

**NOTE BY THE DIRECTOR-GENERAL****SUMMARY OF VERIFICATION ACTIVITIES IN 2016**

1. The Second Special Session of the Conference of the States Parties to Review the Operation of the Chemical Weapons Convention reaffirmed the importance of factual reporting by the Technical Secretariat (hereinafter “the Secretariat”) on verification results “in the interests of transparency and continued assurance of States Parties’ compliance” (paragraph 9.51 of RC-2/4, dated 18 April 2008). In addition, as stated in paragraphs 3.187 and 3.188 of the Note by the Secretariat issued for the Third Special Session of the Conference of the States Parties to Review the Operation of the Chemical Weapons Convention (hereinafter “the Third Review Conference”), “Review of the Operation of the Chemical Weapons Convention since the Second Review Conference” (RC-3/S/1, dated 12 March 2013 and Corr.1, dated 20 March 2013), “[r]ecent developments in the Secretariat’s factual reporting on verification have further enhanced transparency and the continued assurance of States Parties’ compliance. ... The Secretariat will continue its efforts to improve the way it reports on verification results”.
2. In light of the above, the Secretariat has prepared the attached OPCW verification summary for 2016, which reflects the verification work undertaken by the Secretariat during that year.
3. The summary provides valuable reporting on the Secretariat’s verification activities, especially to States Parties that are not represented in The Hague. In terms of public outreach, it is consistent with the OPCW’s Media and Public Affairs Policy (C-I/DEC.55, dated 16 May 1997) and its amendments (EC-85/DEC.7, dated 12 July 2017), and presents pertinent information on such work to a wider audience.
4. The summary follows a structure similar to the verification summaries from previous years, and does not contain any classified information.

Annexes:

- Annex 1: OPCW Verification Summary for 2016
Annex 2: List of Designated OPCW Laboratories



Annex 1

OPCW VERIFICATION SUMMARY FOR 2016

1. EXECUTIVE SUMMARY

Overview

- 1.1 As at 31 December 2016, there were 192 States Parties to the Chemical Weapons Convention (hereinafter “the Convention”). Declared chemical weapons had yet to be destroyed in four States Parties, and declared chemical weapons production facilities (CWPFs) had yet to be fully destroyed in two States Parties. Six States Parties had stocks of old chemical weapons (OCWs) that had yet to be destroyed or otherwise disposed of, while recovered abandoned chemical weapons (ACWs)—confirmed or suspected—were present on the territory of two States Parties. According to declared information, 82 of the States Parties maintained at least one declarable facility pursuant to Article VI of the Convention.
- 1.2 No verification activities could be undertaken for one signatory State not Party¹ and three non-signatory States.² No new States joined the Convention in 2016.
- 1.3 One of the 192 States Parties had not submitted its initial declaration pursuant to the Convention by the end of 2016. The Secretariat was not able to fulfil its verification tasks with regard to this State Party.

Verification operations

- 1.4 With regard to the chemical demilitarisation and industry verification programmes, and without counting the Secretariat’s continuous operations in the Syrian Arab Republic or its activities verifying the destruction of Syrian chemical weapons outside the territory of the Syrian Arab Republic, the Secretariat performed 305 inspections/rotations in 2016, which accounted for 6,606 inspector days at 277 sites in 53 States Parties. This total consisted of 64 inspections or rotations connected to chemical weapons demilitarisation under Articles IV and V, and 241 inspections related to industry verification under Article VI. In addition, a further 1,136 inspector days were spent in 2016 by the Secretariat on verification and related activities connected to the Syrian Arab Republic³ and Iraq.
- 1.5 The overall number of inspector days related to chemical weapons, including those in Iraq and the Syrian Arab Republic, was 4,683 in 2016, while 3,059 inspector days were spent pursuant to Article VI, representing 60% and 40% respectively of the total number of inspector days (7,742).

¹ Israel.

² The Democratic People’s Republic of Korea, Egypt, and South Sudan.

³ This figure includes verification activities both with respect to declared sites in that State Party and with respect to destruction activities that occurred outside its territory, as well as missions related to its initial declaration.

- 1.6 No challenge inspections (CIs) or investigations of alleged use (IAUs) were requested in 2016.
- 1.7 The Secretariat was able to meet the mandated inspection aims at all inspections carried out in 2016. An issue or issues requiring further attention (IRFAs) were registered in connection with 21 inspections (two chemical weapons-related inspection and 19 Article VI inspections).

Chemical weapons verification

- 1.8 In 2016, the Secretariat verified the destruction of 2,014.894 metric tonnes (MT) of chemical weapons. Destruction operations took place at eight chemical weapons destruction facilities (CWDFs) on the territory of possessor States Parties: two in Libya,⁴ one in the Russian Federation, and five in the United States of America.
- 1.9 The Secretariat verified the year-end status of destruction of chemical-warfare agents at the end of the review period as follows:
- (a) A total of 67,752.339 MT, or 93.7%, of the declared chemical weapons stockpile of 72,304.264⁵ MT had been verified as destroyed or withdrawn from chemical weapons stocks for purposes not prohibited under the Convention.
 - (b) Of the seven declared chemical weapons possessor States Parties, A State Party,⁶ Albania, India, and the Syrian Arab Republic had destroyed their entire declared stockpiles of chemical weapons.
 - (c) The Russian Federation had destroyed 96.4% and the United States of America 89.9% of their respective declared quantities of Category 1 chemical weapons.
 - (e) With the assistance of the international community, Libya made progress by destroying 73.3% of its Category 2 chemical weapons.
- 1.10 By 31 December 2016, the Director-General had certified that 90 out of 97 CWPFs had either been destroyed (in 67 instances) or converted (in 23 instances). The remaining seven facilities—four CWPFs in Iraq and two CWPFs in the Syrian Arab Republic—remained to be destroyed. In 2016, the Secretariat carried out eight inspections at eight CWPFs in two States Parties, and conducted five visits to the destroyed CWPFs in the Syrian Arab Republic.
- 1.11 In 2016, the Secretariat conducted five inspections at three chemical weapons storage facilities (CWSFs) in two States Parties, which amounted to 183 inspector days.

⁴ Libyan Category 2 chemical weapons were removed and transported to Germany for destruction.

⁵ Libya submitted an amendment to its initial declaration in 2016, which led to a change in the quantity of the total declared chemical weapons stockpile.

⁶ The State Party in question has requested that its name be regarded as highly protected information. Therefore, for the purposes of this report, it is referred to as “A State Party”.

- 1.12 The destruction of the chemical weapons abandoned by Japan on the territory of China continued, and was based on the destruction plan jointly presented to the Executive Council (hereinafter “the Council”) by China and Japan (EC-67/NAT.11, dated 15 February 2012), pursuant to decision EC-67/DEC.6 (dated 15 February 2012), adopted by the Council at its Sixty-Seventh Session and in accordance with the provisions of the Convention.
- 1.13 The Secretariat carried out 11 inspections related to chemical weapons abandoned by Japan on the territory of China, including four inspections related to the verification of destruction activities.
- 1.14 Since entry into force (EIF) of the Convention, 16 States Parties had declared OCWs. Of these, 11 States Parties had declared OCWs produced between 1925 and 1946, and nine States Parties had declared pre-1925 OCWs. The Secretariat conducted six OCW inspections (in Belgium, France, Germany, Italy, the Netherlands, and the United Kingdom of Great Britain and Northern Ireland) in 2016. In many cases, destruction operations have made considerable progress; however, recoveries of significant quantities of OCWs continue to be made.

Article VI verification

- 1.15 In terms of Article VI of the Convention, the Secretariat verified declared activities at 241 facilities and plant sites in 50 States Parties in 2016. This comprised 11 Schedule 1 facilities (41% of the inspectable facilities); 42 Schedule 2 plant sites (22%); 19 Schedule 3 plant sites (5%); and 169 other chemical production facility (OCPF) plant sites (4%).
- 1.16 Four States Parties reported that they expected to be involved—as importers or exporters—in five transfers of Schedule 1 chemicals between States Parties in 2017. Declarations received in 2016 indicated exports of 6,494 MT of Schedule 2 chemicals by 56 States Parties, and exports of 349,800 MT of Schedule 3 chemicals by 124 States Parties in 2015. There were eight reported transfers of Schedule 1 and no transfers of Schedule 2 chemicals to States not Party in 2015.

