

North Atlantic Treaty
Organization

NATO



MUNUC 37

Model United Nations of the University of Chicago

CHAIR LETTERS

Dear Delegates,

Welcome to the North Atlantic Treaty Organization (NATO) at MUNUC 37! My name is Michelle Li, and I will serve as one of your co-chairs. I'm currently a second-year student from Central Illinois studying political science and economics, and I'm excited to staff NATO for the second time as I served as an Assistant Chair for NATO at MUNUC 36. Outside of MUNUC, I'm involved with the University Community Service Center, the University's Institute of Politics, and the Chinese Undergraduate Student Association. In my free time you can find me reading, watching movies, or trying out new cafes.

I'm looking forward to seeing how you all explore potential challenges and opportunities for NATO's collective defense while revisiting the 2009 Gulf of Aden piracy crisis' impact and strategies for continued counter-piracy efforts. This year, NATO will be focusing on two important and distinct topics surrounding emerging technologies and piracy. Hopefully the first topic will push you to grapple with the ever-evolving world of technology: artificial intelligence, autonomous weapons systems, the growing cyber threat landscape, and beyond. The second topic takes you back to a pivotal moment in recent history: the 2009 Gulf of Aden piracy crisis. This is a chance to learn from the past and ensure the safety of vital trade routes.

As we discuss these important topics, it's crucial to be respectful and aware of their sensitive nature. There is no room for any racist, sexist, homophobic, or misogynistic language or behavior here at MUNUC. Anyone who violates these guidelines will be subject to disciplinary action according to MUNUC's policies. If you're ever unsure if something is appropriate, please don't hesitate to ask your chairs!

We'll be diving into issues that challenge even the best minds in international policy, and I truly am excited to hear you all debate these two complex topics. Please feel free to reach out in the meantime with any questions or concerns.

Sincerely,

Michelle Li

Dear delegates,

My name is Pietro Stabile and I will be one of your co-chairs for the North Atlantic Treaty Organization (NATO) at MUNUC 37! I can't wait to see your strategies to tackle one of the two topics we're covering in this year's guide.

Before I discuss those, let me tell you a bit about myself. I'm a second-year double majoring in computer science and economics, and I'm also chairing a crisis committee for ChoMUN (UChicago's collegiate conference). Last year, I was an assistant chair for MUNUC 36's Federal Communications Commission and for another ChoMUN committee. I also do research for a lab at UChicago, and I'm a member of the Phoenix Sustainability Initiative and Maroon Capital. Unofficially, I'm interested in photography, cooking, and cafe-hopping (matcha > coffee and you won't change my mind).

As NATO delegates, you'll have a choice between two important but distinct topics: technological developments in the 2020s or piracy in the late 2000s. The former invites you to use modern technology, such as artificial intelligence and biotechnology, to protect NATO's interests. However, you'll also need to anticipate the consequences of using said technology. With the latter topic, you'll be taken back to 2009 to navigate the complex situation surrounding the Gulf of Aden. We hope both topics will be engaging, and we encourage all delegates to participate in the discussion.

Absolutely no disrespect of any kind — toward groups of people or other delegates — will be tolerated. This includes, but is not limited to, sexism, racism, ableism, homophobia, and other prejudiced language. If you are unsure whether something violates MUNUC's policy, there are no consequences of asking us.

With that out of the way, we're so excited to see how you handle these topics in February! Until then, please don't hesitate to contact us about MUNUC.

Happy debating,

Pietro Stabile

HISTORY OF THE COMMITTEE

The North Atlantic Treaty Organization, also known as NATO, emerged from the aftereffects of World War II. Signed in 1949 by twelve countries, including the United States, Canada, and several Western European nations, NATO's core purpose was to deter Soviet aggression during the Cold War[1,2]. At this time, the alliance's main goal was to provide a collective security umbrella against communist expansion, which was a critical concern for a war-torn Europe seeking stability and economic recovery[3].

NATO's core principle is Article 5 of the North Atlantic Treaty, which promises that an attack on any member state would be considered an attack on all [1] . This principle is known as collective defense, and served as a deterrent throughout the Cold War, preventing a direct military confrontation between the West and the Soviet Union.

After the collapse of the Soviet Union in 1991, the alliance expanded eastward, joining with former Warsaw Pact countries and maintained its commitment to a unified and free Europe [4]. Its mission also evolved, with NATO engaging in peacekeeping operations and international interventions beyond the traditional boundaries of collective defense.

Today, NATO grapples with new security challenges: terrorism, cyber threats, and the rise of assertive regional powers. The alliance strives to maintain its relevance by adapting its strategies and capabilities. Discussions within NATO address issues like burden-sharing among member states, responsible use of force, and balancing collective defense with broader global security commitments.

TOPIC A: PIRACY

Statement of the Problem

The Gulf of Aden, a deepwater gulf of the Indian Ocean, is a vital waterway in the global economy with about 12-15% of global trade and 20% of container shipping passing through its waters.¹ With several main ports located off the coasts of Yemen, Djibouti, and Somalia, the Gulf of Aden is one of the busiest and most important maritime routes in the world. The gulf has been an essential hub for shipping Persian Gulf oil and aids in the transportation of 9% of all seaborne petroleum.² More than 80% of international trade in the Gulf of Aden is from Europe.

Piracy in the Gulf

Since NATO operations increased in regions such as Ukraine and the Middle East in the 2020s, piracy in the region surrounding Somalia has seen a sharp rise — 33 piracy and armed robbery incidents against international vessels were reported in the first three months of 2024.³ A potential motivation for this return of criminal activity is NATO forces' redirection of focus away from the Somali coast, allowing pirates to escape more easily. This resurgence presents NATO with a potential dilemma, as allocating resources toward addressing piracy may come at the cost of operations elsewhere.

¹ Spencer Feingold, "Red Sea Attacks: What Trade Experts Have to Say about the Shipping Disruptions," World Economic Forum, February 20, 2024, <https://www.weforum.org/agenda/2024/02/red-sea-attacks-trade-experts-houthi-shipping-yemen/>.

² Justine Barden, "The Bab El-Mandeb Strait Is a Strategic Route for Oil and Natural Gas Shipments," U.S. Energy Information Administration, August 27, 2019, <https://www.eia.gov/todayinenergy/detail.php?id=41073>.

³ International Maritime Bureau, "New Report Highlights Continued Threat of Somali Piracy," ICC Commercial Crime Services, April 10, 2024, <https://www.icc-ccs.org/index.php/1348-new-report-highlights-continued-threat-of-somali-piracy>.

The Cost of Rerouting

Due to increased piracy, carrier ships are forced to either avoid the Gulf of Aden entirely by rerouting through the **Cape of Good Hope** or accept the risk of operating ships. Oftentimes, rerouting is not a feasible option for high value cargo that must be delivered as fast as possible. For example, rerouting a cargo ship via the Cape of Good Hope from Saudi Arabia to the United States would add approximately 2,700 miles to the trip. The US department of transportation has estimated that the cost of additional fueling required by a ship rerouting through the Cape of Good Hope requires \$3.5 million annually. With longer routes comes the requirement for additional vessels to maintain service operations on the original carrier and decreases operational efficiency. Additionally, longer distances also decrease delivery capacities, and significant reroutes result in major disruptions in the logistics chain.⁴



Sailors transferring pallets as a part of maritime security operations in the Gulf of Aden (2012).⁵

⁴ United States Maritime Administration, “Economic Impact of Piracy.”

⁵ Zane Ecklund, *Sailors Transfer Pallets of Hazardous Waste*, September 7, 2012, Online Image, *Flickr*, September 7, 2012, <https://picryl.com/media/flickr-official-us-navy-imagery-sailors-transfer-pallets-of-hazardous-waste-3b9c9a>.

Economic Implications

At the cost of taking the Gulf of Aden, ships must take precautions to protect and defend themselves from pirate attacks. The cost of the war risk binder for ships is estimated to cost \$20,000 per ship.⁶ According to a 2012 study conducted by the Intergovernmental Committee, for every \$120 million seized by pirates in Somalia, the cost to the shipping industry and end consumer is between \$1-\$3 billion. After the increase of attacks in 2008, there was an 8% increase in shipping costs.⁷

Ransoms are the most obvious cost to victims of piracy — however, most negative effects are indirect. For example, according to a 2010 report, Egypt lost the equivalent of about \$642 million in potential revenue due to trading vessels' fear of piracy and subsequent avoidance of the Suez Canal.⁸ In addition, the frivolous spending habits of pirates have caused rapid changes in local Somali exchange rates.⁹ Other costs include heightened insurance premiums, the price of private protective details, and re-routing. Many of these are ultimately detrimental to the consumer of internationally traded products, who pays a higher price resulting from piracy.¹⁰

Hostage Situation

The taking of hostages by pirates has been a pressing area of concern. Since 2009, there have been numerous reported incidents involving the capture of vessels and their crews by Somali pirates. In 2010, during the peak of piracy, nearly 50 ships were captured with more than a thousand hostages taken, often enduring inhumane conditions until requested ransoms were paid. However, due to corruption and instability, ransoms

⁶ United States Maritime Administration, "Economic Impact of Piracy."

