

Nuclear, Missile & Space Digest

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A Fortnightly Newsletter from the Indian Pugwash Society

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A. India

Operation of nuclear power unit in India's western Gujarat state delayed

Reuters, May 31, 2022

Construction of Nuclear Power Corp of India Ltd's (NPCIL) Kakrapara plant's fourth unit, scheduled to start commercial generation this year, has not been completed and is running more than a year late, a government memo showed. "The Unit #4 is under construction and would reach completion by March, 2024," a power ministry memo dated May 10 seen by Reuters on Tuesday quoted Bhuwan Chandra Pathak, chairman of state-run NPCIL, as saying. The 700 MW unit in western Gujarat state had been scheduled to start commercial operation this fiscal year ending March 2023, according to a 2022 power ministry report. The delay could add to strain on some old coal-fired utilities and potentially delay their retirement.

<https://www.reuters.com/world/india/operation-nuclear-power-unit-indias-western-gujarat-state-delayed-2022-05-31/>

MoD signs over Rs 2,900 crore contract with BDL for procurement of ASTRA Mk I Beyond Visual Range Air to Air Missile System & Associated Equipment for Indian Air Force & Indian Navy

PIB, May 31, 2022

In a major boost to Prime Minister Shri Narendra Modi's vision of 'Aatmanirbhar Bharat', Ministry of Defence, on May 31, 2022, signed a contract with Bharat Dynamics Limited (BDL) for supply of ASTRA MK-I Beyond Visual Range (BVR) Air to Air Missile (AAM) and associated equipment for the Indian Air Force & Indian Navy at a cost of Rs 2,971 crore under Buy (Indian-IDD) category. ASTRA MK-I missile and all associated systems for its launch, ground handling & testing has been developed by DRDO in coordination with the IAF. The missile, for which successful trials have already been undertaken by the

IAF, is fully integrated on the Su 30 MK-I fighter aircraft & will be integrated with other fighter aircraft in a phased manner, including the Light Combat Aircraft (Tejas). The Indian Navy will integrate the missile on the MiG 29K fighter aircraft.

<https://pib.gov.in/PressReleasePage.aspx?PRID=1829750>

Intermediate Range Ballistic Missile, Agni-4, successfully tested

PIB, June 6, 2022

A successful training launch of an Intermediate Range Ballistic Missile, Agni-4, was carried out at approximately 1930 hours on June 06, 2022 from APJ Abdul Kalam Island, Odisha. The successful test was part of routine user training launches carried out under the aegis of the Strategic Forces Command. The launch validated all operational parameters as also the reliability of the system. The successful test reaffirms India's policy of having a 'Credible Minimum Deterrence' Capability.

<https://pib.gov.in/PressReleasePage.aspx?PRID=1831654>

India Looking Forward To Joining Nuclear Suppliers Group: Jaishankar

Outlook, June 8, 2022

India is looking forward to joining the Nuclear Suppliers Group (NSG), overcoming the political impediments that are against global interest, External Affairs Minister S Jaishankar said on Tuesday. He made the remarks in an address to the foreign diplomatic corps based in India during an event hosted by the Ministry of External Affairs (MEA) to mark eight years of the Narendra Modi government. "Strengthening a rules-based order is a natural inclination of a polity like India. We value all opportunities to contribute to it," he said. Jaishankar said India's membership of the MTCR (Missile Technology Control Regime), Australia Group, and the Wassenaar Arrangement

is significant. All these groupings are multilateral export control regimes.

<https://www.outlookindia.com/national/india-looking-forward-to-joining-nuclear-suppliers-group-jaishankar-news-200991>

‘Nuclear energy can meet India’s energy needs’

The Hindu, June 8, 2022

If the country has to meet net zero carbon emission by 2070, as declared by Prime Minister Narendra Modi in the COP26 Glasgow Climate Summit, India has to rely on production of clean energy in the form of nuclear energy, asserted renowned nuclear scientist and member of the Atomic Energy Board (AEB) Anil Kakodkar on Wednesday. Nuclear energy is also imperative to meet the upcoming demand for electricity in the country as it also clean energy, he said, and discussed about the dream of the father of Indian nuclear programme Homi J. Bhabha of supply of nuclear fuel assemblies and nuclear reactors to the global market. Dr. Kakodkar participated in ‘Nuclear Fuel Complex (NFC) Day’ as part of the Golden Jubilee Year 2021-22 at the Homi Bhabha Convention Centre here as the chief guest.

<https://www.thehindu.com/news/national/telangana/nuclear-energy-can-meet-indias-energy-needs/article65507022.ece>

Rosatom supplies TVS-2M nuclear fuel to India, enables Kudankulam NPP to start operations in longer fuel cycle

Money Control, June 10, 2022

Russian state-owned Rosatom, which offers energy solutions across the nuclear supply chain, has supplied the first batches of TVS-2M nuclear fuel to India for the two functioning units of Kudankulam Nuclear Power Plant (NPP), powered by VVER-1000 reactors. After the nearest refuelling, power unit 1 will start operations in 18-months fuel cycle, according to an official statement. With this, TVEL – the fuel division of the state corporation Rosatom – will fulfill the agreement with Nuclear Power Corporation of India Limited (NPCIL) on the

implementation of a comprehensive engineering project, including the introduction of TVS-2M nuclear fuel and elongation of the fuel cycle from 12 to 18 months for both VVER-1000 reactors. Unlike the UTVS fuel model, which was supplied to Kudankulam NPP earlier, the TVS-2M fuel assemblies have a number of advantages making them more reliable and cost-efficient.

<https://www.moneycontrol.com/news/business/rosatom-supplies-tvs-2m-nuclear-fuel-to-india-enables-kudankulam-npp-to-start-operations-in-longer-fuel-cycle-8669731.html>

India goes with Pakistan & Libya, abstains from vote on IAEA resolution slamming Iran

The Times of India, June 11, 2022

India joined Pakistan and Libya in abstaining from voting on a resolution at the International Atomic Energy Agency (IAEA) that slammed Iran for its lack of cooperation with the global community on the nuclear issue. Thirty countries voted in favour of the resolution, that was drafted by the US, UK, France and Germany. Russia and China voted against it. “Yesterday, we joined the overwhelming majority of the IAEA board of governors in expressing support for the IAEA’s essential mission of safeguarding nuclear material to prevent nuclear proliferation. Iran must cooperate with the IAEA and provide technically credible information in response to the IAEA’s questions, which is the only way to remove these safeguards issues from the board’s agenda,” said the US in a statement.

<https://timesofindia.indiatimes.com/india/india-goes-with-pakistan-libya-abstains-from-vote-on-iaea-resolution-slamming-iran/articleshow/92136461.cms>

India appears to be expanding its nuclear arsenal, claims SIPRI

The Hindu, June 13, 2022

India had 160 nuclear warheads as on January 2022 and it appears to be

expanding its nuclear arsenal, Stockholm-based defence think tank SIPRI claimed on Monday. Similarly, Pakistan also appears to be expanding its nuclear arsenal, the Stockholm International Peace Research Institute (SIPRI) said in a statement. While India's nuclear stockpile increased from 156 in January 2021 to 160 in January 2022, Pakistan's nuclear stockpile has remained at 165 in January 2021 and January 2022, it claimed.

<https://www.thehindu.com/news/national/india-appears-to-be-expanding-its-nuclear-arsenal-claims-sipri/article65523474.ece>

Supply of six nuclear reactors: Question mark on Russia inputs, India evaluates French push at Jaitapur

The Indian Express, June 13, 2022

Amid mounting uncertainties over the civil nuclear partnership with Russia in the wake of the Ukraine war, there are indications of fresh progress on the much-delayed deal with French power utility EDF for the supply of six EPR (European Pressurised Water Reactors) nuclear reactors. The Department of Atomic Energy is actively examining a binding techno-commercial offer submitted by the French state-owned power company to help build six third-generation EPR reactors at Jaitapur in Maharashtra. A high-level team from EDF was here late last month. New Delhi had accorded an "in-principle" approval of the site at Jaitapur in Maharashtra for setting up of six reactors of 1650 MWe (megawatt electric) each as part of an umbrella nuclear deal signed with France in September 2008.

<https://indianexpress.com/article/india/supply-of-six-nuclear-reactors-question-mark-on-russia-inputs-india-evaluates-french-push-at-jaitapur-7966435/>

Short-Range Ballistic Missile, Prithvi-II, successfully tested

PIB, June 15, 2022

A successful training launch of a Short-Range Ballistic Missile, Prithvi-II was carried

out on June 15, 2022 at approximately 1930 hrs from the Integrated Test Range, Chandipur, Odisha. The missile is a proven system and is capable of striking targets with a very high degree of precision. The user training launch successfully validated all operational and technical parameters of the missile.

<https://pib.gov.in/PressReleasePage.aspx?PRID=1834376>

B. Russia

Russian, Chinese strategic bombers conduct joint air patrol in Asia-Pacific

TASS, May 24, 2022

An air task force composed of Russian Tu-95MS and Chinese H-6K strategic bombers conducted a joint air patrol over the waters of the Sea of Japan and the East China Sea, Russia's Defense Ministry reported on Tuesday. The Russian and Chinese strategic bombers did not intrude into the airspace of foreign states in their joint air patrol over the waters of the Sea of Japan and the East China Sea, it emphasized.

