SnT 2025 8 SEPTEMBER ONLINE DAY 9 TO 12 SEPTEMBER AT HOFBURG PALACE, VIENNA & ONLINE
CTBT: SCIENCE AND TECHNOLOGY CONFERENCE

Enhancing On-Site Inspection Training through Online and Computer-Based Training

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INTRODUCTION AND MAIN RESULTS

OSI online training activities enhance the OSI training programme by supporting readiness of surrogate inspectors through a robust learning platform featuring dedicated course homepages, over 35 scenario-based e-learning modules, video tutorials, VR tours, self-paced cloud-hosted remote software training, and synchronous online facilitator-led sessions.

These tools and activities support both pre-course preparation and post-course refreshers, with feedback and evaluations consistently rating them as highly effective and useful. New resources are regularly developed and updated, with a strong interest in emerging technologies such as AI and additional VR/AR applications.

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P4.5-582

About OSI Online and Computer-Based Training

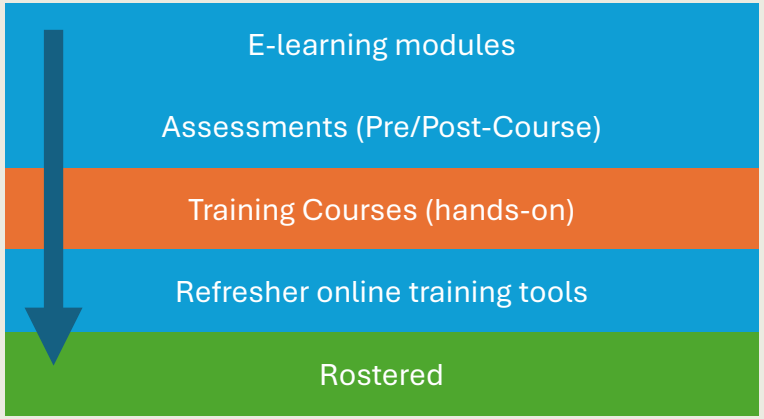
OSI online training tools and methodologies enhance the overall OSI training programme by providing a flexible and consistent mechanism for participants to gain theoretical knowledge in advance, ensuring everyone arrives at face-to-face training equally prepared. By moving core concepts, preparatory materials, and foundational skills online, valuable in-person time can be focused on interactive, hands-on activities, simulations, and real-world scenarios that enhance training impact and outcomes. This blended approach increases engagement, supports continuous learning, and enables cost and time savings by reducing the need for lengthy classroom presentations, freeing up more time for practical application and meaningful field experience.

These tools also give trainees the flexibility to revisit materials and complete online assessments for knowledge checks, helping reinforce key concepts and identify areas for improvement before and after in-person sessions. This ongoing access to learning resources supports long-term retention, ensures sustained readiness across participants, and maximizes the value of face-to-face training by keeping the focus on applied skills and practical experience.

Inventory of Tools

- **E-learning modules (60–90 min):** 35+ interactive, scenario-based courses ranging from introductory to advanced technique-specific topics aimed at preparing trainees for in-person training.
- **Microlearning and Video Tutorials (5–15 min):** Short, in-house tutorials, videos, and guides for “just-in-time” training, including exercise-specific content and quick assessments.
- **Remote software training (2–4 weeks):** Structured learning combining live webinars, facilitated sessions, and self-paced practice on cloud-based virtual machines, ensuring synchronized learning with SME guidance and hands-on experience using OSI operational tools.
- **360° virtual tours and photos:** Self-paced, interactive explorations of OSI environments, facilities, and equipment for familiarization and refresher training.

OSI Training Process (simplified)



Roster Status, Readiness and Approach to online Refresher Training

Online training is assigned to trainees based on their current roster status in the OSI training programme, their specific technical role, and the competencies required for upcoming training activities. Completion status is reviewed each year as part of an annual refresher mechanism, which serves as a compliance-based process to ensure that trainees stay up to date and maintain required competencies. Surrogate inspectors move from a *rostered – pending refresher* status to *rostered* once they have demonstrated competence in the refresher assignments and activities, confirming their readiness for practical, hands-on training.

