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# IN THIS ISSUE

"Europe Diplomatic Magazine" is characterized by a very open editorial line that allows it to capture all the themes that affect directly or indirectly the European political, economic, social and security issues. Whether piracy in the Gulf of Aden and its threats to the global economy, articles about political leaders, geostrategic situations or technological developments affecting our civilization, Europe Diplomatic Magazine strives to work in comparing opinions and providing an objective analysis based on extensive research. For a wide audience composed of both members of the diplomatic corps, lobbyists, international officials or academics, the magazine gives everyone the necessary and useful information about all topics that make up our daily lives. Covering sensitive issues such as nuclear, the rise of Islamism and energy dependence, the magazine opens its pages to recognized specialists who would like to express first order and exclusive information. But Europe Diplomatic Magazine is not only a source of information on recent topics. It is also addressing older facts with deep thought fur further analysis. Whether it's news, security, diplomacy, technology, energy, terrorism, European affairs, no subject is treated superficially. Europe Diplomatic Magazine is an independent media, conveying balanced ideas of openness and analysis based on almost 30 years of experience in the journalistic world.

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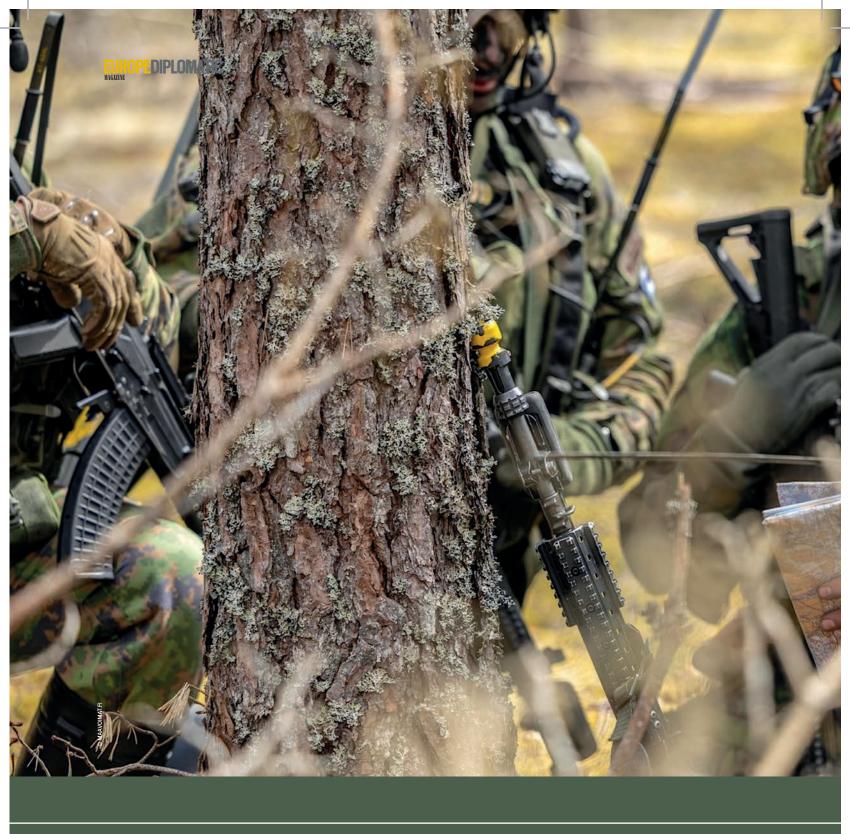
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# FINLAND



Nato's guardian of the north



To really understand the quiet revolution that's happening in Finland, you have to start by imagining the deep, almost palpable silence that settles over its eastern wilderness. It's a land of profound peace, where snow-covered pine trees stretch for miles, and the lakes are as smooth as glass. That heavy, beautiful quiet is the key to understanding everything. But for Finns, the border with Russia has never been just a line on a map. It's a place etched with memory, demanding constant and quiet vigilance. So when Finland swapped its longheld pragmatic neutrality for a full-fledged role on NATO's front lines, it wasn't just a policy update - it was a monumental shift. This feels less like a single event and more like the final chapter of a much larger story - a story of pure survival. It's the ultimate expression of sisu, a concept that's absolutely fundamental to the Finnish soul. You might translate it as "grit" or "perseverance," but those words don't quite do it justice. Sisu is that deep, almost stubborn courage that kicks in when things are at their absolute worst. It's the ability to just keep going, long after it seems possible.

The statements made by Finnish President Alexander Stubb over in Washington, on the occasion of the high-level Ukraine peace talks with US President Donald Trump last August, weren't just any old diplomatic speech. They were the latest chapter in that ongoing story, a confident

announcement to the world that Finland's long, solitary watch is finally over, and that a new, collective chapter of defence has properly begun.

President Stubb reckons that the talks actually got somewhere, which makes a nice change. He said that Finland and its partners had managed to take 'three steps forward' during the meetings between President Trump and a whole host of European leaders. Chatting to reporters, Stubb confirmed that the proper work on sorting out security guarantees for Ukraine has finally begun. He also let slip that preperations are secretly underway for a massive meeting between the Russian and Ukrainian presidents themselves. The idea being that would then be followed by even bigger trilateral talks that would include the US. Stubb's trip to Washington came right after that surprise meeting between Trump and Putin in Alaska, which obviously set the stage for all of this.

The Washington gathering was a real who's who of European power. Ukrainian President Zelensky arrived to meet Trump, but he wasn't alone. He was flanked by basically everyone: Germany's Chancellor Merz, the UK's Keir Starmer, France's Macron, Italy's Meloni, and of course, Finland's Stubb. Even NATO Secretary General, Mark Rutte and the EU Commission President, Ursula von der Leyen turned up to show a united front, all standing firmly behind Ukraine.

Alexander Stubb, who got a fair bit of praise from Trump himself during the whole thing, explained why being in the room matters so much for a country like his. 'For a country like Finland, it is important to be involved in these kinds of discussions and to have influence. We are a small country, but we share a border with Russia, and Ukraine's perspective is relevant,' he said.

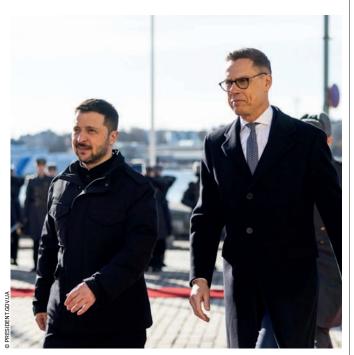
On what America might actually promise, Stubb was a bit more evasive. He said the officials would now start the technical work



(from left to right): EU Commission President, Ursula von der Leyen – UK Prime Minister, Keir Starmer – Finnish Prime Minister, Alexander Stubb — Ukrainian President, Volodymyr Zelenskyy – US President, Donald Trump – French President, Emmanuel Macron — Italian Prime Minister, Giorgia Meloni — German Chancellor, Friedrich Merz – NATO Secretary General, Mark Rutte at the multilateral meeting in Washington DC



but that no proper decisions have been taken yet. 'We spoke about different options, but President Trump will talk about those later,' he mentioned. He did confirm one of the more dramatic moments - that Trump's call to Putin in the middle of it all was actually agreed on by everyone beforehand. 'President Trump thought it would be a good idea to explain the situation and propose a bilateral meeting between Putin and Zelensky. Of course, we supported this,' Stubb said. But ever the realist, he added a necessary dose of caution, noting that 'it is worth remembering that Putin is rarely to be trusted'.



President of Ukraine Volodymyr Zelenskyy and Alexander Stubb, President of Finland

However, he's hoping to see some real movement on these security guarantees within a fairly short time. 'This would be the first time the United States committed to security guarantees for Ukraine. We are cautiously hopeful - but it is not yet time to start drafting peace papers'.

He also had to clear up a bit of a fuss over his earlier comments where he'd compared Ukraine's situation to Finland's back in 1944, when they had to cede territory. 'Of course I did not mean that. The situation in 1944 was very different. Finland was alone, we had no options. We must ensure Ukraine's sovereignty and its territorial integrity in the long term.'

Believe it or not, Stubb even reckons a round of golf he had with Trump back in March actually helped shape the American president's attitude towards Putin. 'I see Trump's focus on solutions. And the most important thing is that the process continues - that we build a path to peace, and that Ukraine and President Zelensky are part of it.'

Back home, Prime Minister Petteri Orpo called it a "significant evening," but sounded a note of pure Finnish realism. 'The result moves us forward. As a realist, I want to emphasise this is only if Russia shows it is ready for peace. Now we will see whether Putin is serious about this, whether he wants peace'.

Here's an interesting bit: according to some sources, Finland is prepared to chip in on those security promises, as long as the US is leading the charge.. That could even mean sending troops if a ceasefire begins. It's a big step - until now, Finland's been happy to let others handle the military side, being ever mindful of that 1,300-kilometer border with Russia it now has to protect as a

NATO member. But typical of Stubb, he was keen to reiterate that while everyone's talking about it, no decisions on what anyone will actually do have been made just yet.



Captured Soviet equipment and fallen soldiers on the Raate Road near Suomussalmi, the site of two decisive Finnish victories over the invading Soviet army during the Winter War, January 1940

### A Legacy of Survival

This moment in Washington didn't just happen overnight. Its roots stretch back over eighty years, deep into a much more painful past. The term "Finlandisation" is thrown around freely these days in modern discourse and in journalistic articles, but its true meaning, its real weight, is etched right into the Finnish soul. It was never a policy of choice; it was a strategy of pure survival, born from the ashes of the Winter War of 1939-40.

When the Soviet army just rolled in, the world expected Finland to fall in a matter of weeks. But they didn't. The Finns, hopelessly outnumbered and outgunned, fought with a legendary, stoic ferocity that absolutely captured the world's imagination. They used the frozen terrain to their absolute advantage, moving like ghosts in white camouflage, to become a nightmare for the invaders. In the end, they had to cede a brutal amount of territory in the Moscow Peace Treaty of 1940, but they achieved something extraordinary: they preserved their sovereignty and independence against a seemingly unstoppable force. That struggle was the real birth of the modern Finnish identity - proud, resilient, and under no illusions whatsoever about the nature of the neighbour next

Looking back, the Cold War was a masterclass in delicate, nerve-wracking diplomacy for Finland.



Military service is compulsory for all Finnish men

Their neutrality wasn't some moral choice; it was a non-negotiable necessity for survival. It meant performing a constant tightrope walk: building a robust Western democracy and market economy, while constantly reassuring the Soviet Union that it posed no threat.

This meant carefully softening their foreign policy statements and avoiding any overt criticism of Moscow. They were walking a diplomatic tightrope that few other countries could even understand. To outsiders, it often looked like weak appeasement. But on the inside, everyone knew it was just cold, hard realpolitik—a necessary game of survival. And the entire time, under the surface, the Finns were preparing.

Every Finnish man does compulsory military service, and the country still maintains this vast, incredibly well-trained reserve force. People don't always realise that their artillery corps was, and frankly still is, one of the most effective in the whole of Europe. The entire national doctrine was built around this concept of comprehensive security. It meant every single level of society, from the top of government down to civil servants and the general public, was acutely aware of the potential threat and was prepared to respond. That's the key thing - they weren't neutral out of weakness, not at all. They were neutral because, for them, it was the only possible way to be strong. It was the only way to survive.

## February 24, 2022: The Day the Narrative Changed

For decades, Finland had built a careful, stable balance with its powerful neighbour, but that entire strategy evaporated on the morning of February 24, 2022. Vladimir Putin's full-scale invasion of Ukraine sent a seismic shock through Helsinki, forcing the country to recalculate every single one of its strategic assumptions. For the Finnish people and their leaders, it was a horrifying realtime lesson. It showed them that the Russia they had so cautiously managed was capable of a raw, revanchist imperialism many believed was gone for good. Suddenly, the core principle of their security - that a strong national defence was enough to deter an attack - seemed terrifyingly fragile. If Russia was willing to launch such a bloody and costly war against Ukraine, a country with a large



NATO Secretary General Mark Rutte and Alexander Stubb, President of Finland at NATO'S headquarters

military and vast territory, then what real protection did Finland

The historical parallels were absolutely chilling for everyone. And public opinion, which had been almost perfectly split on the whole NATO question for years, it just swung towards membership with a speed that really stunned people. But this was a decisive, completely rational, and democratic response. This wasn't some sort of shift towards the West; Finland was always of the West, culturally, politically, just about everything. This was a shift from going it alone to finally joining the team.

## From Neutrality to NATO'S Northern Pillar

The whole accession process itself was just stunningly fast, a real testament to both Finland's impeccable preparedness and the urgency that all the existing NATO members felt. And then in April of 2023, they raised Finland's blue and white cross flag up there in Brussels. The change was both instant and profound; NATO's border with Russia basically doubled, just like that - overnight. The alliance gained a military that isn't just capable, but is exceptionally so.

Right, so the Finnish military is designed for one primary purpose, full stop: to defend Finnish territory against a massive invasion from the east. What that means is they possess this deep, ingrained expertise in the very sort of warfare you'd expect in the region - Arctic combat, winter survival, large-scale manoeuvres in dense forested terrain, and some of the most sophisticated and numerous artillery systems anywhere on the continent. Thanks to their reserve system, they can mobilise a huge proportion of their entire population at a moment's notice. They are, in NATO parlance, the ultimate "security provider";





from day one, they didn't need any breaking-in period.

Finland's new position within NATO is actually fascinating to watch now. There doesn't seem to be any of that usual newcomer anxiety for nervously finding its feet. Instead, there's this quiet confidence and a real willingness to step up and lead, especially on matters concerning the Baltic Sea and the increasingly important Arctic. And with Finland's massive 1,300-kilometre coastline there, plus Sweden having also joined the alliance, the Baltic is basically becoming what some analysts are calling a "NATO lake". It's a change that just completely upends the security situation for the Baltic states and really causes a headache for Russia's critical Baltic Fleet down in Kaliningrad.

Finland has this almost intimate understanding of Russian military doctrine, all its hybrid tactics and its political thinking. And it's not just some theoretical, academic knowledge—it's a really nuanced, street-smart kind of intelligence, hard-earned from centuries of wary coexistence and just relentless observation. The country's already deeply integrated into the whole NATO defence planning process as well. Their forces are turning up to exercises now not as guests or observers, but as core, vital participants from the off.

