



SUMMARY

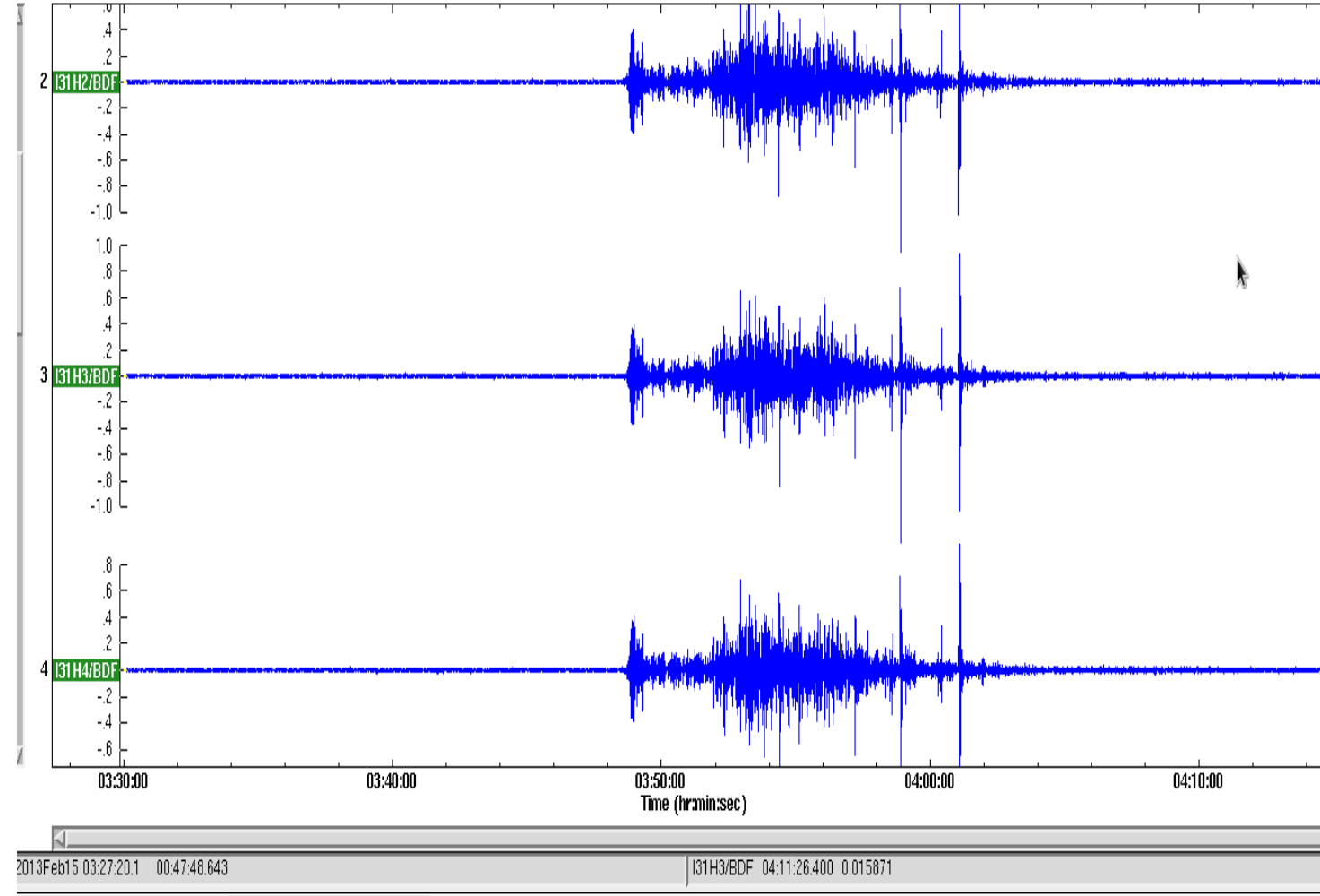
The data of IDC, properly interpreted may predict or prevent some disasters. An earthquake for example, starts with annunciators signals before the event itself. The objective of this study is to show that in areas of high tsunami risk it is often possible to give alert or make an emergency evacuation using IDC data. In addition, the infrasound stations of the CTBTO can detect the entry of a meteorite in the atmosphere and estimate its probable drop point helping to take emergency measures. The presentation will be based on two concrete cases

