



Verification of a Fissile Material Cut-off Treaty (FMCT): The Potential Role of the IAEA

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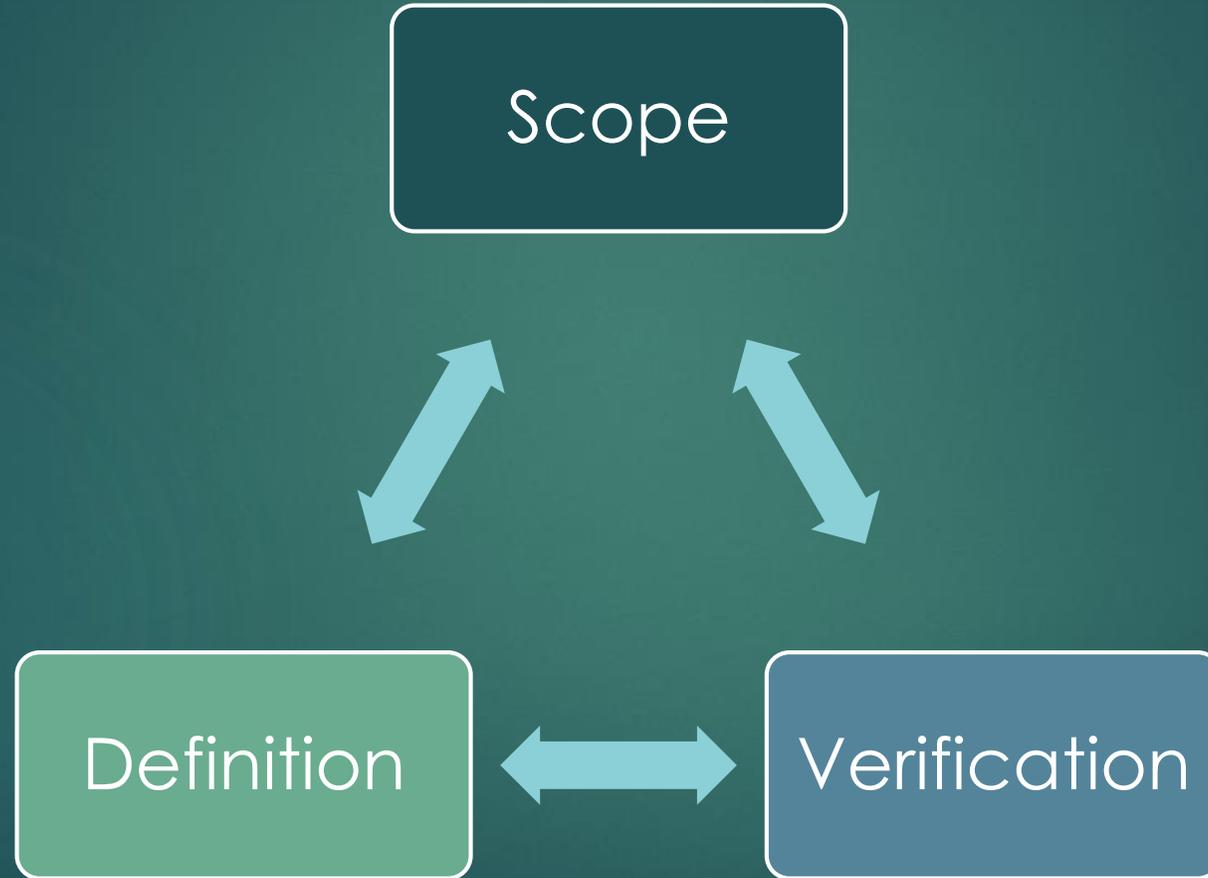
Outline

- ▶ FMCT overview
- ▶ Verification
- ▶ Role of the IAEA
- ▶ Challenges
- ▶ Case study

Backgrounds

- ▶ A treaty banning the production of fissile material for nuclear weapons or other explosive devices
- ▶ Conference on Disarmament
 - Shanon Mandate (CD/1299) in 1995
- ▶ UN General Assembly (R67/53) in 2012
 - Group of Governmental Experts (GGE)
 - ✓ Four two-week sessions in 2014 and 2015 (Final report)

Treaty aspects



Issues

▶ Definition

- Unirradiated Direct Use Material
 - ✓ Plutonium (less than 80% Pu-238), HEU (20% or more of U-235 / U-233)
- Weapons grade material
 - ✓ Plutonium (more than 95% Pu-239), HEU (90% or more of U-235 / U-233)

▶ Existing stockpile (NWSs vs. NNWSs)

▶ Sensitive information, Non-proscribed activities

Verification

- ▶ A process of **gathering and analyzing information** to make a judgement about parties' **compliance with an agreement** aimed at **building confidence** between the parties and assuring that the agreement is being implemented effectively and fairly

- ▶ Verification approaches

	focused approach	comprehensive approach
Scope	enrichment and reprocessing facilities	focused approach + power reactors and spent fuel
Benefits	simplicity and resource efficiency	treaty requirements
Drawbacks	confidence of coverage	complex and costly verification

- ▶ No additional obligations for NNWSs with CSA and AP in force
- ▶ Unnecessary duplication of existing international verification activities (**verification toolbox**)
 - e.g.) **system of nuclear material accountancy and control**: correctness and completeness of state declarations

Role of the IAEA

- ▶ Multilateral verification
 - Technically and politically demanding
 - Trust building among broader participants
- ▶ Verification for a FMCT
 - Avoiding duplication of existing verification methods, tools, and techniques (**cost-effective**)
- ▶ IAEA verification: 181 NNWSs and 5 NWSs with VoAs
- ▶ IAEA Department of Safeguards – Long-Term Research and Development Plan (2012-2023)
 - *‘...contribute to nuclear arms control and disarmament by responding to requests for verification and other technical assistance’*



“

The Agency must remain ready to assist, in accordance with its Statute, with verification tasks under nuclear disarmament [...] that it may be requested to carry out

”

2014 GENERAL CONFERENCE OF THE IAEA

Challenges

- ▶ Sensitive information
 - National security, non-proliferation, commercial proprietary
- ▶ Verification of non-proscribed military activities (e.g. naval propulsion)
- ▶ Insufficient information related to military nuclear program
 - Information gap
- ▶ Disjunction of understanding on verification obligations
 - Different verification culture between NWSs and NNWSs

Case study

▶ Trilateral Initiative (1996-2002)

- A joint project of the U.S., Russia, and the IAEA
- Examining the feasibility of IAEA verification that weapon-origin fissile material declared by the states remained removed from their nuclear weapon programs
 - ✓ Comparison of isotopic composition
- Fundamental conditions
 - ✓ No proliferation of sensitive information
 - ✓ Credible verification
- 2010 NPT Review Conference
 - ✓ *“NWSs to put fissile materials that are no longer required for military purposes under the IAEA verification”*

Conclusion

- ▶ IAEA can play a leading role in FMCT verifications as a form of multilateral verification
- ▶ Challenges
 - Sensitive information, non-proliferation, lack of experience, different attitude, etc.
- ▶ Capacity building
 - Development of effective and efficient technical means
 - ✓ IAEA Member State Support Programmes