

Report of the Meeting of Experts (INFORMAL ADVANCE COPY)

Submitted by the Chairman

I. Introduction

1. The Final Document of the Seventh Review Conference of the States Parties to the Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on their Destruction (BWC/CONF.VII/7), in the Decisions and Recommendations section, contained the following decision:

“5. Reaffirming the utility of the previous intersessional programmes from 2003–2010, the Conference decides to retain previous structures: annual Meetings of States Parties preceded by annual Meetings of Experts.

6. The purpose of the intersessional programme is to discuss, and promote common understanding and effective action on those issues identified for inclusion in the intersessional programme by this Seventh Review Conference.

7. Recognizing the need to balance an ambition to improve the intersessional programme within the constraints — both financial and human resources — facing States Parties, the Conference decides to continue to allocate ten days each year to the intersessional programme.

8. The Conference decides that the following topics shall be Standing Agenda Items, which will be addressed at meetings of both the Meeting of Experts and Meeting of States Parties in every year from 2012–2015:

(a) Cooperation and assistance, with a particular focus on strengthening cooperation and assistance under Article X;

(b) Review of developments in the field of science and technology related to the Convention;

(c) Strengthening national implementation.

9. The Conference decides that the following other items will be discussed during the intersessional programme in the years indicated:

(a) How to enable fuller participation in the CBMs (2012 and 2013);

(b) How to strengthen implementation of Article VII, including consideration of detailed procedures and mechanisms for the provision of assistance and cooperation by States Parties (2014 and 2015).

10. The restructured Meetings of Experts will last five days, and Meetings of States Parties five days.

11. The first year’s meetings will be chaired by a representative of the Group of the Non-Aligned Movement and Other States, the second by a representative of the Eastern European Group, the third by a representative of the Western Group, and the fourth by a representative of the Group of the Non-Aligned Movement and Other States. The annual Chair will be supported by two annual vice-chairs, one from each of the other two regional groups.

12. Each Meeting of Experts will prepare for the consideration of the Meeting of States Parties a factual report reflecting its deliberations. This report will reflect work on the three Standing Agenda Items, as well as a report on the other item scheduled for discussion during that year.

13. In addition to the report of the Meeting of Experts, the Meetings of States Parties will also consider — on an annual basis — progress with universalization of the Convention and the annual reports of the Implementation Support Unit. In 2012 and 2013, the Meeting of States Parties will also consider the Meeting of Experts report on CBMs, and in 2014 and 2015, the Meeting of States Parties will consider the Meeting of Experts report on Article VII.

14. All meetings, both of experts and of States Parties, will reach any conclusions or results by consensus.

15. The Eighth Review Conference will consider the work and outcome of these meetings and decide on any further action.”

2. By resolution 66/65, adopted without a vote on 2 December 2011, the General Assembly, *inter alia*, requested the Secretary-General to continue to render the necessary assistance to the depositary Governments of the Convention and to provide such services as may be required for the implementation of the decisions and recommendations of the review conferences.

II. Organization of the Meeting of Experts

3. In accordance with the decision of the Seventh Review Conference, the 2012 Meeting of Experts was convened at the Palais des Nations in Geneva from 16 to 20 July 2012, under the Chairmanship of Ambassador Boujemâa Delmi of Algeria, with Ambassador Alexandre Fasel of Switzerland and Dr. Cezary Lusiński of Poland serving as Vice-chairs.

4. At its first meeting, on 16 July 2012, the Meeting of Experts adopted its agenda (BWC/MSP/2012/MX/1) and programme of work (BWC/MSP/2012/MX/2/Rev.1) as proposed by the Chairman. The Chairman also drew the attention of delegations to four background papers prepared by the Implementation Support Unit (BWC/MSP/2012/MX/INF.1, /INF.2, /INF.3, and /INF.4).

5. At the same meeting, following a suggestion by the Chairman, the Meeting of Experts adopted as its rules of procedure, *mutatis mutandis*, the rules of procedure of the Seventh Review Conference, as contained in Annex III of the Final Document of the Review Conference (BWC/CONF.VII/7).

6. Mr. Richard Lennane, Head of the Implementation Support Unit, served as Secretary of the Meeting of Experts. Mr. Piers Millett, Political Affairs Officer, Implementation Support Unit, served as Deputy Secretary.

III. Participation at the Meeting of Experts

7. Eighty-one States Parties to the Convention participated in the Meeting of Experts as follows: Algeria, Argentina, Australia, Austria, Bahrain, Bangladesh, Belarus, Belgium, Bosnia and Herzegovina, Brazil, Bulgaria, Canada, Chile, China, Colombia, Costa Rica, Croatia, Cuba, Cyprus, Czech Republic, Denmark, El Salvador, Estonia, Finland, France, Georgia, Germany, Ghana, Greece, Guatemala, Hungary, India, Indonesia, Iran (Islamic Republic of), Iraq, Ireland, Italy, Japan, Jordan, Kazakhstan, Kenya, Kuwait, Lao People's

Democratic Republic, Libya, Lithuania, Madagascar, Malaysia, Mexico, Morocco, Netherlands, Nigeria, Norway, Pakistan, Peru, Philippines, Poland, Portugal, Qatar, Republic of Korea, Romania, Russian Federation, Saudi Arabia, Senegal, Serbia, Singapore, Slovakia, Slovenia, South Africa, Spain, Sri Lanka, Sweden, Switzerland, Thailand, Tunisia, Turkey, Uganda, Ukraine, United Arab Emirates, United Kingdom of Great Britain and Northern Ireland, United States of America, Uruguay.

8. In addition, three states that had signed the Convention but had not yet ratified it participated in the Meeting of Experts without taking part in the making of decisions, as provided for in rule 44, paragraph 1, of the rules of procedure: Egypt, Haiti, Myanmar.

9. Two states, Israel and Namibia, neither parties nor signatories to the Convention, participated in the Meeting of Experts as observers, in accordance with rule 44, paragraph 2 (a).

10. The United Nations, including the Office for Disarmament Affairs (UNODA), attended the Meeting of Experts in accordance with rule 44, paragraph 3.

11. The European Union, the Food and Agriculture Organization of the United Nations (FAO), the International Committee of the Red Cross (ICRC), the International Criminal Police Organization (INTERPOL), the Organisation for the Prohibition of Chemical Weapons (OPCW), the League of Arab States, the World Health Organization (WHO) and the World Organisation for Animal Health (OIE) were granted observer status to participate in the Meeting of Experts in accordance with rule 44, paragraph 4.

12. In addition, at the invitation of the Chairman, in recognition of the special nature of the topics under consideration at this Meeting and without creating a precedent, five scientific, professional and academic organizations and experts participated in informal exchanges in the open sessions as guests of the Meeting of Experts.

13. Fifteen non-governmental organizations and research institutes attended the Meeting of Experts under rule 44, paragraph 5.

14. A list of all participants in the Meeting of Experts is contained in documents BWC/MSP/2012/MX/INF... .

IV. Work of the Meeting of Experts

15. In accordance with the programme of work (BWC/MSP/2012/MX/2/Rev.1), the Meeting of Experts heard introductory statements from the following 15 States Parties: Argentina, Brazil, Chile, China, Cuba (on the behalf of the Group of the Non-aligned Movement and Other States), Ghana, Guatemala, India, Indonesia, Iran (Islamic Republic of), Malaysia, Mexico, Morocco, Pakistan, Turkey, Ukraine.

16. Between 16 and 20 July, the Meeting of Experts held two sessions devoted to each of the Standing Agenda Items on: cooperation and assistance, with a particular focus on strengthening cooperation and assistance under Article X; review of developments in the field of science and technology related to the Convention; and strengthening national implementation (agenda items 5 to 7), and two sessions devoted to the biennial item on how to enable fuller participation in the Confidence-building Measures (agenda item 8). [...] States Parties], [...] international organisations and [...] guests of the Meeting made presentations or statements during these sessions.

17. The Chairman, under his own responsibility and initiative, prepared a paper listing considerations, lessons, perspectives, recommendations, conclusions and proposals drawn from the presentations, statements, working papers and interventions on the agenda items under discussion at the Meeting. The Meeting of Experts noted that this paper had not been

agreed and had no status. It was the Chairman's view that the paper could assist delegations in their preparations for the Meeting of States Parties in December 2012 and in its consideration of how best to "discuss, and promote common understanding and effective action on" the topic in accordance with the decision of the Seventh Review Conference. The paper prepared by the Chairman is attached as Annex I to this Report.

18. In the course of its work, the Meeting of Experts was able to draw on a number of working papers submitted by States Parties and international organizations, as well as on statements and presentations made by States Parties, international organizations and guests of the Meeting, which were circulated in the Meeting.

V. Documentation

19. A list of official documents of the Meeting of Experts, including the working papers submitted by States Parties, is contained in Annex II to this Report. All documents on this list are available on the Implementation Support Unit website at <http://www.unog.ch/bwc> and through the United Nations Official Document System (ODS), at <http://documents.un.org>.

VI. Conclusion of the Meeting of Experts

20. At its closing meeting on 20 July 2012, the Meeting of Experts noted that the Chairman would prepare the provisional agenda and programme of work for approval and adoption at the Meeting of States Parties to be held from 10 to 14 December 2012.

21. At the same meeting, the Meeting of Experts adopted its Report by consensus, as contained in documents BWC/MSP/2012/MX/CRP.1, /CRP.2, /CRP.3 and /CRP.4, as orally amended, to be issued as document BWC/MSP/2012/MX/3.

Annex I

Considerations, lessons, perspectives, recommendations, conclusions and proposals drawn from the presentations, statements, working papers and interventions on the topics under discussion at the Meeting

Note: the source is given using the following codes: P = presentation (with date); S = statement (with date); WP = working paper (with number). See also the list of abbreviations of delegation names at the end of this annex.

I. Agenda item 5: Standing agenda item: cooperation and assistance, with a particular focus on strengthening cooperation and assistance under Article X.

