



TECH TALK

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**Pioneering Tech
Leadership with a
Legacy of Excellence.**



Galaxy Office Automation Pvt. Ltd.



Galaxy and IBM collaborated to host an exclusive Digital Transformation networking session with a strong focus on accelerating modern IT infrastructure using IBM Power and IBM Storage.

The event served as a strategic platform for technology leaders, innovators, and decision-makers to explore how secure, scalable, and AI-powered solutions are shaping the future of enterprise IT.

Through expert discussions and real-world insights, attendees examined how trusted AI, cybersecurity, and resilient infrastructure can enable organisations to modernise operations, enhance efficiency, and drive sustainable digital growth.

Foreword

Dear Readers,

On behalf of all of us at Galaxy, I wish you a very happy, healthy, and successful 2026. At the beginning of every year, we at Galaxy try to predict the technologies that will see widespread adoption during the year. Our top picks for this year are AI-native modular micro-data centres. Cognitive Zero-Trust Fabric, Confidential AI, and Hyperautomation.

We predict the rise of pre-integrated, shipping-container-scale units that combine liquid-cooled GPU racks, on-prem PQC (Post-Quantum Cryptography) appliances, and curated AI software stacks. These Sovereign AI Data Centres will shift from monolithic builds to AI-native, modular micro-data centres.

The Cognitive Zero-Trust Fabric won't just authenticate and authorize, but will also continuously learn. Using behavioural AI, it will establish dynamic, session-specific trust scores for every user, device, and AI agent requesting access.

Confidential AI will move from niche to norm for proprietary model training. Confidential computing, which is nothing but hardware-based trusted execution environments, will ensure that training data and the resulting model weights are never exposed in plain text, even to the cloud provider's hypervisor. We predict that major cloud providers will launch "Confidential AI Training Clusters" as a flagship service, and enterprise procurement will mandate it for any strategic AI development. This will fuse data centre hardware, security, and AIOps into a new gold standard for proprietary innovation.

Hyperautomation will extend beyond the back office and span across IT operations, security, and governance. AI-driven runbooks that self-execute, automated compliance evidence collection, and event-driven remediation for cloud and network issues are a few examples of what will become the norm at enterprises running cutting-edge technology.



Foreword

With stacks becoming too complex, the stakes are too high, and the pace is too fast for BAU system integration. 2026 will mark the dawn of the AI Systems Integrator (AI SI) as the most critical partner for enterprise transformation.

We, at Galaxy, believe we are the AI SI who offer end-to-end services for building, integrating, and continuously assuring complex AI systems. Our cutting-edge products like Auxilium and Kavach-AgentIQ use AI & hyperautomation to improve uptime and customer delight while at the same time reducing costs.

Please reach out to our experts and evangelists to have a conversation around these technologies and how they could help your business.

Happy reading!



Anoop Pai Dhungat
Chairman & Managing Director

Future is now!



AI-Designed Autonomous Underwater Glider: Redefining Ocean Exploration

At the bottom of a swimming pool on MIT's campus, researchers keep testing a strange glider. The glider doesn't have a propeller, nor does it resemble any known fish. It's like a mix between a paper airplane and a fever dream, made out of plastic. It is, of course, an artificial intelligence creation.

This curious contraption, along with its even stranger cousin (a flat, four-winged glider), are among the first autonomous underwater vehicles designed almost entirely by a machine-learning system. Their creators say these new shapes could soon revolutionize how scientists explore the ocean, from mapping currents to monitoring the effects of climate change.

"This level of shape diversity hasn't been explored previously, so most of these designs haven't been tested in the real world," said Peter Yichen Chen, a postdoctoral researcher at MIT's Computer Science and Artificial Intelligence Laboratory (CSAIL) and co-lead author of the project.

Nature-Inspired, Machine-Optimized

For decades, marine scientists have tried mimicking nature's hydrodynamic brilliance. Seals, whales, and rays slice through water with uncanny efficiency. Autonomous underwater vehicles (AUVs), by contrast, have remained largely utilitarian: streamlined tubes with wings, efficient but uninspired.

The reason is simple; it's hard to reinvent the hull. Designing, building, and testing new shapes underwater is time-consuming and expensive. So researchers stick with what works.

The new AI pipeline, developed by researchers at MIT and the University of Wisconsin-Madison, upends that process. Instead of relying on human intuition and knowledge, the team built a system that co-designs both the shape of the glider and the way it controls itself as it moves.