First part

analysis of specific case data: meteorite and seismic event

Meteorite event

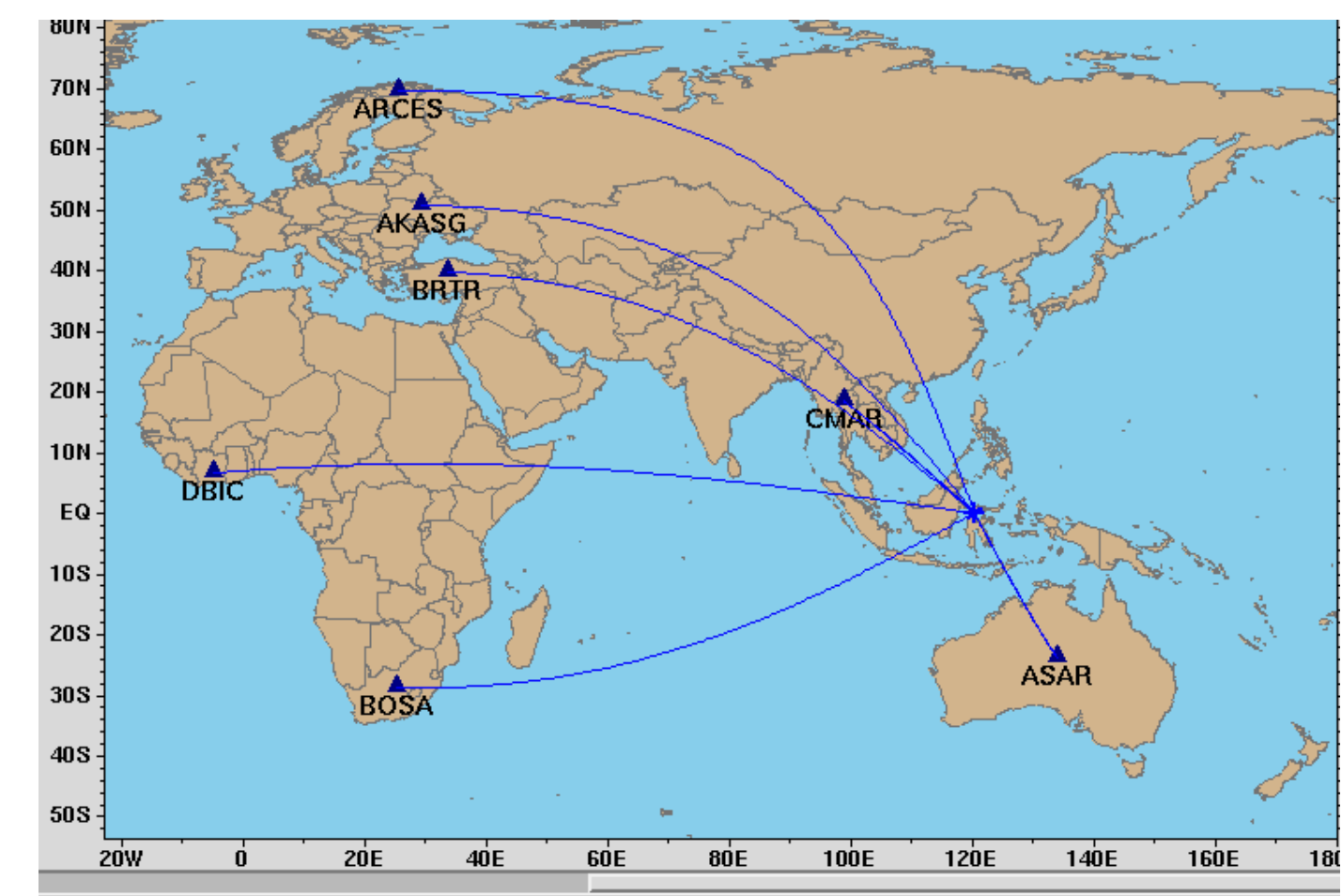
Infrasound is one of the tools used by the CTBTO to detect atomic explosions since April 2001, when the first station was commissioned. Station data is sent in near real time to Vienna, Austria. The raw and analyzed data are provided to all Member States. Infrasound is low-frequency sound with a range of less than 10 Hz. In 2013, for example, infrasound stations recorded the disintegration of a meteorite near the Earth. The infrasonic waves of the meteor that ruptured over the Ural Mountains in Russia were the largest ever recorded by the ILO's international monitoring system.



