

The Nuclear Weapons Convention

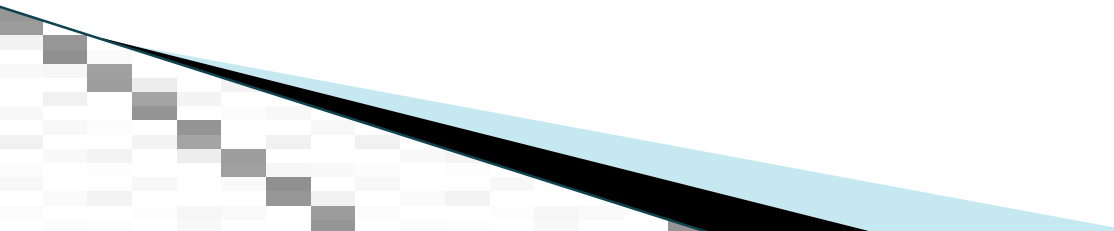
Verification and Compliance Aspects

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Outline

1. Goals of verification and compliance
 2. How much is enough?
 3. Verification tasks and methods
 4. Verification tools
 5. Institutional possibilities
 6. The 'break-out' problem
 7. Next steps
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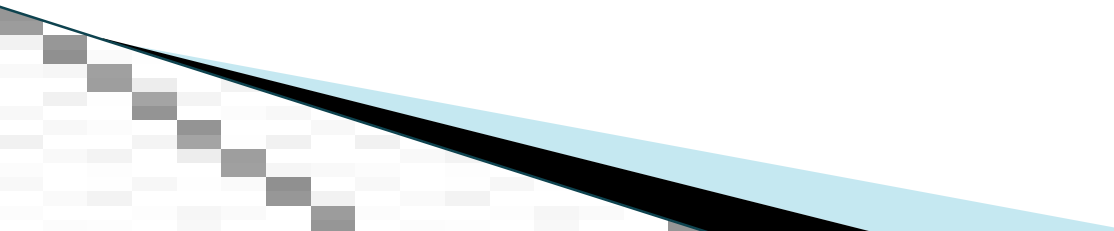
Goals of verification and compliance arrangements

- ▶ timely detection of non-compliance
 - ▶ early and effective response to non-compliance
 - ▶ in order to deter non-compliance and sustain confidence
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How much verification is enough?

- ▶ 100% verification is impossible technically, politically and financially
- ▶ instead verification needs to reduce the risk of non-compliance to a minimum by:
 - providing a high probability of timely detection
 - raising the cost of attempting to cheat
 - creating uncertainty in the minds of the potential violator

How much verification for a nuclear weapon-free world?

- ▶ unprecedented transparency: in order to build confidence
 - ▶ unprecedented intrusiveness of monitoring and inspection: due to the international security implications of 'breakout'
 - ▶ a more dependable compliance system than currently exists via the UN Security Council
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Verification tasks and methods - the (relatively) easy part

- ▶ Dismantlement and destruction of declared nuclear weapons, facilities and delivery systems

Build on START/INF measures

Additional research needed on warhead dismantlement

- ▶ Verification of non-diversion of declared fissionable materials/facilities to new weapons production

Improved IAEA safeguards, especially for timely detection at dual-use facilities (enrichment/reprocessing)

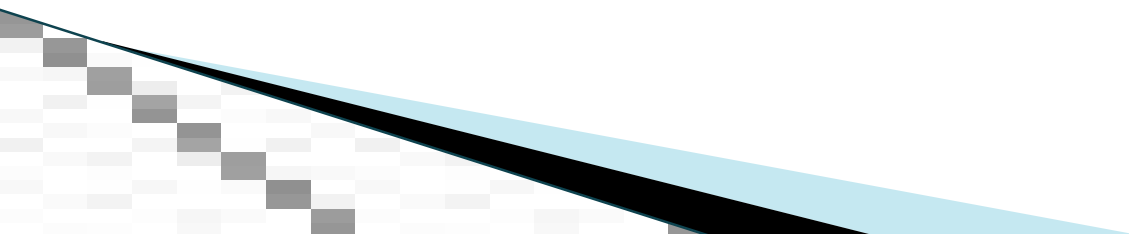
Verification tasks and methods- the hard part