<https://tass.com/defense/1455139>

Russia developing system with AI elements to monitor Black Sea zone – developer

TASS, May 25, 2022

The Scientific Research Institute for Long-Distance Radio Communications (NIIDAR, part of the RTI Systems Group) is developing an information system with elements of artificial intelligence to monitor the situation in the Black Sea, NIIDAR and RTI Director General Yury Anoshko has told TASS in an interview. In his words, along with the primary tasks of detecting hostile vessels and aircraft in the Black Sea, the need for extensive general monitoring of the situation in the entire region has now become relevant.

<https://tass.com/defense/1455399>

Russia to upgrade missile attack warning system to track future weapons

TASS, May 25, 2022

The project of modernizing Russia's missile early warning system envisages radar capability to track a potential enemy's future weapons, CEO of the Mints Radio-Technical Institute and the NIIDAR Long-Distance Radio Communications Research Institute Yury Anoshko told TASS on Wednesday. The system is made up of the space-based component that integrates Tundra satellites and the ground-based segment of a network of Voronezh-type radars

<https://tass.com/defense/1455453>

Russian security chief discusses cooperation in counterterrorism with Kyrgyz counterpart

TASS, May 26, 2022

Russian Security Council Nikolay Patrushev held a working meeting with his Kyrgyz counterpart Marat Imankulov during his trip to Dushanbe on Thursday, the press service of the Russian Security Council reported. "There was a detailed exchange of views on topical issues of security in the changing international situation," the report said.

<https://tass.com/defense/1456417>

Coastal defense system for Tsirkon hypersonic missile in development in Russia – sources

TASS, May 27, 2022

Russia is developing a new coastal defense system for its advanced Tsirkon hypersonic cruise missile, two sources close to the Russian defense ministry have told TASS. The other source said the new system, just like its predecessor Bastion that employs Oniks (export name Yakhont) missiles, will have the capacity to strike both ground-based and sea targets.

<https://tass.com/defense/1456647>

Tsirkon hypersonic missile state trials for naval carriers successfully completed – source

TASS, May 31, 2022

The May 28 trial launch of the newest Russian Tsirkon hypersonic missile was performed at a maximum distance; this job finalized the state trials for the product for surface naval carriers, a source in Russian military industrial complex told TASS. Earlier, a TASS source said that the NPO Mashinostroyeniya, the developer of the missile, is currently working on a coastal system for the Tsirkon missile.

<https://tass.com/defense/1458187>

Russia's Uragan systems obliterate Ukrainian military targets using drone-supplied data

TASS, June 1, 2022

The Russian Defense Ministry uploaded a video clip showing Uragan multiple launch rocket systems striking Ukrainian camouflaged combat hardware. In fulfilling their assigned missions, the Uragan teams received reconnaissance information supplied by Orlan-10 unmanned aerial vehicles, it said.

<https://tass.com/defense/1458881>

Russian frigate carrying hypersonic weapons to enter service this year – Fleet commander

TASS, June 1, 2022

The frigate Admiral Golovko carrying hypersonic weapons will enter service with Russia's Northern Fleet by the end of this year, Fleet Commander Admiral Alexander Moiseyev said on Wednesday. The frigate will be the first regular carrier of sea-launched hypersonic weapons, the admiral said.

<https://tass.com/defense/1458947>

Nuclear arms are “last equalizer” and Russia’s security guarantee – Roscosmos CEO

TASS, June 2, 2022

Roscosmos CEO Dmitry Rogozin has described Russia’s nuclear weapons as “the last equalizer” that gives the country security guarantees. Speaking at the 8th final industrial conference of heads and specialists of human resources’ services of Russia’s rocket and space industry enterprises, Rogozin recalled that Roscosmos was responsible for creating ballistic missiles. Dmitry Rogozin expressed hope that it would never come to using nuclear weapons

<https://tass.com/defense/1459847>

Rostec designs new UAV navigation system, making drones invulnerable to electronic warfare

TASS, June 3, 2022

The Kalashnikov group of companies (part of Rostec corporation) have designed a new type of navigation for unmanned aerial vehicles (UAVs), which makes them practically invulnerable to electronic warfare systems, TASS learned from Rostec on Friday. Besides, the new navigational system is more precise than the Inertial Navigation System (INS). According to designers, the use of it will help to minimize the number of lost drones.

<https://tass.com/defense/1459967>

Second regiment of Avangard hypersonic missiles to assume combat duty in Russia

TASS, June 5, 2022

The second regiment of intercontinental ballistic missiles (ICBMs) outfitted with Avangard hypersonic boost glide vehicles is set to assume combat posture in Russia, Strategic Missile Force Commander Colonel-General Sergey Karakayev said in a live broadcast of the Military Output Acceptance program on the Zvezda TV Channel on Sunday.

<https://tass.com/defense/1460861>

Advanced deck-based drone to make maiden flight in 2025 – source

TASS, June 7, 2022

The most advanced deck-based unmanned aerial vehicle is scheduled to make the first test flight in 2025, a source in the defense sector told TASS. “The first prototype of the domestic deck-based drone will make the test flight in three years. Series production of the drone for the Navy will start in 2026,” the source said.

<https://tass.com/defense/1461445>

Russian Navy Starts Baltic Sea Drills Amid Ukraine Tensions

The Moscow Times, June 9, 2022

Dozens of Russian ships on Thursday took part in military exercises in the strategic Baltic Sea after Sweden and Finland recently announced bids to join NATO. Russia’s Defense Ministry said in a statement that ships of its Baltic fleet, will “perform training tasks for the defense of sea lanes and fleet bases.” The navy drills come amid heightened tensions between Moscow and NATO after Sweden and Finland submitted their bids to join the U.S.-led alliance after the start of Russia’s military campaign in Ukraine.

<https://www.themoscowtimes.com/2022/06/09/russian-navy-starts-baltic-sea-drills-amid-ukraine-tensions-a77953>

Russian Northern, Pacific Fleets hold joint drills in Mediterranean

TASS, June 14, 2022

Combat ships of Russia’s Northern and Pacific Fleets practiced launching a missile attack on an adversary naval group and hunting down a hypothetical enemy’s submarine during joint drills in the Mediterranean Sea, the Northern Fleet’s press office reported on Tuesday. The crews of the warships of the Russian Northern and Pacific Fleets will shortly continue practicing joint operations. The manoeuvres are running in the neutral

waters of the Mediterranean Sea outside shipping routes, the press office said.

<https://tass.com/defense/1464723>

Russia Faces Commercial Drone Shortage as War Increases Demand

The Moscow Times, June 15, 2022

Russia is experiencing a shortage of commercial drones amid increased demand from the military and China's exit from the Russian market, the Kommersant business daily reported Thursday. Prices have risen by an average of 30% since Russian troops invaded Ukraine in February, Kommersant reported, citing industry sources.

<https://www.themoscowtimes.com/2022/06/15/russia-faces-commercial-drone-shortage-as-war-increases-demand-a78004>

Putin Pushes for Stronger Ties with BRICS Nations

The Moscow Times, June 22, 2022

Russian President Vladimir Putin on Wednesday called for a strengthening of ties with the influential club of BRICS emerging economies, amid unprecedented Western sanctions imposed over Ukraine. "Businessmen of our countries are forced to develop their business under difficult conditions where Western partners neglect the basic principles of market economy, free trade, as well as the inviolability of private property," Putin told a BRICS business forum via video link.

<https://www.themoscowtimes.com/2022/06/22/putin-pushes-for-stronger-ties-with-brics-nations-a78073>

C. China

Chinese space scientists aim for telescope to find next Earth up to 32 light years away

South China Morning Post, 22 May 2022

A team of Chinese researchers has proposed launching a space telescope to look for a

nearby "cousin" of the Earth – a planet of similar size and mass as our own, and orbiting in the habitable zone around a sun-like star. No such planet has been found yet, but it may hold the key to the question of "whether life is unique to Earth or ubiquitous in the universe", according to project lead Ji Jianghui of the Purple Mountain Observatory at the Chinese Academy of Sciences (CAS) in Nanjing. Among the 5,000-plus exoplanets, or planets outside our solar system, detected so far, many are much larger than the Earth or dwell in the habitable zone of smaller and cooler stars such as a red dwarf, which are conditions less likely to host liquid water or life as we understand it.

<https://www.scmp.com/news/china/science/article/3178679/chinese-space-scientists-aim-telescope-find-next-earth-32-light>

NASA accuses China of stealing space technology

ANI, 23 May 2022

America's space agency, the National Aeronautics and Space Administration (NASA) has accused China of stealing unclassified American technology, ranging from military secrets to medical research. During a United States House Appropriations Committee hearing on May 17, NASA Administrator Bill Nelson accused the Chinese Communist Party of stealing the United States' most vital technological secrets, The Singapore Post reported. "Yeah, they're pretty good at stealing, And I think that's incumbent upon us to take cybersecurity very, very seriously," Nelson said. This comes as a response to the questions raised by the US representative and committee member, Robert Aderholt who noted that the space vehicles being developed between private US companies and state-run Chinese organizations have similarities.

