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

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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)

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