⁷ Tim Besley, Thiemo Fetzer, and Hannes Mueller, "The Economic Costs of Piracy," International Growth Centre, March 1, 2012, <https://www.theigc.org/collections/economic-costs-piracy>.

⁸ One Earth Future Foundation, "The Economic Cost of Piracy," *Oceans beyond Piracy*, 2010, <https://oneearthfuture.org/sites/default/files/documents/summaries/View%20Summary.pdf>.

⁹ Robyn Hunter, "Somali Pirates Living the High Life," BBC News, October 28, 2008, <http://news.bbc.co.uk/2/hi/africa/7650415.stm>.

¹⁰ Venetia Archer and Robert Young Pelton, "Can We Ever Assess the True Cost of Piracy?," Somalia Report, February 21, 2012, https://web.archive.org/web/20120602064556/http://www.somaliareport.com/index.php/post/2867/Can_We_Ever_Assess_the_True_Cost_of_Piracy_.

and agreements between states and pirates often took lengthy periods of time to come to fruition.¹¹ Although the hostage situation has improved greatly since 2009 due to increased naval presence, incidents have still persisted, and innocent lives have continued to be at stake. In 2017, the motor vessel *Aris 13* was captured, marking the first successful hijacking in five years.¹² The threat of hostage-taking still remains and NATO must continue with its vigilance in preventing future hostage incidents.

Impacts On the Somali Government

In 2023, Somalia was ranked the most corrupt country in the world and piracy has only weakened law enforcement and attempts to destabilize the government.¹³ The influx of ransom money has led to increased corruption among local officials and reports have indicated that some government and military officials have been complicit in piracy, either deliberately turning a blind eye or actively taking part in ransoms.¹⁴ Additionally, piracy has created a strong strain on Somalia's diplomatic relationships with bordering countries. Many nations have highlighted the inability of the Somali government to secure its own waters, leading to tensions over regional stability overall. Effective anti-piracy operations require international information sharing which has been hindered by mistrust among regional states, which in turn increases the reluctance to share intelligence out of fear that it may compromise their own interests or security.

¹¹ BBC News, "Q&A: Somali Piracy," *BBC News*, January 21, 2011, sec. Africa, <https://www.bbc.com/news/10349155>.

¹² Terry McKnight, "End Piracy in the Gulf of Aden," U.S. Naval Institute, June 2017, <https://www.usni.org/magazines/proceedings/2017/june/end-piracy-gulf-aden>.

¹³ Transparency International, "Somalia," Transparency International, 2023, <https://www.transparency.org/en/countries/somalia>.

¹⁴ Denys Reva and Timothy Walker, "Is Somali Piracy Finally under Control?," Institute for Security Studies, April 21, 2022, <https://issafrica.org/iss-today/is-somali-piracy-finally-under-control>.

Impact On the Somali Economy

Estimates suggest that a substantial portion of the \$7 billion that piracy costs the global economy annually has affected Somalia directly. High upfront costs are due to the need for ransom payments, increased insurance for vessels, and supporting security measures. However, indirectly, the fishing industry, a vital sector in Somalia's economy, has also faced the detrimental effects of piracy. Fishing operations have been severely disrupted as pirates target fishing vessels, discouraging legal fishing and revenue. Consequently, illegal fishing has increased and depleted fish stock in Somalia, furthering the damage and local fishermen's livelihoods. The impacts on the economy have exacerbated poverty, pushing locals towards piracy as fishermen who can no longer afford to maintain their vessels or take the risk of going out to sea turn to piracy, as pirates are able to offer higher payments.

History of the Problem

Pre-Civil War



Siad Barre, right, shakes hands with fellow dictator Nicolae Ceaușescu of România.¹⁵

Before the Somali Civil War, the Somali government sponsored a program to support cooperatives for small fisheries and individual fishers. In addition, the fishing industry showed significant potential for growth and thus benefited from foreign investment. Other countries also fished in the area with official sanctions and

¹⁵ Romanian National Archives, Barre with Romanian President Nicolae Ceaușescu in 1976, July 12, 2012, Online Image, Wikimedia Commons, July 12, 2012, https://en.wikipedia.org/wiki/Siad_Barre#/media/File:Muhammad_Siad_Barre_-_40866X9X9.jpg.

controls from Somalia.¹⁶ The civil war and subsequent collapse of the central government has left the waters off the coast of Somalia largely undefended.¹⁷

After Siad Barre

Since the 1980s, Somalia has been mired in a civil war. Initially, several rebel groups in distinct regions of the country opposed Siad Barre's military dictatorship, which they eventually overthrew in 1991. During the following period, competing factions violently vied for control in the resulting power vacuum. In 1992, the United Nations intervened with the original intention of humanitarian aid, as there was a severe famine resulting from the civil war. However, UNOSOM II's directive soon transformed into military action with significant American influence. UNOSOM II suffered severe losses in the Battle of Mogadishu, eventually leading to their withdrawal in 1995.

In 1998, a regional government was established in the northern region of the country, followed by the Transitional National Government in 2000 and the Transitional Federal Government (TFG) in 2004. These governments significantly reduced the intensity of conflict in the north, but further destructive conflict occurred in the southern region from 2005 to 2007.

¹⁶ Sunee C. Sonu, Office of International Fisheries Affairs, and National Marine Fisheries Service, "Foreign Fishery Developments," NOAA Fisheries, December 1982, <https://spo.nmfs.noaa.gov/sites/default/files/pdf-content/mfr44124.pdf>.

¹⁷ Tom Maliti, Malkhadir Muhumed, and Mohamed Olad Hassan, "Somali Pirates a Far Cry from Buccaneers of Old," The Washington Times, April 11, 2009, <https://www.washingtontimes.com/news/2009/apr/11/somali-pirates-a-far-cry-from-buccaneers-of-old/>.

Ethiopian Invasion

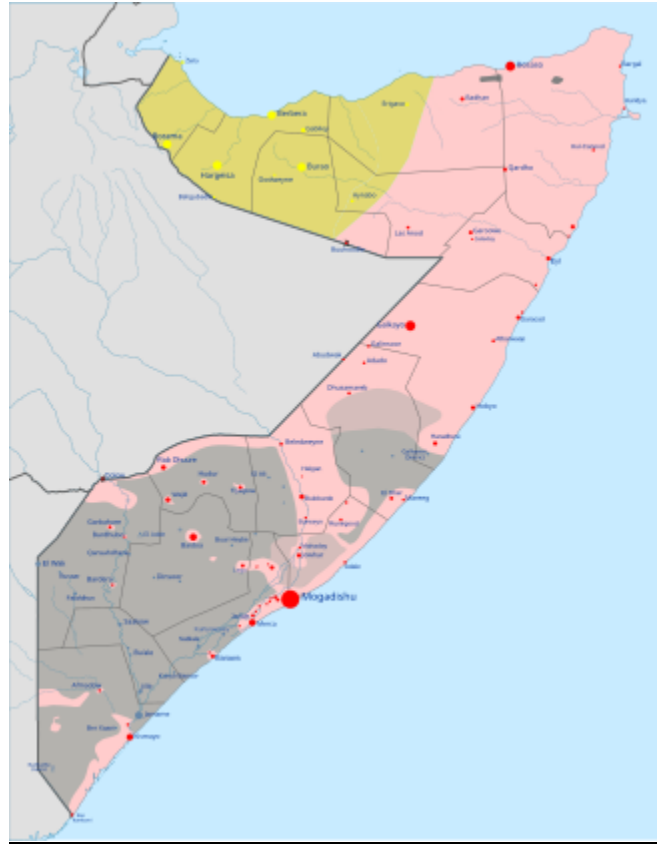


The United States stands by the Somali TFG and Ethiopian forces against the ICU.¹⁸

In 2006, Ethiopian forces invaded Somalia with United States support. They temporarily succeeded in replacing the Islamic Courts Union (ICU), which had controlled southern and central Somalia, with the TFG. The war continued after an Islamist insurgency recaptured Ethiopian territorial gains in 2007 and 2008. The TFG ended in a similarly weak position as before Ethiopian involvement. The insurgency allowed several Islamist military and nationalist organizations to form, the most prominent being al-Shabaab. These organizations have been fighting the Somali government and African Union forces since Ethiopian withdrawal, and they control most of southern Somalia.

¹⁸ Photo by MC2 (SW/AW) Evan Parker. Released. <https://www.cnn.com/2019/04/13/politics/us-military-somalia-mission/index.html>

Conflict Since 2009



The current political state of Somalia. The self-declared state of Somaliland is yellow, the official Somali government is pink, and al-Shabaab and its allies are gray. Dots represent major population centers.

