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Biweekly IoT News Digest (12/23 – 1)

Georgia Tech IoT-related Info/Research Noticed by CDAIT

IoT News and Market Reports

(First Half of December 2023)

- Selected IoT-related announcements and featured activities/topics gathered by CDAIT from governments; agencies; consortia; alliances; associations; standards, research and other similar groups around the world – 15 entries:
https://cdait.gatech.edu/sites/default/files/2023-12/IoT_News_Filings_December_2023_First_Half.pdf
- Sample list of IoT-related market reports gathered by CDAIT – 70 entries: https://cdait.gatech.edu/sites/default/files/2023-12/IoT_Market_Reports_December_2023_First_Half.pdf

- Kwon, Hyeokhyen, Chaitra Hegde, Yashar Kiarashi, Venkata Siva Krishna Madala, Ratan Singh, ArjunSinh Nakum, Robert Tweedy et al. "A Feasibility Study on Indoor Localization and Multi-person Tracking Using Sparsely Distributed Camera Network with Edge Computing," IEEE Journal of Indoor and Seamless Positioning and Navigation (2023)
<https://ieeexplore.ieee.org/abstract/document/10329418>
- Sheng, Feifan, Bo Zhang, Renwei Cheng, Chuanhui Wei, Shen Shen, Chuan Ning, Jun Yang, Yunbing Wang, Zhonglin Wang, and Kai Dong. "Wearable energy harvesting-storage hybrid textiles as on-body self-charging power systems," Nano Research Energy (2023)
<https://www.sciopen.com/article/10.26599/NRE.2023.9120079>
- Herrmann, Felix J. "President's Page: Digital twins in the era of generative AI," The Leading Edge 42, no. 11 (2023): 730-732
<https://library.seg.org/doi/full/10.1190/le42110730.1>

CHRONICLE OF DIGITAL TRANSFORMATION THROUGH INTERNET OF THINGS TECHNOLOGIES

Some biweekly perspectives from around the globe gathered by CDAIT (1950 entries since April 1, 2022)
https://cdait.gatech.edu/sites/default/files/2023-12/Digital_Transformation_Through_IoT_Technologies_December_15_2023_o.pdf

GOVERNANCE & THE INTERNET OF THINGS

Anna Delaney, "Open-Source Oversight: Security Gaps in IoT and OT Devices," [Interview of Stanislav Dashevskiy and Francesco La Spina, security researchers at Forescout Technologies – Video 12'54], Bank Info Security, December 11, 2023
<https://www.bankinfosecurity.com/open-source-oversight-security-gaps-in-iot-ot-devices-a-23834>

Natasha Lomas, "EU lawmakers bag late night deal on 'global first' AI rules," TechCrunch, December 8, 2023
<https://techcrunch.com/2023/12/08/eu-ai-act-political-deal/>

Matt Bracken, "Office of Management and Budget OMB guidance asks agencies to provide inventory of IoT assets," FedScoop, December 6, 2023
<https://fedscoop.com/omb-internet-of-things-iot-guidance-federal-agencies/>

World Wide Web Consortium [W3C] press release, "Enhanced Web of Things connects diverse IoT ecosystems," W3C, December 5, 2023
<https://www.w3.org/press-releases/2023/enhanced-web-of-things-connects-diverse-iot-ecosystems/>

Steve Hanna, "More Collaboration Needed to Improve IoT Security Labeling," EE Times Asia, December 4, 2023
<https://www.eetasia.com/more-collaboration-needed-to-improve-iot-security-labeling/>

Alexander Martin, "IoT vulnerability reporting obligations set to apply in EU from 2027," The Record, December 1, 2023
<https://therecord.media/iot-vulnerability-reporting-rules-european-union>

Kris Cooper, "Lack of comms, security standards and real-time intel slowing IoT adoption," Verdict [U.K.], November 30, 2023
<https://www.verdict.co.uk/lack-of-comms-security-standards-and-real-time-intel-slowing-iot-adoption/?cf-view>

OF NOTE: IoT Business News posting, "The Unfolding Tapestry of IoT: A Deep Dive into Emerging Trends," IoT Business News, December 12, 2023 <https://iotbusinessnews.com/2023/12/11/06510-the-unfolding-tapestry-of-iot-a-deep-dive-into-emerging-trends/>; Rajini Nair, "Industry 4.0 check-in: 5 learnings from ongoing digital transformation initiatives," IoT Analytics, November 27, 2023 <https://iot-analytics.com/industry-4-0-check-in-5-learnings-from-digital-transformation-initiatives/>;

