



OPCW

Scientific Advisory Board

Twentieth Session
10 – 14 June 2013

SAB-20/WP.2*
27 March 2013
ENGLISH only

**REPORT OF THE FIRST MEETING OF THE SCIENTIFIC ADVISORY BOARD
TEMPORARY WORKING GROUP ON VERIFICATION**

1. The Report of the First Meeting of the Scientific Advisory Board (SAB) Temporary Working Group on Verification is hereby circulated to States Parties. The meeting was held in The Hague from 19 to 20 March 2013.
2. The Chairman of the SAB and the Director-General have agreed that this report can be circulated to States Parties in advance of the Twentieth Session of the SAB.
3. In accordance with the Rules of Procedure of the SAB, this report and the recommendations contained therein will be reviewed in detail by the SAB at its Twentieth Session.

Annex: Report of the First Meeting of the SAB Temporary Working Group on Verification

* Reissued for technical reasons.



Annex

REPORT OF THE FIRST MEETING OF THE SAB TEMPORARY WORKING GROUP ON VERIFICATION

- 1. AGENDA ITEM ONE – Opening of the meeting and adoption of the agenda**
- 1.1 The Scientific Advisory Board Temporary Working Group (TWG) on Verification held its first meeting on 19 to 20 March 2013 at OPCW Headquarters in The Hague.
- 1.2 The meeting was chaired by Professor Roberto Martinez-Alvarez on behalf of the SAB.
- 1.3 The meeting began with Professor Martinez-Alvarez explaining the Terms of Reference (TOR), followed by tour de table to introduce the members of the TWG. TOR is given in Appendix 1 and the list of TWG members at the meeting is given in Appendix 2.
- 1.4 The following agenda was adopted (topics cover the questions outlined in the TOR):
 - (a) Introduction by TWG chair, round-table introduction, aims and objectives of the TWG, and adoption of the agenda
 - (b) What are the technologies/methodologies used for verification purposes in other international treaties that could benefit the CWC verification regime?
 - (c) Which methodologies (whether existing or new) could assist States Parties in ensuring that all declarable plant sites are identified for declaration?
 - (d) How can sampling and analysis most effectively be utilized for verification purposes?
 - (e) What are the key technical components of a consistent approach to declaring complex mixtures of discrete organic chemicals?
 - (f) Which new or emerging technologies may add value to existing capabilities for verification purposes (such as data analysis/data mining, statistical analysis, attribution analysis)?
 - (g) Which methodologies might be helpful for the Secretariat to keep abreast of developments in science and technology of relevance to the CWC verification regime?
 - (h) Any other business
 - (i) Conclusions, recommendations, plan of action for intersessional period, elaboration of the TWG report and date of the next meeting.

2. AGENDA ITEM TWO – What are the technologies/methodologies used for verification purposes in other international treaties that could benefit the CWC verification regime?

- 2.1 The Technical Secretariat (TS) briefed the TWG on the experience of the OPCW in a presentation entitled "Technologies/methodologies used for verification purposes under the CWC". Boban Cekovic presented the overview of verification activities under Articles IV and V of the CWC (Chemical Weapons verification) and was followed by Miquel Borotau providing an overview of Article VI (Industry) verification activities. The TWG probed the mechanisms for handling discrepancies found during inspections and how to recognize discrepancies. In discussion, the TWG noted that discrepancies are handled by bringing the issue back to the States Parties to address and correct the issue.
- 2.2 Eric Pujol provided a presentation on the International Atomic Energy Agency (IAEA) Safeguard System with an overview of the concepts, technologies, and methods currently in use.
- 2.3 Hermann Lampalzer presented the experience of the Comprehensive Nuclear Test Ban Treaty Organization (CTBTO). The speaker pointed out both some commonalities and differences between the verification regimes established under the CTBT and the Chemical Weapons Convention (CWC).
- 2.4 In discussion of these two presentations, the following points transpired:
- (a) Legal authority is critical for effectiveness of verification.
 - (b) Taking into consideration the confidentiality requirements, the TWG recognized the necessity of collaboration between all units involved in the verification process in order to improve effectiveness.
 - (c) The group acknowledged the benefits of using a wide variety of sources of data and the importance of developing a process for evaluating and validating information for verification purposes.

3. AGENDA ITEM THREE – Which methodologies (whether existing or new) could assist States Parties in ensuring that all declarable plant sites are identified for declaration?

- 3.1 Pilar Vita of the TS, presented a summary entitled "Identification of declarable Facilities under CWC".
- 3.2 Discussion focused on improving the ability of the National Authorities to make complete, accurate, and consistent declarations. In discussion the following transpired:
- (a) Suggestions were made to make better use of the The Electronic Declarations tool for National Authorities (EDNA) and provide the National Authorities with appropriate training as a means to improve quality of declarations.

