

CVID in retrograde?

On 12 June 2018, US President Donald Trump and DPRK's leader Kim Jong-un met in Singapore to discuss a range of issues, including military tensions on the Korean peninsula and a possible end to North Korea's nuclear programme. These goals were recorded in a Joint Statement signed by the two leaders, but negotiations on the details are yet to commence. It is still unclear what kind of tangible results the international community can expect once these discussions get underway.

In the aftermath of the summit, many observers have focused on the need for strong verification measures to ensure North Korea complies with its commitment to 'complete denuclearization' of the Korean Peninsula. Based on past experience, verification issues are likely to be some of the most contentious areas of debate. However, without a firm agreement on how to verify all parties' respective commitments under a deal, judging whether all countries are compliant with their undertakings will be challenging. For that reason, verification and monitoring should be discussed early, and be kept in constant focus. A phased approach, gradually introducing new transparency requirements and verification arrangements alongside other forms of cooperation, may be the best way to get North Korea to accept measures that it has refused in the past, such as intrusive challenge inspections.

Denuclearisation in Singapore

The Joint Statement has been welcomed by some observers as a new beginning in US-North Korean relationship and a clear opportunity to curtail the North Korean weapons programme—perhaps even the last chance to achieve progress on this, after the rapid advances demonstrated by the DPRK through a series of nuclear and missile tests in 2017 and 2018.

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A key passage in the Joint Statement commits the DPRK 'to work toward complete denuclearization of the Korean Peninsula'. This is obviously vague, and will not mean much without elaboration on further details, such as the scope, goals, and schedule of any denuclearisation activities. These details will be subject of future negotiations. As Joshua Pollack discusses in a 10 June 2018 post on the Arms Control Wonk blog, the word 'denuclearization' has been given different meanings by different parties over time.

One question is whether the US and other stakeholders would be willing to let the DPRK retain parts of its nuclear fuel cycle for power generation. The United States has been opposed to this in the past. However, foregoing its massive investment of time, resources and national pride into nuclear technology may be more than the North Korean leadership is willing to give away. For the DPRK, the phrase 'denuclearization of the Korean peninsula' may also involve making reciprocal demands on South Korea, as well as on the United States, such as not to deploy nuclear weapons-capable platforms onto the Peninsula.

While vague, this language is broadly in line with opening gambits offered at the beginning of previous negotiations with the DPRK, such as the 'six-point consensus' reached in 2003. There is one significant difference, by talking about 'complete denuclearisation', the United States has quietly dropped the prominence of seeking 'Complete, Verifiable, Irreversible Dismantlement' ('CVID'). This phrase has been consistently used in US negotiation positions on the DPRK for almost 15 years.

The acronym CVID came to prominence in 2003 and 2004, as Six-Party talks began in earnest. Preceding years had seen 1994 US-DPRK 'Agreed Framework' collapse. DPRK envoys had allegedly revealed that their country had clandestinely developed uranium enrichment capability, completely bypassing the safeguards regime administered by the International Atomic Energy Agency. Therefore, the US default position was set on curtailing the DPRK's capacity to enrich uranium and produce plutonium. Understandably, it insisted on introducing high standards of verification and monitoring. However, verification was to become one of the key issues of contention that caused the negotiations to stall and ultimately

ultimately falter in 2009. Despite the failure of the Six-Party Talks, throughout the years of President Obama's 'strategic patience', CVID remained as the stated goal of US policy towards North Korea.

Since 2009, the DPRK's nuclear and missile programmes have advanced significantly. Most experts now agree that the country has demonstrated the ability to produce high-yield thermonuclear weapons, as well as more sophisticated ballistic missiles in the medium- and intercontinental range. These new capabilities allow the DPRK to threaten not just its regional rivals such as Japan and South Korea, but the whole of the continental United States as well. Parts of the Yongbyon nuclear complex, which had seen reduced activities and fallen into gradual disrepair, have been refurbished and rebuilt. North Korea's primary plutonium-producing reactor has restarted operations. A centrifuge enrichment facility was unveiled in 2010 and doubled in size in the following four years. Work on North Korea's domestically designed Experimental Light Water Reactor (ELWR), long left incomplete, has progressed rapidly. The IAEA has stated that some of the work that took place around the ELWR in 2017 was consistent with the fabrication of 'certain reactor components,' and analysis of overhead imagery has led some experts to claim that the reactor may be undergoing pre-criticality testing.

Making disarmament stick: the link between irreversibility and verification

Given the failure of both the Agreed Framework and successor Six-Party Talks, many have cautioned that even if North Korea should disarm, they may try to maintain capacities allowing them to reconstitute a nuclear arsenal at a later stage. For instance, former US negotiator Robert Gallucci claimed that irreversibility may be 'not actually plausible' in an NPR interview on 6 June 2018. While caution is indeed called for, this demonstrates that the concept of irreversibility is often understood only superficially, and needs to be better understood and analysed.

Nuclear technology is mature, wide-spread, and straightforward to acquire, albeit still at significant costs. It is hard to put 'the genie back in the bottle' in a country where a trained workforce adept in nuclear technology (and particularly in military applications thereof) persists. Instead, the irrevers-

ibility of any disarmament action depends on the scope and depth of the act itself. For example, a country that gave up its nuclear weapons, but retained a closed fuel cycle with extensive facilities to enrich uranium and separate plutonium from spent fuel would be able to rearm more easily than a country that has given up such capabilities. Even if the second country could still reconstitute its nuclear powers, this would require a far more significant investment of time and resources.

Irreversibility in nuclear disarmament is a mirror image of 'latent nuclear power,' or the capability of a state with a civilian nuclear programme to turn its nuclear technology and industry to weapons use and develop nuclear weapons. 'Latent nuclear power' has nothing to do with policy and intent. Instead, latency is an expression of ability and industrial capacity. Obstacles to the militarisation of nuclear power grow smaller, as industrial capabilities mature, stockpiles of fissionable material grow, and as the national knowledge base becomes more experienced. Nuclear latency has been studied as a concept to understand and mitigate non-proliferation risks, but it can be equally—if not more—useful to assess disarmament options. The same policies and approaches that have been used to mitigate situations of high latent nuclear power can, possibly, be applied to making it more challenging for a disarmed country to rearm.

Reducing a country's latent nuclear power can be achieved by eliminating stockpiles of fissile material and rendering inoperable essential production plants. The country's know-how can be reduced by offering new training and career options to personnel that has been involved in these activities. States have voluntarily reduced their latent nuclear power. For instance, Japan has been discussing the possibility of reducing its stockpile of separated plutonium. Under the 2015 Joint Comprehensive Plan of Action, Iran accepted to limit its capacity to enrich uranium and to down-blend its stockpiles of enriched uranium. Furthermore, several countries that signed 'Nuclear Cooperation Agreements with the United States in recent years have abrogated their right to pursue uranium enrichment and spent fuel reprocessing.

Measures of this kind make the reconstitution of a nuclear programme more difficult. Reversing any one of these deci-

sions would require investments of time, money and other resources, some modest, some significant. Replacing a demolished facility would carry great financial costs, and maybe even procurement of components and equipment not available domestically. Accumulating a new stockpile of enriched uranium may take months of activity at an enrichment plant, and would require a fresh input of nuclear source material. A robust and on-going verification and monitoring regime add to the costs and risks of reconstitution.