The algorithm learns from each shape it tests. The core of the system is a neural network that predicts how proposed gliders would behave under different conditions, focusing mainly on the lift-to-drag ratio. The higher that number, the more efficiently a glider can move through water with minimal energy use.

"Lift-to-drag ratios are key for flying planes," said Niklas Hagemann, an MIT graduate student and co-lead on the project. "Our pipeline modifies glider shapes to find the best lift-to-drag ratio, optimizing its performance underwater." This optimization required the AI to understand both the physics of movement and the geometry of design. To do that, the team built a "deformation cage." This cage is a mathematical framework for bending and stretching simple shapes like ellipsoids into something new. They trained their system using 20 base models, including whales, sharks, and submarines, and then generated hundreds of variations.

From Simulation to Submersion

Of course, simulation is only the first step. To see if their algorithm's creations could swim, the researchers picked two of their best-performing models and built them using 3D printers. The components were fabricated as hollow shells designed to flood with water, making them light and easy to assemble around a standard internal hardware unit.

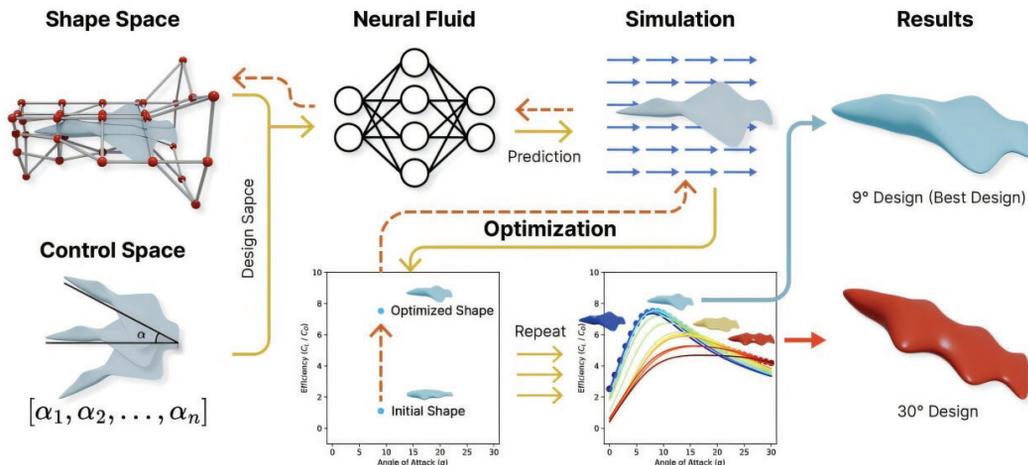
This modular tube, shared between designs, contains a buoyancy engine, a mass shifter, and control electronics. By pumping water in or out, the glider can rise or fall. By shifting an internal weight forward or backward, it adjusts its angle through the water. These subtle controls mimic how real gliders move through the ocean without motors or propellers.

The researchers first tested their designs in MIT's Wright Brothers Wind Tunnel. Simulations and real-world data aligned closely—only about a 5% difference in predicted vs. actual lift-to-drag ratios.

Then they took to the pool.

Two gliders were tested: one with two wings optimized for a 9-degree descent, the other with four fins designed for a steeper 30-degree glide. Both outperformed a conventional torpedo-shaped glider. The two-winged model achieved a lift-to-drag ratio of 2.5. For comparison, a standard handmade design tested in earlier studies achieved just 0.3. "With higher lift-to-drag ratios than their counterpart, both AI-driven machines exerted less energy, similar to the effortless ways marine animals navigate the oceans," the team wrote.

[Read more →](#)





Artificial Intelligence at Galaxy: Engineering the Intelligence Layer for the Modern Enterprise

Galaxy's AI direction is centred on building enterprise-grade intelligence systems that go beyond pilots and demos. By combining data platforms, autonomous AI agents, and governed execution frameworks, Galaxy is working toward scalable AI factories that enable predictive, adaptive, and outcome-driven enterprise operations.

AI Must Graduate from Demos to Enterprise Systems

Artificial Intelligence has become easy to “try” but still hard to “industrialise”. Many organisations have experimented with models, copilots, and automation, yet struggle to scale them beyond isolated use cases. The reasons are consistent: fragmented data, unclear ownership, limited governance, sub-human accuracy, and solutions that aren't engineered for real operational conditions.