1. Ways and means to target and mobilize resources, including financial resources, to address gaps and needs for assistance and cooperation, in particular from developed to developing States Parties, and from international and regional organizations and other relevant stakeholders.

| <i>Delegation</i> | <i>Text</i> | <i>Source</i> |
|-------------------|---|---------------|
| Cuba (NAM) | Mobilize the necessary resources, including financial resources, to facilitate the widest possible exchange of equipment, material and scientific and technological information regarding the use of biological and toxin agents for peaceful purposes, in particular from developed to developing States Parties | S 16/7 |
| Australia | Underpinning the facilitation of international exchange, as described in Article X, are the legislative, regulatory and policy arrangements which governments put in place domestically to allow for legitimate and beneficial activities and innovation in the life sciences, notably by industry and academic and research institutions... A broad range of activities fit within the scope of Article X. | S 16/7 |
| Mexico | Principles for cooperation: (a) Complementarity: projects and cooperation activities must support national efforts of developing countries, but in no way substitute them. (b) Self-sustainability: international cooperation should contribute to the establishment of independent development process that, together with the international cooperation, may be further sustained with the resources of beneficial countries. (c) Co-financing: parties involved in cooperation projects and actions are to provide financial, human or technical support to enhance national development in order to avoid purely assistential schemes and to encourage a sense of ownership. | S 16/7 |
| Brazil | ...cooperation and assistance are two different topics, related to different Articles of the Convention. The electronic database should concentrate on cooperation. Demand-driven approaches should be prioritized because it would adjust to each | S 16/7 |

| <i>Delegation</i> | <i>Text</i> | <i>Source</i> |
|-------------------------------|--|---------------|
| | different national context and scientific and technological development conditions. Projects should prioritize the BWC context, since synergies with other fora, such as the WHO or FAO, should respect their different mandates and competences, as well as their limited resources. | |
| Iran (Islamic Republic of) | Capacity building, transfer of technology and sharing knowledge in the areas related to the BWC is a common responsibility of all countries. | S 17/7 |
| Algeria | The proposal of the Non Aligned to establish a mechanism on international cooperation... is a constructive initiative of a group of countries representing a basis for finding consensus solutions to support this claim legitimate access to the fruits of science and technology in accordance with the objectives of the Convention. | S 17/7 |
| India | While all bilateral and multilateral avenues for cooperation must be explored, it is important that the framework provided by the Convention must be fully implemented, especially by full implementation of Article X. | S 17/7 |
| United States of America | The core of the BTWC effort should be review and discussion of the national reports on implementation of Article X agreed to by States Parties at the 2011 RevCon. Such reports will play an essential role in broadening awareness of the many ways in which States Parties fulfill their Article X undertakings, the challenges they encounter, and in documenting areas of need. As a result, they have the potential to make debate specific, substantive, and productive. In this regard, the submission of clear, specific, and timely reports is central to making progress. | WP.3 |
| United States of America | While a variety of means can be imagined to mobilize resources, common to almost all of them is the importance of identifying specific needs at an early stage. This permits an assessment of the resources required and the benefits that might stem from addressing the needs. It facilitates identifying the appropriate expertise and assistance to be provided and makes it far easier to secure funding from potential donors who seek specificity when considering competing claims on their resources. Therefore, identifying specific gaps and areas of need is a priority. | WP.3 |
| United States of America | The 2012 Meeting of States Parties should... Call on all States Parties to submit biennial reports on their implementation of Article X, as agreed by the Seventh RevCon, and urge that such reports be used, where appropriate, to identify specific gaps and needs that could usefully be addressed, as well as to highlight existing cooperation and exchange | WP.3 |
| United States of America | The 2012 Meeting of States Parties should... Urge States Parties to collaborate to offer assistance or training in support of legislative and other implementation measures (including training programs, increased awareness of requirements, and drafting, implementing, and enforcing laws and regulations), particularly at the regional and sub-regional levels. | WP.5 |
| United States of America | The 2012 Meeting of States Parties should... Welcome regional and sub-regional initiatives to address these issues. | WP.5 |

2. Coordination of cooperation with other relevant international and regional organizations, and other relevant stakeholders

| <i>Delegation</i> | <i>Text</i> | <i>Source</i> |
|--------------------------|--|---------------|
| Cuba (NAM) | Coordinate cooperation with other relevant international and regional organizations for financial and technological support of activities for the use of biological and toxin agents for peaceful purposes. | S 16/7 |
| Indonesia | Partnership between experts in Bio-Security/non-proliferation and public health is also an area that should be enhanced. A closer cooperation between WHO and BWC in order to build an integrated approach on bio-security and bio-safety need to be undertaken. | S 16/7 |
| Georgia | Establish regional partnerships to enhance multi-sectoral training as well as disease surveillance and containment initiatives. | S 17/7 |
| Georgia | Strengthen the core capacities required by the WHO International Health Regulations (IHRs) and existing national measures consistent with the obligations under the Biological Weapons Convention (BWC) and the UN Security Council Resolution 1540 (UNSCR 1540) to deter, prevent, and respond to biological incidents or threats. | S 17/7 |
| Germany | International cooperation has been the key in the tackling the EHEC outbreak in Germany. Local outbreaks of dangerous infectious diseases whether natural or deliberate can have global consequences. International cooperation is one of the crucial items in handling this kind of situations. | S 18/7 |
| India | Coordination with relevant international organizations in accordance with their mandates is helpful in challenging cooperation and utilization of available expertise. | S 17/7 |
| OPWC | Increasing convergence of the science and technology underpinning the two treaties and create an overlap. So greater interaction between BWC scientific community and CWC scientific community is recommended, including informal meetings of experts from both communities. | S 18/7 |
| United States of America | The 2012 Meeting of States Parties should... Highly encourage BTWC States Parties seeking extensions under the IHR (2005) to share information about specific needs or challenges they have encountered with respect to the required core capacities, and urge those States Parties in a position to do so to explore means of assisting in meeting these challenges | WP.3 |

3. Challenges and obstacles to developing international cooperation, assistance and exchange in the biological sciences and technology, including equipment and material, for peaceful purposes to their full potential, and possible means of overcoming these

| <i>Delegation</i> | <i>Text</i> | <i>Source</i> |
|-------------------|---|---------------|
| Cuba (NAM) | Identify and overcome the obstacles hampering the full, effective and non-discriminatory implementation of Article X of the Convention, including by addressing the denial cases of States Parties. | S 16/7 |

| <i>Delegation</i> | <i>Text</i> | <i>Source</i> |
|-------------------------------|---|------------------|
| EU | If facilitating the exchange in biological sciences and technology, including equipment and material for peaceful purposes, is a legitimate goal under the BTWC, appropriate export controls are necessary in order to ensure that only purposes not prohibited by the Convention are undertaken. | S 16/7 |
| Philippines | We still have key BWC-related activities taking place in a parallel fashion, and which need to be coordinated in order to promote mutual non-awareness, and to enhance synergies and to avoid duplication. | S 16/7 |
| Philippines | One aspect of this need for a better coordination is ensuring that cooperation between states is conducted through the proper channels... Cooperating states and organizations should ensure that expert collaborators are properly vetted and selected, thus it is important that Foreign Ministries and Missions in Geneva are always “kept in the loop”. | S 16/7 |
| Iran (Islamic Republic of) | Lack of implementation of Article X prevents the developing States Parties from fulfilling their peaceful biological programs inter alia to prepare for prevention, control, elimination and eradication of communicable diseases. The imposition of undue restrictions and/or limitations on dual use application of know-how, materials and equipment necessary for promoting capacity building in the fields of disease surveillance, detection, diagnosis and containment of communicable diseases including production of vaccines and other biological materials is considered a systematic and gross violation of the Article X. | S 16/7 |
| Iran (Islamic Republic of) | The full, effective and non-discriminatory implementation of Article X, as one of the main pillars of the Convention, is essential to achieve the object and purpose of the Convention. For many years States Parties in particular developing countries have suffered from a systematic denial of the inalienable right of States Parties to exchange equipment, materials, technology, and other biological materials is considered a systematic and gross violation of the Article X. | S 16/7 |
| Iran (Islamic Republic of) | Developing procedures and creation of a mechanism for the settlement of disputes arising from concerns raised on the implementation of Article X is the best way to identify and remove all the undue restrictions and/or limitations hampering the full, effective and non-discriminatory implementation of Article X of the Convention. | S 16/7 |
| Iran (Islamic Republic of) | There is an urgent need for establishment... a non discriminatory multilaterally negotiated and universally acceptable approach to the transfer of biological items and technology for peaceful purposes, including the adoption of multilaterally negotiated Guidelines specifying legal obligations of all parties, the denial redress procedures and devising remedial measures for the rejected cases | S 16/7 S 17/7 |
| Iran (Islamic Republic of) | The States Parties shall have the right to submit the cases of denial to the ISU. The ISU shall be mandated to prepare a report on all denials. The States Parties concerned, will do their utmost efforts to resolve the situation of denial among themselves through consultation and clarification. The denial cases will be referred to A Standing Committee if consultation and clarification process fail to resolve the situation. The members of the Standing Committee should be duly experienced, competent and well qualified governmental individuals appointed on the basis of balanced geographical distribution. | S 16/7 S 17/7 |
| India | There should be a balance between Article X implementation with provisions of Article III of the Convention | S 16/7 |

| <i>Delegation</i> | <i>Text</i> | <i>Source</i> |
|-------------------------------|--|---------------|
| India | It is important that challenges which are encountered by developing countries in obtaining materials, equipments, technology for peaceful uses are addressed. | S 16/7 |
| India | ...strengthened implementation of Article III of the Convention would ensure that cooperation and assistance received is not abused. There should be a balance between Article X implementation with provisions of Article III of the Convention. | S 16/7 |
| India | The need for systematic and long term provision of cooperation under Article X has been felt for a long time. The decision of the 7 th Review Conference on the establishment of a database for submitting requests and offers of cooperation and assistance could play a role in targeting and mobilizing resources. | S 16/7 |
| France | ...cooperation efforts are perfectly consistent with an export control regime, whose purpose is anything but to limit technology transfers, but rather to limit the risk that such exports may be used unwittingly to develop biological weapons. | S 16/7 |
| Iran (Islamic Republic of) | Inaction for technology transfer and cooperation between developing and developed countries in the areas related to biotechnology, nanotechnology genetic engineering microbiology might create serious obstacles in national implementation of those developing countries which in many cases have technological gap for dealing with a common threat knows no boundaries | S 17/7 |
| Iran (Islamic Republic of) | ...the main challenge for the full, effective and non-discriminatory implementation of Article X is the existence of these unjustified politically-motivated restrictions and or limitation posed against States Parties in contravention with the provisions of the Convention. Therefore... there is an urgent need for the removal of these restrictions. | S 17/7 |
| Iran (Islamic Republic of) | Developing procedures for the settlement of disputes arising from concerns raised on the implementation of Article X is the urgent need for any meaningful consideration of the implementation of Article X and its challenges and obstacles. | S 17/7 |
| Iran (Islamic Republic of) | Subjecting scientific research and the free flow of scientific information to undue restriction is a violation of obligations undertaken under Article X of the BWC. | S 17/7 |
| Algeria | ...provide the framework to explore ways to overcome obstacles, restrictions and limitations on transfers of scientific knowledge, techniques, equipment and materials, which are made for purposes consistent with the objectives and provisions of the BWC. | S 17/7 |
| Algeria | Promoting cooperation aims to promote conditions of economic and social development of developing countries. In addition, the strengthening of cooperation and assistance would meet the security objectives of the Convention under Articles I and III and improving the capacity of national implementation, especially regarding measures biological safety and security, the fight against diseases, law enforcement and capacity building of scientific research laboratories. | S 17/7 |
| United States of America | Many issues directly relevant to improving international cooperation in the life sciences – for example, uneven enforcement of international intellectual property rights, or a wide range of regulatory and other barriers to trade and investment relevant to the life sciences – are first and foremost the responsibility of other international fora. It will be important to recognize the primacy of these other fora in their areas of responsibility, or the BTWC will risk eroding its credibility while also losing its appropriate focus on developing its own tools for enhanced cooperation, | WP.3 |

| <i>Delegation</i> | <i>Text</i> | <i>Source</i> |
|--------------------------|--|---------------|
| | bolstering capacity-building, mitigating strategic risks, deepening mutual confidence, and improving transparency in the health security arena. | |
| United States of America | The 2012 Meeting of States Parties should... Call upon all States Parties to identify and report on specific impediments to the provision or receipt of international assistance in response to an attack or outbreak, to facilitate future work on the effective provision of international assistance. | WP.3 |
| Cuba | National economic blockades pose an obstacle to developing international cooperation, assistance and exchange in the biological sciences and technology | WP.7 |