Optimising the verification regime

- 1.17 In 2016, the Secretariat continued its efforts to maximise the number of sequential inspections as a way of saving resources. Fourteen of the 15 States Parties that received four or more industry inspections in 2016 concurred with the use of sequential inspections on their territories. In total, the Secretariat carried out 54 sequential inspections in 2016.
- 1.18 Sampling and analysis (S&A) was used during 11 Article VI inspections in 2016: nine Schedule 2 inspections and two (subsequent) OCPF inspections involved S&A. In both cases the inspection, including S&A, was completed within the 24-hour time limit.
- 1.19 Through the Verification Information System (VIS) programme, which comprises several information-technology components and related projects, the Secretariat has over the years increased the use of information-technology tools for the preparation,

submission, and processing of declaration data. These tools aim to introduce efficiencies for both the Secretariat and the States Parties. The VIS and associated data-analysis tools are essential for the processing and effective monitoring of verification-related information; the Secretariat continues to explore ways to enhance these capabilities. Following the success of the electronic declaration tool for National Authorities (EDNA), in 2014 the Secretariat introduced a secure transmission system—the Secure Information Exchange (SIX)—for declarations-related data. The system provides a secure electronic channel for the exchange of electronic declarations and other information, including that of a classified nature, between States Parties and the Secretariat. As at 31 December 2016, a total of 60 users from 38 States Parties had registered for the SIX system.

- 1.20 The ability of the Secretariat to implement its verification responsibilities effectively and efficiently continues to be adversely affected by outstanding or late declarations, although sustained engagement between the Secretariat and the States Parties concerned has recently resulted in significant improvements in this area.
- 1.21 In total, the Secretariat processed 898 incoming documents, declarations, and other verification-related documents from States Parties in 2016, comprising 10,468 pages.

2. INSPECTIONS

- 2.1 During 2016, and without counting its verification activities connected with the Syrian Arab Republic, the Secretariat conducted 305 inspections/rotations, which accounted for 6,606 inspector days at 277 sites in 53 States Parties. With the inclusion of the number of inspector days spent on operations connected with Iraq and the Syrian Arab Republic, the total number of inspector days for 2016 reached 7,742, and the number of States Parties in which verification operations were carried out was 53. On average, 645 inspector days were undertaken each month.
- 2.2 Table 1 lists the number and types of inspections or rotations completed in 2016 and other summary statistics on inspection activities, while Table 2 shows the inspections completed between EIF of the Convention and 31 December 2016.

TABLE 1: INSPECTION ACTIVITIES IN 2016

Type of Facility	Inspectable or Operational Facilities ⁷	Inspections Completed ⁸	Facilities or Sites Inspected	Inspector Days
Chemical Weapons-Related Inspections				
CWDF	7	29	5	2,898
CWSF	9	5	3	183
CWPF	40	13	13	144
OCW	6	6	6	62
ACW ⁹	39	11	9	260
Totals	101	64	36	3,547
Inspector days connected with Iraq and the Syrian Arab Republic				1,136
Total number of chemical weapons-related inspector days				4,683
Article VI Inspections				
Schedule 1	27	11	11	222
Schedule 2	189	42	42	862
Schedule 3	401	19	19	228
OCPF	4,234	169	169	1,747
Totals	4,851	241	241	3,059
Combined totals	4,952	305	277	6,606
Combined total, including days connected with Iraq and the Syrian Arab Republic				7,742

⁷ For CWDFs and ACW destruction sites (ACWDs): operational facilities in 2016; for CWSFs, CWPFs, OCWs, and ACWs: inspectable in 2016; for Article VI facilities: inspectable in 2016.

⁸ Inspections carried out in the Syrian Arab Republic and in connection with destruction activities outside its territory are not included in this column because of the unique nature of the Secretariat's operations with respect to that State Party. The figures reported here may therefore differ slightly from those in the narrative sections below, where Syrian operations, particularly with respect to CWPFs and ACWs, are included to the extent possible.

⁹ Including ACWDs.

TABLE 2: INSPECTION ACTIVITIES SINCE EIF¹⁰

Type of Facility	Inspections Completed	Facilities or Sites Inspected	Inspector Days
Chemical weapons-related inspections			
CWDF	1,828	43	212,557
CWSF	502	37	14,988
CWPF	485	72	9,046
OCW	136	37	2,190
ACW	113	48	3,097
DHCW ¹¹ /EDCW ¹²	25	n/a	1,734
Totals	3,089	237	243,612
Inspector days connected with Iraq			55
Inspector days connected with the Syrian Arab Republic			10,213
Total number of chemical-weapons related inspector days			253,880
Article VI inspections			
Schedule 1	281	38	4,829
Schedule 2	784	374	18,354
Schedule 3	450	383	7,015
OCPF	1,806	1,625	22,702
Totals	3,321	2,420	52,900
Combined totals	6,410	2,657	296,512
Combined total, including days connected with Iraq and the Syrian Arab Republic			306,780

Distribution of Article VI inspections

- 2.3 Fifty States Parties received Article VI inspections in 2016. As can be seen in Table 3, this number was higher than in the previous year (43 States Parties in 2015), although identical to the total for 2014. The variation in the number of inspected States Parties is mainly due to the random nature of the selection of plant sites for inspection under paragraph 11 of Part IX of the Verification Annex to the Convention (hereinafter “the Verification Annex”).

¹⁰ For CWSFs, the figures related to the number of inspected facilities do not include facilities declared as “CWSFs at CWDFs”, as these are verified as part of the respective CWDF and not as separate entities.

¹¹ DHCW = destruction of hazardous chemical weapons.

¹² EDCW = emergency destruction of chemical weapons.

TABLE 3: DISTRIBUTION OF ARTICLE VI INSPECTIONS

	2008	2009	2010	2011	2012	2013	2014	2015	2016
No. of inspections	200	208	208	208	219	229	241	241	241
Inspected States Parties	40	38	38	39	44	46	50	43	50
No. of States Parties accounting for 50% of inspections	6	6	6	7	6	7	7	6	7

TABLE 4: DISTRIBUTION OF ARTICLE VI INSPECTIONS BY REGION

Regional Groups	No. of Industry Inspections	Percentage of Total	Percentage of Inspectable Sites
Africa	3	1%	1%
Asia	108	45%	58%
Eastern Europe	14	6%	4%
Latin America and the Caribbean	20	8%	5%
Western Europe and Other Countries	96	40%	32%

Challenge inspections and investigations of alleged use

- 2.4 No CIs were requested in 2016, and no CI exercises were conducted. However, the Secretariat continues to maintain a high standard of readiness to conduct CIs under Article IX of the Convention, if requested by the States Parties to do so. In 2016, and in accordance with a request of the Third Review Conference (paragraph 9.111 of RC-3/3*, dated 19 April 2013), the Director-General published a Note on the Secretariat's readiness to conduct a CI or an IAU (EC-82/DG.12, dated 7 June 2016).
- 2.5 Because of further deployments on contingency missions in 2016, the Secretariat did not conduct any CI- or IAU-relevant exercises. However, as part of the initial training of the first new group of inspectors in 2016 (Group O), 12 new inspectors, accompanied by seven instructors from the Capacity-Building and Contingency-Planning Cell, conducted a one-week introductory course on contingency operations in Bulgaria in April 2016.
- 2.6 The Secretariat received no requests from States Parties for an IAU during the year in review and no IAU field exercises were conducted.

Inspector training

- 2.7 In accordance with the decision on the Programme and Budget for 2016 (C-20/DEC.6, dated 3 December 2015) by the Conference of the States Parties (hereinafter "the Conference") at its Twentieth Session, the Secretariat assigned a team of inspectors to the newly created Capacity-Building and Contingency-Planning

Cell, which has the primary responsibilities of, inter alia, planning, coordinating, and providing the training programme for inspectors and support personnel and preparing, planning, and conducting exercises for contingency operations.

- 2.8 Two new inspector training groups came on board in 2016. The first group (Group O) consisted of 12 new inspectors who joined the OPCW in January 2016 and completed their mandatory training by the end of April 2016. The second group (Group P) consisted of 27 new inspectors, covering all required specialities, who started their initial training in October 2016 and completed it by the end of December 2016.
- 2.9 The 2016 Inspectorate Training Programme commenced on 18 January and ran through 20 December 2016. The Inspectorate Division completed 3,058 equivalent training days, with delivery of training by inspectors requiring 605 equivalent training days. The programme (excluding training for new inspectors) comprised 60 individual training courses, with 48 calendar weeks involving training.
- 2.10 Seventy percent of the training held in 2016 was delivered within the territory of the Netherlands, with the remainder conducted within the territories of Austria, Belgium, Bulgaria, Italy, Serbia, Slovakia, Spain, the United Kingdom of Great Britain and Northern Ireland, and the United States of America. These States Parties assisted in the delivery of the training programme, either as host nations, through voluntary contributions, or through the provision of technical and/or administrative assistance.