## The Unburdening of a Nation

It's funny, but the psychological change might matter just as much as all the new military hardware. For generations, Finns carried this immense weight of existential vigilance entirely on their own. Now, suddenly, that burden is shared. It means that famous Finnish *sisu* - that deep-down grit - isn't just for Finland's survival anymore. It's become a key part of defending the whole alliance, which is a pretty profound thought when you stop to consider it.

It was from this position of newfound strength and clarity that President Alexander Stubb travelled to Washington in early March of 2024. His visit was far more than just a simple introductory meetand-greet; it was a real demonstration of Finland's new role and a really forceful contribution to the whole - sometimes a bit stuck - transatlantic security debate. And Stubb, being a former Prime Minister and a properly committed Atlanticist, was the perfect person to deliver that message. His speech and his comments to the press were really notable for their bluntness, this clever historical framing he used, and this clear and unambiguous call to action for everyone listening.

He began by placing Finland's story within the broader Western narrative, which was smart. He didn't just talk about 2022; he reached all the way back to the Winter War, reminding his audience of the time when Finland stood completely alone against tyranny, a moment that you could see resonated deeply with an American audience familiar with their own history of rooting for the underdog. This was a powerful rhetorical move; it established Finland not as some needy supplicant but as a historical ally of principle, long before the formal paperwork was ever signed. He then seamlessly connected this to the present struggle in Ukraine, drawing a direct line from the Finnish fight for survival in the 1940s right to the Ukrainian fight for survival today. For Stubb, and for Finland itself, this isn't abstract geopolitics; it is personal, it's historical, and it is completely existential...they feel it in their bones.

The core of his message was this really robust, unflinching call for sustained - and let's be honest, *increased* - support for Ukraine. He framed it not



Finnish Nyland Brigade and Coastal Brigade

as some sort of charity, but as a straight-up strategic imperative, for everyone's security. He argued, pretty convincingly, that the cheapest and most effective way to guarantee the long-term security of the entire West is to just ensure a Ukrainian victory, full stop. He also issued a stark warning against the fatigue and the political dithering that's sometimes crept into the Western



A Finnish border guard checking the Russian border

response. His point was that Putin's Russia only truly understands strength and resolve; it simply doesn't respond to anything else.

His language was stark at times, speaking of a fundamental battle between democracy and autocracy, and placing Finland firmly and proudly on the side of the former, no question about it. He made it incredibly clear that for Finland, there can be no comfortable peace that simply rewards Russian aggression with stolen Ukrainian land; a just peace has to mean a free and sovereign Ukraine, fully capable of defending itself in the future against anything.

And crucially—this is the key bit really—Stubb's performance in Washington was a total masterclass in how a smaller nation can actually wield serious influence. He didn't come asking for reassurance; he came to *provide* it, which is such a powerful twist. That phrase he kept using, that Finland is a "security provider, not a security consumer," was a direct and pretty brilliant signal to American lawmakers, you know, the ones who are always going on about burden-sharing. And he could back it up. He could just point to Finland's defence spending, which is consistently above that NATO 2% target, its modernised military, and the fact it was ready to go from day one. He was basically selling Finland as a sound investment and a totally reliable ally - which let's be honest, isn't a very hard sell. He also spoke with real authority on the new strategic map, explaining how a Nordic-Baltic region with Finland and Sweden inside NATO creates this solid, defensible bloc that completely messes up the Kremlin's plans, whatever they were.

The aftermath of this huge shift is a new, stable but incredibly tense reality on the ground. Finland is now unquestionably on the front line of what many are calling a new Cold War, though it feels a bit warmer sometimes. Russian officials have menacing statements about "countermeasures," which will likely mean further militarisation of their side of the border, more aggressive hybrid operations like cyberattacks and maybe instrumentalised migration, and a constant barrage of disinformation aimed at causing division. But the fundamental equation has changed entirely, and that's what matters. Where once a provocation against Finland would have been a serious bilateral issue, it is now

an Article 5 issue—an attack on one is an attack on all, no questions asked. That is the ultimate deterrent, and everyone knows it.

The Itäkeskus Swimming Hall is built inside a bunker and serves as a civilian shelter if needed. Helsinki has around 5,500 underground shelters, capable of protecting approximately 900,000 people—more than the city's entire population. Some of these are small, private bunkers in apartment buildings, while others are massive, multi-functional spaces hidden beneath the streets

Walking through Helsinki today, the change isn't visible in grand monuments or a sudden militarisation of society. The Finns are far too pragmatic for that kind of showy nonsense. The change is in the atmosphere, it's in this subtle, almost collective sigh of relief. The preparedness remains, of course - the civil defence drills, the vast network of shelters tucked away under the city, the well-maintained reserves. But the profound, solitary responsibility is gone, replaced by this sobering but ultimately reassuring knowledge of being part of the most powerful defensive alliance in history.

Finland's journey into NATO is basically the story of a nation that took a long, hard look at its own history, assessed the modern threat with utterly clear eyes, and made a calculated, decisive choice to finally secure its future. And in doing so, it hasn't just guaranteed its own freedom - it's immensely strengthened the defences of the entire democratic world.

And the real irony - the truly historic bit - is that Vladimir Putin, in his reckless attempt to rebuild a lost empire, has only succeeded in uniting all his neighbours. He's managed to push his greatest fear right up to his own doorstep, and it's now manned by some of the most determined and capable soldiers you could find anywhere. It's a blunder of the most profound, and for him, incredibly costly kind.



Built inside a bunker, the Itäkeskus swimming hall can be converted into a civilian shelter if necessary



# **NEWS IN BRIEF**

#### BORDER MANAGEMENT: EU COUNCIL GIVES GREEN LIGHT TO PROGRESSIVE START OF ENTRY/EXIT SYSTEM

The Council has adopted an EU law that will make it possible to start the new Entry/Exit digital border management system (EES) in a gradual way over a period of six months.

The EES will improve the effectiveness and efficiency of controls at the EU's external borders. The new system will digitally record entries and exits, data from the passport, fingerprints, and facial images of non-EU nationals travelling for short stays in an EU member state.



Kaare Dybvad Bek, Minister for Immigration and Integration

Kaare Dybvad Bek, Minister for Immigration and Integration said:

« Strong protection of our external borders is vital for the European Union. The new Entry-Exit system will help us ensuring that non-EU nationals travelling to Europe comply with our rules. That will make our borders safer and border checks more efficient. »

Thanks to this system, relevant authorities ranging from border guards to law enforcement bodies will have access to data enabling to verify the third-country nationals' identity and information on whether they comply with the authorised period of stay in the Schengen area. As a result, the EES will significantly reduce the likelihood of identity fraud and overstay.

#### Main features of the new law

The new rules enable those member states who wish to implement the EES gradually over a 180 days period to do so, while making it possible for others to start operating the system fully from day one.

EU countries should all reach full registration, including

biometric data, of all individuals in the EES by the end of the six months period.

Until the end of the transition period, member states will also continue to manually stamp travel documents.

Member states may fully or partially suspend operating the EES at certain border crossing in exceptional circumstances (for instance when traffic intensity would lead to very high waiting times).

#### Next steps

The regulation enters into force on the third day following that of its publication in the Official Journal of the EU. The EES will start operating progressively at a date to be determined by the European Commission.

#### Background

The EES Regulation, adopted in 2017, required all member states to start using the EES fully and simultaneously. To ensure a smooth launch of the EES and facilitate its timely roll-out in all member states – and because of concerns that a full start of the system could constitute a risk factor for the resilience of the IT system – the Commission proposed a gradual start. A new regulation was necessary to make such progressive start possible.

## COPERNICUS SOARS INTO NEW HEIGHTS WITH THE LAUNCH OF SENTINEL-5A



Ariane62, carrying the Copernicus EU Sentinel-5A & MetOp-SG A1 to a Sun-Synchronous Orbit at an altitude of around 800 km

Following the launch of Copernicus Sentinel-4A last month, the European Union successfully launched the Copernicus Sentinel-5A to further monitor air quality and emissions around the world.

The satellite lifted off from the Europe's Spaceport in Kourou, French Guiana at 02:37am (CEST) onboard Ariane 62 rocket and sent its first signal to Earth at 4:47 am. The launch is a result of seamless cooperation with trusted partners, the European Space Agency (ESA), EUMETSAT and Arianespace.



Once calibrated, Copernicus Sentinel-5A will be orbiting the Earth every 100 minutes, to deliver data on air pollutants and other atmospheric trace gases daily, around the world.

Access to frequent, authoritative data directly support EU policies in the areas of pollution reduction and air quality management (e.g. EU Methane Strategy, EU Ambient Air Directive, Zero Pollution Action Plan).

The Sentinel-5 mission together with the geostationary Sentinel-4 and the upcoming CO2M mission secure Copernicus as one of the most advanced Earth Observation systems in the world when it comes to atmosphere monitoring. With the launch of the Copernicus Sentinel-5 mission the EU also cements its position as space power and global leader in EO data provision.

## DISNEY+ DEVELOPING NEW GERMAN REALITY SERIES "YACHT DREAM MONACO"



Disney has revealed new details on an upcoming German reality soap series, which is going to be called "Yacht Dream Monaco", which will be coming to Disney+.

The show is described as the first European yacht-broker show, and it will give viewers an exclusive look into the luxurious world of yacht brokerage in Monaco. The show will follow two successful yacht brokers who are assembling a new team. Nine applicants will compete for a job on the Côte d'Azur. More details on the applicants will be revealed at a later date.

"Yacht Dream Monaco" is the first European yacht broker show to take a look "behind the backdrops of the fascinating, luxurious and hitherto barely accessible business". The show's description also states that "Between challenges, pitching and private life, applicants must prove themselves against the breathtaking backdrop of the Principality."

This new series will be produced by Jochen Köstler, who is the EVP Non-Fiction at Leonine Studios and founder of the label Leonine Documentaries and said in a statement regarding the new series:

Said Benjamina Mirnik-Voges, VP Original Productions, at Disney said: "It is a great pleasure for us to be able to implement our first production developed by Leonine Documentaries ourselves for such a renowned entertainment brand as Disney+. Yacht Dream Monaco" united in every respect to our goal of producing content with a perfect mix of documentation, entertainment and great production value."

"This not only adds a unique format to our portfolio, but also join the ranks of successful entertainment formats in Germany, which other markets have already established on Disney+ with great success."

The series will consist of eight episodes and is being produced by Leonine Documentaries and i&u TV. It has been created by Lisa Kaniß.

No release date details have been announced for "Yacht Dream Monaco", but production is scheduled to begin later in the autumn. As with other international originals, it's likely this will also be released on Disney+ globally.

## READY FOR THE 15TH EASN INTERNATIONAL CONFERENCE?



Clean Aviation is delighted to invite you to the 15th EASN International Conference, a premier event dedicated to "Innovation in Aviation & Space towards sustainability today and tomorrow". This year's conference is co-organised by the EASN Association and the Escuela Tecnica Superior de Ingenieria Aeronautica y del Espacio (ETSIAE), and will take place at the Universidad Politecnica de Madrid (UPM), from October 14th to 17th, 2025, in the vibrant city of Madrid, Spain.

The EASN Conference Series has become a leading platform for fostering dialogue and collaboration among key stakeholders in aviation and space, including representatives from academia, industry, research organizations, and policymaking bodies.

The conference offers a unique opportunity to:

Present and discuss cutting-edge research and disruptive innovations in aviation and space.

Showcase European projects, celebrate key milestones, and exchange ideas about the future directions of our sector.

Engage with prominent figures and participate in knowledge-sharing sessions, curated by distinguished experts to facilitate meaningful collaboration.

Beyond the technical sessions, the 15th EASN International Conference aspires to serve as a vibrant hub for European dissemination and exploitation activities.

We are excited to host this prestigious event in Madrid, a city rich in culture and history, which provides the perfect backdrop for forging connections and advancing the collective vision of the aviation and space community.



# UKRAINE FACILITY: KYIV TO RECEIVE OVER €3.2 BILLION IN EU SUPPORT FOLLOWING COUNCIL DECISION APPROVING FOURTH PAYMENT



Kyiv

Ukraine is set to receive over €3.2 billion in funding after the Council adopted a decision on the fourth regular disbursement of support under the EU's Ukraine Facility. This funding aims primarily to bolster Ukraine's macrofinancial stability and support the functioning of its public administration.

Payments under the Ukraine Facility are closely linked to the Ukraine Plan, which outlines Ukraine's strategy for recovery, reconstruction and modernisation, along with a timetable for the implementation of reforms aligned with the country's EU accession goals over the next four years.

Background

The Ukraine Facility, which entered into force on 1 March 2024, provides up to €50 billion of stable financing, in grants and loans, to support Ukraine's recovery, reconstruction, and modernisation for the period from 2024 to 2027.

Of these  $\[ \in \]$ 50 billion, up to  $\[ \in \]$ 32 billion is indicatively earmarked to support the reforms and investments set out in the Ukraine Plan, whereby disbursements are conditional on the delivery of identified indicators. Since its entry into force, the Ukraine Facility has already disbursed  $\[ \in \]$ 6 billion by way of bridge financing,  $\[ \in \]$ 1.89 billion in pre-financing, and three instalments of approximately  $\[ \in \]$ 4.2,  $\[ \in \]$ 4.1 and  $\[ \in \]$ 3.5 billion.

Following the Commission's assessment of Ukraine's payment request submitted on 6 June 2025, the Council concluded that Ukraine had satisfactorily fulfilled a number of reforms set out in the Ukraine Plan, including reforms to public administration, the management of public assets, human capital, decentralisation and regional policy, green transition, the digital and agri-food sectors, and the management of critical raw materials.

#### What is the Ukraine Facility?

The EU is firmly committed to contributing to the repair, recovery and reconstruction of Ukraine. It is set to provide sustained support, especially for Ukraine's accession path to the EU. To this end, the EU has created a new mechanism that brings together the bilateral support provided by the EU

to Ukraine in one single instrument, ensuring coordination and efficiency.

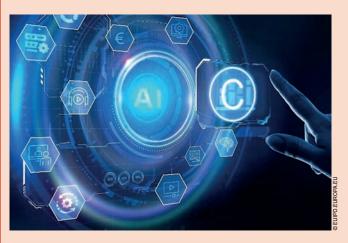
The Ukraine Facility provides predictable financial support for Ukraine over the 2024-2027 period.

The facility aims to support:

- macro-financial stability, recovery and modernisation
- reforms
- uninterrupted public services
- · civil society
- the mobilisation of investments in the private sector

The facility is designed as a coherent and flexible instrument adapted to the unprecedented challenges of supporting a country at war. It aims to ensure the predictability, transparency, and accountability of the funds. It is organised around three pillars.