4. Capacity-building, through international cooperation, in biosafety and biosecurity, and for detecting, reporting, and responding to outbreaks of infectious disease or biological weapons attacks, including in the areas of preparedness, response, and crisis management and mitigation

| <i>Delegation</i> | <i>Text</i> | <i>Source</i> |
|----------------------------|---|---------------|
| Cuba (NAM) | Identify and address the needs in terms of equipment, materials and scientific and technological information regarding the use of the bacteriological and toxin agents for peaceful purposes. | S 16/7 |
| Cuba (NAM) | Facilitate the development of human resources in developing States Parties in the implementation of the Convention, taking into account the special situation faced by them | S 16/7 |
| Australia | Facilitating international exchange of equipment, materials and scientific and technological <i>information</i> for the peaceful use of the life sciences helps to prevent the global spread of infectious diseases, builds capacity to respond to disease outbreaks (whether caused naturally or through the hostile use of biological agents or toxins) and can provide incentives for States to accede to the BWC. | S 16/7 |
| China | States Parties may also promote the exchange of experience on bio-safety and bio-security management by strengthening cooperation in relevant areas. | S 16/7 |
| Cuba | There is no common agreed definition of bio-safety and bio-security in the Convention... the relevant national authorities should have the responsibility in defining and implementing such concepts, in accordance with relevant national laws, regulation and policies, consistent with the provisions of the Convention. | S 17/7 |
| Cuba | Achieving necessary standards in the field of biosafety and biosecurity requires capacity building and is facilitated by, international cooperation and strengthening the Convention | S 17/7 |
| Iran (Islamic Republic of) | There is no commonly agreed definition on biosafety and biosecurity in the Convention. Their definition and implementation of those concepts are the responsibility of the relevant national authorities. | S 17/7 |
| Iran (Islamic Republic of) | Achieving necessary standards in the fields of biosafety and biosecurity requires capacity building and is facilitated by, international cooperation and strengthening the implementation of Article X of the convention | S 17/7 |

| <i>Delegation</i> | <i>Text</i> | <i>Source</i> |
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| Iran (Islamic Republic of) | In light of swift scientific and technological developments in life sciences, there is a need to strengthen the international cooperation among States Parties in order to help all States benefitting from biotechnology, genetic engineering, microbiology and other related areas. | S 17/7 |
| Iran (Islamic Republic of) | Although the discussions under this agenda item have the potential to enhance scientific understanding and knowledge sharing among States Parties, if concrete ways and means are not found for the technology transfer by the developed countries to developing ones in a systematic and non-discriminatory manners, these discussion would be insufficient and ineffective. | S 17/7 |
| Georgia | Promote interagency (public health-law enforcement, civilian-military) cooperation, coordination and synchronization for preparing, detecting, and responding to infectious disease outbreaks, whether natural, accidental, or deliberate in nature. | S 17/7 |
| Georgia | More must be done to foster international cooperation and collaboration in the areas of public health and security. Addressing these diverse challenges will require multilateral and multi-sectoral cooperation and a purposeful engagement in learning across borders and professional sectors. | S 17/7 |
| OIE | There is a need to have more even geographical distribution of expertise with expertise positioned where it is needed. | S 17/7 |
| OIE | A holistic approach looks at expertise, resources, legal powers needed to implement control and governance. | S 17/7 |
| Australia and Ghana | Bilateral capacity-building efforts can also support regional capacity-building through further collaborative activity. | S 17/7 |
| Algeria | The state of implementation of this article does not yet meet the legitimate expectations of developing countries. Inequalities between developed and developing countries in the life sciences and related technology persist and get worse. An additional effort is needed to give practical meaning to the commitments made and close the gap and strengthen the capacities of States, in particular in developing countries. | S 17/7 |
| Algeria | Cooperation and assistance should be focused on particular areas: (a) technology transfer to developing countries; (b) exchange of scientific and technical information relevant to the use of biological agents for peaceful purposes; (c) the management of operations in case of accidents or malicious acts; (d) capacity development of national implementation, including the means for responding to biological threats, in terms of diagnosis, therapy and protection, procedures for detecting and warning systems, means of analysis of contamination and technologies for the containment of pathogens; (e) adjusting the level of biological research in developing countries to international standards; (f) the security measures and biosecurity. | S 17/7 |
| India | It is important that international cooperation and assistance includes exchange of scientific and technological knowledge and information, materials such as organisms for developing diagnostic tests, equipment for advanced laboratories, training opportunities in advanced laboratories and collaborative R&D in vaccine development and therapeutics against listed biological agents and emerging and re- | S 17/7 |

| <i>Delegation</i> | <i>Text</i> | <i>Source</i> |
|--------------------------|---|---------------|
| | emerging diseases. | |
| India | Achieving such [biosafety and biosecurity] standards can be facilitated by international cooperation and strengthening the implementation of Article X. States Parties in need of cooperation on biosafety and biosecurity could be given such help on request. | S 17/7 |
| Canada | Difficulties exist in differentiating between a deliberate use of bioweaponry and a naturally-occurring disease outbreak. Therefore, cooperation and assistance under Article X should encompass more broadly-based activities such as capacity-building for disease surveillance, detection, diagnosis, containment, and response, as well as the development and implementation of biosafety and biosecurity systems. | S 17/7 |
| India | It is important that sharing information and knowledge including on recent advances in science and technology is facilitated among States Parties through international cooperation to enable States Parties to build defences against new and emerging diseases. | S 18/7 |
| United Kingdom | ...seek and provide assistance on biosafety and biosecurity to: enact and improve national legislation; strengthen laboratory infrastructure, technology, security and management; provide training; and help incorporate biosafety and biosecurity in existing efforts to address emerging or re-emerging diseases. | WP.2 |
| United Kingdom | The role of international cooperation on biosafety and biosecurity at the bilateral, regional and international levels was recognised, in particular to overcome difficulties encountered by some States Parties where additional resources, improved infrastructure, additional technical expertise, appropriate equipment and increased financial resources are needed to build capacity. | WP.2 |
| United Kingdom | Project funding is usually short-term, but effective capacity building requires long term commitment from funders. It is important to take account of whole-life costs, including running costs and maintenance as well as initial capital investment. | WP.2 |
| United Kingdom | ...a prototyping approach to building or renovating facilities, which is cheap, customisable and adaptable. Such an approach can use locally available and sustainable resources. It is important to engage with local people, including the users, in the development process. Modular and mobile equipment could be particularly relevant in this context; | WP.2 |
| United Kingdom | ... development of minimum global standards that are based on performance and outcome-based regulation and are sustainable | WP.2 |
| United Kingdom | ... engaging governments and international organisations to support the scientific work, and involvement of the private sector in development of low cost solutions | WP.2 |
| United States of America | The 2012 Meeting of States Parties should... Call for increased efforts to develop and implement appropriate, sustainable, and effective laboratory biosafety and security measures, including guidelines, training materials and resources, and models for collaborative approaches to building and maintaining capacity | WP.3 |
| United States of America | Implementation assistance is a challenging task without clear information on the status of implementation. States Parties should, therefore, agree on means to increase the availability of such information, invite those in need of such assistance to make their needs known, and encourage others to provide such assistance. | WP.5 |

| <i>Delegation</i> | <i>Text</i> | <i>Source</i> |
|--------------------------|---|---------------|
| United States of America | States Parties should seek to identify the major areas of need for such laboratories (e.g., training materials, reference standards, other tools) and explore collaborative approaches, such as internationally available curricula and training resources. | WP.5 |

II. Agenda item 6: Standing agenda item: review of developments in the field of science and technology related to the Convention

1. Advances in enabling technologies, including high-throughput systems for sequencing, synthesizing and analyzing DNA; bioinformatics and computational tools; and systems biology

| <i>Delegation</i> | <i>Text</i> | <i>Source</i> |
|--------------------------|---|---------------|
| Sweden | High-throughput sequencing and bioinformatics are increasingly important for different levels of microbe analysis [including]: Identification, natural versus intentional outbreak and bioforensics | S 17/7 |
| Sweden | There is a need for reference databases [including]: (a) Different markers (SNP, MLVA, etc.) (b) All available global pathogenic strains (c) Curated metadata (d) International data sharing | S 17/7 |
| Sweden | Recent developments in High-throughput sequencing and bioinformatics... [have been applied to] metagenomics: Could answer the question: “What is in the Sample?”; previous method: “Is biological agent X in the sample?”; no need for cultivation; depends upon reference databases | S 17/7 |
| Sweden | Recent developments in High-throughput sequencing and bioinformatics... open new possibilities to detect and confirm violations to the Convention. | S 17/7 |
| Spain | Next generation sequencing is becoming more comprehensive, capable of taxonomically analyzing all rhizobacterial components and estimating biodiversity it is still expensive although it is becoming cheaper and it is good value for money | S 17/7 |
| Spain | Polymerase chain reaction is highly specific and is very cost-effective | S 17/7 |
| Spain | Microarray hybridization: useful for continuous monitoring at a moderate cost | S 17/7 |
| United States of America | The increasing use of gene synthesis technology in the life sciences... is a powerful technology with many positive applications, and enables important research. It does, however, have some potential for misuse – for example, it could be used to synthesize different pathogens – even eradicated pathogens – creating new proliferation pathways. | S 17/7 |
| Germany | Bioinformatics should be considered as the bottleneck of modern approaches in life | S 17/7 |

| <i>Delegation</i> | <i>Text</i> | <i>Source</i> |
|-------------------|---|---------------|
| | sciences. | |
| Netherlands | Synthetic biology has the potential to create new applications in improved healthcare and in environmental technologies... An example of synthetic biology, resulting in improved healthcare, is the successful production of artemisinin. | S 17/7 |
| Netherlands | The synthesis of the genomes of poliovirus and Influenza virus has been proven and published already ten years ago. The challenge now is to design a viral genome in which mutations are introduced by which the virus becomes less pathogenic and could be used as a vaccine. | S 17/7 |
| Netherlands | The promise of synthetic biology to make biology easier to engineer has evoked artists, students and other non-professionals to explore the possibilities. | S 17/7 |
| Netherlands | Synthetic vesicles loaded with a DNA expression system: Upon a trigger, the content of this vesicle is able to synthesize a protein. In future this protein could have for example a therapeutic application. However, the production of a toxin is also thinkable! These vesicles are not regulated by the directives on genetic modification. | S 17/7 |
| China | The international 1,000 Genomes Project under way is trying to draw the human genetic polymorphism map which is by far the most detailed and medically applicable. As the public resource data, it will provide the detailed database for various diseases' analysis and lay the foundation for clarifying the pathogenesis of human major diseases and the carrying out of personalized prediction prevention and treatment. | S 17/7 |
| China | The development of next generation sequencing technology, especially high throughput sequencing technology, could finish the whole genomic sequence of the pathogenic micro-organisms within a short period. Compared with the genome sequence database of many pathogenic micro-organisms, it will make a more accurate judgement on its origin and its evolution history, etc. | S 17/7 |
| China | Progress in bio-informatics and computational biology have greatly contributed to biological data collection processing and utilization. These massive data are vitally used in epidemiology core studies of infectious diseases, food safety, public health and forensic investigation which not only provide deeper understanding of the evolution of toxicity of pathogens but also open up a new research field to design new diagnostic reagents, antibiotics and vaccines while greatly contributing to the monitoring, diagnosis and the treatment of related epidemics. | S 17/7 |
| China | ...the development of biotechnology has created new risks and challenges and enactive effects have become increasingly prominent, for example, recently the host specificity and infectivity of high pathogenically H5N1 avian influenza carried out by scientists is successfully changed. | S 17/7 |
| China | With the development of synthetic biology the cost of commercial synthetic gene fragments is continually declining. At the same time, the new combination technology can combine short fragment to long sequence more easily and faster. This has facilitated the availability of research materials for different countries and non-state entities, with the result of human genome projects and the rapid development of system biology, the diverse human population specific genetic variations and the relation – which in biological functions and infectious diseases sensitivity – have been reviewed. This makes it possible to improve a specific | S 17/7 |

