Priorities for Strengthening International Safeguards

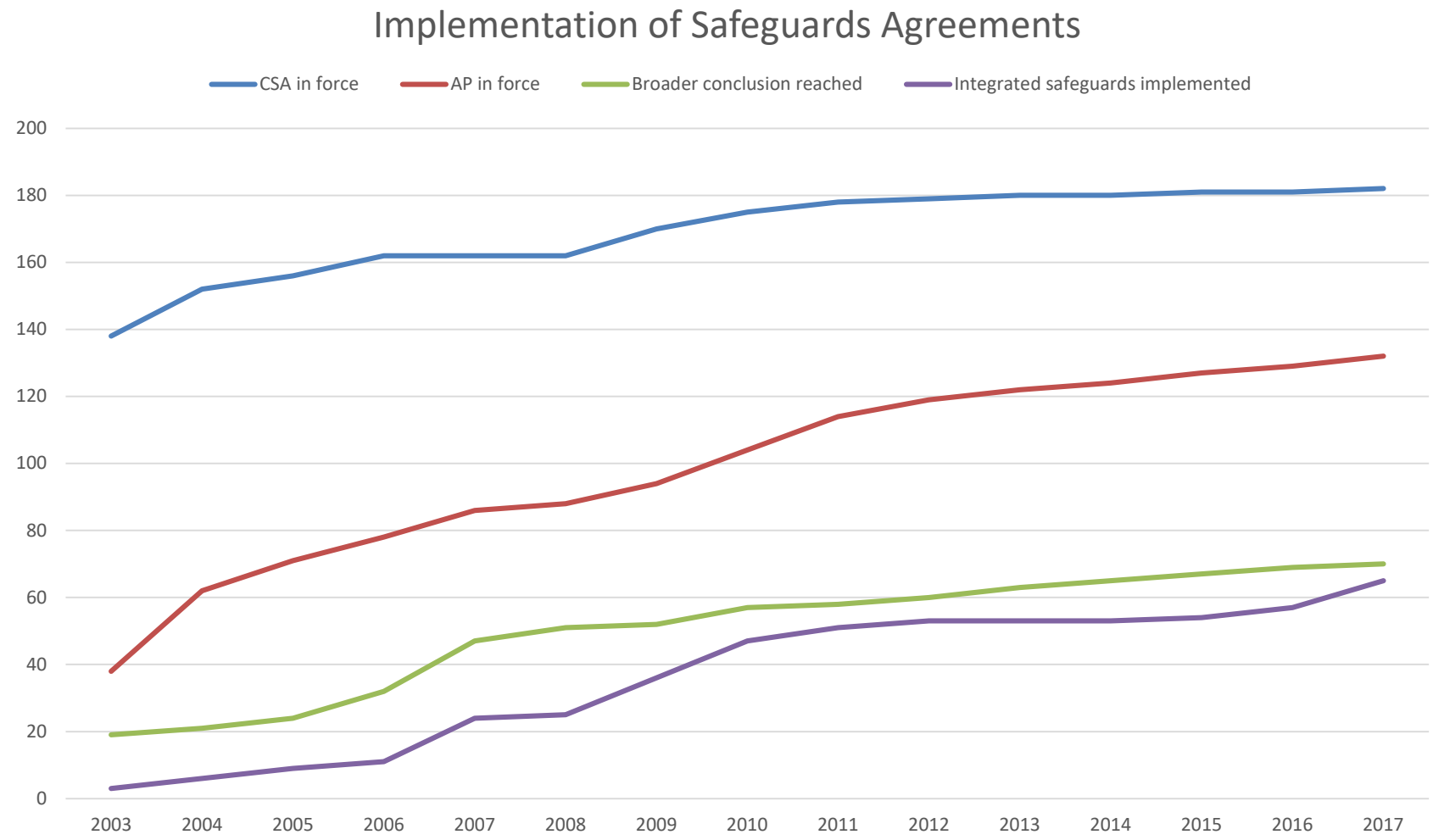
JAEA International Forum on the Peaceful Use of Nuclear Energy and Nuclear Non-Proliferation

