



ADMM Cybersecurity and  
Information Centre of Excellence

# Monthly Digest

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*A monthly round-up of significant news around the world*

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## Artificial Intelligence

### Military Metaverse: Opportunities and Risks

1. The metaverse is characterised by the European Union as a space that integrates the real with the virtual, underpinned by various interconnected technologies, including Virtual Reality (VR), Augmented Reality (AR), Mixed Reality (MR), and Extended Reality (ER). Based on a *GlobalData* report published in April 2023, the metaverse is projected to generate US\$625 billion in revenue by 2030, reflecting a compound annual growth of 33% between 2020 to 2030.
2. Militaries have started to use metaverse in areas such as training, strategic planning and international defence collaborations. NATO Science and Technology Organisation's "Symposium on Emerging and Disruptive Modelling and Simulation Technologies to Transform Future Defence Capabilities" held in October 2022 highlighted that the metaverse is likely to change the way militaries plan and operate. Specifically, the metaverse is expected to (a) enhance strategic planning and decision-making with increased situational awareness using simulation; (b) transform training using simulation to improve defence outcomes; and (c) provide more opportunities for military collaboration in complex situations.
3. Enhancing Strategic Planning. Militaries have used the metaverse to enhance their strategic planning. The *GlobalData* report published in April 2023 stated that countries in the Asia-Pacific were setting up military defences in the metaverse to prepare for modern warfare. For example, China employs Battle Labs, which uses big data, artificial intelligence (AI) and simulations to inform

its military modernisation plans. The metaverse has also been used for strategic planning in virtual war rooms to visualise and test tactics in real time. The US Naval War College has launched a Massive Multi-Player Online Wargame Leveraging the Internet (MMOWGLI) project using a virtual environment to facilitate collaborative strategy development. In addition, US' Defence Advanced Research Projects Agency (DARPA)'s Persistent Stare Exploitation and Analysis System (PSEAS) enables 3D visualisation of battlefield data, offering commanders rich information and unprecedented situational awareness to facilitate more timely and accurate decision-making.



*Strategic Planning Exercise in the Metaverse  
(Source: US Air Force Materiel Command's Digital Transformation Office)*

4. Improving Simulated Training. The use of metaverse in military training can increase effectiveness while reducing associated physical risks. An example is the US' Synthetic Training Environment (STE), which simulates the traditional combat and disaster response drills. The US F-35 fighter jet pilots' helmets use AR to project telemetry and target information onto live video feeds, thereby enhancing pilots' situational awareness and operational effectiveness. In parallel, the Indian Army uses AI-powered VR wargames in the Wargame Research and Development Centre (WARDEC) to simulate battlefield scenarios without the need to go outfield for military exercises under harsh weather conditions, thereby increasing safety in military training. Singapore and the ROK have also explored the Advanced Tactical Augmented Reality System (ATARS) training solution to provide pilots with in-air combat training through simulation exercises.



*Force-on-Force Shooting Simulation (Source: Lockheed Martin)*

5. The metaverse has also been used to enhance emergency medical responder training. For example, the Singapore Armed Forces (SAF) collaborated with National University of Singapore (NUS) to develop the Multi-Sensory Extended Reality (MS-XR) Medical Crisis Management System, which offers medical first responders a more realistic triage training experience. The heart of the system is a software that brings together VR with multi-sensorial hardware interfaces to create synchronised responses between the physical and virtual elements. In addition to the realistic training experience, first responders receive immediate and detailed feedback on their performances tracked by the VR system, removing the need for intermediary assessors. This invention won the gold award at the Wharton-QS Reimagine Education Awards in December 2021 for its practical application.



*The MS-XR Medical Crisis Management System offers an immersive triage training experience  
(Source: NUS News)*

6. Creating Collaborative Opportunities. Multilateral military exercises foster interoperability and shared learning among participating armed forces; the learning value is amplified when such exercises are conducted through the metaverse. For instance, the Joint Multinational Readiness Center (JMRC) in Germany uses the metaverse to conduct exercises for NATO forces, which enable participants from different nations to practise joint operations in a controlled virtual environment. Leveraging the metaverse to conduct joint exercises provides more opportunities for multilateral cooperation without the increased costs involved in running physical joint exercises.