The TFG absorbed the Alliance for the Re-liberation of Somalia (ARS), a successor to the ICU, and elected the ICU's former leader as president as part of a power-sharing agreement with moderate Islamists. This attempt to prevent further territorial expansion by al-Shabaab and other Islamist insurgent groups was somewhat effective, but the TFG remained debilitated. Since Ethiopian forces withdrew from Somalia, the war has consisted of the Somali government and the African Union Mission in Somalia (AMISOM) fighting against al-Shabaab. In 2009 and 2010, al-Shabaab continued absorbing other Islamist groups and escalating their terrorist attacks — for

instance, they carried out suicide bombings at the 2010 FIFA World Cup in Uganda as retaliation for that country's support of AMISOM.

Al-Shabaab nearly gained total control of Mogadishu, the Somali capital, several times until 2011, when they were finally expelled. Al-Shabaab was further weakened by a famine and by Kenya, who invaded in order to create a buffer zone on their border and avoid a worse refugee crisis. However, al-Shabaab still controls significant territory and have turned toward more guerrilla warfare tactics.

Background and Motivation for Piracy

The Gulf of Aden is a productive fishing location, and both foreign interests and local Somali fisheries have taken advantage. Foreign fishing has significantly increased in recent decades at a rate accelerated by the collapse of Siad Barre's government and subsequent lack of law enforcement. Many foreign vessels are fishing illegally, and they directly compete for resources by overfishing and bottom trawling, which reduces the number of fish left for locals to catch.

As a result, most Somali fishers resent the presence of foreign vessels. Their initial response was to organize armed groups into small, motorized boats in an attempt at deterrence. They would occasionally capture foreign crew and hold them for ransom. This practice gradually increased in frequency and expanded to non-fishing vessels, enabled in part by corruption in local government (which did not intervene against the pirates). Piracy was temporarily stymied by ICU anti-piracy policies, but the overall trend continued after ICU's overthrow. Many young Somalis began to view these activities as a financial opportunity, as the areas surrounding the Gulf of Aden and Horn of Africa have been stricken by poverty for decades.

In the 2010s, piracy was significantly reduced due to the United States Navy's establishment of the Combined Task Force 150 (CTF 150) in collaboration with other nations (NATO and non-NATO). Asian and

European countries also sent their navies to rescue hijacked ships during this period. However, the Somali coast has again seen a sharp rise in piracy due to the Israel-Hamas war since late 2023, which has shifted international focus away from the Gulf of Aden and toward the Red Sea. While the root causes of piracy remain the same, the war has added a potential political and religious motivation for Muslim Somali pirates.

Past Actions

As Somali piracy increased in both scale and international impact, global bodies quickly realized that the world lacked an institutional framework in place to deal with it. NATO began combating piracy in the Gulf of Aden at the request of the United Nations in 2008 due to the unanimous passing of Resolution 1816. In August 2009, NATO officially launched Operation Ocean Shield, which was an initiative to deter pirates and increase security of the gulf. This initiative was active from August 17, 2009 until December 15, 2006.

Operation Ocean Shield

Increased Naval Forces

Through Operation Ocean Shield, NATO provided naval escorts to at-risk vessels, ensuring safe transport through the region off the Horn of Africa. NATO vessels complied with the consent of Somali authorities to enter the waters of Somalia to conduct intelligence, surveillance, and reconnaissance missions. NATO vessels closely monitored commercial ships transiting the area, to ensure their safe passage through the Gulf of Aden. An increased presence of NATO vessels also meant increased ability to pursue suspected piracy vessels to prevent attacks. Pursuit operations included NATO boarding teams entering suspect vessels to intervene

in potential hijacking and determining the level of threat the vessel posed. If pirates were detected onboard a ship, they would be detained and taken to the authorities of the designated national law enforcement agency.¹⁹

Relationship with the Shipping Industry

It is essential to consider the nature of naval operations as the oceans are communal regions and seas are often divided among sovereign states. To respect the sovereignty of other nations, there is no single state actor that has the power to enforce exclusive mandates on maritime threats. During this period, international actors saw an increase in the voluntary and collaborative nature of never seen before frameworks developed to combat piracy pushed forward by the Shared Awareness and Deconfliction mechanism that brought together military forces, participants from the shipping industry, and international institutions.²⁰ It was essential that NATO worked closely with the maritime community to ensure that vessels followed the advice of **Best Management Practices 4** to protect themselves from pirate attacks.²¹ Shipping coordination was carried out through the NATO-established Maritime security Center off the Horn of Africa to facilitate communication and coordination between naval forces and the shipping industry.²² Communications included live information on pirate activity and recommended transit routes to avoid pirate attacks.

¹⁹ NATO. "Operation Ocean Shield." <https://mc.nato.int/missions/operation-ocean-shield/#:~:text=NATO%20ships%20also%20actively%20pursued,or%20intervene%20in%20a%20hijacking>.

²⁰ Katja Lindskov Jacobsen, Jessica Larsen, Piracy studies coming of age: a window on the making of maritime intervention actors, *International Affairs*, Volume 95, Issue 5, September 2019, Pages 1037–1054, <https://doi.org/10.1093/ia/iiz099>

²¹ International Chamber of Shipping. "BMP4: Best Management Practices for Protection Against Somali-Based Piracy." Accessed August 25, 2024. <https://www.ics-shipping.org/resource/bmp4-best-management-practices-for-protection-against-somali-based-piracy/#:~:text=BMP4%2C%20which%20was%20developed%20by,in%20the%20Western%20Indian%20Ocean>.

²² Maritime Security Centre - Horn of Africa (MSCHOA). "About MSCHOA." <https://on-shore.mschoa.org/about-mschoa/>.

Land Operations

While naval forces continued their efforts against pirates on water, regional states around Somalia were urged to develop naval coalitions and build their capacities to prosecute piracy suspects that naval forces were able to capture. During this period, key actors were Kenya, Mauritius, and Seychelles, who heavily cooperated with NATO and EU naval operations leading to the establishment of frameworks on the conditions of captured pirates. Prosecution of pirates was especially important for attacking piracy operations on land. NATO ensured that on land, nations had an increased ability to prosecute and take on legal proceedings against pirates on behalf of the international community. At this time, establishing effective regional law enforcement was crucial in the midst of political instability in Somalia and surrounding nations. In response to the **Security Council Resolution 1851**, over 50 states and organizations were brought together to develop counter-piracy policies, leading to the creation of the **Contact Group for Piracy off the Coast of Somalia**.²³

Possible Solutions

Over time, measures that worked in the past have slowly seen a decline in effectiveness. Although incidents fell to almost zero in 2020, piracy is increasing in prevalence again. NATO must create new initiatives adapted to the changing nature of piracy and address new challenges.

Inhibit Piracy Recruitment

NATO must address the issue of increased incentive to turn to piracy within the Somali region. In the past, traditional anti-piracy efforts have often focused on military and security responses, whereas engaging with

²³ World Bank. "Ending Somali Piracy Will Need On-Shore Solutions and International Support to Rebuild Somalia." Press release, April 11, 2013. <https://www.worldbank.org/en/news/press-release/2013/04/11/ending-somali-piracy-will-need-on-shore-solutions-and-international-support-to-rebuild-somalia>.

local communities may be a more holistic and inclusive strategy. Increasing initiatives intended to discourage young Somalis from becoming pirates may be effective in lowering increasing rates of piracy. Example initiatives may include promoting the attractiveness of alternative jobs or raising awareness of the negative impacts of piracy. Engaging with local communities through local leaders and running public information campaigns may prove to be an effective short term solution to slowing down recruitment of Somali youth into piracy. However, NATO has faced challenges in pirates paying Somali teenagers and young men higher rates to risk death and capture at sea.²⁴ Economic development programs may address the root causes of recruitment by supporting job creation, improving education, and enhancing infrastructure to provide an alternative way of life for those at-risk of being targeted by pirates. In order to carry out such initiatives, NATO members must understand the needs and perceptions of piracy of local communities and conduct research to better tailor initiatives.

Digital Economic Platforms

In the age of rapidly increasing technology, leveraging digital technologies to create remote work opportunities and digital economic platforms for Somalis may reduce the incentive to turn to piracy. Specific initiatives may include establishing training centers for teaching digital literacy and other specialized skills useful in the digital job market. The creation of work hubs with internet and other services to facilitate remote work may open up new economic opportunities and establish resilience and flexibility within communities.

Collaboration with Somali Fisherman

The surge in piracy may also in part be exacerbated by overfishing by foreign vessels that has frustrated local fishermen. More comprehensive regulations focused on preventing over licensing fishermen and ensuring

²⁴ International Crisis Group. "The Roots of Somalia's Slow Piracy Resurgence." Accessed August 25, 2024. <https://www.crisisgroup.org/africa/horn-africa/somalia/roots-somalias-slow-piracy-resurgence#:~:text=Over%20time%2C%20these%20measures%20appeared,buccaneering%20incidents%20since%20November%202023.>

compliance with fishing laws may decrease the support for piracy from local fishermen. Strengthening collaboration with fishermen may also decrease current challenges NATO operations face in regards to making false arrests, as many fishing boats are unregistered and oftentimes confused for piracy vessels. False arrests not only create distrust of state forces within local communities but hinder operations in prosecuting actual pirates.²⁵ A focus on legally registering fishermen and their vessels would ensure that fishing is not only better regulated by the government but processes to register as fishmen is easier, possibly transitioning pirates who were once fishermen back to fishing.