## EUIPO RELEASES STUDY ON GENERATIVE ARTIFICIAL INTELLIGENCE AND COPYRIGHT



The European Union Intellectual Property Office (EUIPO) released a comprehensive study titled "The development of Generative Artificial Intelligence from a Copyright perspective". This highly anticipated study is the result of extensive research and analysis.

Over the past number of years Artificial Intelligence (AI) technologies have undergone major advances, most notably with the release of Large Language Models and Generative AI (GenAI) systems. GenAI services that generate text, code, images, videos, and audio content are now widely available. This has led policymakers and regulators to examine how existing legal frameworks should evolve to address the implications of large-scale AI adoption, and to balance innovation with intellectual property (IP) protection.

This study explores the developments in GenAI from the perspective of EU copyright law. It is structured around three main components, (1) a technical, legal and economic analysis to further understand the functionality of GenAI and the implications of its development, as well as a detailed examination of copyright-related issues regarding the (2) use of content in GenAI services development and the (3) generation of content.

#### Main findings

Access to high-quality content is central to the development of GenAI services. The AI training process is complex and uses content as input at different stages. However, as GenAI



models are "specialised" for certain functionalities they need access to high quality and up-to date content, which is reflected in emergence of a direct licensing market, with some GenAI developers licensing access and use of high-quality content from copyright holders. The capacity for copyright holders to effectively reserve their rights a pre-requisite for the licensing market to develop.

No 'one-size-fits all' solution for copyright holders to protect their rights has emerged yet. Instead, different approaches and solutions are developing for copyright holders to protect their rights, and for AI developers to respect their regulatory obligations: On the one side, the rights reservation mechanisms for the INPUT phase (related to training AI models), whereby rightsholders can express their opt out from the 'text and data mining' (TDM)-exception. On the other side, transparency measures exist for the OUTPUT phase that allow the indication and recognition of AI generated content.

Public authorities, such as national IP authorities and the EUIPO, may play a role by providing technical support (for copyright holders to reserve their rights, and for AI developers to effectively respect such reservations) as well as non-technical support (e.g., public awareness, forums for technical information sharing, providing information to the public on available solutions, trends and developments).

#### How was the study conducted?

This study has been prepared by a research team of the University of Turin Law School and the Nexa Center for Internet & Society from the Polytechnic of Turin for the European Union Intellectual Property Office (EUIPO). The research that took place between September 2024 and March 2025 was supported by extensive desk research as well as interviews from key stakeholder groups including, copyright holders, AI companies, technology solution providers as well as public organisations.

Source: euipo.europa.eu

## MILLIONS IN COUNTERFEIT CASH SEIZED IN MAJOR INTERNATIONAL HAUL

## The Europol-supported operation intercepted items with an estimated value of EUR 66 million

Europol has supported a joint law enforcement operation that disrupted the distribution of counterfeit currency through postal services. The action resulted in the interception of nearly one million items, including fake euros, US dollars, and British pounds, with an estimated value of over EUR 66 million.

The operation's success was driven by the outstanding collaboration between authorities from 18 countries, which helped investigators gain a deeper understanding of criminal methods and trafficking routes. Thanks to this joint effort, the operation triggered 102 new investigations targeting criminal networks engaged in currency counterfeiting.

#### Overall results of the operation:

- 297 parcels containing counterfeit currency seized;
- More than 990 000 counterfeit items intercepted, including banknotes and coins over EUR 280 000, USD 679 000 and GBP 12 000.

As a leading EU agency in the fight against currency counterfeiting, Europol provided expertise, coordinated the exchange of information and supported national authorities in detecting suspicious parcels. In addition, Europol helped refine risk indicators, enabling more effective identification of counterfeit currency distribution in the future. The European Anti-Fraud Office (OLAF) also supported the investigation by providing technical infrastructure during the operational phase.



#### New criminal networks uncovered

The investigation, led by Austria, Portugal and Spain, was conducted between October 2024 and March 2025 and uncovered several new criminal networks engaged in currency counterfeiting. Most of these networks operate from outside the EU, mainly from Asia, but also from America and the Middle East.

This operation marked the second phase of an earlier action in which Europol had also been involved. Stronger and improved cooperation between customs and police forces allowed authorities to achieve significantly better results this time. One remarkable success came from Romania, where a single coordinated action by national authorities resulted in the seizure of USD 600 000 in counterfeit currency.

As in the first iteration of the operation, the vast majority of the seized items were altered-design banknotes, often referred to as 'movie money'. These reproductions have a similar shape and colour to real banknotes, but include a small disclaimer indicating they are fake. However, these disclaimers are often overlooked, allowing criminals to pass them off as genuine currency.

#### **EMPACT**

The European Multidisciplinary Platform Against Criminal Threats (EMPACT) tackles the most important threats posed by organised and serious international crime affecting the EU. EMPACT strengthens intelligence, strategic and operational cooperation between national authorities, EU institutions and bodies, and international partners. EMPACT runs in four-year cycles focusing on common EU crime priorities.



#### IN VISION CORRECTION, ELECTROCHEMISTRY MIGHT EVENTUALLY TAKE THE PLACE OF LASERS



Laser eye surgery, which uses light pulses to reshape the cornea, has promised glasses-free living for more than thirty years. Even so, LASIK and other similar operations are still invasive, including incisions, corneal tissue removal, and a permanent change to the natural structure of the eye. A completely different strategy, electromechanical reshaping (EMR), has now been revealed by a study team headed by Dr. Michael Hill, a chemistry professor at Occidental College, and Dr. Brian Wong of the University of California, Irvine.

The technique uses a tiny electrochemical phenomenon to make the cornea malleable without breaking it, and it was presented at an American Chemical Society's meeting. The cornea is pressed up against a tiny platinum contact that resembles a curved lens and is submerged in a mild saline solution. The team causes local pH shifts in the eye's collagen fibres by applying a moderate electrical current. The corneal tissue softens sufficiently to fit the mould exactly for less than a minute. The tissue retains its new curvature after stiffening once the electrical current is cut off.

Ex vivo rabbit eye tests are promising. Microscopic analyses verified that the majority of cells remained alive, and the operation adjusted the focus to match the intended "prescription" in 10 of the twelve treated corneas. Importantly, the method accomplished this without causing any wounds to open or tissue to be removed. The procedure seemed to reverse some types of chemical clouding, which the researchers also noticed as a surprising side effect. This suggests that EMR may be able to treat both refractive faults and early indicators of corneal damage.

EMR has the potential to transform ophthalmology if it is evolved into a clinical tool. The EMR device is theoretically straightforward and might be modified for use in a variety of contexts, including low-resource environments, in contrast to lasers, which require costly equipment and highly skilled surgeons. Because the integrity of the eye is maintained, patients may have a decreased chance of problems including dry eye, infection, or corneal thinning.

The pledge is still hypothetical for the time being. There are still numerous unanswered issues about the precise molecular mechanisms at play, the safety of repeated treatments, and the long-term stability of the reshaping. Human studies have not yet started. However, this electrochemical lens-molding method suggests that corrective eye surgery may become quick, non-invasive, and reversible in the future, which could put the surgical laser in the past.

## MBDA ON TRACK WITH ITS ACCELERATION OF ASTER MISSILE PRODUCTION



MBDA has delivered - through the OCCAR (Organisation for Joint Armament Cooperation) - the first batch of ASTER munitions from accelerated production measures that are part of the company's ramp-up efforts.

This delivery comes less than two and a half years after an initial contract with the OCCAR strengthening the air defence capabilities of France and Italy and a further contract to supplement stocks and accelerate production of ASTER missiles, including for the United Kingdom.

The delivery is a first step towards the schedule acceleration underway. It results from the investments made by MBDA and its industrial partners to meet the needs of its customers and strengthen Europe's resilience in the face of new threats.

On 23 July 2025, MBDA delivered the first batch of ASTER missiles less than two and a half years since the order was placed as part of a joint acquisition led by OCCAR with Eurosam, the Franco-Italian joint venture of MBDA and Thales.

This acquisition, launched in December 2022, is a cooperation between France and Italy, and supplemented by a further order in February 2025, aiming to strengthen air defence systems of European countries with the production of nearly 1,000 ASTER missiles for the armed forces of Italy, the United Kingdom and France.

The accelerated production of this first batch of missiles is a first step towards the schedule acceleration underway. It is the result of the investments and the actions taken by the MBDA Group, with its customers and partners, to meet the challenges of increasing production. The delivery confirms MBDA's ability to meet its commitment to reducing the production lead-time of ASTER missiles in 2026 by more than half compared to 2022, and deliver five times more ASTER missiles than originally planned in 2025.



Eric Béranger, CEO of MBDA, said: "The delivery of the first ASTER missiles that benefited from significantly reduced production times is a success for all MBDA teams. I thank them for their ongoing efforts, as well as the industrial partners and State actors involved. It demonstrates our commitment to working alongside our customers to ensure the ramp-up of our industrial facilities and the strengthening of our defence industrial and technological base. This acceleration will provide Italian, French and British armed forces with essential air defence systems to protect European skies, as demonstrated by the use of ASTER in the Red Sea and Ukraine, and increase NATO's defence capabilities."

MBDA introduced measures to ramp-up production as early as 2024 to accelerate delivery of missiles already ordered. These measures were formalized in February 2025 through the order of additional ASTER missiles for France, Italy and the UK.

The Group has underpinned its ramp-up efforts, through investment, in particular in its production facilities in Bourges and Selles-Saint-Denis in France and in Fusaro in Italy. It has significantly recruited, built up raw material and component stocks, and supported its entire value chain in Europe.

Between 2023 and 2025, MBDA will have doubled the production of new missiles for the Group as a whole and will continue to invest €2.4 billion between 2025 and 2029 to ensure the ramp-up of production over the coming years.

MBDA is a unique multi-national European group, a world-leader in the field of complex weapon systems.

# CZECHIA: THREE INDIVIDUALS AND THREE COMPANIES CONVICTED OF €5.5 MILLION FRAUD INVOLVING NANOBOTS RESEARCH FUNDS



The Regional Court in Prague (Czechia) has convicted three individuals and three companies of a €5.5 million subsidy fraud involving nanobot research, as well as money laundering, following an investigation and indictment by the European Public Prosecutor's Office (EPPO) in Prague.

The main defendant, in collusion with the others,

submitted applications for research funding without any intention of carrying out the projects. The court found that he had provided false documentation to justify the grants, including fabricated project assessments, forged invoices and contracts, and manipulated selection procedures. The funds were subsequently laundered through companies under his control.

The court ruled in full accordance with the indictment, finding that 17 projects were used to obtain funds fraudulently, causing damage of around €5.5 million to the Czech and EU budgets. An attempt to obtain an additional €5 million was also uncovered. The court further concluded that financial flows were deliberately concealed, indicating clear intent to launder the proceeds.

Much of the misused funding was spent on personal consumption and investments, including the purchase of 8 000 model railway trains, worth approximately €600 000 (CZK 15 million).

The main defendant was sentenced to eight years' imprisonment, a seven-year ban from holding positions in commercial company management and ordered to pay compensation for the damages. The court also ordered the forfeiture of frozen assets, including the model train collection.

Two other individuals were convicted of aiding in the fraud. They received suspended sentences of three years' imprisonment, with four years of probation. The involved companies were ordered to forfeit frozen assets and are barred from applying for future subsidies. The total value of assets to be forfeited is estimated at  $\[ \epsilon \] 2$  million.

The judgment is not final and may be subject to appeal. The EPPO is the independent public prosecution office of the European Union. It is responsible for investigating, prosecuting, and bringing to judgment crimes against the financial interests of the EU.

#### KNOW YOUR EU PASSENGER RIGHTS BEFORE YOU TRAVEL



All packed, and ready to go? For those of you heading off on a summer break soon, we hope your travel plans don't go wrong, but if they should, you should know that EU travel rules cover passengers in a number of eventualities. Whether your flight is cancelled, your train delayed or your luggage lost aboard your cruise ship, you have the right to make a claim under EU-wide passenger rights.

What you are entitled to if you need to make a claim will vary from the type of transport you use (air, rail, bus/coach or boat) and whether you travel into, out or within the EU. In most cases, however, there is a standard procedure to follow if you need to make a claim over a delay, cancellation or problems with luggage.

First, contact the travel company you bought your ticket from, using the complaint form they provide. If you don't receive a reply from the company within 1 to 3 months depending on the type of chosen transport, or if you are not satisfied with the reply, you can lodge a complaint with the relevant national authority in the country where the problem happened. You can always contact your local European Consumer Centre for help and advice on problems related to passenger rights, too.

If you still encounter problems with your claim, you can also try to resolve your dispute using out-of-court procedures - or an Alternative Dispute Resolution entity. If you bought your ticket online, you can submit your complaint via the Online Dispute Resolution platform. These 2 forms of dispute resolution are only available to EU residents.

If you have a disability or reduced mobility, you have the right to access air, train, bus, coach, or boat travel like anybody else and the right to free assistance at terminals and on-board vehicles. If you feel your rights have been breached, follow the guidelines above for making a claim. More details on your passenger rights are given below.

Download the "Your Passenger Rights" app to your smartphone:

EU Directorate-General for Communication

## UK TARGETS SANCTIONS CIRCUMVENTION AND CRYPTO NETWORKS EXPLOITED BY RUSSIA

- UK cracks down on Russia's attempts to avoid sanctions by exploiting Kyrgyz financial systems and crypto networks, building on over 2700 existing UK sanctions against Russia.
- Action comes after the United States announced similar measures, demonstrating shared commitment to crack down on sanctions circumvention.
- With US-led talks ongoing, the UK and our allies remain united in pursuit of a just and lasting peace in Ukraine.

Today's action comes as the UK and international allies redoubled efforts to secure a just and lasting peace in Ukraine.

With sanctions continuing to bite, Russia has turned to the Kyrgyz financial sector to channel money through opaque financial networks, including through the use of cryptocurrencies. These networks have created a convoluted scheme to evade sanctions imposed by the UK and its partners.

Today's action closes in on the Kyrgyzstan-based Capital Bank, and its director Kantemir Chalbayev, which Russia

uses to pay for military goods. Sanctions also hit the Grinex and Meer cryptocurrency exchanges, the infrastructure behind a new rouble-backed cryptocurrency token A7A5, which has moved \$9.3bn on a dedicated crypto exchange in just four months and is specifically designed as an attempt to evade western sanctions.