Galaxy's AI philosophy is anchored in a practical enterprise truth:

AI only becomes valuable when it is engineered as part of the enterprise system—securely integrated, measurable, and dependable.

This mindset reframes AI from a set of tools into a core enterprise capability—one that must operate with the same rigor, reliability, and accountability as any mission-critical system.

Agents as a Core Enterprise Primitive

A defining characteristic of modern intelligence platforms is the emergence of AI agents as a first-class architectural concept.

Agents should not be confused with conversational assistants. Conversation is merely one possible interface. At a deeper level, agents represent a general-purpose abstraction for autonomous enterprise intelligence.

An AI agent can be understood as an autonomous unit that:

- Operates toward a defined goal
- Uses an LLM or model stack as its reasoning core
- Plans multi-step actions
- Maintains memory across tasks and time
- Uses tools, APIs, and workflows
- Learns from outcomes and human feedback
- Collaborates with other agents when required

Crucially, an agent does not need to be conversational at all.

Non-Conversational Agents: Where Enterprise Value Concentrates

Many of the most valuable enterprise AI applications are inherently non-conversational:

- Credit and risk evaluation pipelines
- E-commerce listing generation and optimisation
- Content grading and policy compliance
- Competition and market intelligence mapping
- Forecasting, scoring, and optimisation loops

In such cases, agents observe data, reason across multiple signals, execute actions, and produce outputs such as scores, artefacts, alerts, or decisions—not dialogue. Human interaction, when present, is often supervisory or explanatory rather than conversational.

This distinction is important because it highlights where enterprise AI delivers its greatest leverage: automation of complex cognitive workflows, not just improved interfaces.



Enterprise Agentic Systems: Autonomy with Control

As organisations adopt agentic approaches, a critical question emerges: how much autonomy is acceptable in enterprise environments?

What makes enterprise agentic systems different?

In exploratory settings, agentic behaviour can be open-ended and exploratory. In enterprises, it must be bounded, governed, and auditable:

- Clear task scope and permissions (what an agent can and cannot do)
- Deterministic controls for critical operations
- Audit trails for every step and action
- Safety rails such as fallbacks, approvals, and confidence thresholds

A well-designed enterprise agentic system is therefore less like a “free autonomous robot” and more like a highly controlled operations assistant capable of executing complex, multi-step workflows reliably while operating within defined constraints.

This balance between autonomy and control is central to Galaxy’s AI thinking. Agents may plan, reason, use tools, retain memory, learn from feedback, and collaborate with other agents—but always within an architecture designed for trust and accountability.

AI Factory Ecosystems: Industrialising Intelligence

As agentic systems become more pervasive, enterprises require a structured way to build, deploy, operate, and govern them at scale. This leads to the concept of the AI Factory.

An AI Factory is not a single product or tool. It is an ecosystem that industrialises AI delivery by combining:

- Data ingestion and preparation pipelines
- Model training, evaluation, and lifecycle management
- Agent frameworks and orchestration engines
- Tooling and system integration layers
- Monitoring, governance, and audit capabilities
- Feedback loops for continuous learning and improvement

This factory mindset allows enterprises to move from bespoke AI projects to repeatable AI capability creation, dramatically improving scalability and consistency.

At Galaxy, we believe the next phase of enterprise AI is defined not by early adoption, but by the ability to operate AI reliably at scale. As AI moves from experimentation to enterprise-wide execution, operational excellence becomes the true differentiator.

Our AI direction reflects this shift enabling predictive, adaptive, and increasingly autonomous operations built on strong governance and control. Success in this new era will require balancing intelligence with accountability, and innovation with trust. Galaxy is deliberately aligning its AI strategy to help organizations navigate and lead this transformation with confidence.

To connect with our experts, write to us at marketing@goapl.com

Cloud-Delivered Secure Access (Internet, Private & Legacy Applications)

Cloud-Delivered Secure Access enables secure, seamless connectivity to internet resources, private applications, and legacy systems through a unified, cloud-native security platform. Designed to support modern work models, it provides consistent protection and access control for users regardless of location, device, or network.

For internet access, user traffic is securely routed to cloud-based enforcement points where advanced threat protection, content controls, and data safeguards are applied in real time. This eliminates reliance on centralized network backhauling while maintaining uniform security policies and improved performance.

For private applications, access is granted using identity, device posture, and contextual policies rather than network-based trust. Applications remain hidden from direct internet exposure, significantly reducing attack surface while enabling secure access to internal systems hosted in data centers, cloud environments, or hybrid infrastructures.