December 13, 2018

Outline

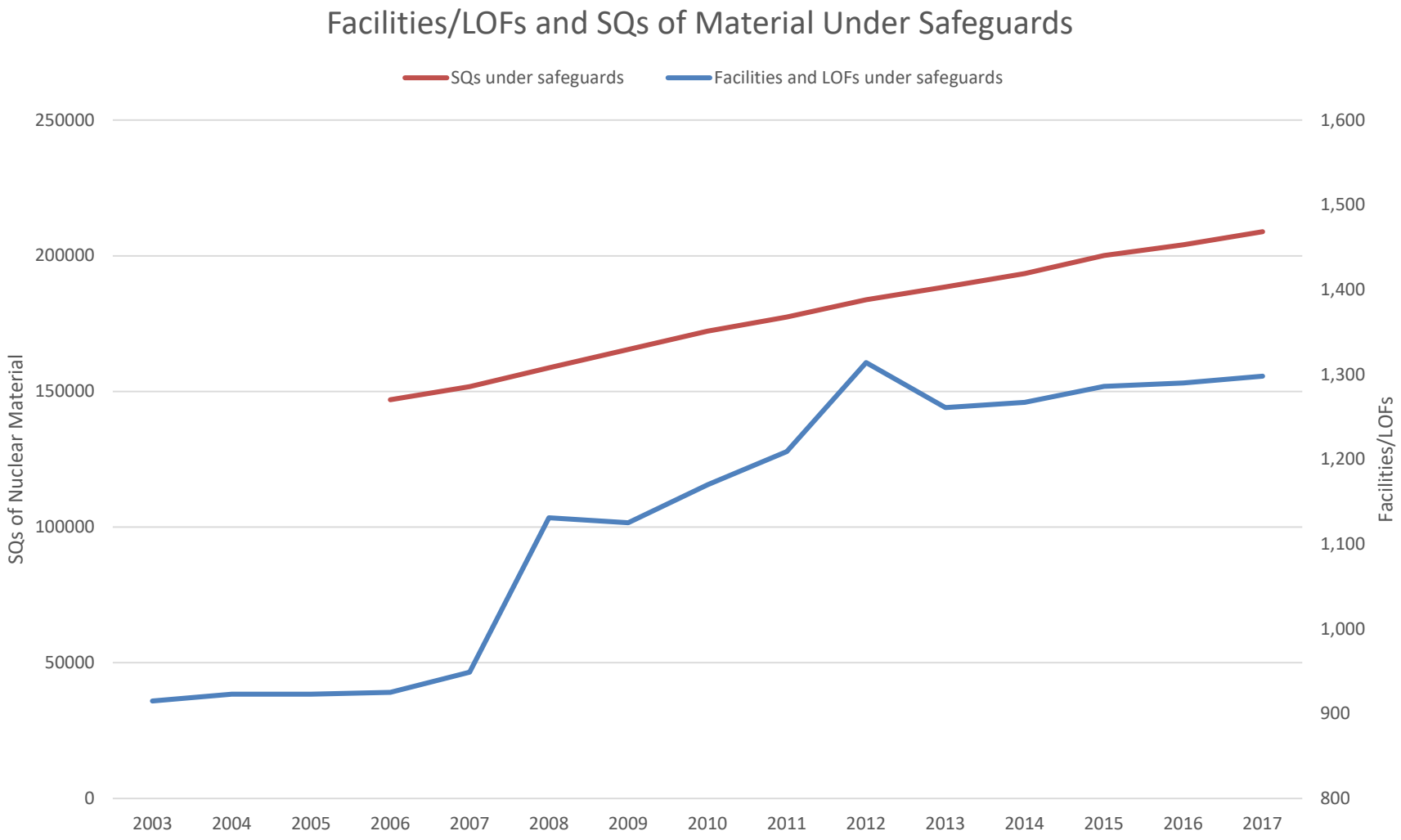
- Trends in International Safeguards: 2003-Present
- Safeguards authorities
- Safeguards implementation
- Emerging technologies
- Human capital development

IAEA Safeguards: 2003-2017



Compiled from IAEA Annual Reports, 2003-2017, available at https://www.iaea.org/publications/reports