- (b) TWG members suggested identifying ways and means for States Parties to make use of the information collected for the purpose of submitting declarations in order to ensure that toxic chemicals are not used for prohibited purposes.

3.3 Bimal Mehta provided a chemical industry perspective on verification activities. He pointed to factors that would influence the degree of engagement of chemical industry with CWC implementation. The speaker presented an idea of a nationally based system of registration numbers to track all sites to help ensure compliance with the CWC. The speaker further stressed that in order to get the private sector to adhere to the CWC, there needed to be education and outreach to industry as well as those being educated to take careers in the chemical industry.

3.4 In discussion the following points transpired:

- (a) The TWG emphasized the need for close collaboration between the industry and National Authorities. The TWG also noted the importance of the OPCW continuing its training and outreach activities.
- (b) Collaboration with other organizations, e.g. United Nations Environmental program (UNEP), World Health Organization (WHO), in conjunction with international conventions related to chemicals was suggested.

4. AGENDA ITEM FOUR – How can sampling and analysis most effectively be utilized for verification purposes?

4.1 Robin Black summarized the work of the TWG on Sampling and Analysis. The recommendations of this TWG were reported in the SAB report to the 3rd Review Conference. Reports from all meetings of the S&A TWG are available on the OPCW website as annexes to relevant SAB.

4.2 Hugh Gregg of the TS informed the TWG of the capabilities of the OPCW Laboratory. He described the current protocols and analytical methods used in both on site and off site analysis with GC/MS analysis being the most suitable and useful tool for meeting the requirements of the CWC at this time.

4.3 In discussion of these two presentations the following points transpired:

- (a) Good progress is being made in broadening the capability for biomedical sample analysis across the member States through OPCW confidence building exercises.
- (b) Limitations of OCAD were discussed; further additions to OCAD were strongly recommended to allow the OPCW to meet all its mandated inspection aims.
- (c) At this time, possibilities to adopt new equipment for on-site chemical analysis were limited.

- (d) The importance of sampling strategies in relation to inspection scenarios, particularly the number of samples required, the selection of sampling points, and selection of appropriate methodologies was noted.

5. AGENDA ITEM FIVE – What are the key technical components of a consistent approach to declaring complex mixtures of discrete organic chemicals?

5.1 Mehran Rouzbahani briefed the TWG on issues surrounding declaration of complex mixtures of discrete organic chemicals (DOC). He observed that States Parties take different approaches to declaration of such mixtures and provided six practical examples.

5.2 In discussion the following points transpired:

- (a) The TWG noted the importance of developing a consistent approach by the TS.
- (b) It was noted that this issue would benefit from discussion within the Industry Cluster; the TWG would further elaborate on possible technical recommendations to facilitate this discussion.

6. AGENDA ITEM SIX – Which new or emerging technologies may add value to existing capabilities for verification purposes (such as data analysis/data mining, statistical analysis, attribution analysis)?

6.1 Per Runn presented several observations to the TWG that spanned the full verification process. He stressed in particular, the importance of information sharing, data analysis, and communication across organizational units. His observations reinforced key points of the discussion of the earlier agenda items.

6.2 In discussion the following point transpired:

- (a) Enhancing the analytical capability of the Verification Information System (VIS) with, for example, the ability to transfer inspection reports into VIS was discussed.

7. AGENDA ITEM SEVEN – Which methodologies might be helpful for the Secretariat to keep abreast of developments in science and technology of relevance to the CWC verification regime?

7.1 Jonathan Forman of the TS provided a set of questions for the TWG to consider in order to efficiently identify and track new developments in science and technology. This topic is relevant to all the other agenda items. Furthermore, this would be discussed by the SAB at the next meeting in June 2013.

7.2 In the discussion the following points transpired:

- (a) The TWG acknowledged the benefit of developing a foresight capability to identify new developments that can be used in verification processes.

- (b) Use of professional social media to interact with appropriate experts was suggested.

8. AGENDA ITEM EIGHT – Any other business

No other business was raised.

9. AGENDA ITEM NINE – Conclusions, recommendations, plan of action for intersessional period, elaboration of the TWG report and date of the next meeting

9.1 Subgroups were formed for terms of reference a, b, c, d, and e (of paragraph 4 of the terms of reference of the TWG). The subgroups would progress work prior to the next meeting of the TWG and would provide an update to the TWG chair by 31 May, in order for TWG chair to report progress to the 20th session of the SAB (scheduled to be held in June 2013).

9.2 Each subgroup would prepare a problem statement with possible solutions, and/or alternative strategies, to the TWG chair. The TWG chair would distribute the updates to all TWG members, the updates would be reviewed in subsequent TWG meetings as they become available.