| <i>Delegation</i> | <i>Text</i> | <i>Source</i> |
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| | microbes pathogenicity, infectivity and host a specificity using a combination approach of synthetic biology, reverse genetics and whole genomes in vitro via directed evolution. They have provided theories for such practices. | |
| India | Advances in enabling technologies including high throughput systems, which reflects convergence of information technology and bio-technology is critical in the future success of life sciences research and development. It has opened new challenges and opportunities for States Parties both in understanding the implications of these advances to the implementation of the Convention and utilizing them for their developments needs including disease surveillance, diagnosis and mitigation. | S 17/7 |
| India | Bioinformatics has spawned new opportunities for cooperation with other countries through enhanced network connectivity. | S 17/7 |
| Japan | Synthetic Biology. Research procedure – Building a life or creation of a new gene expression system no longer exists from artificial and synthetic DNA technique. Dual-use potential (a) Virus development/modification using artificial/modified genetic information (b) More efficient process to recombinant with disease causing gene(s) as well as toxic ones (c) Needs for novel regulation systems of disease-causing agents. | P 18/7 |
| Japan | Bioinformatics Research procedures – analyzing and predicting biological function associated with genomic information and gene expression by utilizing mathematics, statistics and computer science. Dual-use potential: More efficient process for comparing and retrieving genetic data in relation to disease causing toxic genes. | P 18/7 |
| Japan | Systems Biology Research procedure – regarding living body as a system of biological phenomena, analyzing a biological network including genetic information and signal transduction. Dual-use potential (a) Estimating effects of disease-causing agents or human cells' function (b) More efficient ways to analyze disease-causing agent with more serious damages to human body. | P 18/7 |
| Japan | Nanotechnology, Nanobiology Research procedure – analyzing and modulating various biological functions by nanotechnologies, such as Biosensor, Biochip, Molecular imaging, Nanomaterials, Nano-bio-machine etc. Dual Use potential (a) Enabling detection of disease-causing or toxic agents via nanobiosensors (b) Additive novel functions via nanobiomachines | P 18/7 |

| <i>Delegation</i> | <i>Text</i> | <i>Source</i> |
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| | (c) Artificial membrane to cover disease-causing agents as well as toxins | |
| Japan | Nanotechnology, Drug Delivery System Research procedure – delivering drug to target organ(s) more efficiently by applying nanoparticles to drug delivery systems Dual-use potential | P 18/7 |
| | (a) Enhancing infectious ability of microorganism (b) Drug-delivery systems entering brain-blood barriers | |
| Japan | Neurosciences Research procedure – manipulating mechanical devices or computer by neural signal detection and decoding techniques. Receiving external signal input to the brain via brain machine interface technique Dual-use potential | P 18/7 |
| | (a) Controlling brain function including one's thought and judgement (b) Terrorist-like behavior forces by the external command input to one's brain | |
| IGSC | Balanced discussion to take advantage of the opportunities and minimize risks. Goals and objectives: | P 18/7 |
| | (a) to design and apply a common protocol to screen both the sequences of synthetic gene orders, and the customers who place them. (b) To work together with governments and other concerned to promote the beneficial application of gene synthesis technology, and to safeguard biosecurity. | |
| IGSC | [Ongoing work] | P 18/7 |
| | (a) Continuous improvement: screening methods, tools & sequence databases (b) Proactive participation in policy/regulation development (c) Engage the entire industry (d) Ensure we all have the same standards | |
| | Input from Governments desired: | |
| | (a) expert opinion – defining sequences of concern (b) Universal continuously updated screening database (c) Provider and user certification | |
| United States of America | (a) To have a broad enabling effect, a technology must be widely used, and this in turn means that it must not only be available, but sufficiently rapid and affordable to be employed. As speed and reliability increase, and cost decreases, the potential impact on the life sciences will tend to grow. (b) Technologies are interdependent. Part of the impact of gene sequencing technology stems from the increasing availability of genomic, proteomic, and other data that can be used by other researchers, as well as from the ability to apply this information using | WP.6 |

| <i>Delegation</i> | <i>Text</i> | <i>Source</i> |
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| | gene synthesis. Thus sequencing, synthesis, processing power, data storage, and network bandwidth have important synergistic effects. | |
| | (c) Key enabling technologies are not limited to the life sciences. | |
| | (d) Many enabling technologies require States Parties' awareness and understanding, rather than any specific action. | |
| United States of America | The 2012 Meeting of States Parties should... Acknowledge that advances in “enabling technologies” affect not only the pace of scientific developments, but also how science is conducted and applied; over time, such advances may therefore have implications for how States Parties implement the Convention | WP.6 |
| United States of America | The 2012 Meeting of States Parties should... Note that DNA synthesis technology, while overwhelmingly beneficial, has potential for misuse | WP.6 |
| United States of America | The 2012 Meeting of States Parties should... Urge relevant States Parties to consider options for minimizing this potential, such as sequence and order screening, while simultaneously minimizing any negative impacts on the conduct of research and business operations | WP.6 |
| China | By establishing commercial order sorting, filtering and differential authorizing website administration system connected to the central pathogenic microbiology genome database, the whole process of research related to pathogenic microbes can be efficiently monitored and controlled. | WP.? |
| China | The confirmation of the correlation between genetic variation and disease sensitivity makes it possible to improve the specific microbes' pathogenicity, infectivity, the host specificity using combinatorial approaches of synthetic biology, reverse genetics and whole genome in vitro directed evolution. | WP.? |
| China | The primary results of human microbiome research also indicates that our normal physiological functions are closely related to our second genome, whose disorder might affect the normal physiological metabolism of humans and even cause illness. The strong correlation of our second genome with our physiological functions provide an alternative, cryptic, approach to attack human populations, specifically through population specific microbes, even daily dieting. | WP.? |
| China | The rapid development of nanomaterials, nanotechnology will also provide important tools for and approaches to efficient delivery of artificially modified and designed microbes. | WP.? |
| China | ...increasingly robust high-throughput mass spectrometry technology is widely used to quantitatively analyze protein and peptide samples, which makes it possible to detect and confirm microbes and toxins rapidly and sensitively. | WP.? |
| China | Mass spectrometry (MS) can also be used for high-throughput nucleic acid analysis, which is particularly useful for the detection of un-cultivable microbes. Hence, the development of high-throughput MS technologies will facilitate the surveillance and diagnosis of BWC relevant agents and forensic medicine. | WP.? |
| China | DNA sequence information can also be used for the modification of antigenicity, infectivity, toxicity and drug resistance of traditional pathogens, even for the artificial design and synthesis of totally new pathogens, which will lead to the failure of | WP.? |

| <i>Delegation</i> | <i>Text</i> | <i>Source</i> |
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| | traditional prevention and treatment of infectious diseases and make efficient prevention and control more difficult. | |

2. New science and technology developments that have potential for uses contrary to the provisions of the Convention

| <i>Delegation</i> | <i>Text</i> | <i>Source</i> |
|-------------------------------|---|---------------|
| Netherlands | ...cells can also be programmed to produce toxins or viruses, dedicated cells or viruses for misuse. | S 17/7 |
| Netherlands | When one is capable of designing a viral genome, one could also introduce mutations which are harmful they could possibly make a virus more pathogenic. | S 17/7 |
| Netherlands | In this respect applying the techniques of synthetic biology, the design and synthesis of a viral genome could be of dual use. | S 17/7 |
| Netherlands | As such biological knowledge, tools and resources are becoming more widely available around the world to an ever-greater number of individuals. These applications raise also concerns about new biosafety and biosecurity risks. | S 17/7 |
| Netherlands | As genomes of micro-organisms and viruses could also be engineered, design of harmful biological agents is thinkable. | S 17/7 |
| France | ...there is increasing resistance of organisms such as bacteria, viruses, fungi and parasites to drugs used to combat them, especially the increased antibiotic resistance. | S 17/7 |
| France | Cloning of farm animals can have a negative impact on the genetic diversity of animals, according to a report evaluating the benefits and risks realize by the French agency for Food Safety, Food and the Environment. The agency said the reduction in genetic diversity, a result of uncontrolled use of cloning, may have different long-term negative effects | S 17/7 |
| Iran (Islamic Republic of) | It is a matter of concern that some countries are using their scientific supremacy as a tool to engage in a very offensive program under the mask of biodefense. The result of their activities, experiments and researches create pathogens and bioagents that has the potential to be a great threat to all human beings. | S 17/7 |
| Iran (Islamic Republic of) | ...activities that have been carried out in the case of H5N1 would fit within the prohibited activities mentioned in these two articles. [Articles I and III] | S 18/7 |
| Iran (Islamic Republic of) | ...public health was the reason for starting the project [H5N1 mammalian transmission studies]. Can any country use this justification and start research projects on mutations of dangerous viruses? Can anyone without limitation create new dangerous viruses bioagents and pathogens under the pretext of research on public health? Wouldn't it be committing suicide at the fear of death? Wouldn't it be a case of breach of the Articles I and III of the Convention? | S 18/7 |
| United Kingdom | Neuroscience should be considered a focal topic in the science and technology review process of the BWC because of the risks of misuse for hostile purposes in the form of | Wp.2 |

| <i>Delegation</i> | <i>Text</i> | <i>Source</i> |
|--------------------|--|---------------|
| | incapacitating weapons. | |
| Russian Federation | <p>Research in multidrug resistance and/or resistance to other antimicrobials:</p> <p>There are active studies in the field of Enterobacteriaceae (Salmonella, Escherichia coli), the most widespread group of microorganisms which inhabit the intestines of humans and animals and can contaminate the environment, food and ready meals and cause anthrax and cholera. In 2011-2012 a number of scientists published their findings on Enterobacteriaceae, Salmonella and anthrax (USA), anthrax (Japan), Escherichia coli (People's Republic of China) and cholera (Iran).</p> <p>Study areas include both the genetic multidrug resistance mechanisms and the possibility of an artificial simulation of new strains resistant to certain groups of antibacterial agents.</p> | WP.? |
| Russian Federation | <p>Research aimed at increasing the pathogenicity of microorganisms:</p> <p>Findings of the study on orthoreoviruses and influenza A (People's Republic of China), brucellosis (Spain) were published.</p> <p>In May 2012 the American and the Japanese scientists jointly published an article on the experimental version of the modified airborne highly pathogenic influenza A (H5N1) virus able to cause epizootic outbreaks among the laboratory animals. The article was initially banned by the National Science Advisory Board for Biosecurity (NSABB), but after its review it was published in the Nature magazine.</p> | WP.? |
| Russian Federation | <p>“Avirulence genes” research:</p> <p>The Italian scientists are studying the formation of Shigella (dysentery agent) pathogenic strains by means of loss of some genetic elements of Escherichia coli. Such a mechanism can significantly increase the hazardous properties of enterohaemorrhagic Escherichia coli (O104: H4), which caused the epidemic in Europe in summer 2011.</p> <p>“Avirulent” genes of the plant pathogens are studied by the Swiss and the Chinese scientists.</p> | WP.? |
| Russian Federation | <p>Research in selection of strains with altered host specificity and/or high pathogenicity:</p> <p>A number of scientists published their research findings on enteroviruses type 71 (Australia), influenza A H1N1 virus and superinfections agents (USA) and Dengue fever virus (Brazil).</p> | WP.? |
| Russian Federation | <p>Research in immunity overcoming strains:</p> <p>The existing publications represent the studies of American and Italian scientists on the plague agent, including on the analysis and design of molecular mechanisms that enable overcoming both artificial (vaccine-generated) and natural human immunity.</p> | WP.? |
| Russian Federation | <p>Molecular epidemiology:</p> <p>The existence and spread of escape pathogens (e.g. HCV) characterized by antigens expression with atypical serological response pose a grave danger, because this hampers significantly the effectiveness of diagnosis and preventive vaccination. Current methods in molecular biology provide means to modify pathogens the way that will make it difficult to identify them by existing means of identification.</p> | WP.? |

| <i>Delegation</i> | <i>Text</i> | <i>Source</i> |
|--------------------|---|---------------|
| Russian Federation | Human genomics: Human genome mapping, studies on how the polymorphism in the human genes is linked to some causative agents of human diseases, the advancement of molecular and cellular biology, the knowledge of genetic features of different races and nationalities allow for possibilities in principle to manipulate with human genome and to selective impact on certain races. Some publications (Biotechnology: Impact on biological warfare and biodefense; Biosecurity and Bioterrorism 2003. V. 1) tell us about the creation of biological weapons of the third – “postgenomic” – generation called “advanced biological warfare – ABW”. | WP.? |