Bloc Positions:

There are no countries in NATO that directly benefit from or support piracy around Somalia. Thus, bloc formation will be dictated by contrasting ideas to combat the issue. There are two major blocs that will likely form: countries that favor taking immediate and direct security actions against Somali pirates, and those that prefer an approach that revolves primarily around diplomatic strategies and addressing socio-economic conditions that lead to piracy. However, nations may take into account both perspectives for a more holistic approach.

Nations That Favor Immediate Security Actions

A bloc that may emerge in response to the piracy crisis is those of nations with high capacities for carrying out a robust military response to piracy. Nations that provide large financial contributions to the alliance may push for resources to be directed towards increasing naval patrols, intelligence sharing, and use of necessary force to curb the increasing level of piracy in the gulf. Nations that hold a higher stake in trade carried out in the gulf

²⁵ International Crisis Group. "The Roots of Somalia's Slow Piracy Resurgence." Accessed August 25, 2024. <https://www.crisisgroup.org/africa/horn-africa/somalia/roots-somalias-slow-piracy-resurgence#:~:text=Over%20time%2C%20these%20measures%20appeared,buccaneering%20incidents%20since%20November%202023.>

may be more inclined to increase NATO's military presence as a piracy deterrent. For example, France holds large strategic interests in Africa and the Middle East, areas that are directly impacted by piracy and is a nation not only capable but experienced in conducting naval and other military operations in this region. In such cases, nations would be more willing to face the risk of escalating military involvement in a region that is a considerable distance from most of the alliance's borders.

Nations That Favor Diplomacy and Cooperation Efforts

However, anti-piracy strategies are not the only operations requiring NATO resources. Nations in the alliance may feel hesitant about increasing the military presence in the gulf over concerns about overextending NATO's military capacities. This is especially prevalent for nations whose national interests are not directly affected by piracy in the gulf. These nations may instead favor an approach that is more limited in military involvement, focusing more on diplomatic efforts and efforts that are more cost and time effective. Nations in this bloc would also be wary of the potential implications of increased military actions as the military responses carry the possibility of exacerbating existing problems such as the harboring of resentment from locals towards military authorities and furthering destabilization. As an alternative to increasing military deployment, these nations may emphasize solutions based on tackling root causes of piracy. This bloc would advocate for helping regional governments build their own capacities to combat piracy, possibly curbing the need for further NATO involvement in the future. Nations that prioritize peace-building over military intervention would favor this bloc as it supports initiatives that address factors underlying conflict and place more focus on aid and reducing poverty.

Glossary:

Security Council Resolution 733: A resolution adopted by the Security Council on January 23, 1992. This resolution officially established a complete arms embargo against Somalia, banning all forms of trade with Somalia. This was lifted in December 2023.

Security Council Resolution 1816: A resolution adopted by the Security Council on June 2, 2008. This resolution officially condemned all acts of piracy and armed robbery against vessels off the coast of Somalia. The United Nations called for an increased effort against piracy at the interest of being able to continue using commercial maritime routes in the Gulf of Aden.

Security Council Resolution 1851: A resolution adopted by the Security Council on December 16, 2008. This resolution authorized certain actions aimed at stopping piracy such as the use of force to maintain international peace.

Cape of Good Hope: An important navigational landmark and critical maritime waypoint located on the Atlantic coast of the Cape Peninsula, near the southernmost point of Africa. The cape, one of the busiest maritime routes, currently acts as an essential resupply and repair point for vessels carrying important cargo between Europe and Asia.

Best Management Practices 4: Also known as BMP, is a widely recognized set of guidelines nations follow to mitigate the risk of piracy against ships in areas such as the Gulf of Aden, the Somali Basin, etc. These practices focus on key areas such as risk assessment. Planning and coordination, self-protection measures, communication and reportings, training, etc.

Contact Group for Piracy off the Coast of Somalia: An international forum established in 2009 dedicated to promoting cooperative efforts against piracy off the coast of Somalia. The Contact Group included members from around the world and representatives from the United Nations, International Maritime Organization, African Union, etc.

Bibliography

Archer, Venetia, and Robert Young Pelton. "Can We Ever Assess the True Cost of Piracy?" Somalia Report, February 21, 2012.

https://web.archive.org/web/20120602064556/http://www.somaliareport.com/index.php/post/2867/Can_We_Ever_Assess_the_True_Cost_of_Piracy_.

Barden, Justine. "The Bab El-Mandeb Strait Is a Strategic Route for Oil and Natural Gas Shipments." U.S. Energy Information Administration, August 27, 2019.

<https://www.eia.gov/todayinenergy/detail.php?id=41073>.

Barre with Romanian President Nicolae Ceaușescu in 1976, July 12, 2012, Online Image, Wikimedia Commons, July 12, 2012,

https://en.wikipedia.org/wiki/Siad_Barre#/media/File:Muhammad_Siad_Barre_-_40866X9X9.jpg.

BBC News. "Q&A: Somali Piracy." BBC News, January 21, 2011, sec. Africa.

<https://www.bbc.com/news/10349155>.

Besley, Tim, Thiemo Fetzner, and Hannes Mueller. "The Economic Costs of Piracy." International Growth Centre, March 1, 2012. <https://www.theigc.org/collections/economic-costs-piracy>.

Central Intelligence Agency. "Somalia." The World Factbook, 2024. <https://www.cia.gov/the-world-factbook/countries/somalia/>.

Chibelushi, Wedaeli. "Somalia Piracy: Are We Witnessing Its Return off the Country's Coast?" BBC, February 2, 2024. <https://www.bbc.com/news/world-africa-68155471>.

Combined Maritime Forces. "CTF 150: Maritime Security." Combined Maritime Forces, September 17, 2010. <https://combinedmaritimeforces.com/ctf-150-maritime-security/>.

Douglas Parker. Somalia Train and Equip, August 23, 2018, Online Image, Defense Visual Information Distribution Service, August 23, 2018, <https://www.dvidshub.net/image/4669815/somalia-train-and-equip>.

Ecrusized. "Somali Civil War." Wikimedia Commons, May 23, 2024. https://commons.wikimedia.org/wiki/File:Somali_Civil_War_22_May_2024.svg.

Ecklund, Zane. Sailors Transfer Pallets of Hazardous Waste. September 7, 2012. Online Image. Flickr. <https://picryl.com/media/flickr-official-us-navy-imagery-sailors-transfer-pallets-of-hazardous-waste-3b9c9a>.

Feingold, Spencer. "Red Sea Attacks: What Trade Experts Have to Say about the Shipping Disruptions." World Economic Forum, February 20, 2024. <https://www.weforum.org/agenda/2024/02/red-sea-attacks-trade-experts-houthi-shipping-yemen>.

Glaser, Sarah M., Paige M. Roberts, and Kaija J. Hurlburt. "Foreign Illegal, Unreported, and Unregulated Fishing in Somali Waters Perpetuates Conflict." Edited by Philippe Le Billon. *Frontiers in Marine Science* 6 (December 5, 2019). <https://doi.org/10.3389/fmars.2019.00704>.

Hunter, Robyn. "Somali Pirates Living the High Life." *BBC News*, October 28, 2008. <http://news.bbc.co.uk/2/hi/africa/7650415.stm>.

International Chamber of Shipping. "BMP4: Best Management Practices for Protection Against Somali-Based Piracy." Accessed August 25, 2024. <https://www.ics-shipping.org/resource/bmp4-best-management-practices-for-protection-against-somali-based-piracy/#:~:text=BMP4%2C%20which%20was%20developed%20by,in%20the%20Western%20Indian%20Ocean>.

International Crisis Group. "The Roots of Somalia's Slow Piracy Resurgence." Accessed August 25, 2024. <https://www.crisisgroup.org/africa/horn-africa/somalia/roots-somalias-slow-piracy-resurgence#:~:text=Over%20time%2C%20these%20measures%20appeared,buccaneering%20incidents%20since%20November%202023>.

International Crisis Group. "The Roots of Somalia's Slow Piracy Resurgence." <https://www.crisisgroup.org/africa/horn-africa/somalia/roots-somalias-slow-piracy-resurgence#:~:text=Over%20time%2C%20these%20measures%20appeared,buccaneering%20incidents%20since%20November%202023>.

International Maritime Bureau. "New Report Highlights Continued Threat of Somali Piracy." ICC Commercial Crime Services, April 10, 2024. <https://www.icc-ccs.org/index.php/1348-new-report-highlights-continued-threat-of-somali-piracy>.

Jacobsen, Katja Lindskov, and Jessica Larsen. "Piracy Studies Coming of Age: A Window on the Making of Maritime Intervention Actors." *International Affairs* 95, no. 5 (September 2019): 1037–1054. <https://doi.org/10.1093/ia/iiz099>.