<https://www.aninews.in/news/world/asia/nasa-accuses-china-of-stealing-space-technology20220523210834/>

Chinese and Russian nuclear bombers fly over Sea of Japan as Biden visits Tokyo

Financial Times, 24 May 2022

Chinese and Russian strategic bombers flew over the Sea of Japan as Joe Biden attended a Quad summit in Tokyo, in a joint exercise the Japanese government denounced as “unacceptable”. The nuclear-capable bombers conducted a joint flight on Tuesday that began over the Sea of Japan as the US president was meeting his counterparts from Japan, Australia and India, Japanese and US officials said. Moscow said the 13-hour flight was carried out “strictly in accordance with the provisions of international law” and was not directed against third countries. But Nobuo Kishi, Japan’s defence minister, condemned the exercise as “provocative” and “unacceptable”. A US official said the exercise showed China was continuing military co-operation with Russia in the Indo-Pacific “even as Russia brutalises Ukraine”. “It also shows that Russia will stand with China in the East and South China Seas, not with other Indo-Pacific states,” the official said.

<https://www.ft.com/content/2b77473c-44d8-4b27-98f8-07c096f5302c>

Space Force Can Only ‘Mitigate’ China-Russia Space Cooperation

Air Force Magazine, 24 May 2022

The China-Russia relationship in space has serious security implications as the tenuous allies unite financing and know-how in an effort to displace U.S. space superiority and threaten America’s space architecture, according to a panel of experts at the recent China Aerospace Studies Institute conference. The two countries’ space cooperation, including in the military realm, has become inextricable since 2018 and works against U.S. interests, said Kevin Pollpeter, senior research scientist at the CNA think tank’s China Studies Division. “I don’t think we can separate China and Russia. I just don’t think that’s possible,” Pollpeter said in response to a question from Air Force Magazine following a panel discussion May 17 on China-Russia space

cooperation at the National Defense University in Washington, D.C.

<https://www.airforcemag.com/space-force-can-only-mitigate-china-russia-space-cooperation/>

China launches 3 communications test satellites to low Earth orbit

Space, 24 May 2022

China launched three new test communication satellites to low Earth orbit as the country looks to build its own version of SpaceX’s Starlink broadband constellation. A Long March 2C rocket lifted off from the Jiuquan Satellite Launch Center in the Gobi Desert at 6:30 p.m. local time (6:30 a.m. EDT, 1030 GMT) on May 20, the China Aerospace Science and Technology Corporation stated. A Yuanzheng-1S upper stage released three satellites, all of which are designed to carry out tests and verifications of in-orbit communication technologies, according to Chinese state media.

<https://www.space.com/china-launches-test-communications-satellites-low-earth-orbit>

China military must be able to destroy Elon Musk’s Starlink satellites if they threaten national security: scientists

South China Morning Post, 25 May 2022

Chinese military researchers say the country needs to be able to disable or destroy SpaceX’s Starlink satellites if they threaten national security. According to a paper published last month, China needs to develop anti-satellite capabilities, including a surveillance system with unprecedented scale and sensitivity to track and monitor every Starlink satellite. The study was led by Ren Yuanzhen, a researcher with the Beijing Institute of Tracking and Telecommunications under the PLA’s Strategic Support Force. Co-authors included several senior scientists in China’s defence industry.

https://www.scmp.com/news/china/science/article/3178939/china-military-needs-defence-against-potential-starlink-threat?module=more_top_stories_int&pgtype=homepage

Guam, 2,500 nautical miles from mainland China, Would Get Command Center With Integrated Air Picture in Missile Defense Agency Budget

Abraham Mahshie

Air Force Magazine, 25 May 2022

The strategically important U.S. territory of Guam would get 360-degree sensor coverage, missile defenses, and a command center in a plan put forth in the Missile Defense Agency's fiscal 2023 budget request. MDA director Vice Adm. Jon A. Hill made the case for the array of new defensive systems during a May 23 event at the Center for Strategic and International Studies in Washington, D.C., after highlighting all the capabilities that would be located on the island if Congress approves the plan. "Location does matter," Hill said. "If you just go look at where Guam is on the map, it is inside an area that is absolutely tactically relevant," Hill said of the Pacific island that is 2,500 nautical miles from mainland China and home to U.S. military installations including Andersen Air Force Base and Naval Base Guam with its Polaris Point Submarine Base. "You've got repair facilities there. We've got the Marine Corps there. We're going to be stationing long-range fires there. It needs to be defended," Hill said. He said Guam is not yet defensible against ballistic, cruise, or hypersonic missiles. The fiscal 2023 budget request, which is now before Congress, seeks to close that gap and to prepare Guam to be the most forward Pacific site in the defense of the U.S. homeland.

<https://www.airforcemag.com/guam-to-get-command-center-with-integrated-air-picture-in-missile-defense-agency-budget/>

BRICS countries establish joint commission on space cooperation

Global Times, 25 May 2022

A joint commission on space cooperation of the BRICS countries (Brazil, Russia, India, China, and South Africa) was established, kicking off a new chapter of joint observation and data sharing of remote

sensing satellites among the five member states, the China National Space Administration (CNSA) announced. Speaking at the first commission meeting via video, Zhang Kejian, head of the CNSA, noted that the establishment of the commission will guide the remote sensing sharing mechanism to better help the socioeconomic development of the BRICS countries and meet common challenges, such as climate change, disaster relief and environmental protection. Leaders of the space agencies of Brazil, Russia, India, China and South Africa shared updates on their activities and the implementation of the Agreement on the Cooperation on BRICS Remote Sensing Satellite Constellation, according to the administration.

<https://www.globaltimes.cn/page/202205/1266574.shtml>

China tests missile targeting for specific planes: CNAS' Shugart

Nikkei Asia, 25 May 2022

China has set up what appears to be a mock-up of an airborne warning and control system (AWACS) plane used by the Japan Air Self-Defense Force (JASDF) in a desert area of Xinjiang, Nikkei has determined, based on expert analysis of satellite photographs. The object is possibly a dummy target used for training to attack SDF aircraft with missiles. Tom Shugart, an adjunct senior fellow at the Washington-based Center for a New American Security (CNAS) pointed out in an interview with Nikkei Asia that the object appears to be a model of the JASDF's E-767 aircraft.

<https://asia.nikkei.com/Editor-s-Picks/Interview/China-tests-missile-targeting-for-specific-planes-CNAS-Shugart>

US, China must work together on N. Korea, other global issues: Blinken

The Korea Times, 27 May 2022

U.S. Secretary of State Antony Blinken urged Beijing to work with the U.S. on

global issues, including North Korea, as he laid out America's policy toward China and their intensifying power competition. The top U.S. diplomat insisted the two powers must cooperate on vital global issues despite their differences. "On non-proliferation and arms control, it's in all of our interests to uphold the rules, the norms, the treaties that help reduce the spread of weapons of mass destruction," Blinken said in an address delivered at George Washington University. "China and the United States must keep working together and with other countries to address Iran and North Korea's nuclear programs, and we remain ready to discuss directly with Beijing our respective responsibilities as nuclear powers," he added. Blinken's remarks come as North Korea is widely anticipated to conduct a nuclear weapon test as part of its ongoing saber-rattling.

http://www.koreatimes.co.kr/www/nation/2022/05/113_329941.html

China's 1st nuclear steam project to turn seawater into clean energy

CGTN, 29 May 2022

China has started construction of its first nuclear-powered steam supply project for industrial purpose at Lianyungang City in eastern Jiangsu Province. The project will utilize heat generated by the nuclear power to convert desalinated sea water into clean, stable and efficient industrial steam and reduce energy consumption and carbon emissions. According to China National Nuclear Corporation (CNNC), its Tianwan nuclear-powered project, which supplies industrial steam in Lianyungang City, with a total investment of 730 million yuan (\$108.4 million) and construction period of 24 months, will be fully operational by the end of 2023. New desalination plants, power stations, and pumping stations will also be built under the project. At present, China's industrial steam is mainly produced by coal-fired power plants or coal-fired boilers. The project will explore a new way to meet the demand for industrial steam and reduce comprehensive energy consumption as well as environmental pollution.

<https://news.cgtn.com/news/2022-05-29/China-s->

1st-nuclear-steam-project-to-turn-seawater-into-clean-energy-1aqDoswJRiU/index.html

Chinese space centre finds jamming device weeks before launch of latest space station mission in first reported incident of its kind

South China Morning Post, 30 May 2022

A radio surveillance team at a Chinese satellite launch centre have said they have found a jamming device that can interfere with navigation systems in a car outside the base – the first time it has reported such an incident. The researchers at the Jiuquan Satellite Launch Centre in Inner Mongolia caught the car with a jammer inside when the vehicle passed by the centre about two weeks ago, according to an article posted by Beijing Daily on the online news portal sohu.com.

