



The Secretary General's
Annual Report

2019

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FOREWORD



The Niagara Falls were illuminated in deep blue – the colour of NATO's official flag, adopted in 1953 – on July 14 2019, marking the Alliance's 70th anniversary and the start of Secretary General Jens Stoltenberg's visit to North America. 14 July 2019.

NATO at 70: The transatlantic bond endures

In 2019, the NATO Alliance turned 70. To mark the occasion, Foreign Ministers gathered in Washington in April, and Leaders met in London in December. Our 29 nations from Europe and North America stood side-by-side in a powerful demonstration of the strength of the transatlantic bond. Together, we celebrated seven decades of peace, prosperity and freedom. We also took stock of NATO's continued adaptation and set the Alliance's future direction.

Despite questions about the strength of the transatlantic bond, the reality is that we are doing more together than for many years. Based on polls commissioned by NATO and published for the first time in this Report, 81% of people across the Alliance believe that the collaboration between Europe and North America on safety and security is important. They strongly agree with the principle of collective defence. 76% agree that other NATO Allies should defend them if attacked and 71% agree that their own country should act in defence of another Ally. And a clear majority – 64% - would vote to remain in NATO in a referendum.

Over the last year, NATO has continued to respond to security challenges from many directions. We have further strengthened our deterrence and defence posture, raised the readiness of our forces, increased our ability to move them across the Atlantic and within Europe, and modernised our military command structure.

In dealing with a more assertive Russia, we continue to provide strong deterrence while pursuing meaningful dialogue. Unfortunately, 2019 marked the end of a cornerstone treaty of our arms control regime – the Intermediate-range Nuclear Forces Treaty, due to Russia's deployment of new missile systems. NATO decided to respond in a defensive, measured and coordinated way. We have

no intention to deploy new ground-based nuclear missiles in Europe, but we will continue to take the necessary steps to maintain credible deterrence and defence. At the same time, we remain firmly committed to dialogue with Russia, as well as effective arms control, disarmament, and non-proliferation.

In 2019, we made remarkable progress in fighting ISIS. The Global Coalition, of which NATO is a member, liberated all remaining territory from ISIS control. But the fight against terrorism is not over. NATO trains Iraqi forces to help them ensure that ISIS does not return. And in Afghanistan, we train Afghan forces to fight terrorism and create the conditions for peace.

Rapid technological change is transforming the world we live in. In 2019, we increased our investment in innovation in order to harness the benefits and mitigate the risks of emerging and disruptive technologies, such as Artificial Intelligence, quantum computing, and autonomous weapons. We also updated our resilience baseline requirements for our telecommunications infrastructure, to include 5G.

NATO's new Cyberspace Operations Centre in Mons, Belgium, became fully operational. And we declared space as our fifth operational domain, alongside land, air, sea and cyber. Looking to the future, we will continue to strengthen our Alliance – militarily and politically – as we further adapt to a rapidly changing world.

First, we must redouble our commitment to each other's security. This means continuing to invest in defence and in the capabilities the Alliance needs. It also means ensuring a fair sharing of our collective responsibility for the security and defence of the Euro-Atlantic area. 2019 was the fifth successive year of increased defence spending: nine Allies

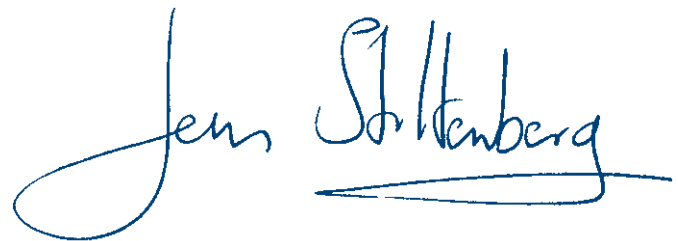


reached the 2% defence spending guideline, up from three Allies in 2014. By the end of 2020, European Allies and Canada will have spent an extra 130 billion US dollars on defence since 2016. This figure is due to rise to 400 billion by the end of 2024. This is good news, but we cannot be complacent and we are determined to keep up the momentum.

Second, the Alliance has to push forward on its adaptation to the shifting global balance of power. This includes the rise of China, whose growing influence and international policies present both opportunities and challenges that we need to address together.

Finally, while we remain a transatlantic alliance, our perspective should be global. This means working together with our partners – from the Middle East and North Africa to the Pacific – in tackling transnational threats that no single country can take on alone. We will also continue to strengthen our cooperation with other multilateral institutions, including the European Union and the United Nations.

We face a complex security environment, one that requires us to adapt and innovate. I am confident that the steps NATO is taking today will preserve what we have achieved together in the past, while preparing us for the future.



Jens Stoltenberg
NATO Secretary General



The Alliance in 2019: Highlights



July

2,000 Allied troops and 27 ships exercise together in the Black Sea during Breeze exercise



August

Allies agree joint statement and response to the end of the INF Treaty, in response to Russia's violations



Secretary General visits New Zealand



NATO signs partnership plan with Australia



September

NATO Mission Iraq reaches full operational capability



New NATO Joint Support and Enabling Command in Ulm, Germany declared operational



NATO deploys unmanned systems during Exercise Recognised Environmental Picture, Portugal



Over 3,000 troops take part in Exercise Silver Arrow in Latvia



October

Command post Exercise Trident Jupiter 19, Norway, gathers 3,000 military and civilian personnel



Dynamic Mariner exercise in Spain tests interoperability of NATO Response Force Maritime Component



Defence Ministers agree baseline requirements for civil telecommunications, including 5G



UK hosts "NEMO", NATO's largest maritime electronic warfare exercise



November

NATO and African Union sign a new cooperation agreement



Foreign Ministers recognize space as operational domain



First NATO Alliance Ground Surveillance aircraft lands in Sigonella, Italy



December

Leaders celebrate NATO's 70th anniversary at Buckingham Palace



Allies contribute all forces required for NATO Readiness Initiative

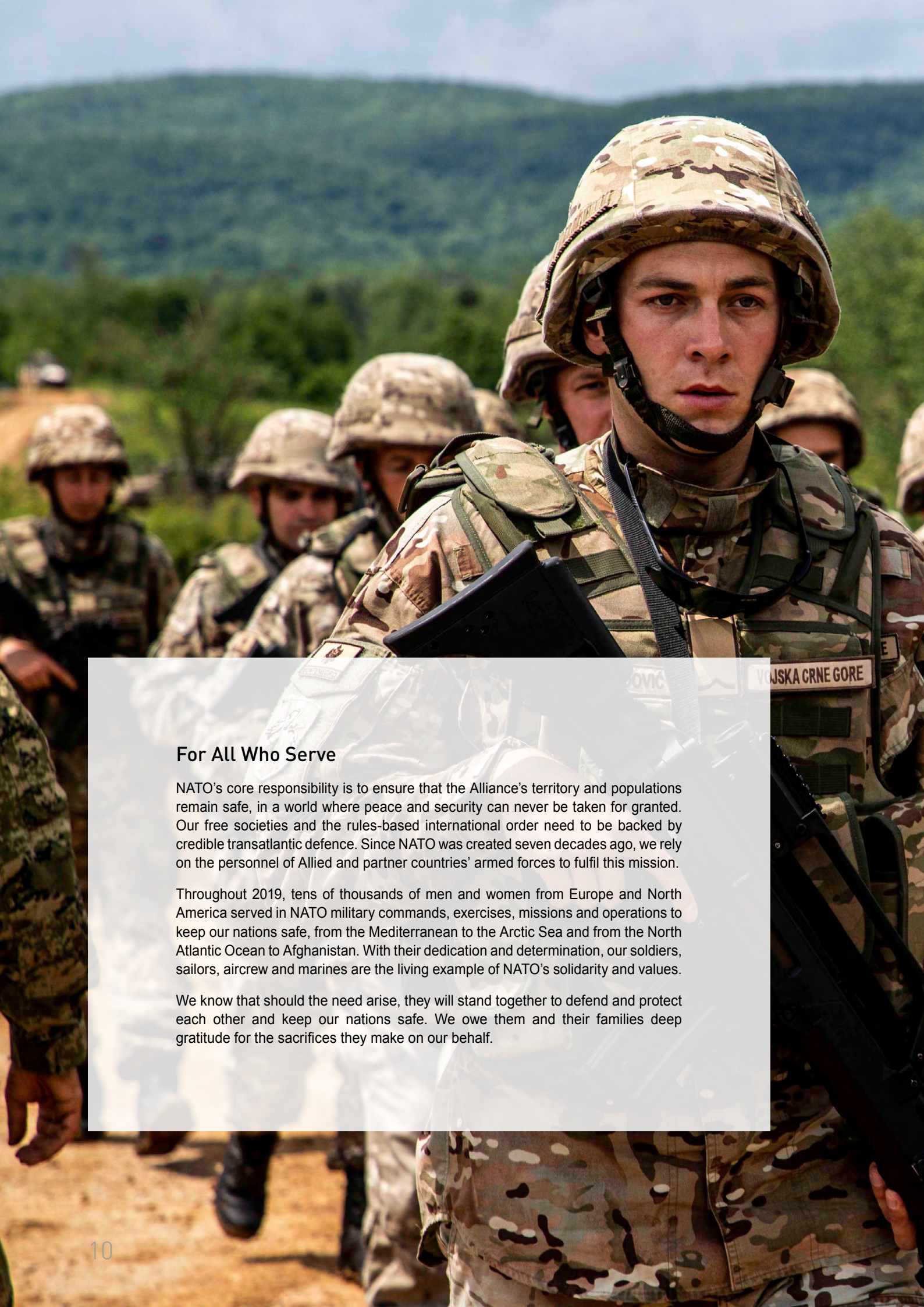


Allies launch Multinational Special Aviation Programme in Zadar, Croatia



NATO signs \$1 billion contract to modernise NATO's fleet of AWACS aircraft





For All Who Serve

NATO's core responsibility is to ensure that the Alliance's territory and populations remain safe, in a world where peace and security can never be taken for granted. Our free societies and the rules-based international order need to be backed by credible transatlantic defence. Since NATO was created seven decades ago, we rely on the personnel of Allied and partner countries' armed forces to fulfil this mission.

Throughout 2019, tens of thousands of men and women from Europe and North America served in NATO military commands, exercises, missions and operations to keep our nations safe, from the Mediterranean to the Arctic Sea and from the North Atlantic Ocean to Afghanistan. With their dedication and determination, our soldiers, sailors, aircrew and marines are the living example of NATO's solidarity and values.

We know that should the need arise, they will stand together to defend and protect each other and keep our nations safe. We owe them and their families deep gratitude for the sacrifices they make on our behalf.





CAP: 65,000 LBS NEXT INSPECT DATE: JUL/2016

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UN3014

DETERRENCE, DEFENCE AND DIALOGUE





NATO enhanced Forward Presence Battlegroup. Lithuania. February 2019.

*The NATO alliance is not only the longest lasting alliance in history.
It is the most successful alliance in history.*

NATO Secretary General Jens Stoltenberg.
US Congress, Washington DC, April 3 2019.

2019 at a Glance

2019 has been a year of rapid adaptation. In response to a complex and unpredictable security environment, Allies continued to strengthen NATO's collective deterrence and defence posture, on land, at sea, in the air, in space and in cyberspace.

Together, Allies have increased the responsiveness and readiness of their forces and strengthened the Alliance's ability to rapidly reinforce any Ally that may come under threat. NATO also invested in enhancing its maritime posture, improving capabilities, bolstering resilience and modernising the Alliance, with a new space policy, an adapted command structure, and new tools to counter hybrid and cyber-attacks.

Following the demise of the Intermediate-Range Nuclear Forces (INF) Treaty in 2019 as a result of Russia's repeated violations, the Alliance has taken

concrete steps to adapt its intelligence, surveillance and reconnaissance, air and missile defence and conventional force posture, and introduced measures to safeguard the continued effectiveness of NATO's nuclear deterrence. These measures were taken to ensure that the Alliance's deterrence and defence posture remains credible and effective. At the same time, NATO Allies have remained firmly committed to the preservation of effective international arms control, disarmament and non-proliferation.

In 2019, Allied commanders approved a new Military Strategy that will help set out NATO's military priorities and approach to current and future challenges, including cyber and hybrid threats, instability across the Middle East and North Africa, and a more assertive Russia.

Ensuring Credible Deterrence and Defence

Over the past few years, NATO has implemented the biggest adaptation and reinforcement of its collective defence since the end of the Cold War.

In 2019, NATO continues to deploy a **Forward Presence in the eastern part of the Alliance**, with four multinational, combat-ready battlegroups in Estonia, Latvia, Lithuania and Poland. They are

NATO Forward Presence in 2019

NATO Enhanced Forward Presence 2019	
ESTONIA	LATVIA
United Kingdom	Canada
Belgium	Albania
Denmark	Czech Republic
France	Italy
Iceland	Montenegro
LITHUANIA	Poland
Germany	Slovakia
Belgium	Slovenia
Czech Republic	Spain
Iceland	POLAND
Netherlands	United States
Norway	Croatia
	Romania
	United Kingdom

NATO Tailored Forward Presence 2019	
Black Sea, Bulgaria and Romania	
Bulgaria	Netherlands
Canada	Poland
France	Portugal
Germany	Romania
Hungary	Spain
Italy	Turkey
Luxembourg	United Kingdom

NFIU: NATO Force Integration Unit



led by the United Kingdom, Canada, Germany and the United States respectively and comprise almost 5,000 troops from across the Alliance. These troops contribute to deterrence by operating alongside national home defence forces and by demonstrating that NATO Allies stand united in the face of any possible aggression. By exercising together with host countries' and other Allied forces operating in the region, the four multinational battlegroups help improve Allied forces' interoperability and readiness. In March 2019, Latvia, Denmark and Estonia inaugurated a new Multinational Division North Headquarters in Ādaži, Latvia, to further strengthen the defence capacities and command and control of NATO forces in the region. These deployments are defensive, proportionate and fully in line with the Alliance's international commitments and its aim to preserve peace and stability.

The Alliance also continued to deploy a **Forward Presence in the Black Sea region**. A multinational framework brigade for training Allies' land forces is in place in Craiova, Romania. The Alliance also invested in additional air training and air policing, and strengthened the presence of the NATO Standing Naval Forces in the Black Sea to increase interoperability and operational skills. In 2019, NATO ships spent 100 days in the Black Sea.



My Forward Presence Battlegroup is proud for having successfully contributed to NATO's deterrence in Lithuania. Our slogan is crystal clear: Together! Strong!

Lieutenant-Colonel Rouven Habel (Germany)

Commander, 6th rotation enhanced Forward Presence Battlegroup, Lithuania

NATO also maintained a series of **assurance measures** in and around Allied territory as part of its broader deterrence and defence efforts, in order to reinforce national defences, deter



My team and I are proud to have worked to enhance our readiness, responsiveness and reinforcement, and helped Allies increase their resilience. I couldn't be more fortunate to lead such an outstanding group of dedicated, talented and motivated professionals.

Sarah Tarry (Canada)

Director, Defence Policy and Capabilities,
NATO Headquarters, Brussels

Responsiveness, Reinforcement and Readiness

NATO's forward presence is underpinned by a reinforcement strategy to ensure that, in a collective defence scenario, it would be backed by the 40,000-strong NATO Response Force. The NATO Response Force is a credible, multinational force made up of land, air, maritime and Special Operations Forces that the Alliance can deploy quickly, wherever needed. It includes the brigade-sized Very High Readiness Joint Task Force, led in 2019 by Germany, the Netherlands and Norway, and able to react as NATO's spearhead force. The Very High Readiness Joint Task Force operates on a rotational principle, ensuring that in the event of a crisis NATO has ready forces at its disposal for rapid response. The NATO Response Force also includes the Initial Follow-on Forces Group, designed to ensure the rapid deployment of combat forces following the Very High Readiness Joint Task Force.

NATO Readiness Initiative

The initiative aims to ensure that the Alliance is able to respond at short notice and quickly reinforce national forces on land, in the air and at sea, be it for crisis intervention or high-intensity war-fighting. At the Brussels Summit in 2018, Allies committed, by 2020, to having 30 mechanised battalions, 30 air squadrons and 30 combat vessels, ready to use within 30 days or less. The initiative is not about new forces, but about increasing the readiness of the forces that NATO nations already have, so that they can be made available to NATO for rapid reinforcement and crisis response at a time when the Alliance is facing threats and challenges from multiple directions. In 2019, Allies contributed all of the combat forces required for this initiative and are now working to build and maintain the level of readiness of these forces and organise them into larger formations. The NATO Readiness Initiative significantly improves the Alliance's ability to reinforce any Ally and to respond rapidly to any crisis.

NATO has been working to ensure it can move and sustain military forces across the North Atlantic and within Europe without delay. In 2019, Allies took further steps to improve the Alliance's military mobility by land, air and sea. These included measures to upgrade transport infrastructure in Europe – such as roads, railways, bridges and airfields – and to streamline related legislation and border procedures to increase the ability to quickly and effectively transport forces and equipment across Allied territory. In this context, Allies have identified main and alternative supply routes capable of handling military transport. They have shortened the time required for

crossing borders and provided diplomatic clearances for rapid land, sea and air movement.

NATO continued to work hand-in-hand with the European Union to improve transport, infrastructure and military mobility, with a focus on coordinated customs and border-crossing legislation, regulations and procedures, including for the transportation of dangerous goods. As part of these broader efforts, in October 2019, NATO, in close cooperation with EUROCONTROL, established the Rapid Air Mobility mechanism, which allows Allied aircraft to move across Europe with priority handling by air traffic control in Europe.



Exercise Noble Jump 2019. Zagan, Poland. June 2019.

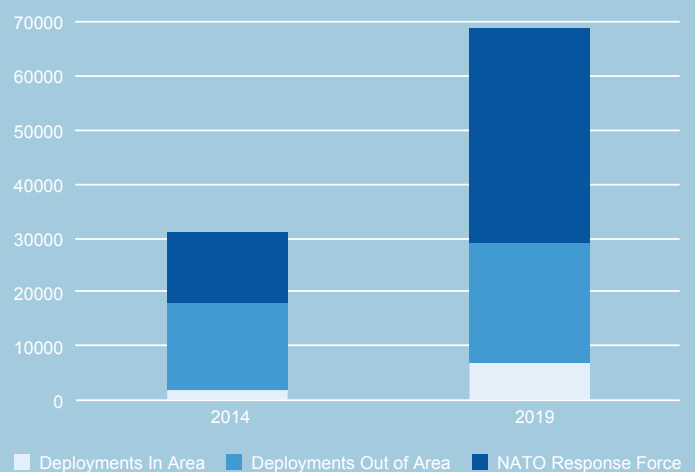
potential adversaries and reassure Allies. These included both measures to improve interoperability, with training and exercising along the Alliance's eastern borders, and measures to provide maritime situational awareness, with the employment of NATO's Standing Naval Forces and maritime patrol aircraft. Assurance measures also contributed

to supplementing national air defence systems and to preserving airspace integrity. NATO kept in place tailored assurance measures for Turkey, including port visits and exercises in the eastern Mediterranean, and continued to augment Turkish air defences with the deployment of missile defence batteries.

Personnel in Allied Deployments and NATO Response Force

Allied Personnel includes: 1- Deployments in area: Allied operations, missions and activities conducted within the territory of NATO member countries; 2- Deployments out of area: Allied operations, missions and activities carried out outside Allied states' territory; 3- NATO Response Force: Allied forces earmarked as NATO's high readiness response forces, including the Very High Readiness Joint Task Force.

In 2019, NATO's principal in area engagements included its Forward Presence; whereas NATO's main out of area deployments included the Kosovo Force, the Resolute Support Mission in Afghanistan and NATO Mission Iraq. The numbers displayed in the chart are rounded off.





Exercise Dynamic Mariner/Flotex19. Cádiz, Spain. October 2019.

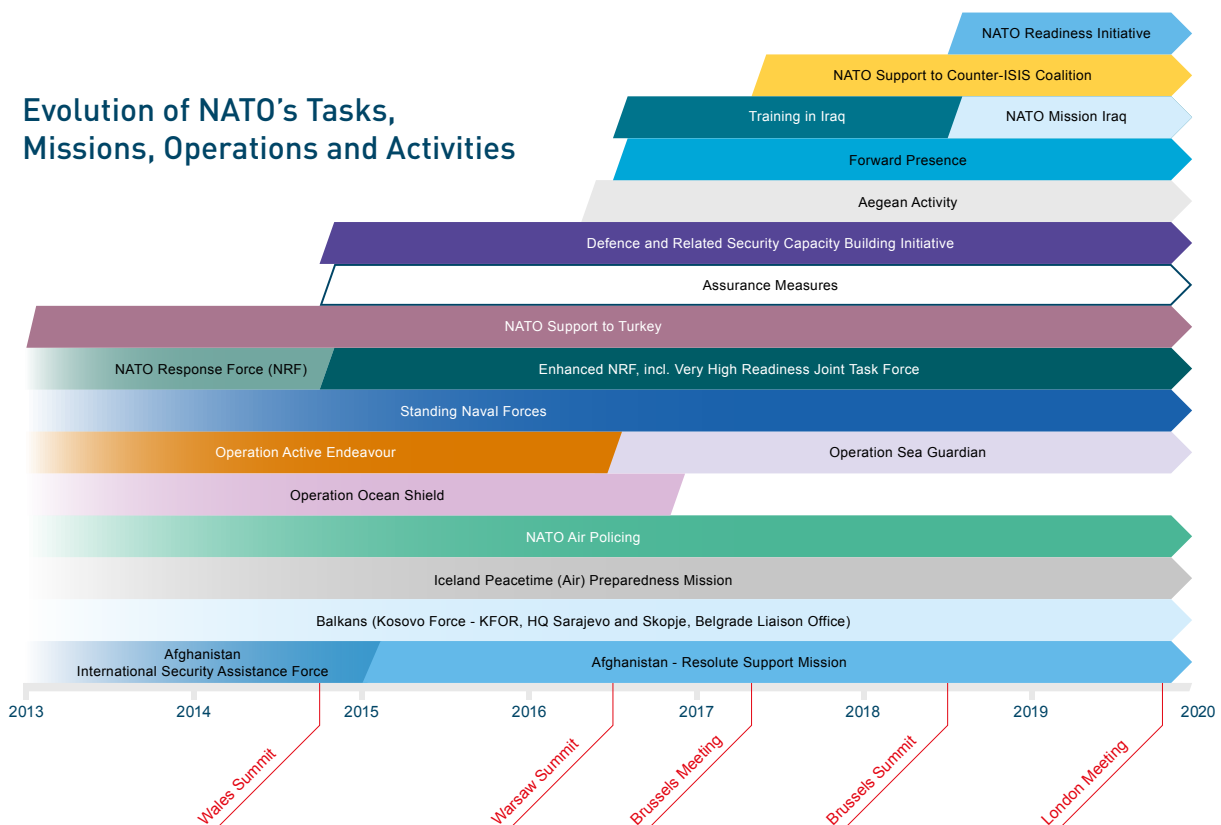
NATO's Maritime Posture

In 2019, the Alliance invested in reinforcing its maritime posture, improving interoperability, increasing maritime situational awareness and enhancing collective maritime war-fighting skills in key areas, including anti-submarine warfare, amphibious operations and the protection of sea lines of communications. In 2019, NATO ships spent more than 12,500 hours patrolling the sea.

NATO's efforts have also focused on **anticipating and responding to security challenges in its southern neighbourhood**, with an emphasis on robust planning and on conducting exercises dealing with scenarios relevant for the south. In 2019, the Hub for the South at Joint Force Command Naples contributed to improving the

Alliance's awareness and understanding of security dynamics in its southern neighbourhood, and to boosting cooperation with partners in the region. The Alliance also remained committed to fighting terrorism, including through its participation in the Global Coalition to Defeat ISIS and through its regional partnerships.

Evolution of NATO's Tasks, Missions, Operations and Activities



Relations with Russia

After the end of the Cold War, NATO made considerable efforts to build a strategic partnership with Russia, based on dialogue and practical cooperation in areas of common interest. Key milestones in the NATO-Russia relationship included the 1997 signing of the NATO-Russia Founding Act and the 2002 creation of the NATO-Russia Council, which to this day remains the primary forum for dialogue between NATO Allies and Russia.

In 2014, as a consequence of Russia's illegal and illegitimate annexation of Crimea, NATO suspended all practical cooperation with Russia. Allies decided there can be "no business as usual" until Russia returns to compliance with international law.

NATO's policy towards Russia is based on two pillars: **defence and dialogue**. This "dual-track approach" allows the Alliance to respond to the deteriorated security environment caused by Russia with strong deterrence, while engaging in periodic, focused and meaningful dialogue. Through its readiness for dialogue, NATO has demonstrated that it is committed to discussing critical issues and avoiding misunderstandings, miscalculation and unintended escalation.

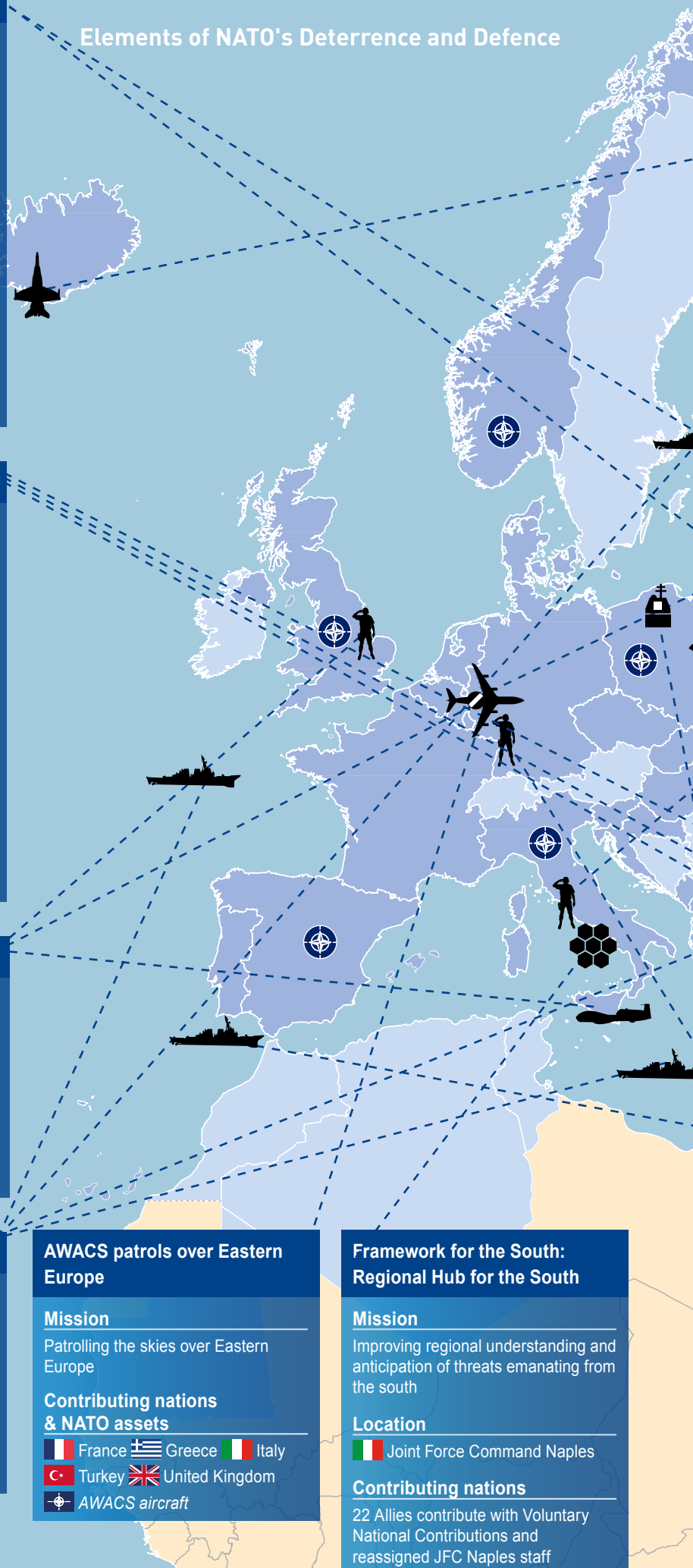
In this context, NATO continues to invest in the NATO-Russia Council as a platform for dialogue to address international security issues, while also working to increase transparency and predictability. In 2019, the NATO-Russia Council met twice – in January and in July. On both occasions, NATO Allies and Russia addressed key current security issues, including the ongoing conflict in Ukraine and Russia's violation of the Intermediate-Range Nuclear Forces Treaty.

NATO and Russia also used the NATO-Russia Council to exchange reciprocal briefings on upcoming military exercises. NATO briefed on Exercise Dynamic Mariner 2019 and provided a follow-on briefing on Exercise Trident Juncture 2018. In turn, Russia briefed on its exercises Tsentr 2019 and Union Shield 2019. The Head of the NATO Military Liaison Mission in Moscow also participated in the Tsentr 2019 Distinguished Visitors Day in September 2019. NATO welcomes the continuation of these voluntary exchanges, but continues to underscore that they cannot replace mandatory transparency Russia has committed to under the Vienna Document.

High-level meetings between NATO and Russia continued in 2019, with Secretary General Jens Stoltenberg and Russian Foreign Minister Sergey Lavrov meeting in the margins of the Munich Security Conference in February 2019. NATO's military leaders kept open their channels of communication with their Russian counterparts. The Supreme Allied Commander Europe, General Tod D. Wolters, met with the Russian Chief of the General Staff, General Valery Gerasimov, in Baku, Azerbaijan in July. The Chairman of the NATO Military Committee, Air Chief Marshal Sir Stuart Peach, also met with General Gerasimov in Baku in November.

While remaining committed to this dual-track policy, NATO is concerned about Russia's pattern of destabilising behaviour across the Euro-Atlantic region and beyond. In 2019, Russia's aggressive actions in Ukraine, including its destabilising military behaviour and use of hybrid tactics, have continued to negatively impact international security, while increasing unpredictability and instability.

Elements of NATO's Deterrence and Defence



Baltic Air Policing

Mission
Protecting the airspace of the Baltic States

Location
Estonia Latvia Lithuania Poland

Contributing nations

- Belgium (Šiauliai, Lithuania)
- Denmark (Šiauliai, Lithuania or Malbork, Poland)
- Czech Republic (Ämari, Estonia)
- Germany (Ämari, Estonia)
- Hungary (Šiauliai, Lithuania)
- Poland (Šiauliai, Lithuania)
- Portugal (Malbork, Poland)
- Spain (Šiauliai, Lithuania or Malbork, Poland)
- United Kingdom (Ämari, Estonia)

Support and Assurance for Turkey

Mission
Reinforcing air defences and providing tailored assurance measures for Turkey

Location
Turkey

Contributing nations

- Italy (Kahramanmaraş, Turkey) - Surface-to-air missile batteries
- Spain (Adana, Turkey) - Surface-to-air missile batteries

NATO assets

- NATO (Konya, Turkey) - AWACS aircraft

Allies also contribute through increased Standing Naval Forces port calls, participation in exercises and Intelligence, Surveillance and Reconnaissance activities.

Joint Intelligence, Surveillance and Reconnaissance

Mission
Supporting decision-makers with timely information and intelligence

Location
Germany Italy United Kingdom

NATO assets

- NATO - AGS, AWACS aircraft

Standing Naval Forces

Mission
Providing the Alliance with a continuous naval presence

Location
The Atlantic Ocean, the Baltic, Black and Mediterranean Seas

NATO assets

- NATO - Standing NATO Maritime Groups (SNMG1 & 2), Standing NATO Mine Countermeasures Groups (SNMCMG1 & 2)

AWACS patrols over Eastern Europe

Mission
Patrolling the skies over Eastern Europe

Contributing nations & NATO assets

- France Greece Italy
- Turkey United Kingdom
- NATO - AWACS aircraft

Framework for the South: Regional Hub for the South

Mission
Improving regional understanding and anticipation of threats emanating from the south

Location
Joint Force Command Naples

Contributing nations
22 Allies contribute with Voluntary National Contributions and reassigned JFC Naples staff

Note: Map data display contributions by Allies in 2019

Iceland Peacetime Preparedness

Mission

Protecting Iceland's airspace

Location

 Iceland, Keflavik

Contributing nations

 Italy
 United Kingdom
 United States

Enhanced NATO Response Force / Very High Readiness Joint Task Force

Mission

Ready to deploy at short notice for crisis management or collective defence

Location

 Joint Force Command Naples (eNRF 2019)
 Germany  Netherlands  Norway (VJTF lead nations 2019)

Contributing nations

Enhanced NATO Response Force (eNRF): 26 Allies
 Very High Readiness Joint Task Force (VJTF): 26 Allies

NATO's Forward Presence

Mission

Strengthening NATO's deterrence and defence

Location

 Bulgaria  Estonia  Latvia  Lithuania  Poland  Romania

Contributing nations

ESTONIA	Framework nation:  United Kingdom
LATVIA	Framework nation:  Canada
LITHUANIA	Framework nation:  Germany
POLAND	Framework nation:  United States

 Belgium  Denmark  France  Iceland
 Albania  Czech Republic  Italy  Montenegro
 Poland  Slovakia  Slovenia  Spain
 Belgium  Czech Republic  Iceland
 Netherlands  Norway
 Croatia  Romania  United Kingdom

BLACK SEA,  Bulgaria  Canada  France  Germany
 BULGARIA AND  Hungary  Italy  Luxembourg  Netherlands
 ROMANIA  Poland  Portugal  Romania  Spain  Turkey
 United Kingdom

Ballistic Missile Defence





Mission

Protecting NATO's populations, territory and forces

Location

 Germany  Romania  Poland  Spain  Turkey

NATO assets

 United States (Rota, Spain) - US Aegis BMD-capable ships
 United States (Deveselu, Romania) - Aegis Ashore
 United States (Kürecik, Turkey) - BMD tracking sensor
 United States (Redzikowo, Poland) - Aegis Ashore (under construction)
 NATO (Ramstein, Germany) - Allied Air Command

 NATO members

 NATO partners

 NATO exercises

For more on NATO exercises please refer to pages 59-63

0 500 km



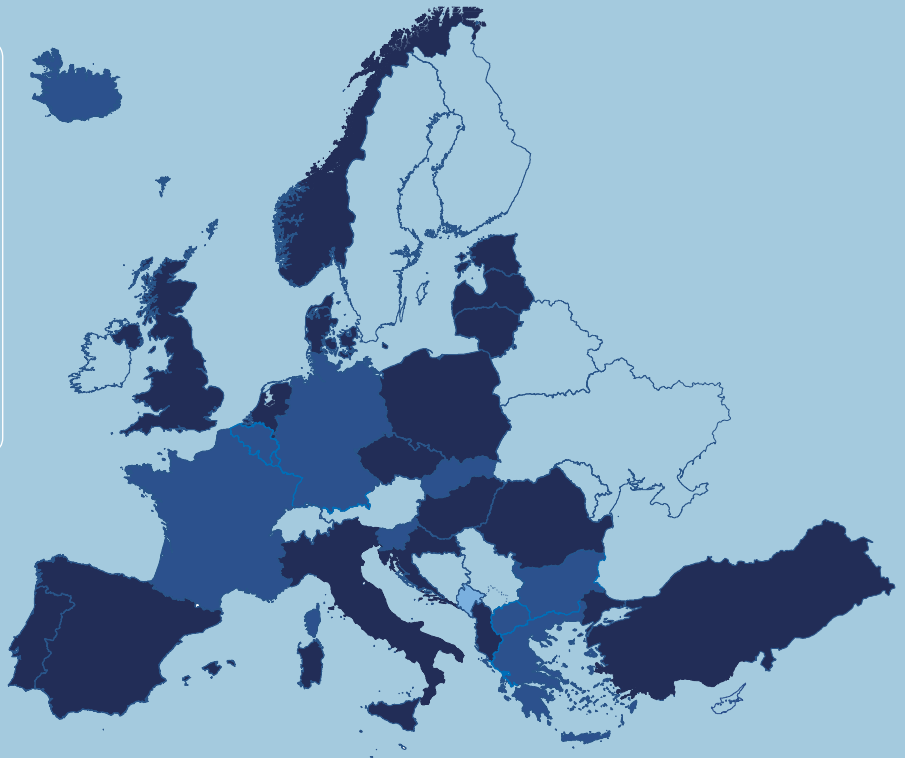
All maps are based on commercial data. Digital Map Data (C) Collins Bartholomew LTD (2013). The boundaries and names shown and the designations used do not imply official endorsement or acceptance by NATO. Due to size limitations, some inserts may have been added to the maps to include other geographical areas. Final boundary between the Republic of Sudan and the Republic of South Sudan has not yet been determined. Final status of the Abyei area is not yet determined.