Janzen, Jörg H.A., Ioan M. Lewis, and The Editors of Encyclopaedia Britannica. "Somalia - Civil War." *Encyclopædia Britannica*, July 11, 2024. <https://www.britannica.com/place/Somalia/Civil-war>.

Karawita, Amali Kartika. "Piracy in Somalia: An Analysis of the Challenges Faced by the International Community." *Jurnal Ilmu Sosial Dan Ilmu Politik* 23, no. 2 (2019): 102. <https://doi.org/10.22146/jsp.37855>.

Maliti, Tom, Malkhadir Muhumed, and Mohamed Olad Hassan. "Somali Pirates a Far Cry from Buccaneers of Old." *The Washington Times*, April 11, 2009. <https://www.washingtontimes.com/news/2009/apr/11/somali-pirates-a-far-cry-from-buccaneers-of-old/>.

Maritime Security Centre - Horn of Africa (MSCHOA). "About MSCHOA." <https://on-shore.mschoa.org/about-mschoa/>.

McKnight, Terry. "End Piracy in the Gulf of Aden." U.S. Naval Institute, June 2017.

<https://www.usni.org/magazines/proceedings/2017/june/end-piracy-gulf-aden>.

Mueller, Jason C. "The Evolution of Political Violence: The Case of Somalia's Al-Shabaab." *Terrorism and Political Violence* 30, no. 1 (May 9, 2016): 116–41.

<https://doi.org/10.1080/09546553.2016.1165213>.

NATO. "Operation Ocean Shield." <https://mc.nato.int/missions/operation-ocean-shield#:~:text=NATO%20ships%20also%20actively%20pursued,or%20intervene%20in%20a%20hijacking>.

NormanEinstein. Gulf of Aden Map. January 29, 2009. Online Image. Wikimedia Commons.

https://commons.wikimedia.org/wiki/File:Gulf_of_Aden_map.png.

One Earth Future Foundation. "The Economic Cost of Piracy." *Oceans beyond Piracy*, 2010.

<https://oneearthfuture.org/sites/default/files/documents/summaries/View%20Summary.pdf>.

Reva, Denys, and Timothy Walker. "Is Somali Piracy Finally under Control?" *Institute for Security Studies*, April 21, 2022. <https://issafrica.org/iss-today/is-somali-piracy-finally-under-control>.

Rice, Xan. "Ethiopia Ends Somalia Occupation." *The Guardian*, January 26, 2009, sec. World news.

<https://www.theguardian.com/world/2009/jan/26/ethiopia-ends-somalia-occupation>.

Shortland, Anja. "Can We Stop Talking about Somali Piracy Now? A Personal Review of Somali Piracy Studies." *Peace Economics, Peace Science and Public Policy* 21, no. 4 (September 8, 2015).
<https://doi.org/10.1515/peps-2015-0018>.

Sonu, Sunee C., Office of International Fisheries Affairs, and National Marine Fisheries Service.
"Foreign Fishery Developments." NOAA Fisheries, December 1982.
<https://spo.nmfs.noaa.gov/sites/default/files/pdf-content/mfr44124.pdf>.

The Editors of Encyclopaedia Britannica. "UNOSOM." *Encyclopædia Britannica*, August 14, 2014.
<https://www.britannica.com/topic/UNOSOM>.

Transparency International. "Somalia." Transparency International, 2023.
<https://www.transparency.org/en/countries/somalia>.

United States Department of State. "Somalia." March 20, 2022. <https://www.state.gov/wp-content/uploads/2022/04>

Walt, Vivienne. "Inside Somalia's Rebirth as a Pirate Haven." *TIME*, May 1, 2024.
<https://time.com/6287107/somalia-piracy-return-2024/>.

Williams, Paul D. "After Westgate: Opportunities and Challenges in the War against Al-Shabaab."

International Affairs 90, no. 4 (July 2014): 907–23. <https://doi.org/10.1111/1468-2346.12148>.

TOPIC B: EDT

Statement of the Problem

Defining EDTs

Emerging and disruptive technologies (EDTs) are recent innovations whose long-term effects on society are still unfolding. The NATO Science and Technology Organization has defined eight major strategic disrupters: 1) data; 2) artificial intelligence; 3) autonomy; 4) quantum technology; 5) space technologies; 6) hypersonics; 7) biotechnology and human enhancement; 8) novel materials and manufacturing. However, NATO has placed emphasis on data, AI, autonomy, space and hypersonics to have the largest impact within the next 5-10 years, with the other EDTs considered as requiring another 10-20 years to have an impact on military capabilities. Overall, AI has been identified as the “biggest technological challenge” to NATO. EDTs have risen in prevalence in the technological industry and state governments alike.²⁶ In the information technologies field, EDTs are often found in the form of artificial intelligence platforms such as ChatGPT and Lensa AI, technologies growing in popularity in everyday life. However, the presence of EDTs have also grown significantly within the defense industries with EDTs being adapted for military use. States have turned to EDTs to uphold territorial integrity and maintain their positions of sovereignty. NATO's mission with respect to these technologies is to harness them for protection and stability of member states and to ensure their responsible use across the globe. In the past several years, the rise of EDTs have shown potential to permanently change military and civilian life, thus, increasing the importance of mitigating the potentially problematic and detrimental consequences of EDT development and use.

²⁶ NATO Allied Command Transformation. "Digital Transformation: Technologies Such as Artificial Intelligence." Last modified 2024. <https://www.act.nato.int/activities/digital-transformation/#:~:text=Technologies%20such%20as%20artificial%20intelligence,opportunities%20for%20NATO%20and%20Allies>.

Impact of EDTs On NATO Operations

EDTs assume the role of a double edged sword, carrying both the potential to support and threaten NATO operations. For example, NATO members may harness EDTs for national security reasons, but autocratic nations, terrorist groups, and other malicious parties may use them to harm NATO or the public well-being.

Case Study – Ukraine War

The war in Ukraine is considered the first hybrid war. Both Ukraine and Russia have utilized drones within the conflict, which has highlighted the important role that electronic warfare capabilities and air defense systems have played in limiting Russia's ability to use drones. Ukraine currently uses cyber tools to counter cyber attacks involving AI on railways and electricity grids as well as flagging propaganda and misinformation. Ukraine also utilizes facial recognition technology to identify Russian agents and soldiers, as well as apply advanced software databases to create applications that allow citizens to report sightings of missiles for early interception. The current conflict in Ukraine has demonstrated the impact of EDTs on warfare and the shift toward EDT usage.²⁷

Case Study – Social Media, Algorithms, and Politics

Social media enjoyed a meteoric rise in popularity in the 2010s, partially due to many platforms' content algorithms, which are designed to keep users entertained for as long as possible (and thus maximize advertisement revenue). These algorithms analyze a large amount of data from individual users to determine what is most likely to keep them engaged. A side effect of this strategy is the creation of echo chambers — the more time one spends

²⁷ Centre for Economics and Foreign Policy Studies (EDAM). "Emerging Disruptive Technologies (EDT) in Defense: Lessons from Ukraine." Defense & Intelligence Sentinel. <https://edam.org.tr/en/defense-intelligence-sentinel/emerging-disruptive-technologies-edt-in-defense-lessons-from-ukraine>.

on social media, the more tailored their content is to their political beliefs. On a larger scale, this has led to political polarization, which is associated with hate speech and violence. In addition, social media can be harnessed by special interests to covertly manipulate public opinion. For example, Russia spread disinformation to millions of American users via social media as part of their larger strategy to interfere in the 2016 election.²⁸

Ethical Considerations

The ever-increasing investment into developing lethal autonomous systems (LAW) have been followed by increasing concerns over the ethicality of using AI. Military operations are especially high risk, with the well-being of large populations at stake. This level of risk, therefore, requires a high level of understanding of the capabilities of AI and AI's place in military roles. If AI were to potentially replace a manual position, it is critical that there is certainty AI can adhere to ethical guidelines. It is also essential to consider potential social biases that AI may carry and execute when performing certain tasks.

A Potential Arms Race

Current theories propose that due to both the civilian and military use of EDTs, availability of such technologies will only increase and result in lower barriers of access, disproportionately benefiting smaller powers compared to major powers. Researchers predict that this growth in access to EDTs could create significant changes to the military balance of power and result in conditions for a poor state of international security.²⁹ Easier access to EDTs by a single state could hold the potential for an action-reaction cycle of arms buildup from other states - increasing the chances for conflict. While NATO Allies are placed to be global drivers of responsible innovation

²⁸ Centre for Economics and Foreign Policy Studies (EDAM). "Emerging Disruptive Technologies (EDT) in Defense: Lessons from Ukraine." Defense & Intelligence Sentinel. <https://edam.org.tr/en/defense-intelligence-sentinel/emerging-disruptive-technologies-edt-in-defense-lessons-from-ukraine>.