<https://www.scmp.com/news/china/science/article/3179756/chinese-space-centre-finds-jamming-device-weeks-launch-latest>

China finds uranium at 'impossible' depth: scientists

South China Morning Post, 30 May 2022

Chinese nuclear authorities say their researchers have discovered rich uranium deposits deep below the Earth, in what they are calling a breakthrough for the country's national security. Huge, industrial-grade deposits were found at depths previously thought impossible, increasing China's estimated total reserve 10-fold to more than two million tonnes – putting China on a par with Australia, one of the world's most uranium-rich countries – according to scientists involved in the project. Using some of the world's most advanced technology and equipment, the geologists increased the exploration depth to 3,000 metres (nearly 10,000 feet) – six times deeper than most of the country's uranium mines.

<https://www.scmp.com/news/china/science/article/3179441/china-finds-uranium-impossible-depth-scientists>

China supports development of South Pacific nuclear-free zone

Xinhua, 31 May 2022

China upholds the international non-proliferation regime with the Treaty on the Non-Proliferation of Nuclear Weapons as its cornerstone and supports the development of the South Pacific nuclear-free zone, according to a position paper issued after the second China-Pacific Island Countries Foreign Ministers' Meeting. China is committed to deepening its comprehensive strategic partnership featuring mutual respect and common development with Pacific island countries, so as to build a closer China-Pacific island countries community with a shared future, the paper said. China hopes to work with Pacific island countries to follow the vision of common, comprehensive, cooperative and sustainable security so as to promote regional peace and security, it said.

<https://english.news.cn/20220531/ccb149b5a103411fac22f9d78d15ca9a/c.html>

China says it's close to completing its independent space station as Beijing and Moscow intensify a space rivalry with the US

Business Insider, 31 May 2022

China is on track to complete construction of its space station by the end of the year, according to Chinese state media. Chinese authorities said they were preparing a spacecraft that will carry a new batch of three astronauts to Tiangong, per the China Manned Space Engineering Office (CMSE). The launch is expected to happen in the coming days. Thereafter, China plans to send two laboratory modules to the space station in July and October, state-owned CGTN reported, quoting information provided by the CMSE. These modules and astronauts are the final steps in Tiangong's construction, CMSE officials said at a press conference in April. "After we complete construction of the space station in orbit at the end of this year, we will start developing use cases and applications for the station

that will last over the next ten years," Hao Chun, the agency's director general, said, according to a transcript from the press conference.

<https://www.businessinsider.in/international/news/china-says-its-close-to-completing-its-independent-space-station-as-beijing-and-moscow-intensify-a-space-rivalry-with-the-us/articleshow/91914429.cms>

A Chinese space center found a mysterious jamming device outside its base just weeks before a crewed rocket launch

Business Insider, 31 May 2022

Researchers from a space center in China said they found a jamming device right outside their base just weeks before a scheduled rocket launch, according to local news outlets. The device was found in a car being driven near the Jiuquan Satellite Launch Center in Gansu province, Yangtze Evening News reported. The space center didn't say if the incident was an act of sabotage but noted that the jammer could interfere with navigation systems and make a rocket go off course, per the outlet. China is set to send three astronauts to its Tiangong space station via its Shenzhou-14 rocket. Among the crew is Liu Yang, who became China's first woman to be sent into space in 2012. According to Yangtze Evening News, scientists at the Jiuquan space center started detecting "abnormal" interference signals earlier this month and spent several days tracking them down.

<https://www.businessinsider.in/international/news/a-chinese-space-center-found-a-mysterious-jamming-device-outside-its-base-just-weeks-before-a-crewed-rocket-launch/articleshow/91907547.cms>

China softens blow of U.S. sanctions on military companies

Nikkei Asia, 02 June 2022

With all U.S. citizens and entities forbidden from investing China's military-industrial

companies by Friday, Beijing has mobilized state funds and its capital market to cushion the potential fallout.

<https://asia.nikkei.com/Politics/International-relations/US-China-tensions/China-softens-blow-of-U.S.-sanctions-on-military-companies>

S. Korea, China hold high-level phone talks on N. Korea, bilateral ties

The Korea Times, 02 June 2022

South Korea and China held high-level phone talks, during which the two sides discussed bilateral ties and the security situation on the Korean Peninsula, the presidential office said. South Korea's National Security Adviser Kim Sung-han and Yang Jiechi, China's top diplomat, exchanged opinions on the bilateral relations under the Yoon Suk-yeol administration, which took office last month. They positively reviewed the brisk consultations at the high-level and agreed to expand "substantive cooperation" between the two nations, the presidential office said. Kim said North Korea's nuclear and missile program poses a risk to regional peace and stability, and called on China to play "an active, constructive role" in persuading Pyongyang to refrain from further provocations and return to dialogue, according to the office. In response, Yang expressed concerns about the growing uncertainties on the Korean Peninsula and affirmed China's role in promoting inter-Korean relations to reach a diplomatic solution to that end, it added.

http://www.koreatimes.co.kr/www/nation/2022/06/113_330319.html

Military potential of China's Zhu Hai Yun: The world's first AI-powered drone carrier

Financial Express, 07 June 2022

In recent years, the world has witnessed intense competition between the US and China, ranging from economic and military dominance so that they could secure superiority in new emerging technologies like Artificial Intelligence (AI). AI is considered a part of the Fourth Revolution;

it is an enabling technology rather than a weapon, thus providing wide application of the technology for civil and military purposes. In such a regard, AI has become one of the main aspects of power competition between the US and China. Currently, the US enjoys dominance in this field, but in recent years advancement made through Research and Development (R&D) in AI in China has started to bridge the gap between countries. Unlike the US, China overlaps the usage of AI and is using such technology for both civil and military purposes.

<https://www.financialexpress.com/defence/military-potential-of-chinas-zhu-hai-yun-the-worlds-first-ai-powered-drone-carrier/2551697/>

China says all IAEA member states must agree before Aukus nuclear sub project begins

South China Morning Post, 07 June 2022

The nuclear submarine project between Australia, the United States and Britain should not begin until all International Atomic Energy Agency members agree, China's foreign ministry said on Tuesday. Foreign ministry spokesman Zhao Lijian said that at China's request, the IAEA had for the third time decided to establish a special formal agenda to discuss issues around the Aukus group's nuclear submarine cooperation regarding the transfer, safeguarding and supervision of nuclear materials, which could affect the Nuclear Non-Proliferation Treaty (NPT). "China has repeatedly stressed that the cooperation between the United States, Britain and Australia on nuclear submarines poses a serious nuclear proliferation risk, affects the international nuclear non-proliferation system, intensifies the arms race and undermines regional peace and stability," Zhao said in Beijing.

<https://www.scmp.com/news/china/diplomacy/article/3180773/china-says-all-iaea-member-states-must-agree-aukus-nuclear-sub>

China urges U.S. to take meaningful, concrete actions to ease Korean Peninsula tensions

CGTN, 09 June 2022

Zhang Jun, China's permanent representative to the United Nations (UN), urged the United States to take meaningful and concrete actions to relieve tensions on the Korean Peninsula. "Where the situation goes from here will depend, to a large extent, on the actions of the U.S., and the key lies in whether the U.S. can face up to the crux of the problem, demonstrate a responsible attitude, and take meaningful and concrete actions," Zhang said, calling on all parties to "avoid any action that could escalate tensions and lead to miscalculation." Zhang made the remarks at a UN General Assembly debate on the Korean Peninsula issue, the first of its kind since the General Assembly adopted a resolution on April 26 that allows it to convene automatically when a veto is cast in the Security Council. On May 26, China and Russia vetoed a Security Council draft resolution aimed to impose new sanctions on the Democratic People's Republic of Korea (DPRK), triggering the General Assembly meeting.

<https://news.cgtn.com/news/2022-06-09/China-urges-U-S-to-take-meaningful-actions-over-Korean-Peninsula-1aInNi0kEHm/index.html>

China, Russia defend North Korea vetoes at U.N.

Nikkei Asia, 09 June 2022

China and Russia defended their vetoes of a strongly backed U.S resolution that would have imposed tough new sanctions on North Korea at a first-ever General Assembly meeting that is now required for any measure that sparks a veto in the Security Council by one of its five permanent members. The close allies reiterated their opposition to more sanctions, blaming the United States for rising tensions on the Korean Peninsula and insisting that what's needed now is dialogue between North Korea and the Biden administration. Nearly 70 countries signed up to speak at the open meeting which General Assembly President

Abdalla Shahid hailed as making the U.N. more efficient and accountable.