IAEA Safeguards: 2003-2017



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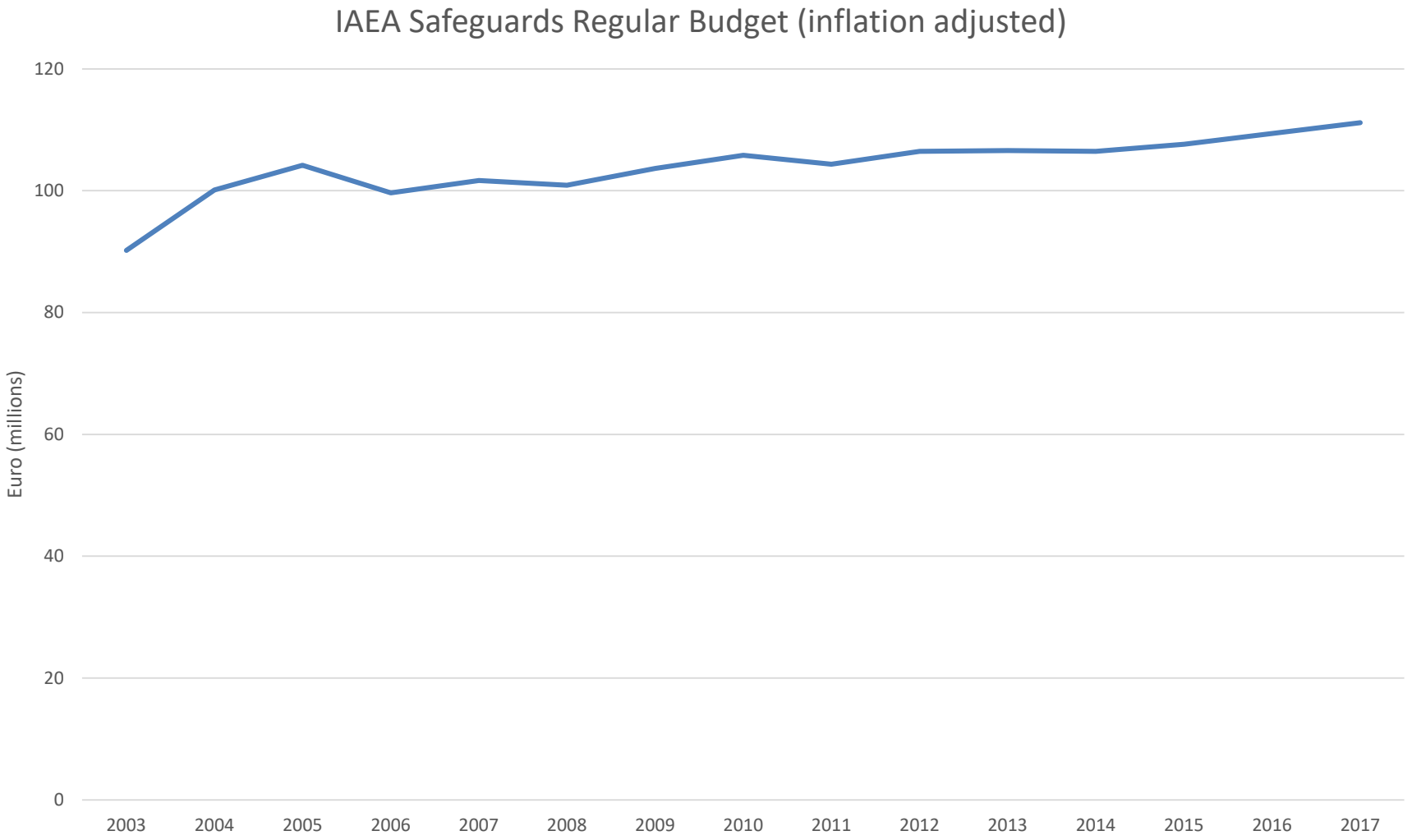
IAEA Safeguards: 2003-2017



