

Object Management Group Announces Cross-Consortia Artificial Intelligence Joint Working Group

31st October 2024



“We’re leveraging the collective experience and intelligence of the OMG Standards Development Organization along with the members of the Digital Twin Consortium and the Augmented Reality for Enterprise Alliance,” said Bill Hoffman, CEO and Chairman of OMG. “We’ve assembled a world-class group of professionals spanning many industries working to understand and apply AI across their organizations.”

The new working group will align AI-related activities across four main areas:

- **Standardization and Semantics** – This subgroup will explore the potential role of AI in standardization, gathering use cases from the digital twin and extended reality areas to identify scenarios in vertical industry domains and horizontal technologies where standardization would be beneficial. It will explore the role of AI and formal semantics in data integration, enabling implementation of FAIR (findable, accessible, interoperable, reusable) principles.
- **Interoperability and Intelligent Automation** – This sub-group will develop comprehensive frameworks for interoperability, intelligent automation, and generative AI with agent-based systems. These frameworks will provide guidance for creating intelligent, interoperable, trusted and autonomous systems. This will include defining and developing the required key assets and promoting industry use.
- **eXtended Reality (XR) – (i.e., AR/VR/MR)** – This subgroup will focus and emphasize the convergence of eXtended Reality (XR) technologies, encompassing augmented reality (AR), virtual reality (VR), and mixed reality (MR) and the intersection of artificial intelligence (AI). These technologies, while powerful individually, can create synergistic effects when combined, leading to innovative solutions and enhanced operational efficiencies.
- **Responsible AI** – This subgroup will develop a comprehensive framework for responsible AI

governance by examining current standards and promoting ethical AI practices across different industries and levels of maturity. The subgroup will focus on creating a toolkit that supports both current AI implementations including privacy and data provenance with the anticipated shift towards digital twin-based, multi-agent, autonomous AI systems.

Learn more about the OMG cross-consortia [Artificial Intelligence Joint Working Group](#). Join an OMG consortium ([AREA](#), [DTC](#), [OMG SDO](#)) and collaborate with industry leaders to advance key technologies such as AI.

About OMG

The Object Management Group® (OMG®) is an international, open membership, not-for-profit technology standards consortium with representation from government, industry and academia. OMG Task Forces develop enterprise integration standards for a wide range of technologies and an even wider range of industries. OMG's modeling standards enable powerful visual design, execution and maintenance of software and other processes. Visit www.omg.org for more information.

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The AREA Welcomes Oakland University as a Member

31st October 2024



“AREA can help our Augmented Reality Center effectively promote AR technology to industry

partners, assisting them in improving operational efficiency and creating long-term benefits,” says Khalid Mirza, Ph.D., founding director of the [Oakland University Augmented Reality Center](#).

Joining AREA will also give Oakland University’s augmented reality-engaged faculty greater capacity to make an impact through their research and scholarship and amplify their capacity to disseminate their work. Faculty can learn about other cutting-edge advances in the field and connect with potential collaborators and industry partners. Oakland University’s association with AREA and its members elevates its recognition as an educational leader in the Augmented Reality ecosystem.

“Through these efforts, OU can be a regional leader in AR training and research,” says David A. Stone, Ph.D., vice president for research at Oakland University. “AREA membership can accelerate our momentum in these directions.”

“We’re excited to have Oakland University as a member of the AREA,” said Mark Sage, Executive Director at the AREA. “We look forward to leveraging Oakland University’s research, training, and experience with AR to further the development of immersive applications.”

About Oakland University

Oakland University is a doctoral, Carnegie Classification R2 “High Research Activity” university located in Oakland and Macomb counties, Michigan. The main campus is located on 1,443 acres of scenic land in the Southeast Michigan cities of Rochester Hills and Auburn Hills. Oakland University offers bachelor’s degrees, graduate degrees and certificate programs and is organized into the College of Arts and Sciences with a School of Music, Theatre and Dance, the Oakland University William Beaumont School of Medicine and the Schools of Business Administration, Education and Human Services, Engineering and Computer Science, Health Sciences, Nursing, and Honors College. The rich campus atmosphere is complete with residence halls, Greek life, Division I athletics and more than 300 student groups that lend to the total college experience. Learn more at www.oakland.edu.

About the Oakland University Augmented Reality Center

The Augmented Reality Center (ARC) represents a partnership between the Oakland University School of Engineering and Computer Science, the College for Creative Studies, and various corporate collaborators. Its mission is to provide students and industry professionals with the specialized skills required to create impactful immersive technology applications. ARC achieves this through a range of initiatives, including workshops, seminars, projects, and a showcase lab, all designed to promote exploration, innovation, and the practical use of immersive technology in industrial settings. For more information, visit the ARC at ouarc.org.

