



Contribution ID: 111

Type: **Wedge Participant**

## **Analysis of Select Unmanned Aerial Systems Application for International Safeguards**

*Monday, 5 November 2018 16:15 (5 minutes)*

Unmanned aerial systems (UAS) are becoming increasingly prevalent and have experienced rapid growth due to advancements in navigation and control technology. This has resulted in cost reductions that have seen small, agile UASs emerge as a multi-billion-dollar commercial market. Novel UAS applications for industries and government agencies are created almost on a daily basis. Based on expert assessment, UASs could be used as a platform for the deployment of a variety of monitoring and inspection technologies for IAEA safeguards activities. This project focuses on analyzing the potential of applying UAS technology for safeguards use. This includes an investigation of the current state of readiness and commercial availability of UAS technology with associated detection and monitoring systems mounted on board, potential implications of the introduction of UAS technology on safeguards operational effectiveness and efficiency, and the impact on operations of nuclear facilities. Four applications were selected for in-depth analysis based on the investigators' consideration of these characteristics, a previous prioritization survey given to safeguards experts, and optimal technical and safeguards application variety. The four applications were collection of detailed site information (site evaluation), survey of mining and concentration activities, verification of container inventory (nuclear material accountancy), and tag/seal verification (containment and surveillance).

### **Which "Key Question" does your Abstract address?**

TEC5.1

### **Topics**

TEC5

### **Which alternative "Key Question" does your Abstract address? (if any)**

**Primary author:** Dr SOLODOV, Alexander (Sandia National Laboratories)

**Co-author:** Mr HOROWITZ, Steven (Sandia National Laboratories)

**Presenter:** Mr HOROWITZ, Steven (Sandia National Laboratories)

**Session Classification:** [TEC] Recent Examples of Innovation in Safeguards

**Track Classification:** Leveraging technological advancements for safeguards applications (TEC)