ID: Type: **Oral**

The Application of Airborne Remote Sensing for OSI

The use of airborne remote sensing and the acquisition of multispectral imagery including infrared are permitted in an On-Site Inspection (OSI) under Paragraph 80 of Part 2 of the Protocol to the Treaty. This paper reports on the findings of field tests conducted by the Provisional Technical Secretariat (PTS) to ascertain the extent to which, and under which conditions, airborne imagery can detect features relevant to an OSI; such features differ in their origin, extent and longevity and may be related to anthropogenic activities conducted in preparation for an underground nuclear explosion (UNE) as well as features that are the direct and indirect consequences of an UNE. Field tests based on features engineered by the PTS to mimic potential OSI-relevant signatures revealed that airborne imagery acquired within an OSI-realistic timeframe can successfully differentiate types of vehicle tracks and their relative chronology as well as the relative chronology of ground disturbance. Additionally, subsurface heated water has been detected as well as a stress signature in vegetation related to the detonation of charges. Workflows and algorithms to rapidly and efficiently process imagery now need to be refined to maximize the value of airborne remote sensing for an OSI.

Primary author: ROWLANDS, Aled (CTBTO Preparatory Commission)

Presenter: ROWLANDS, Aled (CTBTO Preparatory Commission)

Track Classification: Theme 3: Advances in Sensors, Networks and Processing