SPACE CYBERSECURITY WEEKLY WATCH

Week 27

July 3 – 8, 2024

Articles, company's communications, whitepapers, academic works, podcast, and sources not to be missed on the topic of space cybersecurity over a specified timeframe.

Timeframe : Weekly

# of articles identified : 28

Est. time to read : 45 minutes

- ■ **GEOPOLITIC**
- ■ **MARKET INTELLIGENCE**
- ■ **TRAINING & EDUCATION**
- ■ **THREAT INTELLIGENCE**
- ■ **TECHNOLOGY**
- ■ **REGULATION**
- ★ **IMPORTANT NEWS**

Overview & Resilience Index for Space Cybersecurity (RISC)

57%
RISC Score

A 1% increase from last week (from 56% to 57%)
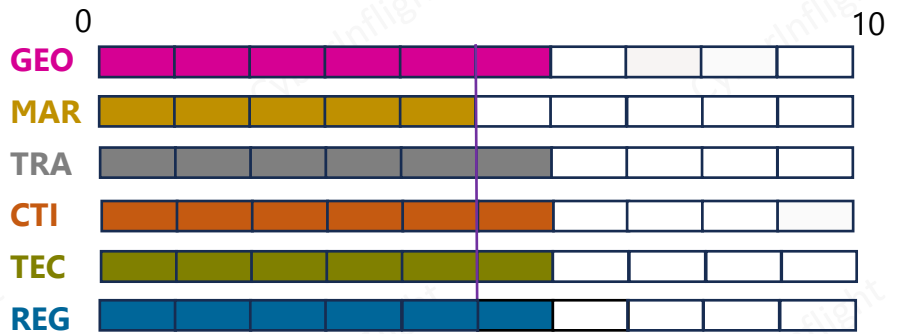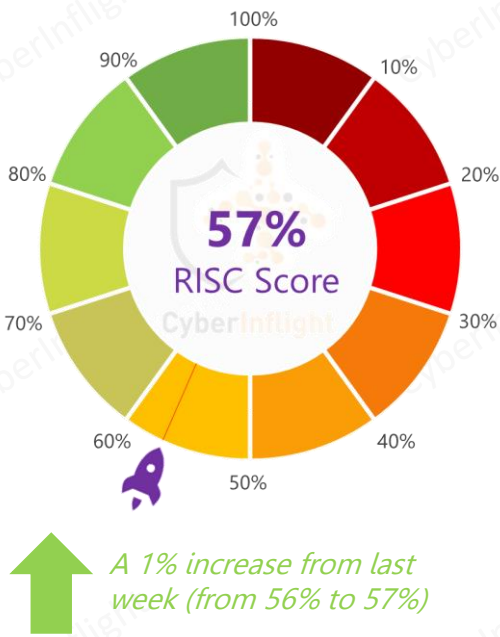
RISC Score Evolution
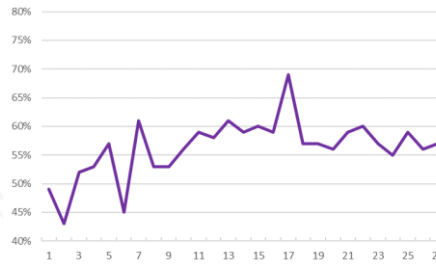
After declining from W18 the RISC score (the tool assessing space cybersecurity resilience) is struggling to recover. However, it rose slightly in W22, W25 and W27.

This week's RISC score is 57%. This week highlights the intensifying space race between China and the US, as both nations recognize the critical role of cyber and space capabilities in enhancing their military strength. China is advancing its satellite and anti-satellite weapons technology, as well as its cyber warfare capabilities. On regulatory front, given the recent elections of the European Parliament and Commission, there won't be a European space law before early 2025; unless the Commission prioritizes it and commits to in-depth negotiations. On another front, a consortium formed by KrattWorks, the European Defense Fund, and the Estonian and Finnish Ministries of Defense has been established. This consortium aims to develop state-of-the-art navigation solutions for land and air vehicles that do not rely on Global Navigation Satellite Systems. On the technology front, given the increase in GPS jamming, a call for AltPNT or Alternative Positioning, Navigation and Timing is rising. This new technology is not dependent on the GPS constellation to prevent any threat. In other news, LUCH 2 continues its maneuver. Last week it was close to Intelsat 1002, now it is approaching the Norwegian satellite THOR 7. Lastly, a paper entitled "Cascaded multiplier-free implementation of adaptive anti-jamming filter based on GNSS receiver" is published by Peking University. It introduces a cascaded multiplier-free approach for implementing time-domain anti-jamming in navigation receivers.