Collective Defence, Shared Security: Listening to NATO Citizens

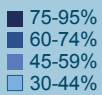
In 2019, NATO commissioned a survey in all NATO Allies and North Macedonia to better understand how NATO's citizens see the transatlantic Alliance.¹ The survey showed:

Strength of the Transatlantic Bond

81% of the public across all Allies and North Macedonia believe that the collaboration between North America and Europe on safety and security matters is important.



Percentage of population replying "important"

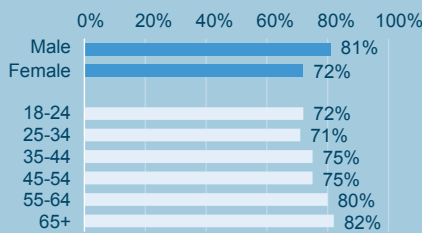


Commitment to Collective Defence

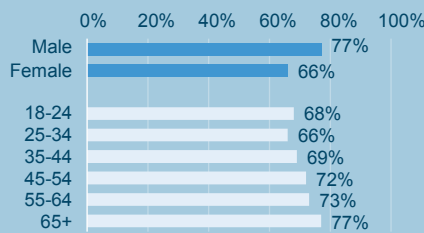
NATO citizens largely endorse the principle of collective defence.



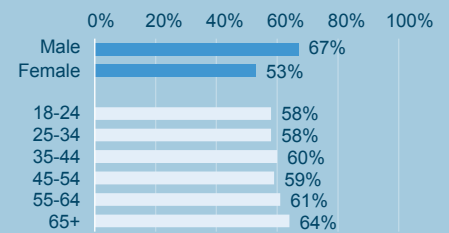
76% of the public agrees that other Allies should defend their country if attacked.



71% of the public believes that their country should defend another NATO Ally if attacked.



60% of the public thinks that their country's membership in NATO makes it less likely that a foreign nation will attack.



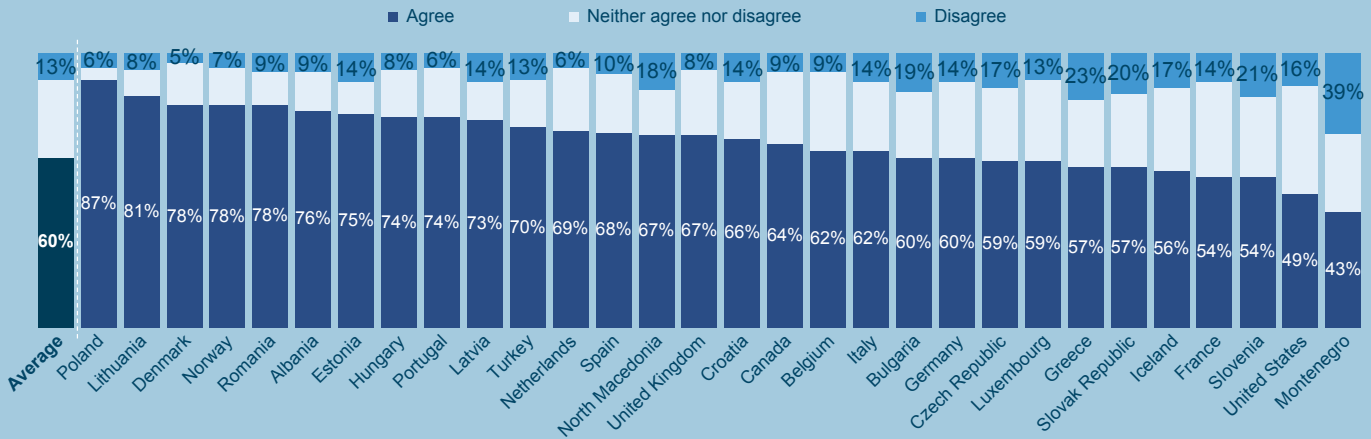
¹ Based on surveys of 28,752 adults conducted in November 2019 by Populus in 29 NATO member countries and North Macedonia. All interviews were conducted online, except for North Macedonia, Albania and Montenegro where a face-to-face methodology was used due to the limited penetration of online panels in these countries. In all countries polled online a sample of at least 1,000 respondents per country was achieved. In face-to-face countries at least 500 individuals per country were interviewed. Quotas for gender, age and region were set and post-weighting was applied to ensure the samples for each country were representative of the adult population in this country. Total results (across all Allies polled) were weighted to the population distribution of NATO.

For more information, see: <https://www.nato.int/SGReport/2019/audience-insight-en.pdf>

Belief in Shared Security

60% of the citizens polled believe that their membership of NATO makes them less likely to be attacked by a foreign nation.

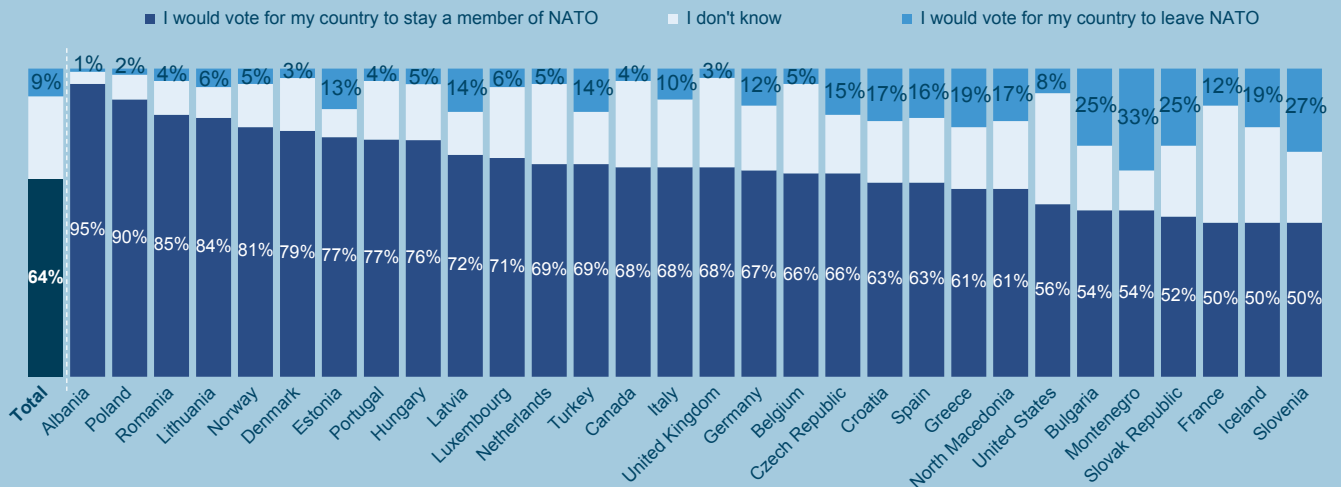
The graph below shows agreement with the statement "Our membership in NATO makes it less likely that a foreign nation will attack our country".



Support for Membership

Support for the Alliance is strong: most citizens back their country's membership of NATO and a clear majority would vote to remain in NATO if a referendum were held (64%).

The graph below shows responses to the question "if you could vote for or against your country's membership in NATO, how would you vote?"





A Hungarian Air Force pilot readying his JAS 39 Gripen fighter to scramble in support of NATO's Baltic Air Policing mission. Baltic Air Policing, May 2019.



We are protecting the skies over the Baltic States, underlining Alliance solidarity.

Lieutenant Colonel Roeland "RON" Van Thienen (Belgium)

Commander, Belgian F-16
Baltic Air Policing Detachment,
Šiauliai Air Base, Lithuania

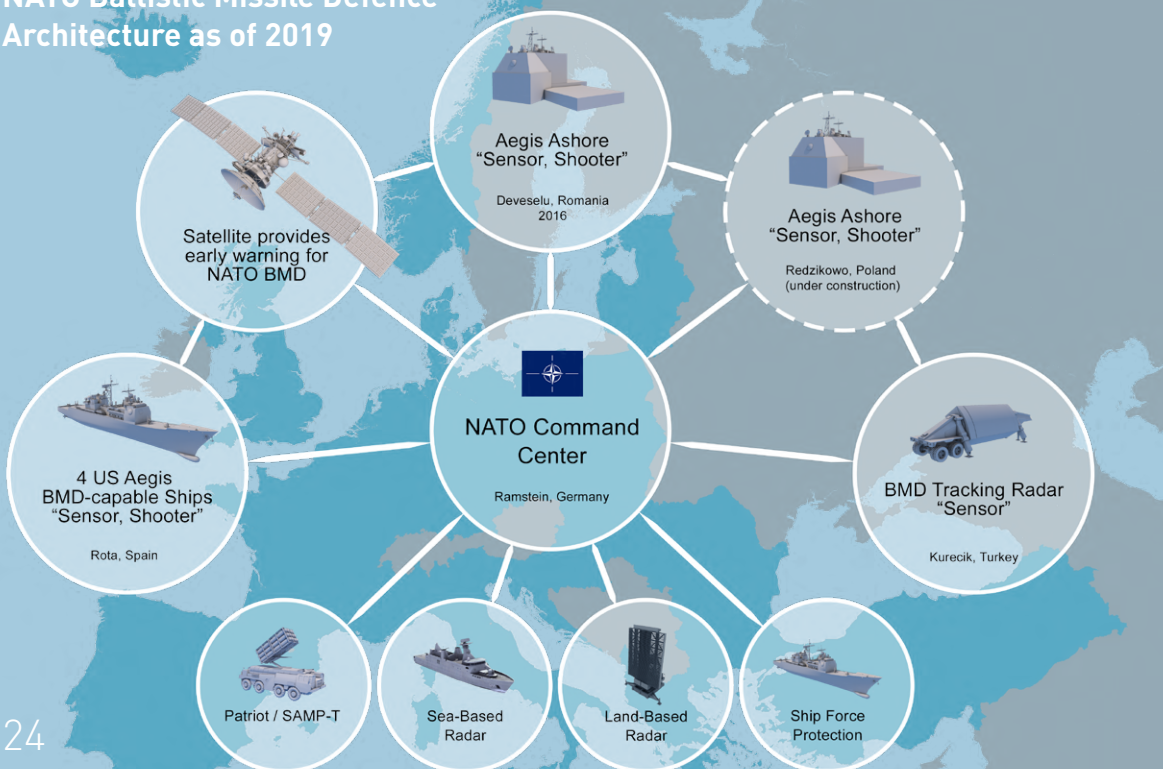
Delivering Effective Air and Missile Defences

NATO's Integrated Air and Missile Defence is one of the Alliance's essential and permanent missions. It keeps NATO's skies safe, defends Allies against any threat from the air, and safeguards and protects Allied populations, territory and forces. In doing so, it contributes to deterrence and to the Alliance's indivisible security and freedom of action.

In peacetime, NATO has two main air and missile defence missions: Air Policing and Ballistic Missile Defence.

The Air Policing Mission is carried out by aircraft owned and operated by NATO Allies. The Mission is designed to safeguard the integrity of Allied airspace by responding to unidentified aircraft or

NATO Ballistic Missile Defence Architecture as of 2019



to those operating in an unusual or unsafe manner. Allies also contribute to NATO Air Policing with their national air surveillance systems and air traffic management. To ensure a single standard of security for all NATO members, Allies which do not have the necessary air policing assets in their own militaries are supported by other Allies.

In 2019, neighbouring Allies continued to provide NATO Air Policing support to Albania, Montenegro and Slovenia. Rotational deployments of air policing capabilities also provided support to Iceland and the Baltic States. In 2019, Allies agreed to extend the Air Policing arrangement for the Baltic States for an additional five years.

The NATO Ballistic Missile Defence mission protects European Allied populations, territory and forces against ballistic missiles potentially launched from outside the Euro-Atlantic area, focusing on threats from the Middle East against NATO's south-eastern flank. NATO's missile defence is a purely defensive capability.

National Resilience for Greater Collective Security

Resilience and civil preparedness are above all a national responsibility. Yet resilient Allies are essential to NATO's collective security, with armed



Resilience is a lot like military readiness: it is a collective obligation to ensure the Alliance as a whole is ready for any contingency in an unpredictable strategic environment.

Hasit Thankey (Canada)

Head, Enablement and Resilience,
NATO Headquarters, Brussels

forces relying heavily on civilian infrastructure and capabilities for transport, satellite communications and internet traffic, among others.

National resilience is the first line of Allied defence, and being resilient is part of every Ally's commitment to the Alliance, and to each other. NATO's work on resilience focuses on assisting Allies to implement the seven baseline requirements for national resilience agreed by NATO Leaders at the 2016 Warsaw Summit.

The NATO baseline requirements for national resilience are:

- assured continuity of government and critical government services
- resilient energy supplies
- ability to deal effectively with uncontrolled movement of people
- resilient food and water resources
- ability to deal with mass casualties
- resilient civil communications systems
- resilient transportation system

A Military Emergencies Unit dog handler. León, Spain. January 2019.



In 2019, NATO continued to work on revising and updating these requirements to meet new challenges and to address emerging vulnerabilities.

One example concerns the implications of new technologies. In October 2019, Allies updated NATO's resilience requirements for civil

communications systems to take into account the implications of new and emerging technologies, such as 5G. Work to update the other six resilience baseline requirements continues to ensure the Alliance has functioning, safe and secure critical infrastructure at all times.

Resilient Civil Communications Systems for NATO

Next-generation telecommunications networks, systems and services will affect every aspect of our society, ranging from transportation to healthcare, education and disaster management. The updated requirements for civil communications stress that Allies need to have reliable communications systems in peacetime, crisis and conflict, including for 5G. This means having in place:

- robust options to restore the systems in case of a disruption or outage;
- priority access for national authorities to communications networks in a crisis;
- thorough risk management plans and mitigation measures;
- and timely information-sharing within governments and with the private sector.

In this context, Allies agreed to conduct an in-depth assessment of the risks to communications systems associated with cyber threats, as well as the consequences of foreign ownership, control or direct investment.

In 2019, NATO also reformed its Civil Emergency Planning Committee, the body that drives civil preparedness and resilience, to improve how national authorities and NATO staff work together to address challenges in areas such as government continuity, energy, transport, food and agriculture, medical services and the civil communications sector.

NATO maintained its support for the efforts of partner countries to enhance their own resilience and civil preparedness. Finland and Sweden are close NATO partners in these areas, and they share best practices and assessments based on

their sophisticated national resilience approaches. In 2019, NATO also provided civil preparedness support and advice to Ukraine, including with the deployment of a resilience advisory support team to Kyiv in February.

The Alliance continued to cooperate with the European Union to bolster resilience in countering hybrid threats. Staff from both organisations shared their respective approaches to resilience and increased awareness about their instruments, with a focus on risk assessments, medical evacuation, mass casualty incidents and population movement.

Cyberspace as Part of NATO's Core Task of Collective Defence

Cyber defence is part of NATO's core task of collective defence, and NATO has made clear that a severe cyber-attack could lead to invoke Article 5.

NATO Allies bear the primary responsibility for their national cyber defences but Alliance cyber defences are interconnected and only as strong as the weakest link. That's why Allies have pledged to strengthen their cyber defences as a matter of priority. NATO is supporting Allies in this effort.

As part of the modernised NATO Command Structure, a Cyberspace Operations Centre is now active to make sure NATO is as effective in cyberspace as on land, in the air and at sea. This enables NATO to operate in cyberspace by improving the Alliance's ability to conduct operations and maintaining its freedom of action and decision, in all circumstances. Allies have also agreed to integrate their national cyber capabilities into NATO operations. Several Allies have volunteered national cyber capabilities to NATO. Allies will retain control of their national cyber capabilities at all times when they are used during NATO missions or operations. As in all other domains, in cyberspace NATO acts in line with its defensive mandate and international law.

In 2019, NATO continued to support Allies in the implementation of the Cyber Defence Pledge made in Warsaw three years earlier and aimed to enhance national cyber resilience among Allies. Since then, the Pledge has been helping Allies boost their defences and strengthen their cyber capabilities. Allies have improved their legal and institutional frameworks and continued to invest in financial and human resources

to confront cyber threats. In this way, NATO will be able to tackle increasingly complex cyber threats faster and more efficiently.

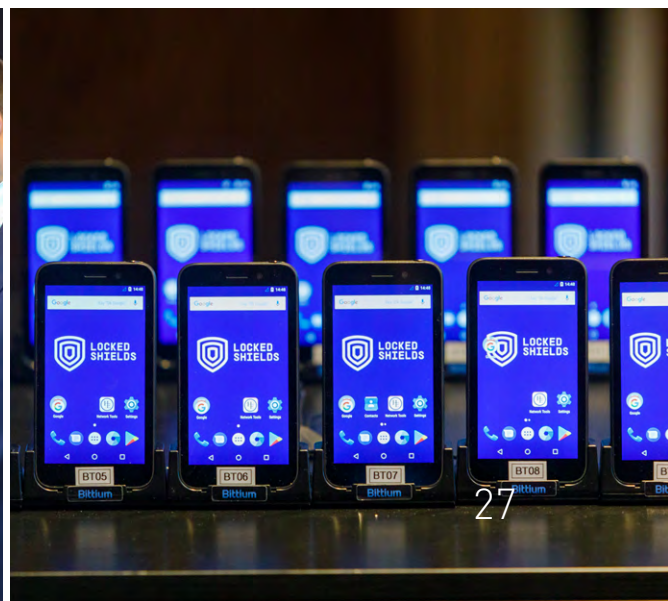
In May, the annual Cyber Defence Pledge Conference hosted in London focused on education and training, including on the need to ensure a better gender balance and diverse workforce in this field. Tackling these challenges will remain a priority going forward with a view to equipping Allies with richer talent pools, enabling them to recruit and retain qualified cyber professionals. The ongoing training and upskilling of staff will remain essential as technology and the cyber threat continue to evolve.

Defence against cyber-attacks also requires cooperation between international organisations, governments and industry. NATO is an important platform to train, test and exercise cyber defence capability and preparedness; to bolster information-sharing – particularly with regard to emerging technologies; and to leverage the expertise of industry and academia. In this context, NATO continues to consult regularly on cyber challenges and threats with Allies and with partners, such as the European Union.

NATO has also invested in strengthening its relationship with industry through the NATO Industry Cyber Partnership. This initiative, established in 2014, facilitates cooperation for the mutual benefit of both NATO and Allies' industry and academia. In 2019, industry continued to support NATO's cyber defence by providing real-time actionable cyber threat information, thereby enabling stakeholders to take rapid action to respond to threats.

Visit to Exercise Locked Shields by Jüri Ratas, Prime Minister of Estonia. Tallinn, Estonia. April 2019.

Exercise Locked Shields, Tallinn, Estonia. April 2019.



Women in Cyber

Women make defence forces more effective. It is no surprise, then, that when it comes to cyber defence, women are also key players, not least because threats stem from a variety of sources, and the range of perspectives that can be brought to bear with a diverse team can improve the ability to tackle them. As part of NATO's Science for Peace and Security Programme, France and Qatar organised a workshop in October at the KINDI Center for Computing Research at Qatar University to explore the advantages of increasing the proportion of women in the cyber workforce. This workshop is one of several events organised by NATO in 2019 that provided opportunities to enhance understanding of the importance of gender diversity in the cyber domain.



While technology is important, it's the people behind it that are key. That's why NATO and its Allies continue to focus on developing a strong and diverse workforce in the field of cyber defence.

Chelsey Slack (Canada)

Deputy Head of Cyber Defence,
NATO Headquarters, Brussels

NATO's Space Policy

In November 2019, NATO recognised space as its fifth operational domain, alongside air, land, sea and cyberspace. In full compliance with international law, this will enable the Alliance to strengthen its awareness of the situation in space and support NATO's operations and missions.

While space can be used for peaceful purposes, such as predicting the weather, it can also be used for aggression. Satellites can be hacked, jammed or weaponised, and anti-satellite weapons could cripple communications and affect the Alliance's ability to operate.

In 2019, Allies acknowledged that space is important for their security and prosperity, and is essential to

NATO's deterrence and defence. Space underpins the ability to navigate and track forces, to have effective satellite communications and to detect missile launches. The evolution in the uses of space and rapid advances in space technology have created new opportunities, but also new risks, vulnerabilities and potential threats. Through the use of space, Allies and NATO can anticipate threats and respond to crises with greater speed, effectiveness and precision.

In this context, Allies have agreed to place space firmly on the NATO agenda, including through a new Space Policy that guides NATO's approach to space.

It is also important that NATO's space capabilities are resilient and that the Alliance maintains its technological edge. To allow NATO forces to communicate more securely and more quickly, NATO decided to invest over EUR 1 billion worth of satellite time for the period 2020-34. This is the Alliance's biggest-ever investment in satellite communications.

NATO has no intention to put weapons in space. But it can serve as a forum to share relevant information, increase interoperability, and ensure that the Alliance's missions and operations can call on the support they need.

Defending against Hybrid Threats

Hostile powers do not have to take to the battlefield to inflict damage on their adversaries. They can make political and strategic gains in other ways, such as spreading disinformation, launching cyber-attacks, and using deception and sabotage. These hybrid or grey zone activities blur the line between peace and war, and are used to destabilise and undermine affected countries.

Countering hybrid threats against Allies is a priority for NATO. Allies stand ready to defend each other against hybrid attacks as part of collective defence, while recognising that the primary responsibility for responding to hybrid attacks rests with the targeted nation.

NATO continues to develop strategies to deal with hybrid threats by enhancing resilience, improving intelligence and early warning, boosting cyber defences, and working with partners and other international organisations.

In 2019, NATO stepped up its efforts to support the Allies in countering hybrid warfare. In May, the Alliance held a NATO-wide crisis management exercise to test NATO's and Allies' ability to deal with a diverse range of threats in the political, economic and military domains. Later that month, a landmark meeting of Allied National Security Advisers was convened at NATO Headquarters. This meeting provided a unique opportunity for Allies to share their experiences of countering hybrid threats and to debate ways for NATO to enhance its support to nations. The first NATO Counter Hybrid

Transparency and Risk Reduction

NATO firmly believes that reciprocal military transparency and risk reduction can contribute to improve stability and security in the Euro-Atlantic area. The Alliance seeks ways to avoid misunderstanding, miscalculation or accidents



In 2019, NATO made a major leap forward in responding to hybrid threats: more exercises, strengthened cyber defences, and the first use of a Counter Hybrid Support Team showed that even when it comes to new security challenges, solidarity remains the hallmark of the Alliance.

Michael Rühle (Germany)

Head, Hybrid Challenges
and Energy Security Section,
NATO Headquarters, Brussels

Support team deployed to Montenegro for a week in November, with the aim to support Podgorica's efforts to prepare against hybrid activities.

Cooperation with the European Union increased with the work of the European Centre of Excellence for Countering Hybrid Threats in Helsinki, Finland. Since its inauguration in September 2017, the Centre has served as an important forum for debate between NATO and the European Union, and has produced valuable work on education, training, table top exercises and building resilience to hybrid threats.

that could lead to unintentional conflict. Allies remain committed to the preservation of effective international arms control, disarmament and non-proliferation as key elements of Euro-Atlantic security.



Exercise Saber Guardian. Danube River, Romania. June 2019.

Conventional Arms Control in Europe

In 2019, arms control, disarmament and non-proliferation featured prominently on NATO's agenda. NATO redoubled its efforts on risk reduction and transparency.

At the London Leaders Meeting in December 2019, Allies reaffirmed their commitment to preserving, strengthening and modernising conventional arms control in Europe — seen as a cornerstone of stability and security. They agreed to do this based on key principles, including reciprocity, transparency and host nation consent.

Verifiable arms control adds to Allies' security by limiting military forces in the Euro-Atlantic area, as well as by providing transparency and predictability of military deployments, manoeuvres and exercises. In this way, conventional arms control agreements help to keep the continent at peace – if all parties implement them fully and in good faith.

In this context, Allies continued to pursue the modernisation of the Organization for Security and Co-operation in Europe's (OSCE) Vienna Document on military transparency.

The Vienna Document is an agreement between OSCE participating states aimed at implementing confidence and security building measures. Its provisions include annual exchanges of military information about forces located in Europe, notifications for risk reduction, consultations about unusual military activities, prior notifications and observations of military activities and inspection visits.

Given the significant changes in the security environment, Allies have introduced the most comprehensive proposal by any state or group of states since 1994, designed to restore confidence, build mutual predictability, reduce risks and help prevent unintentional conflict in Europe.

The proposal tackles five specific issues:

- The need for increased transparency over certain military activities (both exercises and deployments) across the Euro-Atlantic region.
- The need to provide transparency regarding no-notice military activities.
- The need to improve the Vienna Document's Measures for Risk Reduction, including with respect to consultations and cooperation on unusual military activities and hazardous or dangerous incidents of a military nature.
- The need to improve verification provisions, including increased numbers of all types of verification visits and improvements in the visit mechanisms.
- The need to update the Vienna Document to reflect current practice across the different areas of its implementation.



Arms control complements NATO's defence strategy and ensures a secure future. The graver the threats to our security, the greater our ambition on arms control must be.

Eirini Lemos-Maniati (Greece)

Deputy Director, Arms Control, Disarmament and WMD Non-Proliferation Centre
NATO Headquarters, Brussels

NATO Allies have consistently stood by the letter and the spirit of the Vienna Document. In 2019, Allies continued to notify the OSCE of military exercises well in advance, even when below the notification thresholds.² They have also consistently made provisions to facilitate international observation of large-scale manoeuvres. In 2019, Russian military personnel were present as observers during a number of Allied national exercises.³ The main effort on transparency made by Russia in 2019 was related to its exercises Tsentr 2019, which occurred mainly outside the Vienna Document Zone of Application, and Union Shield 2019. However, Russia's implementation of its obligations under the Vienna Document and the Treaty on Open Skies with regard to exercise Tsentr 2019 raised several concerns, in line with Allies' broader worries about Russia's commitment to conventional arms control instruments.

These concerns are due to Russia's selective implementation of the Vienna Document, its suspension of the Treaty on Conventional Armed Forces in Europe, and its disregard of the Budapest Memorandum and the Helsinki Final Act – which lays out the principles for relations among states in the Euro-Atlantic area and forms the basis for the OSCE. Similar worries remain with respect to Russian compliance with the Treaty on Open Skies, including with regard to flights over the Kaliningrad region and Georgia.

The Alliance has a longstanding commitment and track record in promoting arms control, disarmament and non-proliferation. Over the past decades, NATO has supported the development of many key arms control instruments, including the OSCE's Vienna Document on military transparency, the Conventional Armed Forces in Europe Treaty, and the START and New START Treaties, among others.

NATO supports efforts by Allies to address the proliferation of missiles, and the spread of new missile technologies. NATO remains committed to strengthening nuclear arms control and to supporting the Non-Proliferation Treaty, in line with the Alliance's ultimate goal of a world without nuclear weapons.

² Signatories of the Vienna Document are required to notify the OSCE when they conduct exercises involving 9,000 or more troops; observation is obligatory for exercises involving 13,000 or more troops.

³ Including Joint Warrior (UK, 30 March-11 April), Joint Stars (Italy, 13-31 May), Saber Guardian (Romania, 6-24 June), Wettiner Heide (Germany, 2-3 September), Spring Storm (Estonia, 29 April-10 May) and Czech Lion (Czech Republic, 4-10 October).

NATO's Response to Russia's Development of SSC-8 Ground-Launched Cruise Missile in Violation of the Intermediate-Range Nuclear Forces Treaty

Despite years of engagement by the United States and other Allies, Russia continued to develop and field the ground-launched, nuclear-capable SSC-8 cruise missile. In December 2018, Allies formally concluded that Russia was in violation of the Intermediate-Range Nuclear Forces (INF) Treaty. Allies engaged Russia to return to compliance with the INF Treaty, including at NATO-Russia Council sessions in January and July 2019. A situation where the United States fully abides by the Treaty, and Russia does not, was not sustainable. As a result, the United States decided to withdraw from the INF Treaty in August. This decision was fully supported by Allies.

In response to the significant risks posed by the Russian SSC-8 cruise missiles, NATO is implementing a balanced, coordinated and defensive package of political and military measures to ensure NATO's deterrence and defence posture remains credible and effective. These include adaptations to exercise programmes and conventional capabilities such as intelligence, surveillance and reconnaissance and missile defences. The response has also included measures to maintain the deterrence credibility of NATO's dual-capable aircraft, which have the capability to undertake both conventional and nuclear roles. The Alliance began implementing these measures while stressing its firm commitment to the preservation of effective international arms control, disarmament and non-proliferation. NATO clarified it does not want to mirror what Russia does, it does not want a new arms race, and it has no intention to deploy new land-based nuclear missiles in Europe.

Safe, Secure and Effective Deterrent

Allied leaders have agreed that NATO will remain a nuclear Alliance as long as nuclear weapons exist and NATO is committed to maintaining a safe, secure and effective nuclear deterrent.

NATO continues its efforts to maintain leadership focus, promote institutional excellence and emphasise political control of NATO's nuclear deterrence. In the spring of 2019, the NATO Nuclear Planning Group discussed a range of nuclear deterrence issues, supporting the work on enhancing coherence between nuclear and conventional components of deterrence. In the summer, Latvia hosted the annual NATO Nuclear Policy Symposium in Riga, which brought together senior diplomats, policy experts and academics. In the autumn, NATO conducted its annual staff-level procedural exercise to practise consultation mechanisms and systems associated with NATO's nuclear forces.



The fundamental purpose of NATO's nuclear capability is to preserve peace, prevent coercion and deter aggression. Given the changing security environment in Europe, a credible and united nuclear Alliance is essential.

Jessica Cox (USA)

Director, Nuclear Policy
NATO Headquarters, Brussels

Countering Weapons of Mass Destruction and Chemical, Biological, Radiological and Nuclear Threats

In 2019, NATO continued to work with Allies, partners and other international organisations to combat the proliferation of weapons of mass destruction (WMD) and to defend against chemical, biological, radiological and nuclear (CBRN) threats.

NATO provided technical support and a forum for Allied coordination to develop shared approaches and to respond to misinformation. For example, in October, NATO held its annual Conference on Weapons of Mass Destruction and Arms Control, Disarmament and Non-Proliferation in Brussels, gathering over 100 participants from more than 40 countries, and senior representatives from the United Nations, the European Union, the Organisation for the Prohibition of Chemical Weapons and the Comprehensive Nuclear-Test-Ban Treaty Organization. The Conference set out NATO's ambitions in the coming year for addressing arms control and disarmament challenges, including by supporting the 2020 Review Conference of the Treaty on the Non-Proliferation of Nuclear Weapons; adapting nuclear arms control to the current security environment; addressing missile threats; and modernising conventional arms control.

NATO remained engaged in building capacity for Allies and partners in the area of chemical, biological, radiological and nuclear defence. For instance, the NATO Test and Evaluation of Airborne Radio-Nuclear Sensors project helped to develop standardized test and evaluation procedures for airborne CBRN detection. The NATO School in Oberammergau, Germany held 14 different training courses on CBRN defence and WMD non-proliferation during the year. The Joint CBRN Defence Centre of Excellence, based in Vyškov, Czech Republic, also held a training in Kuwait to further develop Kuwait's civil crisis response capabilities.

The NATO Combined Joint CBRN Defence Task Force was modernised in 2019, with a new Concept of Operations and a new Reinforcement Policy to provide for more balanced and effective capabilities, including when it comes to WMD disablement. This Task Force, led by France in 2019, provides highly sophisticated specialist CBRN defence capabilities and is able to conduct CBRN defence operations in the full range of NATO missions, contributing to Alliance freedom of action.

A member of a Ukrainian decontamination team washes a vehicle during Exercise Rapid Trident. Ukraine. September 2019.



Small Arms, Light Weapons, Mine Action

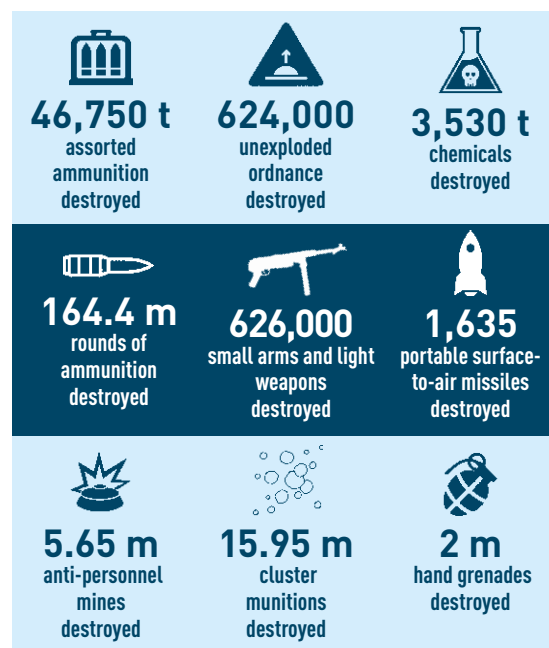
The effects of excessive accumulation and uncontrolled proliferation of small arms and light weapons and their ammunition outlast the end of hostilities. They can derail post-conflict transition periods and take a serious toll on a society's ability to recover, representing a threat to national and regional security. Anti-personnel landmines, improvised explosive devices, and other explosive remnants of war kill and maim people long after the end of hostilities, and prevent access to arable land and safe transportation.

Over the past 25 years, NATO has established and strengthened regional cooperation with 41 partners in efforts to tackle illicit trade in small arms and light weapons. This included developing coordination and information-sharing; integrating small arms and light weapons into defence-related security sector reform projects; providing technical and military expertise in physical security and stockpile management; and establishing best practices on small arms and light weapons and ammunition management. In 2019, there was a continued focus on the Middle East and the Western Balkans to support national and regional efforts to combat the uncontrolled proliferation of small arms and light weapons.

Mines and other unexploded ordnance have been and remain the most lethal threat to Allied and partner forces during military operations. NATO has been active in the field of mine action and supported demining activities in NATO operations and in partnership activities. Furthermore, the Alliance offered information-sharing platforms to Allies and partners and has developed comprehensive institutional and practical competences to deal with risks and challenges caused by mines and unexploded ordnance in a changing operational environment.