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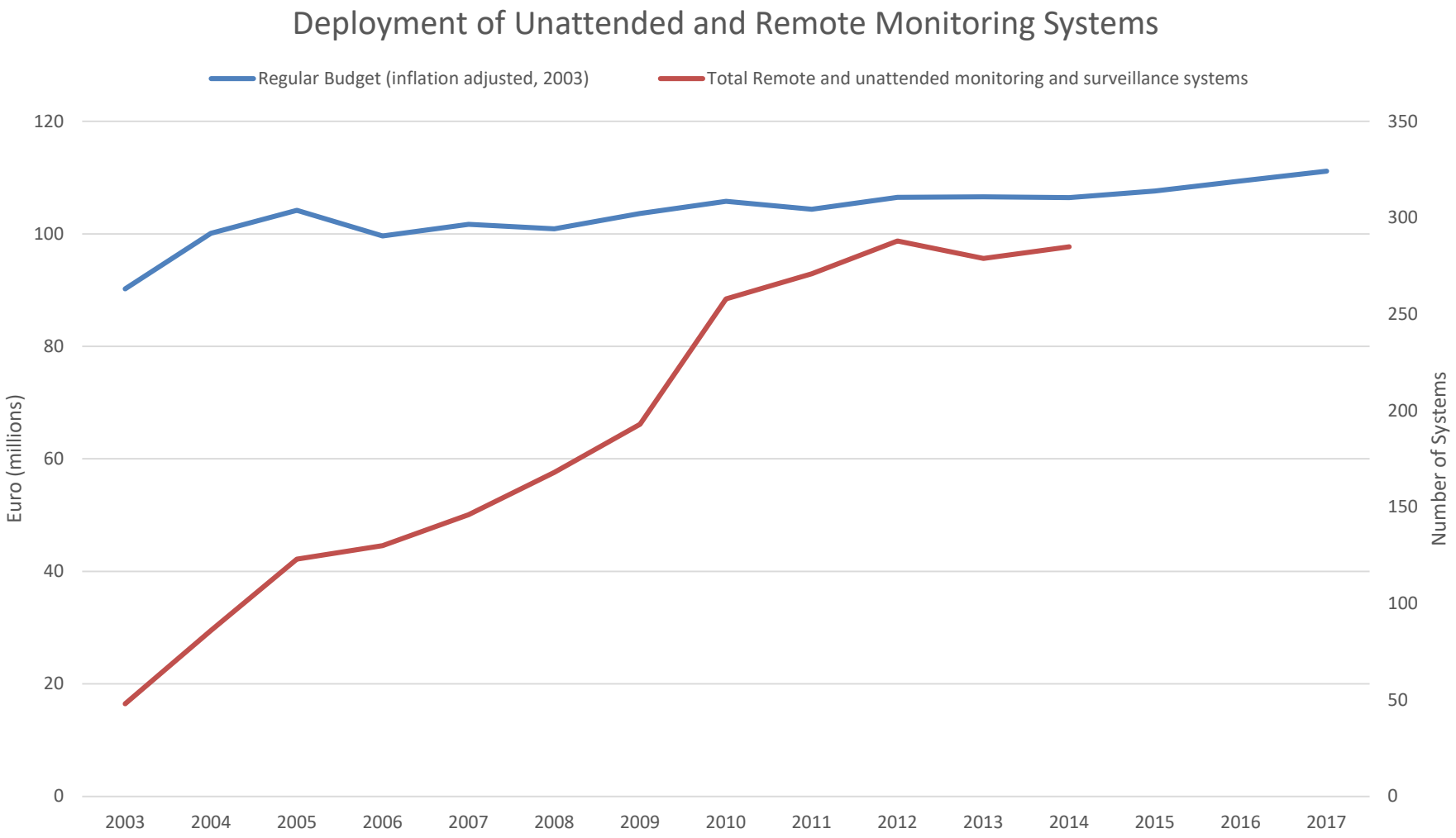
IAEA Safeguards: 2003-2017