3. New science and technology developments that have potential benefits for the Convention, including those of special relevance to disease surveillance, diagnosis and mitigation

| <i>Delegation</i> | <i>Text</i> | <i>Source</i> |
|----------------------------|--|---------------|
| United States of America | The National institute of Biomedical Imaging and bioengineering announced that researchers funded by NIH have developed a new silk based stabilizer for vaccines and antibiotics. In laboratory tests, this kept some vaccines and antibiotics stable at temperatures of 140 degrees fahrenheit. This opens the door to eliminating ‘cold chain’ refrigeration requirements, which could save billions of dollars and greatly improve access in rural areas of developing countries. | S 17/7 |
| United States of America | A research team at a University in Georgia has developed biodegradable microneedles. These can be coated with a vaccine or other treatment. They apply easily, and dissolve within days. Microneedle technology also promises to eliminate cold chain requirements in some cases – and may also help to stretch limited supplies of vaccines or other treatments, because it produces a much more efficient immune response than conventional injection, potentially reducing the amount of vaccine required per person. The implications for developing countries seem particularly important | S 17/7 |
| United States of America | A recent report by the American Academy of Microbiology, which sets out a road map for applying recent advances to develop point-of-care diagnostic systems suitable for resource-limited settings. | S 17/7 |
| Iran (Islamic Republic of) | Science and technology advances could be of special relevance for the implementation of the Convention as well as for assistance and cooperation to the developing countries which finally helps the realization of the objectives and purposes of the Convention. | |

4. Science- and technology-related developments relevant to the activities of multilateral organizations such as the WHO, OIE, FAO, IPPC and OPCW

| <i>Delegation</i> | <i>Text</i> | <i>Source</i> |
|-------------------|---|---------------|
| United Kingdom | The implementing bodies of the Biological Weapons Convention (BWC) and CWC should improve coordination to address convergent trends in science and technology with respect to incapacitating chemical agents. | WP.2 |
| Poland | The BTWC and CWC mechanisms of review in scientific and technological developments should combine their potential to discuss concerns related to bio-chemical security | S 17/7 |
| Switzerland | ...the Seventh Review Conference noted the increasing convergence of biology and chemistry and its possible challenges and opportunities for the implementation of both the BWC and CWC... closer and continuing cooperation between the BWC and CWC is prime in order to be able to keep up with the latest scientific and technological developments by sharing expertise and, hence, to cope with these future challenges that are common to both Conventions. | S 18/7 |
| Australia | Greater interaction between the BWC scientific community and the CWC scientific community, including informal meetings of experts from both communities. | WP.15 |

5. Any other science and technology developments of relevance to the Convention

| <i>Delegation</i> | <i>Text</i> | <i>Source</i> |
|-------------------|--|---------------|
| Poland | ... better understand the consequences of the convergence of biology and chemistry for the existing norms against both biological and chemical weapons. It is important to engage in that process all relevant stakeholders, including bio-chemical companies and laboratories | S 17/7 |
| OPCW | <p>The advances of the convergence of biology and chemistry</p> <p>(a) Increasing use of biologically mediated processes (catalysts, naturally occurring organisms and genetically modified organisms) for the production of chemicals (biosynthesis).</p> <p>(b) Development of DNA chemical synthesis of replicating organisms (synthetic biology)</p> <p>(c) Recombinant DNA technology that allows replacement of the original genome in bacterial cells with synthetically produced genomes, to produce bacteria with new capabilities (synthetic genomics).</p> <p>The benefits of these advances can be identified as the following:</p> <p>(a) Improved medical / health care;</p> <p>(b) More efficient food production;</p> <p>(c) Renewable energy resources; and</p> | P 18/7 |

| <i>Delegation</i> | <i>Text</i> | <i>Source</i> |
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| | (d) Pollution management | |
| OPCW | Importance of continued monitoring of the advanced in Science and Technology, including through OPCW CB convergence TWG | P 18/7 |
| OPCW | Considerable benefits in experts in biology and chemistry sharing their BWC and CWC experiences. | P 18/7 |

6. Possible measures for strengthening national biological risk management, as appropriate, in research and development involving new science and technology developments of relevance to the Convention

| <i>Delegation</i> | <i>Text</i> | <i>Source</i> |
|-------------------|--|---------------|
| China | Timely assessment of the impacts of bio-science and technology on the Convention, sharing the best biological risk management will be conducive to reducing the risks of misuse of biotechnology and encountering challenges brought by the advancement of biotechnology | S 16/7 |
| China | While developing bio-science and technology pursuant to the principle of the convention, States Parties could, taking into account of their national conditions, strengthen their capacity building on bio-safety and bio-security, formulate best standard for developing bio-science and technology on a voluntary basis, and carry out bio-safety and bio-security education to relevant personnel. | S 16/7 |
| India | Measures to mitigate biological risks should be proportional to the assessed risk and should not hamper activities necessary for prophylactic, protective or other peaceful purposes. | S 16/7 |
| EU | A vision of minimum global standards that are based on performance an outcome-based regulation is sustainable. It is urgent the need to overcome the current lack of international coordination by changing the norms and clearing up confusion | S 17/7 |
| EU | Through benchmarking equipment, building design and personnel/protocols solutions, some minimal standards could be made available to every country via improved knowledge management and communication. | S 17/7 |
| China | ...first it is necessary to strengthen national implementation measures and international monitoring and cooperation to effectively prevent terrorist organizations and individuals obtaining biological weapons. Secondly, to track and evaluate the development of biotechnology to prevent hostile use of biotechnology so as to benefit mankind within the framework of the Convention. Thirdly, to strengthen self-regulation education and management practices to prevent intentional or inadvertent involvement in a breach of Convention. | S 17/7 |
| Switzerland | How do we want to balance scientific freedom and progress with legitimate security concerns particularly in the light of both ever-changing security contexts and rapidly developing scientific advances? What level of risk are we willing to accept in light of the expected benefits? | S 18/7 |

| <i>Delegation</i> | <i>Text</i> | <i>Source</i> |
|--------------------------|---|---------------|
| | Where can the BWC offer unique and relevant inputs, platforms and ways forward, and what challenges should be approached elsewhere? | |
| Switzerland | Ideally, we would have appropriate rules and international practices. However, as long as we do not have such tools at hand, we ought to continue to have an in-depth discussion on both the national and international level – also in the framework of this very Convention – in order to find informed and appropriate ways forward, mostly but not exclusively in the national context. | S 18/7 |
| India | <p>Scientific Publications:</p> <p>(a) Avoid unethical practices - fabrication, falsification, plagiarism etc.</p> <p>(b) Appropriate credit to collaborators - intellectual content, authorship of manuscripts</p> <p>(c) Interests of young scientists - especially protect allotting credit, appropriate guidance, and imparted with the value system of research.</p> <p>(d) Ethical considerations - in this Code of Conduct, applicable to all laboratory scientists involved in scientific research on dangerous organisms and toxic weapons against any living being or environment</p> | P 18/7 |
| India | ...measures for biorisk management are voluntary in nature and should be proportional to the assessed risk of misuse of biological science and technology. Such measures should not unduly restrict activities necessary for peaceful purposes. | S 18/7 |
| United States of America | ...top-down systems of regulation and oversight, and bottom-up approaches based on the responsible conduct of individual researchers are complementary. | S 18/7 |
| United States of America | ...recognize the potential risks posed by dual-use research of concern – but also the benefits of such research... take steps to identify and mitigate risks at the earliest possible stage in the research cycle, working in concert with their research community | S 18/7 |
| Brazil | ...countries possessing more advanced technology in biosciences ought not to hinder the access by developing countries to these technologies. Interdictions in Article 1 should not result in unjustified technology denials. | S 18/7 |
| United Kingdom | ...it is timely to consider issues related to governance of this dual-use technology area, balancing the obligation to take measures to prohibit and prevent misuse with the need to ensure that the beneficial development of science is not hampered. States Parties need to be vigilant and be in a position to take decisions and actions in good time when needed | WP.2 |
| United Kingdom | There is a need to counter the provision of ‘over-regulated’ or ‘over-engineered’ solutions that are unsuitable for developing countries due, for example, to cost or lack of local availability of resources such as building materials and electricity supply. Much work is required to develop realistic operating protocols, and in matching risks to resources. A single uniform international standard may not be appropriate for all developing countries. However, there is also a need to address the possible perception that this could result in an unethical approach of providing lower quality or higher risk solutions than those applied in developed countries. | WP.2 |
| United | ... an approach based on systematic risk assessment and the adoption of technologies | WP.2 |

| <i>Delegation</i> | <i>Text</i> | <i>Source</i> |
|--------------------------|---|---------------|
| Kingdom | and materials that are in line with local needs and availability. A ‘whole-system’ approach would include consideration of engineering and technology, training, cultural and behaviour changes, and whole-life costs and sustainability to achieve effective biorisk management | |
| United Kingdom | ...improved knowledge management and communication to facilitate the availability to developing nations of benchmarked equipment, building design and protocols. Creation of, and support to, networks is key to this | WP.2 |
| United States of America | Increased understanding of, and ability to manipulate, living systems at basic levels promises tremendous benefits to human health and economic development. Misused, however, the same understanding and ability hold significant potential for harm. | WP.6 |
| United States of America | Managing such dual-use risks requires efforts to identify, and where appropriate, mitigate risks throughout the life cycle of research. If risks are not identified until the research has been completed and manuscripts submitted for publication, for example, very few options may be available to manage those risks, and the options that are available may be drastic or inadequate. | WP.6 |
| United States of America | The 2012 Meeting of States Parties should... Recognize that the dual-use nature of some life sciences research requires thoughtful approaches to maximize benefits and minimize risks of accident or misuse | WP.6 |
| United States of America | The 2012 Meeting of States Parties should... Call upon States Parties to examine, at a national level, means of appropriately managing the risks of dual use research of concern throughout the research lifecycle | WP.6 |