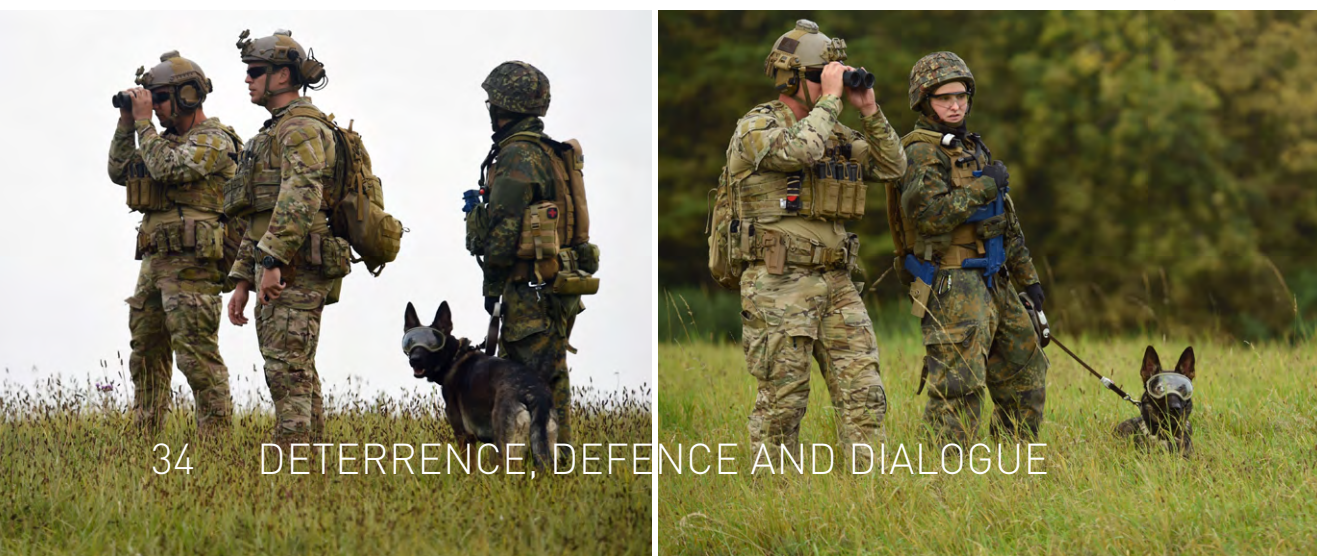
In 2019, NATO conducted around 20 training courses about small arms and mine action, arms control, CBRN defence and non-proliferation at the NATO School in Oberammergau, Germany. Over the years, NATO has also trained thousands of policy makers and practitioners to support the Alliance's efforts in the small arms and light weapons and mine action fields.

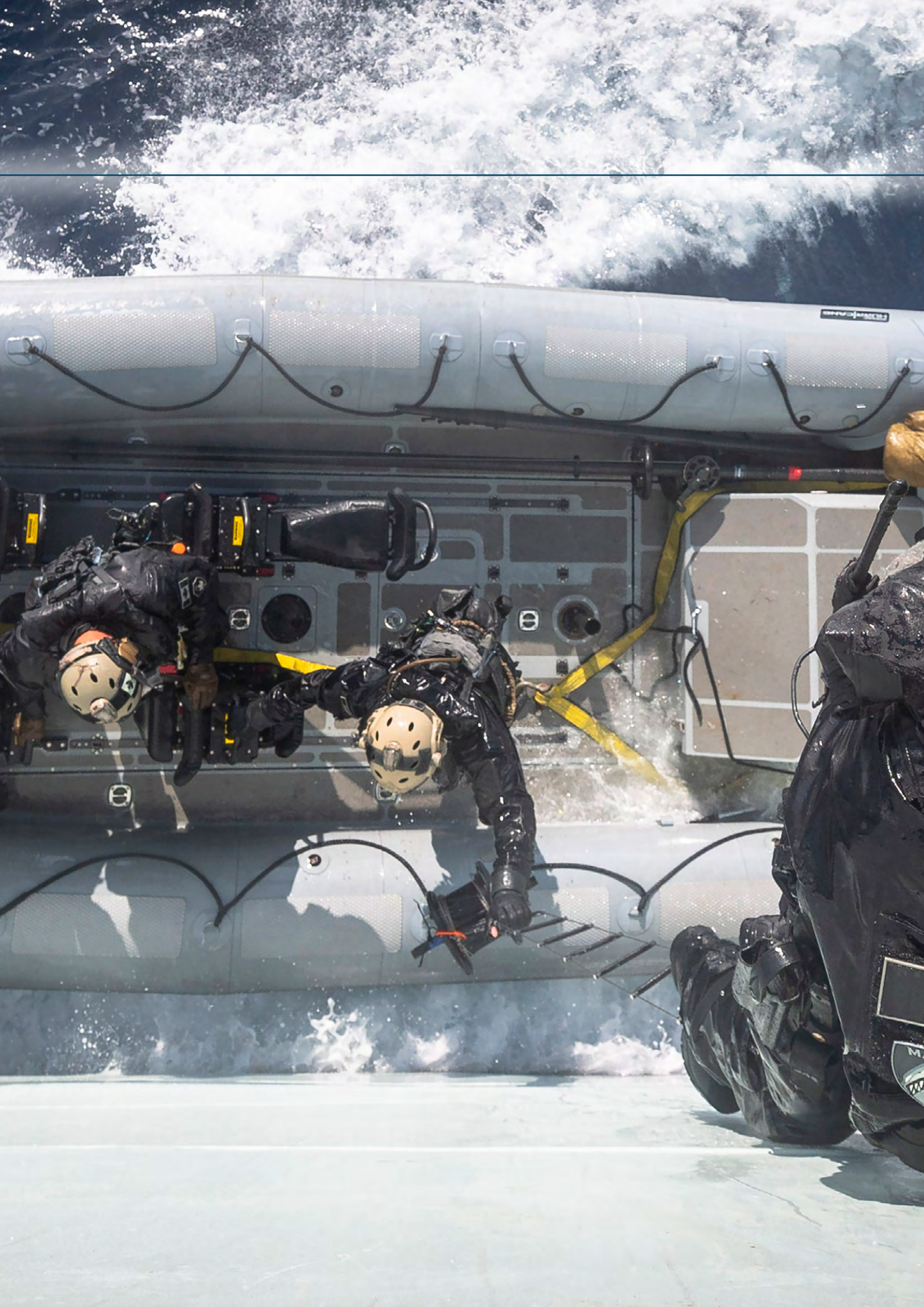
By 2019, NATO's efforts have led to the destruction of the following lethal equipment:



Through all these activities, the Alliance contributes to a more stable security environment, enhances cooperation with its partner countries, and strengthens national, regional and global security.

Explosive ordnance disposal technicians conduct a route clearance mission. Todendorf, Germany. September 2019.





INVESTING IN SECURITY

Setting the Foundations



To protect our freedom, we must continue to invest in our defence. All NATO Allies are increasing defence spending and more Allies are meeting the guideline of spending 2% of GDP on their defence. (...) Economically, politically and militarily, together we are stronger.

NATO Secretary General Jens Stoltenberg.
Columbia University, New York, 26 September 2019.

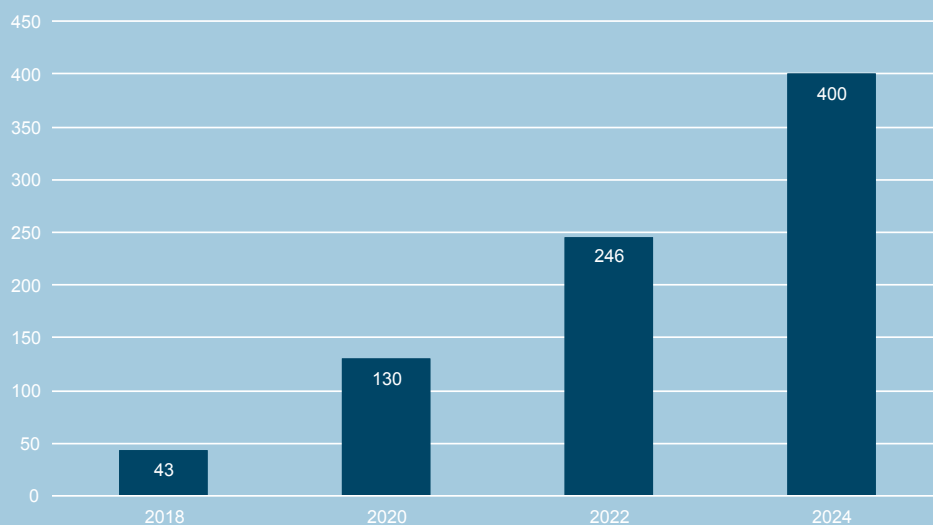
For the Alliance, it is of great importance to ensure fair burden-sharing between Allies on defence expenditure, investments in capabilities, and contributions to NATO's operations, missions and activities. Allies have agreed and embraced the principle of fair burden-sharing, and they are continuously investing in developing, acquiring and maintaining the capabilities that the Alliance needs to defend its citizens.

2019 marked the fifth consecutive year of growth in defence spending for European Allies and Canada, with an increase in real terms of 4.6% from 2018 to 2019. Moreover, nine Allies met the guideline of

spending 2% of their Gross Domestic Product (GDP) on defence, up from just three Allies a few years ago.

Between 2016 and 2020, European Allies and Canada will add a cumulative total of USD 130 billion to their defence budgets. As shown in the graph below, based on national plans submitted by Allies in 2019, this figure will rise to USD 400 billion by the end of 2024.¹

**NATO Europe and Canada - cumulative defence spending over 2016
(billion US dollars, based on 2015 prices and exchange rates)**



¹ For all the graphs in this chapter of the report, it should be noted that Iceland has no armed forces. The figures presented at aggregate level may differ from the sum of their components due to rounding. All figures for 2019 are estimates.

Defence Investment Pledge

In 2014, at the NATO Summit in Wales, Allies endorsed a Defence Investment Pledge asserting that fair burden-sharing is the foundation of the Alliance. The Pledge called for all Allies that did not already meet the NATO-agreed guideline of spending 2% of Gross Domestic Product (GDP) on defence to stop cuts to defence budgets, gradually increase defence spending, and aim to move towards spending 2% of GDP on defence within a decade. Allies also agreed to move towards spending at least 20% of annual defence expenditure on major new equipment, including related research and development, within the same timeframe.

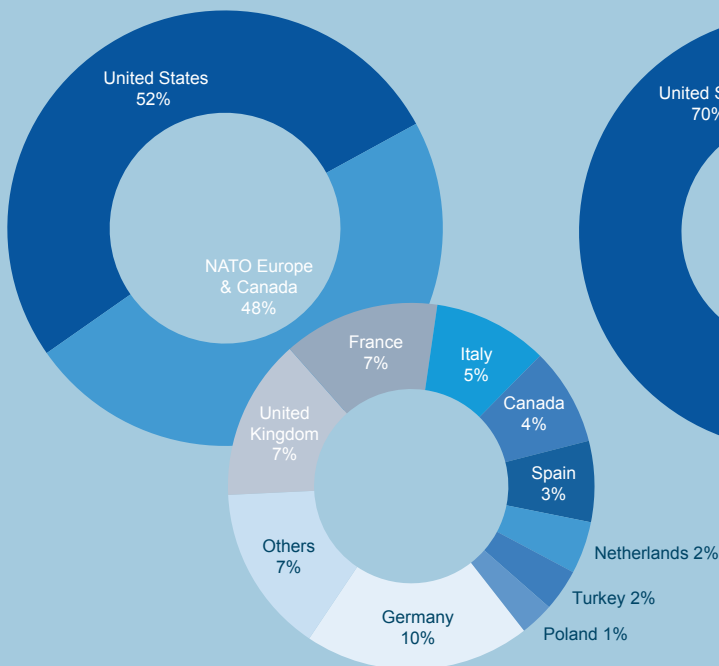
In 2019, the United States accounted for 52% of the Allies' combined GDP and 70% of combined defence expenditure. Total NATO military spending in 2019 is estimated around USD 1 trillion.

Allies also made progress on the commitment to investing 20% or more of defence expenditure in major new capabilities. In 2019, 22 Allies spent more in real terms on major equipment than they did in 2018. Sixteen Allies met the NATO-agreed 20% guideline. Together, European Allies and Canada are estimated to have spent approximately USD 66 billion on major equipment and the associated research and development.

Allies are not just spending more on defence and delivering more of the heavier, high-end capabilities NATO needs. They are also improving the readiness, deployability, sustainability and interoperability of their forces in line with NATO Capability Targets. These targets set out areas where NATO aims to improve its capabilities, including for heavier and more high-end equipment, and forces able to move at even shorter notice. They aim to ensure that NATO has the capabilities and forces it needs.

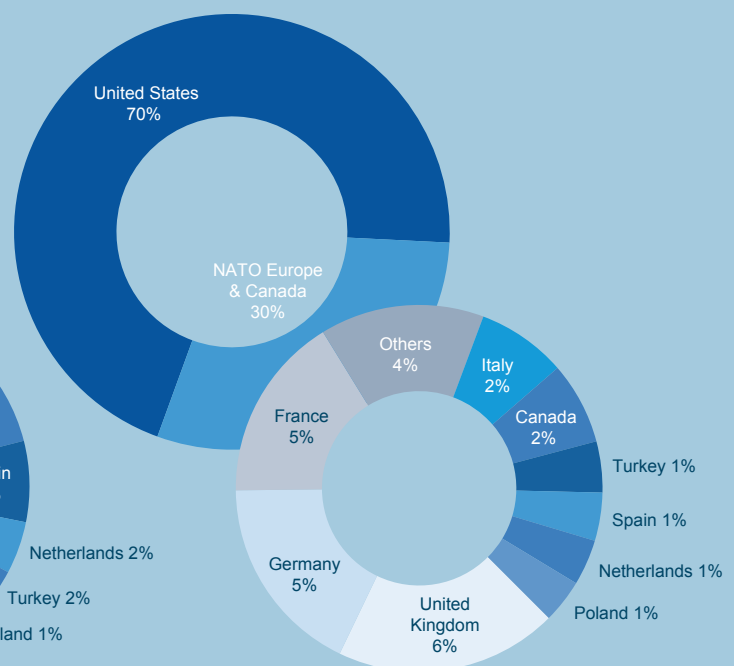
All Allies are contributing to the security of the Euro-Atlantic area and they increased their contributions to NATO's operations, missions and other activities.

Share of Alliance GDP
2019



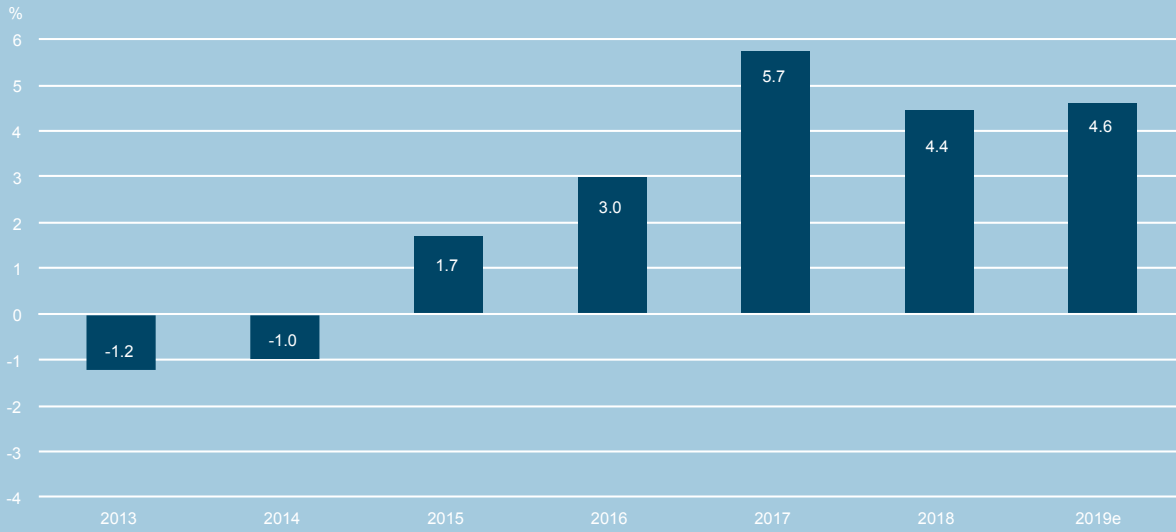
Based on current prices and exchange rates.

Share of Alliance defence expenditure
2019



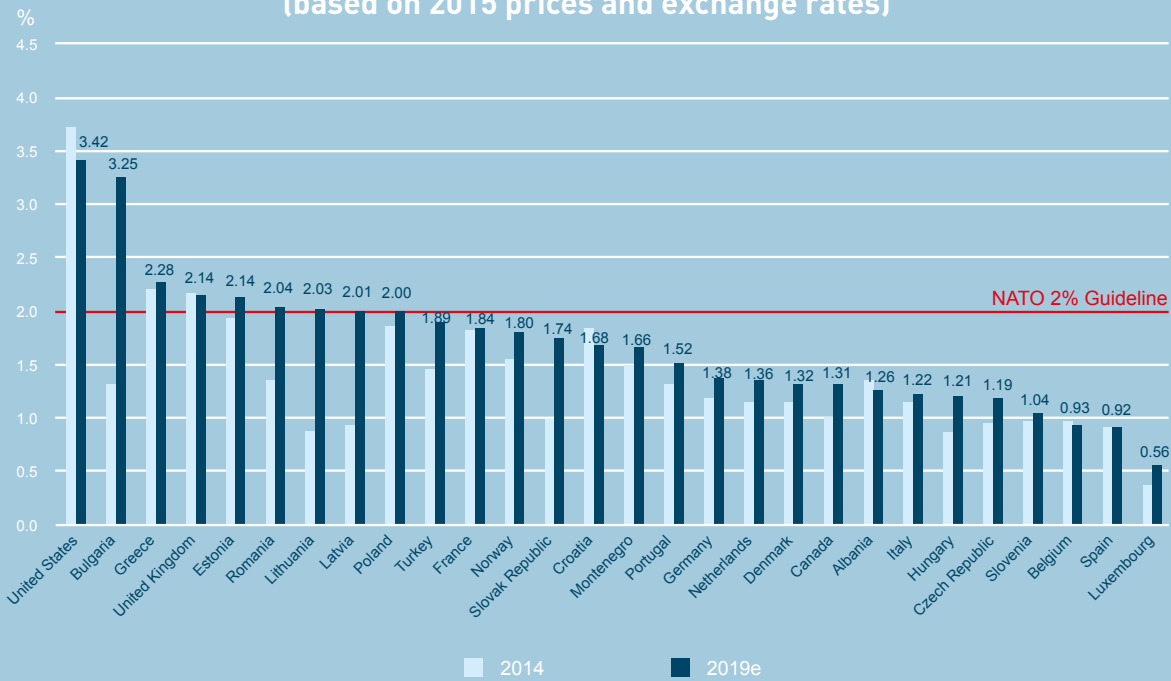
Based on current prices and exchange rates.

NATO Europe and Canada - defence expenditure (annual real change, based on 2015 prices and exchange rates)



Note: The NATO Europe and Canada aggregate from 2017 onwards includes Montenegro, which became an Ally on 5 June 2017.

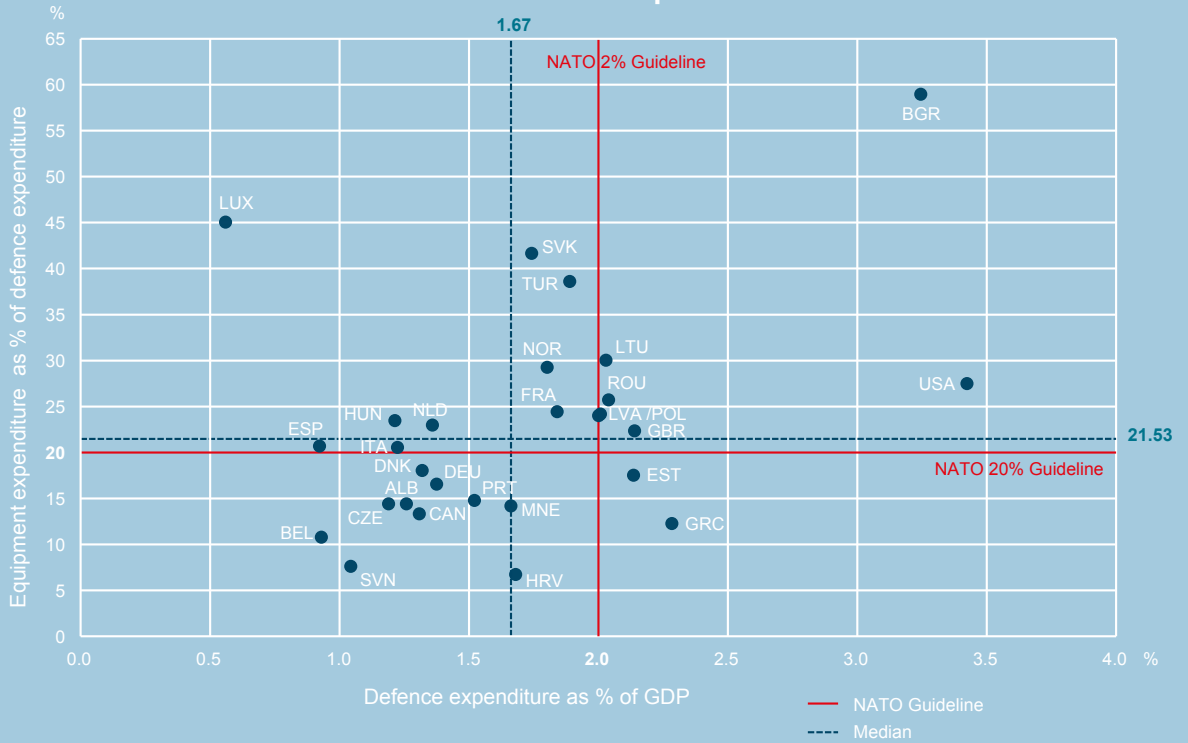
Defence expenditure as a share of GDP (%) (based on 2015 prices and exchange rates)



Equipment expenditure as a share of defence expenditure (%) (based on 2015 prices and exchange rates)



Defence expenditure as a share of GDP versus equipment expenditure as a share of defence expenditure - 2019





NATO Celebrates 70 Years

On 4 April, NATO marked its 70th anniversary in Washington, DC.

Celebrations took place in the Mellon Auditorium where the North Atlantic Treaty was signed by the 12 founding Allies in 1949. In his remarks, Secretary General Jens Stoltenberg said:

Time and again, Europe and North America have served together under the same flag. For the same cause of freedom and democracy. Deterring the Soviet Union. Bringing stability to the Western Balkans. Fighting terrorism in Iraq and Afghanistan. Changing as the world around us changes. And as we look together towards a more unpredictable world, we continue to stand shoulder-to-shoulder.



Reception to commemorate the 70th anniversary of the founding of the Alliance, Washington DC, USA. April 2019.



NATO Secretary General Jens Stoltenberg at a joint meeting of the US House of Representatives and Senate, Washington, D.C. 3 April 2019.

To mark the Alliance's 70th anniversary, the Secretary General was also invited to deliver a speech to a joint session of the United States Congress in April 2019. He was the first leader of an international organisation ever to do so. His speech focused on the bond between Europe and North America, the enduring strength of the Alliance and the importance of transatlantic unity in an unpredictable world:

Europe and North America are not separated by the Atlantic Ocean. We are united by it. And just like the Atlantic, NATO unites our continents. Our nations. And our people. It has done so for 70 years. And today we must do everything in our power to maintain that unity for future generations. Because come what may, we are stronger and safer when we stand together.



NATO Secretary General Jens Stoltenberg at a joint meeting of the US House of Representatives and Senate, Washington, D.C. 3 April 2019.

The anniversary year culminated with a meeting of Heads of State and Government from all NATO Allies, plus invitee North Macedonia, to mark the 70th anniversary of the Alliance. The meeting took place in London in December 2019.

On that occasion, Allied leaders issued a joint declaration affirming that:

NATO remains the foundation for our collective defence and the essential forum for security consultations and decisions among Allies. We reaffirm the enduring transatlantic bond between Europe and North America, our adherence to the purposes and principles of the United Nations Charter, and our solemn commitment as enshrined in Article 5 of the Washington Treaty that an attack against one Ally shall be considered an attack against us all.



Her Majesty Queen Elizabeth II welcomed NATO Secretary General Jens Stoltenberg and Allied leaders to London at a Buckingham Palace reception to celebrate NATO's 70th anniversary. Family photo with Her Majesty the Queen, the Prince of Wales, NATO Secretary General Jens Stoltenberg and NATO Heads of State and Government. London, United Kingdom. December 2019.

Celebrating with NATO Citizens

NATO's public diplomacy agenda in 2019 focused on marking NATO's 70th anniversary and the accession anniversaries of 12 Allies (20 years for the Czech Republic, Hungary and Poland; 15 years for Bulgaria, Estonia, Latvia, Lithuania, Romania, Slovakia and Slovenia; 10 years for Albania and Croatia). The Alliance organised two "NATO Engages" public outreach events in Washington DC and London. These events gathered, respectively, over 400 and 600 participants from nearly 80 countries. The London conference focused on innovation, and aimed to build dialogue and seek a diversity of views from the next generation of leaders, with half the audience under the age of 35.

The Public Diplomacy Division and the Policy Planning Unit in the Office of the Secretary General also organised a think-tank project in the framework of the 'NATO@70' celebrations, involving 16 think-tanks in Allied countries as well as Carnegie Europe in Brussels. Think-tanks organised expert and public workshops in their capitals on NATO's future role, with the findings collected in the report "New Perspectives on Shared Security – NATO's Next 70 Years" presented to NATO's senior leadership on 28 November 2019, and to the "NATO Engages" public diplomacy event in London on 3 December 2019.



WARNING - DO NOT CUT CANOPY
WITHIN 3 INCHES OF CANOPY FRAME

DANGER
EJECTION SEAT
DANGER

RESCUE
EMERGENCY CANOPY
RELEASE ON OTHER SIDE

DANGER
JET INTAKE
DANGER

5200

SSGT JOEL PEREZ
SRA NICHOLAS WILLIAMS

MODERNISING NATO



For 70 years, NATO's deterrence and defence has relied upon maintaining our technological edge. On being better and more advanced than our opponents. We have done this by investing more in research and development than anyone else.

NATO Secretary General Jens Stoltenberg.
United States Military Academy at West Point, 25 September 2019.

Speed, Innovation and Resilience

In 2019, the Alliance invested in speed, innovation and resilience by updating the NATO Command Structure, the military backbone of the Alliance; by implementing a series of measures to modernise NATO Headquarters in Brussels; and by optimising the way military capabilities are delivered through NATO common funding.

NATO continued to optimise its institutions to promote innovation, enhance capability delivery and fully mainstream gender perspectives into the everyday business of NATO civilian and military structures.

In 2019, work continued to adapt the **NATO Command Structure** to make it more robust and capable, with Allies providing more than

1,200 additional personnel. In addition, two new headquarters have been established: Joint Force Command Norfolk (Virginia), United States, to focus on protecting transatlantic sea lines of communication; and Joint Support and Enabling Command in Ulm, Germany, to support the rapid movement of troops and equipment into, across and out of Europe.

The Alliance also established the Cyberspace Operations Centre in Belgium to provide situational awareness and coordination of NATO operational activity in cyberspace. In 2019, NATO accelerated the fielding of communications and IT systems and new facilities needed for the adapted Command Structure to maintain effective command and control of Alliance forces.

The Joint Support and Enabling Command

The Joint Support and Enabling Command, located in the German city of Ulm, is a newly established operational-level headquarters. The new command will help to speed up, coordinate and safeguard the movement of Allied forces across European borders. It will help NATO forces become more mobile and enable rapid reinforcement within the Alliance, ensuring NATO has the right forces in the right place at the right time. The command declared Initial Operational Capability in September 2019 and is expected to be fully operational by October 2021.

Ulm is already home to Germany's Multinational Joint Headquarters, which plans and exercises command and control of crisis management operations for NATO, the European Union and the United Nations.



Joint Support and Enabling Command. Ulm, Germany.

The **NATO Headquarters in Brussels** has been restructured as part of a Functional Review, to close functional gaps and ensure the Headquarters can fully support Allies in peacetime, crisis and conflict. As a result, the Alliance will be better prepared to

tackle unforeseen political and military scenarios, and will function in a more integrated, coherent and efficient manner, ready to take advantage of new and disruptive technologies.

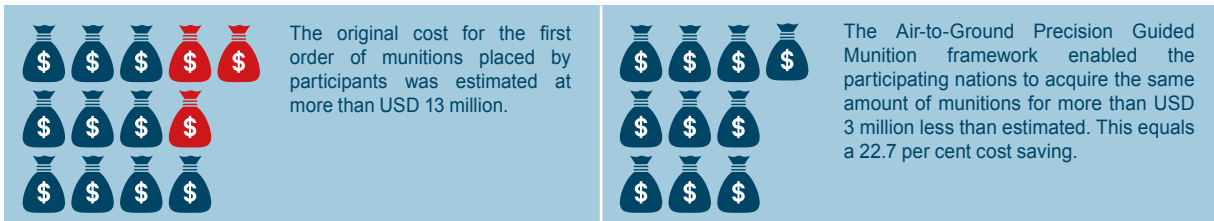
Investing in State-of-the-Art Military Capabilities

Helping Allies make informed investment-related decisions on military capabilities is a crucial part of NATO's job. NATO supports Allies to understand the implications of new technologies and innovation, and to manufacture and acquire the high-end equipment their militaries need.

The Alliance must have adequate, sufficient and flexible capabilities to respond to current and future challenges. Through its Defence Planning Process, NATO identifies the capabilities and forces it requires, and then apportions Capability Targets to Allies, based on the principles of fair burden-sharing and reasonable challenge. In February 2019, NATO Defence Ministers set the parameters for Allied capability development for the next 20 years.

In 2019, several **multinational capability projects** addressing defence planning priorities completed important developments. Allies agreed to establish a Regional Special Operations Component Command, with a temporary deployable multinational command, designed to increase the ability of its participants to effectively employ their Special Operations Forces.

Allies also continued to invest in multinational acquisition initiatives, designed to allow Allies to increase their collective purchasing power, reduce costs, all while increasing interoperability. For example, cost-saving potentials under the Air-to-Ground Precision Guided Munition initiative are substantial as demonstrated by the up to 45% reductions accomplished in the first multinational acquisition round for air munitions in 2018.



2019 Multinational Capability Projects





Croatian Special Operations Forces fast-roping from a Croatian Mi-17 during a training exercise at the Multinational Special Aviation Programme – Training Centre, Zadar, Croatia, December 2019.

Allies also decided to set up a Maritime Battle Decisive Munitions initiative, focused on more cost-effective and more flexible procurement and stockpile management of key maritime munitions such as missiles and torpedoes.

In addition, the Land Battle Decisive Munitions project received its first shipment of multinationally acquired anti-tank weapons. The initiatives for Maritime Unmanned Systems, Air-to-Ground Precision Guided Munition, Land Battle Decisive Munitions and Multi

Role Tanker Transport Capability welcomed new participating nations (respectively France; Italy and Slovakia; Croatia and the United Kingdom; and the Czech Republic).

Finally, Bulgaria, Croatia, Hungary and Slovenia jointly launched the Multinational Special Aviation Programme in Zadar, Croatia in December 2019. The training centre is dedicated to training air crews responsible for insertion and extraction of Special Operations Forces.

A New Focus on Emerging and Disruptive Technologies

Investing in innovation and in preserving NATO's scientific and technological edge remains a key priority for NATO.

In 2019, the Alliance took major steps to address the potential impact of emerging and disruptive technologies, recognising that these technologies will have a profound impact on how the Alliance carries out its core tasks and that Allied future security will be determined by the ability to understand, adopt and implement emerging and disruptive technologies.

In 2019, the Alliance adopted a **roadmap on emerging and disruptive technologies** to help structure NATO's work across key areas such as: space, data, Artificial Intelligence, Autonomy, hypersonic systems, new missile technologies, quantum technologies and biotechnologies. This roadmap will enable Allies to consider these technologies and their implications for deterrence and defence, capability development, legal and ethical norms, and arms control aspects.

In addition, NATO continued to support scientific cooperation between Allies including in the area of emerging and disruptive technologies. Well over 40% of the projects executed by the NATO Science & Technology Organization since 2014 have been directly related to these technologies.

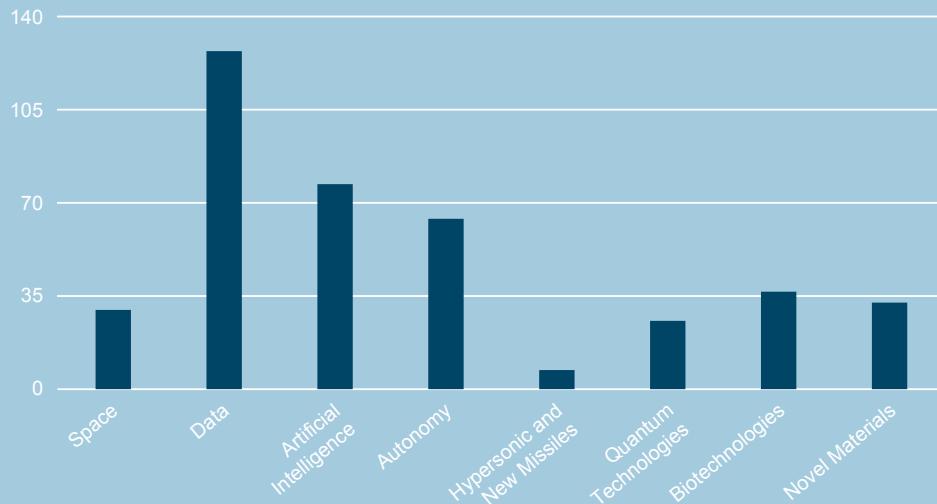


Today, the heightened speed of diffusion and adoption of certain new technologies justifies new efforts and new policies, to ensure we maintain our technological edge.

Edward Hunter Christie (United Kingdom)

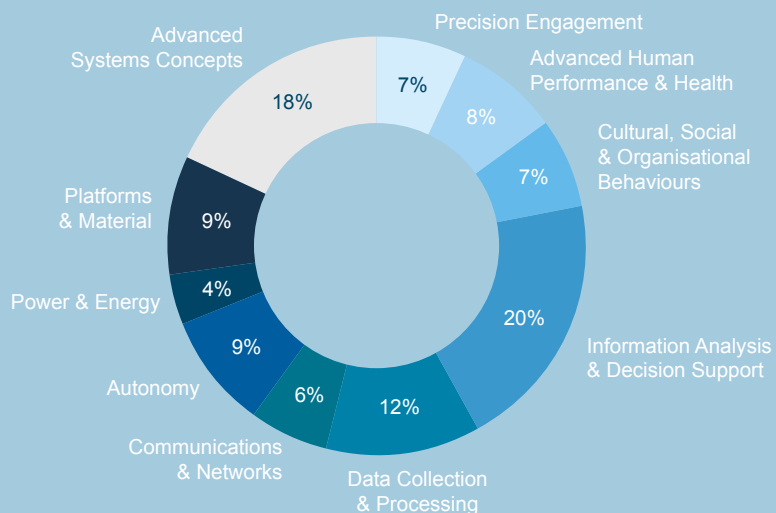
Deputy Head, Innovation Unit
NATO Headquarters, Brussels

Projects in the NATO Science & Technology Organization related to emerging and disruptive technologies, 2014-2019 (baseline total in that period: 855 projects)



In 2019, the NATO Science and Technology community focused its work on the 10 areas depicted below, with a particular emphasis on advanced systems concepts and on information analysis and decision support.