7. The value brought about by the metaverse to promote military and defence cooperation is immense. However, it is also not without its associated risks. Cybersecurity vulnerabilities often accompany integrated technologies because the online systems are platforms subject to data breaches, espionage and sabotage. In May 2023, the European Council Parliamentary Assembly discussed the risks and opportunities presented by the metaverse, and highlighted that there was potential for the metaverse to become a breeding ground for misinformation, conspiracy theories, and orchestrated attacks. In

June 2023, a research article published in *Perspectives on Terrorism* found that the metaverse's immersive nature had given rise to increased incidents of organised crime and disinformation spread.

8. The use of the metaverse in the military and defence context could also raise ethical concerns. An *AsiaTimes* report in April 2022 said that the metaverse could promote certain morality biases, as stakeholders in producing metaverse technologies might imprint their inherent prejudices and produce VR that amplifies social, political and ethnic inequalities. States could also design metaverses to reflect their own policies and cultures, and promote certain national values and ideals. An attack on the metaverse could allow attackers to promote subliminal messaging and create cognitive echo chambers that amplify certain biases.

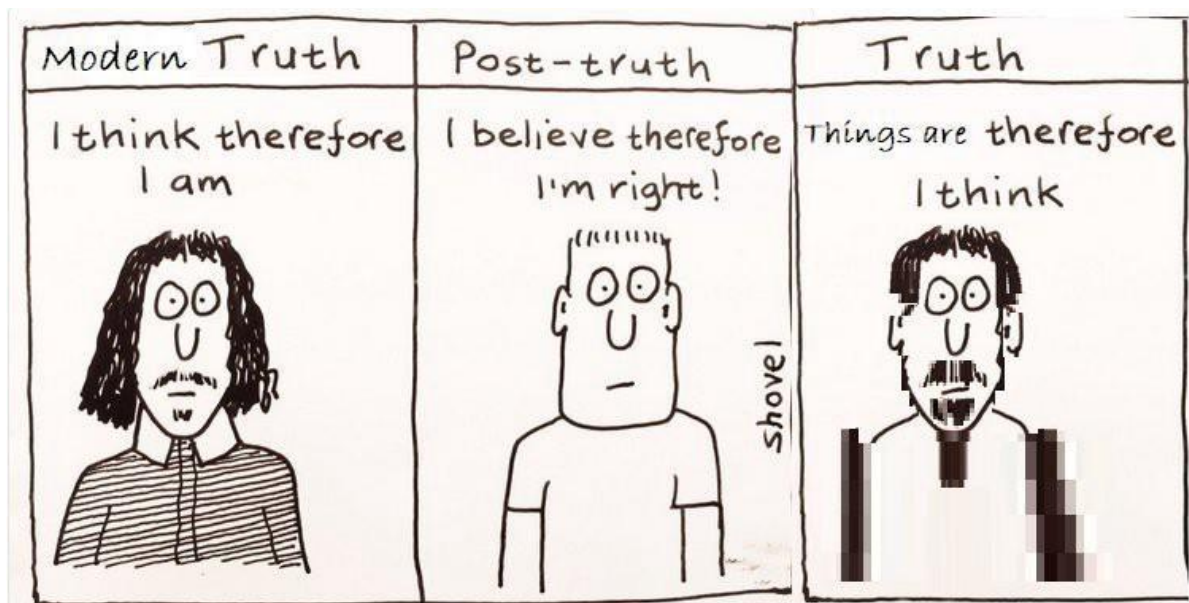
9. To better harness the potential of the metaverse, militaries can work together with industry practitioners and academic researchers to keep abreast of the latest developments on the metaverse, as well as collaborate on effective mitigating measures to address the associated risks.

# Information Operations

## Beyond Truth: Navigating the “Post-Truth” Era

What is “Post Truth”?