For legacy applications, secure access is provided without requiring application modernization or major architectural changes. Existing systems and protocols are protected using modern access controls, extending Zero Trust principles to legacy environments while preserving operational continuity.

Secure Internet Access

Key Features

- Layer-7 proxy inspection with TLS decryption
- DNS and web threat prevention
- Inline SaaS traffic control
- Identity-based policies via Entra ID

Benefits

- Consistent security for users anywhere
- Reduced attack surface and infrastructure complexity
- Improved performance through local breakout

Use Case

Secure internet and SaaS access for remote, branch, and mobile users with centralized policy enforcement based on identity and context.

Zero Trust Network Access (ZTNA) for Private Applications

Key Features

- Application-level segmentation
- Outbound-only connectors
- Mutual TLS and session-based access
- Identity-driven authorization via Entra ID

Benefits

- Eliminates lateral movement
- Hides applications from the internet
- Enforces least-privileged access

Use Case

Users securely access internal applications hosted on-prem or in cloud, authenticated by Entra ID and authorized per application.

Secure Access for Legacy Applications

Key Features

- Modern identity authentication (like Entra ID)
- Protocol-level access brokering (RDP, SSH, HTTP, etc.)
- Session-based controls without app changes
- MFA and Conditional Access

Benefits

- Protects legacy systems without modernization
- Removes VPN and network exposure
- Centralized identity enforcement
- Access independent of network location
- Adaptive, context-aware security
- Unified identity governance

Use Case

Secure remote access to business-critical legacy applications using modern identity while keeping backend systems unchanged.

Why choose SASE technology

Traditional perimeter-based security models built around firewalls, VPNs, and trusted internal networks no longer align with modern IT environments where users, applications, and data are distributed across cloud, on-prem, and remote locations. Cloud-delivered secure access combined with Zero Trust Network Access shifts security from network location to verified identity, device posture, and application context, reducing attack surface and preventing lateral movement. By integrating modern identity providers with application-level access and secure internet controls, organizations can protect both modern and legacy applications, enable remote work securely, and enforce consistent security policies without exposing networks or relying on implicit trust.

By delivering security as a service, this approach simplifies operations, scales on demand, and ensures continuous policy enforcement and updates. The result is a resilient, Zero Trust-aligned security model that enhances user experience, reduces risk, and supports evolving business and IT requirements.

We as a trusted Systems Integrator, partnering with us for SASE implementation and support ensures a seamless, end-to-end deployment that fully leverages the platform's security, performance, and Zero Trust capabilities. With deep expertise in architecture, configuration, and optimization, we provide tailored solutions, continuous monitoring, and proactive support to keep your applications secure and performant. Our partnership minimizes implementation risk, accelerates time-to-value, and allows your teams to focus on core business priorities while we manage the complexity of Cloud-delivered secure access technology.

To talk to our experts, write to us at marketing@goapl.com

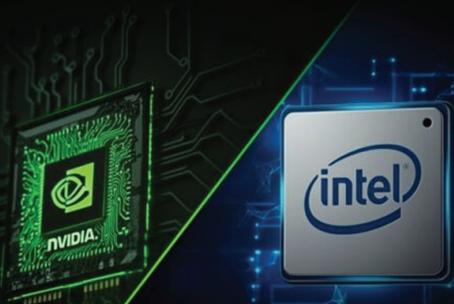
NVIDIA gives a major financial lifeline for Intel

NVIDIA closed its \$5 billion investment in Intel on December 26, acquiring 214.8 million shares at \$23.28 each—36% below Intel's trading price at the time of announcement. The transaction, cleared by the Federal Trade Commission earlier this month, marks a pivotal moment for Intel as it battles to reverse years of declining market dominance and financial strain. The deal transforms Nvidia into a roughly 4% Intel shareholder while providing Intel with desperately needed capital and credibility. Intel's stock has jumped 45% since September's announcement, though both companies dipped in Monday trading—Nvidia down 1.8% and Intel up just 0.5%.

