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DEFINING AN AI-ENABLED SMART DIGITAL ASSISTANT FOR INTERNATIONAL NUCLEAR SAFEGUARDS INSPECTORS

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International nuclear safeguards inspectors are required to perform complex activities in harsh environments with limited time. Safeguards inspectors are responsible for reviewing and comparing reports, physically installing and maintaining equipment, operating numerous instruments including non-destructive assay, taking samples, applying/verifying seals, confirming facility design and operation, and reviewing surveillance images at nuclear facilities around the world, all while observing their environment for potential anomalies. These activities can be mentally and physically challenging or prone to error. Artificial intelligence (AI) and its underlying algorithms are increasingly active in our daily lives – from cars with automated driver-assistance, to online vendors suggesting future purchases, to voice-assisted smart home controls. Implementing AI-based personal digital assistants to support international safeguards inspectors in the field could decrease the cognitive and physical burden on safeguards inspectors and nuclear facility operators and mitigate human error. In this paper we will describe requirements for an international nuclear safeguards smart-assistant, and current technical capabilities that could be implemented in the near-term to develop a prototype digital safeguards assistant.

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