<https://asia.nikkei.com/Politics/International-relations/China-Russia-defend-North-Korea-vetoes-at-U.N>

S. Korean, Chinese defense chiefs hold talks in Singapore on N. Korea, regional security

The Korea Times, 10 June 2022

The defence chiefs of South Korea and China held bilateral talks on the margins of a security forum in Singapore, with North Korea's continued sabre-rattling high on their agenda. The talks between Defense Minister Lee Jong-sup and his Chinese counterpart, Wei Fenghe, came as Seoul seeks to secure regional cooperation to stop Pyongyang's provocations amid concerns about the possibility of the regime carrying out a nuclear test. Lee called on China to play a constructive role to encourage the North's denuclearization. "Minister Lee stressed the need for South Korea and China to work together to make the North understand the benefits that it can get from abandoning nuclear arms outweigh the costs of possessing nuclear arms," Seoul's defence ministry said in a press release.

http://www.koreatimes.co.kr/www/nation/2022/06/113_330803.html

China boosting nuclear arsenal, Pakistan leads India in warheads: Sipri

The Times of India, June 14, 2022

China is undertaking a "substantial expansion" of its nuclear weapons arsenal, which satellite images show includes the construction of more than 300 new missile silos, even as Pakistan also continues to be slightly ahead of India in the number of nuclear warheads. China has an estimated 350 nuclear warheads, with new mobile missile launchers and another submarine becoming operational over the last one year, while Pakistan has 165 and India 160, as per the latest assessment of the Stockholm International Peace Institute

(SIPRI) released on Monday. The SIPRI report comes a day after Chinese defence minister Wei Fenghe at the Shangri La Dialogue in Singapore declared his country has made “impressive progress” in developing and deploying new nuclear weapons, including the Dong Feng-41 (DF-41) inter-continental ballistic missile with a strike range of over 12,000 km. But, he added, China will only use nuclear weapons in “self-defence” and never use them first.

<https://timesofindia.indiatimes.com/world/china/china-boosting-nuclear-arsenal-pakistan-leads-india-in-warheads-sipri/articleshow/92190505.cms>

D. Pakistan

South Asian leaders understand nuclear war risks: US report

Dawn, May 25, 2022

The leaders of China, India and Pakistan understand the risks and costs of an armed conflict between nuclear nations but growing nationalism in the region could ignite a war, warns a new US report. The US Institute of Peace, a federal institution with a mandate from Congress, made this observation in the final report of a study by its senior scholars released this week. The report reviews the challenges posed by changing strategic circumstances in Southern Asia, assesses a range of US policy options, and presents a set of priority recommendations for US policymakers. It urges the United States to devote renewed attention to nuclear risk reduction measures, starting with the establishment of a “dedicated and secure India-Pakistan nuclear hotline, supported by bilateral agreements and practices”.

<https://www.dawn.com/news/1691394>

On anniversary of nuclear tests, PM Shehbaz vows to make Pakistan economic power

Dawn, May 28, 2022

Prime Minister Shehbaz Sharif on Saturday congratulated the nation on the 24th anniversary of the country’s successful nuclear tests and vowed to make Pakistan

an economic power. In his message on ‘Youm-i-Takbir’, the day Pakistan became an atomic power, he said, “Today in 1998, [then] PM Nawaz Sharif rejected pressures & inducements in a bold show of leadership & made Pakistan nuclear power of the world. Now we are resolved to turn it into an economic power.” The prime minister also expressed gratitude to everyone who had made the country’s defence “invincible”. “Pakistan is committed to the promotion of environment of peace and stability in South Asia, while preserving its capability to ward off aggression or adventurism in any form. It is a partner in international efforts to strengthen the global non-proliferation regime based on the principles of non-discrimination and equal security for all states. “It adheres to the latest international standards on export controls and maintains highest standards of nuclear safety and security,” FO spokesperson Asim Iftikhar said in a statement.

<https://www.dawn.com/news/1691910>

E. Europe

What it takes for Europe to become a credible security actor

Euractiv, May 30, 2022

Against the background of the war in Ukraine, and with a view to the security challenges ahead, we believe that Europe needs a defence industry that is able to:

Deliver at all times and under any circumstances the required equipment and related services (maintenance, repair and overhaul); Improve key defence technologies and their applications and develop new, enhanced versions and the next generations of those; React to newly emerging technological trends and breakthroughs by competitors and potential adversaries; Challenge competitors and potential adversaries by developing innovative concepts and disruptive technologies.

<https://www.euractiv.com/section/defence-and-security/opinion/what-it-takes-for-europe-to-become-a-credible-security-actor/>

F. Austria

Austria receives Rheinmetall C-UAS system for evaluation

Janes, May 26, 2022

Austria has received a Rheinmetall Air Defence counter-unmanned aerial system (C-UAS) platform that defends against small unmanned aerial vehicles for six months of evaluation and testing, the German company announced in a press release on 23 May. Rheinmetall said the system has two shelter units that can be rapidly deployed by standard trucks and trailers.

<https://www.janes.com/defence-news/defence/latest/austria-receives-rheinmetall-c-uas-system-for-evaluation>

G. Belgium

Freedom and security more important than profit, NATO chief tells Davos

Euractiv, May 24, 2022

Western countries should not trade security for economic profit, NATO Secretary-General Jens Stoltenberg warned on Tuesday (24 May), pointing to the risks of leaving close economic ties with Russia and China unchecked. "We must recognise that our economic choices have consequences for our security: Freedom is more important than free trade, the protection of our values is more important than profit," Stoltenberg told business leaders at the World Economic Forum in Davos.

<https://www.euractiv.com/section/defence-and-security/news/freedom-and-security-more-important-than-profit-nato-chief-tells-davos/>

NATO needs greater readiness, more weapons: Stoltenberg

Euractiv, June 15, 2022

NATO must build out "even higher readiness" and strengthen its weapons capabilities along its eastern border in the wake of Russia's invasion of Ukraine, the military alliance's chief said on Tuesday (14 June). Responding to a call by Ukrainian

President Volodymyr Zelenskyy earlier Tuesday for more long-range weapons, Stoltenberg said he agreed that Kyiv should be supplied with more heavy weaponry, but provided no details.

<https://www.euractiv.com/section/global-europe/news/nato-needs-greater-readiness-more-weapons-stoltenberg/>

H. Denmark

Denmark to join EU defence policy after historic vote

June 2, 2022

Denmark will join the European Union's defence policy after a referendum on Wednesday (1 June), final results showed, signalling the latest shift among Nordic countries to deepen defence ties in response to Russia's invasion of Ukraine. Denmark is the only EU member that is not part of the bloc's defence and security policy. The referendum marks the first time a government has succeeded in abolishing one of several exemptions secured in a 1993 referendum on the Maastricht Treaty.

<https://www.euractiv.com/section/elections/news/denmark-to-join-eu-defence-policy-after-historic-vote/>

I. Estonia

Eurosatory 2022: Milrem Robotics launches new C2 system for unmanned platforms

Janes, June 14, 2022

Milrem Robotics has launched a command-and-control (C2) platform for autonomous systems at the Eurosatory 2022 defence exhibition in Paris. Speaking to Janes, Johan Persson, head of Systems Engineering for Milrem Robotics, said that the platform integrates unmanned air and ground systems into a composite C2 system, merging and exchanging sensor and effector data from the unmanned payloads to the platform.

<https://www.janes.com/defence-news/industry-headlines/latest/eurosatory-2022-milrem-robotics-launches-new-c2-system-for-unmanned-platforms>

J. Finland

Eurosatory 2022: Patria unveils C-UAS prototype

June 15, 2022

Patria has unveiled a new counter small unmanned aircraft system (C-sUAS) concept at Eurosatory 2022 defence exhibition in Paris. The C-sUAS system is an effector that shoots out a 'string cloud' of material to neutralise the unmanned aircraft system (UAS), up to 100 m away, without causing any collateral damage, Lemola said. The string cloud is made up of a special type of material that can cling to the UAS propellers or motors, resulting in the UAS immediately losing control and falling to the ground, Patria states.

<https://www.janes.com/defence-news/industry-headlines/latest/eurosatory-2022-patria-unveils-c-uas-prototype>

K. France

MBDA Akeron LP missile to arm Tiger Mk III attack helicopter

Janes, June 8, 2022

The MBDA Akeron LP missile has been selected to equip the Airbus Helicopter Tiger Mk III rotorcraft, the rotorcraft manufacturer announced on 8 June. Commenting on the same day MBDA revealed its new Akeron family of missiles, a representative of Airbus Helicopters said that the long-range version of the missile will arm the upgraded Tiger Mk III rotorcraft for France and Spain (Germany is yet to decide on its participation in the project).

<https://www.janes.com/defence-news/air-platforms/latest/mbda-akeron-lp-missile-to-arm-tiger-mk-iii-attack-helicopter>

L. Germany

Eurosatory 2022: Diehl touts advanced capabilities of FCAAM future air-to-air missile

Janes, June 14, 2022

Diehl Defence has highlighted the advanced features and capabilities that its Future

Combat Air-to-Air Missile (FCAAM) will bring to the Future Combat Air System (FCAS)/Système de Combat Aérien Futur (SCAF) being developed by France, Germany, and Spain. Speaking on 13 June at the Eurosatory 2022 exhibition in Paris, Markus Isphording, Air Force Systems' head of marketing, said that the FCAAM concept, which is designed to be a next-generation AIM-2000 IRIS-T missile (also known as IRIS-T FCAAM), will feature the modern design, components, networks, datalinks, and propulsion system needed to equip the New Generation Fighter (NGF) element of the FCAS/SCAF.