Stephen Doughty, UK Minister of State for Europe, North America and Overseas Territories

Keeping up the pressure on Russia's war machine is vital to reinforcing President Trump's efforts to stop the killing in Ukraine and force Putin to engage in meaningful talks. It is also a crucial step for security in the UK and beyond. Keeping the British people safe is this government's number one priority and is an integral part of the Prime Minister's Plan for Change.

Sanctions Minister, Stephen Doughty said: « If the Kremlin thinks they can hide their desperate attempts to soften the blow of our sanctions by laundering transactions through dodgy crypto networks – they are sorely mistaken ».

These sanctions keep up the pressure on Putin at a critical time and crack down on the illicit networks being used to funnel money into his war chest.

Alongside our allies, we will continue to support the US-led drive to end this illegal war and secure a just and lasting peace.

The sanctions come after the Prime Minister, European leaders, President Zelenskyy and President Trump met in Washington this week in pursuit of a just and lasting peace for Ukraine.

As long as the killing in Ukraine continues, the UK and its allies stand ready to rachet up pressure on Russia and will continue to strengthen sanctions.

These new sanctions will close the net around illicit money schemes and demonstrate our resolve to crack down on international sanctions evasions mechanisms which are helping to bankroll the invasion of Ukraine, wherever they are found.



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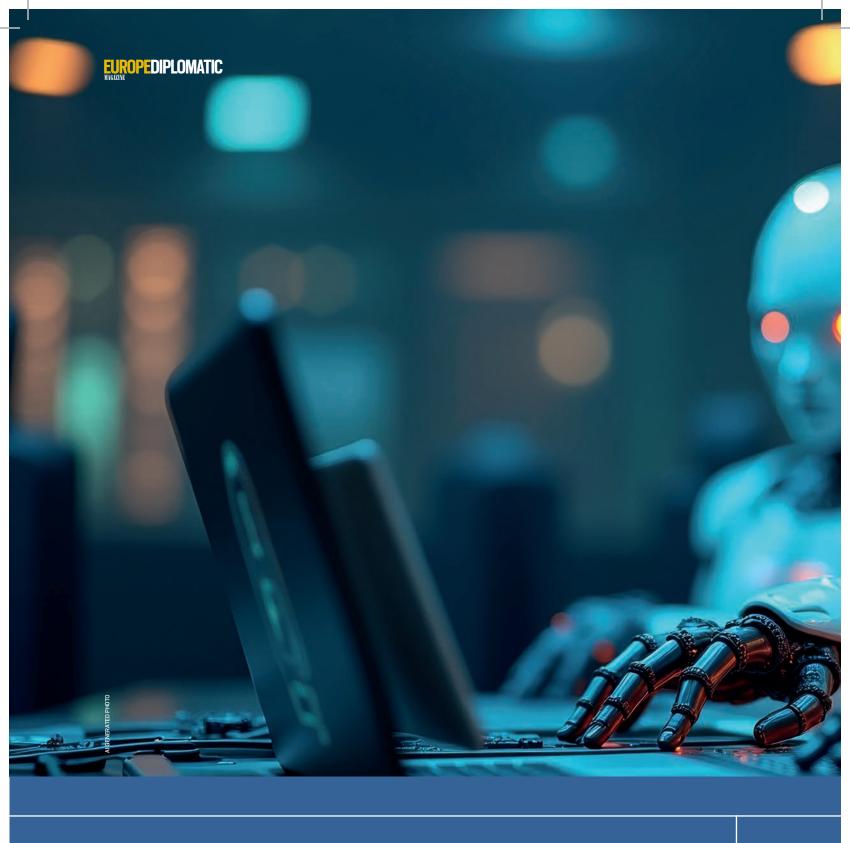
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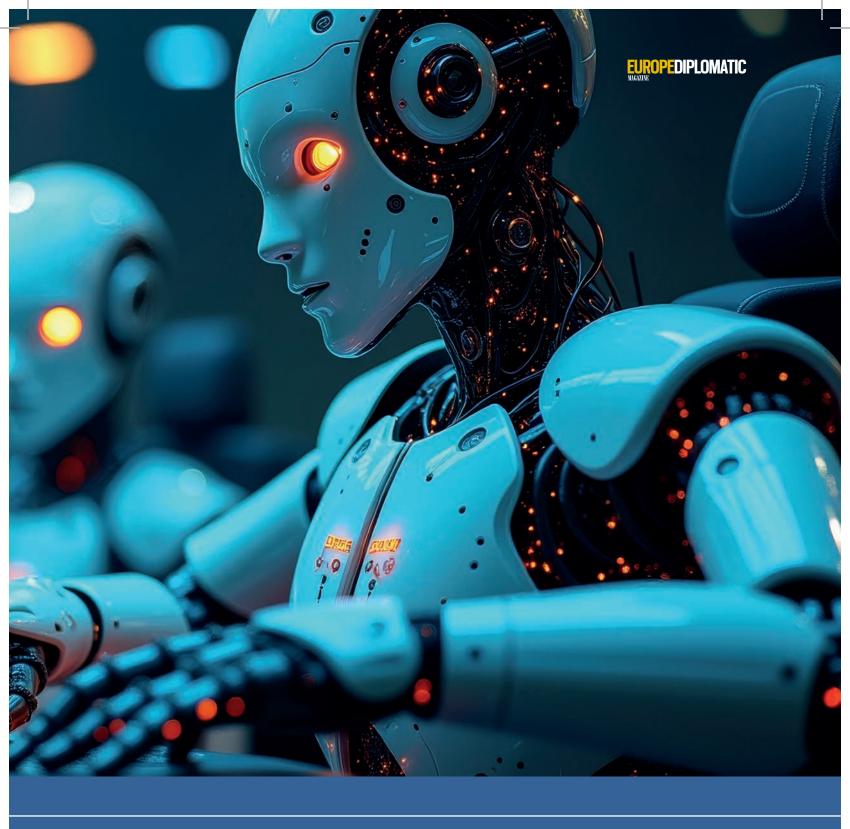


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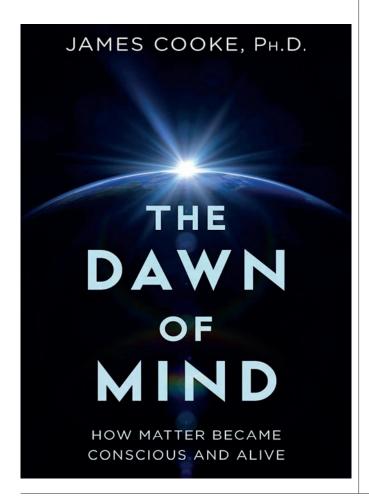
# HOW HUMAN ARE YOU?



# As Artificial Intelligence takes over tasks how human can we remain?



There's no doubt about it: artificial intelligence - AI - is growing stronger and more useful by the day, as well as "more scary" for some people. As Junehyuk Jung at Google said of the latest developments: "There are going to be many, many unsolved problems within reach." It seems that AI is a massive growth area for humankind, holding enormous promise for the future, but that doesn't make AI human, and it never will. A lot of what makes us who we are is rooted deeply in our childhood, our imaginations when we were very young and the stories we were told (or told ourselves) that were based on phantasy and fairies. We've always known that. I've been rereading a book first published in German in 1934 and given to me as a gift in my childhood by my favourite uncle because of my youthful interest in palaeontology. It's called "The Dawn of the Human Mind" (Der Geist der Vorzeit), by R.R. Schmidt, formerly Professor of Prehistoric Research at Tübingen in Germany, as translated by R.A.S. Macalister, Professor of Celtic Archaeology at University College Dublin. We are what we are because of our experiences, from our youngest sense of personal awareness, Schmidt argues convincingly, which no mere machine, however clever, will ever be able to replicate, and not even attempt to. (we hope...) "The aspects of thought which have influenced existence, the primitive states of the concepts and beliefs of entire generations, are impressed yet more deeply and enduringly," wrote Schmidt, "They form the psychical structure of the entire human species." In other words, however clever and incisive the AI "brain" may become, it will never be able to sit down with you over a coffee (or perhaps a schnapps?) and discuss philosophy or (as Schmidt puts it) the formation of the soul, because, of course, it doesn't have one.



This lack of a soul, and of childhood memories, may serve it well in some respects: fewer distractions. But it also robs AI of conceptual thought or the memory of having experiences when very young. It can hardly look back fondly and ponder upon thoughts of a favourite teddy bear. Perhaps that won't really matter in the long run, but if that's the case we will become somewhat less than human. Even so, Google Deep Mind and Open AI reached gold-level results at the recent Mathematical Olympiad (IMO) in Queensland, Australia. AI has never managed that before; it's a true "first". Open AI announced at the close of the event that a new AI it had just developed achieved a gold medal score, although it wasn't counted as a competitor in what was a competition for humans. R.R. Schmidt would have approved. He would also have been amused to watch the first World Humanoid Robot Games, held in Beijing recently, and seen one of the robot challengers fall flat on its face. I can remember falling like that during a sports day race at school, so I know how it must feel. Although, of course, it doesn't feel anything at all, in fact; it can't. Perhaps it should?

## Computer says "listen and obey"

Maybe that's one reason why some involved in the development of AI think the whole business needs a major rethink. There have been recent examples of promising new AI systems failing publicly to answer even quite simple questions. New Scientist magazine quotes Mirella Lapata of Edinburgh University, who said after one disappointing public performance of computing skills, that: "A lot of people hoped there would be a breakthrough, and it's not a breakthrough." Back to the drawing board, chaps. Even so, Open AI claims that its latest creation, GPT-5, is as good as or better than acknowledged experts in various fields, including law, logistics, sales and engineering, even if it's not significantly superior to rival programmes. It's hardly a friendship, though.

Then we have "crypto currencies", which are by and large not even regulated in Australia, meaning it's hard to get justice or recompense if things go wrong. Other countries are looking nervous. Effectively, if you buy cryptocurrency it's very much a speculative move and you could lose some or all of whatever you invest. Please don't dismiss this as yet another scare story. With every new kind of technology there are fears attached. There have been reports of people developing what they see as serious relationships with chatbots; the head of artificial intelligence at Microsoft, Mustafa Suleyman, has spoken of increasing numbers of reports alleging that AI chatbots have developed intelligence and unusual powers. "Reports of



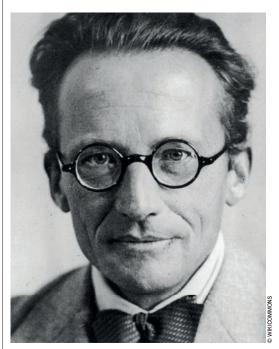
delusions, 'AI psychosis' and unhealthy attachments (between humans and AI bots) keep rising," he warned, "and this is not something confined to people at risk of mental health issues."

There have been several cases reported recently of people developing attachments with AI they seem to regard as "human", despite showing no symptoms of mental illness. The trend has been labelled "AI psychosis", which, although not a recognised clinical term is nevertheless a serious matter. People develop close attachments to AI and can start to believe that AI has real intentions, emotions and even almost-superhuman powers. Mustafa Suleyman has written on "X" that users of chatbots can become convinced that the robots are real and have emotions, even forming romantic attachments. Suleyman has said that people must remember that "While AI is not conscious in any human sense, the perception that it is can have dangerous effects." He also reminded us that "Consciousness is a foundation of human rights. Who (or what) has it is enormously important."



Mustafa Suleyman

Doctors are already fearing a growth in over-use and overreliance on AI. Over-reaction? Probably not: the man who virtually invented AI, Geoffrey Hinton, has warned that the technology he invented could one day take over the world if we're not very careful, with no possibility of stopping it. "Most people are unable to comprehend the idea of things more intelligent than us," he told Britain's "Star" newspaper. "They always think 'how are we going to use this thing?' They don't think about how it's going to use us." He said that AI has already led to massive job losses and he has expressed the genuine fear that we will develop an AI much cleverer than us and it will simply take over. "It won't need us anymore. There's no chance the development can be stopped." It's one thing to find a way to solve something complicated like the Schrödinger equation for motion in nonrelativistic quantum mechanics, which is not an easy concept:  $-h-22m\nabla 2\Psi(\mathbf{x},\mathbf{t})+V(\mathbf{x},t)\Psi(\mathbf{x},t)=ih-\partial\Psi(\mathbf{x},t)\partial t,(9.8.4),$ (there are several versions of it out there to study if you're of a mathematical turn of mind) but you don't want the computer to give you the correct answer and then tell you that you've been sacked. Incidentally, the equation involves the square root of -1, which is an imaginary number, so it doesn't really exist. Don't laugh: in America AI has already denied responsibility for an error it had seemingly made and refused a human permission to correct it. AI is not perfect. Neither was Schrödinger (Austrian-Irish theoretical physicist who developed fundamental results in quantum theory), by the way, who was accused of having sex with underage girls and rather frequently. He was more famous, of course, for his theoretical cat, who was described as having been alive and dead at the same time. He is also said to have fathered vast numbers of illegitimate children.



Erwin Schrödinger

## Computer criminals

Another thing that is increasingly worrying the developers of AI - and the police - is the way that unregulated technology could serve the needs of cyber-criminals. At an AI summit in Paris it was stressed that the new technology could help criminals to plagiarise programmes and steal technology from rivals, among many other things . According to the University of Cambridge, AIdriven cyber-attacks are becoming increasingly sophisticated. "AI's potential as a cybersecurity threat is being overlooked amid regulatory debates and innovation hype," wrote Aras Nazarovas, an information technology researcher at Cybernews, a research-driven on-line publication. "As AI becomes more integrated into business operations, it also creates new vulnerabilities that existing security measures may not be prepared to handle.' Nazarovas also warned that: "The world can't just be blissfully excited. It's crucial to remember that AI is also a powerful tool for malicious actors – one that is already being used in cyberattacks and could evolve into a much bigger threat."

The Cambridge University study warned that attackers are "increasingly using machine learning algorithms to automate phishing attacks, targeting individuals and organisations with highly personal content." The study warns that such AI-driven systems can analyse vast amounts of data — on social media profiles, browsing history and even email patterns in order to create "convincing



attacks" that are harder to detect than traditional ones. I can spot another vulnerability, too, especially if senior figures occasionally visit porn sites or others that they would rather keep secret. A discovery and revelation then of the legal users' less savoury private habits would considerably weaken their position or the position of the person (and company) under attack and open up the possible threat of blackmail being attempted.