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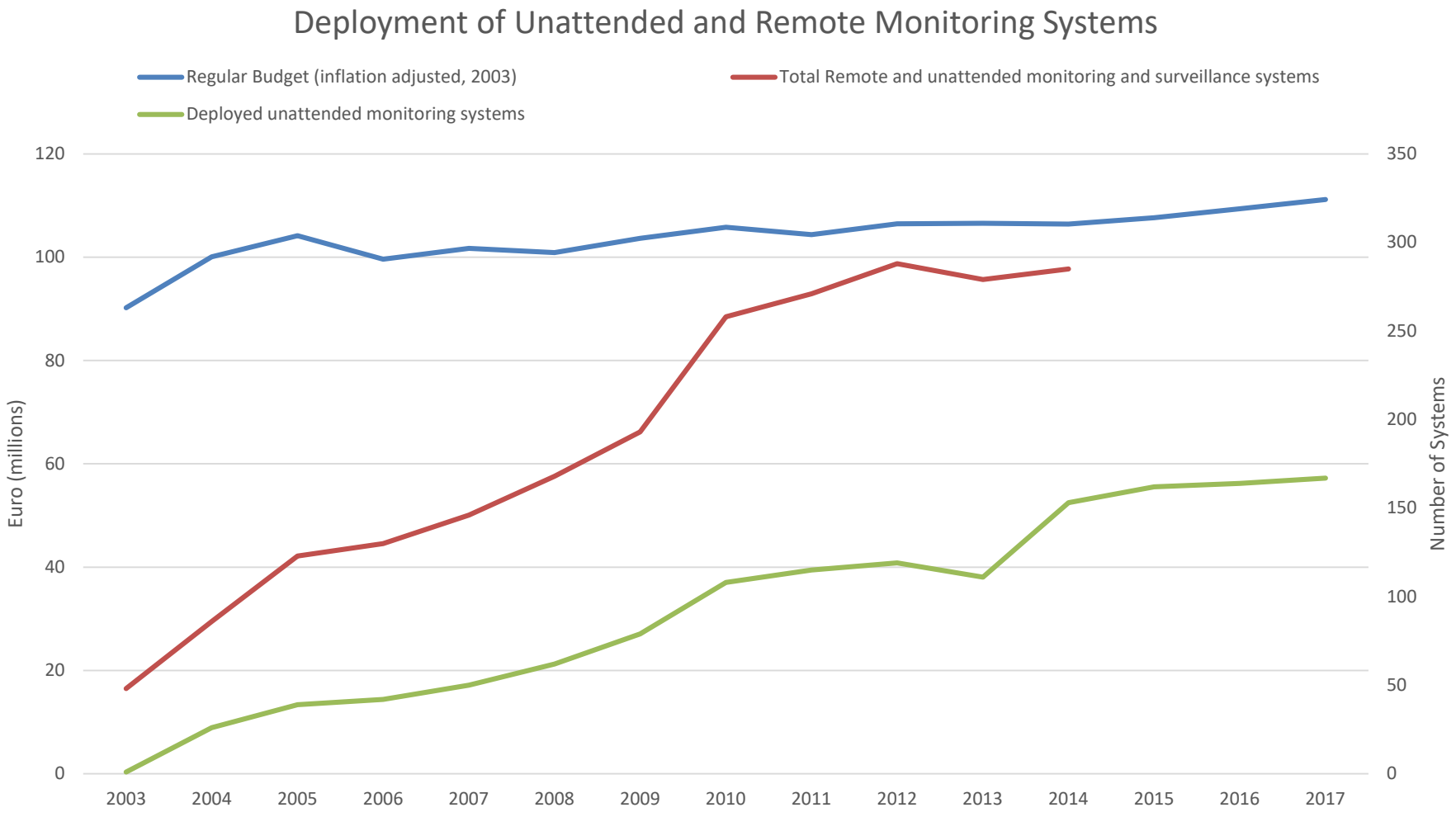
IAEA Safeguards: 2003-2017