GEOPOLITIC

Ukraine says destroyed Russian space communication center

Improving Arctic communication infrastructure amidst growing geostrategic importance

⭐ ### US Military vs China: who holds the upper hand?

China and US both realize cyber and space are considerable military domains. In the context of the US establishing the United States Space Force for the same purpose, China, has made high achievements in satellite technology, as well as developing tools for anti-satellite weaponry and cyber warfare. This presupposes the analogy in terms of cyber warfare in which both nations are actively developing offensive and defensive capabilities. **#US #China**

Link: https://www.thefreemanonline.org/us-military-vs-china/

REGULATION

European Commission requests public feedback on NIS2 cybersecurity measures before implementation

⭐ ### No EU Space Law until 2025, assuming new Commission makes it a priority, leaving more time for in-depth negotiations

The EU Space Law that will impose binding regulations relating to space safety, resilience and sustainability will not be ready for legislative approval until early 2025, after a fresh review by the newly elected European Parliament and the new European Commission. **#EuropeanCommission #EUSL**

Link: https://www.spaceintelreport.com/no-eu-space-law-until-2025-assuming-new-commission-makes-it-a-priority-leaving-more-time-for-in-depth-negotiations/

White House releases National Cybersecurity Strategy Implementation Plan, Version 2

Global Navigation Satellite System Outage and Alterations Leading to Communication / Navigation / Surveillance Degradation

TECHNOLOGY

UK MoD deploys SPOT-Sand for safety and tracking

[illegible blurred text]

Link: [illegible link]

Securing the spectrum: unveiling the Advanced Dynamic Spectrum Reconnaissance (ADSR) in AI-Driven Electronic Warfare

[illegible blurred text]

Link: [illegible link]

WiSeKey integrates satellite Blockchain

[illegible blurred text]

Link: [illegible link]

What is quantum navigation – and could it replace GPS?

[illegible blurred text]

Link: [illegible link]

⭐ Can "AltPNT" really replace GPS?

The challenges of operating GPS in adverse environments have led to a call for AltPNT or Alternative Positioning, Navigation and Timing that doesn't rely on the GPS constellation. This article discusses how this new technology should be designed. **#AltPNT #GPS**

Link: https://spacenews.com/can-altpnt-really-replace-gps/

Army asks industry for navigation warfare waveforms in counter-PNT technology to disrupt enemy operations

[illegible blurred text]

Link: [illegible link]

MARKET & COMPETITION

IHJ Technology wins EU cybersecurity project

(text obscured) **#IHJTechnology #SAMOSA**

Link: *(link obscured)*

Lockheed Martin to integrate electronic warfare avionics for situational awareness and radar jamming

(text obscured) **#USAF #LockheedMartin**

Link: *(link obscured)*

Acquisition strengthens cyber security for IT and OT

(text obscured) **#Marlink #Maritime**

Link: *(link obscured)*

British space companies aim for the stars with government support

(text obscured) **#UK #Space**

Link: *(link obscured)*

Hyundai announces local Security Operations Center in Brazil

(text obscured) **#Hyundai #Brazil**

Link: *(link obscured)*

⭐ **Consortium led by KrattWorks secures €6 million for project BadB to develop GNSS-Free navigation**

The European Defence Fund (EDF) and the Ministries of Defence of Estonia and Finland have awarded a €6 million investment to Project BadB, a consortium led by Estonian defence technology company KrattWorks. The project focuses on developing advanced navigation solutions for land and aerial vehicles that do not rely on global navigation satellite systems (GNSS). **#KrattWorks #GNSS**

Link: https://insidegnss.com/consortium-led-by-krattworks-secures-e6-million-for-project-badb-to-develop-gnss-free-navigation/

TRAINING & EDUCATION

⭐ **Cascaded multiplier-free implementation of adaptive anti-jamming filter based on GNSS receiver**

This paper proposes a numerical power decomposition technique based on optimal Canonical Signed Digit coding and coefficient decomposition. It presents an optimization strategy, and applies the low-complexity multiplier-free technique to the time-domain anti-jamming filter. **#AntiJamming #Research**