7. Voluntary codes of conduct and other measures to encourage responsible conduct by scientists, academia and industry

| <i>Delegation</i> | <i>Text</i> | <i>Source</i> |
|----------------------------|---|---------------|
| Cuba | A Code of Conduct remains the prerogative of the States Parties to decide on the development, content, promulgation and adoption of the code in accordance with relevant national laws regulations and policies, consistent with the provisions of the Convention. | S 17/7 |
| Cuba | Codes of Conduct should avoid any restrictions on exchange of scientific discoveries in the field of biology for prevention of disease and other peaceful purposes. | S 17/7 |
| Iran (Islamic Republic of) | The development, content dissemination and adoption of the Codes of conduct remains the prerogative of the State Parties Codes of Conduct should avoid any restrictions on exchange of scientific discoveries in the fields of biology for the prevention of disease and other peaceful purposes. | S 17/7 |
| Cuba | ...any proposed codes that is considered should cover a combination of existing types (of ethics, behavior and practices). | S 18/7 |
| Cuba | ...the content of any code considered should establish general guidelines that can be used when faced with novel situations or which results in risks to humanity | S 18/7 |

| <i>Delegation</i> | <i>Text</i> | <i>Source</i> |
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| Switzerland | ...making life scientists more aware for potential dangers related to their work constitute an important implementation measure of the BWC. States Parties of the BWC should do their part to support the fostering and promotion of a culture of responsibility and security among life scientists. | S 18/7 |
| India | Codes of conduct or other such measures for biorisk management are voluntary in nature and should be proportional to the assessed risk of misuse of biological science and technology. Such measures should not unduly restrict activities necessary for peaceful purposes. | S 18/7 |
| India | While we recognize the value of evolving voluntary codes of conduct to encourage responsible conduct by scientists, academia and industry, we also believe that such codes of conduct cannot be a substitute for legally binding measures to ensure the strict implementation and compliance with the provisions of the Convention. | S 18/7 |
| India | Increasing awareness for Potential Risks: (a) Both approaches: Top-to-Bottom and Bottom-to-Top (b) Awareness for potential risks to science and its wider applications (c) Ethical responsibilities of the scientists - must comply with international conventions and treaties relevant to their research work (d) Drafted codes of conduct for scientists engaged in life sciences keeping in mind the Biological & Toxin Weapons Convention | P 18/7 |
| India | Basic principles in the codes and guidelines: (a) Autonomy - informed consent, privacy and confidentiality (samples) (b) Beneficence - Fruitful result, Do good, Do no deliberate harm (c) Dual use: Justice - Equitable distribution of risks and benefits - Modern technology applied only for peaceful purposes. | P 18/7 |
| India | Ethical Guidelines for Biomedical Research... to ensure all research activities involving microbial or other biological agents are only of types /or in quantities that have justification for prophylactic, protective or other peaceful purposes | P 18/7 |
| India | Code of conduct relate to individuals as an objective | P18/7 |
| India | Codes of practice widely utilized in the implementation of national regulations, require activities to be carried out in compliance with code of practice. | P 18/7 |
| India | To prevent the misuse of scientific research, all persons and institutions engaged in all aspects of scientific research should abide by this code of conduct | P 18/7 |
| Australia | Codes should be regularly reviewed with all relevant stakeholders | S 18/7 |
| Australia | Add BWC elements to existing codes – not necessarily create new codes. | S 18/7 |
| Australia | Useful to think of codes as occurring in a number of layers, including: (a) a universal code; (b) codes developed in scientific societies; | S 18/7 |

| <i>Delegation</i> | <i>Text</i> | <i>Source</i> |
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| | (c) codes developed by workplaces | |
| Australia | Workplace codes are the basic vehicle for raising awareness of international laws and the national legislative and regulatory frameworks flowing from them. | S 18/7 |
| Brazil | The definition of codes of conduct is a national prerogative and there is no "one size fits all" solution. Multilaterally, a constructive approach would be rather to encourage "responsible behavior" through cooperation, education and awareness-raising. | S 18/7 |
| United Kingdom | There needs to be fresh effort by the appropriate professional bodies to inculcate the awareness of the dual-use challenge (i.e. knowledge and technologies used for beneficial purposes can also be misused for harmful purposes) amongst neuroscientists at an early stage of their training. | WP.2 |
| United Kingdom | Action is required to generate: a renewed effort by appropriate professional bodies to inculcate the awareness of the dual-use challenge among neuroscientists at an early stage of their training; and, greater levels of awareness among scientists of the obligations rising from the CWC and BTWC and of the potential malign applications of their research. | WP.2 |
| United Kingdom | Convergence issues and their implications should be highlighted in these efforts. | WP.2 |
| United Kingdom | A number of complementary interventions could be exploited in addition to working through scientific societies including, for example, law enforcement outreach to scientists and insertion of relevant materials in core texts for science courses. | WP.2 |
| United Kingdom | ...it is important to look at how the issue of dual-use can be assimilated with broader professional training for scientists in the university curricula in a holistic and sustainable matter both at home and abroad. | WP.2 |

8. Education and awareness-raising about risks and benefits of life sciences and biotechnology

| <i>Delegation</i> | <i>Text</i> | <i>Source</i> |
|-------------------|---|---------------|
| Australia | Workplace codes are the basic vehicle for raising awareness of international laws and the national legislative and regulatory frameworks flowing from them. | S 18/7 |
| Japan | The following security issues in advanced biology need to be solved: (a) There is a lack of literacy in the research community and in the general public (b) Less senses of responsibility of bio-security (c) In the scientific world is a lack of ethical basis of bio-security and dual-use protection. (d) Multi-standards under national laws. | P 18/7 |
| United Kingdom | The Experts' Meeting and Meeting of States Parties should address practical ways of implementing such measures and taking actions domestically... we would encourage other States Parties to work with the relevant professional and scientific bodies in | WP.2 |

| <i>Delegation</i> | <i>Text</i> | <i>Source</i> |
|--------------------------|--|---------------|
| | their own countries to promote these issues. | |
| United Kingdom | Convergence issues and their implications should be highlighted in these efforts. | WP.2 |
| United States of America | Purely national efforts, however, are of limited utility, since life science research is a global enterprise. We call on all BTWC States Parties to consider how best to manage the risks of dual-use research of concern. | WP.6 |
| United States of America | Efforts are needed to engage with the scientific community, to increase their awareness of dual-use research risks and mitigation measures, and to work with them to strengthen and reinforce the culture of responsible science. | WP.6 |
| United States of America | ...responsible conduct of life science research, including the development of standards and tools for laboratories and other practicing institutions... [-] Within the life sciences community, these standards and tools can establish norms as well as promote positive communication with the public. Life science practitioners should be actively engaged in these developments to ensure that they are accepted, effective, and do not unduly hamper peaceful uses of the life sciences. | WP.6 |
| United States of America | ... education and outreach as mechanisms to raise awareness about safety, security, and dual-use issues among life science practitioners and to prevent exploitation of S&T for malicious purposes. | WP.6 |
| United States of America | Education and outreach are perhaps the best tools States Parties can use to sensitize life science practitioners to security issues, as well as to their perceived role as holders of public trust. | WP.6 |
| United States of America | The 2012 Meeting of States Parties should... Invite the scientific community, academia, and industry to share their views on how governments and the BTWC can better support them in education, outreach, and other efforts to reinforce the culture of responsible science | WP.6 |
| United States of America | The 2012 Meeting of States Parties should... Invite States Parties, on the basis of stakeholder input, to provide such support where feasible. | WP.6 |

III. Agenda item 7: Standing agenda item: strengthening national implementation

1. Ways and means to enhance national implementation, sharing best practices and experiences, including the voluntary exchange of information among States Parties on their national implementation, enforcement of national legislation, strengthening of national institutions and coordination among national law enforcement institutions

| <i>Delegation</i> | <i>Text</i> | <i>Source</i> |
|----------------------------|--|---------------|
| Iran (Islamic Republic of) | ...the diverse national situations for each of the States Parties requires further cooperation and coordination amongst States Parties. Some States Parties need capacity building through international cooperation and assistance for strengthening their capacities for the full implementation of all the provisions of the Convention. Therefore the full effective implementation of all provisions of the Convention, including the necessary preparations and capacity building for national implementation. | S 18/7 |
| Iran (Islamic Republic of) | ...piecemeal solutions of fragmented proposals are not an option. The only sustainable way for regime building in the BWC is through the legally binding instrument to comprehensively strengthen the Convention. | S 18/7 |
| France | The efforts of national implementation are never completely finished. Legislation must be continuously updated to meet new challenges. There must be a dialectic between the ground truth and the regulatory framework. This was mentioned this morning on the occasion of the debate on the progress of science and technology. | S 18/7 |
| France | It is essential to preserve the "acquis" of previous meetings, without unraveling the common understandings inherited from the previous cycles | S 18/7 |
| France | Innovative approaches could contribute to the strengthening of national implementation. | S 18/7 |
| Thailand | Involvement of the ministerial and regulatory management play very important roles in driving the development of the comprehensive system of pathogens control, prevents bioterrorism and establishes a national biosecurity culture. | S 18/7 |
| Thailand | In order to build a culture of responsibility on biosafety and biosecurity as well as bioethics at all levels of laboratories and related agencies especially in life-sciences research communities, policy makers and law enforcement authorities could play very active role by sharing and supporting their knowledge and activities with those involved stakeholders (management, scientists, engineers, architects, publishers, media, public). | S 18/7 |
| Belarus | The existence of the developed national regulations reflecting the provisions of the BWC is one of the major important criteria showing the good will of the State Party to implement the Convention. Voluntary measures are helpful tools. However, legally binding obligatory regulations for BWC implementation on the global level are | S 18/7 |

| <i>Delegation</i> | <i>Text</i> | <i>Source</i> |
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| | necessary. | |
| EU | (a) assistance to both non States Parties and to States Parties, in order to ensure that States Parties transpose their national obligations into their national legislation and administrative measures and establish functioning relationship among all national stakeholders. The assistance entails support to States parties for establishing a national CBMs process and nomination of national contact points. For non States parties, the assistance would include support for acceding to/ratifying the BTWC (b) support for development of various enabling tools and activities that would assist States parties in national implementation, including submission of CBMs, allow representatives of States Parties to actively engage in the international BTWC process, and raise States Parties' awareness of available international support. | S 18/7 |
| India | National implementation is an important pillar of the Convention. For want of provision on verification of compliance, the prohibitions contained in the Convention critically depend upon the commitment of States Parties to observe them. | S 18/7 |
| United States of America | ...effective national implementation measures are of fundamental importance, and that such measures must be managed, coordinated, enforced, and regularly reviewed to ensure their effectiveness | WP.5 |
| United States of America | National measures should also encompass the full range of biological weapons, consistent with the terms of Article I and the understandings reached by past Rev Cons (e.g., that anti-animal and anti-crop agents and synthetic analogs of toxins are encompassed by Article I). | WP.5 |
| United States of America | States Parties should seek to further develop these understandings - specifically, what they imply, how they are best achieved, and what tools, resources, or information would assist States Parties in implementing them. It would also be appropriate to consider whether any additional understandings would be useful in advancing the goal of effective international implementation of the Convention. | WP.5 |
| United States of America | ...the rapid increase in high-containment facilities means that there is a need for wider availability of high-quality training, for risk-assessment tools, and for the development of facility-specific, risk-appropriate standard operating procedures. | WP.5 |
| United States of America | The 2012 Meeting of States Parties should... Call upon all States Parties to further elaborate the existing understandings of the core elements required for the full implementation of Articles III and IV. | WP.5 |
| United States of America | The 2012 Meeting of States Parties should... Urge States Parties to improve understanding of the status of implementation and identify obstacles to achieving comprehensive national implementation | WP.5 |