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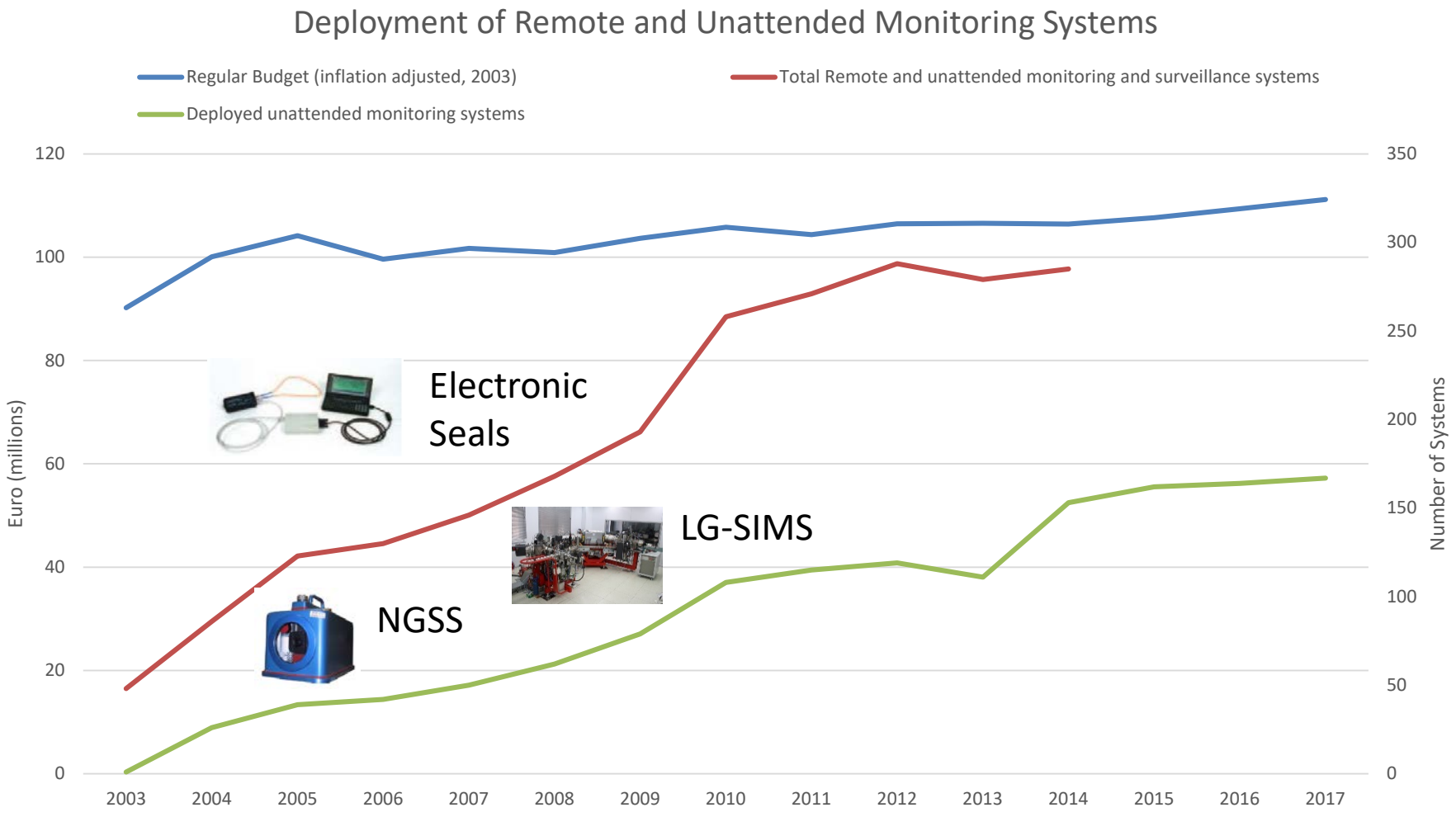
IAEA Safeguards: 2003-2017