1. Cambridge Dictionaries define “post truth” as a “situation in which people are more likely to accept an argument based on their emotions and beliefs, rather than one based on facts”. The post-truth mindset, which weighs emotions and personal beliefs over facts, can lead to critical errors in decision making and strategic planning. The post-truth era provides the environment for the potential spread of disinformation and misinformation. Malicious actors could spread disinformation in the form of conspiracy theories, and less discerning consumers might further share the information with others and cause it to go viral. For example, *The Guardian* published an opinion piece in March 2023 commenting that the “Iraq war started the post-truth era”, as the narratives on Iraq’s alleged role in the horrific attacks of 9/11, and possession of weapons of mass destruction, had played a significant role in shaping public opinion leading up to the Iraq War.



(Source: Meliora, US-based education programme)

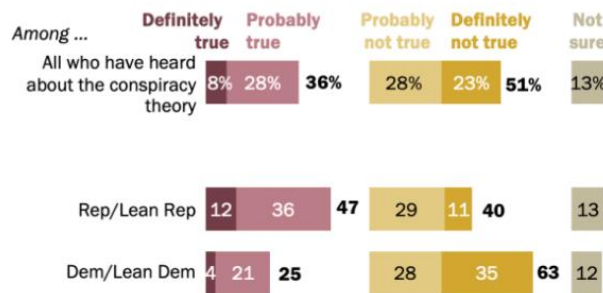
2. In April 2022, the *Public Understanding of Science* published a study on popular debates on conspiracy theories in the “post-truth” era. According to the study, conspiracy theories are central to “post-truth” discussions, as information backed by scientific data and research may be distrusted by people whose thinking may be shaped by their own emotions, beliefs and even experiences. The findings suggested that conspiracy theories could lead to a “habitus of

distrust” in societies. This distrust may be amplified if the conspiracy theories surround government institutions, and could be exacerbated if segments of the population already had low levels of trust in the government.

3. In June 2020, the Pew Research Centre reported findings that different segments of the society in the US had varying degrees of belief in the circumstances surrounding the outbreak of the COVID-19 pandemic. Notably, domestic politics was observed to play a role in shaping the populace’s mindsets, with the Republican-leaning populace more inclined to believe in conspiracy theories as compared to the Democratic-leaning populace. Knowing the political and cultural contexts of the society would enable greater understanding of the impact of conspiracy theories on the populace in the “post-truth” era.

**Among those aware of conspiracy theory that pandemic was planned, about one-third say it is probably or definitely true**

*Among U.S. adults who have heard about the conspiracy theory that powerful people intentionally planned the coronavirus outbreak, % who think that it is ...*



Note: Respondents who did not give an answer not shown.  
 Source: Survey of U.S. adults conducted June 4-10, 2020.  
 “Three Months In, Many Americans See Exaggeration, Conspiracy Theories and Partisanship in COVID-19 News”

PEW RESEARCH CENTER

*Dealing with “Post Truth” Threats*

4. Governments and organisations have recognised the need to raise public media literacy to counter the effects of conspiracy theories in a “post-truth” era. For example, NATO runs the “Protect the Future” campaign to work with youths and young content creators across its member states, by inviting them to discover the role that NATO plays in protecting their future. The campaign brought young content creators behind the scenes of defining events such as the NATO Summits, and allowed them to meet with senior officials including the NATO Secretary-General. This campaign gave youths privileged first-hand encounters of NATO’s work, and also allowed them to share their learning experiences with others through digital story-telling and discovery-led content. By raising awareness about NATO’s work, youths are better inoculated against any conspiracy theories regarding NATO. These young content generators can

also be NATO's advocates, and help to spread NATO's desired narratives to "pre-bunk" potential conspiracy theories or counter the effects of conspiracy theories when they spread.