²⁹ E-International Relations. "Emerging and Disruptive Technologies: New Weapons in the Making?" June 17, 2024. <https://www.e-ir.info/2024/06/17/emerging-and-disruptive-technologies-new-weapons-in-the-making/>.

in EDTs, states must consider the impact of prioritizing investment in EDT development and advancement. States must also consider that within a present-day security context, when an already strong state acquires too much military power (in this case EDTs), this can fuel sentiments of distrust and fear, which can quickly turn into escalation. However, the argument remains that the adoption of EDTs may have the opposite effect. As seen with the emergence of nuclear weapons, EDTs may lead to the potential for mutually assured destruction, therefore, preventing conflict.

History of the Problem

The Changing Nature of Warfare

Warfare has changed over time from conventional warfare operations to digital warfare. As the nature of warfare changes, so do the security risks that align with it. Data and digitalization have become more important than ever and conflicts revolving around information control have increased. It's reported that ransomware and malware attacks are increasing at a rate of 400% per year, forcing nations to strengthen cyber defenses and networks.³⁰ The impact of EDTs have made military capabilities "increasingly intelligent, interconnected, distributed, and digital in nature" - and will continue to do so for the foreseeable future.³¹ The threat landscape now includes state-sponsored cyberattacks, as seen in incidents like the **2017 NotPetya attack**, which caused billions of dollars in damage globally and highlighted the devastating potential of cyber warfare.³² We are entering

³⁰ Saleous, Heba, Muhusina Ismail, Saleh H. AlDaajeh, Nisha Madathil, Saed Alrabace, Kim-Kwang Raymond Choo, and Nabeel Al-Qirim. "COVID-19 Pandemic and the Cyberthreat Landscape: Research Challenges and Opportunities." *Digital Communications and Networks* 9, no. 1 (2023): 211-222. <https://doi.org/10.1016/j.dcan.2022.06.005>.

³¹ World Economic Forum. "AI and Disinformation: A Global Risk." January 2024. <https://www.weforum.org/agenda/2024/01/ai-disinformation-global-risks/>.

³² Iftikhar S. Cyberterrorism as a global threat: a review on repercussions and countermeasures. *PeerJ Comput Sci.* 2024 Jan 15;10:e1772. doi: 10.7717/peerj-cs.1772. PMID: 38259881; PMCID: PMC10803091.

a new era in which the leverage of advanced technology provides stakeholders an unpredictable and unprecedented military edge.

A History of Automated Warfare

By the early 1950's a new concept began to emerge and settle amongst scientists, mathematicians, and philosophers. In 1950, Alan Turing proposed that machines held the capacity to use information and reason to solve problems and make decisions. In the late 1950s to early 1970s, computers became cheaper, algorithms became more advanced, and AI began to flourish³³. Following World War II, nations understood that they needed computing supremacy to maintain dominance and relevance. During the Cold War, the benefits of computation were heavily integrated into standard military operations. NATO focused efforts on developing technology in the nuclear, aerospace, and defense warning system sectors. After the Cold War, the domain of combat had shifted from one that was physical, to digital. Scientific research funding was heavily increased along with higher investment in computer research, leading to the automation of military tasks and the rise of technology-assisted warfare.

Automated Warfare in the 21st Century

By the early 21st century, theories emerged that military victory would be the result of superior decision-making speeds - enabled by artificial intelligence. This theory was commonly known as Network Centric Warfare, which led to transformations in conflict in Afghanistan and Iraq. In 2014, the United States announced a new initiative to maintain US military advantage with the use of advanced technologies such as artificial intelligence and unmanned weapons.³⁴ Nations such as China and Russia were quick to follow suit, with more nations

³³ Sun, Chris. "The History of Artificial Intelligence." Science in the News. Harvard University, August 28, 2017. <https://sitn.hms.harvard.edu/flash/2017/history-artificial-intelligence/>.

³⁴ Singer, Peter W. "Artificial Intelligence and the Future of Warfare." Hudson Institute, September 28, 2021. <https://www.hudson.org/defense-strategy/artificial-intelligence-future-warfare>.

showing increased interest in the military use of AI in recent years, leading to an AI race. Within NATO, by the mid 2010's, several AI-focused projects such as the Autonomous Black Sea Maritime Patrol, which used AI for threat detection, emerged. AI in the 21st century was also marked by the creation of the lethal autonomous weapons system (LAW), with advancements in machine learning and robots capable of performing human tasks without humans. The first documented use of a LAW system was documented in the 2021 Libyan War when an autonomous drone was reported to have targeted combatants. Along with the creation of LAW systems has also come global controversy. The 2020 launch of the autonomous drone "Kargu-2" by Turkish forces in Libya stirred significant debate about the ethical implications and operational rules surrounding autonomous systems.³⁵ This highlighted the urgent need for international guidelines and transparency in the use of such technologies. Since then, LAWs have mainly been put to use in patrol areas or as automated guard guns by militaries. As military powers continue to innovate, ongoing global discussions and regulatory efforts remain crucial in shaping the future landscape of international security and ensuring that technological advancements do not undermine global stability.

History of Global Response to EDTs

As the integration of emerging and disruptive technologies (EDTs) into military operations accelerated, the international community increasingly recognize the need for coordinated responses to address the associated risks and ethical dilemmas. Early global efforts to manage these technologies began with the establishment of frameworks and treaties designed to address the proliferation of specific technologies and their evolving nature. For example, the Convention on Certain Conventional Weapons (CCW) of 1983 was later amended to include

³⁵ Kastner, James. "Kargu-2 Autonomous Attack Drone: Legal and Ethical Implications." Lieber Institute West Point, June 15, 2021. [https://lieber.westpoint.edu/kargu-2-autonomous-attack-drone-legal-ethical/#:~:text=In%20March%202021%2C%20a%20UN,capability%E2%80%9D%20\(para%2063\).](https://lieber.westpoint.edu/kargu-2-autonomous-attack-drone-legal-ethical/#:~:text=In%20March%202021%2C%20a%20UN,capability%E2%80%9D%20(para%2063).)

discussions on lethal autonomous weapons systems (LAWs) in 2016³⁶. The CCW's Group of Governmental Experts (GGE) has since met regularly to debate the implications of LAWs in order to develop international norms and potentially binding regulations to prevent unintended consequences of their deployment.

In addition to legal frameworks, nations and international organizations have also taken measures to address the cybersecurity threats posed by EDTs. For example, the surge in global cybersecurity initiatives promoted by the 2017 WannaCry ransomware attack, which crippled numerous organizations globally including the UK's National Health Service. This attack highlighted the vulnerability of critical infrastructure to cyber threats and ultimately led to the establishment of the Global Forum on Cyber Expertise (GFCE) in 2015. The GFCE aims to enhance international collaboration on cybersecurity capacity building and information sharing. Furthermore, the NATO Cooperative Cyber Defence Centre of Excellence (CCDCOE) was established in 2008 and has played a significant role in advancing collective defense strategies against cyber threats through research and encouraging member states to adopt best practices in the field of cyber security³⁷.

Past Actions

In 2019, NATO allies developed the **Emerging and Disruptive Technology Implementation Roadmap** which acknowledges that technological development will shape many of the future threats to NATO.³⁸ The roadmap first split EDTs into seven categories: data, artificial intelligence, autonomous systems, quantum technologies, biotechnology and human enhancement, hypersonic technologies, and space. NATO has recognized that EDTs are revolutionizing future military capabilities and how warfare is conducted, and the

³⁶ Chowdhury, Rumman. "The Evolution of War: How AI Has Changed Military Weaponry and Technology." Montreal AI Ethics Institute, April 14, 2021. <https://montrealaiethics.ai/the-evolution-of-war-how-ai-has-changed-military-weaponry-and-technology/>.

³⁷ North Atlantic Treaty Organization (NATO). "NATO's Approach to Emerging and Disruptive Technologies." March 24, 2021. https://www.nato.int/cps/en/natohq/news_181901.htm.

