The role of the nuclear industry in advancing nuclear security instrumentation

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Nuclear Safeguards and Security
Introduction

- Developments of nuclear security instrumentation for IAEA
  - Support technological and policy-related advances
  - Collaboration Private sector / IAEA / R&D institutions
  - Developments and services over the lifecycle
- How the private sector can support the current and future enhancement of nuclear security

- Two examples of technological developments
- Mechanisms and considerations by the private sector
- Recommendations for stimulating the cooperation between IAEA-NSS and the private sector
Example 1: Developments for IAEA

Long-term developments of a surveillance system

- **Off-the-shelf systems** ➔ **Specific developments**
  - Obsolescence
  - Specific features

- **Safeguards systems** ➔ **Security applications**
  - Similar functionalities + Real-time capabilities

- **Phases mechanisms:**
  - Initiation of the program
  - Developments and challenges
  - Support and maintenance

Images: Film, MIVS, DCM-14, CVS, NGSS
Example 2: Developments for Government Agencies

Development of the Advanced Spectroscopic Portal (ASP)

- Program funded by US DHS
  - Reducing nuisance alarms at ports and borders
  - Phase 1: technologies evaluation
  - Phase 2: developments funding and acquisition of systems

- Commercial deployment by Belgian Customs
  - Germanium Spectroscopy Portal (GSP)
  - Secondary screening at the Port of Antwerp

Specific developments to address limitations of existing systems
Significant contribution to technological advances
Comparisons and lessons learnt

- Safeguards and Security, two different environments...

<table>
<thead>
<tr>
<th></th>
<th>Safeguards</th>
<th>Security</th>
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<tbody>
<tr>
<td>Size</td>
<td>Niche market</td>
<td>Large with a broad range of users</td>
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<tr>
<td>Competition</td>
<td>Few trusted partners</td>
<td>Many industrial suppliers</td>
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<tr>
<td>Maturity</td>
<td>Mature</td>
<td>Dynamic and less mature</td>
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...but a converging approach

- Shared technologies (surveillance, SNM...)
- Synergistic Safeguards/Safety/Security concept
- Programmatic developments
Strengthening the role of IAEA-NSS

- A unique positioning prompting a more active role in developing new systems
- Increasing its influence by identifying and recognizing the interests of its partners
- Creating a virtuous cycle