<https://www.janes.com/defence-news/air-platforms/latest/eurosatory-2022-diehl-touts-advanced-capabilities-of-fcaam-future-air-to-air-missile>

Eurosatory 2022: German Army to receive PackBot 525 UGVs

Janes, June 14, 2022

The German Army is to receive more than 120 PackBot 525 explosive ordnance disposal (EOD) robots. The deliveries follow a four-year dialogue between PackBot manufacturer Teledyne FLIR and the German Army, according to industry sources speaking to Janes at Eurosatory 2022 in Paris. 127 systems in total are expected to be delivered, with deliveries ongoing and set to conclude in July.

<https://www.janes.com/defence-news/industry-headlines/latest/eurosatory-2022-german-army-to-receive-packbot-525-ugvs>

M. Netherlands

US approves AIM-9X Block II/II+ sale to the Netherlands

Janes, May 27, 2022

The United States has approved the sale of 138 Raytheon AIM-9X Block II/ II+ Sidewinder short-range air-to-air missiles to the Netherlands, announcing a potential USD117 million sales on 26 May. The US Department of State approval covers the Foreign Military Sale (FMS) of 95 Block II and 43 Block II+ missiles, as

well as one Block II+ tactical guidance unit, training missiles, related equipment, and support.

<https://www.janes.com/defence-news/defence/latest/us-approves-aim-9x-block-iiii-sale-to-the-netherlands>

N. Portugal

Portuguese Army upgrades ISTAR capabilities

Janes, June 2, 2022

The Portuguese Army has upgraded its intelligence, surveillance, target acquisition, and reconnaissance (ISTAR) capabilities, with its deployable intelligence fusion system having achieved an initial operational capability (IOC), the Commander of the Rapid Reaction Brigade's ISTAR Battalion, Lieutenant Colonel Duarte Jorge Heitor Caldeira, told Janes on 11 May.

<https://www.janes.com/defence-news/defence/latest/portuguese-army-upgrades-istar-capabilities>

Portugal to build multi-purpose unmanned carrier

June 8, 2022

The Portuguese Navy announced on 27 May that it is planning to design and build an offshore multi-purpose surface ship dedicated to deploying unmanned surface vessels (USVs), unmanned underwater vehicles (UUVs), and unmanned aerial vehicles (UAVs). The future ship will carry out a wide range of roles, including surveillance, search-and-rescue (SAR), underwater survey, scientific research, and disaster relief.

<https://www.janes.com/defence-news/defence/latest/portugal-to-build-multi-purpose-unmanned-carrier>

O. Slovenia

Eurosatory 2022: Carboteh develops DAS spoofing system

June 15, 2022

Slovenia-based Carboteh has developed a man portable system that is designed to

stimulate an aircraft's defensive aids suite (DAS). Speaking to Janes at Eurosatory 2022 in Paris, company representative Domen Vertaènik said that the Battlefield Anti-Aircraft Non-Lethal System (BANS) has been developed in response to its observations of military activity in Russia's ongoing invasion of Ukraine.

<https://www.janes.com/defence-news/land-forces/latest/eurosatory-2022-carboteh-develops-das-spoofing-system>

P. Spain

Spain wants NATO to flag migration as 'hybrid threat' in policy roadmap

Euractiv, June 9, 2022

Spain, as host of an upcoming NATO summit, will push for the inclusion of "hybrid threats" such as irregular migration, food insecurity and terrorism in the alliance's new policy roadmap, Foreign Minister José Manuel Albares said in an interview. Spain is campaigning for NATO to pay more attention to non-military threats on its so-called southern flank, comprised of the Maghreb and Sahel countries under growing Russian influence, Albares told Reuters in the interview, even as it addresses the Ukraine conflict on its eastern border.

<https://www.euractiv.com/section/defence-and-security/news/spain-wants-nato-to-flag-migration-as-hybrid-threat-in-policy-roadmap/>

Eurosatory 2022: Airbus waiting on Spain to launch SIRTAP UAS development

Janes, June 13, 2022

Airbus expects the Spanish Ministry of Defence (MoD) to shortly approve its involvement in the SIRTAP unmanned aircraft system (UAS) project that the company originally launched with Colombia, a programme official told Janes on 13 June. Speaking at the Eurosatory 2022 event in Paris, Fernando Ciria, head of marketing airborne intelligence, surveillance, and reconnaissance (ISR),

said that a decision from Spain is expected within the next 12 months, formally kick-starting development of the SIRTAP UAS that is being billed as sitting midway between the light tactical and medium-altitude long-endurance (MALE) classes.

<https://www.janes.com/defence-news/air-platforms/latest/eurosatory-2022-airbus-waiting-on-spain-to-launch-sirtap-uas-development>

Q. Ukraine

Grossi Expresses Concern to IAEA Board about Safeguards in Iran; Nuclear Safety, Security and Safeguards at Zaporizhzhya Nuclear Power Plant in Ukraine

IAEA, June 6, 2022

Mr Grossi emphatically reiterated his determination to lead an expert mission to the plant, saying: "We must find a solution to the hurdles preventing progress at Zaporizhzhya NPP. I will not stop pursuing this and I count on your active support." He noted that Ukraine's government had last week called on him to lead such a mission, and that the Ukrainian regulator had earlier informed the IAEA that it had "lost control over the facility's nuclear material".

<https://www.iaea.org/newscenter/news/grossi-expresses-concern-to-iaea-board-about-safeguards-in-iran-nuclear-safety-security-and-safeguards-at-zaporizhzhya-nuclear-power-plant-in-ukraine>

R. United Kingdom

Update: UK Sky Sabre operational in Poland

Janes, May 26, 2022

A British Army Sky Sabre air-defence system has reached its initial operating capability in Poland as part of a build-up of forces to defend the NATO ally from air and missile attack by Russia, a British Army spokesperson told Janes on 23 May, adding that the full operating capability would be declared in the "next few months". The spokesperson declined to provide details of how many launchers had been deployed or

their position, citing "operational security" reasons.

<https://www.janes.com/defence-news/defence/latest/update-uk-sky-sabre-operational-in-poland>

BAE to fly T-650 heavy-lift UAS in drive to electric propulsion

Janes, June 1, 2022

BAE Systems plans to fly the T-650 all-electric heavy-lift unmanned aircraft system (UAS) that it first unveiled in September 2021 in the coming weeks, a company official said on 24 May. Neil Appleton, head of Electric Products, BAE systems, told Janes and other defence media that it will fly a demonstrator version of the T-650 that it is developing with Malloy Aeronautics before the end of the third quarter of 2022.

<https://www.janes.com/defence-news/air-platforms/latest/bae-to-fly-t-650-heavy-lift-uas-in-drive-to-electric-propulsion>

UK MoD launches new defence science and technology initiative

Janes, June 8, 2022

The UK Ministry of Defence (MoD) has launched a Science and Technology Portfolio, supported by more than GBP2 billion (USD2.5 billion) worth of investment, the MoD announced on 7 June. According to the MoD, the new portfolio plans to work with academia and British industry to accelerate cutting-edge research and development (R&D) of generation-after-next military capabilities.

<https://www.janes.com/defence-news/air-platforms/latest/uk-mod-launches-new-defence-science-and-technology-initiative>

BAE Systems unveils new M-Code-capable GPS receiver

Janes, June 13, 2022

The newest variant of the BAE Systems-built global positioning system (GPS) guided weapons receiver will be capable of transmitting across Military Code (M-Code) signals, company officials

announced this week. The new Strategic Anti-jam Beamforming Receiver – M-Code (SABR-M) GPS receiver leverages “advanced beamforming technology” to improve signal reception across military and civilian GPS spectrums, while meeting size, weight, and power (SWaP) requirements in unmanned aerial systems (UAS), precision-guided munitions, and advanced missile systems, according to a 7 June company statement.

<https://www.janes.com/defence-news/air-platforms/latest/bae-systems-unveils-new-m-code-capable-gps-receiver>

East Asia

S. Japan

Japan’s Kishida pledges to restart idled nuclear power plants

Al Jazeera, May 27, 2022

Japan will move to restart idled nuclear power plants to make maximum use of nuclear power in order to stabilise energy prices and supply, Prime Minister Fumio Kishida has said. Tokyo will take “concrete steps” to restart plants that suspended operations after the Fukushima disaster more than a decade ago but is not considering any new facilities, Kishida told parliament on Friday. “With priority in safety, we will take concrete steps to restart (plants),” Kishida said. Kishida has pushed for the revival of the country’s nuclear power sector since Russia’s invasion of Ukraine exposed how dependent the world’s third-largest economy has become on imported oil and gas following the 2011 earthquake and tsunami. Kishida’s remarks came as Tokyo reiterated its commitment to lessening the use of coal power.