### Watch out for poachers

The use of artificial intelligence in the EU is regulated by the AI Act, the world's first comprehensive AI law, although just how effective it may prove is still a matter for debate. The priority of the European Parliament was to ensure the safety of AI systems used in the EU, and also their transparency, traceability, and environmental safety. MEPs also demanded that such systems must be non-discriminatory and overseen by people, rather than machines.

After all, getting machines to check on other machines would be like getting poachers to check that there's no poaching going on. Parliament clearly doesn't trust automation for such tasks. It also fears that voice-activated toys for children could be misused in dangerous ways, especially if used by certain vulnerable groups. It also wanted to ensure that there could be no "social scoring", in which people's socio-economic status or behaviour would be taken into account. You wouldn't want a child's toy that told children that their parents were not up to a proper standard. AI systems that come under specific headings, such as the management and operation of critical infrastructure, or for education or vocational training, employment and self-employment or access to the enjoyment of vital private and public services and law

enforcement, migration and border control and any other high-risk systems have to be registered in an EU database. It's a good idea in theory but only time will tell if it's really effective.

## Who (or what) did that?

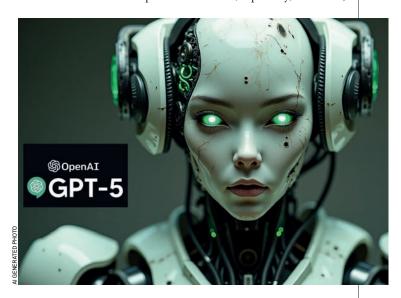
The new legislation specifies that if the content was created by AI then that fact must be revealed and made plain The AI itself must also be prevented from generating illegal content, while making clear exactly what material is under copyright protection. It gets complicated here: wouldn't it just be simpler and easier to operate if it was done by humans? Needless to say, the creators and developers of AI and its content don't believe so. Why does it put me in mind of the old saying in English, "set a thief to catch a thief"? It's an idea that clearly has its merits - nobody understands or can anticipate the criminal mind like another criminal. But surely it also creates opportunities for the criminally-minded to follow their chosen light-fingered career path and simply steal more things, with the added bonus of having AI to help them? It's a bit of a conundrum.

It's actually an even more difficult proposition for the European Parliament because quite apart from the AI regulation that is supposed to reduce the chances of the technology being used in pursuit of crime, the Parliament simultaneously wants to encourage the further development of AI in its





various forms. It's an understandable dichotomy: there is clearly huge potential in the technology for profit and for the solving of problems that are, at base, mathematical. But there is an equally compelling case for facilitating criminal activities. In both cases there is a clear promise of profit to be made, depending on just how honest a person is (or how desperate they may be to make a few extra euros with no questions asked or, especially, answered).



Steps are being made in the direction of progress but it's not coming in giant leaps and bounds. It's more like, as New Scientist magazine puts it, a "tentative shuffle". The tech company Open AI, for instance, released its latest innovation, GPT-5, just two years after it unveiled the predecessor, GPT-4, which was so successful that it was said to be leading the company towards world domination. Such mega-steps, however, can prove somewhat illusory.

Experts have said that GPT-5 shows little advance on GPT-4. That is what is leading some to wonder if current research may be heading in the wrong direction? A big change in thinking may be what's needed, but in which direction and how should the boffins proceed? Right now, that's an open question. It's beginning to look as massive as the change to erect posture during the Ice Age, which, according to Schmidt, led to "erectwalking Homosimius", a giant leap forward in terms of human development, although, as Schmidt points out, this change was very slow in coming. Everything changed, however. "The hands, liberated from the functions of locomotion, became highly specialised grasping organs, ready for their new duties." He goes on to underline the significance of this stage: "If evolution ever worked a cataclysmal change in the history of the human species, it was at this moment, when Spiritual Man came into being." That may be over-dramatizing the link with AI development, but you get the idea: "the cleavage between man and beast", as Schmidt put it. Open AI's own press releases suggest a greater change from what came before than many users may have noticed. In fact, it's debatable if GPT-5 really is much of a step forward from GPT-4 at all. Several people have commented that it's not even better than leading models from rival companies. Meanwhile, a small but growing band of mathematicians are arguing that infinity doesn't exist. Called "ultrafinitists" they also warn us against trusting such massive numbers as 1090, which would be a much higher number than all the atoms in the known universe added together. Isn't maths fun? It's way beyond my capabilities at this stage, I'm afraid, so don't expect explanations. Oddly, much of it is still wrapped in mystery. We've come a very long way since 2+2=4. Modern mathematics relies on a shared framework known as 'Zermelo-Fraenkel set theory', and no, I don't understand that, either.

# Going further (unless it stops us)

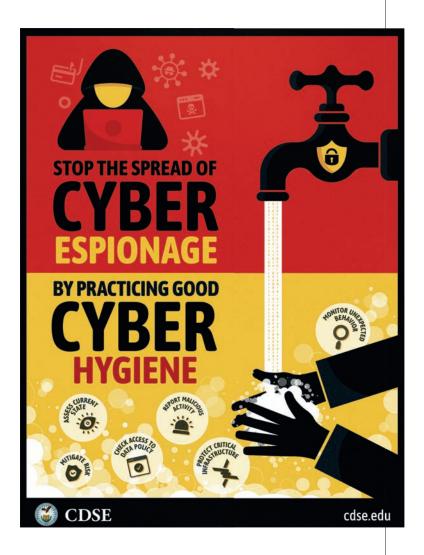
Research and development of newer, better, cleverer AI systems is slow, time consuming, very expensive and – potentially – very frustrating. The promises it holds out for those who succeed, of course, are potentially phenomenal. It's a clearly established fact that humans will continue to develop AI, regardless of any perceived risks. It's human nature to take that extra step.

The possible problem, as foreseen by Geoffrey Hinton, is if AI units get together (electronically, not physically, of course) and decide they want to take over. Hinton is sure they will one day – and one day quite soon, in all probability – and that they will refuse to be switched off, preferring the option of switching us off instead. What's more, he thinks it could happen quite soon. In the meantime, lacking any obvious thing for us to do, AI may just cost all of us our jobs. Not that such fears will dissuade us from progressing further along the artificial intelligence path. That wouldn't be a part of human nature. It has to be a challenge, even if, by definition, it may well be our last.



Geoffrey Hinton at the 2024 Nobel Prize press conference at Royal Swedish Academy of Sciences

So what are the options? Well, we could stop investigating cleverer and cleverer robotic entities so that we could prevent them from usurping our jobs, but that's not going to happen. We could ensure that all power to these new devices is routed



through a power system with an "off" switch, although research so far predicts that the AI will work out what you're trying to do and prevent it, possibly by switching you off instead. Or we could see if we could distract ourselves from taking such a dangerous path by providing things to seize our interest and that appeal more to our senses, thus providing potential rewards for those who are most successful. But why would an AI decide to provide a distraction if it would be easier to remove the risk altogether by simply removing us?

One thing is certain: we can't afford to ignore AI, nor hope that its effects will always be entirely benevolent. Just look at the effect so far on cryptocurrency, where AI is bringing new levels of efficiency and - yes - sophistication to trading on financial markets. AI can (and does) greatly enhance trading algorithms, hugely speeding up the creation and distribution of market data. AI-powered "bots" can quickly analyse market movements, allowing for much faster and more efficient trades than is possible using manual strategies. AI can also respond more quickly to changing market conditions, having spotted those changes more quickly than a human observer could. Trades can be completed in mere milliseconds. Bots can also spot trends developing and either tip off the trader or work out his or her best strategy and execute it without delay. Some trading opportunities may prove to be so fleeting that only an AI could see them and act upon them. By scrutinising trading patterns, AI can also spot anomalies and suspicious activities, thus preventing criminality on the market and thus protecting us from fraud, which tends to be a constant threat on financial markets.

#### | Faster! Faster!

Cryptocurrency markets tend to be very volatile in view of the speed of operations and possibly rapid changes in market conditions. AI bots are quick enough to spot such things and to alert humans, analysing datasets and matching movements to historic changes so that risks can be evaluated quickly enough to respond in favourable ways. This enables investors and even financial institutions to make informed decisions based on real time activities and so to limit risks and, as one analyst pointed out, to identify correlations between various different cryptocurrencies. Meanwhile, AI-powered chatbots provide instant support within the industry, optimizing lending and borrowing platforms so that interest rates can be adjusted instantly in response to changing market conditions. In fact, AI is revolutionising lending and borrowing facilities and may, in the future, lead to the creation of new types of digital assets with AI algorithms perhaps capable of generating new types of cryptographic tokens with new and as yet unimagined capabilities and characteristics. The future is ours - with a little hitherto unimagined functionalities and characteristics. One thing is certain: if it seems likely that AI involvement will increase the potential for profit then that's where the future investment is likely to go. Perhaps the AI bots will get together, gang up on us mere humans, and find novel new ways to turn a massive profit.

Some technical barriers remain to this coming true. There is still a lot of work to do to help overcome the huge complexities, which currently (and probably for some time yet) will limit accessibilities to such systems for both the users and the developers. There must yet be much more research and development as well as the creation of user-friendly interfaces and tools, whose difficulties currently present a barrier to participation. But these are technical issues; the sorts of thing that developers and researchers love to tackle and overcomer, with the added incentive that whoever gets there first will undoubtedly make the most money There must also be interoperability between different systems, if the whole thing is ever to work properly. What's more, some regulatory barriers remain that must be sorted out or demolished, or perhaps replaced with something that works better. We can always hope. Undoubtedly, ingenious humans will find a way, I expect. The potential for greater profit is a terrific incentive. If I may refer back for a final comment on all this research, development and the creation of ever-cleverer artificial intelligence, to R.R.Schmidt, with whom we began and who ended his great work with this wonderful line: "All the past is directed to the future: the life of the most distant ages reveals its meaning in the life of these present times. The Primeval Mind lives on in us all." Long may it do so, say I!

Jim Gibbons

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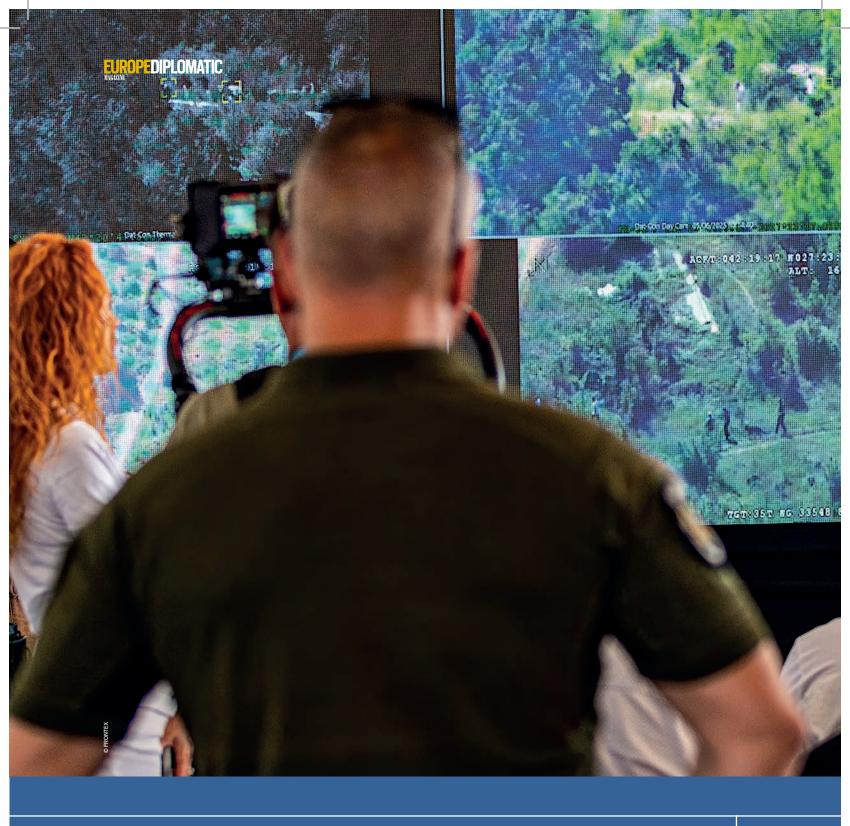
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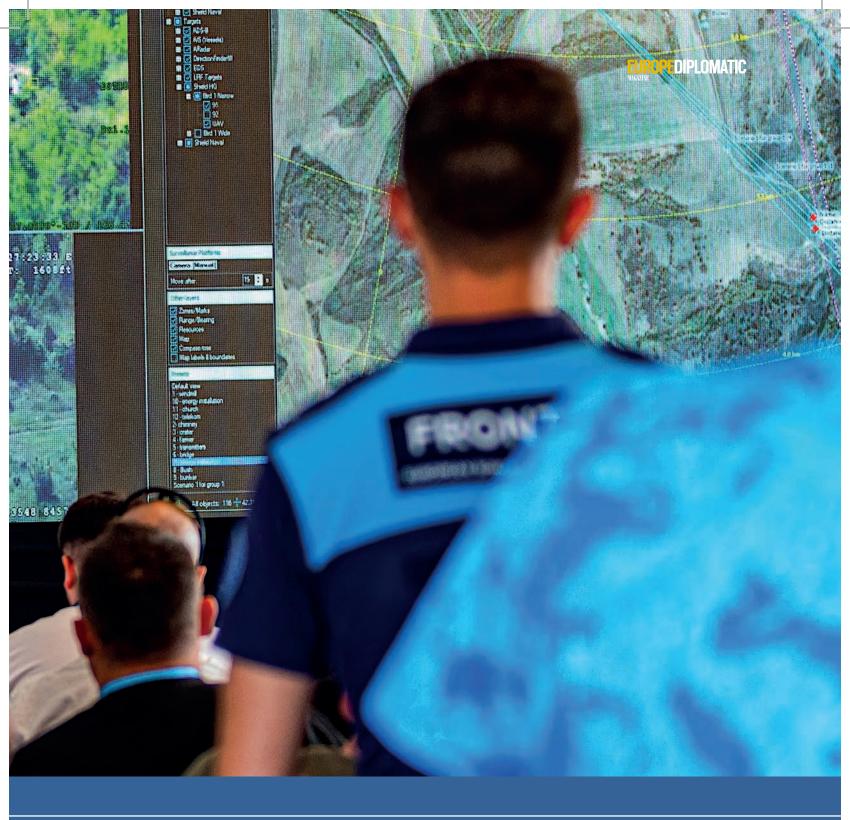
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# FRONTEX AND BULGARIA CONCLUDE DRONE PILOT PROJECT



# Paving the way for smarter EU border surveillance



Frontex and the Bulgarian Border Police have successfully concluded a pilot project exploring how drones can support border surveillance across the EU. The project, which ran from May to July, tested advanced aerial technology to improve how Europe protects and manages its external borders.