3. CHEMICAL WEAPONS

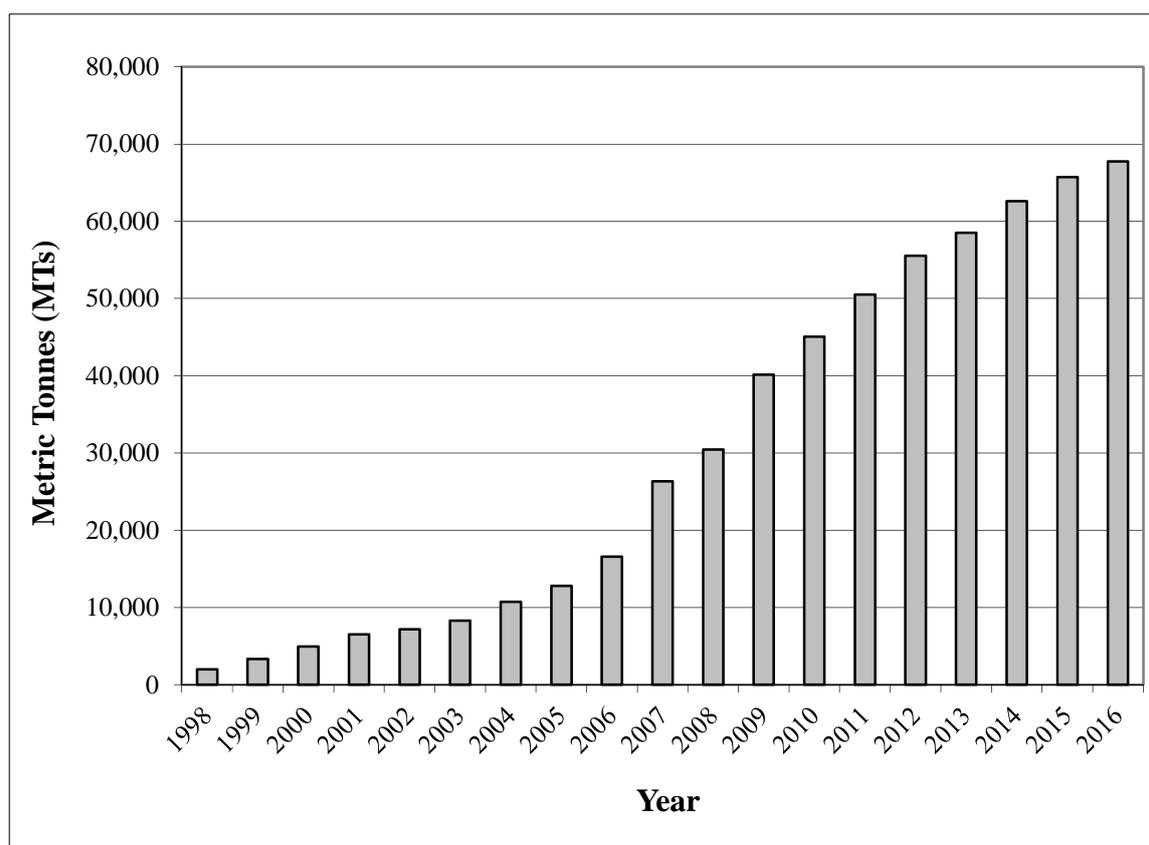
- 3.1 The Secretariat verifies the destruction of chemical weapons by maintaining a continuous presence at operating CWDFs, which allows for the monitoring of ongoing declared activities, either by direct physical observation or through the use of on-site instruments, including equipment specifically dedicated for use by inspectors. For the purpose of verification, inspectors are granted unimpeded access, so that they can monitor process parameters and review relevant documentation. Furthermore, S&A allows the Secretariat to verify the type of chemical-warfare agent being destroyed. By observing the process of destruction and by means of the S&A of generated waste products and, where applicable, the mutilation of drained and decontaminated munitions bodies, the Secretariat can verify that declared quantities of chemical weapons have been completely destroyed and that no chemical weapons have been diverted. Inspections are also carried out at CWSFs to ensure that no removal of chemical weapons takes place except in accordance with the Convention. Inspections at CWDFs¹³ amounted to 2,898 inspector days during 2016 (8,196 in 2015), while inspection efforts at CWSFs totalled 183 inspector days (331 in 2015). In addition, the number of inspector days spent on operations connected to the destruction of chemical weapons declared by the Syrian Arab Republic, as well as on missions of the Declaration Assessment Team (DAT), was 1,136 (2,593 in 2015).

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This number does not include the inspector days for the destruction of the chemical weapons declared by the Syrian Arab Republic at the destruction facilities provided by the States Parties (in-kind contributions) or commercial disposal facilities selected through the OPCW tendering process.

- 3.2 In 2016, the Secretariat verified the destruction of 2,014.894 MT of chemical weapons. This was a decrease compared to 2015, when the total verified destruction amounted to 3,136.007 MT.
- 3.3 By the end of the review period, the overall amount of Category 1 and 2 chemical weapons verified as destroyed, including withdrawals from chemical weapons stocks for purposes not prohibited under the Convention, totalled 67,752.339 MT, or 93.70%, of the declared chemical weapons (see Figure 1).

**FIGURE 1: VERIFIED DESTRUCTION OF CHEMICAL WEAPONS:
CUMULATIVE FROM 1998 TO 2016**



- 3.4 In 2016, eight CWDFs (two fewer than in 2015) were involved in the destruction of Category 1 and 2 chemical weapons: two in Libya, one in the Russian Federation, and five in the United States of America. An additional two CWDFs were still under construction and/or systemisation. Table 5 lists the destruction facilities that were operating or under construction during 2016.

TABLE 5: CHEMICAL WEAPONS DESTRUCTION FACILITIES IN SERVICE OR UNDER CONSTRUCTION IN 2016

Libya	Rabta Toxic Chemicals Destruction Facility (RTCDF) Gesellschaft zur Entsorgung von chemischen Kampfstoffen und Rüstungsaltslasten mbH (GEKA mbH) (Germany)*
Russian Federation	Kizner
United States of America	Pueblo Chemical Agent-Destruction Pilot Plant (PCAPP)** Pueblo Chemical Agent-Destruction Pilot Plant Explosive Destruction System (PCAPP-EDS) Blue Grass Chemical Agent-Destruction Pilot Plant (BGCAPP)*** Blue Grass Chemical Agent-Destruction Pilot Plant Static Detonation Chamber (BGCAPP-SDC)**** Prototype Detonation Test and Destruction Facility (PDTDF) Aberdeen Proving Ground Chemical Transfer Facility (APG/CTF) Recovered Chemical Weapons Destruction Facility (RCWDF)

* Libyan Category 2 chemical weapons were removed and transported to Germany for destruction.

** Construction was complete; systemisation was ongoing until August 2016; operations started in September 2016.

*** Construction was complete; systemisation was ongoing at the end of 2016.

**** Facility was under construction and systematisation at the end of 2016.

- 3.5 At the end of the review period, there remained four States Parties with declared chemical weapons that had yet to be completely destroyed—Iraq, Libya, the Russian Federation, and the United States of America.

Progress in meeting destruction obligations

- 3.6 At the end of the review period, A State Party, Albania, India, Libya, the Russian Federation, the Syrian Arab Republic, and the United States of America had declared a total of 72,304.264 MT of chemical weapons (70,493.561 MT of Category 1 and 1,810.703 MT of Category 2), contained in 8,270,571 munitions and containers. Approximately 93.70% of these chemical weapons—or a total of 67,752.339 MT (66,256.780 MT of Category 1 and 1,495.560 MT of Category 2)—had been verified as destroyed as at 31 December 2016.¹⁴ The possessor States Parties had also declared 417,833 items of Category 3 chemical weapons. All those items had been destroyed at the end of the review period.
- 3.7 In 2011, pursuant to a recommendation of the Council at its Thirty-First Meeting, the Conference at its Sixteenth Session adopted a decision regarding the final extended deadline of 29 April 2012 (C-16/DEC.11, dated 1 December 2011). Pursuant to that decision, Libya, the Russian Federation, and the United States of America submitted in April 2012 and October 2014 (the latter due to the Russian Federation's Addendum (EC-68/P/NAT.1/Add.1, dated 6 October 2014)) detailed plans for the destruction of

¹⁴

Included in this total are 2.913 MT of Schedule 1 chemicals that had been withdrawn from Category 1 chemical weapons stockpiles for purposes not prohibited under the Convention (see subparagraph 2(d) of Part VI of the Verification Annex).

their respective remaining chemical weapons, which specified the planned completion dates for destruction of the remaining chemical weapons by each of the States Parties concerned.

