

## Science & Technology 2015: Conference Wrap-up speech

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### Outcomes, and the continuous improvement process through SnT

Our Executive Secretary, Dr Lassina Zerbo, could not be here today. At the invitation of the Government of Korea he is hosting a high level meeting there.

So on behalf of the Executive Secretary, I would like to extend his thanks – to you the attendees, speakers, panellist, scientist and participants for your active involvement here this week.

Again on behalf of the Executive Secretary, I would like to extend his invitation to all of you to return in two years for SnT2017 (and bring more of your colleagues).

This SnT was bigger than last and while we look forward to the next being bigger still, quality is our goal. The SnT Conferences are a component of our continuous improvement process. They help us identify emerging technology and methods that can be applied to improve test monitoring.

We added a new theme this year – Performance Optimization. This theme will have growing relevance as we sustain and recapitalize the IMS and IDC in the year ahead.

There are far too many note-worthy highpoints to acknowledge in this talk – else I would have to talk as long as all the sessions of the past several days. I will simply note a couple items from the extensive list of highpoints gathered by CTBTO scientist as they interacted with you – and my own observations.

I saw one poster telling of recent progress identifying GT-5 (Ground Truth) seismic events in Brazil. This poster noted the progress resulted from Latin American training and engagement to promote the use of the Regional Seismic Travel Time (RSTT) code. This code was presented at an earlier SnT Conference, and as a result of collaborations fostered at that conference, several Latin American institutions came together to share ideas and collaborate. I'm pleased to see continued positive outcomes of that work begun in earlier SnT conference being presented at this SnT Conference. This reinforces the notion that the conferences are not simply events that take place every two years, but are integral parts of an ongoing effort to engage and advance the technology of monitoring.

Numerous Civil and Scientific Applications were presented. Let me reiterate - Civil and Scientific Applications are truly a win-win.

- They result in better methods: Our noise is someone else's signal. If scientists discover methods to identify "civil signals" in CTBT data, then we can use their methods to remove that noise allowing us to peer deeper into the data for signals on monitoring interest.
- They make more practitioners aware of this data and these become potential recruits for the CTBTO and National Data Centres.

- Civil and Scientific applications result in Better Data Quality because the more eyes on the data, the more likely it is that discrepancies are rapidly identified and corrected.
- These applications demonstrate value and immediate utility to the Member States that support the Treaty. Obviously the monitoring regime has value as a cornerstone of peace and stability – but Member States have invested more than a billion dollars on a system we all hope will never have to detect another nuclear test – so showing continuous societal benefit is an immediate return on investment Member States can be proud of.

Civil and Scientific Applications are not Altruism – it is good business.

Now in the theme of “Events and their Characterization”

I was very impressed with the OSI discussions, and panels (and the floor display of the Maria Theresia Apartments showing the exercise area of IFE2014). Looking forward, the OSI community would benefit from further development, refinement and experience in

- OSI radionuclide and Noble gas technologies
- Remote sensing technologies (MSIR, LIDAR)
- Resonance Seismology and Drilling

Also in this area – I would like to mention the ongoing exploration of data from May 2010. While some past papers on this topic may have been presented in provocative terms – it is important that the Nuclear Test Ban Community set the precedent that enigmas will be explored. We should do this using appropriate scientific discipline – especially when we extrapolate beyond well-established experience. I was impressed with the work presented on this topic.

There was much presented on

- NDC Preparedness Exercises
- Radio Xenon
- Advances in networks, sensors and processing

For the sake of brevity I will simply say these are all important and vibrant areas that are crucial to the Monitoring Regime.

These are just a small sample of the many relevant developments reported at this conference. As we look to the future we have many thoughts on additional areas of focus – 89 such possible focus areas were listed in the report from SnT2011. Most are still relevant today.

There will be a report of this SnT conference. I encourage the scientific community (and other interested communities – Journalists, Academics, Policy Makers) to make use of our on-line resources such as past and current conference reports, e-learning, and the vDec. I

would like to draw special attention to the vDec – there is a new website and banner on our homepage to promote the vDec and we envision more evolution to make this an even more effective conduit for technical collaboration.

Although the Scientific and Technical sessions will conclude today there are still important events continuing tomorrow.

- The Academic Forum brings together educators to share experiences and improve methods used to convey information and promote involvement of students at all levels.
- The NDC meetings allow important discussions between NDC, and dialog between the IDC and NDCs.

I hope everyone involved in these meetings sustains their high level of active participation for another day.

I must emphasise that these conferences are ‘CTBT Science and Technology’; not ‘CTBTO...’. The potential contribution of citizen science to Treaty monitoring lies outside the philosophy of the IMS, but still might play a future role in the global effort. We shall have to see, but in any case, as we have heard, the contribution of a mass of citizen sensors – e.g. back yard seismic sensors – would also contribute to public awareness of the Treaty and its importance, which as we have heard this week, is in great need of more exposure to facilitate moves towards entry into force.

One of the special aspects of the CTBT Science and Technology conferences is that we aim to include presentations on the political and societal context of the Treaty. This year we heard several prominent political figures from a range of countries remind us of convincing arguments in favour of the Treaty and its entry into force.

I would like to stress the CTBTO is a global organization, made up of staff from all over the world. This conference has participants from all over the world and I was very pleased that our first keynote speaker (Minister Pandor) gave all of us eloquent insight into the imperative of science and technology on the African continent – I think she clearly established the link between “science and technology” leading to “prosperity and peace.”

On that note I would like to close by paraphrasing words I saw on a video playing out in the lobby.

*We are using Science and Technology for a good cause.*

By the way – if you have not seen the video I am talking about please do so before you leave or just go to YouTube and search for “Minute Physics – detecting nuclear test” (and if you like what you see send the link on to your friends).

Now we shall present awards for those presentations voted on by you, but I would like to think that all the presentations are worthy of recognition because we are all advancing science and technology for a noble cause.

Thank you.