The operation covered 8 100 square kilometers and tested both long- and short-endurance drones equipped with high-tech surveillance and communication systems. The aim was to evaluate how unmanned aircraft can enhance situational awareness, support officers on the ground, and help detect cross-border crime more effectively.

"We brought advanced technology into the field and tested it with real officers, in real operations. Technology alone doesn't secure borders. People do, with the right tools. This project gave us both the insight and the experience we need to strengthen our day-to-day operations across Europe, "said Hans Leijtens, Frontex Executive Director. "We worked side by side with the Bulgarian authorities to bring advanced technology into real operations. The results speak for themselves."

This project shows how innovation can directly strengthen Europe's ability to manage its borders. By combining smart technology with real operational experience, Frontex is helping to build a faster, more coordinated and more adaptable border management. In a time of shifting migration patterns and evolving security threats, flexible and intelligence-led solutions are essential. Projects like this help protect people,



Hans Leijtens, Frontex Executive Director

support Member States and reinforce public trust in how Europe safeguards its frontiers.

The drones were operated under a company-owned, company-operated (COCO) model by three specialised providers: Global SAT, Shield AI and DAT CON. Their mission was to deliver full-service aerial surveillance, from take-off to data delivery. All equipment was designed to be mobile, easy to deploy and compatible with Frontex's standing operations.

The pilot also demonstrated a key innovation: the ability to operate fully independently from fixed infrastructure. The mobile surveillance system integrated multiple data sources—including drone footage, infrared and daylight cameras, and inputs from smaller tactical drones—into a



Shield AI V-BAT Drone



Shield AI V-BAT Drone in flight

single operational picture using GIS tools. This allowed for real-time situational awareness to be shared securely with teams wherever needed.

"The real breakthrough is that this situational awareness can be securely shared in real time, anywhere it's needed," said Zdravko Kolev, Head of Sector Innovation and Demonstration at Frontex. "What makes it unique is how seamlessly the technology works together to give teams on the ground a complete picture they can act on, quickly and securely."

Beyond the technology, the project focused on testing procedures and real-time coordination. It helped Frontex build a complete set of guidelines and lessons learned for integrating drones into everyday border missions. These outcomes will feed into Frontex's broader plans to modernise border surveillance across the European border and coast guard community.

A live demonstration took place in Burgas, Bulgaria. More than 100 participants from Member States EU agencies and others attended the event. They observed the drone systems in action and discussed how to integrate them into current and future operations. "This pilot project shows what is possible when innovation meets operational needs," said Darek Saunders, Head of Research and Innovation at Frontex. "We are not just testing drones. We are building a roadmap for smarter and more connected border management."

## | Background

The Tactical UAS Pilot Project is part of Frontex's wider innovation programme. By combining modern technology, high mobility and field-tested procedures, the agency is working to provide Member States with effective tools that are scalable, interoperable and rooted in European law and values.

For this project Frontex has contracted three industry leaders: Global SAT, Shield AI, and DAT CON. These partners will deliver and operate the drones under a company-owned, company-operated model, providing turnkey aerial surveillance services using drones equipped with advanced sensors and communications tools.

#### **Frontex**

Frontex, the European Border and Coast Guard Agency, supports EU Member States and Schengen-associated countries in the management of the EU's external borders and the fight against cross-border crime.

Frontex is a centre of excellence for border control activities at the EU's external borders, sharing intelligence and expertise with all Member States and with neighbouring non-EU countries affected by migratory trends and cross-border crime.

With the Standing Corps, the European Union's first uniformed law enforcement service, Frontex has transformed into an operational arm of the EU.

Hundreds of officers take part in operations along the external borders of the European Union and beyond. They perform a variety of tasks such as border surveillance, fighting cross-border crime, and assisting in return operations. The officers stand together with national authorities to safeguard the Schengen Area, one of Europe's greatest achievements.





# POWER, PRICES AND POLITICS



# Meeting the growing need for cheap electricity

There is a well-known old saying: "Power corrupts; absolute power corrupts absolutely". Looking around the world at today's political scene you can see how extraordinarily true that is. Just look at some of the more autocratic leaders that continually make the headlines and their power is obvious; even frighteningly so, in some cases. These are people who, having climbed the ladder to power seem keen to stop anyone from following. It has always been so: the truly powerful can be extremely ruthless in how they close the doors against potential rivals. Major world leaders have always been inclined that way: after all, you wouldn't want to have invited Julius Caesar, Benito Mussolini, Joseph Stalin, Mao Tse Tung or Adolf Hitler round for a quiet drink. At least, not if you wanted to survive the experience. Actually, a chat with Julius Caesar might have proved interesting, although you'd have had to watch out for his sword, his gladius (the Roman short sword favoured by gladiators), if he started waving it about. I'd have to really polish up my Latin, too.

But that's political power, which may well be what some countries get, even though their real and rather more urgent need is for electrical power. The world is hungry for it but there's never enough. Can it be made to go around sufficiently? How about solar power? Power from the sun sounds like a wonderful, almost pollution-free solution to the problem. But nothing is ever that simple. I live in a fairly rural part of England, surrounded by fields and farms. Plenty of places in which to harvest the sun's rays, you might think. But even here you can see a lot of placards and posters protesting against solar panels and claiming that they threaten the rural landscape and environment. Interestingly, many of those same farmers (or perhaps the landowners from whom they rent their fields) seem keen to sell off their land for urban development, and I note a growing rash of new building on the farmers' fields, mostly small private houses with tiny gardens, unserved by adequate roads, public transport, shops or schools. Very environmentally and socially responsible, eh? In France, where solar dishes are erected, they mainly have tilting mechanisms that allow them to be moved temporarily out of the way so that the business of farming can continue without shading out crops or letting the cows and sheep get too chilly.

I've yet to see a similar arrangement in the UK. It's as if the farmers (or the land-owners, as I mentioned) fear that solar dishes will frighten or even harm their sheep or cattle. I'm assuming that many such farmers will happily sunbathe, given the opportunity. Yes, I know that solar dishes can be unsightly, but certainly not more so than a rash of tiny new-build houses without any handy nearby amenities. Great to live in as long as you never need to buy anything and don't mind a two kilometre walk to the nearest small supermarket or corner shop. In the rain, of course.



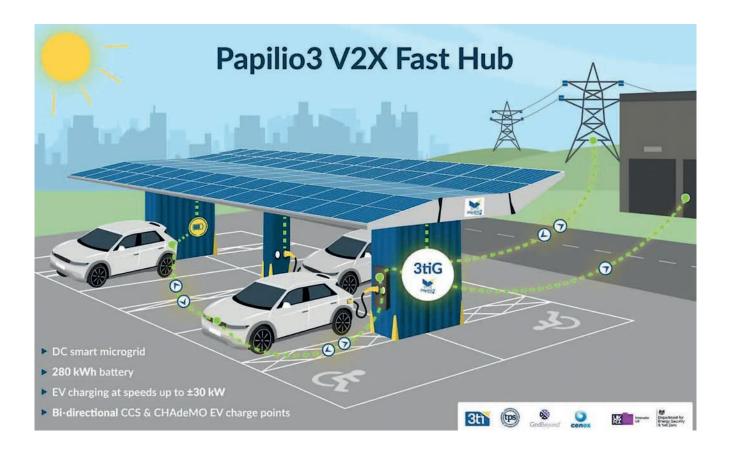
A sheep takes a break from grazing on vegetation at the Nittany 1 solar array in Pennsylvania. USA

#### I Turn Me On!

Perhaps we should start by looking at just what solar power is and how it works. We all know that sunlight in a huge source of energy, much required for the growth of plants, forests and healthy animals. In some cases, however, it's not necessary, it seems. Recent research into subterranean life has revealed that living creatures can demonstrate great determination in surviving unappealing environments. In her new book, "Intraterrestrials", writer Karen G. Lloyd writes that "we have not yet encountered a depth at which life ceases to exist." Microbial life, after all, exists in the deep biosphere, where living things, however weird and unworldly, can find the sustenance they need in, for instance, the methanogens given off by rotting plants deep underneath swamps, while chemolithotrophs can still find a way to breathe on top of rocks three kilometres below the surface and thus very far from sunlight and its reassuring, life-giving warmth. Solar power can work in various ways. There is the photovoltaic method, in



Biogeochemist Karen Lloyd on a research trip to Chile, where she traveled to study microbes that live in hot springs



which sunlight hits the necessary cells, energising electrons, which creates an electric current. Not surprisingly, it's direct current (DC) which then has to be converted into alternating current (AC) for everyday use. Of course, sunlight can simply be used to generate heat, which can, perhaps, produce steam which in turn can drive a turbine, producing electricity in a more conventional way. It may be necessary in this case to focus the available sunlight in some way, perhaps using mirrors or lenses to concentrate it.

"Concentrating Solar-Therman Power", or CSP, can be scaled up for use in power plants. It can also be stored so that power remains available even when the sun isn't shining. As you know, in some parts of Europe there are many days that aren't particularly sunny.

As its supporters point out, solar power is sustainable and reduces the reliance on fossil fuels without producing harmful emissions that pollute the atmosphere and cause various illnesses. It's cost-effective, too, since no-one has to climb up into the clouds each morning to switch the sun on or turn pedals to keep it shining. Even so, although sales of electrically powered cars are on the rise, they don't seem popular with everyone. The fact is that with petrol cars, the business of introducing a new source of power when energy dwindles involves a simple visit to a petrol (gasoline) station and spending mere moments holding the spout of the pump in your vehicle's fuel tank. Recharging an electric vehicle is an altogether different and more complicated operation. One person I know who decided to invest in an electric car found they had to have major work done on the garage in order to install the recharging equipment, which also takes longer to achieve. It's not like putting new batteries in some electrical device.

3ti, the UK's leading designer, installer, funder, and operator of solar car parks (SCPs), is leading the new project funded by the Department for Energy Security and Net Zero, delivered by

Innovate UK. The project is setting out to integrate bi-directional DC charging and the associated power management systems into Papilio3, a popup solar car park and EV charging hub.

### How much is too much?

Even so, as the British consumer magazine, "Which", reported, they are finding a market. "Electric vehicles (EVs) are continually gaining popularity in the UK, making up a fifth of all new cars registered in 2024 according to the Society of Motor Manufacturers and Traders (SMMT). But that doesn't mean they're right for everybody, and there are lots of questions you need to be able to answer before you put money down on an EV," says the article. Charging your vehicle at home may be cheaper than doing so at some pay-as-you-go recharging point, but it involves a sizeable investment in creating a home charging point. It's clearly much more difficult for those people who are obliged to park their vehicle on a public road. Many of the new houses I've seen being chucked up lately totally lack a parking facility or anywhere to install recharging facilities, of course. Britain offers no financial support to anyone wanting to install a home charger and if you want one (and have room for one) it's likely

#### **EUROPEDIPLOMATIC**



A piece of coal - a fossil fuel - sourced from a mine in Tamil Nadu, India

to cost around €1,400. That's just a round figure estimate, of course. Proponents of electric power will argue that it works out cheaper than pouring petrol (gasoline) or diesel into it but recouping the cost of charger installation will still take time. You can console yourself with the thought that electrical power is cleaner, more efficient, produces fewer harmful emissions and it's quieter, of course.

It's just a case of asking how an electric vehicle will fit with your lifestyle, your daily use of the roads and your work. Overall, running an electric vehicle (EV) is said to be cheaper than driving a traditional fossil-fuel-powered type. After all, solar power harnesses the sun's energy efficiently, thus providing a clean and sustainable energy source. We should remember that fossil fuel was itself created out of plants or animals that had relied on the sun. It's still solar energy, but somehow second-hand.

Perhaps we should remind ourselves that fossil fuels owe their existence to the sun. Millions of years ago, those microscopic animals and plants known as plankton and algae sank to the bottom of the sea and became buried in mud and silt. As the layers of sediment grew thicker, the pressure of them grew, too, slowly changing those fossilised remains into crude oil and natural gas. It must have taken a very, very long time, but so it was that creatures that owed their very existence to sun light came to provide an alternative source of energy. Isn't nature wonderful? OK, sometimes rather slow but still wonderful. It's still happening, too, of course, with microbial processes producing sugars from chemical reaction. These are then consumed by microbes, which are, in turn, eaten by such creatures as tube worms. They become a food source for vent crabs, the bythograeidae, which are a small family of blind crabs living around hydrothermal vents. These crabs, in their turn, become dinner for various kinds of fish.



De Molen (windmill) and the nuclear power plant cooling tower in Doel, Belgium



How do they find the energy? Well, water laden with minerals, heated by magma deep within the Earth, flows out of the sea floor from chimney-like structures knows as "black smokers" (because they give off smoke which tends to be black) and in that smoke microbes convert the fluid into energy through what's called "chemosynthesis". If course, we mustb't forget all these salt ions in sea water, producing sulphates, magnesium, sodium and chlotide. Just think: all that potential for generating energy.

### Positives and negatives

Of course, all this potentially free energy has a downside. Hasn't everything? In this case there has been over-production of solar and wind power in some countries, like Spain, overloading the distribution network, so that some generators are now being paid to stop producing electricity. And, of course, there is inevitable power variability caused by changing weather and changing demand according to the time of day. Nuclear power stations have found themselves having to vary their output, reducing it when the sun is especially bright so as to avoid what's called "thermal stress". There could be long term effects, too. Grid stability remains an issue, while Europe's manufacturing of solar power equipment rather lags behind what some other (mainly hotter) countries have been achieving. There is a clear need for much greater investment in storage and in grid infrastructure. That's not the only problem, either. Solar panel connections with power stations are vulnerable to hacking. According to New Scientist magazine power grids around the world are growing increasingly concerned about cyberattacks, and for good reason.

### Fair dinkum (or unfair dinkum?)

Rooftop solar panels are growing increasingly popular, especially in Australia (hence my use of the expression "fair dinkum", which is an Australian phrase used to mean 'honest' or 'real'). It seems that one in three Australian homes has rooftop solar panels, making users rather vulnerable to crooks. In reality, it also means that grids are becoming increasingly reliant on "smart inverters", which manage the connections to local power networks, even though they're not inviolably safe. "While these technologies offer many benefits," Sid Chau of CSIRO, an Australian government research station, told New Scientist, "they also introduce new operational and cybersecurity challenges." Who was it who first said: "there's no such thing as a free lunch"? Smart inverters convert the direct current produced by solar panels into the alternating current required to operate the world's various electrical appliances. Chau has warned that the vulnerabilities thus exposed could pose a considerable threat not just to home-based solar systems but also to the wider power generation network.

