

R&D Priorities for the Department of Safeguards

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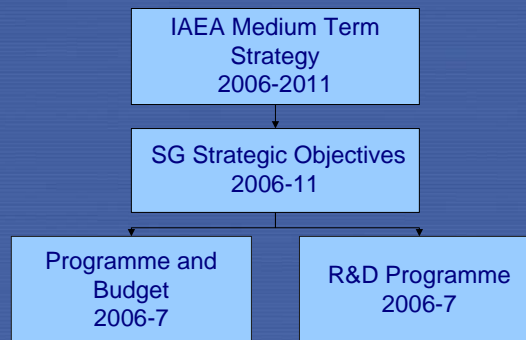
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- Japan Safeguards Support Programme contributions



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IAEA Planning Documents



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IAEA Medium Term Strategy 2006-11

Objective C.1:

- **Provide credible assurances to the international community that States are honouring their safeguards obligations**

includes the following actions:

- Monitor and address observed deficiencies or vulnerabilities in safeguards approaches, equipment and technology and acquire new and/or improved equipment/technology where appropriate.
- Develop and/or use new concepts, approaches, techniques and technology for information analysis and verification activities, especially with regard to enhanced ability to detect undeclared nuclear material and activities.



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Department of Safeguards Strategic Objectives 2006-2011

Key priorities identified

- Develop, implement and revise, as appropriate, safeguards approaches for new safeguards challenges (e.g. integrated safeguards), facility types and operating conditions.
- Optimize safeguards equipment and technology development with the view of further improving present detection capability, increasing reliability of equipment while ensuring the security of information transmission from the field and improving sustainability and timeliness.
- Pursue R&D activities in the development of novel technologies for detection of undeclared activities using inter alia Member States Support Programme mechanisms as well as internal resources and expertise.



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Department of Safeguards Strategic Objectives 2006-2011

Key priorities (cont)

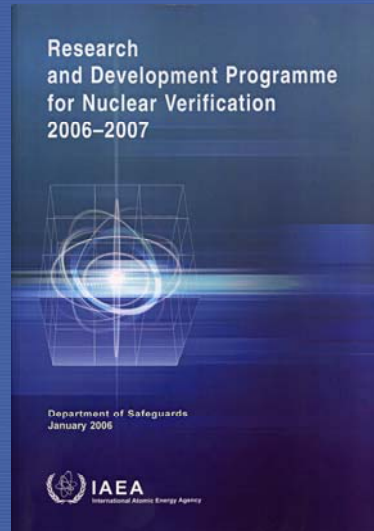
- Enhance capabilities in the area of environmental sampling (by expanding the capacity and capability of the network of analytical laboratories as part of the NWAL)
- Increase and intensify efforts related to the collection, analysis and evaluation of all available information on States' nuclear programmes.
- Maintain an efficient safeguards information infrastructure.
- Enhance the Agency's present satellite imagery acquisition and analysis capabilities to support for the verification work of the Agency.



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The R&D Programme

- The Department implements the work through its R&D Programme
- Published biennially
- Currently 2006/7
- Describes 22 projects
- Our “shopping list” for Member States



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Highlight – Novel Technologies

- In 2005 the Department searched for new technologies that will identify nuclear fuel cycle process signatures
- 60 proposals identified, 5 proposals being developed further
- LIBS, noble gas analysis, Lidar, OSL, Semiconductor sensors for UF_6
- Further suggestions are required and resources needed for assessment and development



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Highlight – Environmental sampling analysis

- NWAL remains essential to the Agency's efforts
- SIMS analysis is required from Japan
- Global FT TIMS capability should be expanded
- Support is required for the development of new methods eg: increased sensitivity for particle location and improved relocation techniques



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Highlight – Information analysis

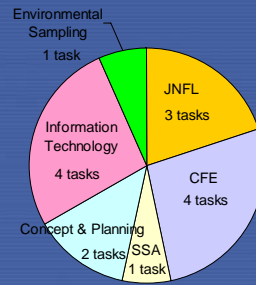
- Information is at the heart of modern verification
"Information-driven Safeguards"
- SIR conclusions based on the evaluation of all information available to the Agency
- However limited information can be evaluated
- New technologies offer the only solution for the collection and analysis of large volumes of information
- These technologies must quickly and automatically collect, extract, increase the signal to noise ratio of information and present the results to the analyst in a readily digestible and convenient manner
- Liaison with organizations who might be able to help us regarding information analysis is required



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Current Jaspas Contributions

- 11 MSSP tasks, significant contribution to Safeguards at RRP, 4 CFEs



Future Jaspas Contributions

- Increased use of Japanese expertise in equipment development
- Identification of new technologies
- Increased support for environmental sampling analysis