- ▶ Verification that no undeclared weapons or facilities remain

Intrusive challenge inspections and new technical means of detection needed

- ▶ Timely detection of resumed or new research, development or manufacture of nuclear weapons

Intrusive routine and challenge inspections and constant monitoring



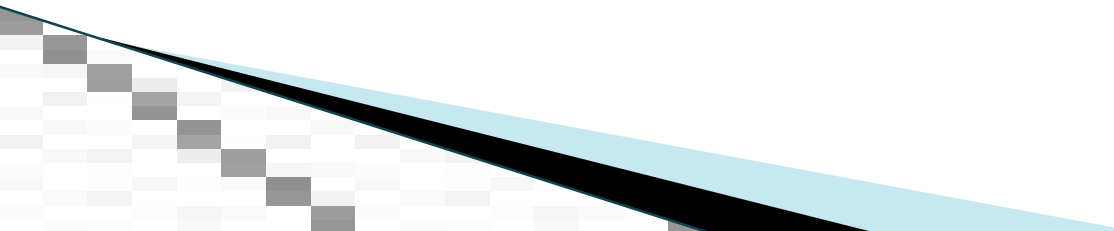
Verification tools

- ▶ transparency and confidence-building measures: declarations; self-reporting; nuclear accountancy/ archaeology/forensics
- ▶ remote monitoring: satellites and aircraft (Open Skies); atmospheric; seismic; environmental
- ▶ unattended on-site, portal or area monitoring; cameras; detectors
- ▶ on-site inspections: permanent, routine, unannounced, challenge
- ▶ National Implementation Measures

Institutions

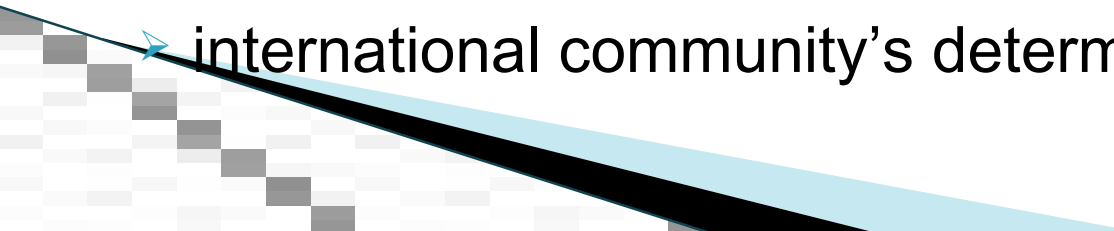
- ▶ Agency for the Prohibition of Nuclear Weapons (successor to the IAEA?)
 - universal membership
 - Executive Council to handle non-compliance cases
 - Secretariat and inspectorate, analytical specialists, weapons experts
 - global verification, monitoring and communication systems
- ▶ Reformed United Nations Security Council or separate NWC Compliance Commission?
 - more representative membership
 - no veto

Arrangements outside the NWC


- ▶ ‘National Technical Means’ (HUMINT, SIGINT, ELINT)
 - ▶ verification/compliance arrangements between former weapon states (US/Russia/China; India/Pakistan; the 2 Koreas; Israel and its neighbours)
 - ▶ regional approaches: enhanced Nuclear Weapon-Free Zones
 - ▶ civil society monitoring (equivalent to Landmine Monitor)
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The 'break-out' problem

Impact would depend on circumstances:

- warning in time to take action
 - whether the violator uses or threatens use and for what purpose
 - readiness and deliverability of the weapon(s)
 - existence of missile defences
 - virtual nuclear deterrence
 - conventional military strength of the violator vs. the rest of the international community
 - international community's determination to respond
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Attenuating the 'breakout' problem

- ▶ ban reprocessing of plutonium
 - ▶ ban use of HEU for any purpose
 - ▶ multilateralize uranium enrichment (and even mining and processing?)
 - ▶ intrusive on-site inspections or perimeter inspections long before final destruction of weapons to deter hiding of existing weapons
 - ▶ an aggressive lessons-learned process as nuclear disarmament proceeds
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What is there to do now?

- ▶ nuclear transparency
 - ▶ confidence-building measures between nuclear weapon states, including joint studies
 - ▶ drawing lessons from existing global verification regimes (nuclear nonproliferation, nuclear testing, chemical weapons)
 - ▶ fleshing out Model NWC, including adding Verification Annex
 - ▶ verification research and development
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