About the AR for Enterprise Alliance (AREA)

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Object Management Group Publishes Aviation and Aerospace Journal of Innovation

31st October 2024



“The Jol now has an expanded scope to include articles from OMG’s consortia, including the OMG Standards Development Organization, the Augmented Reality for Enterprise Alliance (AREA), and Digital Twin Consortium® (DTC),” said Bassam Zarkout, CEO of IGnPower and Co-chair of OMG’s Thought Leadership Group. “We are thrilled to present the latest edition of the Jol under the expanded scope. This edition explores the theme of Pioneering Innovations in Aviation and Aerospace.”

The three articles in this edition include:

- **Guiding Supply Chain Security in Aeronautic Development** – by MITRE and Boeing – Assessing aeronautics supply chain risks is complex due to the lack of standardized risk sets, evaluation practices, and result communication methods. This article proposes leveraging System of Trust™ (SoT) to address these challenges. The article also discusses NASA’s effort to demonstrate real-world consequences and cost impacts on Boeing and Airbus due to supply structure changes and volatility. This work leveraged MITRE’s efforts to standardize security measurement and demonstrate its application and outcomes.

- [Advancing Space Technology for ISAM Maturity and Success](#) – by Dassault Systèmes – Like the golden age of flight 100 years ago, today we are in the golden age of commercial space. New space missions – in this case, In-Space Service, Assembly, and Manufacturing (ISAM) – enable space capabilities to expand the space economy, improve life on Earth, and extend our use of space farther than ever.
- [Digital Engineering Enables Innovative Hardware Integration Opportunities in Aerospace](#) – by SimVentions – Avionics systems need reliability and redundancy but face budget and time constraints. The US Navy’s Hardware Open Systems Technology (HOST) standard provides a modular and open approach for hardware interoperability and reuse. However, reliance on homegrown tools limits its long-term value and data reliability. SimVentions’ research for the US Navy led to the creation of the HOST Hardware Integration Toolkit (HHITS), demonstrating DE’s value in enabling transformative automation and integration for avionics systems.

Jol articles have covered diverse topics and themes, including industry digital transformation, data in the industrial internet, solutions at the digital edge, the role of IoT in enabling rapid response to Covid, industrial artificial intelligence, intelligent transportation, innovations in digital twins, smart cities, smart factories, trustworthiness, and many more. Download current and past editions of OMG’s [Jol](#).

About OMG

When tech organizations, governments, and academia must solve discrete pieces of a technology puzzle or discuss matters of common interest, they often seek to join or form a consortium. Since 1989, Object Management Group® (OMG®) has created and nurtured a productive community with common technology interests and problems to resolve. OMG communities include Augmented Reality Enterprise Alliance (AREA), Consortium for Information and Software Quality™ (CISQ™), Digital Twin Consortium® (DTC), and OMG Standards Development Organization (SDO®). OMG is global, not-for-profit, and vendor-neutral. Visit [OMG](#).

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Augmented Reality for Enterprise Alliance Announces the AR Security Infographic

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The infographic has ten sections for AR Security. The sections contain the risks and considerations related to the topic within AR. Each section has a summary to the left when it is clicked on. There is a detailed page for the section when clicking the 'LEARN MORE' button.

"AR headsets pose unique security risks for businesses. Traditional mobile security isn't enough," said Mark Sage, Executive Director of the AREA. "Vendors, IT departments, and users share responsibility for securing AR."

The sections include:

Attack Surface—Pathways to infiltrate and corrupt data.

- **Connection Abuse**—Enterprises contain AR devices that connect many mobile devices. Understanding the network connections and potential threats at all levels is essential.
- **Physical Breach**—AR devices pose unique security risks because they collect real-world data (audio, video, location), unlike traditional IT systems.
- **System Breach**—AR devices introduce new security risks beyond those of mobile devices.

Data Domains - Nefarious agents use these domains to eavesdrop, pilfer, and exploit enterprises.

- **Trust Exploitation/Data Extraction**—AR devices pose unique security challenges due to their ability to interact with the physical world.
- **External Services/Physical World Data**—AR devices collect vast user data through cameras, sensors, and microphones.
- **Environment/Object/Visual Manipulation**—AR devices introduce unique security risks for businesses. Unlike traditional IT systems, AR devices collect real-world data (audio, video, location) that attackers can exploit.

Considerations -

- **Configuration & Management/Integrity Protection**—AR devices face mobile device security challenges, including logging, malware detection, and incident response.
- **Root of Trust/Physical Security**—AR devices require a hardware root of trust for core security functions due to their unique hardware and complexity.

