

Situational Awareness Platform for **Generative Al** 

#### IMAGINE

In the future, digital systems will come to life, detecting events as they occur, contextualizing them with existing knowledge, and orchestrating the appropriate actions to take.

A city could automatically alert first responders to a car crash, or a hospital could deliver insights to help treat a patient at risk.

### FROM VISION TO REALITY

This is possible now, every industry can have specialized AI assistants that know the nuances of that domain, are situationally aware of the environment around them, and collaborate with humans for real-time decision making.



The opportunities for innovation and disruption with AI have never been higher. We are on the precipice of a wave of transformation that is, quite literally, going to reinvent our world.

> Martin Sprinzen Vantiq CEO

## LIMITATIONS OF GENERATIVE AI

Generative AI has achieved a level of intelligence that surprises us, excelling in tasks like understanding language, generating new ideas, and problem-solving. But despite the hype surrounding its capabilities, certain drawbacks highlight the limitations of Generative AI: it is limited to its training data, has no understanding of the current situation around it, is prone to hallucinations, and only interacts when prompted.

For us to realize the full potential of GenAI, we need to make the systems situationally aware and trustworthy.

#### A NEW ERA OF COMPUTING: REAL TIME SYSTEMS + GENERATIVE AI

REAL-TIME SITUATIONAL AWARENESS	GENERATIVE AI SERVICES	SYSTEM INTEGRATION & AUTOMATION
• Data/Event Analysis • Sensor Fusion • Anomaly Detection • Edge Performance	<ul> <li>Dynamic Responses</li> <li>Adaptive and Non- deterministic</li> <li>Access to Knowledge</li> <li>Adds Context</li> </ul>	<ul> <li>Integration with Existing Systems</li> <li>Automated Decision- Making</li> <li>Action/Orchestration</li> </ul>

By combining real-time applications with Generative AI, Vantiq continuously analyzes what is happening, dynamically interacts with humans, and integrates with existing business systems.

Vantiq turns real-time situational awareness into contextual intelligence, automatically engaging Generative AI in a machine-to-machine mode without the need for human input. This brings Generative AI capabilities into the always on, always aware realtime world.

### **USE CASES**

- Enhanced Emergency Response
- Clinical Decision Support
- Real-time Anomaly Detection
- Adaptive Process Optimization
- Automated Field Service
- Battlefield Decision-Making
- Vital Sign Monitoring
- Intelligent Surveillance
- Dynamic Traffic Management
- Disaster Response & Evacuation

# **VANTIQ GENERATIVE AI ARCHITECTURE**



As data comes in from humans, external systems, and sensors, the Vantiq platform performs realtime stream processing to look for situations of interest, and once detected, automatically creates prompts. Using retrieval augmented generation (RAG) the system can add additional company or domain specific knowledge, such as documentation or private data.

Vantiq can use multiple Large Language Models (LLMs) including small, private and domain specific variations, depending on the situation. Vantiq's proprietary voting algorithm can be used to ensure trustworthiness of results.

By enabling situationally aware and reliable Generative AI interactions, Vantiq applications are able to automatically make decisions and take action, achieving a level of automation not previously possible.



### **DESIGNED FOR AGILITY**

Vantiq platform is built to streamline the creation of real-time Generative AI applications, decreasing development time and costs by an order of magnitude and ensuring success in projects that otherwise have a high risk of failure. Architectural agility means that the system can easily evolve with new technologies.

### THE OPPORTUNITY AHEAD

This fusion of real-time processing with generative AI capabilities is poised to revolutionize the use of software in critical fields like safety, defense, and healthcare.

In this new era, systems will automatically channel contextually relevant data into generative AI for deeper analysis, guidance, and automation. This is set to transform the way systems intelligently collaborate with humans and opens up possibilities to improve the way the world operates.

## VANTIO

Vantiq is the first commercially available platform to easily create real-time edge-to-cloud software solutions. By combing sensor intelligence, edge processing, and Generative AI, Vantiq solutions are situationally aware of what is happening and can effectively orchestrate, in real-time, actions across humans, machines, and business systems. Vantiq powers a broad array of applications where the right decisions at the right time can mean the difference between life or death. Learn more at: **www.vantiq.com/generative-ai/**