![IPNDV — International Partnership for Nuclear Disarmament Verification logo]

**International Partnership for Nuclear Disarmament Verification (IPNDV)
Phase III Programme of Work**

Phase III of the International Partnership for Nuclear Disarmament Verification (IPNDV) will execute a multi-year program of work further developing, testing, evaluating, and refining concepts and practical verification approaches to support future nuclear disarmament. During the course of Phase III, the Partnership will complement other nuclear disarmament verification (NDV) initiatives, such as the Quad Nuclear Verification Partnership and US-UK verification initiatives, future UN groups (like the Group of Governmental Experts on Nuclear Disarmament Verification), and the Creating an Environment for Nuclear Disarmament (CEND) initiative. The Partnership will support the work of the 2025 NPT Review Process and other international fora. Partners will take stock of progress and plans in mid-2022 to review and refine their work as needed.

Objectives

During Phase III, Partners will build on current working methods and engage in further hands-on activities, including scenario-based discussions, practical exercises and technology demonstrations to support the following broad objectives:

1. Use a scenario-based approach based on a full, representative national case study of a notional nuclear weapon possessing state (Country X), and its nuclear enterprise to demonstrate how concepts and other elements of the overall verification "tool kit" developed in Phases I and II can be implemented

2. Continue deeper exploration of issues related to the design of verification, such as irreversibility, transparency and the non-production of nuclear weapons, among others, to build confidence over time

3. Address gap areas identified through Phases I and II, such as the detection of the presence or absence of nuclear-weapon materials, information barrier concepts and technologies; and

4. Conduct outreach activities to engage senior political leaders, and the nuclear disarmament verification expert community and maintain focus on nuclear disarmament verification.

Basic Structure

Phase III introduces two Task Groups (A and B) and a "Technology Track," described in more detail below. The Task Groups are interdependent, working on a shared set of tasks, with each group influencing and feeding into the work of the other. The specific focus of the Task Groups will evolve over time as the scenarios, models and practical activities generate questions and drive the work. Tasks may be worked on over more than one session during a meeting depending on complexity and time required but broken into small enough pieces to allow for conclusions to be reached. Phase III will see more use within group sessions of problem solving, mini-table top exercises and, given the constraints related to the COVID-19 virus, interactive working methods like the IPNDV Portal and video conferencing.

The Partnership requires active and engaged participation by technical experts to develop credible, valuable outcomes. Because input from technology experts is highly sought after from other groups, but hard to integrate sporadically, better alignment between technology and process discussions will result in better end products. To address this issue, dedicated project groups for specific issues may be organized as the Task Groups and Technology Track see fit. These project groups would provide an efficient approach for solving questions, and may draw expertise from more than one group.

Scenario-based work

Phase III will continue the Partnership's move from "paper to practice" focusing on work to "develop, test, evaluate and evolve" concepts, procedures and technologies applicable to future NDV. The Task Groups will initially focus on a scenario developed by a dedicated task force describing a notional nuclear weapon possessing state ("Country X") and elements of a nuclear disarmament verification regime to test possible verification measures against the scenario. This includes specific elements of the nuclear enterprise of Country X. This scenario development work will be the basis for collective work by the Partnership in the early stages of Phase III and will provide a platform for both technical and process development. Participants will also explore how changing verification variables may affect outcomes through testing and exercises. The intent is not to write detailed facility-specific arrangements, but to identify, test, and evaluate concepts and approaches.

Coordination of the Task Groups and the Technology Track, as well as any ad hoc task groups to ensure overall focus on the Partnership's core objectives will be done by a Coordinating Group. This group is composed of the Secretariat and Task Group and Technology Track leads. The Coordination Group will engage as required to make

progress. The Secretariat will continue to oversee logistics and the practical organisation of the Partnership.

Methods of Work

The IPNDV will hold three meetings per year (in line with the notional timeline below), with other smaller meetings scheduled as needed. Meeting schedules should be flexible enough to allow for practical work to continue to be undertaken in parallel, as will be required for dedicated and larger scale activities. Partners hosting meetings should continue to utilize the IPNDV Meeting Planning Guide to assist in organizing meetings.

Employing more hands-on activities, Partners can use the Country X Scenario to test against, for example, the following types of variables:

- Content and timing of declarations (initial and otherwise)
- Unit of account for a notional Treaty regime (Does it change depending on the site, i.e., a strategic nuclear delivery vehicle deployment site or a weapons storage facility?), and how that affects what is done at a particular site
- Timing, frequency, and content of notifications
- Types of on-site inspections, including timing and frequency
- Potential technologies for monitoring and on-site inspections
- Identification of and deployment strategies for monitoring and inspection equipment

    a. Identification of validated tools, and processes of validation

    b. Authentication and certification processes

    c. Use of information barriers

- Safety and security frameworks
- Rights and obligations that affect the conduct of inspections and inspector access
- Identification of diversion pathways
- How to resolve ambiguities and manage "stressful situations"

Using this model, the Task Groups may address issues such as:

- Mapping a timeline of required inspection steps against the 14 step process
- Defining necessary inspection infrastructure
- Systems approaches, including with statistical methods (holding everything at risk)
- What changes in monitoring a dismantlement process when following multiple warheads vs. one warhead through the process?

- What elements of a nuclear disarmament verification regime increase confidence?

- How is compliance assessed by parties to a verification agreement?

- Assuring the presence/absence of declared and undeclared items (state-wide and location-specific)

- Means to deter cheating

- Integrating technology into verification approaches

- Methods for technology authentication and certification

- Complementarity of different technologies

- How varying stockpile numbers (e.g. going from 1000->500, 100->10, 10->1/0) affects outcomes.

The Partnership may, with support from the academic and NGO community, explore development of a virtual digital environment to explore and change variables to assess consequences and test verification approaches. Such a product could serve as a tool for the academic and NGO community, and could be used to engage more broadly with relevant groups and countries outside the IPNDV.

Phase III Key Events

2020

- All work in 2020 is expected to be virtual

2021

- **March:** IPNDV Meeting
- **June/July:** IPNDV Meeting
- **November/December:** IPNDV Meeting

2022

- **March:** IPNDV Meeting
- **June/July:** IPNDV Stock-Taking Meeting to review and refine work streams
- **November/December:** IPNDV Meeting

2023

- **March:** IPNDV Meeting
- **June/July:** IPNDV Meeting
- **November/December 2020:** IPNDV Meeting

<u>2024</u>

- **March:** IPNDV Meeting
- **June/July:** IPNDV Meeting
- **November/December:** IPNDV Meeting

<u>2025</u>

- **March:** IPNDV Meeting
- **May:** NPT RevCon
- **June/July:** IPNDV Meeting
- **November/December:** IPNDV Meeting