

Stefan Balkowiec – Co-Founder & CEO
Dr Mark Seale- Co-Founder & CTO

Graphdome Introduction

Turning complex data into consequential actions for the physical world



Graphdome Introduction

We come from....



Mission Statement:

Graphdome's mission is to empower people to work in harmony with complex physical systems, in human centric ways.

The Problem Statements - Defence

Development of Complex systems can't keep up with the pace of change

Lack of SW/HW abstraction

“The new **digital battle model** expects new features in 24 hours, major upgrades in 6 weeks and a full replacement in 6 months”

(Brigadier Stuart Nasse, UK MOD)

Too much data too many screens (not enough semantics)

“We collect more data than we can exploit... the challenge is turning data into timely, actionable insight.”

(Defence AI Strategy, UK MOD)

AI doesn't understand the physical world

“Generative AI systems can produce inaccurate or misleading outputs with high confidence.”

(UK MOD)

We have built LLUMEN...

...edge reasoning for Human-in-the-loop interaction with complex systems



Edge Reasoning

- Real-time, context-aware reasoning
- Understanding of pre-conditions
- Inferred relationships in the graph



Voice centric Human in the Loop

- Belief & reasoning set for human needs
- Feels like talking with a domain expert
- Next-to zero hallucination



SDX – Hardware Abstraction

- Graph-data model for complex systems
- Rapid, containerised SDX app deployment
- Run-time Digital Twin

LLUMEN : The real-time, edge reasoning platform

LLUMEN's Communicator

Voice based agent channel providing operational awareness

Tank Commander PPT



CPU Channel Switch



LLUMEN Edge Reasoning



ATACS Battlefield Management System Data feed

LLUMEN Operational Intelligence on the Edge

One run-time for mission context, voice, sensors and human interactions



LLUMEN Communicate

- Voice & Report capture
- Contextual Mission Reasoning
- Edge Reasoning – DDIL ready
- Multi system Correlation
- Human-in-the-loop
- Agent-in-the-loop
- Operational knowledge reasoning



Voice



Tactical Edge



Sensors



System Data

How LLUMEN Supports Defence Operational Energy

Looking for POC / GTM partners in the areas of:



Tactical Edge



**Platform health &
repair**



Training & readiness



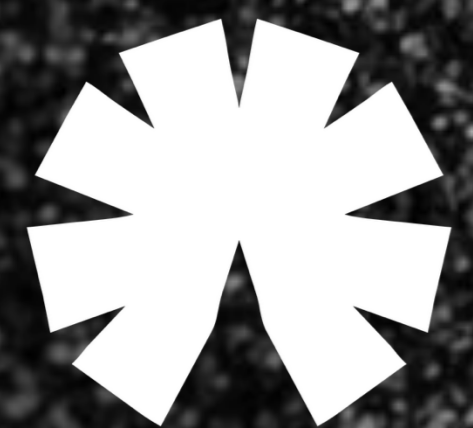
Maritime Bridge support

We currently have a bench version of LLUMEN running Automotive SDV platform health & repair and in-cabin comfort edge reasoning

Thank You

Stefan Balkowiec – Co-Founder & CEO

Stefan@Graphdome.com



graphdome

data engineered actions