One objective of verification and monitoring is to give assurance that no weapons, equipment or weapons-grade material has been secretly kept for a later date. But this is just the tip of the iceberg. A country's capability to reconstitute must also be curtailed or, if that is not possible, closely monitored. The verification and monitoring objective must be to build a complete picture of the production history of the disarming state, as well as their future capabilities. This was the tenet underpinning the verification mission in South Africa in the early 1990s, and its the underlying philosophy of the present 'state-level approach' as implemented by the IAEA today. This is especially important in the case of countries whose nuclear history and fuel cycle are still shrouded in secrecy, like North Korea.

Subsequent monitoring and verification—starting with IAEA Safeguards, and likely going beyond that standard—is also crucial. Robust verification mechanisms, coupled with policies aimed at increasing the time required to reactivate a nuclear weapons programme, make it much more likely that attempts at rearmament will be discovered before the process is completed. This gives the international community time to formulate an appropriate response. Furthermore, the risk of detection has a deterrence value, as some states may decide not to pursue rearmament if they think it too likely that they will be discovered, and fear the consequences of discovery.

Ultimately, however, a decision to rearm would be a political and strategic decision. Some governments—such as those of Kim Jong-Un and his father—may be willing, despite the consequences, to pursue weaponisation at extreme length. A sensible CVID policy, however, creates obstacles that would complicate such a decision, and make it much more difficult, and above all costly, to carry it out.

Key questions on the North Korean nuclear programme

Negotiations following the Singapore summit, the first of which are scheduled for 5 July 2018, are likely to focus on North Korea's nuclear programme. The Trump administration has claimed they believe it possible to achieve denuclearisation quickly, in a year or less, while many other experts have cautioned that a realistic timeline may be much longer. Before any work can commence, it will be necessary to establish a ground truth about the history, and the current state, of the North Korean nuclear programme. Any disarmament deal would require a comprehensive declaration of how many nuclear weapons North Korea currently possesses, a tally of its stockpiles of fissile material— primarily, but not exclusively, weapons-grade material—and information on the facility (or facilities) where all of this is produced. One issue stands out: the DPRK's uranium enrichment capabilities. The vast majority of experts believe that the centrifuge enrichment plant in Yongbyon is not the only facility in the country, and there is at least one, and possibly more, that have remained undeclared and undetected so far.

To have confidence in a denuclearisation campaign, any initial declaration by the DPRK must provide information on all salient aspects of North Korea's fuel cycle, beginning with its front end. North Korea has indigenous reserves of uranium and has been carrying out mining. However, the quality and estimated amount of the reserves is not well understood. The amount of ore that has been extracted throughout the years is unknown. The DPRK's 5MWe Magnox reactor is assumed to be burning its last load of fuel. It is unclear whether they can fabricate more fuel for the reactor. Given that the country has most likely used this reactor's spent fuel for military purposes, before developing uranium enrichment capabilities, it is essential to know how much longer the reactor can operate. Also, what is the quantity of irradiated fuel currently awaiting reprocessing? These questions (and many others) may help clarify the operational history of the North Korean nuclear programme. A thorough understanding of the procurement and flows of fissile material over time is crucial to making a determination that no further undeclared facilities have been operating and no secret stockpiles exist.

Moreover, there are other matters to consider, including the

operational specifications of North Korea's domestically designed Experimental Light Water Reactor (ELWR), understood to be about entering operations, and whether North Korea would be able to reprocess its spent fuel, given that its reprocessing facilities employ a process designed specifically for Magnox cladding. Other activities have recently attracted attention and give rise to further questions. For example, a large building has been erected in Yongbyon between late 2017 and early 2018. Some believe this may be an isotope separation facility, but it has not, so far, been confirmed. Another outstanding matter is the production of Lithium-6, which North Korea likely employs for its thermonuclear weapons.

Verifying denuclearisation in North Korea

The questions above help outline the goals of a verification and monitoring regime tailored to the denuclearisation of North Korea.

To identify the best verification approaches and instruments, we can build on past experiences from bilateral and multilateral agreements, as well as state initiatives and intergovernmental organisations. Drawing on these experiences, and especially on the expertise and methodologies of the IAEA, it would be possible to introduce robust monitoring arrangements to the facilities in Yongbyon and reassure the world that no unlawful activities are taking place there. The Agency's Comprehensive Safeguards Agreement (CSA) and associated Additional Protocol (AP) provide a strong foundation. They would likely not be sufficient on their own. To bolster these instruments, negotiators could draw inspiration from the Joint Comprehensive Plan of Action (JCPOA) concluded between the EU, the US and Iran. This plan of action was devised under similar conditions—incomplete knowledge of past activities, past record of deception, low trust between parties. As such, some of the solutions adopted under the JCPOA may be considered for the North Korean scenario, too.

IAEA Safeguards provide a series of instruments for monitoring activities at known nuclear sites, including material accountancy, inspections, and the use of seals, tags, and remote sensing to detect unauthorised changes to equipment, machinery or stores of material. The AP also offers tools designed

to help discover undeclared activities on nuclear sites, such as ‘complementary access,’ a form of on-request access to buildings and areas not usually covered by inspection with a very short advance warning. It also allows for the use of specific analytical techniques, like environmental sampling. These measures can be supplemented with additional deployment of remote sensing tools, transmitting directly to inspection headquarters, as well as a continuous or near-continuous presence of international personnel, in the form of guards or inspectors. These approaches have been used, for example, in the JCPOA, as well as in activities carried out under Cooperative Threat Reduction schemes.

Investigations based on accountancy of nuclear material and on-site examinations of documents and operating records will be needed to reconstruct an accurate history of activities at Yongbyon, and possibly beyond. Even in the case of facilities that have been out of operation for years, this will be crucial to verify official declarations by the DPRK and build a nuanced, detailed understanding of the North Korean nuclear programme. This kind of investigation can help shed light on past acts of deception, and on secrets erased from the official history of the programme. Moreover, discovering gaps and inconsistencies in operational accounts and in the flows of nuclear material may alert inspectors to the existence of previously undetected pathways to divert material and resources to undeclared facilities. For example, discovering a surplus in the production of uranium hexafluoride (UF₆) that is not accounted for in the rest of the operations of other known facilities may raise suspicions that an unknown centrifuge facility may be in operations.

The most significant verification and monitoring challenge, however, will be related to undeclared facilities and activities; this has proven to be an obstacle in the past. In late 2008, discussions on a verification scheme broke down when North Korea refused a demand for free, unfettered access for international inspectors to all locations and facilities in the country. The AP is meant to safeguard against the use of undeclared material and facilities, but in a problematic context like North Korea, it would hardly be enough. More appropriate starting points may be the ‘challenge inspection’ model implemented under the Chemical Weapons Convention or the Comprehensive Test-Ban Treaty, or the ‘access’ model developed for

the JCPOA.

