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# SnTimes

A YOUTH GROUP NEWSROOM PROJECT

## Nuclear testing: health & environment under threat

The impact on health and economies and the displacement of communities were the topics of three panels during SnT 2019 discussing the short and long term consequences of nuclear testing, on Thursday.

The first panel focused on the environmental and economic impact of the Polynesian nuclear tests and the resulting fallout of radioactive material that will take hundreds of years to become safe. High levels of background radiation have increased cancer rates, contaminated the fish food stock, and devastated the region's economy, the panel was told.

Elsewhere the impact on the people of the Marshall Islands as a result of nuclear testing and the later the effects of climate change was the focus of the second panel. Nuclear testing in the Marshall Islands left islands uninhabitable and displaced many Marshallese.

Genetic alterations to T-lymphocytes, a key component of the human immune system from long-term exposure to low levels of environmental radiation were discussed by the third panel.

**Paul Shaver**

## The CTBT, new star of Armageddon movie

If a massive asteroid was approaching earth, should it be destroyed with a nuclear weapon? That was a question posed at an SnT2019 panel on Thursday – and the answer is that it could worsen the initial threat.

Attempting to blast an asteroid could result in creating more objects whose impact could exceed the damage from a single asteroid, CTBTO and other specialists told a panel on Thursday.

The CTBT prohibits nuclear explosions anywhere, and the space treaty prohibits nuclear devices in outer space, the discussion about how the CTBTO network can contribute to monitoring of near earth objects impacting the atmosphere was told.

But CTBTO infrasound stations, together with visual, video and radar and other means, are contributing to monitoring the entry of asteroids into the atmosphere.

On average a bolide (meteorite) with a diameter of over one meter falls on earth every one or two weeks. In 2013 the CTBTO monitored the Chelyabinsk meteor in Russia, picking up infrasonic waves that were the largest ever recorded by the CTBTO's International Monitoring System. Twenty infrasound stations were able to detect the blast, the furthest being 15 000km away in Antarctica.

**Guillaume Milot**

## Promoting peace and security through art

Jana Swanepoel, a 16-year-old high school student from Namibia, was named today among winners of the 2018-2019 Peace and Cooperation and CTBTO Global Scholar Art Campaign.

Swanepoel is a young artist who believes that art is an effective means of communicating crucial messages to the public.

She used her contribution to the art campaign to underline the importance of the CTBT and the CTBTO in maintaining peace and security on our planet.

Her picture shows a green woman who represents mother nature and a blue ball representing the treaty and the organization behind it. Silhouettes

of people symbolize each one of us who strives towards the world without nuclear tests.

Swanepoel said she used to think international organizations existed somewhere in an unreachable parallel world. Yet after a trip to Vienna she said realized every young person can make an impact by investing their time and passion to promote the treaty. The CTBTO provides many opportunities for youth to speak out and promote a change even in a very artistic and creative way.

“I want to help the CTBTO with my art and I will do what I can” she said, saying her next step will be to join the youth group.

### Ksenya Pirnavskaya



Iran, Age 11



Namibia, Age 16



Kazakhstan, Age 14



China, Age 4

## Winning support from Spanish speaking states

As part of the effort to win global endorsement for the Comprehensive Nuclear-Test-Ban Treaty (CTBT) - for the first time in its history - the CTBTO held a Spanish round table to foster support among Spanish-speaking participants in SnT 2019.

Representatives from Ecuador, Mexico, Brazil, the Dominican Republic, Cuba, and Spain took part in the panel initiated by CTBTO Executive Secretary Lassina Zerbo.

As well as the importance of the treaty itself, participants agreed there are a number of practical advantages in supporting it.

Supporting the treaty offers countries involved an opportunity to establish solidarity between them. Detection of radioactive particles in the

atmosphere is an example of the benefits the IMS data offers.

Building bridges between science and diplomacy is vital in helping Spanish speaking countries contribute to addressing the challenge of climate change.

Data provided by the CTBTO's verification system, respected for its reliability, is of significance to many Spanish speaking countries that lie in areas of seismic activities.

The initiative involving Spanish speaking participants also creates public recognition and builds more public awareness of the treaty.

### Ricardo Cruz y Celis Jiménez

## Countering malware - AI and machine learning

Malware threats have increased due to advanced technology and artificial intelligence (AI) is the best way to counter them, United Nations chief of cyber crime Neil Walsh told an SnT 2019 panel on Thursday.

“By using AI and machine based learning technology we help governments and caller communications service providers. We help them to try and counter the use of our own technology by offenders like child sexual abusers,” said Walsh.

AI refers to an area of computer science that emphasizes the creation of intelligent machines that work and react like humans such as speech recognition while machine learning technology refers to the application of AI that provides systems the ability to automatically learn and improve from experience without being explicitly programmed.

The UN chief of cyber crime said it is now easy for a group of people to produce malware and implement it as they could simply go to a dark market on the encrypted part of the internet and pay someone to produce it for them depending on the person to be hit and the impact.

“If I am to turn back to five to seven years things were less automated than where we are today. The ability to use specialized skills against organizations and individuals was much less easy than it has become now,” he said.

He was speaking during a panel discussion on threats of tomorrow: use of AI and machine learning in predicting malware and responding to malware.

**Farai Shawn Matiashe**



## Searching for a submarine with the CTBTO

Three and a half hours after contact was lost with the Argentinian Navy submarine ARA San Juan on 15 November 2017, hydroacoustic stations HA10 and HA04 in the IMS network at Ascension Island and Crozet Island, monitored a signal from the vicinity of its last known position.

In a series of presentations to SnT2019, CTBTO and other specialists explained how they analysed signals received by stations 6,000 and 7,700 km away from the lost submarine.

Initially CTBTO staff had to determine both signals registered by the stations were linked to the same event. Then the scientists had to work on reducing the uncertainty around the location of the event.

They even observed that the signal sped up when its geodesic propagation path went via the seasonal Antarctic ice-sheet before reaching station HA04. On 1 December 2017 a calibration test was made when the Argentinian navy conducted a controlled explosion test.

From these data experts said they could confirm the occurrence of an impulsive event that could be interpreted as two distinct implosions very close in space and time.

During the investigation the CTBTO continuously informed Argentinian authorities about their progress and findings from the data analysis contributing to the search for the submarine. One year later, the ARA San Juan was found on the seabed at a depth of 900 metres very near the location where the signal was detected on 15 November 15.

**Guillaume Milot**

## A TeST Centre for the CTBTO

Amid lush green fields of lettuce and potatoes, the sweep of golden wheat and the turning blades of Seibersdorf's wind farms lies the CTBT's Technical Support and Training (TeST) Centre.

Newly constructed, approximately 40 kms. from the CTBTO's Vienna headquarters, it is a neighbour of the Austrian Institute of Technology.

Synergy is its keyword - the facility provides storage and technical training for three divisions of the CTBTO, its International Monitoring System (IMS), International Data Centre (IDC) and its On-Site Inspection (OSI).

The mandate of the CTBTO is to promote the treaty and to build up the verification regime so that it is set to go as soon as the treaty enters into force. The IMS and IDC are the sensory organs of the treaty tasked with detecting and accumulating

global data in the eventuality of a nuclear explosion. The spacious wooden beamed warehouse, where treaty-related equipment shared by the three divisions is stored also contains living quarters as well as training rooms with capacity for 100 specialists, a large briefing room and operational centre.

The centre provides specialists designated by Member States a unique opportunity to train together, to become a cohesive team using equipment that would be deployed in an on-site inspection. There is also a facility for training outside the centre.

**Alireza Shahabi Sirjani**