3.8 As at 31 December 2016, OPCW inspectors had verified the destruction of the following quantities of chemical weapons in the seven above-mentioned States Parties that had declared chemical weapons stockpiles:

- (a) Category 1 chemical weapons: The Secretariat had verified the destruction of 66,253.866 MT of this category of chemical weapons. In addition, a total amount of 2.913 MT of Category 1 chemical weapons had been withdrawn pursuant to Article VI of the Convention and subparagraph 2(d) of Part VI of the Verification Annex. Of the total amount, 63,991.195 MT were unitary chemical weapons (of which 1,813.831 MT were destroyed in 2016), including lewisite, sarin (GB), sulfur mustard (including H, HT, and HD), tabun (GA), tabun with UCON, soman (GD) and viscous soman (GD), VX, Vx, and unknown agent, contained in 6,912,420 munitions and containers (of which 704,618 were destroyed in 2016), as well as in other storage vessels that had a volume of less than 2m³ and in larger volume storage tanks, from which the chemical-warfare agent had been drained. Another 2,262.667 MT were binary chemical weapons (none destroyed in 2016), which included the following: DF, QL, OPA, sodium-o-ethyl methyl phosphorothioate, hexamine, diisopropyl aminoethyl chloride hydrochloride, diethyl aminoethyl chloride hydrochloride, and isopropanol. Overall, the Secretariat had verified the destruction of 785,066 binary items, including 415,108 artillery projectiles, 369,958 separately declared DF and OPA canisters, and 306 other containers for binary components.
- (b) Category 2 chemical weapons: The Secretariat had verified the destruction of 1,495.560 MT of Category 2 chemical weapons (196.063 MT in 2016): CNS, thiodiglycol (TDG), 2-chloroethanol (2-CE), phosgene, sodium sulfide, sodium fluoride, chloroacetophenone (CN), adamsite (DM), phosphorous oxychloride, phosphorous trichloride, phosphorous pentachloride, hydrogen fluoride, hydrochloric acid, mono isopropylamine, di-isopropyl aminoethanol, triethylamine, trimethylphosphite, dimethylphosphite, butanol, and methanol, as well as 3,847 artillery projectiles.
- (c) Category 3 chemical weapons: As at the end of 2016, the Secretariat had verified the destruction of 417,825 items of Category 3 chemical weapons declared to the OPCW.

Iraq

3.9 The Secretariat continued consultations with Iraq on the destruction of the two declared bunkers containing chemical weapons remnants. During the reporting period, no destruction of declared chemical weapons took place in this State Party.

Libya

- 3.10 In 2016, Libya continued to report to the Council and Conference through annual and/or periodic reports on the progress achieved towards the complete destruction of its remaining stockpile of chemical weapons, in compliance with Conference decision C-16/DEC.11. This State Party also submitted a modified concept plan for destruction of its remaining Category 2 chemical weapons, updating methods and time frames of Category 2 chemical weapons destruction activities. Libya completed the incineration of 19.257 MT of pinacolyl alcohol in 2016. All reports were received on time and in accordance with the provisions of C-16/DEC.11.
- 3.11 As reported by Libya and documented by Secretariat inspection teams during on-site inspections between 2004 and 2014, two of the chemicals were stored in leaking and deteriorated containers. With assistance from Canada, new tanks were procured and shipped to Libya. Between February and March 2016, Libya completed the decanting of all remaining Category 2 chemicals stored at Ruwagha. Following decanting operations in 2016, Libya submitted an amendment to its initial declaration, thereby adjusting its Category 2 chemical weapons inventory.
- 3.12 In a letter dated 12 February 2016, due to the ongoing security situation and lack of internal technology, Libya requested the Director-General to consider the option of transporting the remaining chemicals to a facility outside the country. The Council recommended that the Secretariat explore options for the remaining Category 2 chemicals (EC-M-51/DEC.1, dated 24 February 2016). On 18 July, the Council requested the Director-General to develop a plan for the expeditious transport, storage, and destruction of Libya's chemical weapons (EC-M-52/DEC.1, dated 20 July 2016). On 22 July 2016, United Nations Security Council resolution 2298 (2016) endorsed the decision of the Council. Further to the aforementioned decision, on 27 July 2016, the Council requested a plan for removal and destruction of Libyan Category 2 chemicals not later than 19 August 2016 (EC-M-52/DEC.2, dated 27 July 2016).
- 3.13 At its Fifty-Third Meeting, the Council welcomed the modified plan for destruction and requested the Director-General to report, on a monthly basis, to the Council on the implementation of the plan (EC-M-53/DEC.1, dated 26 August 2016). The Council also approved the arrangement with Germany (EC-M-53/DEC.2, dated 26 August 2016). All remaining Category 2 chemicals were transported from Libya to Germany for destruction at a commercial facility on 27 August 2016.

Russian Federation

- 3.14 In accordance with Conference decision C-16/DEC.11, the Russian Federation reported to the Council through annual and/or periodic reports on the progress achieved towards the complete destruction of its remaining stockpile of chemical weapons. All reports were received on time and in accordance with the provisions of the decision.
- 3.15 The Russian Federation also provided notifications to the Secretariat regarding activities at one CWSF and one CWDF—notably, process equipment, systematisation operations, standard chemical weapons maintenance operations, the transfer of

munitions from a CWSF to a CWDF, the suspension of destruction activities in order to allow for the servicing of the processing equipment, and other operational information. Updated information for the Kizner CWSF and CWDF was also submitted in 2016.

Syrian Arab Republic

3.16 In accordance with Council decision EC-M-33/DEC.1 (dated 27 September 2013), all relevant documents were made available to the States Parties.

3.17 The Secretariat verified the destruction of 100% of declared Category 1 and 2 chemical weapons.

United States of America

3.18 The United States of America submitted three amendments to its initial declaration in 2016, thereby adjusting its chemical weapons inventory, declaring a new CWSF, and updating the site diagram and building list for two CWSFs.

3.19 In accordance with Conference decision C-16/DEC.11, the United States of America reported to the Council and Conference through annual and/or periodic progress reports on the progress towards the complete destruction of chemical weapons remaining after the 29 April 2012 deadline. All required reports were received by the Secretariat on time and in accordance with all provisions of the above-mentioned decision.

3.20 The United States of America also submitted, inter alia, the following information:

(a) the detailed facility information (DFI), together with a draft facility agreement, for the BGCAPP-SDC, followed by a revision to the DFI for the BGCAPP-SDC updating technical information; and

(b) an analytical method checklist for the PCAPP laboratory.

3.21 As at 31 December 2016, the Secretariat had verified the destruction or withdrawal for purposes not prohibited under the Convention of 24,971.066 MT, or 89.92%, of the stockpile of Category 1 chemical weapons declared by the United States of America. In total, 45.852 MT of Category 1 chemical weapons were destroyed in 2016.

3.22 The Secretariat conducted a final engineering review of the PCAPP in Pueblo, Colorado, in January 2016. The destruction operations started in September 2016.

3.23 The Secretariat conducted an inspection to review documents related to the destruction of items recovered and destroyed in 2016 at the RCWDF, PDTDF, and APG/CTF in January 2017.

4. CHEMICAL WEAPONS PRODUCTION FACILITIES

4.1 The Secretariat conducts inspections to verify progress at those CWPFs that have not yet been fully destroyed or converted for purposes not prohibited under the Convention. Verification ceases once the Director-General certifies that destruction

of a CWPf has been completed, whereas facilities that have been certified as converted remain subject to systematic inspections for 10 years under the provisions of the Convention and for the next five years under the provisions of the Council decision on the nature of continued verification measures at converted facilities 10 years after the Director-General's certification of their conversion (EC-67/DEC.7, dated 16 February 2012). In 2016, the Secretariat carried out eight inspections at eight CWPfs in two States Parties, and conducted five visits to the destroyed CWPfs in the Syrian Arab Republic in accordance with Council decision EC-M-43/DEC.1 (dated 24 July 2014).

- 4.2 As at 31 December 2016, 97 CWPfs had been declared to the OPCW. The Director-General had certified the completion of destruction or conversion of 90 of those facilities. Sixty-seven had been certified as destroyed. Twenty-three had been converted for purposes not prohibited by the Convention. Seven CWPfs remained to be destroyed and certified.
- 4.3 In 2016, in accordance with Council decision EC-67/DEC.7 on the nature of continued verification measures at converted facilities 10 years after the Director-General's certification of their conversion, the Secretariat inspected one CWPf in A State Party and four in the Russian Federation.
- 4.4 Consultations between Iraq and the Secretariat continued in 2016 regarding the development of detailed plans for the destruction of the four declared CWPfs.
- 4.5 In the Syrian Arab Republic, the Secretariat has not been able to carry out activities on sites inaccessible for security reasons.
- 4.6 In accordance with the Convention, residual production capacity (RPC) shall be reduced to zero 10 years after EIF of the Convention. Guided by a decision of the Conference (C-I/DEC.29, dated 16 May 1997) and by a document that sets forth the method for calculating the RPC of CWPfs (S/260/2001, dated 5 June 2001), the Secretariat assessed the RPC at the end of 2016 for all 14 States Parties that had declared CWPfs.

5. OLD AND ABANDONED CHEMICAL WEAPONS

- 5.1 With regard to OCWs, the verification work of the Secretariat consists of inspections at declared storage sites in States Parties declaring OCW holdings, in order to verify the consistency of any changes (recoveries, destruction, or reclassification) reported in either annual or ad hoc declarations, as well as other notifications.
- 5.2 With regard to ACWs, the Secretariat continuously carries out inspections to monitor ongoing activities concerning chemical weapons abandoned by Japan on the territory of China. During periods of destruction the Secretariat also carries out quarterly inspections to verify those destruction operations.
- 5.3 In 2016, the Secretariat conducted six OCW inspections in six States Parties and 11 ACW inspections in one State Party. The discovery of 1,923 OCWs was declared by five States Parties, while 1,058 OCWs were reported as destroyed.