It seems unlikely that North Korea would agree to such a proposal, but it may be more challenging to envision a verification arrangement that does not provide for access to suspect facilities, while still achieving the required level of assurance. Here, the JCPOA offer another comparison: when the agreement was reached, the IAEA declared that it was satisfied that no material in declared facilities was being diverted to weapons purposes. However, it made clear that it could not issue a ‘broader conclusion’ for Iran—meaning that all nuclear material in the country is reserved exclusively for peaceful purposes—until a series of questions about Iran’s past plans and activities were answered. As noted above, Iran and North Korea share a similar history of obfuscating their plans and attempting to deceive the international community.

One lesson learned from past attempt is that if verification measures are left to discuss at the end, they may well scupper negotiations. Instead, given the central importance of the matter, they should be introduced into the negotiations early on and discussed alongside other issues.

The various facets of a verification programme—monitoring of known facilities, investigation of past activities, measures aimed at identifying undeclared activities—support one another. Arrangements can also be implemented over time, building trust through incremental gains. In the case of Iran, the Agency agreed to leave the investigation of past activities, dubbed ‘Possible Military Dimensions’, to a later date, as it was understood to be a sensitive political issue for the Iranian leadership. In North Korea, a staged approach starting with temporary cessation of activities and an exchange of information may lay the foundations for stronger measures to come, provided that the roadmap is clear and unambiguous on the goals set for later steps, and on the verification measures that will accompany them.

Alberto Muti
Senior Researcher for Verification & Monitoring

Verification Watch

International response to chemical weapons use intensifies

Larry MacFaul

Over the last century, the indiscriminate and harmful effects of chemical weapons have been recognised and condemned by states and the United Nations on many occasions. Countries have engaged in practical activities to eliminate these weapons in the form of disarmament and non-proliferation measures as well as through the adoption of new laws. Confidence in these activities was—and continues to be—provided by verification systems implemented by the Organisation for the Prohibition of Chemical Weapons (OPCW).

States' disarmament, non-proliferation and verification measures rest on several international legal instruments including the 1925 Geneva Protocol, 1998 Rome Statue and the 1994 Chemical Weapons Conventions (CWC), among others. These instruments were forged by parties who, in many cases, had severe and ongoing disagreements and differing interests; consequently, they can be considered to be hard-won as well as highly valuable.

Despite these efforts, since 2013, there have been several new cases of chemical weapons use resulting in civilian casualties—including children—as well as soldiers and what appear to be political targets. The attacks were conspicuous and have taken place in different countries, different security environments and for different purposes. As such, they present a profound challenge to the agreements noted above. Consequently, in response, there has been an intensification of governmental, diplomatic and UN activity attempting to prevent these agreements being ignored and to strengthen them further. Some of this effort has been based on a Belgian initiative, see 'Strengthening accountability for CBW use' in Implementation Watch in this edition. Much of the effort has focused on the attacks in Syria.

In 2013, the UN Secretary launched the UN Mission to Investigate Allegations of Use of Chemical Weapons under authority granted by the UN General Assembly (UNGA) and UN Security Council (UNSC) in the 1980s. The inves-

tigation aimed to confirm whether attacks had been carried out. It did not seek to identify who had done them. Although the CWC contains provisions allowing for fact-finding and investigation of alleged use (see Article IX and Verification Annex, Part XI), Syria was not a party to the convention at that time, meaning these provisions were not directly applicable. The UN Mission used a number of methods, based on agreed guidelines, to achieve its goal including interviews with witnesses, documentation of munitions, collection of environmental samples, assessment of survivor's symptoms and the collection of hair, urine and blood samples. It worked with a team of experts from the OPCW and the World Health Organisation. The UN Mission submitted its report to the UNGA and UNSC in September 2013, confirming that an attack involving Sarin had taken place in Ghouta, Syria. After the launch of the investigation, Syria joined the CWC. A joint UN-OPCW mission was established to verify the destruction of its weapons and production facilities.

Despite these developments, allegations of chemical weapons attacks continued. In 2014, since Syria was now a party to the CWC, the OPCW sent out a Fact-Finding Mission (under the authority noted above), using methods including interviewing witnesses and obtaining samples and physical evidence for analysis. Numerous other FFMs followed. However, that year also saw the international response in the UNSC to the use of chemical weapons enter a new phase—that of seeking to determine responsibility for the attacks, rather than focusing exclusively on whether an attack had occurred. This response took the form of a UNSC Resolution (UNSCR 2235) establishing the OPCW-UN Joint Investigative Mechanism (JIM). The JIM team carried out several investigations, crucially including one which found that attacks had been carried out at different times both by Syrian Arab Armed forces and 'Daesh'.

However, disputes among Security Council members emerged as early as 2016, as Russia had reservations about the JIM's conclusions and indicated a desire to change the nature of mechanism. By late 2017, these disputes had hardened. In particular, the Russian Federation questioned the findings of the mechanism and criticised the methodological approach

taken to investigations (including issues concerning when to use on-site visits, chain of custody and use of sources and facts). Other states, including the US, did not share the same views. In November, the US and Russia issued different draft renewal decisions and by the end of the month, with no agreement reached, the JIM's mandate lapsed.

Shortly after this setback, in January 2018, France launched the International Partnership against Impunity for the Use of Chemical Weapons. 30 countries endorsed a joint declaration and undertook to support measures to hold perpetrators accountable. It specified that the 'partnership in no way intends to replace existing international mechanisms, nor does it plan to conduct its own investigations. Its participants will commit to sharing information in their possession with investigation mechanisms.'

Meanwhile, in early 2018, further attempts were made by UNSC members variously to revitalise or reshape the investigation process. The US and Russia put forward two differing visions for a new 'UN Independent Mechanism of Investigation' (UNIMI). The Russian proposal did not include responsibility to assign accountability for the use of chemical weapons, leaving this to the UNSC. It also included new specifications on methodological issues (compulsory on-site visits in cases where conclusions were to be reached) and an increased the level of standard of proof. The drafts went to a vote in April and neither was adopted.

Since Trust & Verify No. 160, there have been further developments. In late May 2018, the United Kingdom, along with several other states, called for a 'Special Conference of States Parties' to the CWC. The purpose of the meeting was to strengthen the OPCW. It was the fourth such special conference, the others held in 2002, 2003 and 2008. Like the first two Special Conferences (on the position of the Director-General and OPCW staff tenure policy respectively), this meeting was contentious. The fault lines between states fell broadly as they have done before when the issues of verification and attribution regarding chemical weapons attacks in Syria and the UK have been discussed in international forums.

The Special Conference was held a month later on 26 and 27 June 2018. Over the course of the two days, states debated a draft decision tabled by the UK. The decision aimed to establish arrangements enabling the OPCW to attribute re-

sponsibility for chemical weapons attacks. Amendments were put forward by Iran, Venezuela and Belarus. These, in the view of the UK, would have weakened the decision. The proposed changes did not achieve sufficient votes for adoption. The draft decision, on the other hand, received 82 votes for and 24 against, and was adopted by the conference. Shortly after, the UK Foreign and Commonwealth Office reported on the conference noting that the adoption of the decision to strengthen the OPCW fills 'the gap left after the ending of the OPCW-UN Joint Investigative Mechanism mandate in November 2017.'