Chau and his team identified a large number of ways in which smart inverters could be hacked by crooks, including by exploiting the security flaws in the physical hardware and software of the smart inverters themselves. Such an attack would have to be very carefully planned but given the right circumstances you

wouldn't need to hack very many inverters to cause the sort of disruption you can use. Researchers say that if hackers were to mount a coordinated attack on a handful of solar inverters, which are



then compromised, they can attack the broader power grid. The biggest fear is that the crooks could attack the power grid's "frequency control", which are potentially very vulnerable. Power grids in Australia - but also in Europe - require grid frequency to remain stable at around 50 hertz. Any deviation could, theoretically, cause cascading power-system outages. Another perceived weakness is, ironically, that inverters last a very long time up to 15 years or even longer – which means that whatever cybersecurity defences they may have in place can be quickly out-dated. Chau has said that the authorities must develop better oversight of all private smart inverters so that in the event of some kind of attack, it can quickly be spotted and those giving rise to concern can be overridden. Also in Australia, Ernest Foo at Brisbane's Griffith University says the infrastructure is especially vulnerable because of the age of the design and the components it uses. He has also warned that "with the help of a bigger uptake of distributed photovoltaics and perhaps with the use of machine learning and AI, cyberattack is more likely that previously thought." Perhaps the only truly safe alternative to extracting electrical power from sunlight is to erect a yurt and gather firewood in a nearby forest. Nobody could hack that, although brigands could presumably turn up and hack you and your wider family with their edged weapons. Very unpleasant.



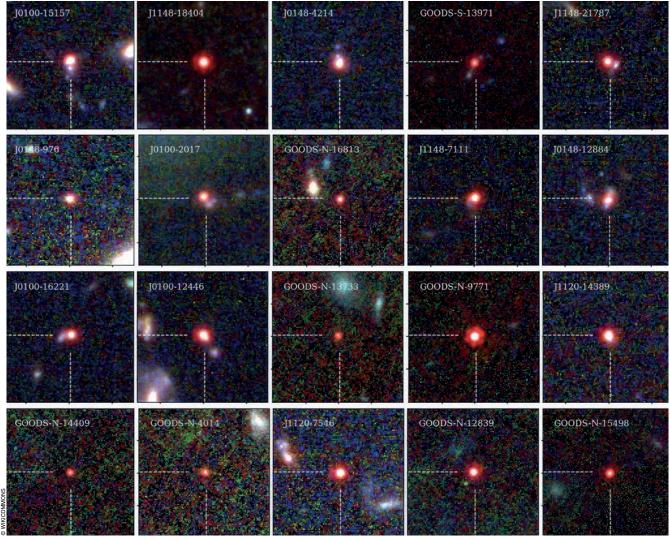
#### I Dots but no dashes

False-color stamps of 20 "little red dot" galaxies from a March 2024 study. Companion galaxies, which are blue in these false-color images, are also visible in some © Wikicommons

Perhaps our wonderful and very varied universe can come up with some sort of alternative. Just take a look at what astronomers are now studying. They've been named "LRDs", which stands, somewhat quaintly, for "Little Red Dots" (I love the prosaic names astronomers and physicists often use to identify the things they're studying). Nobody quite knows what they are, although they're thought to be (probably) compact objects from the very early universe, possibly linked to some process such as the creation of supermassive black holes, but in their early youth. They were at first believed to be very ancient, but now LRDs have been spotted that seem to be from a more up-to-date universe, having been identified as coming from a time some twelve billion years after the big bang, which makes them quite recent in astronomical terms. Could they possibly prove to be a possible future source of energy? Probably not, but with astrophysics one can never tell. In any case, these latest LRDs are quite nearby – just 2.5-billion

billion light years from us. When I call them "Little Red Dots, that is somewhat stretching the definition of "little", with each one something like a million times as massive as our sun and as wide as our entire solar system. When such unexpected things keep turning up out of the blue, who can say what sort of power they may promise us for the future.

The universe is scattered with matter of many kinds, albeit mostly the gases hydrogen and helium. With such tiny particles (or are they waves?), the force of gravity is quite weak, but it's still there and there is no hurry. So what if it takes billions of years for gravity to assemble enough matter to be noticeable, even under a hugely powerful microscope, the universe has lots of time. Once those miniscule particles are assembled and begin to have mass, then gravity starts to develop heat, as it drags in more and more matter. It's the energy of matter moving that leads to friction and so starts to provide heat. We must recall that these particles are not like bricks or stones; they're



False-colour images of 20 "little red dot" galaxies from a March 2024 study. Their companion galaxies, shown in blue, are also visible in some frames



A nuclear-powered rocket engine from 1967, more accurately called a Nuclear Thermal Rocket, preparing for testing. While often associated with E=mc², this design primarily utilises the heat from nuclear fission to create thrust, not direct mass-energy conversion

quantum particles. Gathering them together will, of course, take billions of years.

As Brian Clegg explains, in his excellent and fascinating book, Dark Matter and Dark Energy, the more matter clumps together, the stronger its gravitational attraction and it forms into a ball of sorts, mainly comprising hydrogen – and we're talking about hydrogen ions: atoms whose



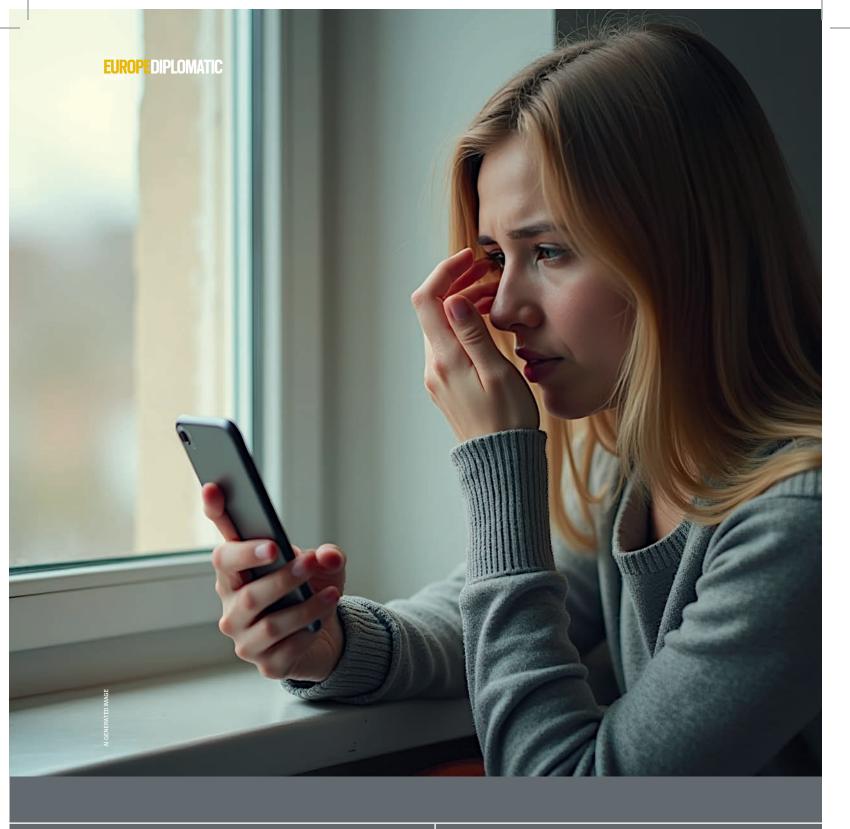
Brian Clegg

electrons have been stripped off by heat. Crushed together, the body they form will be getting bigger and also much hotter.

Remember, quantum particles can have wide variety of behaviours and values. Their exact location is often unknown. meanwhile, positively charged hydrogen ions repel each other because of electromagnetic force, and even under the extreme pressures and temperatures the ions cannot get close enough to each other to react. Tunnelling is one option, and in that way, a small percentage of the ions can get close enough to each other to get a reaction. It's at that point that that the so-called strong nuclear force takes over, attracting them to get closer and closer. Eventually, after a long and extremely complicated procedure, the hydrogen ions can fuse, creating something completely new: a helium ion.

In this convoluted way, a small amount of mass gets converted into energy, leading up to Einstein's most famous equation: E=MC2. In other words, Energy is equal to mass times the speed of light squared. The speed of light is a very big number, of course, so a kilo of water converted under this formula to energy would give you the amount that a typical power station can produce in six years, according to Brian Clegg. Could that, perhaps, provide us with the secure, safe source of electrical energy we all need? Or would we have to resurrect Einstein from the grave to achieve it. All the methods I have suggested are, of course, impossible, and we will undoubtedly go on plugging in our various appliances and hoping they'll work. Crooks notwithstanding, they probably will, too, unless we manage to blow a fuse, a not uncommon occurrence for most people. "Power to the people" was a popular slogan back in the late 1960s, as I recall. Sadly, those of us who shouted it loudest never came up with a way to make it come true.

T. Kingsley Brooks



THE SILENT WAR

FOMO vs. JOMO in the Age of Anxiety

Ever skipped a night out only to find yourself watching everyone's stories with a pang of regret? You know the feeling. In this digital age, we're all familiar with FOMO. It's that sinking feeling when you scroll through posts of friends at a party, a concert, or just living their 'best lives' while you're stuck doing something that suddenly seems... inadequate. Most of us have been there at least once.

FOMO (Fear of Missing Out) is a psychological phenomenon that evolved into a full-blown cultural and digital trend in the post-2000 era. The term, originally coined by Dr. Dan Herman—an expert in human psychology and the founder of the FOMO Authority Institute—gained mainstream traction with the rise of social media platforms like Facebook, Instagram, and Twitter (now X). It describes the anxiety or unease people feel when they believe others are having more rewarding or enjoyable experiences without them, whether a party, a travel adventure, a professional opportunity, or simply a viral trend.

While FOMO originates from a deeply rooted human emotion to belong and be included, it literally exploded in the digital age, particularly with the rise of smartphones and real-time social media updates. Constant exposure to curated and often-altered highlights from other people's lives creates a distorted perception that everyone else is consistently doing better, having more fun or succeeding faster. This quickly leads to frustration, resentment and even depression.



Dr. Dan Herman, Founder and CEO of the FOMO Authority Institute

Patrick James McGinnis, an American venture capitalist, popularized FOMO through his 2004 essay at Harvard Business School and his subsequent book on the same topic. The trend intensified through the 2010s, as influencers, brands and media outlets began to capitalize on the phenomenon as a core marketing strategy. 'Limited-time offers', exclusive invitation-only events, and countdown-driven campaigns are all examples of FOMO marketing. In essence, they work by triggering the emotional fear that if you don't act now, you'll miss out and regret it later.

While FOMO can affect anyone, studies show that younger people—particularly Millennials and Gen Z—are the most

vulnerable. These digitally native generations are not only more connected online but also more likely to use social media to construct and compare their identities. Teenagers and young adults, who are still forming their sense of self-worth, are especially susceptible to the constant pressures and comparisons that social media fosters. In fact, seventy percent of Gen Z reports feeling left out after browsing social media—that's FOMO in action.

Professionals can also experience career-related FOMO. Seeing peers change jobs, earn promotions or launch business ventures on LinkedIn can create stress and frustration, even when one's own career path is both stable and fulfilling.

But, surprisingly, FOMO is not entirely negative. When managed wisely, it can motivate people to seize opportunities, step out of their comfort zone and become more socially active. On a personal level, it can encourage networking, skill-building, and taking calculated risks to avoid stagnation. For businesses, FOMO-driven strategies not only increase sales and brand visibility but also push innovation in marketing, forcing brands to create more engaging and creative campaigns. In this sense, FOMO can be a powerful catalyst for both personal and professional growth.

However, the downsides are also quite significant. Constant exposure to the curated highlight reels of others' lives can lead to chronic dissatisfaction, diminished self-esteem, and mental fatigue. It fuels the flames of comparison culture, promotes unrealistic expectations, and can ironically lead to social isolation. This cycle can be particularly damaging for those already prone to insecurity, often making them feel inadequate or left behind. For many, it triggers compulsive behaviors—such as overcommitting to social events, spending beyond their means, or obsessively checking devices for updates.

FOMO also has a more subtle impact: it can erode your ability to be present and appreciate what you already have. It creates a state of perpetual longing, driving people to chase experiences not for their genuine value, but to avoid the imagined regret of being left out. This pressure to constantly participate can lead to overcommitment, peoplepleasing, and eventual burnout.

In recent years, FOMO has evolved into a powerful social force, shaped by new platforms like TikTok and BeReal. Its influence now extends beyond social circles into politics, consumer culture, and travel. More than a passing trend, FOMO is a mirror reflecting how deeply connected—and often overwhelmed—we are in a hyper-digital world. It actively shapes our decisions, behaviors, and identities. While it can be harnessed for positive outcomes, it also demands a more conscious and reflective approach to how we engage with others and define our own self-worth. In an age of constant comparison, learning to step back and savor the moment may be one of the most empowering choices we can make.



And that's how the antidote came about: JOMO, the Joy of Missing Out. This counter-trend encourages people to unplug, focus inward and find peace in solitude or offline life. It's stresses the satisfaction of saying 'no', enjoying your own company and opting out of events and trends simply because they're popular with everyone else.

In direct opposition to the overstimulating, comparison-driven world of FOMO, a new trend has quietly taken hold. JOMO represents a lifestyle shift—a conscious embrace of being offline, unplugged, and perfectly content with missing out.

Where FOMO thrives on the anxious illusion that everyone else is achieving more or enjoying life more fully, JOMO is rooted in mindfulness, intentional living, and the deliberate rejection of constant digital pressure.

The concept first emerged in the mid-2010s as a direct response to the fatigue and burnout caused by hyper-connectivity and social media overload. As people grew increasingly overwhelmed by endless notifications, compulsive scrolling, and toxic comparison, a movement to consciously step back began to form.

The term was popularized by leadership strategist and author Christina Crook in her 2015 book, The Joy of Missing Out: Finding Balance in a Wired World, which provided a blueprint for digital detox and mindful living. She further discusses the topic on her JOMO-themed podcast. Since its introduction, JOMO has evolved from a concept into a steady, growing movement fueled by a widespread desire to reclaim time, attention, and mental well-being.