2019 NATO Science & Technology Activity



The promotion of science and technology in NATO continued to be a team effort, predominantly driven by the voluntary collaboration of national subject matter experts from Allied and partner countries. For example, the NATO Science & Technology Organization's Collaborative Programme of Work, which relies on a network of over 6,000 national scientists, researchers, analysts and engineers, comprised more than 280 research projects, each planned and executed by experts from at least four nations.

Science and Technology Organization: Highlights

In 2019, the Science and Technology community carried out initiatives that:

- demonstrated the effects of munition health management technologies on operational capability, interoperability, life-cycle cost and acquisition of missile stockpiles of NATO nations.
- assessed the effectiveness of anti-ship missile seekers against electro-optical and infrared counter-measures, and identified counter-measure deficits.
- developed a common reference architecture for intelligent, autonomous and trusted agents to enhance NATO's cyber defence capability and resilience.
- evaluated existing literature on violent radicalisation to develop evidence-based and effective approaches to preventing the recruitment of foreign terrorist fighters.
- surveyed existing models and tools for logistic analysis to identify gaps and share best practice advice.
- enhanced acoustic threat detection sensors and signal processing for NATO forces to better locate and respond to hostile fire from rifles, rocket-propelled grenades, mortars, rockets and artillery.

NATO Integrated Air and Missile Defence System

The NATO Integrated Air and Missile Defence System is a network of interconnected sensors, command and control facilities, and weapons systems that NATO uses to defend against any threat from the air.

Some of these assets and facilities are provided by contributing nations, while others have been acquired by NATO and are collectively paid for by Allies. There are two major acquisition programmes designed to modernise the NATO Integrated Air and Missile Defence System, and improve the command and control of Allied air operations.

First, the **NATO Air Command and Control Programme** consists of several programmes and projects funded by NATO and designed to provide the backbone of the overall air and missile defence system within the NATO Command Structure. One important project in this framework is the Air Command and Control System, which was developed to replace existing national systems with a NATO-wide network.

NATO's Ballistic Missile Defence Programme provides the platform into which national sensors and weapons systems – offered voluntarily by Allies – can

The USS Carney operates SM-3 interceptors that can shoot down incoming ballistic missiles from outside the Euro-Atlantic Area. Rota, Spain. 2019. Photo courtesy of US Department of Defense, 2019.



The US Aegis Ashore Ballistic Missile Defence site in Deveselu, Romania. It provides a 24/7 support to NATO's Ballistic Missile Defence mission and has been under permanent command and control of NATO since 2016. Like the AEGIS ships, it also operates SM-3 interceptors. Deveselu, Romania. 2019. Photo courtesy of US Department of Defense, 2019.



be plugged to detect, track and intercept attacking ballistic missiles. NATO's Ballistic Missile Defence architecture relies on United States elements deployed in Europe – including a radar station in Turkey, four ships based in Spain and a ground-based interceptor site in Romania, updated in mid-2019 to be able to defend NATO populations and territory with a new generation of more advanced interceptors. A second ground-based interceptor site will be deployed in Poland. NATO's architecture also relies on additional national contributions by a number of European Allies, as well as on common-funded command and control.



Polish aircrew from a MIG-29 squadron. Poland. August 2019.

NATO's AWACS Fleet

The NATO Airborne Warning and Control System (AWACS) surveillance aircraft are essential for Alliance missions and operations. The AWACS force is constantly evolving in response to changing threats, requirements and technology.

In 2019, the fleet completed a USD 1 billion upgrade delivering digital cockpits and the latest communication, navigation, surveillance and air traffic management capabilities to the aircraft. In November, NATO signed a new contract, also worth USD 1 billion, to modernise the 14 AWACS surveillance aircraft, ensuring their service to 2035. This upgrade will provide AWACS with sophisticated new communications and networking capabilities, so that these aircraft can continue their vital mission and contribute to Alliance security.



NATO AWACS airplane at Melsbroek Air Base. Belgium. November 2019.





NATO AWACS cockpit. February 2019.

In addition to the AWACS modernisation, NATO is already looking at its follow-on capability known as **Alliance Future Surveillance and Control**, to be delivered around 2035, in parallel with the AWACS fleet's retirement. The first phase of this project determining the requirements of the new system was completed on schedule. In the next phase, Allied industry from defence and other sectors will develop six alternative concepts of what the future capability will be able to do. By taking a fresh look at how new technologies and their interplay could fundamentally redefine surveillance and control in the future, these concepts will take into account disruptive technologies such as Artificial Intelligence, Big Data and Autonomy. On this basis, the Alliance will establish an agreed concept for the future.

Secretary General Jens Stoltenberg speaks with NATO AWACS crew. Melsbroek Air Base, Belgium. November 2019.



Intelligence, Surveillance and Reconnaissance Capabilities

NATO's Joint Intelligence, Surveillance and Reconnaissance capabilities achieved significant progress in 2019.

The **NATO Alliance Ground Surveillance** system is uniquely adapted to provide a state-of-the-art Joint Intelligence, Surveillance and Reconnaissance capability to the benefit of all NATO Allies and it is a vital new capability for NATO operations and missions. In 2019, the Programme completed developmental flight tests and achieved successful airworthiness certification. In November and December 2019, the first two of five aircraft were ferried from the United States to the Alliance Ground Surveillance Programme Main Operating Base in Sigonella, Italy, marking an important step in the delivery of this programme. The five aircraft and ground stations will be handed over to the NATO Alliance Ground Surveillance Force for operations in 2020, when the first missions are expected to begin.

The Alliance Ground Surveillance system is being developed with significant contributions from 15 Allies – Bulgaria, Czech Republic, Denmark, Estonia, Germany, Italy, Latvia, Lithuania, Luxembourg, Norway, Poland, Romania, Slovakia, Slovenia and the United States. The system will be collectively owned and operated by all NATO Allies and all Allies will have access to data acquired through it.



I'm particularly proud of the team effort to deliver Alliance Ground Surveillance drones to their home in Sigonella, Italy. With cutting-edge technology, they are a NATO-owned game changer for our shared situational awareness.

Dr Giorgio Cioni (Italy)

Director, Armaments & Aerospace Capabilities
NATO Headquarters, Brussels



The first NATO Alliance Ground Surveillance remotely piloted aircraft ferries to its Main Operating Base in Sigonella, Italy. November 2019.



NATO is also taking steps to enhance intelligence-sharing information among Allies through other parts of the Alliance's **Joint Intelligence, Surveillance and Reconnaissance**. In 2019, NATO awarded contracts worth EUR 8.5 million to procure data servers that support the sharing of intelligence products, such as images, reports or video clips from across the Alliance.

Land Capabilities

In 2019, NATO's land capabilities made significant progress in the areas of autonomy, data networking and examining future needs.

NATO completed an interoperability standard for Unmanned Ground Vehicles to ensure that the software driving such assets, and their controlling systems from different nations, can communicate efficiently. Many important aspects of this work relate to the defence against cyber threats to such vehicles. To that end, a code of best practice for both software and hardware protection was developed over 2019 for publication in 2020.

In addition to Unmanned Ground Vehicles, the Alliance focused on Directed Energy Weapons (laser, millimetre wave and microwave technologies) that can be used to deliver scalable effects. In 2019, a cutting-edge NATO standard for Millimetre Wave Technology was developed.

Field Artillery also covered significant ground in 2019 with the successful implementation of the Artillery Systems Cooperation Activities standard in Exercise Dynamic Front II in Germany in March 2019. The exercise saw 26 Allied and partner nations using a common standard to enable interoperability of different national artillery software systems.

The German Mountain Infantry Brigade lead mules during Exercise Mountain Lion. Germany. May 2019.

In 2019, NATO also launched the Next Generation Rotorcraft Capabilities concept, aimed at ensuring that the expected large-scale renewals of Allied helicopter fleets in the 2035-2050 timeframe are based on a commonly defined requirement. In the near term, this approach is expected to yield important multinational cooperative initiatives between Allies.

In order to provide Land Manoeuvre Forces with the necessary protection against the full range of existing and emerging air threats, Allies also agreed to develop a pilot project called “21st Century Ground Based Air Defence”. Through this initiative Allies will launch multinational capability projects for innovative approaches against emerging air threats, to include hypersonic unmanned systems, new-generation stealth aircraft and cyber threats.

In the context of the Women, Peace and Security agenda, NATO took steps to better incorporate gender-specific needs into individual equipment standards for soldier clothing and protection.



Norwegian Mechanised Infantry, NATO enhanced Forward Presence Battlegroup. Lithuania. August 2019.



Romanian land forces, Exercise Saber Guardian 2019. Romania. June 2019.



Turkish frigate TCG Turgutreis, right, alongside Canadian frigate HMCS Toronto during Exercise Sea Breeze 2019. Black Sea. July 2019.

Maritime Capabilities

In 2019, NATO focused on creating an adaptable, resilient and sustainable anti-submarine warfare capability. The 2019 Dynamic Mariner and Dynamic Mongoose exercise series experimented with a number of predictive tools that help commanders locate, track and effect submarines. The technical and operational requirements for a next-generation maritime patrol and reconnaissance aircraft capable of conducting maritime operations were also laid down in 2019.

Above water, NATO navies validated their ability to operate jointly and without constraint in the maritime arena. The 2019 Naval Electromagnetic Operations – or NEMO – trials involved 13 nations, five surface ships, eight air assets and approximately 1,500 personnel. The exercise tested how Allied navies can defend themselves against anti-ship cruise and hypersonic missiles with the use of state-of-the-art technology. It gathered scientific measurement data that will be used to further reduce the susceptibility of NATO naval ships to cruise missiles and precision-guided munitions.



Exercise Dynamic Mariner 19. Spain. October 2019.



Damage control sailors respond to a simulated cruise missile strike during Exercise NEMO 19. United Kingdom. October 2019.

Maritime Unmanned Systems Initiative

The use of unmanned systems is potentially a game-changing leap forward in maritime technology. The development and employment of maritime unmanned systems could increase effectiveness and efficiency in crucial areas such as detecting and clearing naval mines, finding and tracking submarines, and enabling maritime intelligence, surveillance and reconnaissance – all at reduced risk to human life.

NATO developed the Maritime Unmanned Systems Initiative to accelerate the delivery of maritime capabilities and contribute to the resolution of maritime capability shortfalls as rapidly as possible through multinational cooperation. Fourteen nations collaborate on the capability development of interoperable unmanned systems in the maritime domain.

In September 2019, the Maritime Unmanned Systems Initiative partnered with the Portuguese Navy on Exercise Recognised Environmental Picture to test unmanned systems. Seven NATO nations – Portugal, Belgium, Italy, Poland, Turkey, the United Kingdom and the United States – participated in the exercise, with a focus on technological and

procedural interoperability, testing the integration and coordination of activities between unmanned systems in the three domains – above the water, on the water and underwater, including anti-submarine warfare.

A number of worldwide firsts in maritime unmanned operations were achieved. This included high-level command and control platforms capable of integrating multiple, multinational drones in the air, on the surface and underwater, into one tactical picture.

Maritime drone systems were used to provide force protection, improve shared situational awareness, support night operations, and enhance long-range communications to extend maritime operations.

The NATO Centre for Maritime Research and Experimentation contributed by introducing new procedures for distressed submarine operations. Autonomous Wave Glider vehicles were used to relay radio messages from the air to acoustic digital underwater communications networks using a protocol developed by the Centre to establish real-time communication.



The NATO Centre for Maritime Research and Experimentation deploys an autonomous Wave Glider during Exercise Recognised Environmental Picture. Portugal. September 2019.



A sensor buoy is taken off the Portuguese Navy survey vessel NRP Dom Carlos I during Exercise Recognised Environmental Picture. Portugal. September 2019.



Keynote address by NATO Secretary General Jens Stoltenberg at the NATO-Industry Forum. Washington D.C. USA. November 2019.

Working with Industry

NATO's cooperation with industry is at the forefront of NATO's adaptation. NATO needs access to the latest developments in order to maintain its technological edge, and to guarantee deterrence and defence.

The Alliance pursues dialogue with industry through a number of platforms. The NATO-Industry Forum is NATO's highest-level engagement with industry. At the November 2019 NATO-Industry Forum, hosted by the United States in Washington DC, more than 500 experts addressed the impact of technological developments on decision-making. Experts from dozens of companies, big and small, from defence as well as other industries participated in the discussion.

The NATO Industrial Advisory Group represents NATO's main interlocutor with industry. It engages with companies working on emerging technologies and has access to a community comprising a large number of small and medium-sized enterprises from both sides of the Atlantic. By the end of 2019,

it had published more than 240 studies on a range of topics such as underwater communications and innovative acquisition. The studies represent industry recommendations helping to develop the initial concepts for NATO capabilities.

NATO's Allied Command Transformation and NATO Agencies also work closely with industry, engaging with dozens of start-up companies each year in their innovation hubs and on practical innovation challenges.



The NATO-Industry Forum brings together top national government and industry leaders from NATO and EU countries to define strategies for future capabilities.

Liviu Lazar (Romania)

Officer Industry Relations
Capability Delivery Section,
NATO Headquarters, Brussels



French Marines deployed to NATO's enhanced Forward Presence Battlegroup during Exercise Furious Hawk. Ādaži, Latvia. September 2019.

Exercises: Ensuring the Alliance is Ready

In 2019, NATO conducted 103 exercises, varying in scope, duration and form. They ranged from live-fire to command-post exercises, including map exercises and lectures. In recent years, NATO has significantly updated its exercise schedule and the types of exercises it conducts. While in 2016 NATO mostly focused on counter-insurgency, counter-terrorism and crisis response, 2019 exercises brought a wide variety of tested skills from reinforcement to anti-submarine and anti-electronic warfare. Allied exercises included some large-scale exercises such as Spring Storm, involving 10,000 military personnel.

More than 30% of NATO exercises in 2019 were open for participation or observation by partners and international organisations, including the European Union. In addition, 82 national exercises were associated to NATO for the purpose of improving interoperability.



Training and exercising together makes the Alliance stronger and capable to deter and defend against the threats to its security. Exercises are the tangible proof of Allies' will to stay together and improve together the collective responsiveness.

**Colonel Maurizio Colonna
(Italian Air Force)**

International Military Staff
Head, Training & Exercise
NATO Headquarters, Brussels

The Italian Army's 9th Regiment Alpini deployed to NATO's enhanced Forward Presence Battlegroup during urban operations training in Ādaži, Latvia. February 2019.



Military exercises are one of the most visible tools to demonstrate NATO's strengthened deterrence and defence posture. During exercises, forces from NATO countries jointly train and test their readiness and responsiveness to rapidly unfolding crises, ranging from collective defence to crisis response scenarios. Exercises also provide a platform for testing the application of technological innovation.

In accordance with Allies' international obligations, NATO is fully committed to transparency and predictability. Exercise schedules are published months in advance on NATO's website¹. Allies strictly abide by their commitments on arms control, and confidence and security measures. They also regularly go beyond those obligations, for example, by offering observation opportunities to international organisations or non-NATO countries, even when exercises do not reach the threshold that requires inviting observers.

¹ www.shape.nato.int/exercises



US soldiers during Exercise BALTOPS. Saaremaa, Estonia. June 2019.

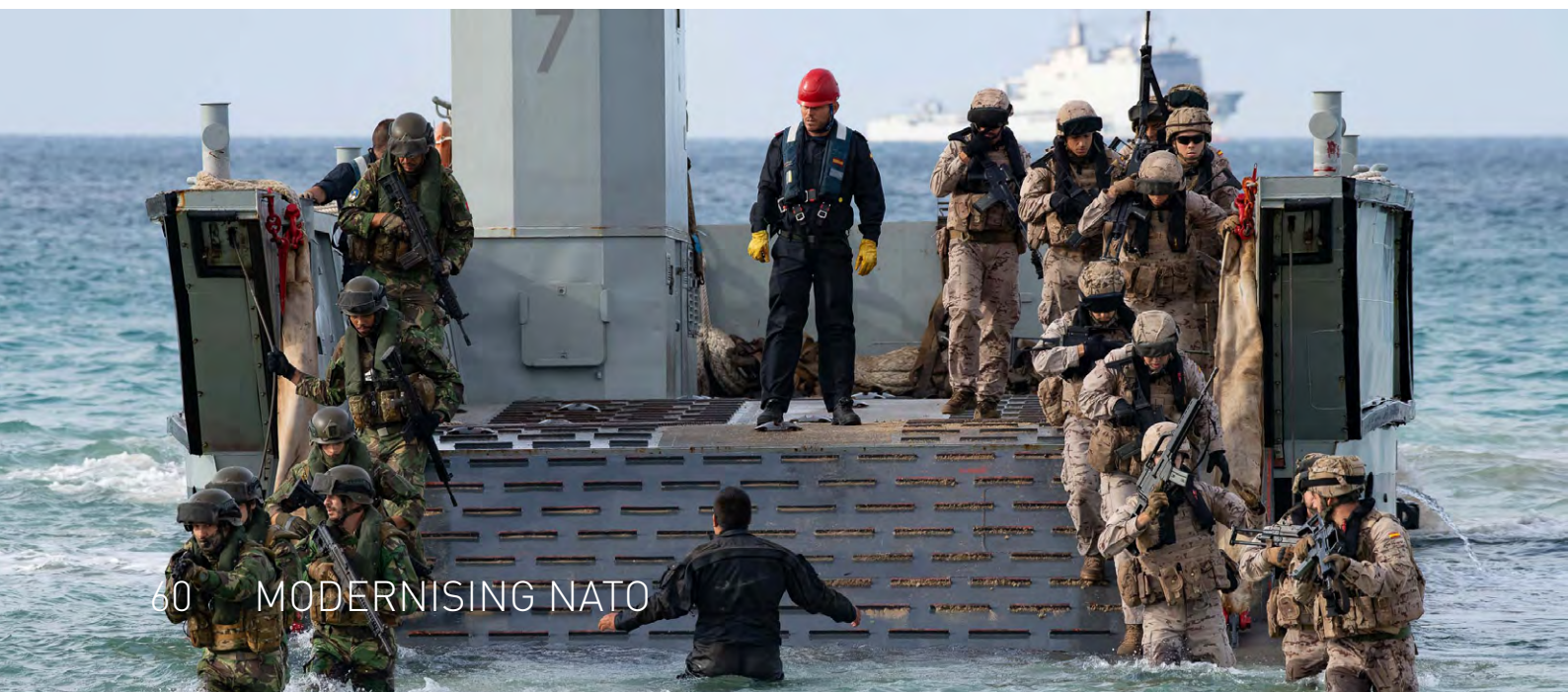


26 NATO Allies and 13 partners participate in Exercise Vigorous Warrior 2019, NATO's largest medical exercise in its history. Romania. April 2019.

Crisis Management Exercise

NATO's periodic crisis management exercise tests consultation procedures to ensure that Allies are capable of swiftly and effectively taking decisions by consensus, when faced with a crisis. In 2019, the exercise was based on a fictitious but realistic scenario, set in a hybrid environment. The exercise involved the North Atlantic Council and subordinate committees as well as staffs in Allied capitals, NATO Headquarters and NATO's Strategic Commands. Crisis Management Exercise 2019 included the participation of partners Finland and Sweden alongside NATO Allies. It also included staff-to-staff exchanges with European Union institutions. As in previous cases, no forces were deployed during the exercise.

Amphibious landing by Spanish Marines during Exercise Dynamic Mariner. Spain. October 2019.



Key NATO and Allied Multinational Exercises in 2019

NATO Exercises

DESCRIPTION	DATE	LOCATION
<p>DYNAMIC MANTA The annual maritime exercise tested anti-submarine warfare capabilities. Ten Allied nations contributed ships, submarines, aircraft and personnel: Canada, France, Germany, Greece, Italy, the Netherlands, Spain, Turkey, the United Kingdom and the United States.</p>	25 February – 9 March	Mediterranean Sea, Italy
<p>STEADFAST COBALT This large exercise focused on communications and information systems, gathered over 1,200 Romanian and other Allied personnel from 35 NATO communications and information technology structures. The aim was to test and validate the interoperability of the Command, Control, Communications and Information Technology, Intelligence, Surveillance and Reconnaissance systems.</p>	20 May – 2 June	Romania
<p>NOBLE JUMP The Jump exercise series tests the readiness of the Very High Readiness Joint Task Force within the NATO Response Force, designed to quickly react to crises. In 2019, Noble Jump involved around 2,500 Allied troops and some 1,000 vehicles from Germany, the Netherlands, Norway and Poland.</p>	24 May – 14 June	Poland
<p>DYNAMIC MONGOOSE The annual NATO-led anti-submarine warfare exercise in 2019 involved naval and air forces from Canada, Denmark, France, Germany, Norway, Portugal, Turkey, the United Kingdom and the United States. Norway was the host nation. Six surface ships, nine maritime patrol aircraft, eight helicopters and four Allied submarines participated in the exercise in the North Atlantic.</p>	1 – 10 July	Norway
<p>RAMSTEIN ALLOY 19 I, II and III This exercise series brings together regional Allied and partner forces for tactical training of NATO's Baltic Air Policing mission and is traditionally hosted by the three Baltic States: Estonia, Latvia and Lithuania. In 2019, aircraft from Belgium, the Czech Republic, Denmark, Germany, Hungary, the Netherlands, Norway, Poland, Spain, the United Kingdom and the United States participated in the exercise series. A NATO Airborne Warning and Control System (AWACS) plane was also involved as well as aircraft from partner nations Finland and Sweden.</p>	15-17 April 25-27 June 17-19 September	Estonia, Latvia and Lithuania
<p>DYNAMIC MARINER This multinational exercise tested the NATO Response Force Maritime Component and interoperability with NATO forces. In 2019, forces performed anti-submarine, anti-surface and anti-air warfare manoeuvres, as well as air operations and mine counter-measures operations in support of amphibious and force protection operations. It included 32 surface ships, two submarines, 18 air assets, including maritime patrol aircraft and helicopters, as well as personnel from 18 Allied nations: Albania, Belgium, Bulgaria, Canada, Denmark, France, Germany, Greece, Italy, the Netherlands, Norway, Poland, Portugal, Romania, Spain, Turkey, the United Kingdom and the United States. The NATO exercise was merged with the Spanish exercise Flotex.</p>	7-18 October	Spain

NEMO

Naval Electro-Magnetic Operations, “NEMO”, is NATO’s largest maritime electronic warfare exercise. In 2019, it gathered around 1,500 personnel, six ships and eight aircraft from 13 NATO Allies: Belgium, Canada, Denmark, France, Germany, Italy, the Netherlands, Norway, Portugal, Spain, Turkey, the United Kingdom and the United States. The exercise tested how Allied navies can defend themselves against anti-ship cruise and hypersonic missiles with the use of state-of-the-art technology.

31 October–
5 November

United Kingdom

TRIDENT JUPITER-Part 1

Based on a fictitious Article 5 scenario, this command- post/computer-assisted exercise staged high-intensity operations against a peer state adversary, contesting NATO in all domains within its North-Eastern Area of Responsibility. Trident Jupiter 19 Part 1 was the first exercise in a three-part exercise campaign. Part 1 trained and certified the responsiveness of NATO Response Force 2020 and Naval Striking and Support Forces NATO for a small joint operation. More than 3,000 civilian and military staff from Allied and partner nations as well as governmental and non-governmental organisations worked together in the exercise as participants, evaluators and observers. (Parts 2 and 3 – the latter also known as Exercise LOYAL LEDA – are scheduled for spring 2020).

5-14 November

CYBER COALITION

NATO’s flagship exercise addressing cyber threats provides a venue for Allies to share best practices on information-sharing, situational awareness and decision-making, and is open to NATO partner nations. In 2019, Finland, Georgia, Japan, Sweden, Switzerland and Ukraine were welcomed as participating partner nations. Nine countries also sent observers: Azerbaijan, Egypt, Ireland, Israel, Jordan, Republic of Korea, Morocco, Serbia and Singapore.

2-6 December

Estonia

Allied National Exercises (Selected)

DESCRIPTION	DATE	LOCATION
SEA SHIELD This annual Romanian-led multinational exercise to promote interoperability at sea involved more than 20 ships in 2019, including five NATO ships from Standing NATO Maritime Group Two. There were approximately 2,000 personnel from Bulgaria, Canada, Greece, the Netherlands, Romania and Turkey as well as maritime patrol aircraft from Turkey and the United States.	5-13 April	Black Sea, Romania
SPRING STORM The largest annual Estonian exercise to test the readiness of Estonian armed forces and enhance interoperability with Allied forces involved around 10,000 troops from Estonia in 2019. NATO Allies Belgium, Canada, France, Germany, Latvia, Lithuania, Poland, the United Kingdom and the United States and partner countries Finland, Georgia and Ukraine also took part in the exercise.	24 April - 17 May	Estonia
SUMMER SHIELD The annual multinational exercise led by Latvia tested a broad range of combat support elements, including artillery, air defence and reconnaissance. In 2019, it involved around 1,000 NATO troops from Albania, Canada, the Czech Republic, Germany, Latvia, Lithuania, Poland, Slovakia, Slovenia, Spain and the United States.	13-25 May	Latvia

<p>KURTARAN The largest Turkish undersea search and rescue exercise to develop methods for joint rescue operations of submarine personnel in NATO as well as non-NATO countries. The exercise involved six ships, three submarines, six coast guard ships, two aircraft, two helicopters, 21 submarine evacuation and rescue personnel, and 12 rescue paratroopers. The exercise involved participants from 18 countries, including eight Allies (Bulgaria, Canada, France, Greece, Italy, Portugal, Romania and the United States).</p>	27-31 May	Turkey
<p>IRON WOLF The annual international exercise to improve military mobility is one of three large-scale exercises conducted in the Baltic Sea region involving NATO forces. About 4,000 troops from Lithuania and 10 other Allied countries (Belgium, the Czech Republic, Denmark, Estonia, Germany, the Netherlands, Norway, Poland, the United Kingdom and the United States) took part in the exercise in 2019.</p>	8-22 June	Lithuania
<p>BALTOPS The annual US-led multinational naval exercise designed to improve the safety of sea lanes and the security of the Baltic Sea region involved around 8,600 personnel in 2019. The exercise gathered 50 surface ships, 40 aircraft and two submarines from Belgium, Denmark, Estonia, France, Germany, Latvia, Lithuania, the Netherlands, Norway, Poland, Portugal, Romania, Spain, Turkey, the United Kingdom, the United States and partners Finland and Sweden.</p>	9-21 June	Germany and Baltic Sea
<p>DRAGON The largest Polish exercise in 2019 involved around 18,000 troops and 2,500 units of military equipment and armament from Poland as well as 10 NATO Allies: Belgium, Bulgaria, the Czech Republic, Germany, Italy, Norway, Romania, Spain, the United Kingdom and the United States. Among them were also troops from Multinational Division Northeast Headquarters.</p>	13-25 June	Poland
<p>BREEZE The Bulgarian-led maritime exercise involved 2,000 forces and 27 ships from 12 NATO Allies: Albania, Belgium, Bulgaria, Canada, France, Greece, Italy, Poland, Romania, Turkey, the United Kingdom and the United States. Standing NATO Maritime Group Two and Standing NATO Mine Countermeasures Group Two also participated in the exercise.</p>	12-31 July	Black Sea, Bulgaria
<p>REAL THAW This large annual Portuguese joint and combined force exercise is designed to train a vast range of battlefield missions, in an environment as realistic as possible. The exercise also focuses on interoperability between different countries. In 2019, the exercise involved 21 aircraft and 600 personnel. Elements from Denmark, France, the Netherlands, Spain, the United States and NATO (AWACS) were employed under a simulated UN-authorised mandate, deploying as a multinational stabilisation force.</p>	22 September – 3 October	Portugal
<p>JOINT WARRIOR The UK-led, multinational naval exercise involved around 4,000 personnel, 58 aircraft, 16 ships and three submarines. Eleven NATO Allies (Belgium, Canada, Denmark, France, Germany, Latvia, the Netherlands, Norway, Spain, Turkey and the United States) participated in the exercise. Military personnel from Japan and the United Arab Emirates were also involved.</p>	5-17 October	United Kingdom

Energy Security

Allies recognise energy security as part of their common security. Energy developments to NATO's east and south can have security implications for all Allies, while cyber and terrorist attacks can target energy infrastructure, on which both civilian populations and the military rely.

NATO can make many tangible contributions to the energy security of Allies and partner countries through shared situational awareness, training and exercises, as well as more reliable, interoperable and efficient energy technologies in the military.

In June, NATO deployed its Smart Energy Training and Assessment Camp as part of Exercise Capable Logistician 2019. This project brought together national experts who built an interoperable smart grid and helped to halve the fuel consumption in a military camp. NATO also continued its project on Harmonised Energy Monitoring and Camp Simulation for Energy Efficiency and organised energy-efficiency training activities with support from the NATO Energy Security Centre of Excellence in Lithuania.



Energy and climate developments increasingly affect Allied security and stability in NATO's neighbourhood. In 2019, the Alliance further adapted its energy security agenda to ensure that NATO can assess energy-related risks, support infrastructure protection, and enable reliable and sustainable energy supply to our military forces.

Julijus Grubliauskas (Lithuania)

Officer, Hybrid Challenges
and Energy Security Section,
NATO Headquarters, Brussels

French Air Force personnel unfold photo-voltaic solar panels connected to a "green to grid" portable trailer during Exercise Capable Logistician 2019. Drawsko Pomorskie Training Area, Poland. June 2019.





Italian Air Force personnel use and monitor energy-saving portable LED helicopter landing lights at the NATO Smart Energy Training and Assessment Camp at Ziemsko Airfield. Exercise Capable Logistician 2019. Drawsko Pomorskie Training Area, Poland. June 2019.

In 2019, NATO also continued to discuss global energy developments and their security implications, and analysed the impact of specific challenges posed by Russia's energy policies. In March 2019, the NATO-Istanbul Cooperation Initiative Regional Centre in Kuwait held a course on the protection of critical energy infrastructure, with the participation of experts from the region. In September, the annual NATO Energy Security Strategic Awareness Course brought together participants from NATO and partner countries to discuss energy challenges ranging from geopolitics to cyber-attacks against energy networks. Also in September, on invitation

by Poland, NATO's Political Committee visited the Liquefied Natural Gas (LNG) facility in Świnoujście on the Baltic coast to gain a better understanding of the major energy shifts brought about by a growing global LNG market.

To guide the way forward, in November 2019, NATO Foreign Ministers endorsed recommendations on how to consolidate NATO's role in energy security. The recommendations aim to improve situational awareness and understanding of energy-related risks; support the protection of critical infrastructure and enhance Alliance resilience; and enable a reliable and sustainable energy supply to the military.

The Bigger Picture: Enhancing Intelligence Coordination

In a challenging and dynamic security environment, the ability to rapidly identify and react to emerging threats is vital. To do this, the intelligence community at NATO is pursuing a number of initiatives to understand potential adversaries over the longer term, while being agile and responsive to quickly developing situations. That is why NATO has designated warning and alerting as the top priority since the creation of the Joint Intelligence and Security Division at NATO Headquarters in 2016. Since then, NATO has adapted and improved its warning and alerting mechanisms, with a new policy and a fully operational Indications and Warning Construct for Allied Command Operations.

NATO is also enhancing intelligence in the cyberspace domain, allowing Allies to share best practices to cope with more frequent, complex, destructive and coercive malicious activities. A cyberspace policy team, composed of intelligence professionals and cyberspace analysts from across NATO, provided an in-depth study of the state of intelligence support to cyberspace operations, with a detailed gap analysis and recommendations. On that basis, NATO started work on several key initiatives to enhance NATO's intelligence support to cyberspace operations, including by creating a community of experts to energise collaboration within NATO and with national intelligence services on cyber-related analytic issues.



PROJECTING STABILITY

Countering Terrorism,
Working with Partners



It is in all our interests to ensure regional stability, and to address the shared challenges and threats we face. NATO is playing its role as an active member of the Global Coalition against Daesh, helping to build national capacity in Jordan and Tunisia, and providing training, advice and assistance to the Afghan Security Forces. Together we can continue to root out terrorism wherever it exists, with determination and solidarity.

NATO Secretary General Jens Stoltenberg.
Iraqi Defence University for Military Studies, Baghdad, 17 September 2019.

Ensuring the security of Allies is not only about deterrence and defence at home, it is also about developments beyond NATO borders that can impact Alliance security. When NATO's neighbours are more stable, the Alliance is more secure.

NATO has extensive experience in projecting stability, including through operations and missions

in its neighbourhood; but also through political engagement, dialogue and cooperation with partners and with other international organisations, like the European Union. In 2019, the Alliance continued to assist its partners in building stronger defence institutions, improving governance, enhancing resilience, and more effectively contributing to the fight against terrorism.

Fighting Terrorism

The Alliance's contribution to the fight against terrorism began in Afghanistan, following the 9/11 terrorist attacks, but it now extends far wider. In 2019, the NATO training and advisory activities in Iraq continued to support the country in its efforts to fight terrorism and prevent a resurgence of ISIS. At the same time, as a part of the Global Coalition to Defeat ISIS, NATO provided situational awareness and early warning with Airborne Warning and Control System (AWACS) flights.

In 2019, NATO assisted its partners and other international organisations in building sustainable counter-terrorism capacity. For example, NATO experts worked with the European Union, the Organization for Security and Co-operation in Europe and partner nations to develop a NATO Counter-Terrorism Reference curriculum under the lead of the Partnership for Peace Consortium, a security cooperation organisation of defence academies across 60 countries. The curriculum aims to enable all interested learners in Allied and partner countries to develop a more nuanced and complete picture of the challenges posed by terrorism and the counter-terrorism concepts to address them. In April, NATO conducted its first-ever joint training course in collaboration with the African Union, followed by the first NATO-African Union counter-terrorism dialogue on future cooperation.

NATO also helps Allies enhance their ability to better prevent, protect and respond to terrorist threats, including through its long-standing Defence against

Terrorism Programme of Work. The programme conducts pioneering projects, addresses shortfalls and strengthens interoperability through exercises and training activities.

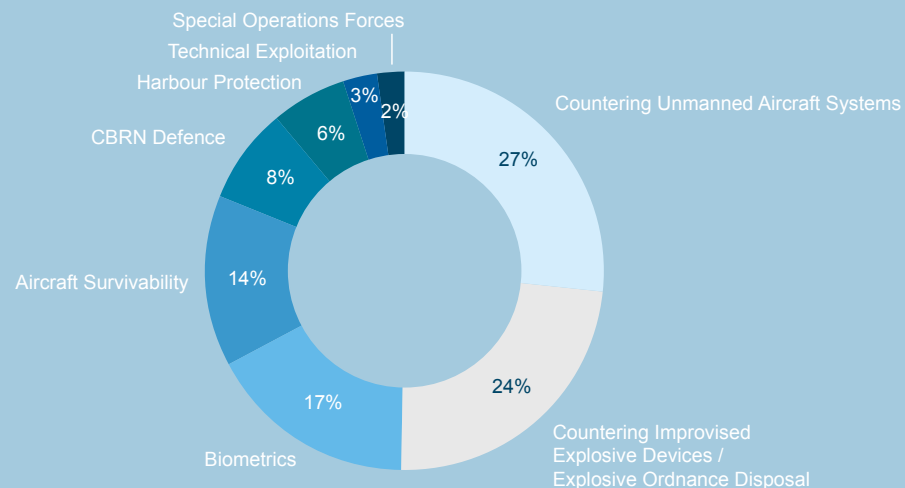


I am most proud of the progress made with NATO's partners in counter-terrorism capacity building, improving NATO's ability to provide assistance but also learning from our partners' vast experience in this field through practical cooperation.

