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## Additional Protocol Verification Using the Collaborative Analysis Platform

Member States with an Additional Protocol (AP) agreement in force with the International Atomic Energy Agency (IAEA) must annually submit declarations detailing relevant nuclear fuel cycle (NFC) activity pursuant to Article 2. The IAEA Department of Safeguards is charged with comparing each Member State's declarations with all available information in order to verify their correctness and completeness. The early detection of undeclared nuclear materials and activities becomes more critical as advances in material science and manufacturing techniques continually erode many of the technological barriers that may have historically thwarted proliferation efforts. The central challenge in detecting undeclared material and activities is the volume, velocity, and variety of the data sets within which the indications are buried. This information includes both the full history of State declarations under the Comprehensive Safeguards Agreement and Additional Protocol, as well as the exponentially increasing volumes of information available from structured (publications, patents, etc.) and unstructured information. In this paper we present a scalable approach to using the Collaborative Analysis Platform to produce a structured representation of a State's NFC activity from over a billion records from disparate sources, allowing Safeguards to analyse this activity together with AP declarations to identify and confirm the presence or absence of any inconsistencies.

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

TEC3.3

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

TEC3.4

### Topics

TEC3

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