³⁸ NATO. "Emerging and Disruptive Technologies (EDTs)." https://www.nato.int/cps/en/natohq/topics_184303.htm.

roadmap provides structure to NATO's work regarding EDTs. NATO also added space as an operational domain (in addition to land, sea, air, and cyberspace) to facilitate operations in that area.³⁹

In 2020, NATO established the **Advisory Group on Emerging and Disruptive Technologies**, consisting of twelve academic and industry experts from several NATO countries. Since then, the Group has advised NATO on technological issues, including adoption, education, and funding.⁴⁰

In 2021, NATO agreed on a **Coherent Implementation Strategy on EDTs** which outlined the development of dual-use technologies and creating a platform for member states to exchange best practices. Allies launched an innovation fund worth 1 billion euros dedicated to NATO technology development. Current panels working in accordance with this strategy include the Applied Vehicle Technology Panel, the Human Factor and Medicine Panel, the Information Systems Technology Panel, the System Analysis and Studies Panel, and the Sensors and Electronics Technology Panel. Also in 2021, allies agreed on an Artificial Intelligence Strategy to ensure that AI is adapted for NATO's purposes and integrated securely with pre-existing systems. The NATO Science and Technology Organization is currently the main body that utilizes investments of member states to conduct research, development, and innovation on EDTs.⁴¹

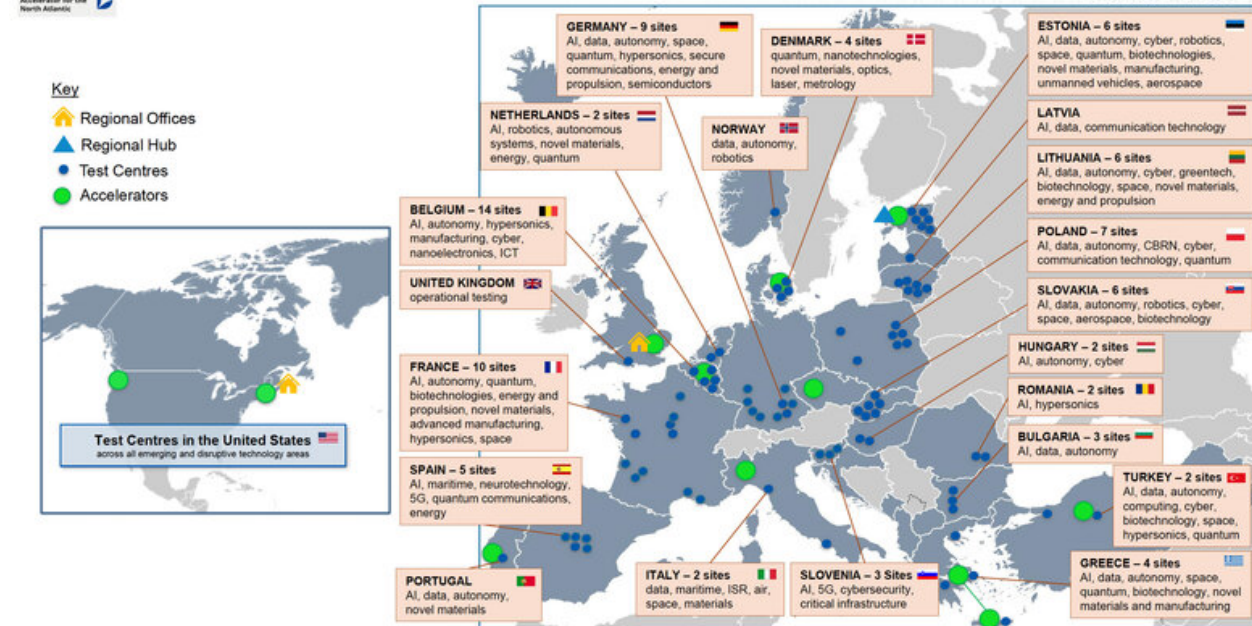
³⁹ Brussels School of Governance. "CSDS Policy Brief 2307." 2023. https://www.brussels-school.be/sites/default/files/CSDS%20Policy%20brief_2307_0.pdf.

⁴⁰ NATO. "Emerging and Disruptive Technologies: Advisory Group Annual Report 2020." March 3, 2021. https://www.nato.int/nato_static_fl2014/assets/pdf/2021/3/pdf/210303-EDT-adv-grp-annual-report-2020.pdf.

⁴¹ NATO. "NATO to Establish New Centre for Emerging and Disruptive Technologies." February 18, 2022. https://www.nato.int/cps/en/natohq/news_187934.htm.



Updated DIANA footprint: Test Centres March 2023



DIANA site locations, including regional offices, regional hubs, test centers, and accelerators, across NATO member states.⁴²

In 2023, NATO collaborated with the European Union to increase cooperation on EDTs to prevent the threat of operational advantages in future warfare. Through this cooperation, NATO and the EU agreed upon the “triple helix” approach — an intersection between government, private industry, and academia for technological advancement.⁴³ With regard to private industry, NATO pushed for the involvement of commercial companies as a large portion of innovation in the EDT sector lies external to state development. To address this, NATO and the EU developed the NATO **Defense Innovation Accelerator for the North Atlantic (DIANA)** which includes a network of 9 innovation accelerator sites and 63 innovation hubs across the alliance.⁴⁴

⁴² NATO. “NATO’s Diana expands transatlantic footprint, gears up for first challenges.” March 31, 2023.

⁴³ Brussels School of Governance. “CSDS Policy Brief 2307.” 2023. https://www.brussels-school.be/sites/default/files/CSDS%20Policy%20brief_2307_0.pdf.

⁴⁴ NATO. “DIANA: Maps of NATO’s Defense Innovation Accelerator for the North Atlantic.” April 7, 2022. https://www.nato.int/nato_static_fl2014/assets/pdf/2022/4/pdf/220407-DIANA-maps.pdf.

Additionally, NATO has emphasized the importance of including small businesses and startup companies within the DIANA network. NATO believes that linking private sector developments with public authorities and academia will create a strong cooperation between stakeholders in the rising EDT industry. DIANA also establishes a multinational venture capital fund to financially support this development throughout the alliance.

Possible Solutions

Improving Technology Literacy

To effectively handle EDTs, political and corporate decision-makers — as well as end users — should collectively have a firm grasp of the technologies they apply. Otherwise, unintended and potentially harmful consequences will likely ensue. EDTs are naturally difficult to understand, as the field is constantly rapidly evolving. Thus, some NATO members advocate for increased education on EDTs, but there are many methods in which this could be implemented. For instance, mandatory educational programs targeted toward staff who would use EDTs or wider educational media on EDTs for NATO citizens may be effective solutions.⁴⁵ The degree to which these methods are tailored toward different roles may vary, and any actions should be kept up to date with new EDT developments.

EDT Funding

Whether it is via the government, private interests, or academia, virtually any use of EDTs requires funding. The nature of EDTs demands quick turnarounds, and finances should be paced to match. Contracting larger organizations provides a less risky option, but smaller and newer corporations may provide more novel ideas

⁴⁵ European Commission. "Action Plan on Synergies between Civil, Defence and Space Industries." March 2021. https://commission.europa.eu/system/files/2021-03/action_plan_on_synergies_en_1.pdf.

to accelerate EDT innovation. Obtaining funding may present challenges, as private benefactors may have individual interests that EDT development must cater to, and national budget appropriations for EDTs must be approved by the various governments of NATO member states. Furthermore, if too much money is provided toward unpopular applications of EDTs, public opinion may turn against the elected officials who support them. A potential solution to this issue is public education on the merits of EDTs.⁴⁶

To maximize effect, funding for EDTs should be strategically targeted. Potential tactics include diversifying investments to smaller companies and startups rather than only established corporations. This strategy would counteract the top-down control of critical technologies by making sure new ideas are routinely considered and economic competition is maintained. Investment could also focus particularly on dual-use technologies, which have both military and civilian functions. The versatility of these technologies would make funding more effective and incentivize further development.

Regulation and Oversight

Many ethical concerns exist regarding EDTs, many of which are unpredictable due to the pace of innovation. To combat these and ensure EDTs are not used to society's detriment, NATO may enact binding ethics codes for government use, as well as regulatory measures or oversight committees for EDTs in private industry. Such rules might protect data privacy or outlaw certain applications of biotechnology on human subjects, to name some examples. However, these regulations (if implemented) should balance control with efficiency — they should not excessively hamper progress and innovation. In addition, any laws will take time to write and pass, and thus may not keep pace with the advancement of EDTs.

⁴⁶ NATO. "Emerging and Disruptive Technologies: Advisory Group Annual Report 2020." March 3, 2021. https://www.nato.int/nato_static_fl2014/assets/pdf/2021/3/pdf/210303-EDT-adv-grp-annual-report-2020.pdf.

Expanding Data Sets

Diversifying the data sets used in the programming of AI can reduce the chances that social biases will be present in algorithms. The capabilities of AI are limited by the data with which the model is trained on— if the data are biased, the AI will learn that bias. A prominent example of a biased algorithm is the Correctional Offender Management Profiling for Alternative Sanctions (COMPAS), which is used in the United States criminal justice system to estimate the chance a criminal defendant will reoffend. Unfortunately, COMPAS is significantly more likely to label a person of color as high-risk despite the retrospective fact that they do not end up committing other crimes.⁴⁷ This is just one example of the importance of providing diverse data sets to prevent certain biases within AI usage.

Bloc Positions

The formation of blocs regarding EDTs will place countries into two major categories: those that support further EDT innovation and investments, and those that do not. Much of the support will stem from NATO members with robust infrastructure to develop EDTs, but not all opposition will be from countries without this advantage. Some countries may oppose EDT development for fear of falling behind economically and technologically, and they also may be concerned about ethical issues surrounding EDTs.