- 5.4 Approximately 3,100 ACWs in China were reported as newly recovered and/or identified and 6,384 ACWs were reported as destroyed in 2016.
- 5.5 Chemical weapons abandoned by Japan on the territory of China were subject to the destruction deadline of 29 April 2012 (EC-46/DEC.4, dated 5 July 2006). According to Council decision EC-67/DEC.6, the destruction of chemical weapons abandoned by Japan on the territory of China was to continue after 29 April 2012, in accordance with the provisions of the Convention. The Abandoned Chemical Weapons Mobile Destruction Facility at Shijiazhuang continued operations in 2016. In addition, the Abandoned Chemical Weapons Test Destruction Facility at Haerbaling continued destruction operations in 2016.

Declared stocks

- 5.6 Between EIF of the Convention and 31 December 2016, 16 States Parties had declared OCWs. Of these, 11 States Parties declared 71,780 OCWs produced between 1925 and 1946, while nine States Parties declared 67,726 OCWs produced before 1925. All of these States Parties provided information to the Secretariat on recovery and destruction operations, and on steps being taken to destroy or otherwise dispose of the OCWs as toxic waste.
- 5.7 In 2016, OCWs and/or suspected OCW discoveries were reported to the Secretariat by Belgium, France, Germany, Italy, and the United Kingdom of Great Britain and Northern Ireland.
- 5.8 Based on information received, as at 31 December 2016, six States Parties (Belgium, France, Germany, Italy, the Netherlands, and the United Kingdom of Great Britain and Northern Ireland) had OCWs or suspected OCWs on their territories and more than 38,600 OCWs had yet to be destroyed or otherwise disposed of.
- 5.9 Also as at 31 December 2016, four States Parties had declared confirmed ACWs on their territories. In particular, more than 50,000 items of chemical weapons abandoned by Japan on the territory of China had been discovered at over 90 locations in 19 provinces in China. Of these, 45,624 had already been destroyed.

Verification activities

- 5.10 In 2016, the Secretariat conducted six OCW inspections in Belgium, France, Germany, Italy, the Netherlands, and the United Kingdom of Great Britain and Northern Ireland.
- 5.11 During the period under review, 11 ACW inspections were conducted in relation to chemical weapons abandoned by Japan on the territory of China.

6. INDUSTRY VERIFICATION

- 6.1 The total number of facilities declared worldwide in connection with the Article VI verification regime at the end of the review period was 5,220, of which 4,728 were subject to systematic verification (see Table 6). In 2016, the Secretariat verified the declared activities at 241 facilities and plant sites in 50 States Parties. The breakdown

of inspections per verification remained the same as in 2015. Thus, 11 Schedule 1 facilities, 42 Schedule 2 plant sites, 19 Schedule 3 plant sites, and 169 OCPF plant sites were inspected in 2016.

TABLE 6: FACILITIES DECLARED PURSUANT TO ARTICLE VI AS AT 31 DECEMBER 2016

Number of Declared Facilities					
Number of States Parties Having Declared Article VI Facilities					
Regime	Schedule 1	Schedule 2	Schedule 3	OCPF	Totals
Declared	27	485	403	4,305	5,220
Declarable	27	456	398	4,303	5,184
Inspectable	27	200	374	4,127	4,728
States Parties	23	36	35	82	82

- 6.2 In 2016, an IRFA or IRFAs were recorded at 19 Article VI inspections, that is, at 12 Schedule 2 inspections, three Schedule 3 inspections, and four OCPF inspections. Furthermore, 179 observations during inspections were marked “gather further information” (typically, declaration issues that do not amount to IRFAs, according to the Secretariat’s internal practices).
- 6.3 In 2016, four OCPF inspections were carried out at plant sites that turned out to be non-inspectable (see paragraph 6.17 below).

Transfers of scheduled chemicals

Transfers of Schedule 1 chemicals according to ADPAs for 2015

- 6.4 Fourteen transfers of Schedule 1 chemicals were declared by 11 States Parties in their annual declarations of past activities (ADPAs) for 2015. All these 14 transfers were notified by both the sending and receiving States Parties. The total amount of Schedule 1 chemicals transferred in 2015 was 24.83 grams.

Transfers of Schedule 2 and Schedule 3 chemicals between States Parties in ADPAs for 2015

- 6.5 The ADPAs for 2015 that were received in 2016 indicated that a total of 56 States Parties transferred Schedule 2 chemicals in 2015, and that the total volume of this trade came to approximately 6,494 MT. Meanwhile, 124 States Parties transferred Schedule 3 chemicals in 2015, and the total volume of this trade was approximately 349,800 MT.

Transfers of Schedule 2 and 3 chemicals to States not Party in ADPAs for 2015

- 6.6 In the ADPAs for 2015 received in 2016, there were no reported transfers of Schedule 2 chemicals to States not Party in 2015. Nine States Parties exported four Schedule 3 chemicals to three States not Party.

Optimisation of the Article VI inspection regime

- 6.7 Throughout 2016, the Secretariat continued its efforts to optimise the effectiveness and efficiency of the Article VI inspection regime.
- 6.8 Inspections were carried out with a comparable team size to that of similar inspections carried out in 2015. However, the Secretariat will continue to evaluate and re-assess the size of the inspection teams, with a view to ensuring the greatest possible levels of both efficiency and effectiveness.
- 6.9 In January 2016, updated inspection report templates were introduced for Schedule 1, Schedule 2, and Schedule 3 inspections. The updated templates facilitated a more streamlined post-inspection process, thus reducing the time on site for those inspections.
- 6.10 During 2016, the Secretariat also continued its efforts to maximise the number of sequential inspections (see Table 7) as a way of optimising the use of human and material resources. Sequential inspections (two inspections in one mission) are an important tool for making the inspection process more efficient; further efficiencies could be achieved should additional States Parties agree to the conduct of sequential inspections on their territories, in particular those with large numbers of annual Article VI inspections. In this regard, 14 of the 15 States Parties that received four or more industry inspections in 2016 have advised the Secretariat that they concur with the use of sequential inspections on their territory. Out of the 54 sequential inspections that took place in 2016, 43 were consecutive inspections in a single country, while 11 allowed inspectors to conduct inspections in two States Parties during one mission. As a result of performing those 54 sequential inspections, the Secretariat saved at least EUR 295,000 in travel costs, and 130 inspector weeks of work.
- 6.11 In 2016, five fewer sequential inspections were carried out than in 2015. This was due to the location of the sites selected,

TABLE 7: SEQUENTIAL INSPECTIONS

Sequential Inspections (On a Year-by-Year Basis)											
2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
23	26	26	37	42	40	47	48	57	51	59	54

- 6.12 At the end of the review period, the following States Parties with inspectable Schedule 3 and/or OCPF plant sites had not yet agreed to the Secretariat's conducting sequential inspections in some form: Azerbaijan, Georgia, Pakistan, the Russian Federation, and Viet Nam.

Sampling and analysis

- 6.13 The Secretariat has continued to conduct Schedule 2 inspections using S&A on a routine basis, reaching 90 such missions in 22 States Parties by the end of 2016 (see Table 8).

- 6.14 In 2016, there were 11 inspections involving S&A, nine in Schedule 2 inspections, and two (subsequent) OCPF inspections involved S&A. In both latter cases the inspection, including S&A, was completed within the 24-hour time limit. This brought the total of Article VI inspections using S&A to 94, and the number of States Parties that have received S&A missions to 25, giving a broader geographical distribution.
- 6.15 As at 31 December 2016, 100% (20 out of 20) of the States Parties with currently inspectable Schedule 2 plant sites had received at least one S&A mission. Two additional States Parties that had received S&A no longer have inspectable sites.

TABLE 8: SAMPLING AND ANALYSIS AT ARTICLE VI PLANT SITES

Number of Inspections with S&A											
2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	Total
2	9	9	9	9	8	9	8	9	11	11	94 ¹⁵

- 6.16 Analytical data have been continually included in the OPCW Central Analytical Database (OCAD), following validation by the Validation Group and approval by the Council.

Inspections at non-inspectable Article VI sites

- 6.17 In 2016, a total of four Article VI inspections were carried out at sites that proved to be non-inspectable, all being OCPF sites. In the past few years, the Secretariat has made efforts to address the issue of non-inspectability through a variety of means, including bilateral consultations and requests for clarification (RFCs), internal analyses and checks, and education and outreach at training courses and seminars for National Authorities. In addition, e-learning modules have been developed. Table 9 shows how the number of inspections at non-inspectable sites has varied over time.

