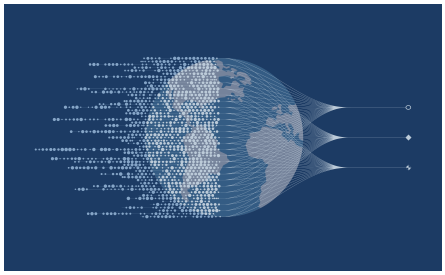

ID: **P3.3-629** Type: **E-poster**

gas measurements in an OSI, lessons learned from field measurements and BuE24

Measurements of radioactive noble gases, i.e. isotopes of xenon and argon, are an important part for an on-site inspection (OSI) in detecting an underground nuclear explosion. The first integrated field exercise where the capacity to collect and analyse noble gases were exercised was in Jordan, 2014(IFE14). Since then the development of methods and systems has improved the capacity for xenon detection. Here details on the SAUNA Field system is presented, including a rapid deployment configuration (in a flight pod), integration with the OSI software and routines (GIMO), and an automatic inlet. The latter allows for multiple samples to be added simultaneously to the system at the same time freeing time for the OSI inspectors . These features were tested during the build-up exercise field test in Hungary, 2024(BuE24). Lesson learned from this, and earlier field measurements, as well as potential improvements for collection and analysis of noble gas during an OSI will be presented.

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Session Classification: P3.3 On-Site Inspection Relevant Techniques

Track Classification: Theme 3. Monitoring and On-Site Inspection Technologies and Techniques: T3.3 On-Site Inspection Relevant Techniques