Link: https://www.frontiersin.org/journals/physics/articles/10.3389/fphy.2024.1404236/full

SIGINT, COMINT, and ELINT: pillars of modern cybersecurity and threat intelligence

(text obscured) **#Cybersecurity #ThreatIntelligence**

Link: *(link obscured)*

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THREAT INTELLIGENCE

Why GPS is under attack

The article notes that over 40,000 commercial flights was affected by bogus GPS signals this year. Moreover, American GPS is becoming outdated as China, Russia, and Europe modernize their systems. In addition, spoofing and jamming attacks are major GPS threats. **#GPS #Spoofing**

Link: https://www.nytimes.com/interactive/2024/07/02/technology-threats.html/unlocked_article_code=1-Msi.tsVa.dKZZ_AA0MGY

RadioRadi! Episode 14: Living on the frontline

Estonia has witnessed recent disruption to civil aviation strongly suspected to have been caused by Russian GNSS (Global Navigation Satellite System) jamming. GNSS jamming has also caused disruption to everyday life in Estonia. Ride-sharing services and food deliveries are two companies' services affected by Russian GNSS attack. However, Estonia has world-class innovation focused on nullifying and reducing the severity of nefarious Russian attacks in the spectrum. Tallinn's strategy will range to not just to prevent Russian invasion but to deter it. **#GPS #Podcast**

Link: https://www.armadainternational.com/2024/07/radioradi-podcast-14-electronic-warfare/

New York Times: Israeli air base identified as source of GPS disruptions in Mideast

A team of researchers from the University of Texas at Austin has uncovered evidence linking an Israeli air base to widespread GPS disruptions affecting civilian airline navigation in the Middle East, according to the New York Times. The disruptions, known as "spoofing," involve the transmission of manipulated GPS signals that cause airplane instruments to misread their location. **#Israel #GPS**

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Link: https://www.timesofisrael.com/israeli-air-base-identified-as-source-of-gps-disruptions-in-mideast-nyt-reports/

How airlines can navigate GPS spoofing

Numerous incidents involving GPS spoofing, jamming or even failure of navigation systems have been recorded, particularly by planes flying over Egypt, Iraq, Iran, Israel, Lebanon as well as the Black Sea region. If a GPS position signal is faked, most aircraft are incapable of detecting the ruse. For many, it has lead to total navigation failure. For others, it has led to subtle and undetected erroneous tracking. Airlines, civil aviation and regulatory authorities are keeping a close eye on this growing phenomenon. **#GPS #Airlines**

Link: https://www.thrivasroacesero/features/civil-aviation/how-airlines-can-navigate-gps-spoofing

⭐ ### The Russian SIGINT satellite LUCH 2 has arrived at its new destination, next to THOR 7

Last week, LUCH 2 was close to Intelsat 1002. Now it is starting another relocation move by leaving its position near ASTRA 4A and moving to the vicinity of another Western commercial geosynchronous satellite: the Norwegian satellite THOR 7. **#LUCH2 #THOR7**

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Link: https://sattrackcam.blogspot.com/2024/07/the-russian-sigint-satellite-luch-olymp.html

Lebanon says Israeli GPS jamming confounding ground, air traffic

An Uber driver was battling traffic in Beirut when he found himself in the Gaza Strip according to his online map, anyway as location jamming blamed on Israel disrupts life in Lebanon. For months, already location data on apps have caused confusion in Lebanon, where the Hezbollah militant group has been engaged in cross-border clashes with Israel. **#Lebanon #Israel**

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Link: https://www.france24.com/en/live-news/20240702-lebanon-says-israeli-gps-jamming-confounding-ground-air-traffic

Skyfall: How To Practice Cybersecurity For Low Earth Orbit (LEO)

Space is getting crowded, with an estimated 2477 satellites deployed in 2023 alone. Yet, with the increasing amount of communication routed via space, satellites are becoming an attractive target for cybercriminals. The thriving space industry and its growing ties to the world economy on Earth demand a closer look at how every company and organization is vulnerable to space-based cyberattacks. There are concrete steps we can take now to thwart the bad actors. **#Cybersecurity #LEO**

Link: https://www.forbes.com/sites/forbestechcouncil/2024/07/01/skyfall-how-to-practice-cybersecurity-for-low-earth-orbit/