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Potential Ways for Optimization of Multispectral including Infrared (MSIR) Imaging for On-Site Inspection (OSI)

According to the Protocol stipulated techniques for inspection activities provide multispectral including infrared (MSIR) imaging during an additional overflight (AO) to search for anomalies or artifacts as features of potential underground nuclear explosion (UNE). Modern MSIR systems may be used for OSI purposes with application of multispectral and infrared sensors. Since the Protocol has no definition of the “multispectral” term the Treaty and the Model Text for the draft OSI Operational Manual have no limitations for these sensors in regard to number and parameters of spectral regions. But MSIR equipment should be used solely for OSI purposes in full compliance with the Treaty and therefore practical application of specific spectral regions should be well-grounded. Based on the IFE-2014 the CTBTO Preparatory Commission developed the OSI Action Plan for 2016-2019 which includes Project 3.1 for examination of integrated airborne systems for MSIR, gamma spectroscopy and magnetic field mapping. One of the problem issues is optimization of all such equipment within a limited space of an aircraft . Therefore MSIR equipment optimization for OSI purposes is critical task. This paper examines potential ways for optimization of MSIR equipment with account of well-grounded selection of specific regions.

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