Special Reading Suggestions

- Emily Newton, "What IoT developers need to know about cybersecurity labels," Embedded, December 12, 2023
<https://www.embedded.com/what-iot-developers-need-to-know-about-cybersecurity-labels/>
- Rich Lansdowne, "Orchestrating the IoT World: The Indispensable Role of Managed Service Platforms," IoT Business News, December 7, 2023 <https://iotbusinessnews.com/2023/12/07/86752-orchestrating-the-iot-world-the-indispensable-role-of-managed-service-platforms/>
- IoT, Volume 4, Issue 4 (December 2023) – 6 articles <https://www.mdpi.com/2624-831X/4/4>
- Max Goijarts, "How a Functional 'Internet of Energy' Could Come Together," EE Times, December 7, 2023 <https://www.eetimes.com/how-a-functional-internet-of-energy-could-come-together/>
- Fernando Brügge, "Predictive maintenance market: 5 highlights for 2024 and beyond," IoT Analytics, November 29, 2023 <https://iot-analytics.com/predictive-maintenance-market/>
- Team EMB, "Harnessing IoT for Industry 4.0 Success," Expand My Business, December 5, 2023 <https://blog.emb.global/harnessing-iot-for-industry-4-0-success/>
- Mickey McCarter, "Smart Cities Connect 2023: Smart Streetlights Provide IoT Entry Point," StateTech Magazine, November 28, 2023 <https://statetechmagazine.com/article/2023/11/smart-cities-connect-2023-smart-streetlights-provide-iot-entry-point>
- University of Georgia press release, "UGA Cyber-Physical Systems Symposium fosters innovation and federal collaborations," UGA, College of Engineering, September 14, 2023 <https://engineering.uga.edu/newsroom/news/uga-cyber-physical-systems-symposium-fosters-innovation-and-federal-collab/>

Selected IoT Perspectives

IoT and Energy Harvesting

"The EnABLES project report, published in July 2021, warns that 78 million batteries powering IoT devices will be dumped globally every day by 2025 if nothing improves their lifespan. The report highlights energy harvesting, energy storage and micropower management as crucial to addressing the "power the IoT challenge." It stresses the need to extend battery life and, in many cases, allow an IoT device to be powered indefinitely," Robert Huntley, "Energy Harvesting: Powering IoT Devices Reliably and Sustainably," EE Times Europe, June 21, 2023
<https://www.eetimes.eu/energy-harvesting-powering-iot-devices-reliably-and-sustainably/>

- Tobias Best, "How the Wiegand Effect Helps Create Energy-Harvesting IIoT Devices," Automation.com, December 8, 2023
<https://www.automation.com/en-us/articles/december-2023/wiegand-effect-energy-harvesting-iiot-devices>
- Robert Huntley, "Ambient Light Harvesting Heads Indoors," EE Times Europe, November 17, 2023 <https://www.eetimes.eu/ambient-light-harvesting-heads-indoors/>
- Eric Whitley, "The Importance of Power Electronics in IIoT for Smart Manufacturing," All about circuits, November 2, 2023
<https://www.allaboutcircuits.com/industry-articles/the-importance-of-power-electronics-in-iiot-for-smart-manufacturing/>
- Energy Harvesting," EE Times, June 26, 2023 <https://www.eetimes.com/powering-the-future-wirelessly-with-rf-energy-harvesting/>
- Rajesh Uppal, "Energy Harvesting Technologies for Internet of Things (IoT) and Military IoT Devices," International Defense, Security and Technology, June 27, 2023 <https://idstch.com/technology/ict/energy-harvesting-technologies-for-internet-of-things-iiot-and-military-iiot-devices/>
- James Blackman, "IoT in 2023 – in a groove with energy harvesting, in a rut with printable electronics," RCR Wireless January 12, 2023 <https://www.rcrwireless.com/20230112/internet-of-things/iiot-in-2023-energy-harvesting-finds-its-groove-printable-electronics-still-stuck-in-a-rut>

Research background info (sample): Azamat Bakytbekov, Thang Q. Nguyen, Ge Zhang, Michael S. Strano, Khaled N. Salama, and Atif Shamim, "Synergistic multi-source ambient RF and thermal energy harvester for green IoT applications," Energy Reports, Volume 9, 2023, Pages 1875-1885, ISSN 2352-4847, <https://doi.org/10.1016/j.egy.2023.01.027>; Yaonan Yu, Chao Luo, Hayato Chiba, Yu Shi, Fumio Narita, "Energy harvesting and wireless communication by carbon fiber-reinforced polymer-enhanced piezoelectric nanocomposites," Nano Energy, Volume 113, August 2023, 108588, ISSN 2211-2855, <https://doi.org/10.1016/j.nanoen.2023.108588>; Swetha Shekarappa G, Sheila Mahapatra, M. Senbagavalli, and Saurav Raj, "IoT Implementation in Energy Harvesting," IEEE Smart Grid, January 2023 <https://iopscience.iop.org/article/10.1088/2515-7639/acc550/meta>; Lynch, Charles, Ajibayo Adeyeye, El Mehdi Abbara, Ashraf Umar, Mohammed Alhendi, Chris Minnella, Joseph Iannotti, Nancy Stoffel, Mark Poliks, and Manos Tentzeris. "5G-enabled, battery-less smart skins for self-monitoring megastructures and digital twin applications," (2023 – preprint) <https://www.researchsquare.com/article/rs-3649651/v1>

<https://cdait.gatech.edu>



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