

Rolling list of upcoming workshops, training and exercises organized by the PTS

Disclaimer: The information was last updated on 30 November 2019. This list is updated on a regular basis.

For the latest up-to-date information, please consult the web sites for “Calendar of Events” (<http://www.ctbto.org/the-organization/calendar-of-events/>) and “Workshops, Training and Exercises” (<http://www.ctbto.org/the-organization/workshops-training-and-exercises/>)

2019 (for Planning Purposes)

| <i>Dates</i> | <i>Venue</i> | <i>Meeting/Event</i> | <i>Target audience/participants</i> | <i>Background / Objectives</i> | <i>Lead Division(s)</i> |
|---------------------|-------------------------|---|--|---|-------------------------|
| 4 – 29 November | VIC, Vienna, Austria | NDC Capacity Building: NDC Waveform Analyst Training Course | National Data Centre (NDC) technical staff/authorized users (preferably Principal User or Regular User) Seismologists with an advanced degree who operate or have access to regional and local seismic network data and the means of processing that data to provide accurate phase pick information; The participants should have experience in waveform data analysis and/or similar experience related to nuclear test ban verification as well Linux background and some SQL experience. | <u>Objectives:</u> <ul style="list-style-type: none"> • To understand the roles of NDCs in the verification regime; • To build and/or improve the NDC capabilities; • To provide participants with sufficient knowledge for accessing and using IMS data and IDC products; and • To provide practical experience in analyzing IMS data. | IDC |
| 18 – 22 November | VIC, Vienna, Austria | Technical Training for PKI Operators for RN and Waveform Stations | Invited State Signatories should nominate participant(s) who are PKI operators at the following stations: Argentina: RN01 Australia: PS02, IS07, RN04, RN05, RN06, RN07, RN08, RN09, RN10 Brazil: PS07, IS09 Canada: PS09, RN14, RN16, RN17 Germany: PS19, IS26, IS27 | <u>Objectives:</u> <ul style="list-style-type: none"> • To provide PKI Operator with the basic knowledge and technical understanding on Data Authentication, Public Key Infrastructure (PKI) concepts and terminology and Data Surety, how to generate key pairs and submit certificate requests, and how to retrieve and install certificates for radionuclide and waveform station systems such as SSI, Guralp, Nanometrics. | IMS |

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| 18 – 22 November | VIC, Vienna, Austria | Technical Training for PKI Operators for RN and Waveform Stations (continued) | <p>Israel: AS048, AS049 Japan: PS22, AS051, AS052, AS053, AS054, AS055, IS30 Malaysia: RN42 New Zealand: RN46, RN47 Niger: PS26 Norway: PS27, PS28, AS072, AS073, IS37 Portugal IS42 Russian Federation: PS32, PS33, PS34, PS36, PS37, AS082, IS43, IS44, IS45, IS46, RN56, RN57, RN58, RN59, RN60, RN61 Spain: PS40 Sweden: AS101 Switzerland: AS102 Tanzania: RN64 Tunisia: PS42, IS48 United Kingdom: RN67, RN68 Ukraine: PS45</p> <p>The participation of PKI Operators of IMS stations not listed above will be subject to availability of places in the training course.</p> <p>Applicants are encouraged to complete the following e-learning modules: EN-POL01, 03 and 04 EN-MON18</p> | | IMS |
| 20 – 21 November | VIC, Vienna, Austria | 2nd NDC-in-a-Box Alpha Tester Group (ATG) Technical Meeting | <p>The participants of the first ATG Technical Meeting who had been nominated by the NDCs of the following States Signatories:</p> <p>Australia, Botswana, China, Israel, Jordan, Kazakhstan, Russian Federation, Ukraine and Vietnam</p> | <p>Objectives: Under the overall objectives to integrate the NET-VISA associator with SeisComp3 and to incorporate the result of this efforts into an upcoming NDC-in-a-Box release:</p> <ul style="list-style-type: none"> To gather feedback from the participants on the testing activities related to the SeisComp3/NET-VISA integration; and To obtain guidance on the further improvement that may be required in the future. | IDC |

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| 2 – 6 December | Freiburg, Germany | International Noble Gas Experiment (INGE) Workshop 2019 | All scientists, engineers and other persons involved in Noble Gas monitoring related to the verification of the CTBT. | <u>Objective:</u> <ul style="list-style-type: none"> To present and evaluate the most recent advances in noble gas monitoring in support of the CTBT. | IDC |

2020 (for Planning Purposes)

