

*Engaging a Diverse Group of Countries to Develop Innovative
Monitoring and Verification Solutions*



Verification and Nuclear Reductions

- IPNDV definition of verification:
 - The iterative and deliberative processes of gathering, analyzing and assessing information to enable a determination of whether a state party is in compliance with the provisions of an international treaty or agreement.
- Effective verification = key feature of all successful nuclear reduction agreements

Verification Challenges

- Verification becomes more demanding as the number of weapons decrease & agreements get increasingly complex/intrusive
- How can the world's nuclear weapons stockpiles be dismantled in a way that is safe, secure and verifiable for all parties, while not revealing any proliferation-sensitive information?

Verification Requirements

- For a future nuclear disarmament agreement, verification will require procedures and technologies that provide countries with sufficient confidence that:
 - nuclear weapons are being dismantled
 - no country can cheat on its obligations
 - national security is being protected
 - the spread of proliferation-sensitive information is being prevented

IPNDV – Why Now?

- While the current global security situation does not appear likely to support further weapons reductions in the near-term, states should not conclude that work on new and innovative verification measures is futile. **The reality is quite the opposite.**
- Without the pressure of on-going negotiations, experts have the ability to focus on the complex technical challenges associated with verifying further reductions and can take the time needed to collectively address those challenges and identify potential solutions.
- Innovative approaches to verification can build confidence, transform thinking about what is possible to reduce nuclear risk and spark political momentum.
- These are long-term problems. **If we wait until we are ready for an agreement, it might be too late to find the solutions.**

Disarmament Verification Gaps

- Practical On-Site Inspection procedures and methods
 - Chain of custody
 - Transportation
 - Storage monitoring
 - Measuring containerized weapons/components
- Technologies and methodologies that need to be developed:
 - Detection methods for HE in a closed container using a method that is not a swipe sample or destructive to the container or contents
 - Quantification methods for the threshold mass of HE in a closed container that may contain additional contents
 - Passive measurement of uranium isotopics and threshold uranium mass in a closed container
- Technologies and methodologies that need additional development or engineering:
 - Methods for detecting explosives in a room from a distance
 - Additional nuclear weapons template methods beyond those currently existing
 - Information barrier methods that can be used with a variety of monitoring methods
 - Potential nuclear weapon intrinsic signatures before and after dismantlement

IPNDV – A Path Forward

- The IPNDV is working steadily toward solutions to these challenges, with the aim of identifying and developing the necessary technical expertise, processes, and procedures that will be needed to support future negotiations of additional agreements on nuclear disarmament.
- While tough challenges remain, potentially applicable technologies, information barriers and inspection procedures provide a path forward that should make possible multilaterally monitored nuclear warhead dismantlement while successfully managing safety, security, non-proliferation and classification concerns in a future nuclear disarmament agreement.

For more information visit www.ipndv.org