Elena Beganu (Romania)

Counter-Terrorism Officer and Science
for Peace and Security Advisor,
NATO Headquarters, Brussels

Defence Against Terrorism Programme of Work 2019 Activity Domains



In 2019, the Defence against Terrorism Programme supported 18 cooperative projects in different domains, including countering unmanned aircraft systems, harbour protection against seaborne terrorist threats, defence against terrorist use

of chemical, biological, radiological and nuclear (CBRN) substances, electronic warfare for aircraft survivability, and countering improvised explosive devices.

Countering the Threat Posed by Misuse of Unmanned Aircraft Systems

Terrorist misuse of unmanned aircraft systems poses a number of challenges to Allies' and partner nations' resilience and preparedness, both when deployed and in their own homeland. These systems are used by ISIS and other terrorist organisations both for surveillance activities and to direct and perform attacks against Allied troops and assets. Preventing, protecting and recovering from such attacks requires a coherent and cross-dimensional approach. This is why NATO Defence Ministers in 2019 endorsed a practical framework to counter terrorist misuse of unmanned aircraft systems. The framework will support Allies in establishing capabilities and better organising NATO's ongoing efforts in this area, including by developing equipment, operational doctrines, trials and exercises to deal with the unmanned aircraft systems threat. Through these efforts, personnel

will be equipped with counter-measures (detection, identification, tracking and engagement systems) in field conditions to better tackle this challenge.

A commercial drone captured with a net system to neutralise the unmanned aircraft systems threat with minimum collateral damage. NATO Non-Lethal Technology Exercise 2018, Quantico (VA), December 2018.



In 2019, the Alliance also started work on two new policies that will help Allies in countering terrorism. The first policy focuses on the use of technical exploitation, a military capability enabling the collection and analysis of materials in military operations. The policy is designed to improve NATO's ability to produce and use information in support of a variety of tactical, operational and strategic outcomes, ranging from force protection to the development of counter-measures.

The second policy will set out roles and responsibilities in the area of battlefield evidence – or how to use information collected by the military to counter the threat from foreign terrorist fighters and support civilian rule of law efforts to counter terrorism such as investigations, prosecutions and sentencing.

NATO Automated Biometrics Identification System

The field of biometrics is crucial for protection, in particular by identifying terrorist fighters and impede their movement. To this end, NATO has developed a biometric data policy consistent with applicable national and international law. In 2019, the NATO Automated Biometrics Identification System, a platform to share biometric data, was successfully tested. In the next phase, planned for 2020, this platform will be deployed in theatre for force protection purpose. This represents a critical step towards the validation, testing and interoperability of the biometrics capabilities. An additional biometrics project in a maritime environment, through satellite connectivity, was successfully tested in spring 2019.

NATO in Afghanistan

Allies remain committed to preventing Afghanistan from ever again becoming a safe haven for international terrorism. NATO does this through the Resolute Support Mission; through its political and practical partnership with Afghanistan; and with ongoing financial support to the Afghan security forces. By maintaining support for a more professional and self-sustaining Afghan security sector, NATO Allies and partners are also helping to set the conditions for an inclusive and durable political settlement.

At the Leaders' Meeting in London in December 2019, NATO Allies reaffirmed the Alliance's commitment to long-term security and stability in Afghanistan. The Afghan government, in turn, reiterated its commitment to leading on security, peace and reform.

In 2019, NATO's Resolute Support Mission continued its work as a non-combat capacity-building mission to train, advise and assist the Afghan security forces and institutions. Key activities included support to Afghan operational planning, budgetary development, force generation, personnel management, logistics and civilian oversight. The Resolute Support Mission also promoted the Women, Peace and Security agenda through training and education activities.

In the midst of a volatile and complex security situation, Afghan security forces were able to protect cities, secure the presidential elections and control major roads, while increasing offensive operations against insurgents. The Afghan Special Security Forces and Afghan Air Force continued to demonstrate improvement, with the Special Security Forces increasing their ability to conduct independent offensive operations. The Afghan government launched a number of leadership changes in the security ministries to improve professional development in the Afghan security forces. Afghanistan's Ministries of Defence and Interior introduced reforms allowing for the merit-based appointment of the next generation of Afghan officers to senior leadership positions. Despite all these efforts, the security situation in Afghanistan remained serious. While NATO Allies always did their utmost to prevent civilian casualties, the Taliban and other terrorist groups deliberately targeted civilians and remained responsible for the majority of civilian casualties.

NATO's partnership with Afghanistan also included a series of programmes to support capacity-building and military education, and to foster effective and sustainable Afghan institutions.

The NATO-managed Afghan National Army Trust Fund is one of three funding streams used by the international community to channel support to Afghanistan's security forces and institutions. By the end of 2019, the total contribution made to this Trust Fund was around USD 3 billion. The Fund supports the sustainment of the Afghan National Army, services for Afghan National Army engineering projects, literacy and professional military education and capacity-building activities, including those

for Afghan women working in the security sector. It also supports the implementation of a roadmap launched by the Afghan government to further develop the Afghan security forces and institutions. This roadmap has four key elements — enhancing national combat capabilities, countering corruption, developing new military leaders, and enhancing command and control arrangements among different elements of the Afghan National Defence and Security Forces.

NATO in Iraq

NATO Mission Iraq reached full operational capability in September 2019. The mission is designed to help Iraq build, train and educate its military forces with the wider purpose of preventing the re-emergence of ISIS.

NATO Mission Iraq is based on partnership and inclusiveness, with full respect for Iraq's sovereignty, independence and territorial integrity. The mission complements the broader international efforts to increase the long-term stability of Iraq and the region. It coordinates its activities with the Global Coalition to Defeat ISIS, the European Union and the United Nations.

In 2019, NATO assisted Iraq in the area of security sector reform, delivering advice to the Ministry of

Defence, the Office of the National Security Advisor and the Prime Minister's National Operations Centre.

As a non-combat training and advisory mission, NATO Mission Iraq employed a train-the-trainer approach. Through technical courses, workshops and seminars conducted in Iraqi military training schools and professional military education institutions, the mission aims to form a cadre of self-sustaining Iraqi instructors.

Work also continued in the areas of countering improvised explosive devices, explosive ordnance disposal, demining, civil-military planning support to operations, military medicine, civil preparedness, cyber defence, rule of law and the law of armed conflict, countering corruption, protection of civilians,

NATO Secretary General Jens Stoltenberg visits Iraq, September 2019.



protection of children in armed conflicts, and the Women, Peace and Security agenda. The mission integrates gender perspectives into every stage of planning and operations. A gender advisor is deployed as part of the mission's senior advisory group and gender issues are considered throughout, including training, education, and review and assessment processes.

In October 2019, NATO Mission Iraq and the European Union Advisory Mission in Iraq agreed to further

strengthen NATO-EU practical cooperation in the country to include capacity-building, human resources management, crisis management, governance, gender mainstreaming and international law.

NATO Mission Iraq is based in the greater Baghdad area and integrates nearly 500 civilian and military personnel. Major-General Jennie Carignan of Canada took over command of the mission in November 2019.

Resilience: Cooperating with Partners in the Middle East and North Africa

Through the Mediterranean Dialogue and the Istanbul Cooperation Initiative, NATO has developed unique networks of partners across the Middle East and North Africa. These networks have helped to boost trust between members and develop meaningful practical cooperation, addressing the needs of individual partners.

The Mediterranean Dialogue involves Algeria, Egypt, Israel, Jordan, Mauritania, Morocco and Tunisia. The Istanbul Cooperation Initiative sees the participation of Bahrain, Kuwait, Qatar and the United Arab Emirates.

In 2019, NATO's political dialogue with partners in the Middle East and North African region has grown

in substance and in regularity. The North Atlantic Council met in Turkey in May 2019 to celebrate the 25th anniversary of the Mediterranean Dialogue with the seven participating countries, reflecting on past achievements and on the way forward for cooperation. Sustained political dialogue and public diplomacy activities with participants from the seven countries also continued to help foster a common understanding of regional security challenges as well as to improve the understanding of NATO's policies and goals, and the benefits of cooperation.

2019 was also the year to celebrate the 15th anniversary of the Istanbul Cooperation Initiative. The North Atlantic Council visited Kuwait in

NATO marks the 25th anniversary of the Mediterranean Dialogue. 6-7 May 2019. Turkey.



December and looked back at 15 years of joint efforts. On this occasion, the Council agreed to further deepen cooperation with Istanbul Cooperation Initiative partners and to continue to regularly meet to discuss security issues of common concern.

NATO further developed practical cooperation with Mediterranean Dialogue and Istanbul Cooperation Initiative partners in the areas of capacity-building, interoperability, standardization and security sector reform. Key priority areas in 2019 included: counter-terrorism, small arms and light weapons, counter-

improvised explosive device training, cyber defence, mine detection, enhanced explosive remnants of war detection, chemical, biological, radiological and nuclear defence, and crisis management.

As in previous years, regional partners were active participants in NATO's education and training activities in the Alliance's schools and institutions. In total, 37 mobile training teams conducted training activities in Mediterranean Dialogue countries and 17 were deployed to Istanbul Cooperation Initiative countries.



NATO Secretary General Jens Stoltenberg and Sheikh Thamer Ali Sabah Al-Salem Al-Sabah, President of the Kuwait National Security Bureau. Kuwait. December 2019.

The NATO-Istanbul Cooperation Initiative Regional Centre

The Kuwait-based Centre is a hub for training and cooperation between NATO and its Istanbul Cooperation Initiative partners, as well as Oman, Saudi Arabia and the Gulf Cooperation Council. Since its inauguration in 2017, the Centre has hosted almost 1,000 participants from the region, as well as more than 200 experts from NATO countries. Its purpose is to promote the exchange of expertise among professionals in the defence and security sectors, and to improve interoperability between NATO and its partners in the region. Its activities have included cyber defence, chemical, biological, radiological and nuclear defence, crisis management, maritime security, energy security, political dialogue and military-to-military cooperation.

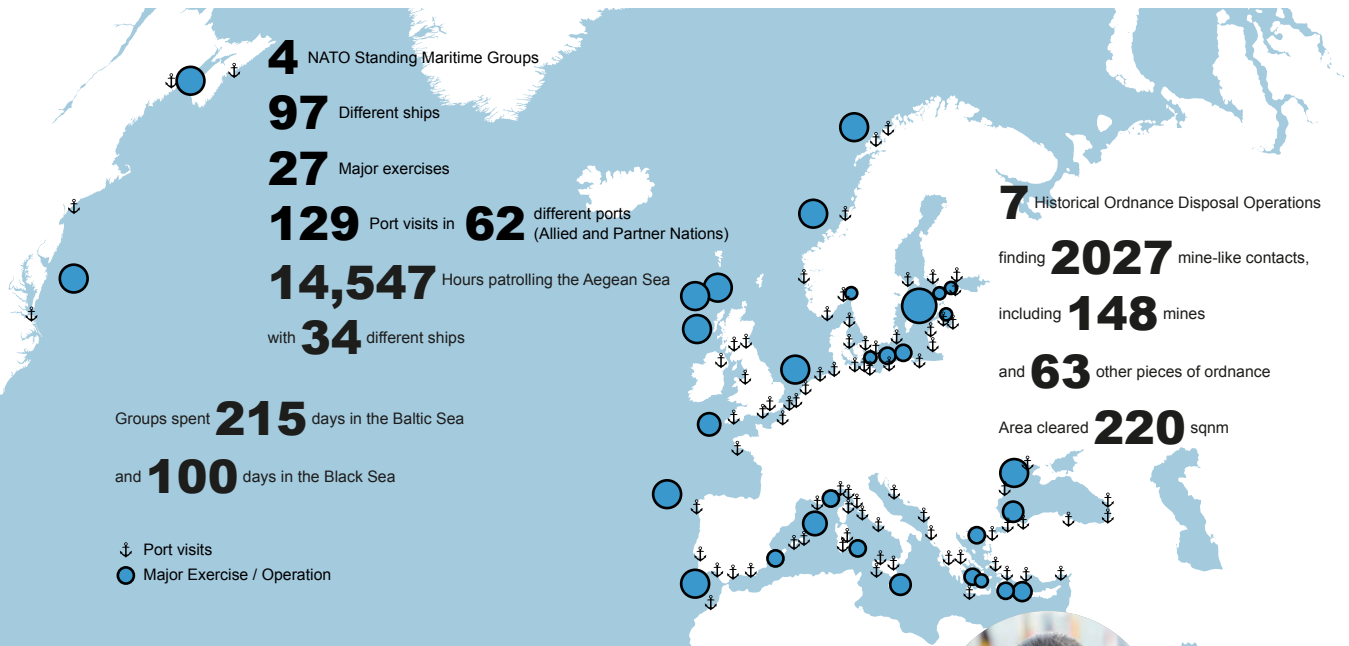
NATO at Sea

NATO's maritime posture and operations are of fundamental importance for the Alliance's ability to deter and defend against any potential adversary. They equally allow NATO to project stability and to work together with partners and other international organisations. From the Baltic to the Black and Mediterranean Seas, in 2019 NATO vessels continued to exercise, monitor and patrol areas of strategic importance for the Alliance.



Exercise Dynamic Mariner/Flotex-19. Spain. October 2019.

NATO Standing Maritime Presence 2019



In 2019, Operation Sea Guardian played a vital role in enhancing NATO's maritime situational awareness in the Mediterranean Sea. As part of its mandate, Sea Guardian also has a counter-terrorism and capacity-building function. In 2019, Sea Guardian carried out a total of six so-called Focused Operations, involving various surface and sub-surface vessels and maritime patrol aircraft. These operations helped NATO gain a more comprehensive picture of threats and of the daily patterns of shipping in different geographic areas of the Mediterranean. In this context, NATO vessels in the Mediterranean continued to share information with the European Union's Operation Sophia.

In the Aegean Sea, NATO's activity continued with NATO ships regularly providing information on illegal trafficking to the Greek and Turkish coast guards and to the European Border and Coast Guard Agency, Frontex.



With four standing naval groups permanently operating on the high seas under MARCOM command, we sit on the front line of providing a responsible deterrent posture at sea to keep the Alliance safe.

**Lieutenant Commander Caroline Hoefsmits
(The Netherlands)**

Battle Watch Captain,
Maritime Operational Centre,
Maritime Command, Northwood, UK



Major General Lorenzo D'Addario (Italy), then Commander KFOR (right), welcomes Admiral James G. Foggo (USA), Commander Allied Joint Force Command Naples, to his office at KFOR Headquarters. Kosovo. September 2019.

NATO in Kosovo

NATO's presence in Kosovo remains crucial for stability and security in this still volatile region.

2019 marked 20 years since the launch of the NATO-led Kosovo Force (KFOR) operation. Since then, NATO's mission has remained unchanged, based on UN Security Council Resolution 1244. In 2019, KFOR continued to ensure a safe and secure environment and freedom of movement for all communities in Kosovo. At no point during the year KFOR was required to intervene directly.

Over the past two decades the security in Kosovo has improved significantly and KFOR has been able to reduce force levels from over 50,000 soldiers in 1999 to around 3,500 today.

Next to KFOR, NATO also provided capacity-building support to the Kosovo Security Force through the

NATO Advisory and Liaison Team, a mixed civilian-military team of approximately 40 personnel and advisors from over 10 countries. In early 2019, the North Atlantic Council decided to review NATO's engagement with the Kosovo Security Force in light of the decision by the institutions in Kosovo to change the mandate of the force.

During their bi-annual reviews, Allies confirmed that NATO's force posture would remain unchanged and conditions based.

Despite some improvements in the overall security situation, political tensions and the stalled EU-facilitated dialogue between Belgrade and Pristina remained a major impediment to more significant progress.

A KFOR Tactical Reserve Battalion conducts a realistic exercise in crowd and riot control. Kosovo. October 2019.





Resolute Support Mission, Italian Officer, Lt. Rosa Pastore, with Gender Advisor of Afghan Border Force in Herat, Gulghutai Melma. Afghanistan. January 2019.



KFOR soldiers donate football equipment to junior football teams of western Kosovo. November 2019.

Human Security

In order to prevent conflict and preserve peace, attending to matters of human security is essential. In December, NATO leaders in London reaffirmed that the Alliance is committed to stepping up its role in this area. In conflict and post-conflict environments, aspects of human security that are especially pertinent to NATO's work include the protection of

civilians, attention to issues related to children and armed conflict, preventing and responding to sexual exploitation and abuse, addressing conflict-related sexual violence, combatting human trafficking and protecting cultural property. The broader Women, Peace and Security agenda is also linked to the human security approach.

Protection of Civilians

NATO's policy on the protection of civilians makes clear that all feasible measures must be taken to avoid, minimise and mitigate harm to civilians that might arise from NATO and NATO-led military operations, missions and other Council-mandated activities. In 2019, the NATO Military Authorities continued to adapt and develop doctrine and

training related to the protection of civilians. This is an area in which NATO works extensively with other international actors, including the United Nations and the International Committee of the Red Cross.

Children and Armed Conflict

NATO recognises that protecting children from the effects of armed conflict is both a moral imperative and an essential element to break the cycle of violence. NATO is taking steps, as part of the wider international community, to confront this issue.

Training is one of the key tools the Alliance is using to improve efforts to protect children from the effects of armed conflict. In 2019, NATO began to test an advanced virtual reality tool to improve training for Allied and partner forces in this area. Beyond training focused on the conduct of operations and missions, NATO has also been working to include

issues related to children and armed conflict into its preparation and planning processes.

The Senior Adviser on Children and Armed Conflict to Resolute Support Mission continued her work in Afghanistan throughout 2019, working not only with the NATO leadership but also with other international organisations to help the Afghan government improve its policies and practices. This is important not only as it relates to the protection of children from physical harm, but also to complexities surrounding the recruitment and use of children by armed groups.

Preventing and Responding To Sexual Exploitation and Abuse

Sexual exploitation and abuse runs counter to NATO's principles and core values. In 2019, NATO adopted its first policy on preventing and responding to sexual exploitation and abuse. The policy was endorsed by NATO leaders in London at their meeting in December and stipulates NATO's zero-tolerance approach. While NATO already had military guidelines prohibiting these behaviours, and while a number of individual countries had

defined policies in place, Allies in 2019 agreed on the importance of raising the bar to adopt a formal NATO policy on the issue. The aim of the policy is to bring a coherent, consistent approach to preventing and responding to sexual exploitation and abuse across NATO, and to prompt the development of mechanisms needed to ensure compliance with the zero-tolerance principle.

Cultural Property Protection

The protection of cultural property and common heritage has been a core NATO value since its foundation in 1949. As an essential aspect of the security environment, cultural property and its protection can constitute an important element in strategic, operational and tactical considerations. NATO's training requirements for all military forces help them identify cultural sites and provide guidance on actions to be taken if cultural property is encountered when deployed.

In October 2019, Allied Command Operations and Allied Joint Force Command Naples gathered key high-level representatives from the international community to enhance understanding of cultural property protection and the need to integrate it into the preparation, planning and conduct of NATO and NATO-led operations and missions at all stages, as well as in the delivery of education, training, exercises and evaluation.



A Swiss F-18 fighter taxis near runway at Leeuwarden Air Base during Exercise Frisian Flag 2019. The large-scale airpower exercise, hosted by the Netherlands, helps NATO Allies and partner nations practise together the complex and demanding task of multinational air operations. The Netherlands, April 2019.



Then NATO Deputy Secretary General Rose Gottemoeller visits Israel. January 2019.

Partnerships: Stability through Dialogue and Practical Cooperation

Political dialogue is crucial to foster regional understanding and to exchange expertise. Dialogue is also essential so that NATO and its partners can develop tailored practical cooperation that helps improve institutional capacity in the defence and security sectors. Through practical cooperation with NATO, partners can also enhance the interoperability of their forces with the Alliance and build more resilience.

Forty-one countries have established formal partnerships with NATO across Europe, Asia, the Middle East and North Africa, the Pacific Region and Latin America. In addition, many other countries have begun a dialogue with the Alliance. Of all partners, 19 have established Missions to NATO in Brussels. The Alliance also has a network of liaison and information offices, including in Belgrade, Chişinău, Kuwait City, Kyiv, Moscow, New York, Sarajevo, Skopje, Tbilisi and Vienna.

In 2019, partners were involved in 39 NATO-led exercises, contributed 45 personnel to the NATO Command Structure, and participated in NATO



NATO and the African Union share common challenges and threats. In 2019 we revitalised the NATO-African Union relationship, culminating in the signature in November 2019 of a new agreement laying the ground for closer practical and political cooperation.

Theodora Adekunle (United Kingdom)

Political Adviser, Operations Division,
NATO Headquarters, Brussels

missions, including in Afghanistan, Iraq and Kosovo. Partners also contributed financially to NATO-led Trust Funds and offered in-kind support, for example through Partnership Training and Education Centres.

NATO's Open Door

NATO's Open Door Policy is a founding principle of the Washington Treaty and one of the Alliance's great successes. NATO's door is open to all European democracies that share the values of the Alliance, are willing and able to assume the responsibilities and obligations of membership, are in a position to further the principles of the North Atlantic Treaty, and whose inclusion can contribute to the security of the North Atlantic area. NATO respects the right of every country to choose its own security arrangements. Each country has the right to choose for itself whether or not it joins any treaty or alliance.

In 2019, North Macedonia continued to prepare for full integration into NATO structures. As an invitee, North Macedonia participated in NATO meetings following the signing of the Accession Protocol by all NATO Allies in February 2019. NATO looks forward to welcoming North Macedonia as the 30th member of the Alliance once all Allies have ratified the Accession Protocol.

Membership in NATO will contribute to stability and prosperity in the country, as well as in the Western Balkans and the whole Euro-Atlantic area. North Macedonia's imminent accession demonstrates that hard work, reforms and commitment pay off and that NATO's door remains open.

In 2019, NATO continued to support Bosnia and Herzegovina's reform efforts through a strong programme of cooperation. In December 2019, Bosnia and Herzegovina submitted its Reform



NATO's Open Door policy strengthens the Alliance and has brought security to millions of Europeans. The signing of the Accession Protocol for North Macedonia demonstrates the commitment NATO attaches to this policy and to the security and stability of the Western Balkans.

Tanya Hartman (USA)

Policy Officer,
Political Affairs and Security Policy Division,
NATO Headquarters, Brussels

Programme to NATO. The Alliance expressed its support for the country as the government implements the reforms contained in the Programme, including with respect to the Defence Review.

In 2019, Allies also restated their commitment to supporting eventual NATO membership of Georgia and Ukraine in line with the 2008 Bucharest Summit decision and subsequent Summits.

NATO Allies sign the Accession Protocol for the Republic of North Macedonia. Brussels, Belgium. February 2019.



NATO's Global Partners: Asia Pacific and Latin America

Over more than 25 years, the Alliance has developed a network of partnerships with non-member countries from the Euro-Atlantic area, the Mediterranean and the Gulf region, and with other partners across the globe.

NATO has four close partners in the Asia-Pacific region – Australia, Japan, New Zealand and South Korea – and is also developing a partnership with Mongolia. The Alliance has also been pursuing a dialogue with China and India to build confidence and understanding.

Dialogue with China

NATO has a long-standing political and military dialogue with China, which provides a basis for mutual understanding and engagement. NATO wants to maintain a constructive relationship with China, based on shared interests and mutual respect. Continued and focused dialogue can enhance mutual understanding and dispel misperceptions. At their meeting in London in December 2019, NATO leaders recognised that China's growing influence and international policies present both opportunities and challenges that NATO needs to address together as an Alliance.

In 2019, dialogue with China was sustained through high-level interactions, including through meetings between the NATO leadership and the Head of the Chinese mission to the European Union, with military-to-military staff talks held in Beijing in September and with political high-level staff talks in Brussels in October.

Against the background of increasing challenges confronting the Euro-Atlantic area and the Asia-Pacific region, in 2019 NATO expanded political dialogue with global partners from the Asia Pacific. The Secretary General visited Australia and New Zealand in August and the North Atlantic Council met four times with Asia-Pacific partners. NATO's long-standing engagement with its partners in the

Asia-Pacific region has focused on working together on areas of common interest, such as cyber defence, Women, Peace and Security, crisis response and management, and energy security. Through this engagement, NATO aims to promote cooperative security and speak with one voice in defence of the international rules-based order.



NATO Secretary General Jens Stoltenberg with Prime Minister of New Zealand Jacinda Ardern. New Zealand. August 2019.



NATO Secretary General Jens Stoltenberg visits the Al Noor Mosque and meets with members of the Muslim community during his visit to New Zealand. Christchurch, New Zealand. August 2019.

NATO continued to work with Colombia, the Alliance's first partner in Latin America. In 2019, the North Atlantic Council met twice with Colombia to discuss the regional security situation. Practical cooperation increased, with Colombia actively participating in NATO's Building Integrity Programme by sharing its national experiences of fighting corruption; and with

more cooperation on cyber defence. Demining is another focus area for NATO-Colombia cooperation. In March, the North Atlantic Council welcomed Colombia's International Demining Centre into the network of NATO Partnership Training and Education Centres.



NATO Secretary General Jens Stoltenberg meets with Georgian wounded soldiers at the Joint Training and Evaluation Centre. Georgia. March 2019.

Investing in Partners: Capacity-Building and Training

Developing Capacity

The Defence and Related Security Capacity Building Initiative assists partners with strategic advice on defence and security sector reform, and helps them develop defence capabilities for local forces through education and training. The initiative draws from NATO's extensive expertise in providing advice, support, training, education and mentoring activities. NATO's support enhances partners' resilience and security.

All NATO Allies, as well as seven partners – Finland, Ireland, Jordan, North Macedonia, Serbia, Sweden and Switzerland – supported NATO capacity-building packages in 2019, by providing experts, trainers and funding.

Here are a few examples of support provided by the Defence and Related Security Capacity Building Initiative to partner countries in 2019 and of activities that improved interoperability with NATO.

Georgia

2019 was a busy year for NATO-Georgia relations.

Practical cooperation increased in 2019 under the framework of the Substantial NATO-Georgia Package, designed to strengthen Georgia's defence capacities and help Georgia prepare for eventual

NATO membership. Under this umbrella, Georgia made significant progress on aviation and air defence, in developing transparent acquisition legislation, in improving its cyber defence and logistics capabilities, and in bolstering the strategic communications capacity of the Ministry of Defence. In 2019, NATO also stepped up support to Georgia in the field of maritime security and harbour protection. The Joint Training and Evaluation Centre and the Defence Institution Building School offered numerous training events to military and civilian students.

In March 2019, Georgia hosted a NATO-Georgia joint exercise. This computer-assisted command post exercise brought together some 350 participants from 24 NATO and partner countries. It was designed to train a Georgia-led multinational brigade headquarters staff to plan, coordinate and execute a military response to a humanitarian crisis. It also tested the interoperability of Georgian, Allied and other partner forces, as well as Georgian command and control capabilities. The Georgian Coast Guard cooperated closely with NATO's Maritime Command. The Coast Guard, military police and other units were trained for future participation in NATO-led operations, including NATO's Resolute Support Mission and Operation Sea Guardian.

The North Atlantic Council visited the Black Sea coastal city of Batumi in October, where it met with President Salome Zourabishvili, Prime Minister Giorgi Gakharia and other senior officials, parliamentarians as well as civil society representatives. On that occasion, the NATO-Georgia Commission celebrated the achievements of the Substantial NATO-Georgia Package over the past five years and announced its agreement to refresh and update the package.

Georgia continued to provide significant support to NATO's operations and other activities.

Iraq

For more information on NATO's activities in Iraq – including NATO Mission Iraq – see page 71.

Jordan

Jordan has been a NATO partner for more than 20 years.

In 2019, practical cooperation focused on the Alliance's efforts to help modernise the country's armed forces. These efforts reached new milestones, including with the completion of training support in the areas of counter-improvised explosive device, cyber defence and logistics. Jordan also decided to participate in NATO's Building Integrity Programme to analyse the structures, practices and capacities of the Jordanian Armed Forces with respect to good governance, transparency and accountability. NATO conducted training and education activities for the Jordanian Armed Forces; boosted cooperation in the area of good governance; and started a project to assist in the development of a cyber laboratory to strengthen Jordan's incident and crisis management system as well as its digital forensics capacities and the skills of Jordanian cyber defenders. NATO also continued to assist Jordan to enhance its chemical, biological, radiological and nuclear civil preparedness, through a three-year joint project with the United Nations.

In 2019, NATO decided to establish a small NATO coordination team in Amman to work closely with the Jordanian Armed Forces to improve the implementation of capacity-building measures. The team will be in place in 2020.

The Republic of Moldova

Moldova and NATO worked together to support reforms in the country, including in the areas of fighting corruption, cyber defence and women's role in the defence sector. In 2019, NATO assisted the Moldovan authorities in developing their national defence and military strategies and in devising a new force structure of the Moldovan Armed Forces. NATO also assisted with the implementation of defence reforms.

Cooperation with Moldova is strengthened by the NATO Liaison Office in Chişinău, a small, civilian office that provides practical advice to Moldovan officials on how to make best use of NATO assistance activities, as well as information to the public on the nature of the NATO-Moldova relationship. In 2019, the NATO Liaison Office has been reinforced with a defence capacity building coordinator. NATO's support is provided with full respect for Moldova's neutrality and is designed to meet Moldova's own requirements.

The country is also a valuable contributor to the NATO-led peace-support operation in Kosovo.

Tunisia

In 2019, the capacity-building support to the Tunisian Armed Forces focused on implementing the Partnership Goals identified under the framework of the NATO Planning and Review Process. NATO's support to Tunisia complemented bilateral and other international efforts on issues including cyber defence, counter-improvised explosive device training and the promotion of financial transparency.

Other initiatives were also implemented in 2019, particularly in the area of promotion of good governance and ethics at the defence leadership level, and financial transparency. In 2019, representatives of the Ministry of National Defence of Tunisia participated in the NATO Building Integrity flagship educational course for leaders of the defence and related security sector, annually held at the NATO School Oberammergau. They were joined for the first time by representatives of the Government's Service for Good Governance.

Cooperation with Ukraine

Throughout 2019, Allies remained firm in their support for Ukraine's sovereignty and territorial integrity. Following the unjustified use of military force by Russia against Ukrainian ships and naval personnel near the Sea of Azov and the Kerch Strait in November 2018, Allied Foreign Ministers decided in April 2019 to enhance NATO's practical support to Ukraine, including through cooperation with its Navy, sharing situational awareness and information, port visits and joint exercises.

Ukraine's new President Volodymyr Zelenskyy assumed office in May 2019 and reaffirmed his country's strategic course of Euro-Atlantic integration. In October, the North Atlantic Council visited Odesa and Kyiv, and reiterated NATO's commitment to providing continued practical assistance to Ukraine. During the visit, NATO and Ukraine reviewed the Comprehensive Assistance Package for Ukraine designed to assist the country in reforming the security and defence sectors.

In 2019, Allied advisers working from the NATO Representation to Ukraine assisted the Ukrainian government and parliament with regard to the implementation of the framework law on National Security, setting out reforms in line with Euro-Atlantic standards. Practical support has also been provided through 16 different programmes under the Comprehensive Assistance Package, which includes Trust Funds with a budget of over EUR 40 million. As an example, in 2019, through the Trust Funds, medical rehabilitation equipment and secure communication devices were delivered

A member of a Ukrainian vehicle decontamination team in Exercise Rapid Trident, organised by Ukraine and the United States. Ukraine. September 2019.



Meeting of the NATO-Ukraine Commission during the visit to Ukraine by the NATO Secretary General and the North Atlantic Council. October 2019.

to Ukraine, while the NATO-Ukraine Professional Development Programme continued to assist the country in enhancing the skills of its defence and security sector personnel.

Ukraine has been a beneficiary of projects carried out under NATO's Science for Peace and Security Programme. In 2019, the NATO-Ukraine Platform for Countering Hybrid Warfare supported two expert seminars on military aspects of hybrid warfare, and a project focused on building resilience against disinformation.

Investing in Training

One of the best ways NATO can project stability in the Alliance's neighbourhood is by training local forces and investing in defence education to support institutional reform in partner countries.

2019 marked the 20th anniversary of NATO's Partnership Training and Education Centres, a network of 33 institutions in NATO member and partner countries. The Centres focus on the education and training of military officers from Allied and partner countries, and have also played an important role in NATO's operations through pre-deployment training of troops.

In 2019, the Centres conducted 715 different courses and trained close to 50,000 personnel. The Partnership Training and Education Centres also increased cooperation with international organisations, such as the African Union, the European Union and the United Nations.

In addition, NATO has established the Defence Education Enhancement Programme to support practical cooperation with partners in defence education within NATO's defence institution and capacity building activities. The Programme helps partners to build, develop and reform their professional military education institutions, establishing common validated references for military education.

In 2019, the Programme worked with defence institutions in 16 countries¹, and implemented 318 educational events with the participation of 3,494 partners supported by 1,050 Allied subject matter experts. Key achievements in 2019 included helping the Republic of Moldova to successfully establish its non-commissioned officers school; launching a programme in Morocco focused on cyber defence and non-commissioned officers; establishing the first Master Instructor Programme with the Tunisian War College as well as an advanced distance learning system; publishing a new reference curriculum on counter-terrorism; and successfully completing a major faculty development effort with the Military Academy of North Macedonia.

Trust Funds

Trust Funds were created to generate additional funding sources for implementing practical projects and assisting partners. Those projects are typically in the areas of demilitarization, defence transformation and capacity-building. Allies and partners as well as international organisations contribute to NATO Trust Funds on a voluntary basis.

In 2019, there were 19 NATO Trust Funds. These included Partnership for Peace Trust Funds, trust funds in support of Ukraine, the Building Integrity Programme Trust Fund, the Professional Development Programme as well as the Defence and Related Security Capacity Building Trust Fund, established in 2015 to provide additional support and resources to implement NATO's Defence and Related Security Capacity Building Initiative.

The Defence and Related Security Capacity Building Trust Fund allows Allies and partners to contribute to specific projects in recipient countries (currently five: Georgia, Iraq, Jordan, Moldova and Tunisia). Since the Trust Fund was established, 21 Allies and four partner nations (Finland, Ireland, North Macedonia and Sweden) have made financial contributions totalling around EUR 23 million. To date, this Trust Fund has spent or committed approximately EUR 12 million on 35 projects. Funded projects include support to the Joint Training and Evaluation Centre in Georgia, demining training and capacity-building in Iraq, and the NATO Codification System in Jordan.

Building Integrity

The Alliance recognises that poor governance and corruption complicate the security challenges that NATO Allies and partners face. As of 2019, 53 nations supported the NATO Building Integrity Programme designed to provide strategic advice and tailored support to Allies and partners to strengthen good governance, enhance institutional resilience and minimise the risk of corruption in the defence and related security sector.

In 2019, NATO provided tailored support to a total of 2,500 civilian and military leaders from 21 countries, with the assistance of over 30 Allies and partners. The Programme contributed to enhancing institutional capacity as part of NATO's defence and related security capacity building efforts in several participating countries, including Armenia, Colombia, Georgia, Iraq, Jordan, the Republic of Moldova, North Macedonia, Tunisia and Ukraine. For example, in Ukraine, the Building Integrity Programme completed a review of eight Ukrainian defence and security sector ministries and agencies, and produced a report, submitted to Ukrainian authorities in October 2019, providing specific recommendations aimed at strengthening good governance for all participating institutions.