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| 26 – 30 January | Red Sea, Egypt | NDC Training for Arabic Speaking NDCs | Arabic speaking National Data Centre (NDC) technical staff / authorized users (preferably Principal User or Regular User) with: <ul style="list-style-type: none"> Experience in waveform or radionuclide data analysis and/or similar experience related to nuclear test ban verification; and Linux background and some SQL experience. | <u>Objectives:</u> <ul style="list-style-type: none"> To understand the roles of NDCs in the verification regime; To build and/or improve the NDC capabilities; To provide participants with sufficient knowledge for accessing and using IMS data and IDC products; and To provide practical experience in analyzing IMS data. | IDC |
| 10 – 21 February | VIC, Vienna, Austria | Training Course on NDC Capacity Building: Access and Analysis of Waveform IMS Data and IDC Products | NDC technical staff / authorized users (preferably Principal User or Regular User). Seismologists with an advanced degree who operate or have access to regional and local seismic network data and the means of processing that data to provide accurate phase pick information. Participants should have: <ul style="list-style-type: none"> Experience in waveform data analysis and/or similar experience related to nuclear test ban verification; Linux background and some SQL experience; and Passed the NDC e-Learning course. | <u>Objectives:</u> <ul style="list-style-type: none"> To understand the roles of NDCs in the verification regime; To build and/or improve the NDC capabilities; To provide participants with sufficient knowledge for accessing and using IMS data and IDC products; and To provide practical experience in analyzing IMS data. | IDC |

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| 2 – 6 March | Jakarta, Indonesia | Regional Infrasound Workshop and Integrated Training for SEAPFE NDCs | <p>Participants should be involved in the use of IMS data and IDC products, in particular NDC researchers and analysts, other persons involved in infrasound technology and related fields.</p> <p>Participants should have a degree in geophysics and/or atmospheric science and/or acoustics.</p> <p>Participants should also have experience with data processing and have worked in areas related to SHI technologies.</p> | <p><u>Objectives of the Regional Infrasound Workshop:</u></p> <ul style="list-style-type: none"> • To further build up the national and regional capacities in implementing the Treaty and participating in the verification regime; • To promote the civil and scientific application of verification technologies, in particular to promote the importance of infrasound technology; • To promote the exchange of experience and expertise in infrasound technology among the NDCs in the SEAPFE region; • To strengthen the knowledge of participants on the Comprehensive Nuclear-Test-Ban Treaty (CTBT) and the work of the Preparatory Commission; and • To share experiences, insights and vision to strengthen effective NDCs development. <p><u>Objectives of the Infrasound Integrated Training:</u></p> <ul style="list-style-type: none"> • To understand and learn how infrasound data can help in the verification regime and civil and scientific application; • To learn how to use the infrasound tools in the NDC-in-a-Box package with processing the data collected from the Indonesia portable array experiment; and • To stimulate regional cooperation in infrasound data analysis through the NDCs. | IDC |
| 5 – 6 March | VIC, Vienna, Austria | Technical Expert Meeting on Automatic Aftershock Processing Algorithms | <p>Members from the three inventors of the automatic aftershock processing algorithms, i.e. NORSAR, Sandia National Labs and IDC.</p> <p>Representatives from NDCs and research establishments who have relevant expertise in applying or developing methods that address aftershock or recurring event processing.</p> | <p><u>Objectives:</u></p> <ul style="list-style-type: none"> • To hear presentations by the developers of the algorithms on their tools and methods and on how they addressed specific aftershock sequences and recurrent events; • To hear presentations by the IDC on the experimental pipeline it developed in order to integrate these algorithms and generate automatic seismic event lists; and • To discuss the performance of the methods, compare them with one another, note each of the pros and cons and compile a common summary agreed upon by the three stakeholders. | IDC |

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| 9 – 27 March | VIC, Vienna, Austria | Training Course on NDC Capacity Building: Access and Analysis of Radionuclide IMS Data and IDC Products | NDC technical staff / authorized users (preferably Principal User or Regular User). Participants should have: <ul style="list-style-type: none"> • Experience in radionuclide data analysis and/or similar experience related to nuclear test ban verification; • Linux background and some SQL experience; and • Passed the NDC e-Learning course. | <u>Objectives:</u> <ul style="list-style-type: none"> • To understand the roles of NDCs in the verification regime; • To build and/or improve the NDC capabilities; • To provide participants with sufficient knowledge for accessing and using IMS data and IDC products; and • To provide practical experience in analyzing IMS data. | IDC |
| 30 March – 3 April | Niamey, Niger | NDC Training for French Speaking NDCs | French speaking NDC technical staff / authorized users (preferably Principal User or Regular User) with: <ul style="list-style-type: none"> • Experience in waveform or radionuclide data analysis and/or similar experience related to nuclear test ban verification; and • Linux background and some SQL experience. | <u>Objectives:</u> <ul style="list-style-type: none"> • To provide a forum for NDC experts to share experience in fulfilling their verification responsibilities; • To provide NDC feedback to the PTS on all aspects of the data, products, services and support NDCs in their work, with special emphasis on: i) NDC contribution to performance monitoring and testing; ii) NDC involvement in the IDC Progressive Commissioning Plan; and iii) recent and ongoing IDC projects; and • To discuss the progress results of the NDC Preparedness Exercise, i.e. NPE19, and to draft the scenario of the next NPE. | IDC |
| 30 March – 3 April | Vienna, Austria | Science Diplomacy Symposium | Diplomats, practitioners and policy makers, academics and the next generation | <u>Objectives (to be confirmed)</u> <ul style="list-style-type: none"> • To raise public awareness of the CTBT's contributions to international peace and security; • To encourage cooperative and collaborative research and innovation on nuclear test monitoring science and technology; • To stimulate creative thinking about possible political, legal and diplomatic solutions to the challenges facing the Treaty. | OES/ LEGREL |
| 14 – 17 April | Toledo, Spain | 2020 NDC Workshop | Persons involved in NDC-related activities who are nominated by the States Signatories | <u>Objectives:</u> <ul style="list-style-type: none"> • To understand the roles of NDCs in the verification regime; • To build and/or improve the NDC capabilities; • To provide participants with sufficient knowledge for accessing and using IMS data and IDC products; and • To provide practical experience in analyzing IMS data. | IDC |