2. A range of specific measures for the full and comprehensive implementation of the Convention, especially Articles III and IV

| <i>Delegation</i> | <i>Text</i> | <i>Source</i> |
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| India | National implementation is an important pillar of the Convention: a broad-based regulatory framework to prevent the misuse of biological science and technology; a | S 16/7 |

| <i>Delegation</i> | <i>Text</i> | <i>Source</i> |
|-------------------|--|---------------|
| | comprehensive system for disease surveillance; national guidelines on biological disasters covering management of epidemics and pandemics and bio-terrorism; national expert controls matching the highest international standards. | |
| Algeria | <p>... the following actions are envisaged:</p> <p>(a) Strengthening the scientific expertise skill level</p> <p>(b) upgrading of senior technicians in biology and scientific skills to doctoral level;</p> <p>(c) establishing the training curriculum for post-graduate studies in Medical Sciences, a unit on bio-security, bio-safety and bioethics;</p> <p>(d) support for the establishment of microbiological laboratories, BSL3;</p> <p>(e) pairing between the national and international biological laboratories;</p> <p>(f) development of a centralized database of potentially dangerous microorganisms;</p> <p>(g) development of a health system to mitigate the impact caused by a biological incident, also including a post-incident plan;</p> <p>(h) The creation of an advisory committee on genetic accidents and an Advisory Committee on dangerous pathogens entering the system response;</p> | S 17/7 |
| Algeria | <p>... development of regulations governing:</p> <p>(a) provisions for collecting, sampling and transport of biological agents from the sampling point to the place of treatment;</p> <p>(b) provisions on international standards for transporting samples and identification of routes.</p> | S 17/7 |
| India | On biosafety and biosecurity, there is merit in continuing discussions amongst States Parties on how such measures can help in meeting the aims and objectives of the Convention. Our discussions could focus on exchange of ideas and experiences to see whether best practices can be evolved, which can be implemented by national authorities which bear the main responsibility for implementation of the BWC, in accordance with national laws, regulations and policies. | S 17/7 |
| Thailand | <p>(a) establish a very comprehensive system to authorize the production, import, export, sale, transport and possession (use, storage) of pathogens and animal toxins</p> <p>(b) require permit holders to adopt some accountability measures over pathogens and animal toxins; require the adoption of biosafety and biosecurity measures</p> <p>(c) strengthen the enforcement mechanism with a system for co-operation and co-ordination between law enforcement and public health official</p> <p>(d) criminalize the intended use of the pathogens and animal toxins in bad faith</p> | S 18/7 |
| Thailand | <p>(a) promote awareness of the obligations under the Convention</p> <p>(b) review and update the national acts related to biosafety and biosecurity</p> <p>(c) make clear policies and requirements of legislation programs</p> <p>(d) support private and public sector</p> <p>(e) educate and communicate with stakeholders, i.e. research organizations, academia, manufacturers, distributors, publishers, media and public</p> <p>(f) share knowledge and collaborate with local and international organizations</p> | S 18/7 |
| Canada | Compliance Assessment is a method for evaluating the implementation of the BTWC, not through on-site inspections of biological facilities, but through an analysis of the programs that implements the convention's provisions, and is a useful | S 18/7 |

| <i>Delegation</i> | <i>Text</i> | <i>Source</i> |
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| | way forward on addressing national implementation issues. | |
| Denmark | National implementation through: (a) regulations, but better through dialogue (b) awareness raising and helping the local personnel to adopt biosecurity responsibility as their own (c) making biosecurity part of Corporate Social responsibility (d) national biosecurity must not be isolated from the international community | S 18/7 |
| Australia | National regulatory schemes which control access domestically to hazardous biological materials, remain an effective and necessary subset of measures to support States Parties' implementation of the BWC. To remain effective such regulatory schemes need to be subject to regular review and improvement, including through consultations with stakeholders and on the basis of advances in science and technology and evolving bioterrorism and biocrime risk assessment. | S 18/7 |
| Switzerland | National legislation has to be developed, examined and possibly adapted, including relevant national control mechanisms in order to take into account the new developments in the respective fields and keep up with the evolving challenges. Experts in industry and academia have to be informed and educated. | S 18/7 |
| Switzerland | The responsible conduct of research by life scientists sanitized for potential dangers will continue to constitute an important implementation measure of the BWC. Governments should do their part to support the promotion of a culture of responsibility and through awareness-raising programs as well as education in biosafety, biosecurity and bioethics. | S 18/7 |
| Switzerland | With regard to national implementation and oversight, the issue of the CBMs is crucial, and in particular the reporting of national legislation. Regulations and other measures. | S 18/7 |
| Switzerland | States Parties have an obligation to make further progress with regard to national implementation. By helping each other, and through the invaluable support of ISU and specialized actors from civil society, States Parties should be able to make significant progress between now and the 8 th review Conference. | S 18/7 |
| Cuba | ...different types of inspections: routine inspections, inspections for granting security clearances, biological inspections to verify compliance with the conditions of validity of authorizations granted, and safeguards inspections. | S 18/7 |
| Cuba | Training is a key element contributing to the successful implementation of the Convention. | S 18/7 |
| India | ...maintaining effective national export controls matching the highest international standards and is engaged in other forums so as to achieve these objectives. | S 18/7 |
| Iran (Islamic Republic of) | The case of H5N1 showed that still we have controversy around the areas that related to the national implementation of the Convention. Some countries do not have a clear picture about the authorized and unauthorized activities in the framework of the BWC. Scientists and institutions in one country were easily funded by other countries to work on the areas that are equal to a bioweapon. There were no limitation on their | S 19/7 |

| <i>Delegation</i> | <i>Text</i> | <i>Source</i> |
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| | activities and they were engaged in activities that has the potential to go against the text of the Convention. | |
| Iran (Islamic Republic of) | Since we don't have any definition for bioweapon and areas of red-light in the activities related to biotechnology. It seems that some countries have misused the grey areas and have been involved in offensive biological activities under the mask of biodefence... only way for ending this kind of misuses from the grey areas is the strengthening of the Convention through a multilaterally negotiated instrument. | S 19/7 |
| Algeria | The national implementation of all provisions of the Convention is essential for it to achieve its security objectives and cooperation. | S 19/7 |
| Algeria | ...implementation should cover both the legal aspects on the technical, human and material. States Parties should have to give full effect to the provisions of the Convention in national plan. | S 19/7 |
| Algeria | It is widely admitted that there is no one universal model of application. The latter should be transcribed into national law taking into account the specific conditions of different States Parties and their constitutional status. | S 19/7 |
| Algeria | (a) Legislative, administrative and other measures ensure that the State Party is properly discharging its obligations. This is, among other things, legislation and regulations that clearly define the prohibitions, crimes, criminal provisions, provisions to prevent and punish violations. (b) Biosecurity measures ensure that activities in this area occur in conditions of adequate safety and security, improve management of biological resources, to empower stakeholders and manage under conditions of safety and safety micro-organisms and products of biological processes. (c) Measures within this framework should also cover the registration of entities, control and accounting of materials and biological agents to prevent loss, theft, misuse, diversion or intentional release agents and biological toxins and related resources as well as unauthorized access to such materials, preservation or transfer. | S 19/7 |
| Algeria | Strengthening of the national control of transfers of biological materials and equipment is an important element to prevent any acts contrary to the Convention. This task can be achieved without improving national capacities for surveillance, detection and diagnosis of biological agents and toxins. The exchange of information and data between the Parties, the possibility of access to databases specialized regional and international trafficking in CBRN and the use of backtracking investigations, for more information on biological and toxins at the level of licit and illicit drugs are needed to control borders. The management of these aspects requires skilled human resources that should be bound and accompanied by the acquisition of specific equipment, such as to enable an effective management and rational use of materials and bacterial toxins, for all stakeholders. | S 19/7 |
| Canada | Management and control of human pathogens is an evolving practice: (a) Management approaches varies around the world (b) Based on specific country needs and pressures Need for a common understanding of problems and solutions: | S 19/7 |

| <i>Delegation</i> | <i>Text</i> | <i>Source</i> |
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| | (a) international networking and co-operation is an important element (b) development of knowledge and expertise (c) Promotes a more global or mutually complementary response to emerging issues and threats | |
| Canada | ... focal point for the development of an international network of Advisors in matters related to the regulation of Human Pathogen Biosafety and Biosecurity | S 19/7 |
| Canada | ... active discussion of current and emerging issues relating to Human Pathogen Biosafety and Biosecurity and to share best practices and lessons learned | S 19/7 |
| Canada | ...discussion and sharing of related programs, expertise, and approaches [to biosafety and biosecurity] | S 19/7 |
| Canada | ...encourage coordination among national regulators in order to ensure greater compatibility and interoperability of biosecurity and biosafety systems and processes | S 19/7 |
| Canada | International cooperative work for regulators of human pathogens: (a) International best practises for inspections/audits (b) Potential for “standardization” of risk assessment approaches/methodologies (c) Common approach to containment assessment and requirements (d) Solid network of biosafety regulatory experts (e) Common approach to new and emerging risks (f) Rapid international response | S 19/7 |
| United Kingdom | Legislation often promotes highly secure physical containment with new buildings, high-tech security systems and personnel training, which are associated with high costs. However, some developing nations may not have the necessary resources, infrastructure and regulatory capacity to construct and operate such facilities. Furthermore, there is no point in specifying high-tech, high-maintenance equipment if it cannot then be adequately maintained through its life. | WP.2 |
| United Kingdom | ... development of a nationally based risk-assessment with global management tools and innovative scientific and technical system designs | WP.2 |
| United States of America | States Parties have also recognized that such measures should: (a) Penalize and prohibit activities that breach any of the prohibitions of the Convention; (b) Prohibit assisting, encouraging, or inducing others to carry out such activities; (c) Include not only legal measures, but efforts to strengthen relevant national capacities, including those relevant to investigation and prosecution; (d) Include effective import and export control systems; (e) Address the physical protection of laboratories to prevent unauthorized access to and removal of microbial or other biological agents or toxins, not only through legal and regulatory measures, but | WP.5 |

through effective enforcement and the use of a range of tools including:

- (i) accreditation, certification, and auditing or licensing procedures for facilities, organizations, and individuals;
 - (ii) requirements for appropriate training in biosafety and biosecurity;
 - (iii) mechanisms to check qualifications, expertise, and training of individuals;
 - (iv) national criteria for relevant activities; and
 - (v) national lists of relevant agents, equipment, and other resources;
- (f) Be practical, sustainable, and enforceable, appropriate to the context and the risks involved, and developed in concert with national stakeholders;
- (g) Include regular review and updating of lists of agents and equipment relevant to safety, security, and transfer regimes.