- **I/O Security/Identity**—AR’s unique hardware and data collection require careful security assessment of all components to minimize confidentiality, integrity, and availability risks.
- **Access Control/Monitoring & Analysis**—AR’s new voice, gesture, and gaze controls make strong passwords difficult for secure access. Biometrics offers a solution, but integrating them securely company-wide is complex.

The AREA Security Committee member companies and Brainwaive LLC contributed expert insight to completing the [AR Security Infographic](#).

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Augmented Reality for Enterprise Alliance Elects New President

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As President, Ryan will serve as the organization’s primary advocate, fostering partnerships, driving

strategic direction, and ensuring the successful execution of programs and initiatives. Ryan replaces Boeing Technical Fellow Paul Davies, who served as AREA President for more than eight years, and continues as part of the AREA Executive Committee and as Vice President of the AREA Enterprise Segment.

At Collins Aerospace, Ryan leads the RTX XR Working Group, helps lead the RTX XR Community of Practice, and co-chairs the RTX Immersive & Interactive Visualizations Technology Interest Group. Ryan has also led teams that have invented numerous visual analytics and virtual reality-enabled applications.

“We’re excited to announce Ryan Wheeler as President of the AREA,” said AREA Executive Director Mark Sage. “With his technical background in AR/XR technologies and proven track record of working with AR/XR communities, we are certain he will steer the organization’s efforts to make it easier for enterprises to adopt interoperable AR-enabled systems that fully deliver on their promises. I would also like to thank Paul Davies, Technical Fellow at Boeing, who has served as President for many years, and he will continue to actively be involved in the AREA.”

About the AREA

The Augmented Reality for Enterprise Alliance (AREA) is the only global non-profit member organization. Whether you view it as the next computing paradigm, the key to breakthroughs in manufacturing and service efficiencies, or the door to unimagined applications, AR will have an unprecedented impact on enterprises of all kinds. AREA is a program of Object Management Group®. Visit <https://thearea.org> for more information.

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Augmented Reality for Enterprise Alliance Publishes Latest Research on the Adoption of Real-Time AR-assisted Inspections for Quality and Compliance

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“AR-assisted inspections can greatly benefit aerospace and defense, oil and gas, and healthcare industries due to intricate processes and inspection protocols, strict safety and quality compliance guidelines, and the high cost of downtime,” said AREA Executive Director Mark Sage. “AR solutions enhance task performance, reduce mental workload for frontline users, minimize errors, and allow for better utilization of resources.”

Common barriers to the adoption of AR-assisted inspections include:

- *Technological barriers* can be mitigated by establishing innovation hubs outside of their IT infrastructure to enable close evaluation of potential AR solutions for quality and compliance inspections.
- *Economic barriers* can be addressed by implementing scalable proofs-of-concept (POCs) that show tangible ROI for solutions using data and performance-driven KPIs. This showcases the potential savings and efficiency gains and provides flexible pricing models and financial incentives to lower the initial investment barrier.
- *Organizational barriers* require effective change management strategies. These include engaging stakeholders at all levels, providing comprehensive training programs, and designing intuitive, user-friendly AR solutions.
- Collaboration with governing and compliance bodies to establish clear guidelines and standards for AR-assisted inspections can mitigate *regulatory and compliance barriers*.

Please view an executive summary of the research report on [The Adoption of Real-Time AR-assisted Inspections for Quality and Compliance](#) from the AREA website. [Vertical Realities](#) completed the research report on behalf of the AREA.

The full report includes a comprehensive view of the factors affecting the adoption and implementation of AR solutions for inspection use cases and a template for measuring the direct impact of AR-assisted inspections (available to AREA members).

Please also consider the website’s executive summaries of other AREA resources and enterprise guidance. To learn about AREA membership, visit the AREA [website](#).

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The AREA Welcomes Net4 Connect as a Member

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“We are delighted to join the AREA community. Becoming part of a network sharing our enthusiasm and passion for augmented reality was easy. The opportunity to share and gain knowledge with fellow members will be invaluable, benefiting us and our clients,” said Alex Taylor, CEO of Net4 Connect. “Through our membership, we hope to gain new insights, foster innovative collaborations, and stay at the forefront of industry advancements, ultimately enhancing our service offerings and driving success for our clients. We look forward to contributing to and growing with this vibrant community.”

“Net4 Connect is a welcome addition to the AREA,” said Mark Sage, AREA’s Executive Director. “We look forward to the contributions they will make to our alliance in the use of augmented reality and

their knowledge and expertise in AI, IoT, and 5G.”

About Net4 Connect

Empowering Innovation with Cutting-Edge Technology Solutions. Visit our website: <https://net4connect.com/>.