Operational aspects of the decision can be found in the section entitled 'Strengthening Implementation of the Convention'. It decides that the OPCW Director-General, 'if requested by a State Party investigating a possible chemical weapons use on its territory, can provide technical expertise to identify those who were perpetrators, organisers, sponsors or otherwise involved in the use of chemicals as weapons'. It also decides that the Director-General may enlist support 'as appropriate from outside experts'. The decision invites the Director-General to submit to the next regular CWC conference session proposals to enhance the 'capacity and tools of the Secretariat to strengthen implementation of the Convention verification regime' and to 'produce a report on options and proposals' for the above.

Other activities to address the use of chemical weapons continue alongside the tumultuous events described above; both the UN General Assembly and the Human Rights Council have set up investigatory mechanisms. The HRC set up the Independent International Commission of Inquiry in 2011 on the Syrian Arab Republic, and the UNGA set up the International, Impartial and Independent Mechanism for Syria in 2016. The latter mechanism has been welcomed by the Partnership against Impunity and is supported by the decision adopted at the Fourth Special Conference.

JCPOA in doubt

Andreas Persbo

On 8 May 2018, US President Donald Trump announced the United States' withdrawal from the Joint Comprehensive Plan of Action ('JCPOA,' see INFCIRC/887, 31 July 2015). The announcement was widely anticipated, given the President's campaign pledges, but nevertheless threw the viability of the accord in serious doubt.

Later in the month, US Secretary of State Mike Pompeo outlined twelve conditions that need to be met in any future negotiations with Iran. Amongst the twelve, Iran must 'provide a complete account' of its alleged nuclear weapons program, and completely cease all uranium enrichment activities. Moreover, Iran must provide 'unqualified access' to all sites in the country. These conditions, all Iranian red lines, has virtually slammed shut the door to future US-Iranian talks. A European effort to preserve the JCPOA has been underway since then, but it is not clear to what extent the agreement can be salvaged in present form.

Meanwhile, Iran appears to make on-the-ground preparations to restart its nuclear programme. On 5 June 2018, the Atomic Energy Organization of Iran (AEOI) reportedly unveiled a new uranium gas centrifuge assembly facility at its enrichment facility in Natanz. More recently, on 28 June 2018, the Atomic Energy Organization of Iran (AEOI) issued a statement confirming that it has reopened the uranium conversion facility in Isfahan, a facility that converts yellowcake into uranium hexafluoride gas for subsequent enrichment. According to the AEOI statement (accompanied by a dramatically tuned video), the site had been in-operational for nine years, due to raw material shortages.

However, these shortages have now been overcome through the influx of imported uranium. Iran has bought, and Russia has delivered in early February 2018, an additional 149 metric tonnes of yellowcake. In February 2017, Iran's AEOI also announced the purchase of 950 tonnes from Kazakhstan, although it is not clear how much of this has been delivered, or if the deal still stands should the JCPOA collapse.

On 9 May 2018, IAEA Director General Yukiya Amano stated that 'Iran is subject to the world's most robust nuclear verification regime under the JCPOA, which is a significant

verification gain.' If the deal collapses, Iran would no longer feel bound to display the same level of transparency as it has done over the last three years. The IAEA's verification activities in the country would dramatically decrease, and that would, indeed, be a terrible loss for arms control verification. The clock is ticking on efforts to shore up the arrangement. The United States will reimpose the first set of sanctions on Iran on 6 August 2018. Oil sanctions that are expected to have a wide-ranging impact on Iran's economy will be imposed on 4 November 2018. Whether other parties to the JCPOA have the necessary political will to weather the coming storm remains to be seen.

FMCT group ends work with consensus

Andreas Persbo

On 8 June 2018, the High-Level Fissile Material Cut-Off Treaty (FMCT) Expert Preparatory Group, under the chairmanship of Ambassador Heidi Hulan of Canada, adopted its final report by consensus. Twenty-five experts participated in the group's deliberations over a period of two years. Six out of nine nuclear-armed states participated, the DPRK, Israel and Pakistan did not. The report is presently undergoing translation into the United Nation's six official languages and will be made public by the opening of the General Assembly.

This is the latest initiative in a series of efforts spanning two decades to get some progress on the FMCT. In 1998, after years of debate, the Conference on Disarmament (CD), decided to establish an Ad-Hoc Committee to negotiate a 'non-discriminatory, multilateral and internationally and effectively verifiable treaty banning the production of fissile material for nuclear weapons or other nuclear explosive devices.' As this bulletin noted at the time, the FMCT 'would not just be a useful arms control measure in its own right but would be a necessary precursor to the complete and verified elimination of nuclear weapons' (see Trust & Verify No. 82). However, there's been a stalemate at the CD for decades over unresolved issues such as verification and the inclusion of existing stocks of fissile material in the proposed ban.

It is not clear how far the present effort went. The Chair's informal summary dated 19 March 2018, reflects continued debate on several issues. Ambassador Hulan notes how 'some delegations' had highlighted how 'definitions should not be the sole factor in determining what should be verified.' Many

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governments pointed to the need for the FMCT to have an ‘effective and robust verification regime’ capable of providing ‘timely detection of non-compliance.’ Others went further, highlighting that verification also must ‘make it possible to detect clandestine activities that could violate the object and purpose of the treaty.’

Importantly, however, Ms Hulan’s summary also points that the majority of states appear to accept that an FMCT would create no new obligations for countries having an IAEA Comprehensive Safeguards Agreement and an Additional Protocol in place. While this falls short of saying the Additional Protocol should be the safeguards standard, it implicitly recognises the instrument’s value to the verification and monitoring of the peaceful use of atomic energy.

Enter the UK nuclear safeguards bill

Benjamin Reedman

The Nuclear Safeguards Bill (‘the bill’) successfully passed through both Houses of the UK Parliament in June 2018. The bill is intended to address a gap in the regulation of the UK’s civil nuclear industries caused by the UK’s withdrawal from the European Atomic Energy Community (Euratom) and its nuclear safeguards system. While Euratom is a separate legal entity from the European Union, it is governed by the European Commission and shares with it a common institutional framework. Staying in Euratom would have bound the UK to relevant European Court of Justice judgments and required it to allow nuclear specialists freedom of movement. Therefore, the UK concurrently announced its withdrawal from both the EU and Euratom in March 2017. This bulletin covered the announcement and its implications in an article by Daniel Davies in *Trust & Verify* No. 153.

Euratom regulates civil nuclear industries and the wider use of radioactive substances in non-nuclear sectors across the EU. The scope of the framework includes the regulation of various civilian nuclear activities, such as safe disposal of waste, transport and radioactive emissions, amongst others. Importantly, it is also intended to ensure that civil nuclear materials are not diverted from their declared use into military or weapons programmes.

Euratom verification requirements are extensive. Euratom implements most duties related to IAEA safeguards for the UK, in addition to operating a unique safeguards scheme, which, according to a conclusion by UK Parliament, sets out standards higher than those required by the UK’s international obligations.