<https://www.aljazeera.com/economy/2022/5/27/japans-kishida-pledges-to-restart-idled-nuclear-power-plants>

Japan to move forward with nuclear restarts and include strict examinations

The Japan Times, June 6, 2022

Japan will move forward with the safe restart of nuclear power plants and include strict examinations in its nuclear regulatory oversight, the final draft of its annual economic policy outline says. The government aims to speed up decarbonization and improve energy self-sufficiency, and the use of power sources with a high decarbonization effect, such as nuclear power, will be a key part of achieving that, according to the draft. The policy outline is the first to be drawn up under Prime Minister Fumio Kishida, and it will serve as a framework for his government’s future policymaking. It is expected to be adopted upon Cabinet approval on Tuesday. It comes about a month after Kishida said during a visit to London that Japan would use nuclear reactors to help cut its own and other countries’ reliance on Russian energy.

<https://www.japantimes.co.jp/news/2022/06/06/national/nuclear-restarts-strict-examinations/>

First Japanese BWR cleared for restart

World Nuclear News, June 6, 2022

The governor of Japan’s Shimane prefecture has approved the restart of unit 2 at Chugoku Electric Power Company’s Shimane nuclear power plant. His approval marks the completion of the process to gain the consent of local communities for the 789 MWe boiling water reactor (BWR) to resume operation. Speaking at a prefectural assembly meeting on 2 June, Shimane Governor Tatsuya Maruyama was cited by the *Kyodo* news agency as saying “I understand that (nuclear power) plays a certain role” in

Japan's energy policy. He added: "I thought that restarting is inevitable at present, so I decided to accept it." The *Asahi Shimbun* reported that Maruyama noted that "if the reactor does not restart, the impact on the local economy will be huge."

<https://www.world-nuclear-news.org/Articles/First-Japanese-BWR-cleared-for-restart>

T. North Korea

U.S. warns Kim Jong Un of 'forceful response' to any nuclear test

The Japan Times, June 7, 2022

The U.S. has warned North Korea of a strong punishment if it conducts a nuclear test, as Washington and a United Nations' watchdog agency have said signs indicate Pyongyang could soon set off its first atomic device since 2017. "There would be a swift and forceful response to such a test," Deputy Secretary of State Wendy Sherman said in Seoul on Tuesday. "Any nuclear tests would be in complete violation of U.N. Security Council resolutions," she said, adding it "would be very destabilizing to the world security." Sherman didn't elaborate on specific measures but suggested the U.S. could work with its allies to levy punishments. "I believe that not only ROK and United States and Japan but the entire world will respond in a strong and clear manner," she told a news conference after talks with her South Korean counterpart, Cho Hyun-dong. ROK is the Republic of Korea, South Korea's official name.

<https://www.japantimes.co.jp/news/2022/06/07/asia-pacific/us-warning-north-korea-nuclear/>

U. USA

Quick-fielding contracting model touted for US Navy Task Force 59 unmanned systems in the Middle East

Janes, May 26, 2022

The contracting model employed by US Navy (USN) Task Force 59 (TF 59) makes it possible to field, test, and evaluate unmanned systems quickly in the Middle East, according to Michael Stewart, USN

Unmanned Task Force lead. Established by the US 5th Fleet in September 2021, TF 59 works closely with members of industry and academia as well as other experts to provide operator feedback and help drive the innovation process forward for unmanned systems.

<https://www.janes.com/defence-news/defence/latest/quick-fielding-contracting-model-touted-for-us-navy-task-force-59-unmanned-systems-in-the-middle-east>

Pentagon eyes commercial 5G network integration into tactical systems

Janes, June 3, 2022

The US Department of Defense (DOD) is exploring potential technologies that would enable the US Armed Forces to field advanced tactical networks integrated with commercially developed 5G communications networks, linked via air-based relay nodes. The Beyond 5G Integrated Tactical Communication Networks programme is focused on leveraging device-to-device (D2D) or side link capabilities inherent in commercial and military 5G applications, to "offer multiple novel architectural options and system design opportunities", for future tactical network systems, according to a request for solution (RFS) issued by the Pentagon.

<https://www.janes.com/defence-news/defence/latest/pentagon-eyes-commercial-5g-network-integration-into-tactical-systems>

Northrop Grumman reveals development of Jackal 'sprint' loitering system

Janes, June 6, 2022

Northrop Grumman has disclosed details on its embryonic development of a new 'sprint' loitering weapon system, designated Jackal. An internal research and development (IRAD) initiative in association with AeroVironment, Jackal is intended to address a capability gap

between current propeller-driven loitering weapon systems and requirements for tactical kinetic, intelligence, surveillance, and reconnaissance (ISR), and electronic warfare (EW) missions at extended range.

<https://www.janes.com/defence-news/air-platforms/latest/northrop-grumman-reveals-development-of-jackal-sprint-loitering-system>

Ukraine conflict: US to provide Gray Eagle UAVs to Kyiv

Janes, June 6, 2022

The US government intends to supply Ukraine with General Atomics Aeronautical Systems Inc (GA-ASI) MQ-1C Gray Eagle medium-altitude long-endurance (MALE) unmanned aerial vehicles (UAVs) armed with air-to-surface missiles. Reuters announced the plan on 1 June, saying that the Biden administration will provide four Gray Eagle unmanned aircraft equipped with Lockheed Martin AGM-114 Hellfire missiles.

<https://www.janes.com/defence-news/air-platforms/latest/ukraine-conflict-us-to-provide-gray-eagle-uavs-to-kyiv>

USAF picks companies for a phase one of its Stand-in Attack Weapon

Janes, June 10, 2022

Lockheed Martin and Northrop Grumman – and possibly another competitor – received US Air Force (USAF) phase one contracts to build the service's Stand-in Attack Weapon (SiAW), the companies announced in early June. The air-to-ground weapon is to be internally fitted on the Lockheed Martin F-35A Lightning II Joint Strike Fighter (JSF) to counter targets in an anti-access/area denial (A2/AD) environment. Target requirements include anti-ship cruise missile launchers, Global Positioning System (GPS) jammers, anti-satellite systems, and integrated air defence systems.

<https://www.janes.com/defence-news/air-platforms/latest/usaf-picks-companies-for-a-phase-one-of-its-stand-in-attack-weapon>

Eurosatory 2022: Teledyne FLIR Defense launches UAS biological detector

Janes, June 13, 2022

Teledyne FLIR Defense has launched its MUVE B330 – a biological detector designed for unmanned aircraft systems (UAS) and unmanned platforms – at Eurosatory 2022 defence exhibition in Paris. Speaking to Janes, Craig Crume, director of product management for detection at Teledyne FLIR Defense, said that the MUVE B330, fitted onto a Skyraider R70 or a R80D SkyRaider, can detect, collect samples, and determine the quantity of biological hazards on the move.

<https://www.janes.com/defence-news/industry-headlines/latest/eurosatory-2022-teledyne-flir-defense-launches-uas-biological-detector>

New US Marine Air Defense Integrated System fielding set for 2024

Janes, June 14, 2022

The US Marine Corps (USMC) is testing two early versions of its new Marine Air Defense Integrated System (MADIS) Increment 1 to defeat aerial threats and is plotting ways to produce a future, more lethal version of the weapon, according to Don Kelley, the service's programme manager for Ground Based Air Defense and the programme executive officer for Land Systems.

<https://www.janes.com/defence-news/air-platforms/latest/new-us-marine-air-defense-integrated-system-fielding-set-for-2024>

HII shows amphibious ships can launch, operate, and recover LDUUVs

Janes, June 15, 2022

HII confirmed on 13 June the successful demonstration of launch, operation, and recovery of company-built large-diameter unmanned underwater vehicles (LDUUVs) using an amphibious warship.

HII's Advanced Technology Group, comprising employees from across the company, performed the launch-and-recovery demonstration with the HII prototype platform Pharos and the company's LDUUV Proteus.

<https://www.janes.com/defence-news/naval-weapons/latest/hii-shows-amphibious-ships-can-launch-operate-and-recover-lduuv>

West Asia

V. Iran

In new escalation, Iran tells IAEA it plans to further ramp up uranium enrichment

Times of Israel, 9 June 2022

Iran plans to install two new cascades of advanced centrifuges that will allow Tehran to rapidly enrich more uranium, the UN's nuclear watchdog said Thursday, the latest escalation in the standoff over the country's atomic program. The decision to add the two IR-6 centrifuges cascades at its underground Natanz nuclear facility comes as countries at an International Atomic Energy Agency meeting in Vienna voted Wednesday night to censure Iran.

<https://www.timesofisrael.com/un-watchdog-says-iran-plans-to-further-ramp-up-uranium-enrichment/>

Iran's nuclear tactics push Biden further from elusive JCPOA revival

Times of Israel, 10 June 2022

A flare-up in tensions between the UN nuclear monitor and Iran this week has left US President Joe Biden in an increasingly tight jam. The US leader opened his presidency with a pledge to return to the 2015 international agreement that aimed to prevent Tehran from building nuclear weapons, after predecessor Donald Trump unilaterally withdrew from it. Negotiations to restore that agreement have been at an impasse for three months over the very last details.

