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## Next Generation Surveillance System (NGSS): Field implementation & associated developments

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The NGSS is the product of more than five years of development between the IAEA, other Inspectorates, Member State Support Programmes, and commercial vendors. The product of these efforts has now matured into the field implementation stage. This paper details the goals, achievements and challenges experienced during the implementation phase and associated developments of the project.

NGSS procurement was subject to the IAEA's stringent procurement policies involving independent third party assessments to assure supplier reliability and competitive pricing controls. More than 1200 surveillance cameras currently installed in facilities worldwide will be replaced by NGSS within the next 4 to 5 years. Joint use procedures have been established taking advantage of the technical capabilities integrated within the design of the NGSS which allow for multiple inspectorates and States to securely and independently share and review data.

Utilization of outdated facility infrastructure poses many challenges to implementation efforts; these were met with innovative technical solutions to take advantage of cost-benefits allowed in its re-utilization. New partnerships were established with Member States, regulatory bodies and nuclear power plant operators for new nuclear facilities under construction, to address infrastructural requirements spanning the next half century.

The utilization of the IAEA's well-established PKI infrastructure enhances data security features and usability with regard to data sharing, key management and joint use of the NGSS system data. Embedded inventory reporting capability aids electronic inventory verification of safeguards equipment, simplifying accountability, configuration control and troubleshooting of installed systems.

Current developments ongoing within the project include the design of hardware and software components for use of the system in special applications (e.g. underwater and outdoor installations, mechanism to authenticate external sensors). The lessons learned within the project can contribute a great deal to future developments and continued implementation efforts.

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International Atomic Energy Agency

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