TABLE 9: INSPECTIONS AT SITES THAT ARE NON-INSPECTABLE

2010	2011	2012	2013	2014	2015	2016
14	6	5	7	8	7	4

Secretariat support to consultations on industry and other Article VI issues

- 6.18 Four informal consultations were conducted in 2016, and were webcast to enable the representatives of National Authorities to remotely observe consultation proceedings. States Parties undertook consultations on a number of outstanding verification-related topics, including production by synthesis and possible exemption of OCPF declaration requirements; guidance for declarations of mixtures; a summary of industry verification in 2015; updates to the Schedule 2 and Schedule 3 inspection report templates; a summary of the 7 July 2016 technical meeting on the discussion of the recommendations of the Scientific Advisory Board (SAB) on verification; a progress report on the use of S&A during Article VI missions; engaging the chemical industry associations; an update on transfer discrepancies; implementation of the

¹⁵

Includes 90 Schedule 2, one Schedule 3, and three OCPF missions.

Verification Action Plan, addressing the SAB's recommendations on verification (including continuous additions to the OCAD, production by synthesis, engineering capabilities of OCPFs, and current capabilities for assisting States Parties in identifying declarable plant sites); and a presentation on isotopic labels, stereoisomers, and scheduled chemicals.

7. OTHER VERIFICATION-RELATED ACTIVITIES

Implementation matters

- 7.1 This section provides information about several ongoing matters that constitute challenges to the Secretariat's ability to effectively discharge its verification responsibilities. It is not an exhaustive list. By highlighting these subjects, the Secretariat is giving States Parties an opportunity to see how matters are affected by remedial action taken by the Secretariat and States Parties; the Secretariat will continue to monitor how these challenges develop over time.

Outstanding initial declarations

- 7.2 Since EIF of the Convention, the Secretariat has reminded States Parties of their declaration obligations through a variety of means, including bilateral consultations and RFCs, reconciliation letters, and education and outreach at regional and subregional meetings, courses, seminars, and workshops. The Secretariat will continue to work with the relevant States Parties towards the submission of their outstanding initial declarations.

Progress and status

- 7.3 During 2016, the Secretariat received initial declarations pursuant to Articles III and VI of the Convention from Angola and Kiribati. This means that, by the end of 2016, 191 of the 192 States Parties had submitted initial declarations in accordance with Article III and/or Article VI.
- 7.4 As at 31 December 2016, only one State Party had not yet submitted its initial declaration under both Articles III and VI: Tonga (due date: 28 July 2003).

Outstanding or late annual declarations

- 7.5 In order for the Secretariat to be able to continue to perform its verification tasks effectively, it is of the utmost importance that States Parties continue to submit their ADPAs and annual declarations of anticipated activities (ADAAs) in a timely manner. Outdated information not only leads to erroneous site selections, but also risks increasing the rate of inspections at non-inspectable sites. Both of these scenarios involve an inefficient use of inspection resources. In addition, countries that submit their aggregate national data (AND) late may cause transfer discrepancies.

Follow-up actions

- 7.6 In regard to actions taken by the Secretariat to address the issue of timely submission of declarations, particular emphasis has been placed on supporting the States Parties

concerned. In 2016, the Secretariat provided tailor-made technical assistance to those States Parties in the framework of several bilateral meetings and consultations.

Progress and status

- 7.7 Since the 2007 decision on timely submission of Article VI declarations, the Secretariat has regularly been requested to prepare status reports for the Council on the implementation of that decision. Two such reports¹⁶ were provided in 2016 by the Secretariat. In addition, one status report focusing on ADPAs for 2015 and ADAAs 2017 as at 31 December 2016 has been published in 2017 (EC-84/DG.8, dated 17 January 2017).
- 7.8 Overall, 92 States Parties with declarable facilities or activities submitted ADPAs for 2015. Of these, 79 States Parties met the deadline of 30 March 2016 for submitting at least part of their required declarations, and 13 States Parties submitted their ADPAs for 2015 between 30 March and 31 December 2016. Of the aforementioned 13 States Parties, five States Parties submitted their ADPAs for 2015 more than 30 days late, and eight States Parties submitted their ADPAs for 2015 fewer than 30 days late.
- 7.9 In 2016, 47 States Parties with declarable facilities or activities submitted ADAAs for 2017. Of these, 21 States Parties met the deadline (2 October 2016) for Schedule 1 chemicals and facilities, and 42 States Parties met the deadline (1 November 2016) for Schedule 2 and 3 chemicals and facilities. In total, 44 States Parties met the deadline for submitting at least part of their required ADAAs for 2017, and three States Parties submitted their required ADAAs for 2017 after the deadline but before 31 December 2016.
- 7.10 In line with EC-53/DG.11 (dated 17 June 2008), the Secretariat has continued to highlight to States Parties the need to review and update their lists of declared OCPFs through a variety of means. In 2016, the majority of States Parties continued to fully replace their lists of OCPFs annually, with the result that approximately 99% of declared OCPFs were either updated in 2016 or were declared for the first time. However, one State Party had not fully updated its list of declarable OCPFs for five years or more.

Transfer discrepancies

- 7.11 The Third Review Conference encouraged the cluster on chemical-industry and other Article VI issues to consult on ways to reconcile such discrepancies, and called upon States Parties and the Secretariat to continue working to identify the causes of discrepancies related to Article VI declarations, such as those relating to AND for Schedule 2 and 3 transfers (paragraph 9.93 and subparagraph 9.95(g) of RC-3/3*).

¹⁶ EC-81/DG.4 (dated 14 January 2016) and EC-82/DG.14 (dated 13 June 2016).

Actions taken by the Secretariat on transfer discrepancies

Cooperation with the World Customs Organization

- 7.12 In the framework of cooperation with the World Customs Organization (WCO), the Secretariat initiated the Harmonized System (HS) project together with the WCO on the subject of identification by customs authorities of the most traded scheduled chemicals. This project aims to allocate unique international six-digit HS codes to the most traded scheduled chemicals, to identify globally traded scheduled chemicals and, ultimately, to ensure complete and accurate declarations and resolve existing transfer discrepancies.
- 7.13 The HS project covers two phases. The first phase, focused on the 33 most traded scheduled chemicals, was successfully completed by the end of 2016, resulting in the inclusion of these 33 chemicals with unique international subheadings (six-digit HS codes) in the 2017 edition of the HS Convention, effective from 1 January 2017.
- 7.14 The second phase of the project focuses on the inclusion of an additional 15 most traded scheduled chemicals in the 2022 edition of the HS Convention.

Capacity building

- 7.15 In 2016, the Secretariat held several events focused on capacity building in relation to Article VI declarations. During these events, which were attended by different stakeholders, the Secretariat placed particular emphasis on raising awareness of the transfers regime of the Convention and on resolving transfer discrepancies. Furthermore, the Secretariat facilitated a forum in which participants could share key problems and best practices in resolving transfer discrepancies, and make suggestions to the Secretariat for future consideration.

Transfer discrepancies with respect to Schedule 2 and Schedule 3 chemicals

- 7.16 Despite the follow-up actions taken by the Secretariat, according to the ADPAs for 2015, there were still considerable Schedule 2 and 3 transfer discrepancies,¹⁷ as was the case in previous years. In particular, approximately 69% (515) of the total number (747) of Schedule 2 and Schedule 3 transfers between States Parties showed transfer discrepancies, compared to 68% in 2014 and 67% in 2013. The ADPAs for 2015 show that the aforementioned 515 transfer discrepancies of Schedule 2 and 3 chemicals involved 79 States Parties. Out of these 515 transfer discrepancies, 147 were encountered for Schedule 2 chemicals and 368 for Schedule 3 chemicals.