In addition, the Programme held its bi-annual conference in the United States, gathering over 150 representatives from NATO and partner countries as well as international organisations and civil society to discuss the importance of resilient institutions for security.

The Building Integrity Programme received a EUR 1 million grant from the European Union, recognising NATO's expertise in integrity and good governance as a leader in the defence and related security sector.

¹ Afghanistan, Armenia, Azerbaijan, Bosnia and Herzegovina, Georgia, Iraq, Kazakhstan, Kyrgyzstan, Mauritania, the Republic of Moldova, Mongolia, Morocco, North Macedonia, Serbia, Tunisia and Ukraine.

Advancing Science for Peace and Security

In 2019, NATO's Science for Peace and Security Programme funded 49 concrete, result-oriented and demand-driven cooperative projects in 22 partner countries; concluded 31 additional projects; and conducted 31 training activities and workshops, involving approximately 2,700 experts, researchers and young scientists.

Key highlights from the programme in 2019 include:

- Launching the DEXTER Programme (Detection of Explosives and firearms to counter Terrorism) aimed at developing a system that detects explosives and firearms in a mass transit environment, supported by eight Allies and partners;
- Promoting coordinated regional responses to crises in the Western Balkans through field exercises in Bosnia and Herzegovina, Montenegro and North Macedonia as part of the "Next-generation Incident Command System" project;
- Supporting scientific workshops on advanced technology in communications systems, new materials, quantum, sensors and detectors, as well as unmanned and autonomous systems;
- Deepening NATO-Ukraine scientific cooperation, in particular in the field of advanced technologies, as well as early warning for hybrid warfare;
- Reopening contacts with the Belarusian scientific community with an event organised in Minsk, and through a high-level NATO team visit with the support of the Belarus National Academy of Sciences, the State Committee for Science and Technology, and the Ministry of Foreign Affairs;
- Taking forward 17 separate projects with Mediterranean Dialogue countries in the field of advanced technologies, chemical, biological, radiological and nuclear defence, and cyber defence;
- Supporting courses for Istanbul Cooperation Initiative countries at the Regional Centre in Kuwait, promoting regional cooperation and interoperability, in particular on critical energy infrastructure protection and resilience, and on network security.

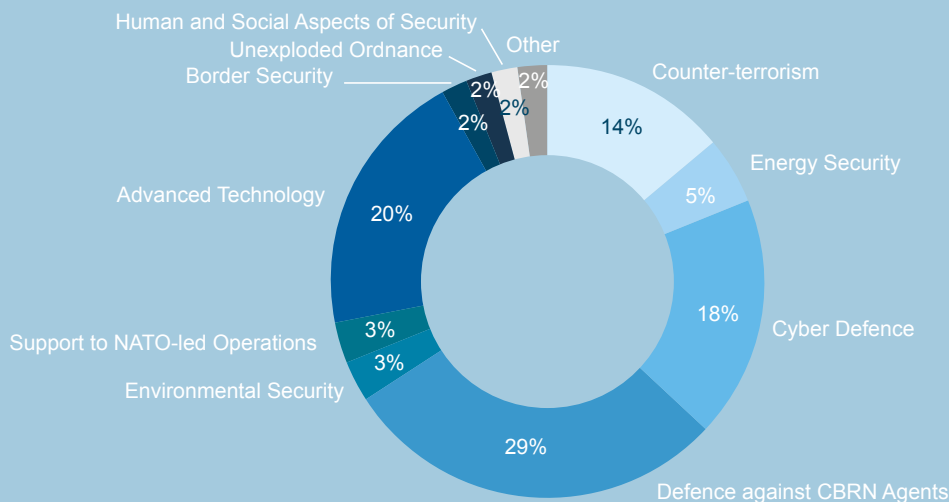


The application of advanced technologies helps NATO contribute to the fight against terrorism. In 2019, Allies signed a consortium agreement to develop DEXTER, an integrated system for the detection of explosives and firearms in a mass transit environment.

Deniz Yüksel-Beten (Turkey)

Senior Science for Peace and Security & Partnership Cooperation Advisor, NATO Headquarters, Brussels

Science for Peace and Security Programme: activities developed in 2019 by key priority area



Euro-Atlantic Disaster Response Coordination Centre

The Euro-Atlantic Disaster Response Coordination Centre is NATO's principal civil emergency response mechanism for working with partners in responding to natural and man-made disasters. It functions as a clearing-house mechanism for the coordination of requests by affected nations and offers of assistance by nations. The Centre is also a recognised leader in disaster response field exercises.

The Centre works in close cooperation with the NATO Military Authorities, the United Nations Office for the Coordination of Humanitarian Affairs, as well as the European Commission's Emergency Response Coordination Centre, and other international organisations.

In 2019, the Euro-Atlantic Disaster Response Coordination Centre participated in several

multinational civil emergency exercises organised by national entities and by other international organisations. This included exercises conducted by Azerbaijan, Montenegro, Romania and the International Atomic Energy Agency.

In November, an earthquake in Albania prompted a request for international assistance. After a request to Allies and partners by the Centre, several nations provided bilateral assistance directly to Albania, while Hungary and Israel offered their contributions of expertise and humanitarian aid through the Alliance's response mechanism.

The Centre also developed new guidelines for the planning, conduct and evaluation of international exercises for disaster response.

The Common Good: Working with International Organisations

NATO is committed to cooperating and consulting closely with other international organisations. The Alliance engages with a number of international organisations, including with the European Union,

the United Nations, the Organization for Security and Co-operation in Europe and the African Union. NATO also interacts regularly with the International Committee of the Red Cross.

The European Union

In 2019, NATO and the European Union continued to deepen their long-standing strategic cooperation. Key to this cooperation is the implementation of 74 agreed proposals, based on the Joint Declarations signed by the NATO Secretary General and the Presidents of the European Council and European Commission in 2016 and 2018.

Significant progress was made in a number of areas, including military mobility, countering hybrid and cyber threats, and Women, Peace and Security. Cooperation also continued between NATO Operation Sea Guardian and EU Operation Sophia.

In 2019, NATO supported the further development of European defence initiatives in the spirit of transparency and complementarity, calling for the fullest possible involvement of non-EU Allies.



Meeting between NATO Secretary General Jens Stoltenberg and EU High Representative for Foreign Affairs and Security Policy and Vice President of the European Commission Josep Borrell. Brussels, Belgium. December 2019.

Political dialogue between both organisations remained robust, with regular mutual briefings and with three meetings of the North Atlantic Council with the EU Political and Security Committee.

The United Nations

The relationship with the United Nations remained strong, supported by the NATO Liaison Office to the United Nations in New York and based on the Updated Joint Declaration on UN-NATO Secretariat Cooperation of 2018.

In 2019, NATO supported UN peace operations, including through training on countering improvised explosive devices and in the area of military medicine. Based on a request by the United Nations, NATO began exploring new areas of support to UN peace operations in Africa.

NATO and the United Nations cooperated in Jordan, with a joint three-year project aimed to enhance Jordan's chemical, biological, radiological and nuclear civil preparedness.

NATO continued to pursue broad political dialogue with the Department of Political and Peacebuilding Affairs. Human security issues are central to the relationship, including through mutual support for the implementation of resolutions on Women, Peace and Security. NATO deepened its relationship with the UN Office of Counter-Terrorism, the Office for Disarmament Affairs and the Office for the Coordination of Humanitarian Affairs.

The Organization for Security and Co-operation in Europe

The Organization for Security and Co-operation in Europe is a key partner for NATO and an important platform for security dialogue, including on arms control and confidence- and security-building measures.

Political dialogue between the two organisations remained strong and multi-faceted, including at the highest levels. The dialogue was supported by the NATO Liaison Office in Vienna, which became fully



I am proud of working to enhance political interoperability between NATO and the UN – and among Allies in New York. By bringing these different environments closer we set the stage for a new wave of practical cooperation to be delivered in the coming years.

Michal Miarka (Poland)

Civilian Liaison Officer to the United Nations,
New York, NY

operational in 2019. It touched on security issues in the Western Balkans, Ukraine, the Southern Caucasus, Central Asia, Afghanistan, the Middle East and North Africa, as well as on cross-cutting issues, such as cyber defence and Women, Peace and Security.

The African Union

NATO engaged with the African Union through practical cooperation with the support of its Senior Military Liaison Office in Addis Ababa, focused on operational, logistical and capacity-building assistance, as well as on providing subject matter experts in areas like exercise planning and logistics.

In November 2019, NATO and the African Union signed a new cooperation agreement, laying the groundwork for closer practical and political cooperation between the two organisations. NATO continued to support the build-up of the African Standby Force, a major African Union initiative aimed at enhancing the continent's ability to address conflicts, crises and humanitarian disasters.



KNM OTTO SVERDRUP

PROMOTING EQUALITY

Women, Peace and Security





A Dutch soldier deployed to NATO's enhanced Forward Presence Battlegroup in Lithuania readies herself to exit a frozen lake during a cold water immersion training exercise. Lithuania. December 2019.

Changing the attitudes, fighting prejudice and developing role models, (...) is at least some of the things you can do to try to strengthen the role of women in your armed forces. The smart thing to do and the right thing to do.

NATO Secretary General Jens Stoltenberg. Maritime Academy, Odesa, Ukraine, October 2019.

NATO and its partners are committed to promoting the full implementation of the Women, Peace and Security agenda. Gender mainstreaming and the increased representation of women in civilian and military structures improve effectiveness and contribute to a more modern, agile, ready, and responsive Alliance.

NATO's policy on Women, Peace and Security is built around the principles of integration, inclusiveness and integrity. These stem from NATO's founding values as well as the Alliance's commitment to continued adaptation. There is a growing understanding of how the integration of gender and the inclusion of women's voices in all aspects of NATO's work is essential to peace and security. The principle of integration reflects the importance of gender equality in NATO policies, programmes and projects. Inclusiveness demands that all existing barriers in the way of implementing the full Women, Peace and Security agenda are dismantled. Integrity is key to enhancing accountability and promoting the highest standards of conduct.



Over the course of 2019 Women, Peace and Security has become entrenched into the DNA of NATO and part of the new security paradigm. A people-centric approach is critical to NATO's core tasks and key to NATO's ability to succeed.

Clare Hutchinson (Canada)

Special Representative of the Secretary General for Women, Peace and Security, NATO Headquarters, Brussels

Progress in 2019

The imperative to incorporate a gender perspective into all of NATO's work is well-established, but what that means and why it matters is not always obvious. To illustrate how a gender perspective made a difference to the Alliance in 2019, here are two examples.

- The uncontrolled proliferation and misuse of small arms and light weapons can have a deeply detrimental effect on security, peace and stability. In order to improve the overall effectiveness of activities in this area, NATO's Arms Control, Disarmament, and Weapons of Mass Destruction Non-Proliferation Centre published, in October 2019, guidelines for gender mainstreaming in the domain of small arms and light weapons. These guidelines are designed to ensure that the intersectional contributions and concerns of women and men alike are acknowledged and addressed equally. Advantages of adopting a gender perspective in this area are highlighted in the guidelines and include a more comprehensive understanding of security, particularly in low-intensity conflicts, improved local buy-in for small arms and light weapons activities, and more innovative and effective solutions generated by including women in decision-making.
- The senior committee responsible for enabling delivery of interoperable NATO capabilities to all Allies is known as the Conference of National Armaments Directors. The Conference meets twice a year, and in 2019 considered the relevance of a gender perspective in relation to the development of military capabilities. In particular, this included a plan to improve the suitability of military equipment for women – an increasingly important consideration for the operational success of deployed forces.

The NATO Committee on Gender Perspectives held its 43rd annual conference in June, bringing together 150 participants from 36 countries to discuss accountability and the integration of a gender perspective. Key leaders discussed their experiences and the changes they have seen over time, and gender advisors and non-commissioned officers shared successes and challenges they have had with implementing gender perspectives at the tactical level.



Spanish Navy officer during Exercise Dynamic Mariner 19.
Spain, October, 2019.



NATO Committee on Gender Perspectives Annual Conference, NATO Headquarters. Brussels, Belgium. June 2019.

NATO also works with other international organisations on Women, Peace and Security. In March, NATO and the European Union organised a high-level conference in Sarajevo, Bosnia and Herzegovina to foster the involvement of young women in politics and public life throughout the Western Balkans. In Brussels, NATO's then Deputy Secretary General Rose Gottemoeller addressed women in the European External Action Service about her experience working in international relations and the valuable role women play in national and international organisations. In October, NATO and the Nordic Centre for Gender in Military Operations hosted NATO and EU military leadership to exchange experiences on the integration of a gender perspective in military operations. The discussion included practical ways in which the two organisations might improve exercises and training in this area.

On the margins of the annual UN Security Council Open Debate on Women, Peace and Security, NATO, the United Nations, the European Union, and the African Union launched the Regional Acceleration of the UN Security Council Resolution 1325 initiative, through which these organisations can share best practices and lessons learned on Women, Peace and Security. The platform provides a mechanism for cooperation and exchange, enabling all involved to benefit from and contribute to a growing repository of experience in this field.

NATO's Civil Society Advisory Panel on Women, Peace and Security was created in 2016 in order to provide more systematic engagement between the Alliance and civil society leaders in this realm. A review was undertaken after the first two years of work to assess whether any adjustments were necessary. As a result of this review, the composition



Left to right: Ursula von der Leyen (then Minister of Defence, Germany) and Margarita Robles Fernandez (Minister of Defence, Spain). Meeting of the North Atlantic Council in Defence Ministers' session, NATO Headquarters. Brussels, Belgium. June 2019.

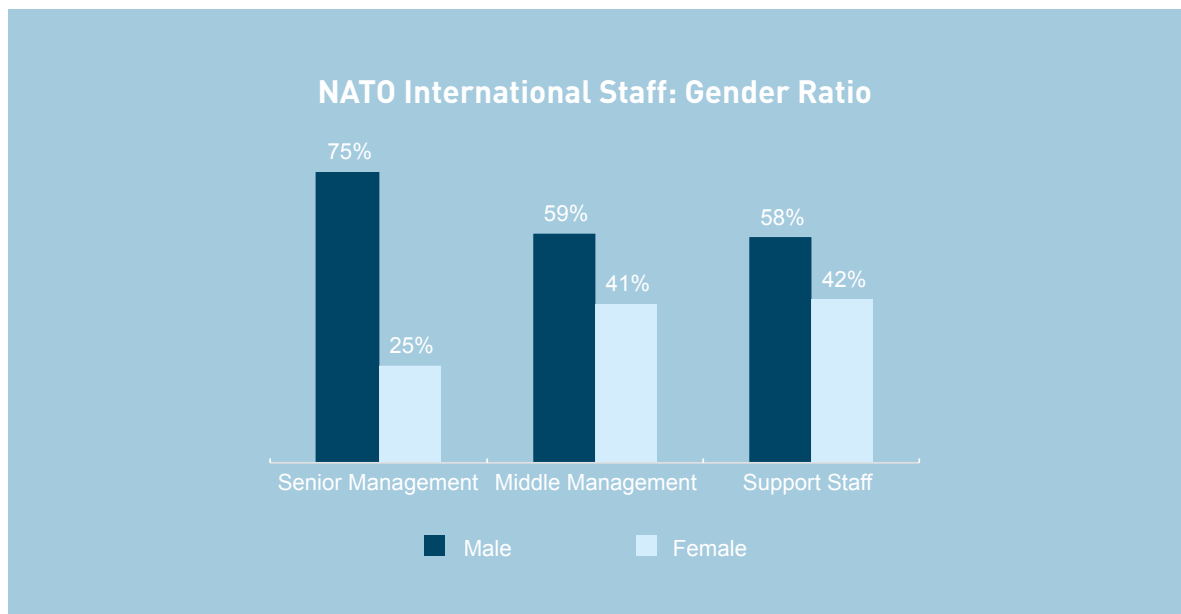
of the panel was revised in 2019 to make explicit the importance of including civil society representatives from conflict-affected areas in addition to those from NATO Allied and partner countries. The newly-formed panel met at NATO Headquarters in November and agreed on a number of areas for cooperation in 2020.

On International Women’s Day in March 2019, NATO hosted Mariam Safi, founding director of the Organization for Policy Research and Development Studies in Afghanistan, for a meeting of the North Atlantic Council with partners. During this session, she highlighted the plight of women in Afghanistan and emphasised the importance of including women in the peace negotiations.

Gender Balance Statistics

While gender balance in any organisation is only a part of the equation where integration and inclusion are concerned, statistics on gender balance are valuable. NATO is committed to tracking and publishing its gender balance statistics on an annual basis. In 2019, 40% of the NATO International Staff were women and, as depicted below, the ratio of women in senior management increased to 25%. Within the NATO International Military Staff, women represent 17% of the staff.

In 2019, the Alliance strengthened its commitment to improving these numbers further – and to making the Organization more effective in the process – by agreeing a diversity and inclusion action plan that will help to reduce barriers to entry and improve the recruitment and retention of a more diverse workforce.





ORGANISATION





NATO staff take pictures with Secretary General Jens Stoltenberg during a holiday reception at NATO Headquarters. Brussels, Belgium. December 2019.



The Oxford Philharmonic Orchestra performs at NATO Headquarters, celebrating the 70th anniversary of the Alliance. Brussels, Belgium. November 2019.

Our Alliance is unmatched. We protect close to 1 billion citizens on both sides of the Atlantic. So what we say and what we do carries a great deal of weight. To navigate this unpredictable and challenging world, we must remain politically united and militarily strong.

NATO Secretary General Jens Stoltenberg on receiving the Manfred Wörner Medal. Berlin, November 2019.

NATO Headquarters and Structures

NATO Headquarters in Brussels houses the Alliance's International Staff and International Military Staff, along with 29 Allied delegations and military representations, 19 partner missions and staff from several NATO Agencies. It is the main forum for the discussions and consultations that shape NATO policy and practice.



A green Headquarters

Since moving to the new Headquarters in the spring of 2018, NATO has been engaged in becoming a greener organisation, paying particular attention to waste reduction and eco-mobility investments. In 2019, NATO recycled 54% of its generated waste and developed different initiatives to drastically reduce the amount of waste produced at the Headquarters.

NATO's new Headquarters has sustainable features that allow it to minimise energy consumption, including through co-generation and geo-thermal energy solutions to provide the electricity and heating used on site, along with slab cooling and rainwater collection systems.

North Atlantic Council

The **North Atlantic Council** is the main political decision-making body in NATO. It provides a forum for consultation between Allies on all issues affecting their peace and security. It brings together high-level representatives from each member country to discuss policy and operational questions requiring collective decisions as well as to discuss and consult on topics of common interest and concern.

Because decisions are made on the basis of consensus, the policies agreed in the Council are considered the expression of the collective will of all member countries of the Alliance. The Council is chaired by the Secretary General and all its decisions have the same status, whether the meeting takes place during a Summit of NATO Heads of State and Government or in permanent session at the level of Ambassadors.



North Atlantic Council chambers. Brussels, Belgium. November. 2019.



Family portrait at the ceremony for NATO's 70th anniversary at the NATO Leaders' Meeting. London, United Kingdom. December 2019.

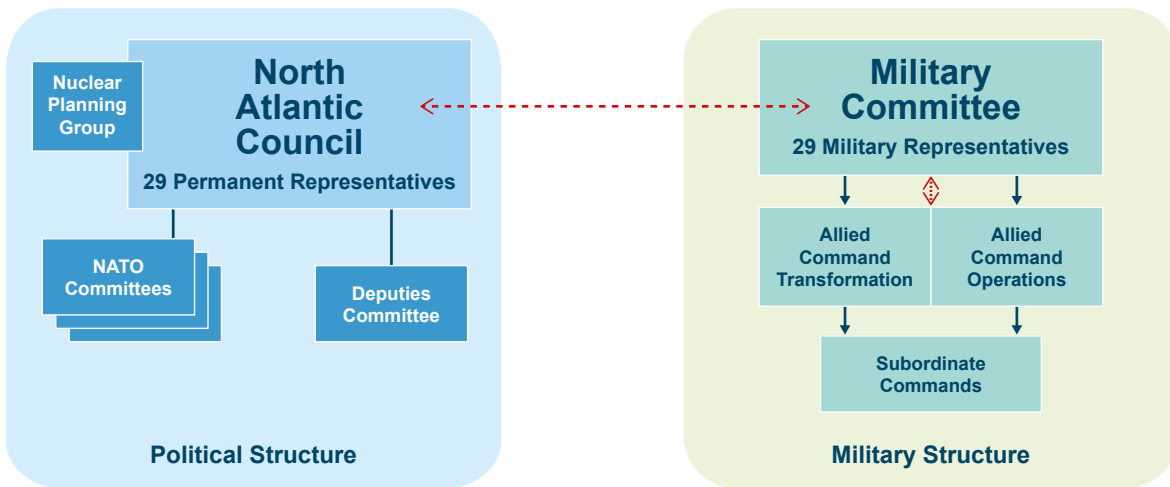
The London Leaders' Meeting

Heads of State and Government from all NATO Allies, plus invitee North Macedonia met in London on 4 December 2019 at the 30th formal meeting of NATO leaders. In London, they marked the 70th anniversary of the Alliance and took a range of decisions to adapt NATO for the future. Allies reaffirmed their commitment to Article 5, increased the readiness of NATO's forces, declared space as the fifth operational domain alongside land, air, sea and cyberspace, agreed on a new action plan to step up efforts in the fight against terrorism and committed to ensuring safety of critical infrastructure, including relying on secure and resilient 5G systems. Leaders also addressed the question

of burden-sharing, recognising the unprecedented progress and expressing their commitment to continue pursuing the positive trajectory of defence spending. Furthermore, NATO reconfirmed that its response to Russia's deployment of intermediate-range, nuclear-capable missiles remains defensive, coordinated, and committed to strengthening effective arms control, disarmament and non-proliferation.

Leaders reiterated their openness to pursue meaningful dialogue with Russia and also addressed the rise of China and the challenges and opportunities it raises for the Alliance.

NATO's Political and Military Structure



NATO Military Authorities

All 29 Allies are present within NATO's military structures, with over 6,300 military personnel and 720 civilians working across the International Military Staff and the headquarters of the NATO Command Structure.

The **Military Committee** is the most senior military authority within NATO and is composed of the Chiefs of Defence of all NATO Allies. Since June 2018, the Military Committee is led by Air Chief Marshal Sir Stuart Peach from the United Kingdom Royal Air Force.

The Military Committee provides the North Atlantic Council with consensus-based military advice. It works closely with the two Strategic Commanders to bring plans, issues and recommendations forward for political considerations. While NATO Chiefs of Defence convene three times a year, the Military Committee meets on a day-to-day basis in permanent session with Military Representatives who act on behalf of their national Chiefs of Defence.

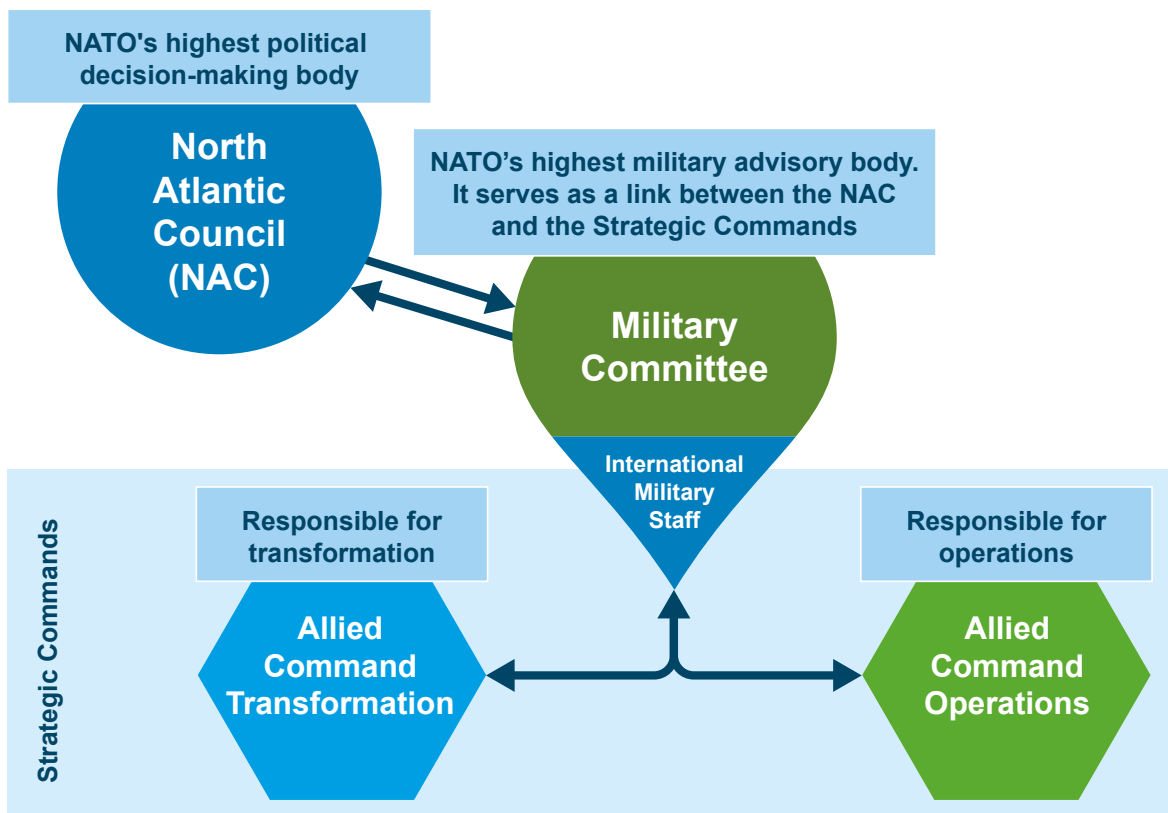


The Military Committee, led by its Chairman, Air Chief Marshal Sir Stuart Peach, visits Allied Land Command, Izmir, Turkey. February 2019.

The executive body of the Military Committee is the **International Military Staff**. It comprises approximately 500 dedicated military and civilian personnel from NATO Allies and partner countries. It is responsible for preparing assessments and analysis on NATO military issues, identifying areas of strategic and operational interest, and

proposing courses of action. It also ensures that NATO decisions and policies on military matters are implemented by the appropriate NATO military bodies. In July 2019, Lieutenant General Hans-Werner Wiermann from Germany became the Director General of the International Military Staff.

How does the Military Committee fit into the decision-making process?



To carry out its core military functions, the Alliance relies on the NATO Command Structure and the NATO Force Structure.

The **NATO Command Structure** has the strategic role to command and control the Alliance's joint operations. NATO has two Strategic Commands: Allied Command Operations and Allied Command Transformation. The NATO Command Structure consists of these two commands and their subordinate commands and headquarters. Military

personnel for the NATO Command Structure are provided to NATO by all 29 Allies and are supported through their national defence budgets.

Allied Command Operations is responsible for the planning and execution of all Alliance operations and missions. Its main headquarters is in Mons, Belgium and other subordinate headquarters exist across several other NATO nations. On 3 May 2019, General Tod D. Wolters, United States Air Force, took over the command of Allied Command Operations and became



General Tod Wolters, Supreme Allied Commander Europe, and General André Lanata, Supreme Allied Commander Transformation. NATO Headquarters, Brussels, Belgium. May 2019.

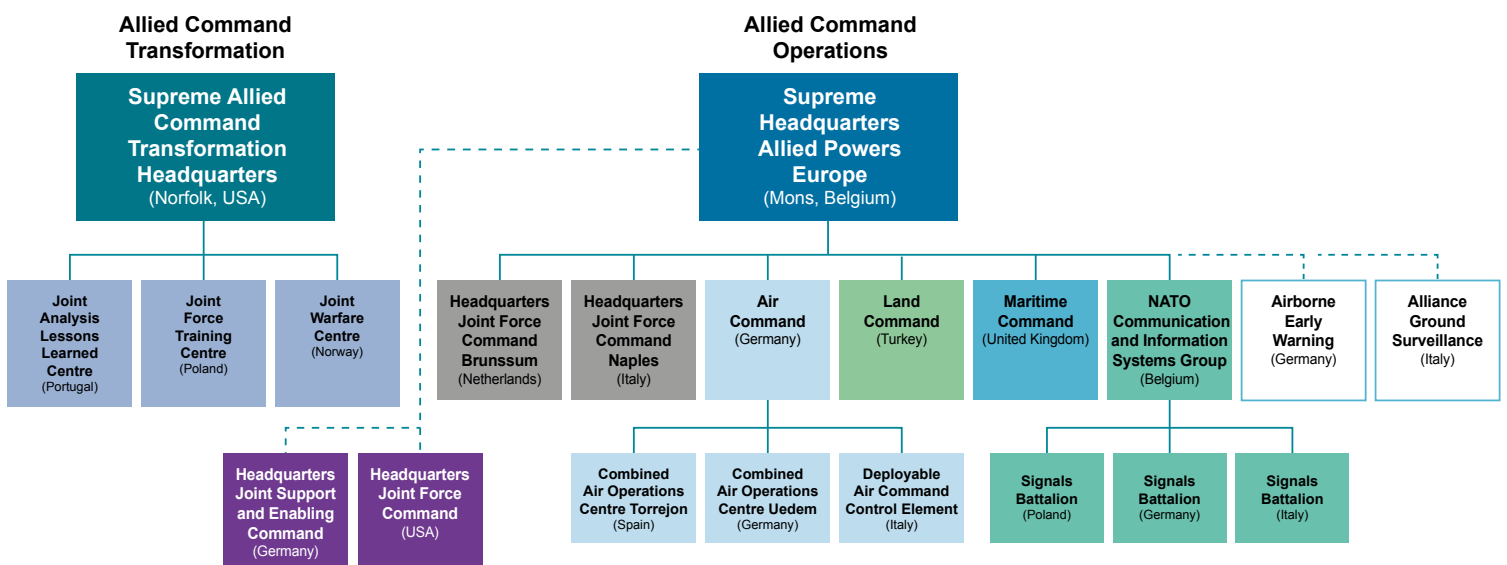
Supreme Allied Commander Europe (SACEUR). SACEUR is responsible for the preparation and conduct of all Alliance military operations, assumes the overall command of operations at the strategic level and issues strategic military direction to the subordinate commanders.

Allied Command Transformation leads the transformation of NATO's military structure, forces, capabilities and doctrine. Its main headquarters is in Norfolk, Virginia in the United States and it has subordinate commands in other NATO nations. Since

June 2018, Allied Command Transformation has been headed by Supreme Allied Commander Transformation General André Lanata, French Air Force.

The **NATO Force Structure** comprises national and multinational forces and their associated operational headquarters. These are owned by Allies, but placed at the Alliance's disposal on a permanent or temporary basis under specified criteria. These forces form a pool from which NATO can draw to meet the Alliance's requirements for conducting and sustaining operations.

NATO Command Structure



International Staff

In 2019, the International Staff at NATO Headquarters comprised 1,130 staff members. Nationals of nearly all member nations were employed in the International Staff, supporting the consensus-building process of the Alliance and helping to implement the decisions of the North Atlantic Council.¹

NATO has a merit-based recruitment process and endeavours to build a staff that represents the citizens it serves. In 2019, the North Atlantic Council agreed a new Human Resources Strategy designed to attract and develop the most talented people. In addition, NATO adopted a new Diversity and Inclusion Action Plan to guide the Alliance's efforts to further promote diversity and equality, and empower all employees to achieve their full potential.



NATO is an attractive employer and I feel proud of the work we do at Human Resources in supporting our colleagues wherever they serve the Alliance.

Floricica Olteanu (Romania)

Human Resources Officer,
NATO-wide Policy and Strategy Coordination,
NATO Headquarters, Brussels



NATO Secretary General Jens Stoltenberg and the Ambassadors of the North Atlantic Council bid a fond farewell to Deputy Secretary General Rose Gottemoeller. NATO Headquarters, Brussels, Belgium. October 2019.



Outgoing Deputy Secretary General Rose Gottemoeller with incoming Deputy Secretary General Mircea Geoană. NATO Headquarters, Brussels, Belgium. October 2019.

2019: The Alliance Bids Farewell to Rose Gottemoeller and Welcomes New Deputy Secretary General Mircea Geoană

In October, the Alliance bid farewell to Rose Gottemoeller. Ms Gottemoeller took office in October 2016 and was the first woman in NATO's 70-year history to hold the post of Deputy Secretary General. During her tenure at NATO, Ms Gottemoeller helped guide the Alliance's policy on Russia, managed the transition to the Alliance's new Headquarters – one of Europe's largest architectural projects in years – and coordinated NATO's efforts in the fight against

terrorism and in advancing the Women, Peace and Security agenda.

Romanian diplomat Mircea Geoană took up his post as NATO Deputy Secretary General on 17 October 2019, becoming the first Deputy Secretary General from Central and Eastern Europe. Mr Geoană was previously President of the Romanian Senate, Foreign Minister and Romania's Ambassador to the United States.

¹ Except Iceland and Montenegro.



NATO's largest tech conference, the NATO Information Assurance Symposium, attracted record attendance from over 1,800 NATO officials, national experts, small and medium enterprises, start-ups and academia delegates from 46 countries. Mons, Belgium. October 2019.

Agencies and Organisations

The Alliance is served by a number of different agencies. These manage essential tasks such as communications, logistical support and capability development.

NATO Communications and Information Agency

The NATO Communications and Information Agency acquires, deploys and defends NATO's communications systems. It is on the front line against cyber-attacks and malicious activity, monitoring, identifying and preventing potential threats, and working closely with governments and industry to prevent future debilitating attacks.

The Agency has an annual turnover of EUR 1 billion and operates by contracting with industries across the 29 NATO nations.

The Agency is spread over more than 30 locations and has deployed staff in support of NATO operations and missions. In 2019, this meant coordinating communications support for more than 100 NATO and national exercises, and seven NATO operations and missions. For example, in November, the Agency put IT systems to the test in 10 different locations across Europe, in the first iteration of a large and complex joint command post



Agency General Manager Kevin Scheid (right) and Michael Street, Head of Innovation and Data Science (left) with Adrian Tofting (centre), CEO of Vake, the winner of the Innovation Challenge 2019 at the NITEC. Oslo, Norway. May 2019.

exercise, Trident Jupiter 2019. Moreover, Agency experts supported the space-related elements of the exercise.

In 2019, the Agency secured an agreement for the provision of space segment services between 2020 and 2035 by Italy, France, the United Kingdom and the United States to ensure space data and services are effectively delivered to NATO operations. These services are valued at EUR 1 billion and represent one of the largest acquisitions in the history of NATO.



Afghan President Ashraf Ghani accompanied by First Lady Rula Ghani attended the official opening ceremony for the Pediatrics & Women's Wellness Centre in Afghanistan, built by the NATO Support and Procurement Agency in 2019. The centre, located inside the Kabul National Military Hospital compound in Kabul, is the most comprehensive pediatric facility in Afghanistan. Kabul, Afghanistan. October 2019.

The NATO Communications and Information Agency also leads the technological effort of digitalising the Alliance, delivering critical technology that enables Allies to communicate and work together. For this purpose, it also invests in engaging with the private sector, including through its annual flagship industry event, the NATO Innovation and Technology Conference, attended by government institutions, partner nations, academia, multinational organisations and industry. The event aims to connect with existing communities and form new ones, tapping into wider ecosystems for ideas, insights and solutions with a focus on challenges posed by technologies with a transformative effect.