Intel and Nvidia's partnership goes beyond cash infusion

The partnership extends far beyond financial backing. Intel will design and manufacture custom x86 CPUs tailored for Nvidia's AI server platforms, positioning them alongside Nvidia's own Grace processors. The companies also plan PC chips that marry Intel CPU cores with Nvidia RTX graphics chiplets via NVLink interconnect technology. Back in September Nvidia CEO Jensen Huang called the partnership a "historic collaboration," while Intel CEO Lip-Bu Tan emphasized how the deal validates Intel's x86 architecture and manufacturing prowess. The arrangement offers Nvidia smoother entry into enterprise x86 systems without forcing customers to abandon existing software infrastructure. Intel's desperation is quantifiable: its data center market share collapsed from 70% in 2021 to just 7% last quarter as Nvidia and Taiwan Semiconductor Manufacturing surged ahead. The company has hemorrhaged both technological leadership and investor confidence over years of execution failures. Critically, neither company has committed to moving Nvidia's crown-jewel GPU production from TSMC to Intel's contract manufacturing, suggesting this remains primarily a strategic alliance rather than a foundry partnership. For Intel, however, the Nvidia stamp of approval offers something nearly as valuable as cash: proof that the industry's dominant player still sees potential in Intel's turnaround story.

[Read more →](#)



Samsung and other Korean companies get US approval to bring chip-making tools into China.

The US government has approved annual export licences to allow Samsung Electronics and SK Hynix to ship chipmaking equipment to their China facilities throughout 2026. A Reuters report, citing people familiar with the decision, said the approvals came just before a long-standing waiver system expired, marking a shift to a more restrictive licensing framework for foreign-owned fabs in China.

Under the new system, the US has formally moved to annual approvals for chipmaking tool exports into China, replacing the validated end-user status that Samsung, SK Hynix and TSMC previously enjoyed. The yearly licences must be renewed each calendar year, the Reuters report claimed.

What is this waiver system between the US and China.

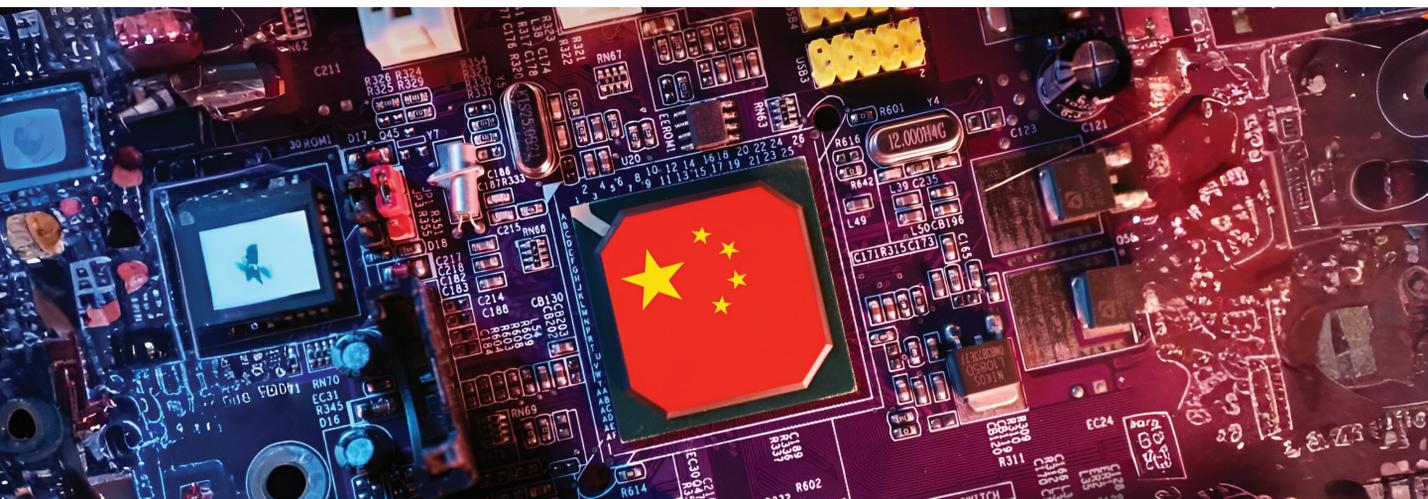
The expired waiver system validated end-user status and allowed qualifying factories in China to receive US-controlled semiconductor tools without seeking individual export licences for each shipment. Now, all

shipments of US-origin manufacturing equipment require explicit authorisation from Washington to enter China.

US officials had increasingly viewed the previous waiver system as overly permissive, according to one source cited by Reuters, prompting the transition to stricter annual oversight.

These approvals are significant for Samsung and SK Hynix because they make most of their memory chips in China.

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