In the UK, nuclear safeguards were first introduced as part of the 1968 Treaty on the Non-Proliferation of Nuclear Weapons (NPT). Under the NPT, non-nuclear weapons states must allow the International Atomic Energy Agency (IAEA) to monitor their nuclear material. Nuclear weapons states, like the UK, voluntarily accepted a similar monitoring scheme. After joining Euratom in 1973, the UK’s safeguarding obligations became primarily fulfilled through its membership of

the Euratom Treaty and related regulations.

The UK has had two safeguards agreements with the IAEA: a Voluntary Offer Agreement and an attached Additional Protocol. These are trilateral agreements between the UK, the IAEA and Euratom. After the UK withdraws from Euratom, the VOA and the AP will cease to be in effect. Therefore, the UK must make new bilateral safeguards agreement with the IAEA under the NPT. The UK signed a new safeguards agreement with the Agency in June 2018 (see below).

Bridging the gap

The bill was introduced to Parliament on 10 October 2017, and both Houses passed it on 6 June 2018. Royal Assent was given on 26 June 2018, making it an Act of Parliament. The bill allows the government to establish a domestic nuclear safeguards regime, by transferring all the responsibilities currently managed by Euratom to the Office for Nuclear Regulation (ONR). Additionally, it grants the Secretary of State the power to make new regulations detailing the UK safeguards framework (for instance accounting, reporting, and inspection arrangements) to implement international safeguards agreements.

Euratom has entered into several 'Nuclear Cooperation Agreements' (NCAs) with 'third countries.' While these agreements are not a prerequisite to engaging in nuclear trade under international law, several states require them either under domestic legislation or strictly as a matter of policy. If the UK fails to negotiate its own, separate, NCAs before withdrawing from Euratom, nuclear trade with those states is likely to be affected. Some countries may be hesitant to commit to new nuclear cooperation agreements with the UK without further details regarding its new safeguards framework. The UK appears have made some progress here, however, as evidenced by the NCA signed with the United States on 4 May 2018.

As noted above, on 7 June 2018, the UK signed two bilateral safeguards agreements with the IAEA covering nuclear safeguards and non-proliferation. They are intended to replace existing trilateral arrangements between the IAEA, the UK and Euratom. The agreements ensure that the IAEA retains its right to inspect all civil UK nuclear facilities, continues to receive safeguards information and set forth the increased responsibilities of the ONR, which it will be taking over from Euratom. While these agreements await ratification, Euratom inspections continue. Under Article 25.b of its current Vol-

untary Offer Agreement, the UK will need to give the Agency six months termination notice, so by September 2018. Given the uncertainties in the UK's divorce proceedings overall, it may have to provide this notice without much clarity on other transition arrangements with the European Union, including that of a transitional role for Euratom.

Strengthening accountability for CBW use

Cédric Apercé

Since 2013, repeated chemical attacks in Syria, Malaysia, and the United Kingdom have raised concerns regarding the lack of accountability for violations of international law, and the impact of this on the prohibition of chemical and biological weapons (CBW) as well as their non-proliferation. VERTIC has held this view since 2011, when it released a publication reaffirming the charity's commitment to an explicit and comprehensive prohibition of CBW, noting that their use 'in armed conflict is a serious crime of international concern that should be prohibited by the Rome Statute.'

Facing a political deadlock over the attribution of chemical attacks in Syria, some states have started new initiatives to strengthen the 1993 Chemical Weapons Convention (CWC), and fight against impunity for the use of chemical weapons (see 'International response to chemical weapons use intensifies' in *Verification Watch* in this edition). Alongside possibly assigning responsibility to states, holding individual perpetrators accountable for their use of CBW remains of primary importance, as it may deter future violations, promote respect for the law, and provide redress to the victims.

Despite the prohibition of all activities associated with CBW in the 1972 Biological Weapons Convention (BWC) and the CWC, the 1998 Rome Statute establishing the International Criminal Court (ICC) did not explicitly prohibit the use of chemical or biological weapons in its original text. Instead, article 8 of the Statute considered 'employing poison or poisoned weapons', or 'employing asphyxiating, poisonous or other gases, and all analogous liquids, materials or devices' as war crimes in international armed conflicts.

These formulations are problematic for many reasons. Firstly, they are inherited from treaties pre-dating the BWC and CWC, and hence do not cover the absolute prohibitions contained therein. Secondly, ambiguities remain as to

whether biological weapons, not being toxic chemicals, would fall under the category of ‘poison’. The vagueness in terminology could lead to judicial inconsistencies. Moreover, technical advancements have added urgency to clarify those ambiguities. Thirdly, those formulations only apply to international armed conflicts, leaving the use of chemical or biological weapons in non-international armed conflicts outside of the scope of the Statute.

The chosen terminology was not an opposition to the inclusion of CBW as such, but the result of a disagreement relating to nuclear weapons. As we learn from the records, mentions of CBW were only removed in the last day of the meeting, in response to some delegations’ fear that the omission of nuclear weapons in the Statute would create a lack of reciprocity and balance towards nuclear-equipped states.

In 2010, in line with its policy objective to reinforce the norm against biological weapons and its concern to ensure that war crimes are prosecuted, and the victims protected regardless of the armed conflict in which the crimes have been perpetrated, Belgium proposed three amendments during the first Review Conference of the Rome Statute. Two to align the provisions of the Statute with the BWC and CWC and another one to extend the current rules to non-international armed conflicts. Because of time constraints and an objection to make direct reference to the BWC and CWC, only the second amendment was ultimately adopted. To date, 36 of 123 States Parties have ratified or accepted that amendment. Belgium pointed out this stride at the Fourth Special Session of the Conference of the States Parties to the CWC, calling all States Parties to ratify the amendment and thus to help putting an end to impunity for the use of chemical weapons.

Belgium successfully submitted another amendment in December 2017, which considers ‘employing weapons, which use microbial or other biological agents, or toxins, whatever their origin or method of production’ as a war crime in both international and non-international armed conflicts. Together, these two significant advances would allow for the prosecution of the use of CBW in international armed conflicts or non-international armed conflicts—such as Syria for instance—should the jurisdiction of the ICC be established.

As part of the principle of complementarity, states have the first responsibility and right to prosecute international crimes. Hence, the ICC would only act if states were unwilling or

unable to investigate or prosecute crimes under its Statute. The National implementation and adoption of criminal provisions in national legislation for international crimes are therefore of fundamental importance. Criminal law assorted with the right forms of jurisdiction will also strengthen compliance with the implementation requirements under the BWC, CWC and UN Security Council Resolution 1540 and enable prosecutions at the national level.

Compliance Watch

NZ company pays the price for indirect export to DPRK

Sylvia Barnett

In February 2016 a New Zealand aircraft manufacturer, Pacific Aerospace Limited, failed to meet both New Zealand law and United Nations sanctions when it sent aircraft parts to China knowing these would be sent on to North Korea. As stated in the New Zealand's sanctions implementing regulation, aircraft and related parts are classified as 'luxury goods' and therefore prohibited for export to the DPRK. It was identified in the Pacific Aerospace case that the breach violated both New Zealand law and United Nations Security Council Resolution 1718. The reserved judgment by Judge Bergseng, dated 29 May, fined Pacific Aerospace NZ\$74,805 for three charges of indirectly exporting sanctions prohibited goods to the DPRK.