The Agency also organises the annual Defence Innovation Challenges to bring forward innovative thinking and technology solutions from small businesses and academia in areas of critical importance to NATO such as data science tools and approaches for natural language processing, capabilities for sensing the maritime environment and solutions to the telecommunication challenges in the High North.

In 2019, the Agency also opened an Academy in Oeiras, Portugal, offering Allies and NATO staff training and education services on all aspects of communication and information systems; command, control, communications and computers; intelligence, surveillance and reconnaissance; and cyber.

NATO Support and Procurement Agency

The NATO Support and Procurement Agency is NATO's main services provider, delivering a broad spectrum of integrated capabilities for the Alliance, its nations and partners. The Agency brings together NATO's logistics support and procurement activities, providing multinational support solutions for its customers. The Agency's annual business volume has continuously increased in recent years, exceeding EUR 3.5 billion in 2019.

The Agency is headquartered in Luxembourg with duty stations in France, Hungary and Italy. It employs more than 1,490 civilians, with over 50 staff deployed at any one time managing over 2,500 contractors to support operations.

In 2019, the Agency reached significant milestones in supporting NATO operations: exceeding 1.5 billion litres of fuel distributed, and providing more than 180 million meals.

The NATO Support and Procurement Agency also continued to enable capability development and sustainment for NATO Allies and partners by supporting more than 90 weapons systems and 170 projects through full life-cycle management, including acquisition, in-service support and disposal.

The NATO Airlift Management Programme based in Hungary owns, manages and supports a fleet of three C-17 aircraft, delivering in 2019 more than

2,000 flight hours and enabling strategic airlift capability nations to meet their strategic and tactical airlift requirements. Furthermore, the Agency is in charge of implementing most NATO Trust Fund projects, supporting NATO partners in security and defence-related areas.

The NATO Support and Procurement Agency plays a key role as operational enabler through the Central Europe Pipeline System Programme, which is the largest NATO pipeline system with a network of 5,100 km. The Programme manages the transport, storage and distribution of fuel to supply the military forces of the Alliance.

NATO Science and Technology Organization

The NATO Science and Technology Organization delivers innovation, advice and scientific solutions to meet the Alliance's evolving needs. In 2019, the NATO Science and Technology Organization's annual programme of work included over 300 projects covering a wide spectrum of topics such as applications of Artificial Intelligence to anti-submarine warfare and naval mine warfare military capabilities.

The Organization is founded on a community of more than 6,000 actively engaged scientists and engineers from Allied and partner countries and can be described as the world's largest collaborative defence and security research forum. In 2019, its programme of work also comprised projects related to big data, directed energy, quantum capabilities and military decision-making.

The Organization has scientific and technical committees and three executive bodies: the Centre for Maritime Research and Experimentation in La Spezia, Italy; the Collaboration Support Office in Paris, France; and the Office of the Chief Scientist at NATO Headquarters in Brussels. All committees and executive bodies are governed by the NATO Science and Technology Board. The NATO Chief Scientist, Dr Bryan Wells (UK), chairs the Board and serves as the scientific advisor to NATO's senior leadership.

NATO Standardization Office

The NATO Standardization Office supports the development and update of standards in order to enable interoperability between NATO forces and capabilities.

In 2019, the Office advanced several projects related to cyberspace operations, strategic communication, automated air-to-air-refuelling, and maritime unmanned systems by promoting and facilitating Allies' development of standards for these activities and capabilities. The Office also upgraded its online services, which enable remote collaboration among over 17,000 subject matter experts and provide access to NATO standards by an even wider user community, generating nearly 18,000 hits per working day. To support partners, the NATO Standardization Office also delivered training in Switzerland and briefings to Mediterranean Dialogue and Istanbul Cooperation Initiative nations on the development, management and application of NATO standards.

NATO Centres of Excellence

NATO's Centres of Excellence are nationally or multinationally sponsored entities that offer expertise and experience to the benefit of the Alliance. NATO does not directly fund them and they are not part of the NATO Command Structure.

The Centres contribute to the Alliance's ongoing adaptation and learning. They cover areas such as cyber defence, military medicine, energy security,

naval mine warfare, defence against terrorism, strategic communications, civil-military operations and cold weather operations. They support the transformation and adaptation of NATO as a whole.

Allied Command Transformation has overall responsibility for NATO Centres of Excellence and is in charge of the establishment, accreditation and periodic assessments of the Centres.

CENTRE OF EXCELLENCE	LOCATION
Analysis and Simulation for the Preparation of Air Operations	Lyon Mont Verdun, FRA
Civil-Military Cooperation	The Hague, NLD
Cold Weather Operations	Elverum, NOR
Combined Joint Operations from the Sea	Norfolk, Virginia, USA
Command and Control	Utrecht, NLD
Cooperative Cyber Defence	Tallinn, EST
Counter-Improvised Explosive Devices	Madrid, ESP
Counter-Intelligence	Krakow, POL
Crisis Management & Disaster Response	Sofia, BGR
Defence Against Terrorism	Ankara, TUR
Energy Security	Vilnius, LTU
Explosive Ordnance Disposal	Trencin, SVK
Human Intelligence	Oradea, ROU
Joint Air Power	Kalkar, DEU
Joint Chemical, Biological, Radiological and Nuclear Defence	Vyškov, CZE
Military Engineering	Ingolstadt, DEU
Military Medicine	Budapest, HUN & Munich, DEU
Military Police	Bydgoszcz, POL
Modelling and Simulation	Rome, ITA
Mountain Warfare	Begunje na Gorenjskem, SVN
Naval Mine Warfare	Oostende, BEL
Operations in Confined and Shallow Waters	Kiel, DEU
Security Force Assistance	Rome, ITA
Stability Policing	Vicenza, ITA
Strategic Communications	Riga, LVA

NATO Funding

The costs of running NATO are funded through both direct and indirect contributions by its Allies.

Indirect contributions are by far the largest type of contributions and include Allies' participation in NATO-led operations and missions.

Direct contributions are those made to finance capabilities and initiatives that serve all 29 Allies, such as NATO-wide air defence or command and control systems. Costs for direct contributions are borne collectively through common funding, with all 29 members contributing according to an agreed cost-share formula, based on individual nations' Gross National Incomes. Discussions on fairer burden-sharing among the Allies throughout 2019 culminated with the adjustment of cost-share formulas.



I am proud to support the political leadership of the Alliance in their success to reach fairer burden-sharing.

Martine Letellier (France)

Head, Finance & Secretariat Branch
NATO Office of Resources,
NATO Headquarters, Brussels

NATO Common Funding Reform

Allies regularly review cost shares for NATO's common funded budgets. In 2019 Allies agreed a new cost-share formula for the upcoming years. Under the new formula, for the period 2021-2024, cost shares attributed to most European Allies and Canada will increase, while the United States' share will decrease. The revised budget contributions refer to the NATO Security Investment Programme as well as the military and civil budget. This is an important demonstration of Allies' commitment to the Alliance and to fairer burden-sharing. Under the new arrangements, the United States' contribution will be reduced from around 22% to around 16%.

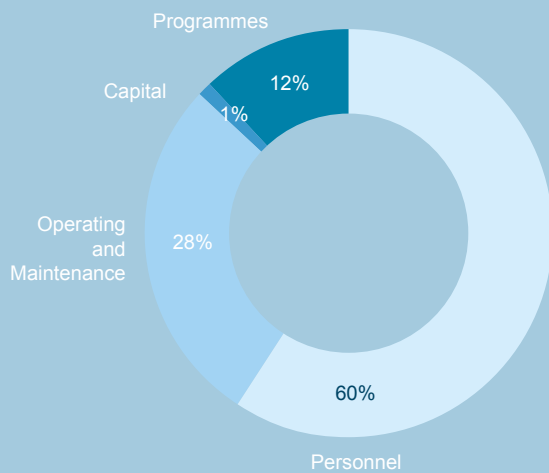
Common funding finances NATO's principal budgets and programmes: the Civil Budget, the Military Budget and the NATO Security Investment Programme. A commonly agreed set of financial regulations and an accounting framework are in place to ensure the proper management of funds provided by nations, and corresponding financial statements are made available to the public.

Each NATO project is financed through a combination of common funding, joint funding, multinational funding and national funding. Participating nations, in cooperation with the military authorities, identify the requirements, the priorities and the funding arrangements, but NATO provides political and military oversight. The common funding process is overseen by the North

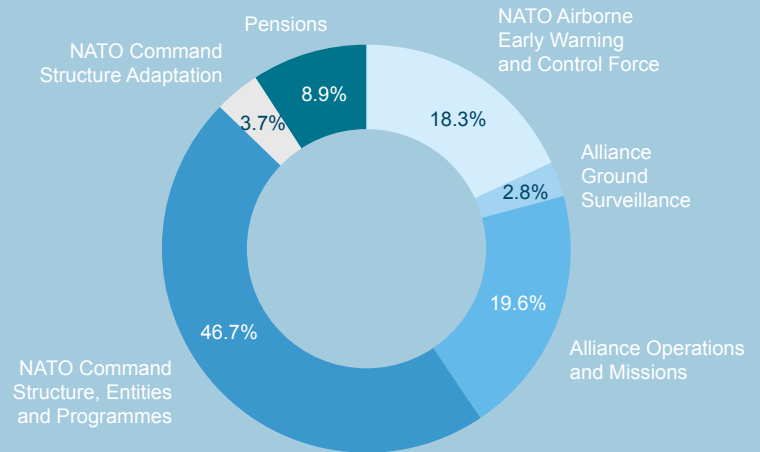
Atlantic Council, managed by the Resource Policy and Planning Board, and implemented by the Budget Committee and the Investment Committee.

NATO also provides financial oversight for a number of Trust Funds used to facilitate the participation of non-NATO nations on specific country- or issue-based projects. These are funded through voluntary national contributions.

2019 Core Civil Budget



2019 Military Budget Ceilings



Civil Budget for 2019

The Civil Budget funds personnel expenses, operating costs, and capital and programme expenditures of the International Staff at NATO Headquarters. In 2019, the International Staff establishment was 1,130 posts. The core 2019 Civil Budget, excluding pension liabilities, was agreed at EUR 206 million, a 1.7% increase compared to 2018.

The North Atlantic Council approves the Civil Budget and ensures expenditures are aligned with the Alliance's political priorities. In 2019, NATO continued improving overall accountability and transparency of its resource management through an objective-based budgeting framework that allows Allies to directly match the resources provided to the Civil Budget with the outputs achieved.

Military Budget for 2019

The Military Budget covers the operating and maintenance costs of the NATO Command Structure and other NATO military entities. It is composed of 38 separate budgets, financed through contributions from Allies' national defence budgets according to agreed cost-share formulas, typically from national defence ministries.

The Military Budget is approved by the North Atlantic Council, overseen by the Budget Committee – with representatives from all NATO member countries – and implemented by the individual budget holders. In all cases, the provision of military staff remains a nationally funded responsibility. The military budget ceiling for 2019 was EUR 1.43 billion.

NATO Security Investment Programme

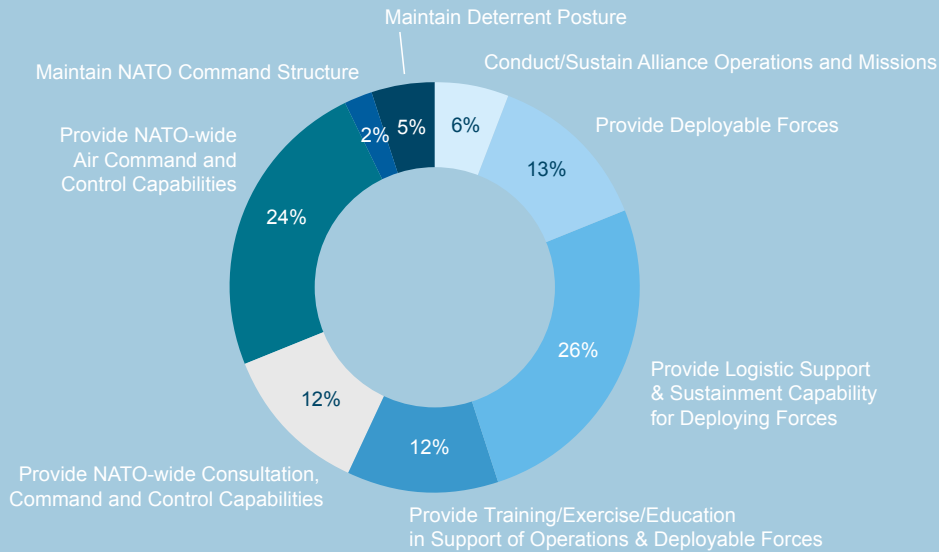
The NATO Security Investment Programme supports NATO's mission through the delivery of common-funded capabilities to the two NATO Strategic Commands: Allied Command Operations and Allied Command Transformation.

Established in 1951, the Programme is executed through capability packages and approved by the North Atlantic Council to fund a number of projects implemented by NATO Allies and Agencies. Annual

funding is around EUR 700 million, with a total of EUR 7.6 billion-worth of projects currently under implementation.

In 2019, the NATO Security Investment Programme continued to deliver capabilities such as satellite communications, cyber defence, surveillance and control. Additional investments were devoted to supporting upgrades to NATO and Allied airbases.

NATO Security Investment Programme 2019 Expenditure



Deliveries approved by the NATO Investment Committee included:

- A EUR 1 billion investment in cyber, satellite and surveillance technology. NATO will acquire roughly EUR 1 billion of satellite capacity for the period 2020-34, its biggest-ever investment in satellite capacity. The investment is intended to allow NATO forces to communicate with each other more securely and more quickly, permitting more effective sharing of information gathered.
- A EUR 232 million investment in a major project to support US forces in Powidz, Poland. This is NATO's biggest single infrastructure investment in more than 30 years. The funding will go towards building a facility for the long-term storage and maintenance of US military equipment prepositioned in Poland. The initial contract worth EUR 166 million was awarded to a Polish-German consortium in November 2019. Works will start in the summer of 2020.

Engaging with Citizens

NATO actively engages with people around the world to explain and promote the Alliance's efforts and activities in Allied countries and beyond.

In a more complex and competitive information environment, NATO continues to work hard to gain and maintain public support, as well as to counter disinformation. To do so, it uses a wide variety of tools, including press and media activities, NATO-sponsored workshops and round tables, speeches, the dedicated web portal 'Setting the Record Straight', digital channels and briefing programmes at NATO Headquarters in Brussels. With its proactive communications, NATO aims to ensure that its fact-based narrative features prominently in the information space.



NATO Secretary General Jens Stoltenberg with World War II veterans. Arnhem, the Netherlands. September 2019.

Digital Outreach

Social media is an essential tool to engage with NATO publics. In 2019, NATO social media platforms continued to grow by 10% altogether. The fastest growing platforms in 2019 were Instagram (+106%) and LinkedIn (+35%).



Members of NATO Battlegroup Estonia helped the non-profit Narva Cat Room move to its new location across town. Estonia, June 2019.
Photo credit: Aili Vahla/ERR



The principle of our integrated digital outreach is that, for most of these people, who will never engage directly with NATO, digital NATO is NATO. We believe that our collective digital presence is an avatar of our Alliance and that it is a critical space for NATO to engage with our populations.

Rebecca Obstler (USA)

Head, Digital Outreach and Communications
Technologies Section,
NATO Headquarters, Brussels



NATO's history is not (only) about the past. Providing access to the archives helps the public to understand NATO and build trust for the Alliance's current and future activities.

Ineke Deserno (The Netherlands)

NATO Archivist,
NATO Headquarters, Brussels

Improving Transparency

2019 marked the 20th anniversary of the Alliance opening access to archived documents to the public.

NATO remains committed to transparency and openness, with the annual declassification and public disclosure of thousands of NATO documents related to its primary functions and activities. Progress continued in 2019, with a total of 14,690 documents disclosed to the public.

In the wake of its 70th anniversary, NATO opened its doors and launched the NATO Declassified Centre, a dedicated space at NATO Headquarters designed to raise awareness about the Organization and its historic milestones. The facilities include interactive displays to guide learning about the Organization; as well as historical artefacts, documents and video emphasising key moments in the Alliance's history. By extending NATO's public disclosure activities to include this dimension of public engagement grounded in its own archival heritage, the NATO Declassified Centre offers a unique contribution to building the public trust that is crucial to the success of the Alliance.

Resolute Support Mission

The Resolute Support Mission is a NATO-led mission to train, advise and assist the Afghan security forces and institutions. The mission was launched on 1 January 2015, immediately following the stand-down of the International Security Assistance Force.

The legal framework for the Resolute Support Mission is provided by a Status of Forces Agreement, signed in Kabul on 30 September 2014 and ratified by the Afghan Parliament on 27 November 2014. The Agreement defines the terms and conditions under which NATO forces are deployed, as well as the activities they are authorised to carry out. The Mission is also supported by United Nations Security Council Resolution 2189, unanimously adopted on 12 December 2014.

In 2019, the Resolute Support Mission consisted of almost 17,000 troops from 38 NATO Allies and partners.

The Mission operates with one 'hub' (Kabul/Bagram) and four 'spokes' (Mazar-e-Sharif in the north, Herat in the west, Kandahar in the south and Laghman in the east). It carries out training, advice and assistance activities in support of the Afghan government's four-year security roadmap (launched in 2017), which aims to increase the effectiveness and accountability of the Afghan national security forces and institutions. The roadmap focuses on leadership development, fighting capabilities (with an emphasis on the Afghan Special Operations Forces and the air force), unity of command and fighting corruption. The Mission also performs supporting functions in several areas. These include: operational planning; budgetary development; force generation process; management and development of personnel; logistical sustainment; and civilian oversight in order to ensure the Afghan security forces and institutions act in accordance with the rule of law and good governance.

Those countries not contributing troops to the Resolute Support Mission support this Mission in different ways, as well as the broad effort to strengthen the sustainment of the Afghan National Defence and Security Forces in the long term.

Allies and partner countries also contribute to the financing of the Afghan National Defence and Security Forces, and enhance the Enduring Partnership with Afghanistan, by strengthening political consultations with the country and by strengthening practical cooperation in areas of specific interest for Afghanistan.

These efforts are part of the broader engagement of the international community in Afghanistan to ensure that Afghanistan is never again a safe haven for terrorism.

Commander: General Austin S. Miller (USA)
NATO Senior Civilian Representative: Ambassador Sir Nicholas Kay KCMG (UK)

Resolute Support Mission Command (RSM) in Kabul
RSM Headquarters

Commander: General Austin S. Miller (USA)
Deputy Commander: Lieutenant General Giles Hill
CBE (GBR)

Train, Advise and Assist Command (TAAC) Capital
Headquarters TAAC(C) in Kabul (TUR)
Commander: Brigadier General Şahin Iğdir (TUR)

Train, Advise and Assist Command (TAAC) North:
Headquarters TAAC(N) in Mazar-e Sharif (DEU)
Commander: Brigadier General Jürgen Brötz (DEU)

Train, Advise and Assist Command (TAAC) East:
Headquarters TAAC(E) in Laghman (USA)
Commander: Brigadier General Donn H. Hill (USA)

Train, Advise and Assist Command (TAAC) South:
Headquarters TAAC(S) in Kandahar (USA)
Commander: Brigadier General Miles Brown (USA)

Train, Advise and Assist Command (TAAC) West:
Headquarters TAAC(W) in Herat (ITA)
Commander: Brigadier General Giovanni Parmiggiani
(ITA)

Train, Advise and Assist Command (TAAC) Air:
Commander: Brigadier General Jeffery D. Valenzia
(USA)

38 Troop-Contributing Nations (as at December 2019)

Albania	135
Armenia	121
Australia	300
Austria	16
Azerbaijan	120
Belgium	83
Bosnia and Herzegovina	68
Bulgaria	159
Croatia	110
Czech Republic	306
Denmark	155
Estonia	42
Finland	67
Georgia	871
Germany	1,300
Greece	11
Hungary	95
Italy	895
Latvia	40
Lithuania	50
Luxembourg	2
Mongolia	233
Montenegro	27
Netherlands	160
New Zealand	13
North Macedonia	47
Norway	58
Poland	355
Portugal	210
Romania	797
Slovakia	51
Slovenia	8
Spain	66
Sweden	25
Turkey	588
Ukraine	21
United Kingdom	1,100
United States	8,000
Total Strength ¹ :	16,705

Kosovo Force

NATO-KFOR's mission is to contribute to maintaining a safe and secure environment as mandated by United Nations Security Council Resolution 1244.

NATO cooperates with the United Nations, the European Union and other international actors, as appropriate, to support the development of a stable and peaceful Kosovo. KFOR supports the development of professional, democratic and multi-ethnic security structures in Kosovo.

Commander: Major General Michele Risi (ITA)

28 Troop-Contributing Nations (as at December 2019)

Albania	29
Armenia	41
Austria	330
Bulgaria	22
Canada	5
Croatia	36
Czech Republic	9
Denmark	34
Finland	20
Germany	70
Greece	111
Hungary	395
Ireland	13
Italy	542
Lithuania	1
Moldova	41
Montenegro	2
Norway	2
Poland	249
Portugal	3
Romania	57
Slovenia	242
Sweden	4
Switzerland	165
Turkey	273
Ukraine	40
United Kingdom	23
United States	660
Total Strength:	3,419

¹ The troop numbers reported reflect the overall presence in Afghanistan of each individual contributing nation. They are based on information provided directly by individual contributing nations and may include forces deployed in a support role for Resolute Support Mission. They should be taken as indicative as they change regularly, in accordance with the deployment procedures of the individual troop-contributing nations.

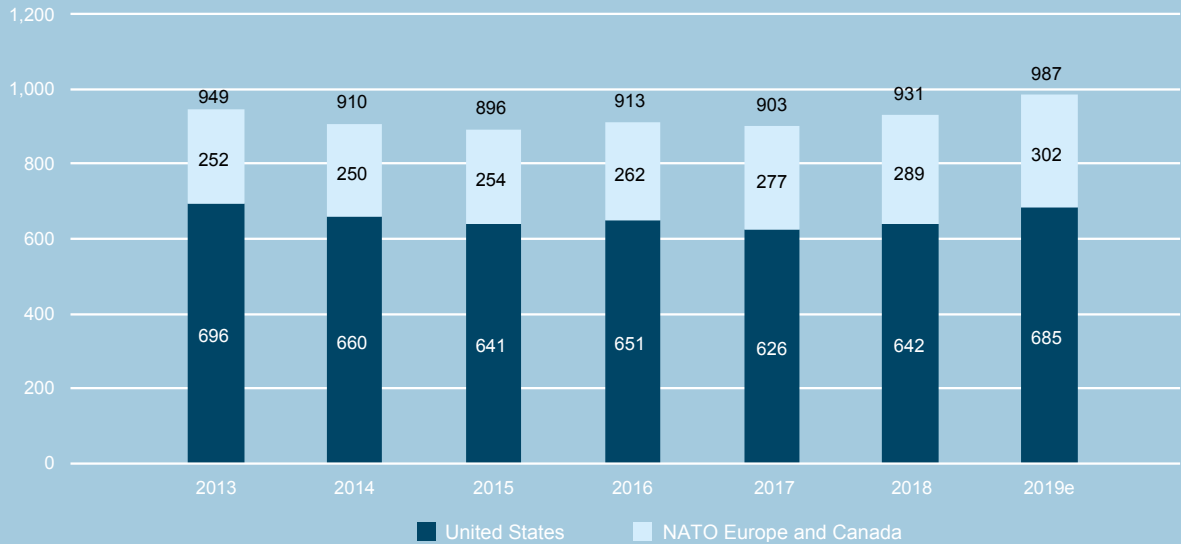
Defence Expenditure of NATO Countries (2013 – 2019)

NATO collects defence expenditure data from Allies on a regular basis and presents aggregates and subsets of this information. Each Ally's Ministry of Defence reports current and estimated future defence expenditure according to an agreed definition of defence expenditure. The amounts represent payments by a national government actually made, or to be made, during the course of the fiscal year to meet the needs of its armed forces, those of Allies or of the Alliance. In the figures and tables that follow, NATO also uses economic and demographic information available from the Directorate-General for Economic and Financial Affairs of the European Commission (DG-ECFIN), and the Organisation for Economic Co operation and Development (OECD).

In view of differences between both these sources and national GDP forecasts, and also the definition of NATO defence expenditure and national definitions, the figures shown in this report may diverge considerably from those which are quoted by media, published by national authorities or given in national budgets. Equipment expenditure includes expenditure on major equipment as well as on research and development devoted to major equipment. Personnel expenditure includes pensions paid to retirees.

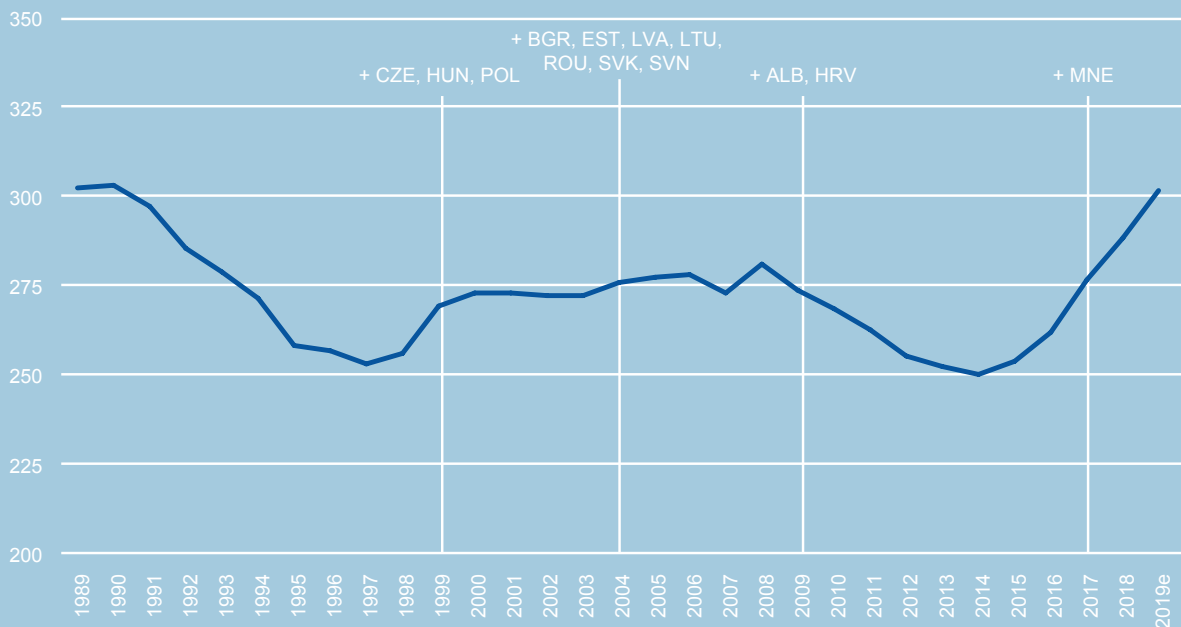
The cut-off date for information used in this report was 21 November 2019. Figures for 2019 are estimates.

**Graph 1 : Defence expenditure
(billion US dollars, based on 2015 prices and exchange rates)**



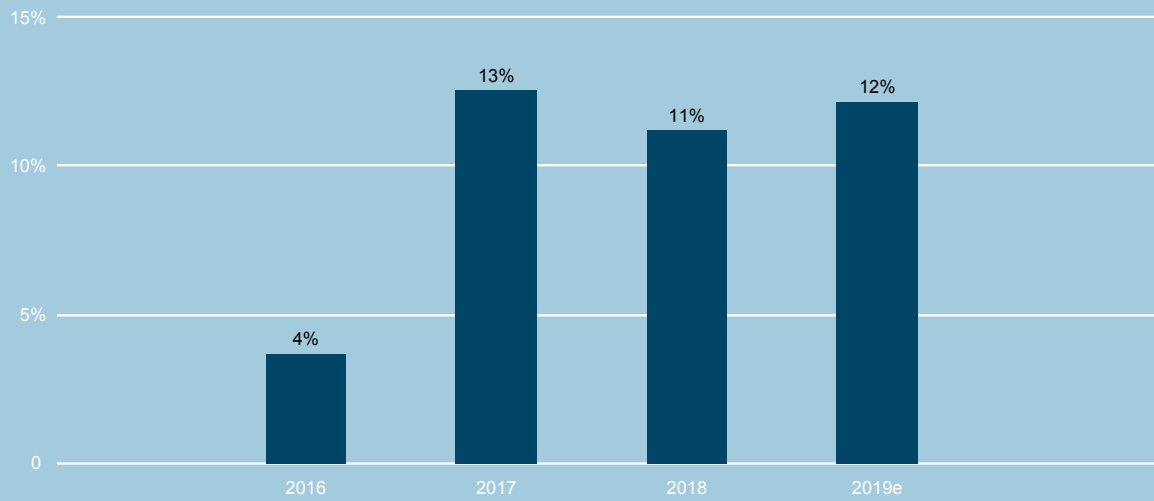
Notes: The NATO Europe and Canada aggregate from 2017 onwards includes Montenegro, which became an Ally on 5 June 2017. Figures for 2019 are estimates.

**Graph 2 : NATO Europe and Canada - defence expenditure
(billion US dollars, based on 2015 prices and exchange rates)**



Notes: Includes enlargements which took place in: 1999 (3 Allies), 2004 (7 Allies), 2009 (2 Allies) and 2017 (1 Ally). Figures for 2019 are estimates.

**Graph 3 : NATO Europe and Canada - major equipment expenditure
(annual real change, based on 2015 prices and exchange rates)**



Notes: The NATO Europe and Canada aggregate from 2017 onwards includes Montenegro, which became an Ally on 5 June 2017. Figures for 2019 are estimates.

**Table 1 : Defence expenditure
(million national currency units)**

Country	Currency unit (million)	2013	2014	2015	2016	2017	2018	2019e
Current prices								
Albania	Leks	19,022	18,788	16,671	16,250	17,199	18,995	21,702
Belgium	Euros	3,964	3,913	3,789	3,848	3,932	4,101	4,303
Bulgaria	Leva	1,196	1,102	1,116	1,186	1,255	1,593	3,716
Canada	Canadian dollars	18,764	20,076	23,900	23,474	30,761	29,025	29,600
Croatia	Kunas	4,848	6,113	6,057	5,696	6,120	6,068	6,683
Czech Republic	Koruny	42,035	41,003	47,264	45,598	52,805	59,752	66,737
Denmark	Kroner	23,682	22,769	22,633	24,190	24,961	28,787	30,389
Estonia	Euros	361	386	418	450	479	514	586
France	Euros	39,402	39,149	39,199	39,950	40,852	42,748	44,361
Germany	Euros	34,593	34,749	35,898	37,598	40,265	42,127	47,878
Greece	Euros	3,999	3,939	4,073	4,190	4,208	4,560	4,320
Hungary	Forint	286,341	281,402	316,338	362,798	402,793	484,031	553,383
Italy	Euros	20,078	18,427	17,642	20,226	21,166	21,183	21,408
Latvia*	Euros	212	221	254	364	430	613	634
Lithuania*	Euros	267	322	425	575	724	895	968
Luxembourg	Euros	176	190	225	213	288	301	346
Montenegro	Euros	49	52	51	56	58	64	81
Netherlands	Euros	7,702	7,788	7,816	8,234	8,539	9,456	10,912
Norway	Kroner	46,057	48,660	49,529	54,022	56,664	61,349	66,127
Poland*	Zlotys	28,467	31,874	39,940	37,082	37,558	42,824	45,118
Portugal	Euros	2,457	2,263	2,384	2,364	2,424	2,874	3,160
Romania*	New Lei	8,160	9,014	10,337	10,738	14,765	17,181	20,932
Slovak Republic	Euros	729	752	889	907	935	1,098	1,666
Slovenia	Euros	382	366	361	406	422	463	508
Spain	Euros	9,495	9,508	10,000	9,014	10,528	11,172	11,505
Turkey	Liras	27,466	29,727	32,522	38,203	47,323	68,300	79,356
United Kingdom	Pounds	39,824	39,902	38,940	41,590	43,257	45,206	46,861
United States	US dollars	680,856	653,942	641,253	656,059	642,936	672,255	730,149
Constant 2015 prices								
Albania	Leks	19,426	18,894	16,671	16,354	17,057	18,700	20,921
Belgium	Euros	4,032	3,952	3,789	3,780	3,799	3,918	4,052
Bulgaria	Leva	1,228	1,126	1,116	1,160	1,187	1,454	3,303
Canada	Canadian dollars	18,956	19,894	23,900	23,292	29,769	27,623	27,962
Croatia	Kunas	4,850	6,115	6,057	5,700	6,058	5,903	6,406
Czech Republic	Koruny	43,580	41,481	47,264	45,029	51,408	56,954	61,781
Denmark	Kroner	24,030	22,868	22,633	24,017	24,438	28,065	29,152
Estonia	Euros	376	390	418	443	454	466	513
France	Euros	40,081	39,595	39,199	39,873	40,506	41,993	43,074
Germany	Euros	35,898	35,439	35,898	37,092	39,121	40,184	44,823
Greece	Euros	3,908	3,925	4,073	4,195	4,192	4,522	4,259
Hungary	Forint	302,053	286,921	316,338	359,267	385,004	442,784	485,889
Italy	Euros	20,771	18,734	17,642	19,769	20,553	20,791	20,992
Latvia*	Euros	216	221	254	361	413	565	561
Lithuania*	Euros	271	323	425	567	685	819	863
Luxembourg	Euros	180	190	225	211	280	281	314
Montenegro	Euros	51	53	51	54	53	58	71
Netherlands	Euros	7,780	7,796	7,816	8,162	8,340	9,041	10,292
Norway	Kroner	44,905	47,287	49,529	54,643	55,176	56,588	59,853
Poland*	Zlotys	28,829	32,119	39,940	36,967	36,723	41,353	42,635
Portugal	Euros	2,525	2,309	2,384	2,323	2,347	2,743	2,982
Romania*	New Lei	8,519	9,249	10,337	10,481	13,770	15,134	17,522
Slovak Republic	Euros	727	750	889	911	928	1,068	1,581
Slovenia	Euros	389	370	361	403	413	442	474
Spain	Euros	9,525	9,557	10,000	8,988	10,369	10,896	11,123
Turkey	Liras	31,814	32,054	32,522	35,341	39,495	49,074	48,959
United Kingdom	Pounds	40,682	40,076	38,940	40,750	41,470	42,531	43,164
United States	US dollars	696,291	660,062	641,253	651,201	626,380	642,012	685,099

Notes: Figures for 2019 are estimates.

* These Allies have national laws and political agreements which call for 2% of GDP to be spent on defence annually, consequently estimates are expected to change accordingly. For the past years, Allies' defence spending was based on the then available GDP data and Allies may, therefore, have met the 2% guideline when using those figures (In 2018, Lithuania met 2% using November 2018 OECD figures).