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The Growing Irish Immersive Technology Sector

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Note: This article is shared on behalf of a member company, EIRMERSIVE, and does not represent the work of the Augmented Reality for Enterprise Alliance (AREA).

The Irish immersive technology sector is emerging as a significant player on the international stage, with organizations generating over €92 million annually. According to the Irish Immersive Economy report 2022, the sector was valued at over €43 million. The global immersive technology market, which includes augmented reality (AR), virtual reality (VR), spatial computing, and mixed reality

(MR), is currently valued at \$65.5 billion and is projected to grow to \$936.6 billion by 2030.

To capitalize on this growth potential, Cultural & Creative Industries Skillnet (CCIS) and Eirmersive have developed the Irish Immersive Technology Strategy for Growth (IITSG). This strategy aims to address the barriers to growth and provide strategic support to ensure Ireland's place in the global market.

However, without immediate and sustained investment, Ireland risks falling behind other European countries that are actively investing in their immersive technology sectors, such as Finland with its "Finnish Metaverse Initiative".

The IITSG was developed with input from a diverse range of stakeholders, including industry, government, large enterprises, SMEs, research, and education sectors. The strategy will be regularly updated to reflect ongoing developments in the field.

Read the full article here: [Irish Immersive Technology Strategy for Growth](#)

Augmented Reality for Enterprise Alliance Announces the AR Safety Infographic

31st October 2024



BOSTON, MA - MAY 9, 2024 - Today, the [Augmented Reality for Enterprise Alliance \(AREA\)](#) announced the [AR Safety Infographic](#), a new tool that explores the benefits and potential safety risks of using AR in the workplace. By carefully considering safety before deploying AR solutions, organizations may be able to avoid issues before they occur.

Each section contains the benefits and challenges of using AR and includes a summary to the left when it is clicked on. There is also a detailed page for the section when clicking the 'LEARN MORE'

button to help you understand the benefits and potential risks and how to manage them.

“Our mission is to help companies in all parts of the AR ecosystem achieve greater operational efficiency through the smooth introduction and widespread adoption of interoperable AR-assisted enterprise systems,” said Mark Sage, Executive Director of the AREA. “Our AR Safety Infographic provides reliable guidance that makes the path to AR adoption surer, shorter, and smoother.”

The sections include:

AR Experience – integrates the digital and physical worlds seamlessly, and any interactions should feel like you are interacting within a real-world environment.

Cognition – Effective use of technology-based environments and augmented reality reduces cognitive load by scaffolding information and lessons’ contents

Sensory – Engaging in immersive experiences can offer many benefits, catering to personal growth, entertainment, education, and even therapeutic purposes.

Environmental – Augmented Reality has all the trapping to encourage sustainability in the energy sector; AR is being used to power renewable energy systems by providing a more detailed understanding of energy sources and their potential.

Physical – The most prevalent benefit is the AR headset experience, enabling users to see their physical surroundings while interacting with virtual assets. This allows not only safety for the user by seeing their surroundings but also mobility.

Devices & Accessories – Augmented Reality Devices encompass various hardware, each offering unique immersive experiences.

See the AREA [website](#) for member companies contributing to the [AR Safety Infographic](#).

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The evolution of delivering immersive media over 5G/Cloud

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This blog post introduces a white paper from Ericsson, an AREA Member. The full paper can be read [here](#).

Introduction

With the availability of more Augmented Reality (AR) and Virtual Reality (VR) headsets, people are starting to experience more realistic and interactive immersive services. Thanks to the advanced technology embedded into the headset we are getting more powerful devices, able to compute and render images of increasing resolution and quality. Yet the development of longer and more realistic experiences is progressing slowly, limited by battery consumption, device form factor, and heat dissipation constraints. Many service providers have started to deploy services in the cloud to address these issues. However, running the application in the cloud imposes additional challenges: latency, bandwidth, reliability, and availability of the service. 5G cloud architecture can overcome those issues with solutions that can be applied incrementally, each differently affecting the complexity of the application, but each improving the ultimate experience for the user. Additionally, the ultimate vision for 5G architecture as applies to immersive experiences calls for new relationships among the ecosystem members – the consumer, communications service provider, hyperscale cloud provider, and developer/service provider.

This paper examines key aspects to launch an immersive service using 5G cloud infrastructure. First, reviewing recent offerings and developments, then walking through a set of use cases each exploiting more and more offload to the cloud. We follow with a description of 5G technologies that satisfy the use cases, and finally, reflect on the evolution of the stakeholders' ecosystem in relation to their technical and commercial relationships to establish an immersive service using 5G.