¹⁷

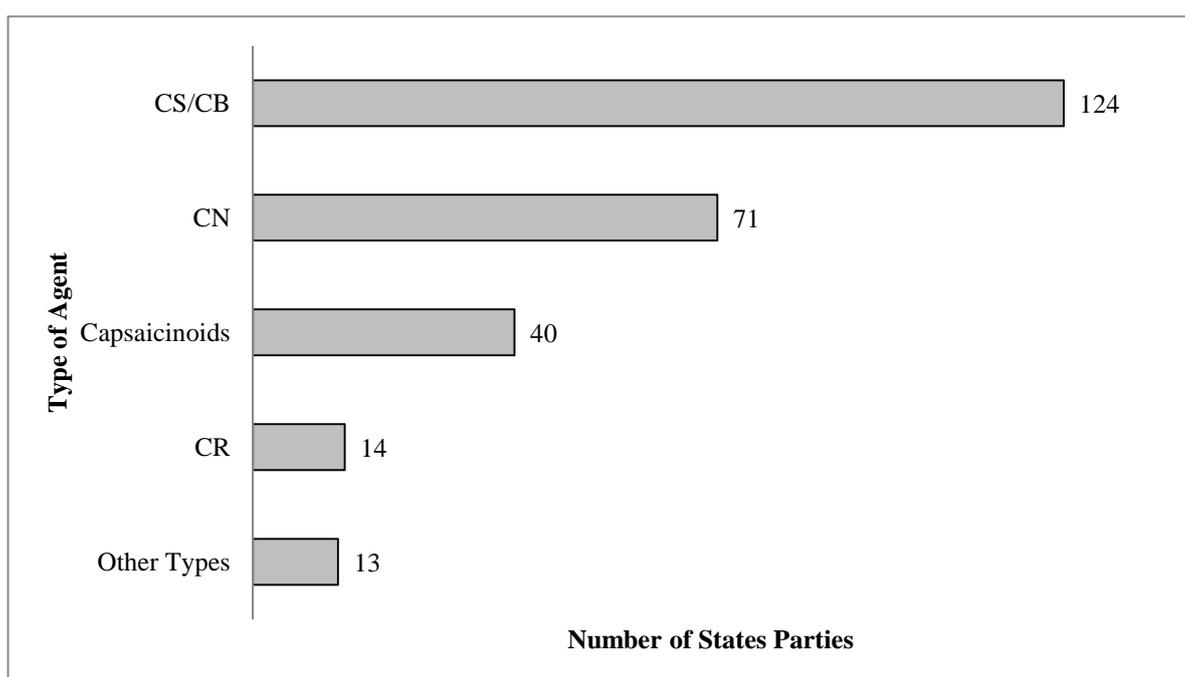
A transfer discrepancy arises for a transferred Schedule 2 or 3 chemical when the difference between the quantities declared by the importing and exporting States Parties is more than the relevant threshold specified for that chemical in paragraph 3 of Part VII or paragraph 3 of Part VIII of the Verification Annex.

Status of required declarations

Riot control agents

- 7.17 In line with efforts undertaken in previous years to keep information received from States Parties in regard to chemicals held for riot control purposes up to date, the Secretariat takes every opportunity—such as bilateral consultations, follow-up correspondence, RFCs, reminder letters, etc.—to highlight to States Parties the need to update their declarations with respect to riot control agents (RCAs). The latest information on the number of States Parties having declared RCAs, by agent type, is contained in Figure 2.

FIGURE 2: NUMBER OF STATES PARTIES HAVING DECLARED RIOT CONTROL AGENTS – BY TYPE OF AGENT



Handling of declarations

Clarification of declarations

- 7.18 In a 2004 decision (EC-36/DEC.7, dated 26 March 2004), the Council urged States Parties to expedite their responses to RFCs, established a 90-day deadline for responding to such requests, and recommended that the Secretariat take follow-up action in cases where it cannot determine whether or not a facility is inspectable.
- 7.19 The Secretariat did not issue any RFCs addressing inspectability-related issues in 2016. A small number of inspectability-related issues were identified during the reporting period, but in each case these issues were quickly resolved through discussions between the Secretariat and the States Parties concerned, without the need for RFCs to be issued. At the end of reporting period, there were no outstanding issues of this nature.

- 7.20 Clarification of the Syrian initial declaration continued throughout 2016 by the DAT, which had conducted 18 rounds of consultations as at 31 December 2016. The preliminary results of the work of the DAT were reported to the Council at its Eightieth (EC-80/P/S/1, dated 25 September 2015), Eighty-First (EC-81/HP/DG.1, dated 22 February 2016), and Eighty-Second Sessions (EC-82/HP/DG.2*, dated 30 June 2016).

Processing of declarations

- 7.21 In 2016, the Secretariat received 898 incoming documents, comprising 10,468 pages, from States Parties. These documents included 98 ADPA 2015, 59 ADAA 2017, and other verification-related documents. Four hundred and twenty-eight documents, or 48%, comprising 2,230 pages (22%), were unclassified. However, the majority of the pages that were received continued to be classified: 118 documents (1,219 pages) were classified as “OPCW Highly Protected”; 220 documents (6,156 pages) as “OPCW Protected”; and 132 documents (863 pages) as “OPCW Restricted”. In other words, 52% of the documents received (48% in 2015), and 78% of the pages (70% in 2015) were classified. The Secretariat continues to ensure that all documents are handled in strict compliance with the OPCW confidentiality regime. Meanwhile, the Secretariat encourages States Parties to evaluate classification levels carefully and to minimise the number of classified documents to the extent possible.

Electronic declarations

- 7.22 Fifty-eight States Parties provided their ADPAs for 2015 either solely or additionally in electronic format (as compared with 52 States Parties in the preceding year). A total of 37 States Parties submitted their original ADAAs for 2017 in electronic format (the same number as the year before).
- 7.23 The Secretariat has continued to provide States Parties with support during their submission of electronic declarations using EDNA. In addition, 12 representatives from 12 States Parties attended the EDNA training courses organised during the Twenty-First Session of the Conference. The Secretariat also provided a basic course on electronic declarations as part of the “Training Course on National Authorities and Chemical Databases”, organised by the Finnish Institute for Verification of the Chemical Weapons Convention (VERIFIN) in August 2016.
- 7.24 In 2016, the Secretariat successfully completed work on improvements to the EDNA tool and released an enhanced version (3.3) to States Parties, in July. The new version includes a number of technical enhancements and corrections of previously reported errors.
- 7.25 In 2016, the Secretariat also observed a significant rise in interest amongst the States Parties in using the Secure Information Exchange (SIX) system, which was made available to States Parties in July 2014 (S/1192/2014, dated 1 July 2014). As at 31 December 2016, a total of 60 users from 38 States Parties had registered for the system. As reported to the States Parties in the Note by the Secretariat S/1407/2016 (dated 16 August 2016), the expected key benefits of the system have started to materialise, particularly those related to improvements in both the timeliness of declarations and the overall efficiency of the declaration processing.

- 7.26 In 2016, the Secretariat increased its efforts to provide and support training opportunities for States Parties through the development of e-learning modules. As a result, a set of six modules was made available to States Parties in the first quarter of 2015. Also in 2016, the Secretariat completed the translation of these modules into French and Spanish. They will be available to States Parties in due course. The Secretariat also organised a dedicated training session for the SIX system during the Twenty-First Session of the Conference, which was attended by eight representatives from eight States Parties.

Implementation by States Parties of the 2009 Conference decision on low-concentration limits for mixtures of chemicals containing Schedule 2A and 2A* chemicals

- 7.27 The Conference at its Fourteenth Session approved a decision (C-14/DEC.4, dated 2 December 2009) on guidelines regarding low-concentration limits for mixtures containing Schedule 2A and 2A* chemicals. The decision required States Parties to implement the guidelines as soon as practicable.
- 7.28 The decision also required the Secretariat to report in the Verification Implementation Report on the progress made by States Parties in implementing the decision, beginning not later than 1 January 2012. To gather information for this report, a total of six surveys have been carried out: in 2011 (S/948/2011, dated 6 July 2011), in 2012 (S/1040/2012, dated 18 September 2012), in 2013 (S/1125/2013, dated 17 September 2013), in 2014 (S/1213/2014, dated 12 September 2014), in 2015 (S/1310/2015, dated 15 September 2015), and in 2016 (S/1420/2016, dated 13 September 2016).
- 7.29 As at 31 December 2016, the overall response to the six surveys showed that 60 of the 192 States Parties had responded to at least one survey. Of those 60 States Parties, 41 States Parties had implemented the decision and 19 had not.
- 7.30 In addition, one State Party provided a submission under paragraph 5 of Article VII of the Convention in 2010; this submission indicated that the State Party had implemented this decision.

8. TECHNICAL SUPPORT FOR VERIFICATION ACTIVITIES

Sampling and analysis for verification purposes

- 8.1 The OPCW Laboratory calibrated, prepared, and dispatched gas-chromatography mass-spectrometry (GC-MS) instruments for 11 S&A missions in 2016. In each case, the instrumentation was fully certified by the Office of Internal Oversight (OIO).
- 8.2 Assistance and support were provided to the inspectors who are analytical chemists, in preparation for inspections involving S&A. This included acquiring the chemicals needed to emulate process streams and consultations on the methods used for analysing the results.

Official OPCW proficiency tests

- 8.3 Each year, the OPCW carries out proficiency tests for institutions that may wish to participate in the OPCW network of analytical laboratories. The year under review saw the completion of the Thirty-Eighth, the holding of the Thirty-Ninth, and the start of the Fortieth OPCW Proficiency Tests, as well as the First Biomedical Proficiency Test. The particulars of these tests are provided in Table 10.

