.

Encouraging signs abound. At the April meeting of the Group of Eminent Persons in Stockholm, Sweden, which was hosted by Swedish Foreign Minister Carl Bildt, the Group’s impressive energy, creativeness and structured approach were clearly visible. The Group’s joint statement adopted at the meeting is featured in this issue.

It is also encouraging to see increasing support from the United States, another important Annex 2 State. With the addition of former Secretary of Defense Willam Perry, the Group of Eminent Persons now has a personality of international standing from the United States.

The only country to isolate itself from the near-global consensus against nuclear testing seems to be North Korea, which has threatened to conduct a “new kind of nuclear test”. I sincerely hope that the international community will not need this wake-up call, and we shall make headway on the CTBT’s entry into force without additional nuclear tests.

Steady headway is evident on the verification regime which underpins the CTBT. The CTBTO’s most complex station rebuilding effort ever has concluded successfully: hydroacoustic station HA03, located on Robinson Crusoe Island, Juan Fernandez Archipelago, Chile, is fully operational again after it was destroyed by a tsunami in 2010. In their article, CTBTO staff members Georgios Haralabus, Lucie Pautet, Jerry Stanley and Mario Zampolli describe the technical and logistical challenges they encountered to ensure that this remote station is back online.

In this issue, CTBTO scientist Mark Prior explains how hydroacoustic technology can help scientists to understand different “soundscapes” in the underwater world, which also includes breaking ice, earthquakes and volcanoes.