**Table 2 : Defence expenditure
(million US dollars)**

Country	2013	2014	2015	2016	2017	2018	2019e
Current prices and exchange rates							
Albania	180	178	132	131	144	176	198
Belgium	5,264	5,192	4,202	4,256	4,431	4,840	4,921
Bulgaria	811	747	633	671	723	961	2,179
Canada	18,221	18,150	18,685	17,711	23,704	22,400	22,485
Croatia	850	1,064	883	837	924	966	1,032
Czech Republic	2,148	1,975	1,921	1,866	2,259	2,750	2,967
Denmark	4,217	4,057	3,364	3,593	3,780	4,559	4,651
Estonia	480	513	463	497	540	607	670
France	52,316	51,940	43,474	44,191	46,036	50,459	50,729
Germany	45,931	46,102	39,813	41,590	45,374	49,725	54,751
Greece	5,309	5,226	4,517	4,635	4,742	5,383	4,940
Hungary	1,280	1,210	1,132	1,289	1,468	1,791	2,080
Italy	26,658	24,448	19,566	22,373	23,852	25,004	24,482
Latvia*	281	293	281	403	484	724	724
Lithuania*	355	427	471	636	816	1,056	1,107
Luxembourg	234	253	249	236	325	355	395
Montenegro	65	69	57	62	65	76	92
Netherlands	10,226	10,332	8,668	9,108	9,622	11,162	12,478
Norway	7,839	7,722	6,142	6,431	6,850	7,544	7,708
Poland*	9,007	10,104	10,596	9,405	9,938	11,857	11,902
Portugal	3,262	3,003	2,644	2,615	2,732	3,392	3,613
Romania*	2,452	2,691	2,581	2,645	3,643	4,359	5,050
Slovak Republic	968	997	986	1,003	1,053	1,297	1,905
Slovenia	507	486	401	449	476	546	581
Spain	12,607	12,614	11,090	9,971	11,864	13,187	13,156
Turkey	14,427	13,583	11,957	12,649	12,972	14,145	13,919
United Kingdom	62,258	65,658	59,492	56,154	55,672	60,308	60,761
United States	680,856	653,942	641,253	656,059	642,936	672,255	730,149
NATO Europe and Canada	288,088	288,965	254,347	255,345	274,490	299,631	309,479
NATO Total	968,944	942,907	895,600	911,404	917,426	971,886	1,039,628
Constant 2015 prices and exchange rates							
Albania	154	150	132	130	135	148	166
Belgium	4,472	4,383	4,202	4,192	4,214	4,345	4,494
Bulgaria	696	638	633	657	673	824	1,872
Canada	14,820	15,553	18,685	18,210	23,273	21,596	21,860
Croatia	707	892	883	831	883	861	934
Czech Republic	1,772	1,686	1,921	1,831	2,090	2,315	2,512
Denmark	3,572	3,399	3,364	3,570	3,632	4,171	4,333
Estonia	417	432	463	491	504	517	569
France	44,453	43,914	43,474	44,222	44,923	46,573	47,771
Germany	39,813	39,304	39,813	41,138	43,387	44,567	49,712
Greece	4,335	4,353	4,517	4,652	4,650	5,015	4,723
Hungary	1,081	1,027	1,132	1,286	1,378	1,585	1,739
Italy	23,036	20,777	19,566	21,925	22,794	23,058	23,281
Latvia*	239	245	281	400	458	627	622
Lithuania*	301	358	471	629	759	908	957
Luxembourg	200	210	249	234	310	312	348
Montenegro	56	59	57	59	59	64	78
Netherlands	8,629	8,646	8,668	9,053	9,249	10,027	11,414
Norway	5,568	5,864	6,142	6,776	6,842	7,017	7,422
Poland*	7,648	8,521	10,596	9,807	9,742	10,970	11,311
Portugal	2,801	2,561	2,644	2,576	2,603	3,042	3,307
Romania*	2,127	2,309	2,581	2,617	3,438	3,778	4,374
Slovak Republic	806	832	986	1,011	1,029	1,184	1,754
Slovenia	431	411	401	447	457	490	525
Spain	10,564	10,599	11,090	9,968	11,500	12,084	12,336
Turkey	11,696	11,784	11,957	12,993	14,520	18,042	18,000
United Kingdom	62,153	61,227	59,492	62,257	63,357	64,978	65,944
United States	696,291	660,062	641,253	651,201	626,380	642,012	685,099
NATO Europe and Canada	252,490	250,076	254,347	261,902	276,860	289,100	302,361
NATO Total	948,781	910,138	895,600	913,103	903,241	931,112	987,460

Notes: Figures for 2019 are estimates. The NATO Europe and Canada and NATO Total aggregates from 2017 onwards include Montenegro, which became an Ally on 5 June 2017.

* These Allies have national laws and political agreements which call for 2% of GDP to be spent on defence annually, consequently estimates are expected to change accordingly. For the past years, Allies' defence spending was based on the then available GDP data and Allies may, therefore, have met the 2% guideline when using those figures (In 2018, Lithuania met 2% using November 2018 OECD figures).

**Table 3 : Defence expenditure as a share of GDP and annual real change
(based on 2015 prices)**

Country	2013	2014	2015	2016	2017	2018	2019e
Share of real GDP (%)							
Albania	1.41	1.35	1.16	1.10	1.11	1.17	1.26
Belgium	1.01	0.98	0.92	0.91	0.90	0.91	0.93
Bulgaria	1.46	1.32	1.26	1.26	1.24	1.48	3.25
Canada	0.99	1.01	1.20	1.16	1.44	1.31	1.31
Croatia	1.46	1.84	1.78	1.62	1.67	1.59	1.68
Czech Republic	1.03	0.95	1.03	0.96	1.04	1.13	1.19
Denmark	1.23	1.15	1.11	1.15	1.15	1.30	1.32
Estonia	1.91	1.93	2.02	2.07	2.03	2.00	2.14
France	1.86	1.82	1.78	1.79	1.78	1.82	1.84
Germany	1.22	1.18	1.18	1.19	1.23	1.24	1.38
Greece	2.21	2.21	2.30	2.38	2.34	2.48	2.28
Hungary	0.95	0.86	0.92	1.02	1.05	1.15	1.21
Italy	1.27	1.14	1.07	1.18	1.21	1.21	1.22
Latvia*	0.93	0.94	1.04	1.45	1.59	2.08	2.01
Lithuania*	0.76	0.88	1.14	1.48	1.72	1.98	2.03
Luxembourg	0.38	0.38	0.44	0.40	0.52	0.51	0.56
Montenegro	1.47	1.50	1.40	1.42	1.35	1.39	1.66
Netherlands	1.17	1.15	1.13	1.16	1.15	1.21	1.36
Norway	1.50	1.55	1.59	1.73	1.71	1.73	1.80
Poland*	1.72	1.85	2.22	1.99	1.89	2.02	2.00
Portugal	1.44	1.31	1.33	1.27	1.25	1.43	1.52
Romania*	1.28	1.35	1.45	1.40	1.72	1.82	2.04
Slovak Republic	0.98	0.99	1.12	1.12	1.10	1.22	1.74
Slovenia	1.05	0.97	0.93	1.01	0.98	1.01	1.04
Spain	0.93	0.92	0.92	0.81	0.90	0.92	0.92
Turkey	1.52	1.45	1.39	1.46	1.52	1.85	1.89
United Kingdom	2.26	2.16	2.05	2.11	2.11	2.13	2.14
United States	4.03	3.73	3.52	3.52	3.31	3.30	3.42
NATO Europe and Canada	1.47	1.43	1.43	1.44	1.48	1.52	1.57
NATO Total	2.76	2.59	2.48	2.49	2.40	2.42	2.52
Annual real change (%)							
Albania	-4.30	-2.74	-11.76	-1.90	4.30	9.64	11.88
Belgium	-2.48	-1.99	-4.13	-0.25	0.52	3.12	3.43
Bulgaria	9.53	-8.29	-0.84	3.88	2.33	22.52	127.17
Canada	-7.68	4.95	20.14	-2.54	27.81	-7.21	1.23
Croatia	-4.91	26.07	-0.94	-5.90	6.28	-2.55	8.52
Czech Republic	-3.13	-4.82	13.94	-4.73	14.17	10.79	8.48
Denmark	-8.37	-4.84	-1.03	6.12	1.75	14.84	3.87
Estonia	2.72	3.75	7.12	6.11	2.55	2.58	10.03
France	-0.02	-1.21	-1.00	1.72	1.59	3.67	2.57
Germany	-6.20	-1.28	1.30	3.33	5.47	2.72	11.54
Greece	-6.41	0.42	3.78	2.99	-0.06	7.87	-5.83
Hungary	-6.47	-5.01	10.25	13.57	7.16	15.01	9.74
Italy	-5.09	-9.81	-5.83	12.05	3.97	1.16	0.97
Latvia*	7.94	2.55	14.79	42.29	14.35	36.94	-0.74
Lithuania*	4.72	19.15	31.60	33.37	20.79	19.61	5.40
Luxembourg	3.70	5.33	18.59	-6.04	32.39	0.62	11.62
Montenegro	-8.44	4.49	-3.50	4.33	-0.77	8.39	22.74
Netherlands	-5.98	0.19	0.26	4.43	2.17	8.41	13.84
Norway	8.07	5.30	4.74	10.33	0.97	2.56	5.77
Poland*	0.07	11.41	24.35	-7.44	-0.66	12.61	3.10
Portugal	1.51	-8.56	3.24	-2.55	1.02	16.87	8.71
Romania*	8.39	8.57	11.76	1.39	31.38	9.91	15.78
Slovak Republic	-8.63	3.22	18.54	2.47	1.78	15.09	48.11
Slovenia	-11.19	-4.74	-2.39	11.55	2.32	7.15	7.20
Spain	-12.62	0.33	4.64	-10.12	15.37	5.08	2.09
Turkey	3.56	0.75	1.46	8.67	11.75	24.25	-0.24
United Kingdom	6.92	-1.49	-2.83	4.65	1.77	2.56	1.49
United States	-6.04	-5.20	-2.85	1.55	-3.81	2.50	6.71
NATO Europe and Canada	-1.20	-0.96	1.71	2.97	5.71	4.42	4.59
NATO Total	-4.80	-4.07	-1.60	1.95	-1.08	3.09	6.05

Notes: Figures for 2019 are estimates. The NATO Europe and Canada and NATO Total aggregates from 2017 onwards include Montenegro, which became an Ally on 5 June 2017.

* These Allies have national laws and political agreements which call for 2% of GDP to be spent on defence annually, consequently estimates are expected to change accordingly. For the past years, Allies' defence spending was based on the then available GDP data and Allies may, therefore, have met the 2% guideline when using those figures (In 2018, Lithuania met 2% using November 2018 OECD figures).

Table 4 : Defence expenditure real change 2014-2019

Country	2014	2019e	Real change 2014-2019e (%)	Share of real GDP 2014 (%)	Share of real GDP 2019e (%)
Million US dollars (2015 prices and exchange rates)					
Albania	150	166	10.73	1.35	1.26
Belgium	4.383	4.494	2.53	0.98	0.93
Bulgaria	638	1.872	193.39	1.32	3.25
Canada	15.553	21.860	40.55	1.01	1.31
Croatia	892	934	4.77	1.84	1.68
Czech Republic	1.686	2.512	48.94	0.95	1.19
Denmark	3.399	4.333	27.48	1.15	1.32
Estonia	432	569	31.55	1.93	2.14
France	43.914	47.771	8.78	1.82	1.84
Germany	39.304	49.712	26.48	1.18	1.38
Greece	4.353	4.723	8.50	2.21	2.28
Hungary	1.027	1.739	69.35	0.86	1.21
Italy	20.777	23.281	12.05	1.14	1.22
Latvia*	245	622	153.86	0.94	2.01
Lithuania*	358	957	167.27	0.88	2.03
Luxembourg	210	348	65.68	0.38	0.56
Montenegro	59	78	32.92	1.50	1.66
Netherlands	8.646	11.414	32.02	1.15	1.36
Norway	5.864	7.422	26.57	1.55	1.80
Poland*	8.521	11.311	32.74	1.85	2.00
Portugal	2.561	3.307	29.12	1.31	1.52
Romania*	2.309	4.374	89.44	1.35	2.04
Slovak Republic	832	1.754	110.74	0.99	1.74
Slovenia	411	525	27.99	0.97	1.04
Spain	10.599	12.336	16.39	0.92	0.92
Turkey	11.784	18.000	52.74	1.45	1.89
United Kingdom	61.227	65.944	7.70	2.16	2.14
United States	660.062	685.099	3.79	3.73	3.42

Notes: Figures for 2019 are estimates.

* These Allies have national laws and political agreements which call for 2% of GDP to be spent on defence annually, consequently estimates are expected to change accordingly. For the past years, Allies' defence spending was based on the then available GDP data and Allies may, therefore, have met the 2% guideline when using those figures (In 2018, Lithuania met 2% using November 2018 OECD figures).

Table 5 : Real GDP

Country	2013	2014	2015	2016	2017	2018	2019e
Billion US dollars (2015 prices and exchange rates)							
Albania	11	11	11	12	12	13	13
Belgium	443	448	456	463	471	477	483
Bulgaria	48	49	50	52	54	56	58
Canada	1,502	1,545	1,556	1,573	1,620	1,650	1,671
Croatia	48	48	50	51	53	54	56
Czech Republic	173	177	187	191	200	206	211
Denmark	291	296	303	310	317	321	328
Estonia	22	22	23	24	25	26	27
France	2,390	2,413	2,438	2,465	2,522	2,561	2,595
Germany	3,258	3,329	3,378	3,451	3,536	3,587	3,614
Greece	196	197	196	196	199	202	207
Hungary	114	119	123	126	131	138	143
Iceland	16	17	17	19	19	20	20
Italy	1,813	1,816	1,831	1,854	1,886	1,900	1,901
Latvia	26	26	27	28	29	30	31
Lithuania	39	41	42	42	44	46	47
Luxembourg	53	55	57	59	59	61	62
Montenegro	4	4	4	4	4	5	5
Netherlands	740	751	765	782	805	826	840
Norway	372	379	387	391	399	405	412
Poland	445	460	478	492	516	542	565
Portugal	194	196	199	203	209	213	217
Romania	166	171	178	186	199	208	214
Slovak Republic	82	84	88	91	93	97	101
Slovenia	41	42	43	44	47	49	50
Spain	1,141	1,157	1,199	1,237	1,274	1,307	1,336
Turkey	771	810	860	887	953	978	952
United Kingdom	2,749	2,830	2,896	2,948	3,002	3,044	3,081
United States	17,285	17,709	18,219	18,505	18,915	19,456	20,004
NATO Europe and Canada	17,142	17,491	17,838	18,177	18,679	19,022	19,239
NATO Total	34,428	35,200	36,058	36,682	37,594	38,477	39,243

Notes: Figures for 2019 are estimates. The NATO Europe and NATO Total aggregates from 2017 onwards include Montenegro, which became an Ally on 5 June 2017.

**Table 6 : GDP per capita and defence expenditure per capita
(2015 prices and exchange rates)**

Country	2013	2014	2015	2016	2017	2018	2019e
GDP per capita (thousand US dollars)							
Albania	3.8	3.9	4.0	4.1	4.3	4.4	4.6
Belgium	39.8	40.1	40.6	41.0	41.5	41.9	42.1
Bulgaria	6.6	6.7	7.0	7.3	7.7	7.9	8.2
Canada	42.7	43.5	43.4	43.4	44.1	44.5	44.7
Croatia	11.4	11.4	11.8	12.3	12.8	13.2	13.6
Czech Republic	16.4	16.9	17.7	18.1	18.9	19.3	19.8
Denmark	51.8	52.4	53.3	54.1	55.0	55.5	56.2
Estonia	16.5	17.1	17.4	18.0	18.9	19.6	20.1
France	36.2	36.4	36.6	36.9	37.7	38.2	38.6
Germany	40.4	41.1	41.4	41.9	42.8	43.3	43.4
Greece	17.8	18.1	18.1	18.2	18.5	18.9	19.3
Hungary	11.5	12.1	12.5	12.8	13.4	14.1	14.7
Iceland	50.2	50.7	52.6	55.3	56.5	58.6	58.7
Italy	29.9	29.9	30.1	30.6	31.2	31.4	31.4
Latvia	12.8	13.1	13.6	14.1	14.8	15.7	16.2
Lithuania	13.3	13.9	14.3	14.8	15.7	16.4	17.0
Luxembourg	96.7	98.5	100.4	100.2	99.6	99.9	99.7
Montenegro	6.2	6.3	6.5	6.7	7.1	7.4	7.6
Netherlands	44.0	44.5	45.2	45.9	47.0	47.9	48.4
Norway	73.2	73.8	74.5	74.7	75.6	76.1	76.8
Poland	11.6	12.0	12.4	12.8	13.4	14.1	14.7
Portugal	18.6	18.8	19.3	19.7	20.3	20.8	21.2
Romania	8.3	8.6	9.0	9.5	10.2	10.6	11.0
Slovak Republic	15.1	15.5	16.2	16.7	17.2	17.9	18.4
Slovenia	19.9	20.4	20.9	21.5	22.6	23.5	24.3
Spain	24.5	24.9	25.8	26.6	27.4	28.0	28.5
Turkey	10.2	10.6	11.1	11.3	12.1	12.2	11.7
United Kingdom	42.9	43.8	44.5	44.9	45.5	45.8	46.0
United States	54.6	55.5	56.7	57.2	58.0	59.3	60.5
NATO Europe and Canada	28.7	29.2	29.7	30.1	30.8	31.3	31.5
NATO Total	37.7	38.3	39.1	39.5	40.3	41.1	41.7
Defence expenditure per capita (US dollars)							
Albania	53	52	46	45	47	52	58
Belgium	402	392	374	371	371	381	392
Bulgaria	96	88	88	92	95	117	268
Canada	422	438	521	502	634	583	585
Croatia	166	210	210	199	214	210	229
Czech Republic	169	160	182	173	197	218	236
Denmark	636	602	592	623	630	720	742
Estonia	316	329	353	373	383	392	430
France	674	662	653	663	672	695	710
Germany	494	485	487	500	525	538	597
Greece	395	400	417	432	432	467	441
Hungary	109	104	115	131	141	162	178
Italy	380	342	322	362	377	381	385
Latvia	119	123	142	204	236	326	325
Lithuania	102	122	162	219	269	324	346
Luxembourg	366	377	438	401	520	511	558
Montenegro	91	95	91	95	95	103	127
Netherlands	514	513	512	532	540	582	658
Norway	1,096	1,141	1,183	1,294	1,297	1,321	1,384
Poland	199	221	276	255	254	286	295
Portugal	268	246	255	250	253	296	323
Romania	106	116	130	133	175	193	225
Slovak Republic	149	154	182	186	189	217	322
Slovenia	209	199	194	217	221	237	253
Spain	227	228	239	215	247	258	264
Turkey	154	154	154	166	184	225	222
United Kingdom	970	948	914	948	959	978	985
United States	2,199	2,069	1,996	2,012	1,922	1,956	2,072
NATO Europe and Canada	2,022	1,906	1,848	1,860	1,791	1,816	1,921
NATO Total	1,039	991	971	984	969	993	1,048

Notes: Figures for 2019 are estimates. The NATO Europe and NATO Total aggregates from 2017 onwards include Montenegro, which became an Ally on 5 June 2017.

**Table 7 : Military personnel
(Thousands)**

Country	2013	2014	2015	2016	2017	2018	2019e
Albania	6.8	6.7	6.2	5.8	6.8	6.8	6.8
Belgium	30.7	30.5	29.7	28.8	27.8	26.5	25.9
Bulgaria	28.0	27.5	24.9	24.7	24.3	24.4	24.8
Canada	67.5	65.9	70.3	70.5	68.2	70.3	69.4
Croatia	15.8	15.4	15.1	14.8	14.8	15.0	15.1
Czech Republic	19.8	20.2	21.5	22.7	23.8	24.7	25.0
Denmark	18.1	16.9	17.2	17.3	16.7	17.2	18.0
Estonia	6.3	6.3	6.0	6.1	6.0	6.2	6.3
France	213.1	207.0	204.8	208.1	208.2	208.2	207.8
Germany	184.0	178.8	177.2	177.9	179.8	181.5	182.0
Greece	110.4	107.3	104.4	106.0	104.6	106.8	107.6
Hungary	18.1	17.5	17.4	17.9	17.8	18.7	19.7
Italy	188.9	183.5	178.4	176.3	174.6	174.1	178.1
Latvia	4.6	4.6	4.8	5.2	5.5	5.9	6.4
Lithuania	8.4	8.6	11.8	11.8	13.5	14.3	15.7
Luxembourg	0.9	0.8	0.8	0.8	0.8	0.9	0.9
Montenegro	1.9	1.9	1.7	1.5	1.5	1.5	1.5
Netherlands	42.2	41.2	40.6	40.0	39.5	39.3	41.7
Norway	19.9	21.0	20.9	20.5	20.2	20.2	20.7
Poland	100.0	99.0	98.9	101.6	105.3	109.5	118.5
Portugal	32.7	30.7	28.3	29.8	27.8	26.9	28.6
Romania	66.2	65.1	64.5	63.4	61.6	61.5	73.1
Slovak Republic	12.3	12.4	12.4	12.2	11.9	11.7	11.7
Slovenia	6.9	6.8	6.6	6.5	6.3	6.2	6.3
Spain	121.8	121.8	121.6	121.0	117.7	117.4	121.0
Turkey	426.6	426.6	384.8	359.3	416.7	444.3	435.5
United Kingdom	179.4	168.7	141.4	139.5	156.7	157.1	153.3
United States	1,382.3	1,338.2	1,314.1	1,301.4	1,307.5	1,322.5	1,338.1
NATO Europe and Canada	1,930	1,891	1,811	1,788	1,859	1,897	1,921
NATO Total	3,312	3,229	3,125	3,090	3,166	3,220	3,259

Notes: Figures for 2019 are estimates. The NATO Europe and NATO Total aggregates from 2017 onwards include Montenegro, which became an Ally on 5 June 2017.

**Table 8a : Distribution of defence expenditure by main category
(percentage of total defence expenditure)**

Country	2013	2014	2015	2016	2017	2018	2019e
Equipment (a)							
Albania	16.29	16.65	8.92	8.01	6.96	9.42	14.42
Belgium	2.84	3.52	3.44	4.72	6.52	10.15	10.78
Bulgaria	4.52	1.03	3.47	9.15	8.10	9.65	58.97
Canada	11.16	13.03	10.47	10.61	10.70	11.94	13.34
Croatia	10.72	5.56	8.01	7.51	5.69	3.37	6.73
Czech Republic	9.49	6.53	11.75	6.70	11.55	11.16	14.42
Denmark	11.26	10.99	11.50	13.68	10.39	11.66	18.06
Estonia	14.48	22.15	12.82	17.86	19.22	16.73	17.54
France	28.56	24.64	25.04	24.44	24.17	23.66	24.45
Germany	12.74	12.94	11.93	12.21	11.77	12.36	16.55
Greece	12.06	8.17	10.40	13.45	11.28	11.03	12.27
Hungary	11.08	7.76	9.75	13.37	15.34	20.35	23.48
Italy	12.51	10.92	9.72	19.09	20.68	21.12	20.57
Latvia	12.09	7.55	13.60	19.05	15.01	31.19	24.18
Lithuania	9.23	14.06	21.55	30.06	31.61	36.98	30.04
Luxembourg	14.57	22.61	33.33	30.07	42.06	45.18	45.06
Montenegro	1.32	7.46	5.43	4.46	4.95	11.05	14.19
Netherlands	12.57	10.68	11.16	14.14	14.75	16.39	22.98
Norway	18.89	20.42	21.83	23.37	24.63	25.60	29.27
Poland	13.90	18.84	33.20	21.62	22.04	27.51	24.01
Portugal	8.65	8.43	8.70	9.95	11.42	9.78	14.78
Romania	10.71	15.77	19.65	20.43	33.34	33.48	25.74
Slovak Republic	7.39	11.12	18.28	15.32	17.74	22.27	41.68
Slovenia	1.27	0.66	1.85	1.02	4.04	5.86	7.63
Spain	12.37	13.49	14.82	6.65	20.39	21.83	20.72
Turkey	26.89	25.08	25.13	25.55	30.30	37.64	38.60
United Kingdom	21.89	22.82	21.75	21.24	22.29	22.19	22.35
United States	25.83	25.97	25.41	25.05	25.73	27.06	27.51
Personnel (b)							
Albania	75.25	68.05	78.15	68.05	68.20	70.70	64.18
Belgium	77.34	77.84	78.23	76.80	75.20	70.69	68.65
Bulgaria	65.37	72.84	73.66	65.64	68.33	62.99	28.73
Canada	52.44	50.90	53.76	53.11	57.37	51.02	49.40
Croatia	68.06	76.55	72.28	75.40	71.72	76.96	72.96
Czech Republic	62.03	61.40	55.27	61.97	56.11	54.57	53.16
Denmark	51.74	51.27	52.01	49.51	47.01	49.88	48.19
Estonia	39.83	38.62	39.56	38.70	34.89	34.27	35.47
France	49.23	48.59	47.79	47.94	47.98	46.90	45.78
Germany	49.86	50.67	49.86	48.35	48.96	47.99	44.02
Greece	74.56	77.18	72.05	73.13	76.56	78.76	76.82
Hungary	48.96	49.77	48.21	49.66	42.41	39.98	41.72
Italy	75.00	76.41	77.55	70.79	67.58	65.66	..
Latvia	52.98	52.97	50.06	43.87	38.59	34.21	34.91
Lithuania	66.53	57.53	48.49	45.50	40.79	37.47	42.36
Luxembourg	51.10	49.31	42.77	45.56	34.40	33.42	30.25
Montenegro	87.68	78.53	78.03	75.32	80.44	72.87	64.17
Netherlands	58.53	56.50	55.51	51.77	52.19	51.16	45.25
Norway	42.21	40.64	39.96	38.60	37.08	36.43	34.23
Poland	57.70	51.45	41.96	47.15	50.04	46.14	48.47
Portugal	79.85	81.27	81.90	81.38	80.19	74.84	69.77
Romania	78.99	71.15	63.30	65.01	54.67	54.48	54.79
Slovak Republic	70.14	69.14	56.24	58.72	58.21	54.74	40.61
Slovenia	80.52	82.31	82.23	76.03	75.04	72.38	68.65
Spain	68.25	67.34	65.18	72.61	61.64	59.64	60.80
Turkey	54.58	56.88	56.82	57.60	51.02	45.18	46.75
United Kingdom	37.85	36.59	36.80	35.27	34.54	33.82	34.52
United States	34.38	35.45	36.64	45.01	41.22	39.28	38.62

Notes: Figures for 2019 are estimates.

(a) Equipment expenditure includes major equipment expenditure and R&D devoted to major equipment.

(b) Personnel expenditure includes military and civilian expenditure and pensions.

**Table 8b : Distribution of defence expenditure by main category
(percentage of total defence expenditure)**

Country	2013	2014	2015	2016	2017	2018	2019e
Infrastructure (c)							
Albania	1.17	0.86	1.40	1.37	0.92	1.09	1.98
Belgium	2.28	1.81	0.93	0.96	1.05	1.43	1.30
Bulgaria	0.47	0.63	1.27	0.63	0.83	2.62	3.00
Canada	4.12	3.81	3.63	3.03	2.98	3.58	3.45
Croatia	1.21	1.24	1.98	1.26	3.59	1.00	1.64
Czech Republic	2.72	2.34	3.32	3.91	3.99	5.31	7.04
Denmark	1.16	0.97	1.09	2.16	1.95	1.49	1.74
Estonia	11.54	8.20	8.45	12.15	11.27	8.63	5.50
France	2.30	2.33	2.80	2.70	2.88	3.51	3.12
Germany	3.55	3.75	3.60	3.39	4.06	4.15	3.82
Greece	0.63	1.10	0.65	0.58	0.79	0.62	1.25
Hungary	2.32	1.07	1.21	1.13	1.64	4.85	3.52
Italy	1.57	1.40	1.30	0.70	0.94	1.92	..
Latvia	6.26	8.89	6.64	12.83	15.02	6.97	9.27
Lithuania	2.04	2.17	2.16	3.59	3.92	2.24	5.02
Luxembourg	11.81	10.26	7.79	6.64	4.64	5.05	6.71
Montenegro	0.09	0.96	2.47	2.41	0.88	2.24	3.97
Netherlands	2.74	4.77	3.19	3.90	3.02	3.46	3.19
Norway	5.33	5.71	5.30	6.56	6.93	6.67	6.44
Poland	5.62	5.47	4.74	4.62	4.21	3.45	5.35
Portugal	0.04	0.11	0.25	0.06	0.03	0.12	0.32
Romania	1.16	1.09	1.27	2.77	2.09	1.54	4.42
Slovak Republic	0.29	0.57	1.99	3.75	2.97	2.00	1.90
Slovenia	1.33	0.65	0.61	1.14	0.45	1.40	0.65
Spain	0.67	0.66	0.97	0.97	0.68	0.64	1.10
Turkey	2.72	2.77	2.56	2.42	2.95	2.53	2.04
United Kingdom	2.04	1.95	1.63	1.87	2.25	2.99	2.17
United States	2.08	1.71	1.45	1.22	1.23	1.17	1.27
Other (d)							
Albania	7.30	14.44	11.53	22.57	23.92	18.79	19.41
Belgium	17.53	16.83	17.40	17.52	17.23	17.72	19.27
Bulgaria	29.64	25.51	21.60	24.57	22.74	24.74	9.30
Canada	32.28	32.26	32.14	33.25	28.95	33.46	33.81
Croatia	20.01	16.65	17.73	15.83	18.99	18.67	18.67
Czech Republic	25.75	29.73	29.65	27.43	28.35	28.95	25.39
Denmark	35.84	36.78	35.40	34.65	40.66	36.97	32.01
Estonia	34.14	31.03	39.18	31.30	34.62	40.36	41.49
France	19.91	24.43	24.37	24.92	24.97	25.92	26.65
Germany	33.84	32.63	34.61	36.05	35.20	35.49	35.61
Greece	12.75	13.55	16.90	12.84	11.37	9.60	9.66
Hungary	37.64	41.40	40.83	35.84	40.62	34.82	31.29
Italy	10.93	11.27	11.42	9.42	10.80	11.30	..
Latvia	28.68	30.59	29.69	24.25	31.38	27.63	31.64
Lithuania	22.20	26.24	27.79	20.85	23.67	23.30	22.59
Luxembourg	22.52	17.82	16.11	17.73	18.90	16.35	17.98
Montenegro	10.91	13.06	14.07	17.80	13.73	13.84	17.67
Netherlands	26.16	28.05	30.14	30.20	30.04	28.99	28.58
Norway	33.88	33.24	32.90	31.46	31.36	31.30	30.06
Poland	22.78	24.24	20.11	26.61	23.71	22.89	22.17
Portugal	11.46	10.19	9.15	8.61	8.35	15.26	15.13
Romania	9.13	11.98	15.78	11.79	9.90	10.50	15.06
Slovak Republic	22.19	19.16	23.49	22.22	21.08	20.99	15.80
Slovenia	16.88	16.38	15.31	21.80	20.47	20.36	23.07
Spain	18.71	18.50	19.03	19.78	17.28	17.89	17.39
Turkey	15.80	15.27	15.49	14.43	15.73	14.65	12.61
United Kingdom	38.22	38.63	39.82	41.62	40.92	41.00	40.95
United States	37.72	36.87	36.51	28.73	31.83	32.49	32.59

Notes: Figures for 2019 are estimates.

(c) Infrastructure expenditure includes NATO common infrastructure and national military construction.

(d) Other expenditure includes operations and maintenance expenditure, other R&D expenditure and expenditure not allocated among above-mentioned categories.

NATO defence expenditure

NATO defines defence expenditure as payments made by a national government specifically to meet the needs of its armed forces, those of Allies or of the Alliance. A major component of defence expenditure is payments for Armed Forces financed from within the Ministry of Defence (MoD) budget. Armed Forces include land, maritime and air forces as well as joint formations such as Administration and Command, Special Operations Forces, Medical Service, Logistic Command etc. They might also include "Other Forces" like Ministry of Interior troops, national police forces, gendarmerie, carabinieri, coast guards etc. In such cases, expenditure should be included only in proportion to the forces that are trained in military tactics, are equipped as a military force, can operate under direct military authority in deployed operations, and can, realistically, be deployed outside national territory in support of a military force. Also, expenditure on Other Forces financed through the budgets of ministries other than the Ministry of Defence should be included in defence expenditure.

Pension payments made directly by the government to retired military and civilian employees of military departments should be included regardless of whether these payments are made from the budget of the Ministry of Defence or other ministries.

Expenditure for peacekeeping and humanitarian operations (paid by the Ministry of Defence or other ministries), the destruction of weapons, equipment and ammunition, contributions to eligible NATO-managed trust funds, and the costs associated with inspection and control of equipment destruction are included in defence expenditure.

Research and development (R&D) costs are to be included in defence expenditure. R&D costs should also include expenditure for those projects that do not successfully lead to production of equipment.

Expenditure for the military component of mixed civilian-military activities is included, but only when the military component can be specifically accounted for or estimated.

Expenditure on NATO common infrastructure is included in the total defence expenditure of each Ally only to the extent of that nation's net contribution.

War damage payments and spending on civil defence are both excluded from the NATO definition of defence expenditure.

NATO uses United States dollars (USD) as the common currency denominator. The exchange rate applied to each Ally is the average annual rate published by the International Monetary Fund (IMF).

Note to readers:

Iceland has no armed forces. For nations of the Euro zone, and Montenegro, monetary values in national currency are expressed in Euros for all years. Estonia adopted Euros from 2011, Latvia from 2014, and Lithuania from 2015. Montenegro joined the Alliance in 2017.

To avoid any ambiguity, the fiscal year has been designated by the year which includes the highest number of months: e.g. 2019 represents the fiscal year 2019/2020 for Canada and United Kingdom, and the fiscal year 2018/2019 for the United States. Because of rounding, the total figures may differ from the sum of their components.

Conventional signs:

e	estimated
-	nil
..	not available
.	decimal point
	break in continuity of series

Nomenclature of NATO defence expenditure:

1	Operating costs
1.1	Military personnel
1.1.1	Pay and allowances
1.1.2	Employer's contributions to retirement funds
1.1.3	Other
1.2	Civilian personnel
1.2.1	Pay and allowances
1.2.2	Employer's contributions to retirement funds
1.3	Pensions
1.3.1	Paid to military retirees
1.3.2	Paid to civilian retirees
1.4	Operations and maintenance
1.4.1	Ammunition and explosives (excluding nuclear)
1.4.2	Petroleum products
1.4.3	Spare parts
1.4.4	Other equipment and supplies
1.4.5	Rents
1.4.6	Other operations and maintenance

2	Procurement and construction
2.1	Major equipment
2.1.1	Missile systems
2.1.2	Missiles (conventional weapons)
2.1.3	Nuclear weapons
2.1.4	Aircraft
2.1.5	Artillery
2.1.6	Combat vehicles
2.1.7	Engineering equipment
2.1.8	Weapons and small arms
2.1.9	Transport vehicles
2.1.10	Ships and harbour craft
2.1.11	Electronic and communications equipment
2.2	National military construction
2.3	NATO common infrastructure
2.3.1	Expenditure as host country
2.3.2	Payments to other countries
2.3.3	Receipts from other countries
2.3.4	Land and utilities
3	Research and development
3.1	Devoted to major equipment
3.2	Other
4	Other expenditure
5	Total
6	Statistical discrepancy
7	Adjusted total

Main categories of defence expenditure:

- Equipment (Table 8a) – lines 2.1 + 3.1
- Personnel (Table 8a) – lines 1.1 + 1.2 + 1.3
- Infrastructure (Table 8b) – lines 2.2 + 2.3
- Other (Table 8b) – lines 1.4 + 3.2 + 4



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