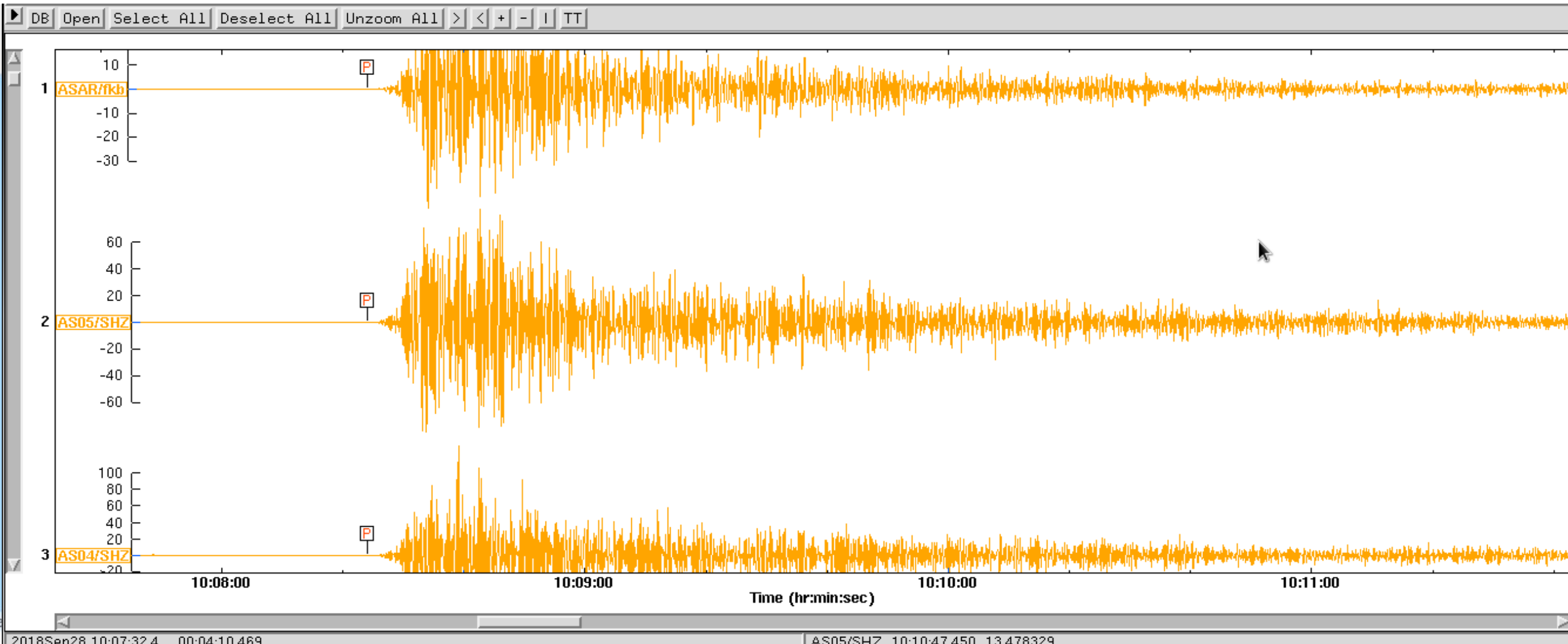
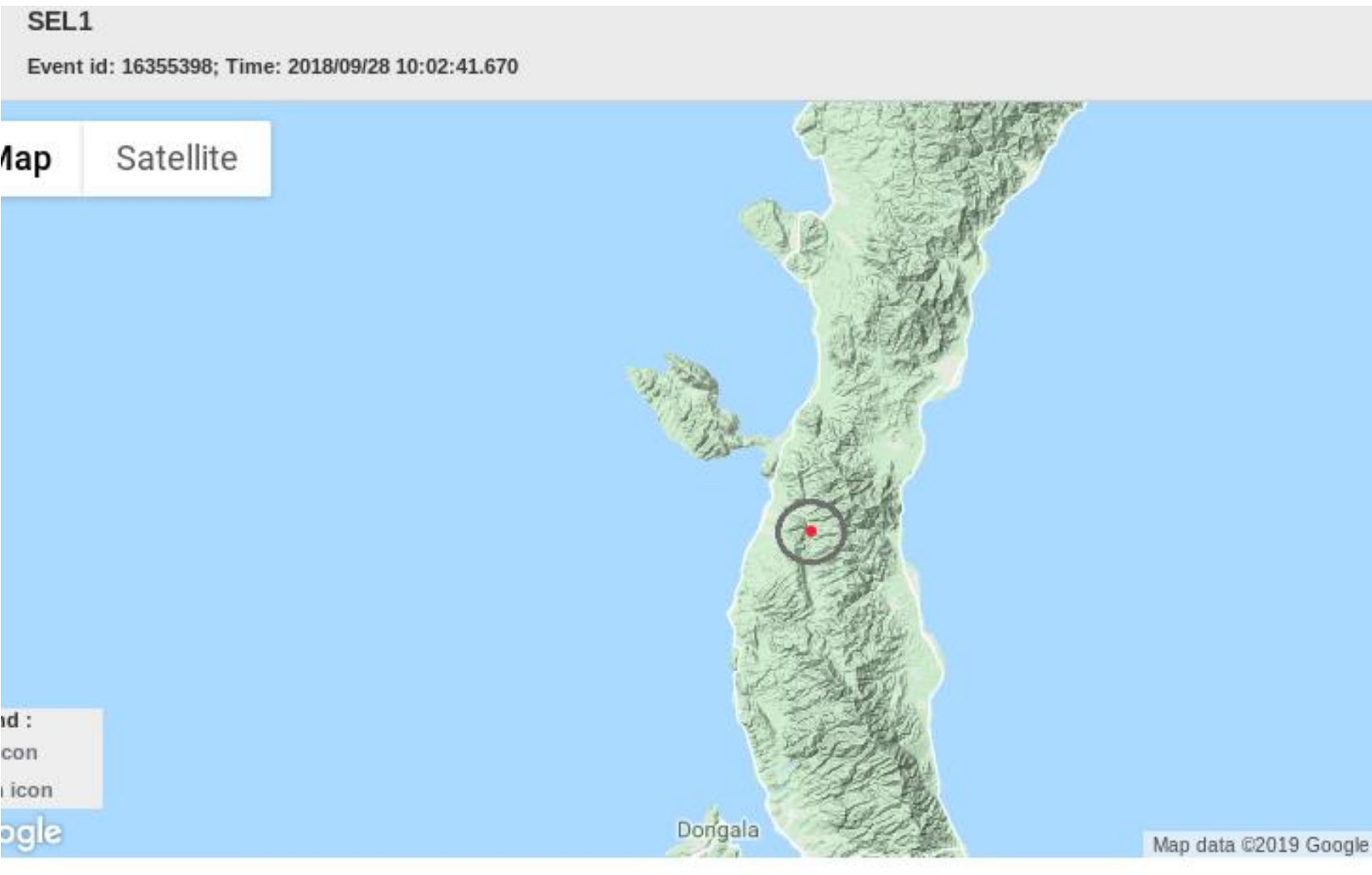
The blast was detected by 20 infrasound stations in the CTBTO's network, which tracks atomic blasts across the planet. The origin of the low frequency sound waves from the blast was estimated at 03:48 GMT on 15 February 2013