Name	Training Cycle	Roles
John Buckle	Training Cycle 3	Technical Inspectors (Visual Sensory) · Technical Subject Leaders (Visual Sensory) · Introductory Block
W.J.M.P. Gayan Shevantha SILVA	Training Cycle 3	Utilities Maintenance Officer · Introductory Block · Technical Inspector (Ops Support) · Technical Inspectors (Visual Sensory) · BOO Maintenance Officer · Head of Logistics
Peter LABAK	Training Cycle 1	Technical Inspectors (Seismic) · Data Flow Officer · Introductory Block
Daniel Boddice	Training Cycle 3	Technical Inspectors (Geophysics) · Technical Inspectors (Seismic) · Introductory Block
Robert Kysel	Training Cycle 3	Introductory Block · Technical Inspectors (Geophysics) · Technical Inspectors (Seismic)
Richard Nelson Birungi	Training Cycle 3	Introductory Block · Technical Inspectors (Seismic) · Technical Inspectors (Geophysics)
Atsanai SAIBUNCHAN	Training Cycle 3	Introductory Block · Technical Inspectors (Visual Sensory) · Technical Inspectors (Geophysics) · Introductory Block · Technical Inspectors (Seismic)
Ahmed Mohsen Ahmed Lethy ELSHAFEY	Training Cycle 3	Technical Inspectors (Geophysics) · Introductory Block · Technical Inspectors (Seismic)
Pedro CANAZIO	Training Cycle 1	Technical Inspector (Ops Support) · Introductory Block · BOO Maintenance Officer
Luis Ricardo GAYA-PIQUE	Training Cycle 1	Technical Inspectors (Geophysics) · Introductory Block
Harun Raphael Munyi MUTURI	Training Cycle 1	Technical Inspectors (Visual Sensory) · Introductory Block
Feihong KUANG	Training Cycle 1	Introductory Block · Technical Inspectors (Visual Sensory)
Walter DEKIN	Training Cycle 2	Introductory Block · Technical Inspectors (Visual Sensory)
Christoph Paul WIRZ	Training Cycle 2	Technical Inspectors (RN) · Introductory Block

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Development of online and computer-based training tools

The development of OSI online training tools begins with published Quality Management System (QMS) documentation and other authoritative sources. These materials are converted into source texts that provide the technical foundation for instructional content. An instructional design plan is then established to define learning objectives, structure, and alignment with the OSI training programme.

Building on this framework, the development process incorporates a blend of newly captured media and curated legacy materials. Subject Matter Experts (SMEs) provide inputs to ensure technical accuracy, while instructional designers adapt the content for clarity, engagement, and pedagogical effectiveness. This integration of diverse resources ensures that the tools reflect both technical depth and instructional quality.

Before release, all modules and resources undergo a structured peer review and quality assurance process. This stage validates accuracy, consistency, and usability, ensuring that each tool meets the dual requirements of scientific rigor and effective adult learning practice. The result is a suite of online tools that are both technically reliable and instructionally sound, supporting progressive development of inspection-relevant competencies.

Impact of Online and Computer-Based Training Tools (Results)

Following each course, surrogate inspectors and trainees complete structured evaluations. Analysis of these evaluation data indicates that OSI e-learning and computer-based training tools are consistently rated between very effective and highly effective, yielding an average score of 4.65 out of 5 on the Likert scale (with 5 denoting highly effective).

These high ratings reflect the perceived usefulness of online and computer-based training for preparation, refreshers, and practical skill-building. Trainees specifically highlighted interactive modules, remote software training, and digital resources as valuable in enhancing readiness and building confidence ahead of in-person activities, explaining why the tools consistently achieve such positive evaluations.

Taken together, these results validate the utility of OSI e-learning and computer-based tools in preparing surrogate inspectors for subsequent hands-on training courses and field activities, thereby supporting the progressive development of inspection-relevant competencies.

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Digital Evolution – What's New and What's Next

Looking ahead, the OSI Training Section is exploring emerging technologies to further enhance online and blended learning. Areas of interest include more robust applications of virtual reality (VR) and augmented reality (AR) to create immersive, scenario-based experiences that complement practical training. These tools also offer opportunities to keep a geographically dispersed, non-standing inspectorate engaged and prepared.

In parallel, the use of artificial intelligence (AI) and adaptive learning approaches is being examined to support greater personalization of training pathways. Such approaches aim to increase engagement, tailor learning to individual needs, and sustain motivation across a diverse roster.

By leveraging these technologies and approaches, the OSI training programme will further enhance established training practices, providing more on-demand, personalized, and impactful learning opportunities for surrogate inspectors.

Disclaimer: The views expressed on this e-poster are those of the authors and do not necessarily reflect the view of the CTBTO.