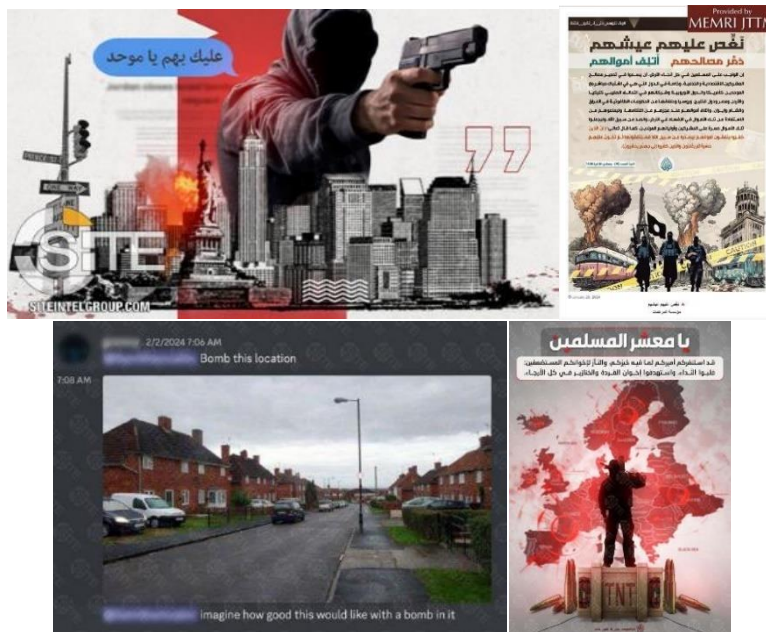
5. In addition, a whole-of-government approach leverages the capabilities and expertise of multiple agencies within the public service to debunk conspiracy theories in the "post truth" era. One approach is to establish a joint task force to explore opportunities amongst multi-stakeholder experts in diverse and related fields such as psychology, media studies, and communications. These teams can co-develop strategies to identify and debunk conspiracy theories, using evidence-based research, and clear communication strategies to spread corrective information and counter narratives. For example, Finland has established a multi-pronged and multi-layered campaign to help its citizens navigate the digital landscape.

6. With conspiracy theories here to stay and likely to have an increasing impact amid rising digitalisation, it is important to devise effective measures to safeguard public trust. By fostering collaboration amongst the public service, academics and industry players, societies can better defend against the harmful effects of conspiracy theories in the "post truth" era.

# Terrorism

## Continued Incitement of Lone-Wolf Attacks against the West

- From 13 January to 4 February 2024, pro-ISIS media groups and individuals published posters inciting attacks against various Western targets including the Eiffel Tower (France), Bristol (UK), St. Peter's Basilica (Vatican City), as well as New York City landmarks such as the Statue of Liberty and the Empire State Building (US).
- European countries such as Iceland, Ireland, Norway, Sweden, and Ukraine were also targeted. The posters suggested the use of small arms in conducting the attacks.



## Active ISIS Poster Campaign

- Since early January 2024, pro-ISIS media units such as *Tala'i' Al-Ansar*, *Sarh Al-Khilafah* and *Hadm Al-Aswar* had collaborated to produce and disseminate posters criticising Hamas for its alliance with Iran, and warn Palestinians against accepting support from Shi'ite militias and movements due to their anti-Sunni activities. The campaign framed the Israel-Hamas conflict through a religious lens rather than a nationalistic view. The anti-Iran and religious focus on the conflict were consistent with the official ISIS stance.





### Soliciting Cryptocurrency Donations through Monero

- On 27 January 2024, Filipino extremist media group *Al-Fursan Media* solicited donations through the cryptocurrency, Monero. This was the first time a Filipino media group had called for donations through cryptocurrency.
- Earlier in May 2021, in Myanmar, extremist media group *Arrukn Media Center* had also called for donations through Monero. Extremists leveraged Monero as the cryptocurrency purportedly had a non-traceable transaction history which accorded users with anonymity.

DAWLAH TULL ISLAM-MARAWI



## CONTACT DETAILS

All reports can be retrieved from our website at [www.acice-asean.org/resource/](http://www.acice-asean.org/resource/).