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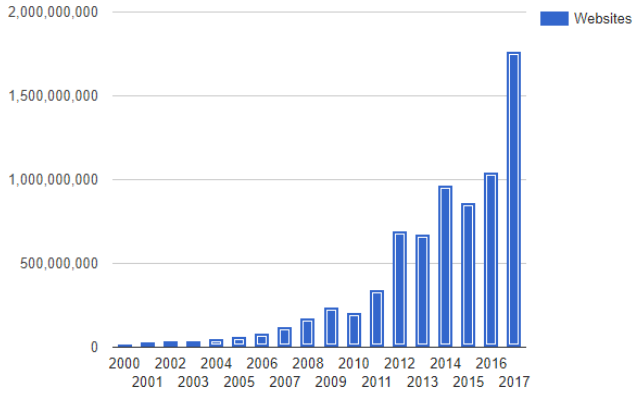
Information Revolution

Volume

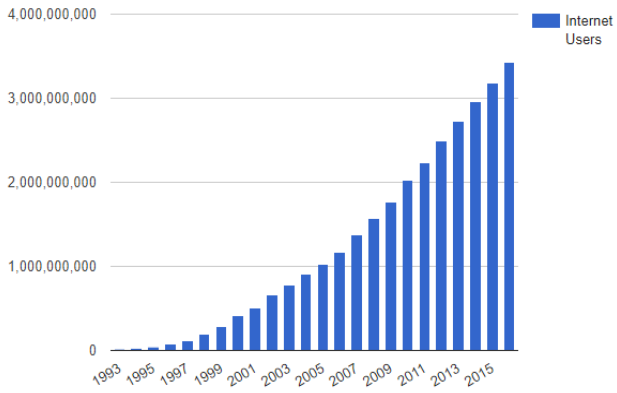
Number of Websites: 2000-2017



Source: http://www.internetlivestats.com

Availability

Global Internet Users:



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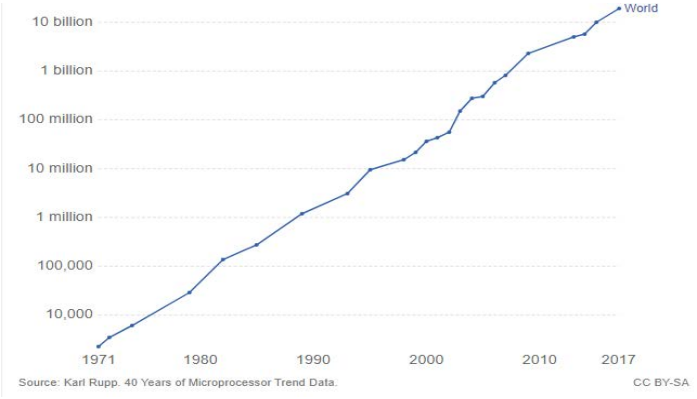
Velocity

Transistors per Computer Processor



2017 IAEA SIR

- Over 1 million material accounting reports
- Over 2,200 AP declarations
- Over 140 million open source items collected
- 556 commercial satellite images acquired
- 932 unattended safeguards data streams
- Completion of MOSAIC project

Where are we today?

- Future of nuclear power uncertain
  - Greatest interest among states with less experience
  - New types of nuclear facilities (e.g. SMRs, geological repositories)
  - Safeguards burden associated with facility decommissioning
- Resource-intensive monitoring and verification missions (including potential return to DPRK)
- Availability of / Access to sensitive information and technology
- Turnover among safeguards workforce
- State System of Accounting and Control (SSAC) shortfalls

Safeguards Authorities

- Comprehensive Safeguards Agreement (CSA) and the Additional Protocol (AP) as the *de facto* standard for safeguards and verification
- Full use of IAEA authority to pursue all safeguards-relevant information related to potential undeclared nuclear materials and activities

Safeguards Implementation

- Development and adoption of State Level Approaches (SLAs)
- Focus on acquisition pathway analysis (APA) and development of technical objectives

Safeguards Tools / Technologies

- Revisit feasibility of Wide Area Environmental Sampling (WAES)
- Particle age-dating
- Statistical methodologies for evaluating safeguards data
- Applications for information collection, synthesis, and analysis
- Asset management and life-cycle planning

Safeguards Expertise

- Outreach to post-docs and mid-career professionals through fellowships and short-term, substantive opportunities in the safeguards field
- Improve SSAC capacity (INSEP program)
- Development of online resources for aspiring safeguards / nonproliferation professionals
- Training courses

Questions?