TABLE 10: SUMMARY OF THE THIRTY-EIGHTH, THIRTY-NINTH, AND FORTIETH OFFICIAL OPCW PROFICIENCY TESTS AND THE FIRST BIOMEDICAL PROFICIENCY TEST

	Thirty-Eighth Proficiency Test	Thirty-Ninth Proficiency Test	Fortieth Proficiency Test	First Biomedical Proficiency Test
Sample Preparation	OPCW Laboratory	Spiez, Switzerland	Dstl, United Kingdom	OPCW Laboratory
Evaluation of Results	LAVEMA, Spain	Edgewood, United States	FOI, Sweden	OPCW Laboratory
Number of Nominations ¹⁸	26	12		26
Results	15 As 3 Bs 1 C 3 Ds 2 F* ¹⁹ 2 trial tests	8 As 1 B 0 Cs 0 Ds 2 Fs 1 trial test	Available in 2017	17 As 1 B 0 Cs 5 Ds 0 Fs 3 trial tests

- 8.4 At the end of the reporting period, there were 19 designated laboratories from 15 Member States, three of which had had their designation temporarily suspended, and 17 designated laboratories for biomedical sample analysis from 14 States Parties. Annex 2 shows the status of each designated laboratory as at 31 December 2016.

OPCW Central Analytical Database

- 8.5 The Validation Group met twice in 2016 and technically approved 338 new analytical data. Data from the second Validation Group meeting of 2015 and the first Validation Group meeting of 2016 were processed and forwarded to the Council for its approval.
- 8.6 Five hundred and two new analytical data were approved by the Council and were incorporated into the new version of the OCAD (V.19), which has been certified by the OIO and released to States Parties in January 2017. The OCAD (database/extracted analytical data) was issued 11 times for on-site inspections and training purposes.
- 8.7 The contents of the OCAD are reflected in Table 11.

¹⁸ Including sample preparation/evaluation laboratories.

¹⁹ F* indicates a failure due to a reporting error; the laboratory does not lose designation.

TABLE 11: CONTENTS OF THE OPCW CENTRAL ANALYTICAL DATABASE

Number of Analytical Data in the OCAD (Last Five Versions)					
	V.15	V.16	V.17	V.18	V.19
MS ²⁰	4,957	5,243	5,376	5,412	5,672
IR ²¹	975	981	989	988	999
NMR ²²	1,391	1,391	1,391	1,391	1,391
GC(RI) ²³	4,253	4,485	4,614	4,639	4,875
Number of Chemical Species in the OCAD ²⁴					
MS	3,731	3,898	4,003	4,022	4,225
IR	723	726	734	734	745
NMR	298	298	298	298	298
GC(RI)	3,560	3,740	3,866	3,878	4,089

OPCW Laboratory accreditation

- 8.8 Two internal audits, to cover three areas of activity in the OPCW Laboratory under accreditation, were conducted by the OIO in 2016, confirming that the Laboratory is following ISO²⁵ 17025 and 17043 standards. An additional audit was conducted on the First Biomedical Proficiency Test in preparation for the inclusion of this activity in the scope of accreditation.
- 8.9 The audit by the Dutch Raad voor Accreditatie (RvA) was carried out successfully in 2016. A few minor non-conformities were noted, all of which have been closed, and the accreditation has been continued.

Multipurpose training facility

- 8.10 A number of classes were conducted at the multipurpose training facility that has been constructed within the Rijswijk facility. This space (approximately 38 m²) is equipped with four fume hoods, and has been equipped with four GC-MS systems and an LC-MS²⁶ system. All equipment is on movable tables, enabling the space to be used for non-laboratory purposes.
- 8.11 An NMR spectrometer was ordered in 2016 and a room to house the new NMR spectrometer had been refurbished.²⁷
- 8.12 Four courses were conducted for external participants in 2016:

²⁰ MS = mass spectrometry.

²¹ IR = infrared spectroscopy.

²² NMR = nuclear magnetic resonance.

²³ GC(RI) = gas chromatography-retention indices.

²⁴ Number of distinct chemicals represented in the OCAD.

²⁵ ISO = International Organisation for Standardization.

²⁶ LC-MS = liquid chromatography-mass spectrometry.

²⁷ The new NMR spectrometer became operational in February 2017.

- (a) basic proficiency testing (one week for six participants);
- (b) basic analysis under the Convention (three days for nine participants);
- (c) advanced analytical analysis (one week for 10 participants); and
- (d) basics of proficiency testing (three days for two participants).

8.13 Approximately four weeks of courses were provided to Secretariat staff, including the use of gas chromatography-Fourier transform infrared spectroscopy (GC-FTIR), the Hapsite® GC-MS, ricin analysis, and numerous safety classes.

Annex 2

LIST OF DESIGNATED OPCW LABORATORIES²⁸

	State Party	Laboratory Name	Date of Designation
1.	Belgium	Defence Laboratories Department*	12 May 2004
2.	China	The Laboratory of Analytical Chemistry Research Institute of Chemical Defence	17 November 1998
3.	China	Laboratory of Toxicant Analysis Institute of Pharmacology and Toxicology Academy of Military Medical Sciences	14 September 2007
4.	France	DGA Maîtrise NRBC Département d'analyses chimiques	29 June 1999
5.	Germany	Bundeswehr Research Institute for Protective Technologies and NBC Protection*	29 June 1999
6.	India	VERTOX Laboratory Defence Research and Development Establishment	18 April 2006
7.	Iran (Islamic Republic of)	Defense Chemical Research Laboratory*	3 August 2011
8.	Netherlands	TNO Defence, Security and Safety	17 November 1998
9.	Republic of Korea	Chemical Analysis Laboratory CB Department, Agency for Defence Development	3 August 2011
10.	Republic of Korea	Chemical, Biological and Radiological Defence Research Institute*	4 September 2012
11.	Russian Federation	Laboratory for Chemical and Analytical Control Military Research Centre*	4 August 2000
12.	Russian Federation	Central Chemical Weapons Destruction Analytical Laboratory of the Federal State Unitary Enterprise, "State Scientific Research Institute of Organic Chemistry And Technology"	15 Apr 2015
13.	Singapore	Verification Laboratory Defence Medical and Environmental Research Institute, DSO National Laboratories*	14 April 2003
14.	Spain	Laboratorio de Verificación de Armas Químicas (LAVEMA), Instituto Tecnológico, "La Marañosa"*	16 August 2004
15.	Sweden	FOI, CBRN Defence and Security Swedish Defence Research Agency	17 November 1998
16.	Switzerland	Spiez Laboratory Swiss NBC Defence Establishment	17 November 1998
17.	United Kingdom of Great Britain and Northern Ireland	Defence Science and Technology Laboratory Chemical and Biological Systems Porton Down	29 June 1999
18.	United States of America	Edgewood Chemical/ Biological Forensic Analytical Center	17 November 1998
19.	United States of America	Lawrence Livermore National Laboratory	14 April 2003

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An asterisk (*) next to the name of a laboratory means that its status as an OPCW designated laboratory remained suspended as at the end of the reporting period because of its performance in a recent official OPCW proficiency test. These laboratories will not be considered for receipt of samples taken for off-site analysis until they perform satisfactorily in future OPCW proficiency tests.

LIST OF DESIGNATED OPCW LABORATORIES (BIOMEDICAL ANALYSIS)

	State Party	Laboratory Name	Date of Designation
1.	Australia	Defence Science and Technology Group	1 August 2016
2.	China	The Laboratory of Analytical Chemistry Research Institute of Chemical Defence	1 August 2016
3.	China	Laboratory of Toxicant Analysis Institute of Pharmacology and Toxicology Academy of Military Medical Sciences	1 August 2016
4.	Finland	Finnish Institute for Verification of the Chemical Weapons (VERIFIN)	1 August 2016
5.	France	DGA Maîtrise NRBC Département d'analyses chimiques	1 August 2016
6.	Germany	Bundeswehr Research Institute for Protective Technologies and NBC Protection*	1 August 2016
7.	India	VERTOX Laboratory Defence Research and Development Establishment	1 August 2016
8.	Iran (Islamic Republic of)	Defense Chemical Research Laboratory*	1 August 2016
9.	Netherlands	TNO Defence, Security and Safety	1 August 2016
10.	Republic of Korea	Chemical Analysis Laboratory CB Department, Agency for Defence Development	1 August 2016
11.	Russian Federation	Laboratory for Chemical and Analytical Control Military Research Centre*	1 August 2016
12.	Russian Federation	Laboratory of Chemical Analytical Control and Biotesting, Research Institute of Hygiene, Occupational Pathology and Human Ecology (RIHOPHE)	1 August 2016
13.	Singapore	Verification Laboratory Defence Medical and Environmental Research Institute, DSO National Laboratories*	1 August 2016
14.	Sweden	FOI, CBRN Defence and Security Swedish Defence Research Agency	1 August 2016
15.	United Kingdom of Great Britain and Northern Ireland	Defence Science and Technology Laboratory Chemical and Biological Systems Porton Down	1 August 2016
16.	United States of America	Edgewood Chemical/ Biological Forensic Analytical Center	1 August 2016
17.	United States of America	Lawrence Livermore National Laboratory	1 August 2016