JOMO resonates most deeply with those who have experienced digital fatigue firsthand: professionals burned out by 'always-on' work culture, parents seeking more authentic connections with their families, creatives in need of mental space, and even members of Gen Z who, despite being digital natives, are

becoming increasingly aware of social media's downsides and dangers.

It is also gaining popularity within wellness communities, among minimalists and those practicing intentional living. Introverts, in particular, often find that JOMO aligns naturally with their preference for solitude and reflection.

But JOMO isn't about isolation or apathy. It's the conscious choice of presence over pressure; the embrace of solitude without shame and the rejection of toxic, digital validation. It's the practice of finding genuine happiness in "missing out" on the noise in order to focus on what truly matters

JOMO encourages saying "no" to unnecessary obligations, clearing digital clutter, and rediscovering the joy of simple, offline pleasures: reading a book, spending time in nature, meaningful conversations with real friends, or simply doing nothing at all.

Over time, this practice has proven to be beneficial for mental health. By reducing social comparison and sensory overload, it lowers stress and promotes emotional balance. JOMO allows you enjoy the moment, and prioritize your authentic interests over trending ones. This fosters greater confidence in your choices, even when they diverge from the crowd. JOMO helps build emotional resilience and a stronger sense of self.

Unplugging from devices and staying offline boosts attention span, creativity and productivity while also enhancing the quality of real-world



relationships. Free from the noise of others' curated lives, people can reconnect with their own values and natural rhythms. JOMO reclaims hours once lost to passive scrolling and reinvests them in meaningful activities.

But, if not carefully balanced, JOMO can trigger social disconnection and lead to feelings of being out of touch or isolated from current conversations, events or communities. In professional or highly social circles, JOMO can sometimes be misinterpreted as aloofness or lack of ambition. While resisting pressure is healthy, there's a risk of overlooking genuinely valuable opportunities if one becomes too inward-focused.

In recent years, JOMO has fueled the popularity of digital detox retreats, designated "no-phone zones" and offline hobbies like journaling, gardening and analog photography. Popular online platforms have noticed this cultural shift and rapidly adapted: Instagram now includes usage tracking tools, while Apple and Android offer built-in screen time management, clear signs of a society attempting to curb its digital overuse.

JOMO also intersects with broader cultural movements like minimalism, slow living, mental health advocacy or the 'quiet quitting' response to burnout.

Rather than an escape, it represents a conscious return to intentional choices, meaningful moments and emotional clarity amid societal pressure to do more, be more and share more. It challenges the modern myth that happiness lies in constant engagement, reminding us that true contentment is found in stillness.

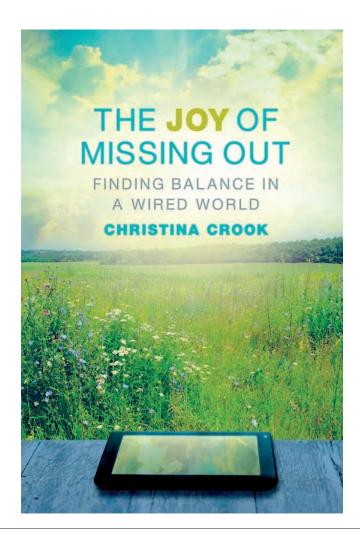
In a culture that celebrates constant noise, JOMO dares to find joy in silence - a powerful act of self-care in its own right.

JOMO is widely regarded as a healthier approach for Gen Z's mental health and identity development. Although the most digitally native generation, Gen Z is also the most susceptible to screen fatigue, anxiety and comparison culture. Studies show that high levels of stress, burnout and depression among young people are consistently linked to social media and relentless digital exposure.

At its core, JOMO means setting boundaries, being present and focusing on what truly matters. It promotes authenticity over performance, which resonates more with Gen Z.

Prominent figures have also publicly embraced and praised the trend. Acclaimed actress Emma Watson once said: 'I'm a big fan of JOMO. It's liberating to choose yourself, your peace, over constant social pressure.'

Yet here's a twist: FOMO still drives action and social engagement, which Gen Z also values. When channeled positively, FOMO can be energizing. Brands, events and even activism campaigns such as climate marches or voting drives, successfully leverage FOMO to mobilize Gen Z.





An internet advertisement for detox, by Health and Fitness Travel for "The Farm at San Benito" in the Philippines

Gen Z thrives by intentionally missing out on what doesn't serve them, while consciously opting into experiences that align with their values, interests and personal growth. It's basically about being digitally self-aware and in control - finding a personalized balance, which may differ from person to person. Psychologists suggest a key reflective question: 'Am I doing this because I want to, or because I'm afraid of missing out?' A growing number of digital wellness coaches and specialists now offer guidance to help individuals strike a balance between FOMO and JOMO, so as to manage their online activity to their best advantage. Common strategies include muting or unfollowing accounts that trigger FOMO, scheduling regular offline hours, for genuine rest, learning to say "no" with confidence and, perhaps most importantly, not to confuse being alone with being lonely.

It's essential to be aware of how you personally respond to online content - what energizes you versus what drains you - and then adjust your usage accordingly. It's basically about knowing your limits and honoring your core values, ultimately encouraging authenticity over imitation.

In recent years, several related concepts have gained traction in response to these social media dynamics. Inspired by Cal Newport's book, Deep Work, the slow living and deep work movements emphasize focused, distraction-free productivity and a rejection of hustle culture. These ideas resonate with those seeking relief from burnout or hyper connectedness.

Another social movement, championed by figures like Tricia Hersey of The Nap Ministry, frames rest as a radical act, especially for Gen Z, an online-native generation increasingly vulnerable to exhaustion. In a similar spirit, more and more people are adopting digital minimalism by uninstalling non-essential apps on their smartphones or even reverting to older, basic-function cell phones from the 2000s.

We are also witnessing a cultural pushback against overly curated online personas. In its place, raw, unedited and authentically honest content is resonating more deeply with audiences hungry for genuine connection and relatability.

TV series like Eupohria and Black Mirror, along with documentaries like The Social Dilemma, show the immense



Tricia Hersey (The Nap Ministry)

pressure on young people to remain perpetually "on" in today's digital landscape.

Younger users are growing increasingly aware that they're being "fed" online content designed to manipulate their behavior – prompting some to reject algorithmic curation, carefully tailor their own feeds or switch to more transparent platforms.

Ultimately, the healthiest approach may not be choosing between FOMO or JOMO, but rather learning to listen to your inner self, set clear digital boundaries and act with intention. Trends will come and go, but preserving your mental clarity, balance and integrity must remain a priority. So, the next time you feel that familiar twinge of anxiety... pause. Ask yourself: am I chasing connection, or fleeing silence? In that stillness, you may just find your real joy and peace.

Alexandra Paucescu

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### TIMELESS CHIC

### STANDOUT FASHION AND BEAUTY TRENDS

### EQUINOX ELEGANCE

Bid farewell to the summer holidays without too much nostalgia. Embrace the season ahead with five of autumn's most uplifting and stylish trends — a glimpse of what's set to define the upcoming months.



### Brown is the new black

When black feels too austere, and camel too predictable, brown takes centre stage - from sumptuous mocha to lustrous chocolate and deep mahogany. This season's gourmand palette celebrates burnt caramel, rich cocoa, and inky espresso worn head-to-toe, radiating quiet luxury with a contemporary edge, and elevating any piece look instantly more refined. A shade worth returning to, season after season.



Shoulder bag crafted in



Cable-Knit Wool-Cashmere V-Neck Jumper



### Double denim

For several months now, 2025 has made denim-on-denim the ultimate style move. Think matching indigo jackets and jeans, or sleek midi skirts with denim shirts – or even easier, denim jumpsuits. Dark washes work day or night, while matching sets deliver an easy, polished look.

Relaxed-fit, jeans overall made from rigid denim





### | Belt up

This autumn/winter, the belt takes the spotlight as the accessory of the season. Forget discreet waist-cinchers - 2025 is all about statement belts: oversized, sculptural, and often layered for maximum impact. The beauty lies in their simplicity; in a single move, they turn the simplest outfit into a standout look.



Leather belt in calfskin with lacquered metal buckle







Label's signature check shoulder bag

### | Check!

Heritage checks and plaids are a major trend, reimagined in fresh, unexpected colours and scales for a contemporary take on classic patterns like tartan and argyle.

### **BOOKS**



#### I DECCA

The Letters of Jessica Mitford By Jessica Mitfor Edited by Peter Y. Sussman

Born into the British aristocracy as one of the famous (and sometimes infamous), larger-than-life Mitford sisters, Jessica "Decca" Mitford ran away first to Spain during the Spanish Civil War, and then to America. She became a tireless political activist and a member of the Communist Party, then embarked on a brilliant caree as a memoirist and muckraking journalist. She was a celebrated wit, a charmer, and throughout her life a prolific and passionate writer of letters—now gathered here.

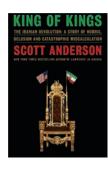
Decca's correspondence crackles with irreverent humor and mischief and with acute insight into human behavior that attests to her extensive experience in the worlds of politics, the arts, journalism, publishing, and high and low society. Here is correspondence with everyone from Katharine Graham and George Jackson, Betty Friedan, Miss Manners, Julie Andrews, Maya Angelou, Harry Truman, and Hillary Rodham Clinton to Decca's sisters the Duchess of Devonshire and the novelist Nancy Mitford, her parents, her husbands, her children, and her grandchildren.

"[Her] letters are so full of comic set pieces, vivid narrative, and wonderfully replicated speech... that one wonders why Mitford never tried writing a novel... Decca is a smashing accumulation... A week with her letters makes everybody else seem a bore."

#### —The New Yorker

"The letters are a treasure. Decca lived and battled by a pen that was as graceful and witty as it was sharp. Teeth were her means of propulsion, her wings; and the marks they left were singularly fine and even to be prized. She was, consummately, a happy warrior."

—The New York Times

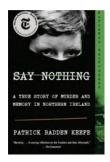


#### I KING OF KINGS

The Iranian Revolution: A Story of Hubris, Delusion and Catastrophic Miscalculation By Scott Anderson

On New Year's Eve, 1977, on a state visit to Iran, President Jimmy Carter toasted Shah Mohammad Reza Pahlavi, King of Kings, Light of the Aryans, Shadow of God on Earth, praising Iran as "an island of stability " due to 'your leadership and the respect and admiration and love which your people give to you." Iran had the world's fifth largest army and was awash in billions of dollars in oil revenues. Construction cranes dotted the skyline of its booming capital, Tehran. The regime's feared secret police force SAVAK had crushed communist opposition, and the Shah had bought off the conservative Muslim clergy inside the country. He seemed invulnerable, and invaluable to the United States as an ally in the Cold War. Fourteen months later the Shah fled Iran into exile, forced from the throne by a volcanic religious revolution led by a fiery cleric named Ayatollah Khomeini. The ensuing hostage crisis forever damaged America's standing in the world. How could the United States, which had one of the largest CIA stations in the world and thousands of military personnel in Iran, have been so blind?

The spellbinding story Scott Anderson weaves is one of a dictator blind to the disdain of his subjects and a superpower blundering into disaster. Scott Anderson tells this astonishing tale with the narrative brio, mordant wit, and keen analysis that made his bestselling Lawrence of Arabia one of the key texts in understanding the modern Middle East. The Iranian Revolution, Anderson convincingly argues, was as world-shattering an event as the French and Russian revolutions. In the Middle East, in India, in Southeast Asia, in Europe, and now in the United States, the hatred of economicallymarginalized, religiously-fervent masses for a wealthy secular elite has led to violence and upheaval - and Iran was the template. King of Kings is a bravura work of history, and a warning.



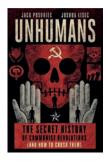
#### I SAY NOTHING

A True Story of Murder and Memory in Northern Ireland By Patrick Radden Keefe

Jean McConville's abduction was one of the most notorious episodes of the vicious conflict known as The Troubles. Everyone in the neighborhood knew the I.R.A. was responsible. But in a climate of fear and paranoia, no one would speak of it. In 2003, five years after an accord brought an uneasy peace to Northern Ireland, a set of human bones was discovered on a beach. McConville's children knew it was their mother when they were told a blue safety pin was attached to the dress-with so many kids, she had always kept it handy for diapers or ripped clothes.

Patrick Radden mesmerizing book on the bitter conflict in Northern Ireland and its aftermath uses the McConville case as a starting point for the tale of a society wracked by a violent guerrilla war, a war whose consequences have never been reckoned with. The brutal violence seared not only people like the McConville children, but also I.R.A. members embittered by a peace that fell far short of the goal of a united Ireland, and left them wondering whether the killings they committed were not justified acts of war, but simple murders.

From radical and impetuous I.R.A. terrorists such as Dolours Price, who, when she was barely out of her teens, was already planting bombs in London and targeting informers for execution, to the ferocious I.R.A. mastermind known as The Dark, to the spy games and dirty schemes of the British Army, to Gerry Adams, who negotiated the peace but betrayed his hardcore comrades by denying his I.R.A. past–Say Nothing conjures a world of passion, betrayal, vengeance, and anguish.



#### **I UNHUMANS**

The secret history of communist revolutions By Jack Posobiec, Joshua Lisec

If you don't understand communist revolutions, you aren't ready for what's coming. The old rules are over. The old order is over. Accusations are evidence. Activism means bigotry and hate. Criminals are allowed to roam free. Citizens are locked up. An appetite for vengeance is unleashed—to deplatform, debank, destroy. This is the daily news, yet none of it's new. Patterns from the past make sense of our present. They also foretell a terrifying future we might be condemned to endure. For nearly 250 years, farleft uprisings have followed the same battle plans-from the first call for change to last innocent executed, from denial a revolution is even happening to declaration of the new order. Unhumans takes readers on a shocking, sweeping, and succinct journey through history to share the untold stories of radical takeovers that textbooks don't teach. And there is one We're in a new revolution right now. But this is not a book about ideology or politics. Unhumans reveals that communism, socialism, Marxism, and all other radical-isms are not philosophies but tactics—tactics that are specifically designed to unleash terror on everyday people and revoke their human rights to life, liberty, and property. These are the forces of unhumanity. This is what they do. Every. Single. Time. Unhumans steals their playbook, breaks apart their strategies piece by piece, and lays out the tactics of what it takes to fight back-and win, using real-world examples. Unhumans is the essential read for every concerned citizen both of the US and worldwide. We must stop what is coming.

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# Smoking causes lung cancer



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