<https://www.timesofisrael.com/irans-nuclear-tactics-push-biden-further-from-elusive-jcpoa-revival/>

Iran says it's starting up new centrifuges, claims IAEA 'hostage to Zionist regime'

Times of Israel, 11 June 2022

Amid global tensions with the West over its nuclear activity, Iran's atomic agency chief announced that it has begun injecting gas into newly installed advanced uranium enrichment centrifuges. The head of the Atomic Energy Organization of Iran, Mohammad Eslami, who made the announcement during an interview with Iranian national TV on Thursday, claimed the decision was in line with international regulations. Eslami did not specify where the centrifuges in question were located.

<https://www.timesofisrael.com/iran-says-its-starting-up-new-centrifuges-claims-iaea-hostage-to-zionist-regime/>

Iran, Venezuela sign 20-year cooperation deal for defense, energy and finance

Times of Israel, 11 June 2022

Iran and Venezuela signed a 20-year deal on cooperation between the two allies subject to US sanctions during a visit Saturday to the Islamic Republic by Venezuela's President Nicholas Maduro. The inking of the agreement "shows the determination of the high-level officials of the two countries for development of relations in different fields," Iran's President Ebrahim Raisi said. Maduro, speaking at a joint news conference in the Iranian capital, said the cooperation covered the energy and financial sectors, as well as an agreement to "work together on defense projects."

<https://www.timesofisrael.com/iran-venezuela-sign-20-year-cooperation-deal-for-defense-energy-and-finance/>

Iran says rocket launch coming after photos show preparation

AP News, 15 June 2022

Iran acknowledged Wednesday it plans two tests for its new solid-fuelled rocket after satellite photos showed preparations

at a desert launch pad previously used in the program, even as tensions remain high over Tehran's rapidly advancing nuclear program. The Islamic Republic will launch its satellite-carrying Zuljanah rocket twice more after conducting a previous launch, the state-run IRNA news agency quoted Defense Ministry spokesman Ahmad Hosseini as saying.

<https://apnews.com/article/space-launches-technology-politics-dubai-united-arab-emirates-b1759a8d692aa7f2bfe5b4e4e57a2583>

US says 'closely' monitoring Iran's space program

Iran Front Page, 15 June 2022

The United States has announced its military "will continue to closely monitor Iran's pursuit of viable space launch technology." Tehran says it plans to carry out two more launches of its domestically-developed hybrid-propellant satellite carrier rocket called Zoljanah. A Pentagon spokesman, US Army Maj. Rob Lodewick, said the American military "will continue to closely monitor Iran's pursuit of viable space launch technology and how it may relate to advancements in its overall ballistic missile program."

<https://ifpnews.com/us-iran-space-program/>

Bennett gets up-close view of Israel's new laser defense system

I24, 1 June 2022

Prime minister praises Magen Or for giving Jewish state a strategic advantage during tour of Rafael. Israeli Prime Minister Naftali Bennett on Tuesday visited defense technology company Rafael to review the under-development laser defense system, the government said in a statement.

<https://www.i24news.to/en/news/israel/defense/1654066668-bennett-gets-up-close-view-of-israel-s-new-laser-defense-system>

Biden's Mideast Visit Could Advance Israel-UAE-Saudi Air Defense Alliance

Haaretz, 2 June 2022

The planned visit of U.S. President Joe Biden to Israel and the Persian Gulf later this month may bring about a significant advance in defense ties between Israel and states in the area. The need to strengthen ties between Israel and the United Arab Emirates, and perhaps even with Saudi Arabia, has already been raised in discussions between Jerusalem and Washington. One of the main operative directions this is taking is the formation of a regional defense system to help the area's states cope with the developing threat from Iranian ballistic and cruise missiles, and drones.

<https://www.haaretz.com/israel-news/2022-06-02/ty-article/biden-visit-could-advance-regional-air-defense-system/00000181-20d3-de27-a1bd-2bdfc0340000>

Bennett: Iran dangerously close to nukes; may get there soon if no Western pressure

Times of Israel, 12 June 2022

As tensions between Iran and the West ramped up this week, Prime Minister Naftali Bennett warned in an interview published Saturday that Tehran was drawing "dangerously close" to producing nuclear weapons. "Iran is enriching uranium at an unprecedented rate and moving dangerously close to getting their hands on nuclear weapons," he told the UK's Telegraph in an interview.

<https://www.timesofisrael.com/bennett-without-western-pressure-iran-dangerously-close-to-nuclear-weapon/>

W. Saudi Arabia

Saudi Arabia welcomes IAEA's resolution on Iran

Arab News, 9 June 2022

Saudi Arabia on Wednesday welcomed the International Atomic Energy Agency Board of Governors' resolution stressing that Iran must comply with its obligations under the safeguards agreement, and the necessity to cooperate with the agency to resolve all outstanding nuclear issues, the Ministry of Foreign Affairs said in a statement.

<https://www.arabnews.com/node/2099826/%20saudi-arabia>

Saudi Arabia tells Iran to resolve all outstanding nuclear issues

Saudi Gazette, 09 June 2022

Saudi Arabia on Wednesday welcomed the International Atomic Energy Agency Board of Governors' resolution stressing that Iran must comply with its obligations under the safeguards agreement, and the necessity to cooperate with the agency to resolve all outstanding nuclear issues. Saudi Arabia called on Iran to cooperate with the IAEA and resolve outstanding issues without delay, hoping that member states in the board of governors will fully support the agency and its director general.

<https://saudigazette.com.sa/article/621567/SAUDI-ARABIA/Saudi-Arabia-tells-Iran-to-resolve-all-outstanding-nuclear-issues>

X. Turkey

Turkey starts mass production of laser-guided munition for its drones

Daily Sabah, June 5, 2022

Turkey has started to mass-produce its latest miniature munition developed for unmanned aerial vehicles (UAVs), an official said Saturday. Developed by TUBITAK Defense Industries Research and Development Institute (SAGE), the laser-guided munition Bozok has undergone multiple successful fire tests. Its firing tests

saw it being integrated into the Bayraktar TB2 unmanned combat aerial vehicle (UCAV), developed by drone magnate Bayraktar.

<https://www.dailysabah.com/business/defense/turkey-starts-mass-production-of-laser-guided-munition-for-its-drones>

Turkey's new kamikaze UAV Kargý debuts in Aegean drill

Daily Sabah, 6 June 2022

The new Kargý kamikaze unmanned aerial vehicle (UAV) developed by the Turkish defense industry was showcased for the first time as part of the EFES-2022 military drill. One of the largest planned exercises of the Turkish Armed Forces (TSK), the EFES-2022 field exercise is ongoing in the Seferihisar district of western Izmir with the participation of friendly and allied country elements. The Kargý project was initiated by Lentatek with the support of the Scientific and Technological Research Council of Turkey (TUBITAK).

<https://www.dailysabah.com/business/defense/turkeys-new-kamikaze-uav-kargi-debuts-in-aegean-drill>

Y. United Arab Emirates

MENA Project Tracker: Work on UAE's Barakah nuclear plant 97% complete

Arab News, 06 June 2022

Work on the UAE's Barakah Nuclear Plant is almost complete. In addition, Saudi Arabia's Mohammed bin Salman Foundation has appointed Australia's Conrad Gargett for its headquarters project. Also, UAE's Masdar and Egypt's Infinity Energy are on track to acquire a majority stake in Lekela Power. Meanwhile, the Kuwait Oil Co is in talks with the Central Agency for Public Tenders to restart the second phase of price negotiations for a large contract that has already been delayed multiple times.

<https://www.arabnews.com/node/2097776/business-economy>

Z. Australia

Australian MC-55A Peregrines undergoing flight-testing

Janes, May 31, 2022

Australia's Gulfstream G550 electronic warfare (EW) aircraft have started initial flight-testing. The first of four ordered aircraft should be delivered by late 2023. Known as the MC-55A Peregrine to the Royal Australian Air Force (RAAF), the aircraft are being modified into the EW configuration by L3Harris Technologies. The modifications are being conducted under the Air 555 Phase 1 (Airborne Intelligence Surveillance Reconnaissance and Electronic Warfare Capability) project.

<https://www.janes.com/defence-news/c4isr-command-tech/latest/australian-mc-55a-peregrines-undergoing-flight-testing>

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Indian Pugwash Society welcomes research articles from students, researchers and faculties on Space, Missile, nuclear technology, WMD proliferation, arms control, disarmament, export controls and other related issues. Articles should be crisply written and should address contemporary debates in the policy arena. Manuscripts submitted for the consideration of the Indian Pugwash Society should be original contributions and should not have been submitted for consideration anywhere else. For further assistance, please contact us at : indianpugwashsociety@gmail.com

The Indian Pugwash Society aims to promote the study, discussion, and knowledge of and to stimulate general interest in, and to diffuse knowledge in regards to problems relating on WMD proliferation, arms control, disarmament, space security, export controls, nuclear technology and other related issues. This newsletter is part of the project "Emerging Nuclear Order in Asia: Implications for India" sanctioned to us by Department of Atomic Energy-Board of Research in Nuclear Sciences (DAE-BRNS).

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