Pacific Aerospace is an aircraft manufacturer. One of the company's products is the low-wing monoplane P-750 XSTOL, designed initially for skydiving. In September 2016, a P-750 was sighted at the Wonsan air show in the DPRK. After international media attention, the UN 1718 Sanctions Committee Panel of Experts started an investigation, and so did New Zealand Customs. The latter found that Pacific Aerospace had entered into a joint venture with Beijing General Aviation Company (BGAC, a Chinese company), under which the Pacific Aerospace supplied specific aircraft to BGAC, including the P-750 that was seen in Wonsan. BGAC told Pacific Aerospace that it had sold the aircraft to another Chinese company. This in turn intended to base the plane in North Korea, where it would be used for tourism purposes; Pacific Aerospace was notified on 6 January 2016 that the aircraft had in fact arrived in the DPRK and that the aircraft manufacturer's two year/500 flight hour warranty had been transferred to the new owner when it purchased the aircraft.

Pacific Aerospace subsequently supplied parts under warranty: a flap actuator, two cockpit indicators, and a component for the fuel delivery system, valued at approximately NZ\$6,700. While the company was not in breach of the New Zealand sanctions regulations by selling the aircraft to the BGAC, it was in violation for supplying the parts under war-

ranty, knowing that these were to be used on the plane based in the DPRK. Further to the investigation, customs discovered that the company had provided erroneous information on the customs declarations regarding its export of accessories sent with the aircraft to BGAC, one of which enable the aircraft to carry survey equipment on its undercarriage. The company claimed this was an administrative oversight. Pacific Aerospace cooperated with enforcement authorities, pleaded guilty to three charges of indirectly exporting a specified good to the DPRK and to one charge of making an erroneous export entry, and has taken steps to prevent any further illegal exports. The United Nations Sanctions (DPRK) Regulations 2006, which applied at the time of the shipping, states that such a charge carries a maximum fine of NZ\$100,000 while the false export charge carried a maximum penalty of NZ\$5,000 under the Customs and Excise Act 1996. The sanctions regulations have since been updated twice to give effect to further UN sanctions resolutions concerning the DPRK.

A Victim Impact Statement was prepared by the Ministry of Foreign Affairs and Trade (MFAT), describing the effect of the sanctions breach on the New Zealand Government and the country's international reputation. It noted that New Zealand takes its international obligations seriously and that the sanctions breach had led other states to question New Zealand's implementation of the sanctions regime. MFAT expressed concern over how the case diminished and threatened New Zealand's reputation and future exports. The statement said the Ministry had to apply significant resources to manage criticism received through diplomatic missions. Judge Bergseng commented that such 'offending which impacts on New Zealand's international reputation will almost invariably be serious ... in this case, given the contents of the victim impact statement, catastrophic consequences appear to have been avoided.' Such a judgement is intended to deter and prevent future violations, and sets a precedent for enforcement action should any such violations, reckless or intentional, occur in future. This case is a helpful example of where national law meets the criteria of international sanctions and reprimands those in violation of UN sanctions.

Flags of convenience: a cautionary tale

Celeste Donovan

Over the last decade, flags of convenience have proven to be big business, particularly in the Pacific. An increasing number of Pacific Island states have chosen to open their maritime registries, allowing foreign nationals and companies to register vessels in their jurisdiction; ship registries are otherwise only available to a state's citizens and corporations. The term 'flag of convenience' (FOC) refers to the widespread practice of registering vessels in these open registries. A ship operates under the laws of the state where it is registered. The organisation that registers the vessel is known as 'the registry', and this can be either a government or private entity. In 'open registry' states, it can even be a company physically located in a third jurisdiction.

There is growing evidence that the open registry system is contributing to weaknesses in the domestic enforcement of maritime sanctions against DPRK. Since 2006, there has been a concerted international effort to increase the breadth and scope of the sanctions regime against DPRK. In 2017 alone, the UN introduced four new resolutions aimed at restricting North Korea's export revenue, maritime commerce and international financial sectors, adding to what is already one of the most complex and stringent sanctions regimes in history. Crucially, the sanctions prohibit DPRK-related vessels from registering in foreign jurisdictions. A 2017 UN Sanctions Committee Panel of Experts report identified several countries that were involved in flag-related sanctions violations such as the re-flagging of DPRK owned or controlled vessels, document falsification, ship-to-ship transfers and document falsification. According to this report, the DPRK is exploiting weaknesses in the FOC system to flout sanctions and that these breaches are increasing in 'scale, scope and sophistication'.

Another potential barrier to sanctions effectiveness is the use of false documents to obscure the ownership of vessels. Some registries in the Pacific have been inadvertently caught out by scams, most recently the Federated States of Micronesia (FSM), which states that it operates a closed registry. The country was notified in 2016 that an entity called Micronesia International Ship Registry (MISR), had illegally issued FSM

vessel registration and seafarer certificates. Also, according to Security Council reports, a number of these vessels registered under the FSM flag had suspected links to North Korea and were being closely monitored. The FSM is not the first country to fall victim to such a scam; in 2015 Samoa also learned that a 'fraudulent' entity, known as SIMA, was illegally issuing registration and seafarer certificates in its name. These private actors are understood to continue to be engaged in registration activities, and in the case of FSM, the fake registry website is still active and proving difficult to shut down.

A further challenge is the influence of private sector stakeholders. An increasing number of states within the Pacific, with limited resources to manage a large registry, have opted to appoint a private entity to act as their legal administrator, many of which are based offshore and have no physical presence in the flagged state. The risk with this approach, however, is that individuals or entities managing these registries may not have been appropriately vetted for possible ties to North Korea, or past involvement with sanctioned entities. While past links do not prove current wrongdoing, it illustrates the need for stringent oversight and vetting of these private registries by the flag states. States need to ensure that they carry out due diligence on private registry managers to ensure that they are not facilitating sanctions evasion activities by DPRK-affiliated entities. If the state is not receiving adequate income from the contracted registry companies, as is the case for flag registries which outsource registry management, and risks international opprobrium for sanctions violations using its flag, it might be inclined to change registry management company or move the register to a government agency, or even close its registry to foreign nationals and corporations.

There is no quick fix to ensure effective sanctions enforcement. The reality is that the broad scope and complexity of these sanctions has meant some states either lack the capacity or political will to translate these into national law. Even countries that have the political will to enforce sanctions have struggled to fully implement them, making enforcement difficult. It makes sense for future efforts to shore up the sanctions regime to focus on national implementation, not just enforcement, especially in states that have limited capacity or that have been targeted by scams in the past. Also, it

Science & Technology Scan

would be useful to focus resources on increased awareness-raising and implementation assistance for states that are geographically far removed from North Korea about the purpose of these sanctions and the DPRK's increasingly sophisticated evasion techniques.

Operation Ice Bridge

Andreas Persbo

On 17 March 2018, sea ice in the Arctic grew to its annual maximum extent. The last four years have, successively, been the lowest maximum extents on record since measurements began. This is worrying for sea-levels. The Intergovernmental Panel on Climate Change assesses that the contribution of the ice-sheets in Greenland and Antarctica to sea level change has increased almost sixfold over a decade, from about 0.17 mm per year in 1992 to 2001, to about 0.99 mm per year in 2002 to 2011.