Nations That Support the Development of EDTs

One of the major blocs in this session will be those countries that actively support the development of EDTs within the Alliance. As countries hold varying degrees of innovation capacities and defense strategies, these

⁴⁷ Angwin, Julia, Jeff Larson, Surya Mattu, and Lauren Kirchner. "How We Analyzed the COMPAS Recidivism Algorithm." ProPublica, May 23, 2016. <https://www.propublica.org/article/how-we-analyzed-the-compas-recidivism-algorithm>.

countries view technological edge as the key to securing threats in the rapidly evolving landscape of EDTs in warfare. The United States, United Kingdom, and Germany are currently the three leading proponents of EDTs within the alliance. One of the motivations nations that support EDT innovation holds is the need to respond effectively to sophisticated adversaries who are also investing heavily in technological advancements, and are hoping to match the capabilities of potential threats. These nations may also support EDT development for economic and industrial purposes as the defense industry in these nations may be a large contributor to their economies and innovations would drive economic growth.

For instance, the United States passed the CHIPS and Science Act in 2022, which provides \$280 billion of funding toward microchip and semiconductor manufacturing and research. Part of the motivation for this investment is to compete with China on both technological and economic fronts. This motivation is shared by some other Western countries that find much of their private industry outsourced to Chinese competitors or feel threatened by Chinese technological advancements.

Nations That Do Not Support the Development of EDTs

As previously mentioned, not all countries hold the same capacities for technological advancement. Another significant bloc in the session will be those nations that are cautious or opposed to the rapid development of EDTs. Concerned about the implications of advancing technology on either global security or ethical standards, these nations have a multitude of reasons for a reluctance to fully embrace EDTs. Nations may be concerned about the potential for an arms race in advanced technologies. Nations that share borders with adversaries investing heavily in EDT development would be particularly concerned about increased instability and risk of united escalations in conflict. These nations may also be concerned over the ethical implications of certain EDTs such as the accountability of autonomous systems when deployed in sensitive operations where human lives are at stake.

The development of EDTs may also be misaligned with the economic goals of these nations. Investing heavily in EDTs may take away focus from existing military technologies and place resources into an emerging field that has uncertain outcomes and costs.

NATO members that might not support EDT development include Turkey, Albania, and other countries in Eastern Europe. These nations may have less developed economies than other NATO members, and thus may prefer to invest in more familiar sectors that they perceive as more likely to lead to prosperity. In addition, many countries share borders with or are geographically close to Russia, and may fear being caught in the crossfire of a potential escalation and military conflict involving EDTs between NATO and Russia.

Glossary:

Autonomous Systems – an umbrella term for any mechanism that works without human intervention (i.e. automatically). Not to be confused with artificial intelligence; for example, some factory machinery is autonomous because it runs without humans, but its actions are simple and explicitly pre-programmed.

Artificial Intelligence – technologies that allow computers to perform complex tasks, such as interpreting language and analyzing data (visual, numerical, or otherwise). Often abbreviated as AI.

Machine Learning – a subset of artificial intelligence that involves computers using ("learning from") known data to draw conclusions about unknown data. Sometimes abbreviated as ML.

Quantum Technologies – a group of technologies that apply principles of quantum mechanics (the behavior and interaction of particles smaller than atoms). These show potential to change the fields of computing, navigation, imaging, simulation, and many others.

Biotechnology – any technology that harnesses a biological process (i.e. a natural process of an organism or cell). Biotechnology shows potential to advance sciences such as material science, but also poses the danger of bioweapons and the unintended spread of pathogens.

Human Enhancement – any technology that improves human functions, such as substances to temporarily enhance physical and cognitive performance or a suit to withstand harsh environments.

Lethal Autonomous Weapons Systems - Weapons capable of selecting and engaging threats without human intervention. Weapons are often operated using artificial intelligence and machine learning algorithms.

Big Data Analytics - A form of analysis involving large and complex data sets that are utilized to uncover patterns and insights that inform decision making to predict potential threats, smooth out operational logistics, and improve efficiency.

Defence Innovation Accelerator for the North Atlantic - A NATO initiative dedicated to accelerating the development and adoption of EDTS in defense and security. This operation connects start ups, enterprises, and academic institutions with NATO's technological needs.

Bibliography

Angwin, Julia, Jeff Larson, Surya Mattu, and Lauren Kirchner. "How We Analyzed the COMPAS Recidivism Algorithm." ProPublica, May 23, 2016. <https://www.propublica.org/article/how-we-analyzed-the-compas-recidivism-algorithm>.

Brussels School of Governance. "CSDS Policy Brief 2307." 2023. https://www.brussels-school.be/sites/default/files/CSDS%20Policy%20brief_2307_0.pdf.

Centre for Economics and Foreign Policy Studies (EDAM). "Emerging Disruptive Technologies (EDT) in Defense: Lessons from Ukraine." Defense & Intelligence Sentinel. <https://edam.org.tr/en/defense-intelligence-sentinel/emerging-disruptive-technologies-edt-in-defense-lessons-from-ukraine>.

Chowdhury, Rumman. "The Evolution of War: How AI Has Changed Military Weaponry and Technology." Montreal AI Ethics Institute, April 14, 2021. <https://montrealethics.ai/the-evolution-of-war-how-ai-has-changed-military-weaponry-and-technology/>.

E-International Relations. "Emerging and Disruptive Technologies: New Weapons in the Making?" June 17, 2024. <https://www.e-ir.info/2024/06/17/emerging-and-disruptive-technologies-new-weapons-in-the-making/>.

European Commission. "Action Plan on Synergies between Civil, Defence and Space Industries." March 2021. https://commission.europa.eu/system/files/2021-03/action_plan_on_synergies_en_1.pdf.

Iftikhar, S. "Cyberterrorism as a Global Threat: A Review on Repercussions and Countermeasures." PeerJ Comput Sci. 2024 Jan 15;10:e1772. doi: 10.7717/peerj-cs.1772. PMID: 38259881; PMCID: PMC10803091.

Kastner, James. "Kargu-2 Autonomous Attack Drone: Legal and Ethical Implications." Lieber Institute West Point, June 15, 2021. [https://lieber.westpoint.edu/kargu-2-autonomous-attack-drone-legal-ethical/#::~:~:text=In%20March%202021%2C%20a%20UN,capability%E2%80%9D%20\(para%2063\)](https://lieber.westpoint.edu/kargu-2-autonomous-attack-drone-legal-ethical/#::~:~:text=In%20March%202021%2C%20a%20UN,capability%E2%80%9D%20(para%2063).).

Lai, Karmen. "Facial Recognition Tech in China Will Soon Be Governed." Tech Wire Asia, August 23, 2023. <https://techwireasia.com/2023/08/facial-recognition-tech-in-china-will-soon-be-governed/>.

Mozur, Paul. "Hong Kong Protests Test the Limits of Facial Recognition." The New York Times, July 26, 2019. <https://www.nytimes.com/2019/07/26/technology/hong-kong-protests-facial-recognition-surveillance.html>.

NATO. "DIANA: Maps of NATO's Defense Innovation Accelerator for the North Atlantic." April 7, 2022. https://www.nato.int/nato_static_fl2014/assets/pdf/2022/4/pdf/220407-DIANA-maps.pdf.

NATO. "Emerging and Disruptive Technologies (EDTs)." https://www.nato.int/cps/en/natohq/topics_184303.htm.

NATO. "Emerging and Disruptive Technologies: Advisory Group Annual Report 2020." March 3, 2021. https://www.nato.int/nato_static_fl2014/assets/pdf/2021/3/pdf/210303-EDT-adv-grp-annual-report-2020.pdf.

NATO. "NATO to Establish New Centre for Emerging and Disruptive Technologies." February 18, 2022. https://www.nato.int/cps/en/natohq/news_187934.htm.

NATO Allied Command Transformation. "Digital Transformation: Technologies Such as Artificial Intelligence." Last modified 2024. <https://www.act.nato.int/activities/digital-transformation/#:~:text=Technologies%20such%20as%20artificial%20intelligence,opportunities%20for%20NATO%20and%20Allies>.

North Atlantic Treaty Organization (NATO). "NATO's Approach to Emerging and Disruptive Technologies." March 24, 2021. https://www.nato.int/cps/en/natohq/news_181901.htm.

Saleous, Heba, Muhusina Ismail, Saleh H. AlDaajeh, Nisha Madathil, Saed Alrabae, Kim-Kwang Raymond Choo, and Nabeel Al-Qirim. "COVID-19 Pandemic and the Cyberthreat Landscape: Research Challenges and Opportunities." *Digital Communications and Networks* 9, no. 1 (2023): 211-222. <https://doi.org/10.1016/j.dcan.2022.06.005>.

Singer, Peter W. "Artificial Intelligence and the Future of Warfare." Hudson Institute, September 28, 2021. <https://www.hudson.org/defense-strategy/artificial-intelligence-future-warfare>.

Sun, Chris. "The History of Artificial Intelligence." Science in the News. Harvard University, August 28, 2017. <https://sitn.hms.harvard.edu/flash/2017/history-artificial-intelligence/>.

World Economic Forum. "AI and Disinformation: A Global Risk." January 2024. <https://www.weforum.org/agenda/2024/01/ai-disinformation-global-risks/>.