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| 20 – 24 April | CTBTO TeST Centre, Seibersdorf, Austria | Technical Training for Station Operators of IMS Infrasound Stations with GURALP and Nanometrics Equipment | <p>Station Operators involved in the operation and maintenance who are nominated by the invited States Signatories.</p> <p>Preference will be given to Station Operators from the following stations:</p> <p>Australia: IS04, IS06, IS07 Brazil: IS09 Chile: IS14 China: IS16 Djibouti: IS19 Ecuador: IS20 Germany: IS26, IS27 Japan: IS30 Kenya: IS32</p> | <p><u>Objectives:</u></p> <ul style="list-style-type: none"> To provide Station Operators with operational knowledge, technical understanding and relevant hands-on training on operation, maintenance and troubleshooting of IMS infrasound stations with Guralp and Nanometrics equipment. | IDC |
| 20 – 24 April | CTBTO TeST Centre, Seibersdorf, Austria | Technical Training for Station Operators of IMS Infrasound Stations with GURALP and Nanometrics Equipment (continued) | <p>Paraguay: IS41 Portugal: IS42 Tunisia: IS48 Bermuda: IS51 (United Kingdom)</p> | | IDC |
| 8 – 21 June | TeST Centre and Lešt, Slovakia | Build-Up Exercise – Initial Inspection Period | Third Training Cycle inspectors, selected First and Second Training Cycle inspectors, external experts and PTS staff | <p><u>Objective: (to be confirmed)</u></p> <ul style="list-style-type: none"> To test OSI processes, procedures and techniques related to the PoE and Initial Period of an On-Site Inspection and to validate training provided to inspectors. | OSI |
| 29 June - 17 July | VIC, Vienna, Austria | Training Course on NDC Capacity Building: Access and Analysis of Radionuclide IMS Data and IDC Products | <p>NDC technical staff / authorized users (preferably Principal User or Regular User).</p> <p>Participants should have:</p> <ul style="list-style-type: none"> Experience in radionuclide data analysis and/or similar experience related to nuclear test ban verification; Linux background and some SQL experience; and Passed the NDC e-Learning course. | <p><u>Objectives:</u></p> <ul style="list-style-type: none"> To understand the roles of NDCs in the verification regime; To build and/or improve the NDC capabilities; To provide participants with sufficient knowledge for accessing and using IMS data and IDC products; and To provide practical experience in analyzing IMS data. | IDC |

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| 6 – 20 September | TeST Centre and Lešt, Slovakia | Build-Up Exercise – Continuation Period | Third Training Cycle inspectors, selected First and Second Training Cycle inspectors, external experts and PTS staff | <u>Objective:</u> <ul style="list-style-type: none"> To test OSI processes, procedures and techniques related to Continuation Period of an On-Site Inspection and to validate training provided to inspectors. | OSI |
| 14 – 18 September | Kyiv, Ukraine | Advanced Infrasonud Training for NDCs | Participants should be involved in the use of IMS data and IDC products, in particular NDC researchers and analysts, other persons involved in infrasound technology and related fields. | <u>Objectives:</u> <ul style="list-style-type: none"> To improve the knowledge on infrasound technology and how it can help the verification regime and civil and scientific applications with IMS data; To refine user skills of infrasound tools available in the NDC-in-a-Box package with processing data from IMS infrasound arrays and other waveform technologies; To learn how to use additional tools in the NDC-in-a-Box that help enhance analysis of waveform arrays; | IDC |
| 14 – 18 September | Kyiv, Ukraine | Advanced Infrasonud Training for NDCs (continued) | Participants should have: <ul style="list-style-type: none"> A degree in geophysics and/or atmospheric science and/or acoustic; Experience with data processing; Worked in areas related to SHI technologies; and Attended the beginner infrasound data analysis training or regional infrasound integrated training. | <u>Objectives (continued)</u> <ul style="list-style-type: none"> To stimulate cooperation in infrasound data analysis between NDCs; and To promote the exchange of experience and expertise in infrasound technology among the NDCs. | IDC |
| 16-20 November | TBD | OSI Workshop 25 | TBD at WGB 54 | TBD at WGB 54 | OSI |