Human knowledge of climate change has increased dramatically over the last two decades through the deployment ever more sophisticated monitoring methods. Perhaps unsurprisingly, the US National Aeronautics and Space Administration (NASA) has been at the forefront of data collection on ice coverage and annual change in the polar regions.

In 2009, its Ice, Cloud and Land Elevation Satellite (ICESat) stopped collecting data. A replacement satellite, the ICESat-2, is scheduled for launch on 12 September 2018. This satellite will carry a single measurement device, the Advanced Topographic Laser Altimeter System (ATLAS), which will be able to measure ground elevation at an unprecedented level of detail. To compensate for a decade's loss of satellite coverage, NASA decided to start 'Operation IceBridge', bridging the gap between the two missions. The mission has been airborne.

NASA initially flew two aircraft for the operation, a Lockheed P-3 Orion and a Douglas DC-8 jetliner. These aircraft have later been supplemented by others: the C-130 Hercules, King Air B-200 and HU-25C Falcon owned by the Administration, as well as some aircraft operated by others. The planes have been packed with instrumentation designed to measure snow

depth, ice elevation and thickness, surface temperature, bed topography and other characteristics of sea ice, ice sheets and glaciers.

Like IceSat-2, a principal tool used by the IceBridge team has been laser altimeters, which measure changes in ice elevation. If the height of ice is known, scientists can calculate the mass balance of ice from year to year. They will also be able to figure out the volume lost each year, meaning more accurate data on ice-sheet contribution to sea-level rise. The operation also used other laser equipment, such as the Airborne Topographic Mapper (ATM), the Land, Vegetation and Ice Sensor (LVIS), as well as two types of Light Detection and Ranging (LIDAR) scanners.

IceBridge also uses a variety of radars on different frequency bands. These allow for the examination of entire ice columns, from the surface, through accumulated snow and all the way down to the bedrock below. In doing so, radar helps complement the laser readings, creating a granular picture of how the ice coverage is changing. With this use, Synthetic Aperture Radar technology is undergoing a gentle renaissance, and the technology is progressing. In November 2017, VERTIC staff were invited to a demonstration of such equipment at the Deutsches Zentrum für Luft- und Raumfahrt (DLR), witnessing how such gear can be used to detect, for instance, water movements under ice and other vital phenomena. To supplement radar, IceBridge also deploys a gravimeter and magnetometer. These are used to locate sea-bed in areas where the radar cannot see it (for instance where the ice is floating on open sea).

Data gathered by these missions has started to indicate that the polar ice-coverage is in irreversible decline, which will have implications for climate change mitigation. Data is also used to accurately map sea ice so that the polar regions become more accessible for human exploration and exploitation. It is not clear whether NASA will continue to run this programme once IceSat-2 launches later this year.

Upgrading safeguards information technology

Andreas Persbo

On 16 May 2018, the International Atomic Energy Agency (IAEA) announced that it had completed its three-year Modernization of Safeguards Information Technology (MOSAIC) project. This completes a much needed upgrade of the way Agency stores and accesses safeguards-relevant information.

The previous mainframe was more than three decades old, and had become difficult to maintain. The software was understandably severely out of date, but in-house expertise on how to maintain and run the antiquated database was also diminishing. The information supplied to the Agency by its member states came in various forms, mostly paper.

The new system is able to store state declarations, inspection reports, satellite imagery, results from environmental samples, as well as open source information. States are now encouraged to submit their information directly through a dedicated Safeguards Declaration Portal. In the past, the Agency received declarations through email, post or fax. They could even be delivered in person.

Inspectors no longer have to go down to the archive to retrieve previous inspection reports, it is all readily available to them through a click on a mouse. MOSAIC has digitised several hundred thousand archived documents, which the Agency is required to keep on file.

Getting MOSAIC in place was not cheap, it cost €41m, but it promises to make the analytical work less time consuming, hence driving down future costs. Since the IAEA still operates on a shoestring budget, this is required. In the period 2010-2015 alone, the number of material accounting reports increased by 20 per cent, and the amount of nuclear material under safeguards by 17.

It is not just about costs. MOSAIC also promises to improve the way the IAEA's Department of Safeguards plan, conduct, report and assess their inspection activities. Information is now readily searchable and cross-referenced.

In the past, "most of the process of gathering and reviewing the information reported from the field [was] done on paper," noted Alexis Vasmant, a Senior Inspector with the Depart-

ment, observing that inspector's 'manually [had] to trawl through a mountain of paper' before inspection. In the future, this can be done through a single application, called the 'Electronic Verification Package.' This reduces the possibility that the inspectorate 'misses something' in mission planning and execution.

Centre News

National Implementation

Sonia Drobysz (aPD), Yasemin Balci, Cédric Apercé and Benjamin Reedman

This quarter, the NIM team has been primarily focusing on two European Union CBRN Centres of Excellence projects, namely Project 53 on ‘Strengthening the National Legal Framework and Provision of Specialized Training on Bio-Safety and Bio-Security in Central Asian Countries’ and Project 61 on ‘Sound management of chemicals and their associated wastes in Southeast Asia’. Both projects are implemented by a consortium led by Sustainable Criminal Justice Solutions UK; VERTIC is the leading partner for legislative activities.

Together with the Project 53 countries, we have completed legislation analyses and the review of draft legislation for the implementation of the BWC. We have started working on the legislation analyses for the implementation of the International Health Regulations (a legal instrument requiring states to prevent and respond to public health risks) and Codex Alimentarius (a collection of standards to protect consumers’ health and ensure fair practices in the food trade). NIM Legal Officer Cédric Apercé participated in an awareness-raising meeting in Islamabad, Pakistan, during 9-10 April. The aim of the meeting was to raise awareness with national stakeholders on the importance of bio-safety/security issues and highlight the importance of cross-ministerial and regional cooperation, legislation and training in this area. Participants discussed Project 53 scope, methodology and next steps.

As for Project 61, NIM Senior Legal Officer Yasemin Balci joined the consortium members for fact-finding visits in Thailand and the Philippines during 7-11 May. The aim of the visits is to gain a better understanding of the needs and interests of the partner countries in relation to the scope of activities of the project. Yasemin Balci also attended Project 61’s Kick-Off meeting, which took place on 22 June in Brussels, Belgium.

NIM Acting Programme Director Sonia Drobysz assisted in

organising and then participated in a workshop on BWC implementation in Rabat, Morocco during 10-11 May. This workshop was hosted by the Ministry of Health of Morocco along with the US State Department and the James Martin Centre for Non-Proliferation Studies (CNS). It served as a follow-up activity to the peer review exercise carried out in Morocco in May 2017. Participants discussed national implementation measures, the country’s list of pathogens and toxins, as well as the establishment of a ‘national authority’ for the BWC.

Sonia Drobysz also participated in a seminar in Paris, France on 31 May to celebrate the first anniversary of Sciences Po’s research programme ‘Nuclear Knowledges’, which focuses on nuclear weapons politics in France. She spoke as a panelist on the role and expectations of civil society.

