With regard to another criticism, separate detection of multiple or simultaneous explosions is not a requirement of the CTBT verification system because a single explosion is enough to constitute a violation of the Treaty.

Satellite observation is not part of the CTBT international monitoring system's mandate, though satellite data may be introduced by any State Party to support a request for an on-site inspection. Neither is the detection of preparations. It was the US national satellite operation that reportedly failed, not the CTBT verification system. Nonetheless satellite observation, and in particular the increasing availability of commercial satellite data, has interesting features that could be of benefit for the CTBT verification regime. The CTBTO should be encouraged to develop expertise in this area.

While the Novaya Zemlya incident was arguably typical of anomalous events that might give rise to a challenge under the CTBT, the Indian and Pakistani explosions were not. The Treaty only applies to States Party, and neither India nor Pakistan have signed, let alone ratified, the CTBT. If they were States Party, they would agree to accept monitoring stations on their territories and to on-site inspections; measures which strongly extend the CTBT verification system's power of detection. Nonetheless, the Indian and Pakistani blasts produced seismic signals that are useful for assessing the CTBT seismic monitoring system.

The findings of this paper suggest that the CTBT verification system should be completed as quickly as possible. Further signatures and ratifications of the Treaty, especially of the United States and Russia, would help to maintain the momentum towards full implementation. The CTBT verification system would benefit technically (as well as politically) by the adherence of holdouts like India and Pakistan, making the monitoring networks more complete and globally effective, and moving towards subjecting all countries to the full legal force – including on-site inspections – of the Treaty.

As the review of the three events showed, there is a great deal of useful data and analysis outside the CTBT verification system, and such data will likely increase in importance. States Party and the CTBTO should be encouraged to develop ways of making optimal use of the information and analysis that will be available outside the formal CTBT verification system, while ensuring that the data used is of the required quality. States Party should promote, both at home and in the CTBTO, a policy of maximum dissemination and availability of data and analysis pertaining to the CTBT verification system, consistent with commitments made to the providers of the information with respect to confidentiality. Individual States Party should consider fostering a community of interested groups with a capability for analysis and interpretation of data pertaining to verification, for instance in universities, scientific institutions and private firms. The CTBTO should be encouraged to develop similar outreach programs.

Canada and other States Party have a strong interest in the technologies used for monitoring nuclear explosions, including satellite imagery, for security reasons but also because of their relevance to large-scale resource and environmental management. The continued development of the relevant technologies and skills should be fostered to support verification