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| United States of America | RevCons have also invited States Parties to consider, to the extent feasible, extraterritorial application of such measures to their nationals, as well as ways and means to ensure that individuals or subnational groups are effectively prohibited from acquiring biological agents for other than peaceful purposes. | WP.5 |
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| United States of America | States Parties have consistently recognized the importance of outreach to and engagement with the scientific community as a necessary complement to formal legislative and regulatory action. | WP.5 |
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| United States of America | Regulatory mechanisms are appropriate but by themselves inadequate to address this situation. | WP.5 |
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| United States of America | National biosecurity measures include much more than simply preventing theft of biomaterial from a laboratory, however. They include maintaining continuous awareness of threats (coercion, manipulation, illicit solicitation) and conducting activities to prevent biosecurity incidents from both external threats as well as internal threats. These efforts might include: | WP.5 |
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- (a) A pre-suitability check to verify records (accuracy of education, publications, military history, etc.) and determine past issues that may be of concern (criminal history, violent behavior, medical health, etc.);
- (b) Maintaining a personnel reliability program to conduct on-going reliability assessments of laboratory staff to ensure staff is suitable to work with pathogens;
- (c) Promoting awareness of potential suspicious activities (missing biological material or equipment, odd hours working in laboratory, unsolicited request for technical information, etc.) and a non-attribution reporting mechanism for staff;
- (d) Training laboratory staff on violence prevention (termination process training, annual evaluation of workplace stress/concerns, conflict resolution programs, etc.);
- (e) Highlighting the benefits of providing a robust employee health and

| <i>Delegation</i> | <i>Text</i> | <i>Source</i> |
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| | wellness program. | |
| United States of America | Active outreach and engagement between the scientific and security communities could greatly assist the mitigation of the aforementioned biosecurity risks, thereby protecting research endeavors. | WP.5 |
| United States of America | The 2012 Meeting of States Parties should... Call upon States Parties to establish a regular review of progress on national implementation measures. | WP.5 |
| United States of America | The 2012 Meeting of States Parties should... Urge States Parties to take regulatory or other steps to ensure that laboratories adhere to widely recognized standards of biosafety and biosecurity; including by providing necessary support. | WP.5 |

3. Regional and sub-regional cooperation that can assist national implementation of the Convention

| <i>Delegation</i> | <i>Text</i> | <i>Source</i> |
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| EU | ...promotion of awareness about the implementation of the BTWC, strengthening of the regional discussion of intersessional topics and their application and supporting key regional actors in defining needs and requirements for national implementation through Regional Workshops | S 18/7 |

IV. Biennial item: how to enable fuller participation in the Confidence-building Measures

| <i>Delegation</i> | <i>Text</i> | <i>Source</i> |
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| Indonesia | Confidence Building Measures (CBMs) serve as a tool to provide transparency and build trust among states parties in the implementation of the Convention. | S 16/7 |
| China | CBMs are not obligatory in nature, and the differences in national conditions and capacity of States Parties should be taken into account... Necessary support and assistance should be provided to those in need. | S 16/7 |
| India | CBMs are an important transparency measure to enhance trust in the implementation of the Convention in accordance with the relevant decision of the 7 th Review conference we should look at ways to increase the number of States Parties making CBM submission in the agreed forms. | S 19/7 |
| Iran (Islamic Republic of) (NAM) | CBMs are a tool of transparency and building trust and confidence among States Parties in the implementation of the Convention | S 19/7 |
| Iran (Islamic | CBMs cannot be a tool to assess compliance for which the only method is a legally binding mechanism with verification provisions. | S 19/7 |

| <i>Delegation</i> | <i>Text</i> | <i>Source</i> |
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| Republic of (NAM) | | |
| Iran (Islamic Republic of) (NAM) | There is a hope that the new CBMs forms lead to an increase in the number of CBMs submissions as only a limited number of States Parties currently make CBM submissions | S 19/7 |
| Iran (Islamic Republic of) (NAM) | There is a need to allow time to the national stakeholders to adjust the amended forms. | S 19/7 |
| Switzerland | Confidence building will become even more important in the years to come due to the rapid progress in biotechnology and related fields. | S 19/7 |
| Switzerland | Even with the partial review during last year's review Conference, the current situation does not look much different, which calls for additional improvements to the CBMs. In terms of content, we certainly need to consider in more depth new development in science and technology and what they mean for the different CBM forms we currently have; Do we ask the right questions? Do we ask them in an unambiguous way living up today's standards implemented in the biological sciences? | S 19/7 |
| Switzerland | The whole submission process is not an easy task to fulfil. It could be beneficial to use electronic means, which could trigger both more submissions and less incomplete submissions at the same time. | S 19/7 |
| Switzerland | To enable fuller participation States Parties should continue to make the forms and the process as a whole easier and more accessible, whilst keeping them relevant. An electronic submission process could: (a) Lower the reporting burden (b) Increase the number of submissions (c) Improve the quality of the information provided | S 19/7 |
| Switzerland | Technological progress and new developments in science and technology need to be addressed. While we have made some adjustments at the last Review Conference, none of these changes made the CBMs pertinent specific challenges States Parties are facing. | S 19/7 |
| Switzerland | In order to increase participation we have to increase the political relevance of the CBM process. The intersessional process should bring us closer to a common understanding on how to handle and process the information contained in the CBMs and that this will lead to a better use of the information submitted | S 19/7 |
| Switzerland | We need to highlight that submitting CBMs is not voluntary, but a political commitment all States Parties should respect. | S 19/7 |
| United Kingdom | States Parties are to submit CBM returns, this is not a voluntary or discretionary activity. Therefore, we do have to find ways to improve the performance rates. | S 19/7 |
| Iran (Islamic | The only aim of this voluntary mechanism is increasing transparency and confidence among States Parties. They cannot be used for other purposes. | S 19/7 |

| <i>Delegation</i> | <i>Text</i> | <i>Source</i> |
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| Republic of | | |
| Iran (Islamic Republic of) | CBMs shall not constitute a mechanism for verification of compliance. It should not impose additional burden on States Parties. | S 19/7 |
| Iran (Islamic Republic of) | ...there is a need to allow time to the national stakeholders to adjust themselves to the amended forms and let the amendments to seep in to the national institutions. These amendments were aimed at increasing the number of States Parties which submit CBM forms. | S 19/7 |
| Iran (Islamic Republic of) | The mandate is clear that the aim of the exercise is to increase the number of States Parties making CBM submissions. | S 19/7 |
| Iran (Islamic Republic of) | The interest of States Parties to voluntarily submit their annual reports on the CBMs may diminish, if they feel that the provision of this information would not contribute to the increasing confidence and subsequently promoting of international cooperation... encourage the States Parties to take the necessary measures to secure its universality including through providing the incentives by promoting the international cooperation in the field of peaceful biological activities and by adhering strictly to the concept of confidence building and its associated objective of transparency. | S 19/7 |
| Canada | The best means to increase the rate of return on CBMs is to make them both relevant and user-friendly. Exchanging information contributes to enhancing transparency and building confidence between States Parties, as well as improving States Parties' implementation of Article X. | S 19/7 |
| Canada | CBM submission would build more confidence if they could be read and understood by all States Parties. At present, CBMs are only available in the language in which they were originally submitted | S 19/7 |
| Canada | CBM submissions only build confidence if they can be read and analyzed by all. Transparency in CBM submission is important, and the restriction of such information does nothing to increase confidence between States Parties. | S 19/7 |
| United States of America | The 2012 Meeting of States Parties should... Urge States Parties in a position to do so to offer assistance or training in support of national implementation tasks, such as drafting, implementing, and enforcing laws and regulations, as well as assistance in compiling and submitting CBMs. In this regard, the potential for assistance from civil society also should be noted. | WP.3 |
| United States of America | The 2012 Meeting of States Parties should... Urge States Parties that have not submitted CBMs and those that lack comprehensive, fully-implemented national measures to avail themselves of this assistance. | WP.3 |
| United States of America | ... the BTWC Chairman should contact all States Parties that have not yet designated a National Point of Contact, as called for by the Sixth and Seventh RevCons, and ask them to do so by the time of the Meeting of States Parties in December. | WP.3 |
| United States of America | ... the Chairman should, each year, write to those States Parties who have not submitted their reports for the previous year, noting that they have not reported, stressing that the ISU and various States Parties stand ready to provide assistance, | WP.3 |

| <i>Delegation</i> | <i>Text</i> | <i>Source</i> |
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| | and urging them to submit their CBMs without delay. | |
| United States of America | ... the ISU should continue and intensify its efforts to move to a fully electronic CBM system that will simplify both reporting and analysis. | WP.3 |
| United States of America | ... a CBM assistance network, coordinated by the ISU, should be established. A number of States Parties have standing offers to assist with CBM reporting. These offers should, where necessary, be updated; the offers and contact information posted on the BTWC website; the CBM reporting guidelines published by various sources harmonized if possible; and greater use made of remote assistance (e.g., via phone and email). | WP.3 |
| United States of America | States Parties should be encouraged to urge others that do not submit CBM reports to do so. | WP.3 |
| United States of America | An improved electronic reporting process could make the data contained in CBMs much more accessible and useful than it is at present, thereby promoting use | WP.3 |
| United States of America | To the extent that language is a barrier, translation may be an important factor. We welcome Canada's announcement at the Seventh RevCon that it intends to support some CBM translation, and are considering options to support this goal. | WP.3 |
| United States of America | ...the move toward publicly available CBM submissions in recent years has shown that public access allows civil society—in particular, academia—to play a constructive role in aggregating and analyzing CBM data. This may considerably facilitate analysis and engagement by those States Parties that lack the resources for this exercise, and should therefore be encouraged. | WP.3 |
| United States of America | The 2012 Meeting of States Parties should... Strongly urge all States Parties to acknowledge, and reiterate to others, the importance of participation in the CBM process. | WP.3 |
| United States of America | The 2012 Meeting of States Parties should... Call on all States Parties to designate National CBM Points of Contact as agreed at the Sixth RevCon and reiterated at the Seventh RevCon, and request the Chairman to follow up with those States Parties who have not done so | WP.3 |
| United States of America | The 2012 Meeting of States Parties should... Call upon the BTWC Chairman to contact States Parties who have not submitted CBMs the previous year, note offers of assistance, and urge submission without delay | WP.3 |
| United States of America | The 2012 Meeting of States Parties should... Urge States Parties to assist the ISU with efforts to move to a fully electronic CBM system that will simplify both reporting and analysis and make the data more widely available | WP.3 |
| United States of America | The 2012 Meeting of States Parties should... Urge establishment of CBM assistance network, coordinated by the ISU, to provide expert advice in an accessible manner; update and harmonize CBM handbooks; and post this information on ISU website | WP.3 |
| United States of America | The 2012 Meeting of States Parties should... Urge States Parties in a position to do so to offer, and coordinate, assistance, training, translations, and workshops in support of national implementation tasks such as compiling and submitting CBMs | WP.3 |

| <i>Delegation</i> | <i>Text</i> | <i>Source</i> |
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| United States of America | The 2012 Meeting of States Parties should... Welcome the decision of many States Parties to post submissions on the publically available ISU website to facilitate aggregating and analyzing CBM data | WP.3 |
| Russian Federation | In the age of rapid development of life sciences and modern biotechnologies the results of almost any research in the field of molecular biology of the immune system and pathogens, synthetic and cell biology as well as proteonomics may be regarded as technologies with a dual-use potential. In this context, submitting information on such research within the framework of CBMs, in our opinion, will reflect openness and commitment of a State to ideas of the BTWC. | WP.11 |
| Russian Federation | In order to achieve the maximum transparency of biological research and development possible in such conditions and to protect the above-mentioned commercial and national interests, it is necessary to continue the exchange of opinions at the expert level on elaborating criteria of control over high technology research and development with a dual-use potential. | WP.11 |
| Russian Federation | ... we could consider the exclusion of the exchange of information on outbreaks of infectious diseases from CBMs, as it is the domain of specialized international organizations (WHO, FAO and IEO), as well as we doubt the need to keep a list of articles published within a reporting period in publicly available science magazines. | WP.11 |
| Russian Federation | We also suggest discussing possible additional forms on facilities, which, as we assume, may give a more detailed insight into State Parties' compliance with the obligations under the Convention. | WP.11 |

List of abbreviations

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| EU | European Union |
| IGSC | International Gene Synthesis Consortium |
| INTERPOL | International Criminal Police Organization |
| NAM | Group of the Non-aligned Movement and Other States |
| OIE | World Organisation for Animal Health |
| OPCW | Organisation for the Prohibition of Chemical Weapons |