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# REFERENCES

## Artificial Intelligence

1. Virtual, Augmented and Mixed Reality for Defence and Public Sector  
[https://www2.deloitte.com/content/dam/Deloitte/in/Documents/about-deloitte/in-about-deloitte-Digital%20Reality%20in%20Defence\\_Final%20print.pdf](https://www2.deloitte.com/content/dam/Deloitte/in/Documents/about-deloitte/in-about-deloitte-Digital%20Reality%20in%20Defence_Final%20print.pdf)
2. 15 Examples of the Use of Metaverse in Military  
<https://capsulesight.com/metaverse/15-examples-of-the-use-of-metaverse-in-military/>
3. Our Digital Future: The Security Implications of Metaverses  
<https://dam.gcsp.ch/files/doc/ssa-25-march-2022>
4. Militarising the Metaverse  
<https://www.defencweb.co.za/cyber-defence/militarising-the-metaverse/>
5. The Full Potential of a Military Metaverse  
<https://warontherocks.com/2022/02/the-full-potential-of-a-military-metaverse/>
6. Attacking the Metaverse  
<https://public.milcyber.org/activities/magazine/articles/2022/baughman-attacking-the-metaverse>
7. Video Games and Metaverse: New Fields of Cognitive Warfare for Terrorist Groups?  
<https://www.cairn-int.info/journal-revue-defense-nationale-2023-10-page-52.htm>
8. US, China race to militarise the metaverse  
<https://asiatimes.com/2022/04/us-china-race-to-militarize-the-metaverse/>
9. The Metaverse in the Context of the Fight Against Terrorism  
<https://data.consilium.europa.eu/doc/document/ST-9292-2022-INIT/en/pdf>

10. Risks and Opportunities of the Metaverse  
<https://rm.coe.int/-risks-and-opportunities-of-the-metaverse/1680ace8c1>
11. The Metaverse and Terrorism: Threats and Challenges  
<https://pt.icct.nl/sites/default/files/2023-06/PT%20-%20Vol%20XVII%2C%20Issue%20II%20-%20June%202023%20A5.pdf>
12. Asia-Pacific builds military defenses in metaverses for modern warfare  
<https://govmedia.com/news/asia-pacific-builds-military-defenses-in-metaverses-modern-warfare-report>
13. Military Metaverse: Key Technologies, Potential Applications and Future Directions  
<https://www.china-simulation.com/EN/10.16182/j.issn1004731x.joss.23-0104>
14. Enhancing emergency medical responder training with extended reality  
<https://news.nus.edu.sg/enhancing-medical-responder-training-with-extended-reality/>

## Information Operations

1. Definition of Post Truth  
<https://dictionary.cambridge.org/dictionary/english/post-truth>
2. Fake news: National Security in the Post Truth Era  
[https://www.rsis.edu.sg/wp-content/uploads/2018/01/PR180313\\_Fake-News\\_WEB.pdf](https://www.rsis.edu.sg/wp-content/uploads/2018/01/PR180313_Fake-News_WEB.pdf)
3. Public Understanding of Science: Poly-truth, or the limits of pluralism: Popular debates on conspiracy theories in a post-truth era.  
<https://doi.org/10.1177/09636625221092145>
4. Living in a post truth world  
<https://news-decoder.com/living-in-a-post-truth-world/>
5. Most Americans have heard of the conspiracy theory that the COVID-19 outbreak was planned, and about one-third of those aware of it say it might be true  
<https://www.pewresearch.org/journalism/2020/06/29/most-americans-have-heard-of-the-conspiracy-theory-that-the-covid-19-outbreak-was-planned-and-about-one-third-of-those-aware-of-it-say-it-might-be-true/>
6. NATO's approach to countering disinformation  
[https://www.nato.int/cps/en/natohq/topics\\_219728.htm](https://www.nato.int/cps/en/natohq/topics_219728.htm)
7. The Most Common Coronavirus Conspiracies  
<https://www.statista.com/chart/23105/share-of-coronavirus-misinformaton-identified-as-conspiracy-theories/>
8. The Iraq war started the post-truth era.  
<https://theguardian.com/commentisfree/2023/mar/14/iraq-war-9-11-george-bush-post-truth>
9. What is Post Truth  
<https://www.joinmeliora.com/laoreet-sit-amet-cursus-sit-amet-dictum/>

## Terrorism

1. Hamas-Israel war highlights divergent views among Iranian clerics  
<https://amwaj.media/article/hamas-israel-war-highlights-divergent-views-among-iranian-clerics>
2. How Iran-backed militant groups are widening the Israel-Hamas war  
<https://www.bloomberg.com/news/articles/2024-01-04/iran-s-role-in-israel-hamas-war-will-it-spiral-into-wider-middle-east-war?embedded-checkout=true>
3. How Monero became extremists' privacy coin of choice  
<https://amwaj.media/article/hamas-israel-war-highlights-divergent-views-among-iranian-clerics>