Finally, Sonia Drobysz and Yasemin Balci participated in the Global Partnership Against the Spread of Weapons and Materials of Mass Destruction CBRN Working Group and Chemical Security Working Group meetings, held in Lyon, France and The Hague, the Netherlands, respectively. Both sessions considered recent developments and programmatic efforts to respond to the threat posed by weapons and materials of mass destruction.

Verification and Monitoring

Larry MacFaul (PD), Alberto Muti, Noel Stott and Christina Lusser

Over this period, the programme moved into the final phase of its project on ‘Strengthening the Open Skies Treaty: A Technical, Legal and Policy Analysis’ supported by the US Department of State. Further research was carried out on sensor types, in particular on aerial RADAR and satellite capabilities. The technical analysis and international workshops conducted over the course of the project and their results were consolidated and compiled for finalisation.

The team also continued its work on ‘Examining technology and associated procedural needs for international bio-forensic investigations strengthening biological weapons investiga-

tions.’ The project aims to support the development of the UN Secretary General’s operational capability for investigating the alleged use of biological weapons. Over the period several experts were engaged to consider lessons from recent events, including Syria among others, and forecast future technology trends that could impact the mechanism.

In June, the programme was pleased to begin two projects on non-proliferation and nuclear safeguards. These projects build on and expand our long-standing activities to strengthen and facilitate non-proliferation norms and controls globally. The projects, as with the previous activities, are supported by the UK FCO. The projects this year focus on new areas for this assistance work which have been identified as relevant and timely; safeguarding uranium production in and across key regions as well as assisting in national safeguards stakeholder engagement.

During the period, the team continued to stand by in readiness for deployment to Oman to provide expertise on conventional weapons export control through a project supported by US Department of State.

There were several significant developments since the last edition of Trust & Verify including the US-North Korea Summit of 12 June, the US withdrawal from the JCPOA, and the 4th Special Conference of the Chemical Weapons Convention, among others. The team monitored these events and was called on to provide input to various stakeholders in the UK, US and elsewhere.

Also, on 25 May, Senior Researcher Alberto Muti was interviewed live on BBC World News where he discussed the demolition of the North Korean nuclear test site, as well as the expectations surrounding the US-North Korea Summit. Finally, on 28 June, Senior Researcher, Noel Stott travelled to Washington D.C. to attend the conference ‘Preserving the Legacy: NPT Depositary-hosted Conference on the Occasion of the 50th Anniversary of the Opening for Signature of the Treaty on the Non-Proliferation of Nuclear Weapons’.

Special Projects

Angela Woodward (PD), Celeste Donovan and Sylvia Barnett

This period we recruited two new staff to join a project on DPRK maritime sanctions. We welcomed Celeste Donovan

as a Researcher to the team on 14 May, and another Researcher will start in July. We also welcomed volunteer Sylvia Barnett, who is providing research assistance on the DPRK sanctions project and contributing copy to Trust & Verify, alongside her studies at the University of Canterbury, New Zealand.

On 3 May, Angela Woodward participated in a New Zealand Public Advisory Committee on Disarmament and Arms Control (PACDAC) policy meeting, in Wellington. During 7-8 May, she participated in a workshop on DPRK maritime sanctions, held in Panama City, where she gave a presentation on states’ obligations under the UN Security Council sanctions. In her role as a PACDAC member, Angela met with New Zealand Minister of Foreign Affairs and Minister for Disarmament, (and currently acting Prime Minister), Winston Peters on 28 May, in an open roundtable meeting of civil society groups in the field of disarmament, held at Parliament Buildings in Wellington, where she highlighted the need for increased involvement in disarmament verification. She also participated in a Disarmament Law Conference, held at the University of Auckland during 6-8 June, alongside VERTIC Trustee, Lisa Tabassi, where she spoke in a panel discussion on current issues in disarmament law.

Celeste Donovan commenced research on the DPRK maritime sanctions project during this period. Along with Sylvia Barnett, she participated in discussion group sessions on topical verification issues, led by Angela, as part of VERTIC’s training mandate, to increase teaching resources in disarmament verification. Both Celeste and Sylvia also wrote articles for the Compliance Watch section of this issue of Trust & Verify.

Grants and administration

Andreas Persbo (ED) and Helen Cummins

In May, we said hello to Ms Celeste Donovan, who joins the charity as a Researcher for the Special Projects team. She holds a Master's degree (Distinction) from the National Centre for Peace and Conflict Studies at the University of Otago and an Honours degree (First Class) in Diplomacy and International Relations and a Bachelor's degree from the University of Canterbury, both in New Zealand. Special Projects will be joined by a second researcher, Ms Cristina Rotaru, in July.

In June, the Verification and Monitoring Programme welcomed Ms Christina Lusser as a summer intern. Ms Lusser is presently working towards a BA degree from King's College London. She is studying Human Geography with an emphasis on geopolitics and development.

We opened four new projects. The NIM Programme will take part in Project 67 under the European Union's Centres of Excellence Initiative. The Foreign & Commonwealth Office awarded two grants to the VM programme, to continue its work on nuclear safeguards. Finally, further funding was attained for our project on international sanctions.

Finally, this is the last edition of Trust & Verify to be published out of Development House. On 1 August 2018, we will move premises to the Greenhouse on 244–254 Cambridge Heath Road, London E2 9DA.

building trust through verification

VERTIC is an independent, not-for-profit, nongovernmental organisation. Our mission is to support the development, implementation and effectiveness of international agreements and related regional and national initiatives, with particular attention to issues of monitoring, review, legislation and verification. We conduct research, analysis and provide expert advice and information to governments and other stakeholders. We also provide support for capacity building, training, legislative assistance and cooperation.

PERSONNEL

Mr Andreas Persbo, Executive Director (Sweden); Ms Angela Woodward, Deputy Executive Director (New Zealand/United Kingdom); Mr Larry MacFaul, Programme Director (United Kingdom); Dr Sonia Drobysz, Acting Programme Director (France); Ms Yasemin Balci, Senior Legal Officer (the Netherlands); Mr Alberto Muti, Senior Researcher (Italy); Mr Noel Stott, Senior Researcher (South Africa); Mr Cédric Apercé, Legal Officer (France); Ms Celeste Donovan (New Zealand); Ms Helen Cummins, Administrator (United Kingdom); Mr Tom Hobson, Science Fellow (United Kingdom); Mr Benjamin Reedman, Intern (Iceland); Ms Sylvia Barnett, Volunteer (New Zealand); Ms Christina Lusser, Intern (Austria); and Mr Benjamin Reedman, Intern (Iceland).

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REGISTERED ADDRESS

Development House, 56–64 Leonard Street
London EC2A 4LT
United Kingdom
tel +44 (0)20 7065 0880
fax +44 (0)20 7065 0890
website www.vertic.org
Registered company no. 3616935
Registered charity no. 1073051

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VERTIC

Development House
56–64 Leonard Street
London EC2A 4LT
United Kingdom

tel +44 (0)20 7065 0880
fax +44 (0)20 7065 0890
website www.vertic.org

Registered company no.
3616935

Registered charity no.
1073051