Sismic event

The Celebes earthquake of September 28, 2018 is a shallow earthquake that occurred in the Minahasa Peninsula Passage. The epicenter is located in Celebes, in the mountainous region northeast of Donggala, in central Sulawesi Province, Indonesia; the earthquake was felt south of Makassar, the capital of the island. The earthquake occurred at 10:02 am GMT, with a magnitude of 5.8, followed a few minutes later by a tsunami whose water waves reached a height of 1.5m.



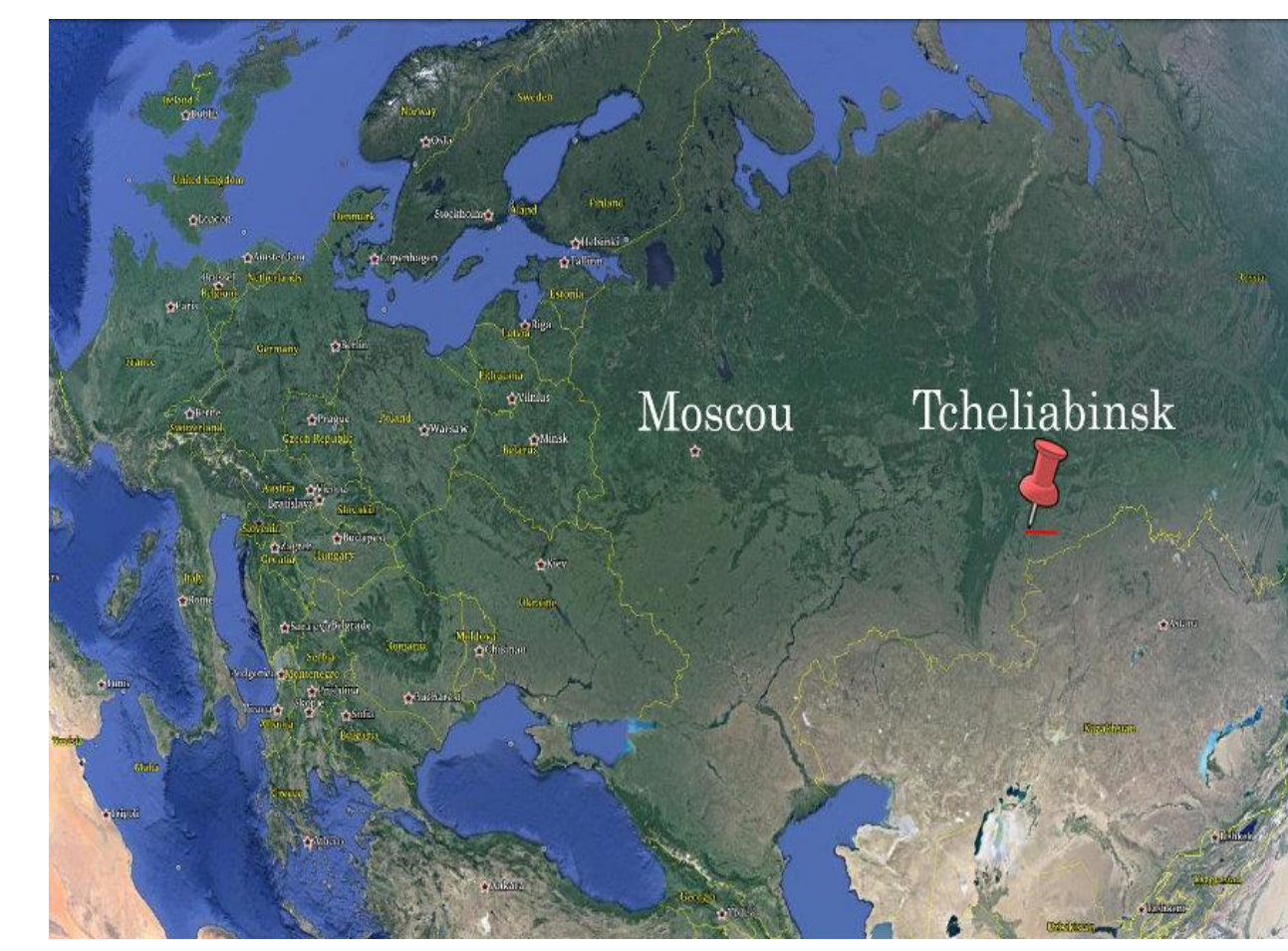
Localisation:
 Date: 2018/09/28
 Time: 10:02:45.64
 Long: 120.3592 degre
 Lat:0.0596 degre Est



Second part

Civil data interpretation and benefits

The city of Chelyabinsk (Urals - Russia), which has more than one million inhabitants, was shaken by a violent explosion of a meteorite of about 13 000T on February 15, 2013. For 30 seconds this space car crossed the atmosphere at a speed of about 19 km / s (68 400 km / h), it then ignited, burning up to a large extent and exploded violently in the form of an intense, blinding flash of lightning. a brightness more important than the Sun. He then disintegrated into several pieces that themselves exploded. The infrasound stations of CTBTO detected a sound inaudible by the man on February 15, 2013. the first sound elements reached the stations around 3H40mn GMT.



Station I31L, for example, detected the vibrations around 4H38 minutes, about 8 minutes after the meteorite entered the atmosphere. this is explained by the fact that the sound waves should travel a certain distance before coming in contact with the sound sensors, while the meteorite, it was moving at nearly 3 times the speed of sound. Among these infrasound sensors, the nearest to Chelyabinsk, the industrial city of the Urals hit hard by the disaster, is located in Alaska, 6,500 km away. Sixteen other stations reacted to the event

September 28 tsunami in Indonesia

The city of Palu on the island of Celebes, in central Indonesia, was hit by a tsunami, triggered after the earthquake on September 28, 2018. the nearest CTBTO site seismic station recorded the signal at 10H08mn. Ten minutes later, almost all the primary stations had data from the event. the first waves of water touched the island around 10h26mn.

Interpretation

In summary, given the magnitude of the earthquake recorded at 10:08, it was conceivable that a replica would occur because of the geographical location of the island. Admittedly, we could not predict the exact nature of the disaster, but we had 15 minutes of respite for a warning. In short, the reliability of CID data in the prediction of natural disasters is well established. Madagascar, for example, has signed an agreement with CTBTO as part of tsunami warnings

CONCLUSION

It is certain that in the very near future, the field of nuclear explosions will be relegated to the background because the world will be unanimous on the need to curb the nuclear weapons race, the consequences of which are more dangerous than the power they provide. This could lead to the entry into force of the treaty, so important for our world. Since then, the other component of the SSI (research, prevention of risks and natural disasters, etc.) will serve as appropriate, the humanity.

This component of using CTBTO SSI data is a real shield that protects the world by providing real-time judgment, as well as the risk zone of a potential disaster that could be announced

Disclaimer: The views expressed on this poster are those of the author and do not necessarily reflect the view of the CTBTO