9.3 The second meeting of the TWG was tentatively scheduled for 23-24 September, 2013.

10. AGENDA ITEM TEN – Closure of the meeting

The Chairperson closed the meeting at 16:40 on 20 March 2013.

Appendices:

Appendix 1: Terms of Reference of the Temporary Working Group on Verification

Appendix 2: List of Participants in the First Meeting of the Temporary Working Group on Verification

Appendix 1

TERMS OF REFERENCE¹ OF THE TEMPORARY WORKING GROUP ON VERIFICATION

1. Verification-related issues with scientific and technological dimensions have arisen over recent years. The Director-General has decided that in-depth study by the Scientific Advisory Board (SAB) is necessary. Further to his response to the report from the Nineteenth Session of the SAB, and in accordance with paragraph 9 of the terms of reference of the SAB, the Director-General has therefore established a Temporary Working Group (TWG) on Verification and has appointed Roberto Martínez-Álvarez as the Chairperson of the group.
2. The objective of the TWG is to consider questions relating to verification, in particular those which fall under paragraphs 2 (e)² and 2(g)³ of the SAB's terms of reference, and to make recommendations to the SAB.
3. The TWG will consist of individuals who collectively have expertise in the theory and practice of verification, in the chemical weapons and industry dimensions of verification, or experience with the implementation of the CWC. Qualified members of the SAB may join the TWG. Members of relevant scientific organisations and international organizations may also be invited to join the TWG. Guest speakers may be invited from time to time. The TWG may also, when necessary, draw upon the expertise of the Technical Secretariat.
4. Reporting to the SAB, the TWG will in particular answer the following questions:
 - (a) What are the technologies/methodologies used for verification purposes in other international treaties that could benefit the CWC verification regime?
 - (b) Which methodologies (whether existing or new) could assist States Parties in ensuring that all declarable plant sites are identified for declaration?
 - (c) What are the key technical components of a consistent approach to declaring complex mixtures of discrete organic chemicals?
 - (d) How can sampling and analysis most effectively be utilized for verification purposes?
 - (e) Which new or emerging technologies may add value to existing capabilities for verification purposes (such as data analysis/ data mining, statistical analysis, attribution analysis)?

1 Approved by the Director-General on 20 December 2012

2 "... assess the scientific and technological merit of a present, or proposed, methodology for use by the Technical Secretariat in verification under the Convention"

3 "assess and report on emerging technologies and new equipment which could be used on verification activities"

- (f) Which methodologies might be helpful for the Secretariat to keep abreast of developments in science and technology of relevance to CWC verification regime?

- 5. In addition, the TWG will provide advice on Secretariat proposals for technologies and equipment for verification purposes.

- 6. The Director-General might pose other relevant questions to the TWG, through the SAB.

- 7. The temporary working group will exist for a period of three years from the date of its first meeting. Thereafter its work will be reviewed by the SAB and the Director-General, and a decision will be made as to whether it should continue its work, and, if so, whether the Terms of Reference should be revised.

Appendix 2

**LIST OF PARTICIPANTS IN THE FIRST MEETING
OF THE SAB TEMPORARY WORKING GROUP ON VERIFICATION
THE HAGUE, THE NETHERLANDS⁴
19 – 20 MARCH 2013**

Participant	Institution
Dr Roberto Martinez-Alvarez ⁵	Universidad Complutense de Madrid
Dr Robin Black	Defence Science and Technology Laboratory (DSTL), Porton Down
Mr Julius Kozma	Consultant
Mr Hermann (Alex) Lampalzer	Preparatory Commission for the Comprehensive Nuclear-Test-Ban Treaty Organization (CTBTO)
Mr Bimal Mehta	Transpek Industry Ltd., Vadodora
Dr Nicia Maria Fusaro Mourao	ABIQUIM (Brazilian Chemical Industry Association), São Paulo
Dr Daan Noort	Netherlands Organisation for Applied Scientific Research (TNO)
Mr Eric Pujol	International Atomic Energy Agency (IAEA)
Mr Mehran Rouzbahani	Consultant
Dr Per Runn	Consultant
Ms Mui Tiang Sng	DSO National Laboratories, Singapore
Professor Paula Vanninen	Finnish Institute for Verification of the Chemical Weapons Convention, University of Helsinki
Mr Francois Mauritz van Straten	South African Nuclear Energy Corporation SOC Ltd, Pretoria
Dr Rob Visser	Consultant

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⁴ Michael Walls (American Chemistry Council) and Stefan Mogl (Spiez Laboratory) could not attend the first meeting of the TWG.

⁵ Chairman of the TWG on Verification.