

Revolutionizing Patient Care & Staff Safety at The Ottawa Hospital:

The impact of breakthrough ambient perceptual AI technology

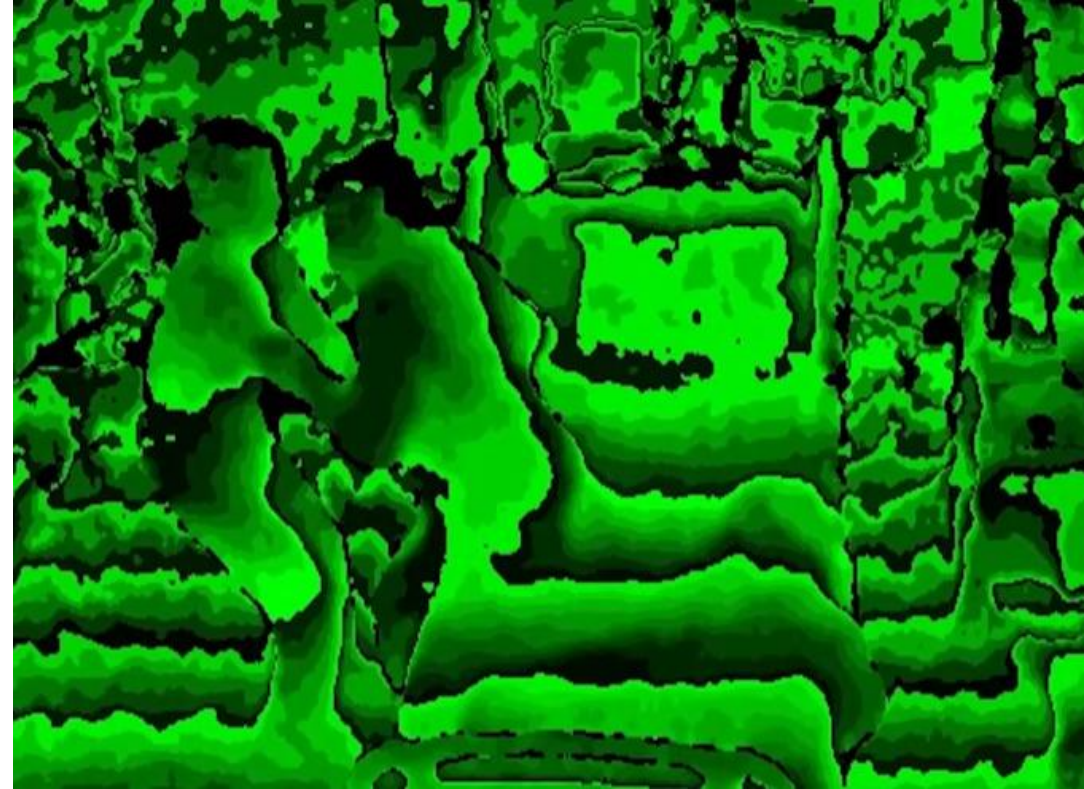


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AIMS Overview Video



[Click here to play video](#)

Direct link to video: <https://youtu.be/JSHxNIRUaJk>

Bridging the Healthcare Paradox



Healthcare paradox: The tension between the specificity of individual patient needs and the **limitations of existing processes to meet those needs**



The impact:

- Patients suffer from delays and higher risks
- Providers experience stress, overload and burnout
- **Our healthcare system's overall quality and sustainability decline**



A breakthrough solution:

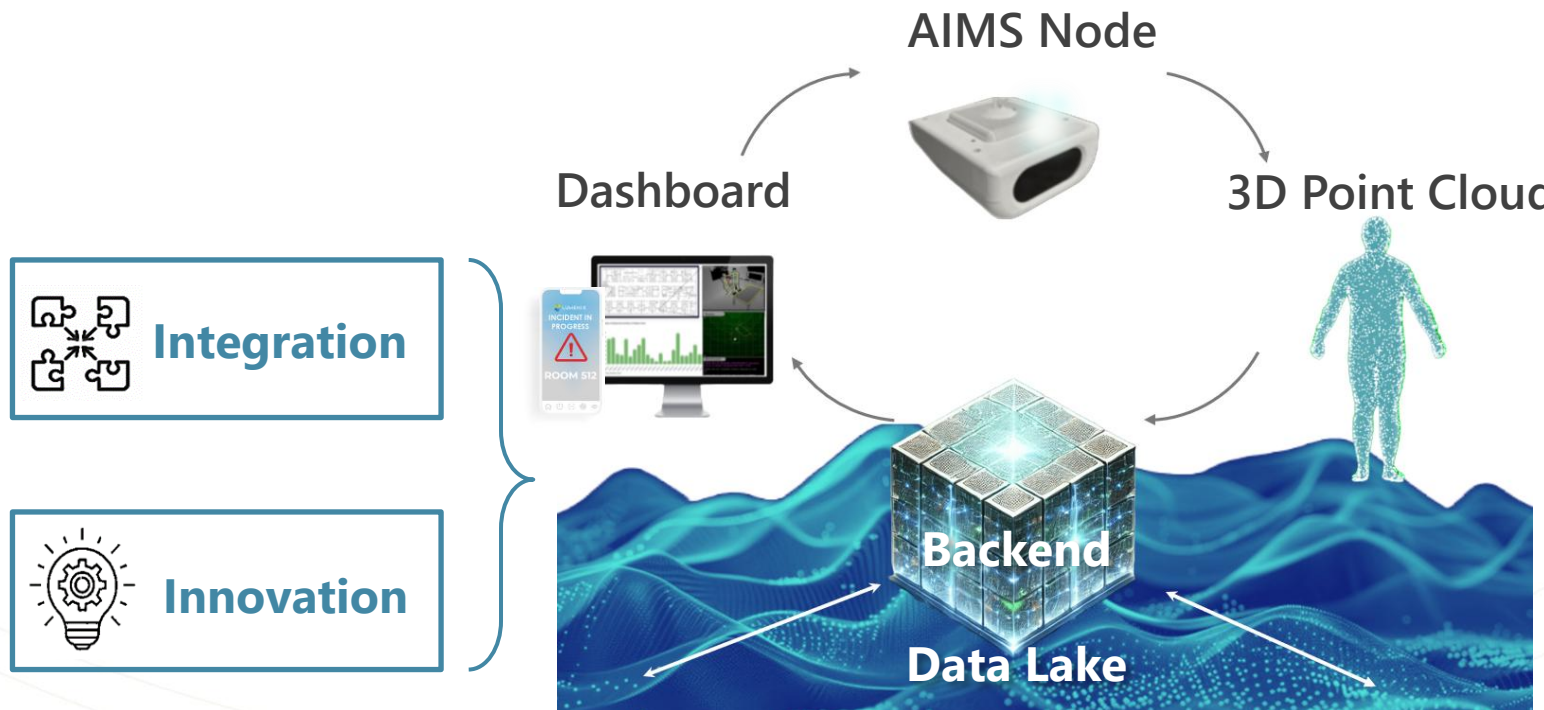
- Combine edge computing, ambient perceptual-action AI, and real-time data, enabling healthcare teams to dynamically understand and respond to patient needs
- Enable intelligent, proactive support, tailoring healthcare delivery to each patient
- **Create a more responsive, effective system that improves outcomes for all**

The AIMS Platform: A Visionary Leap

Artificially Intelligent Monitoring System (AIMS)

Mesh Network of Nodes

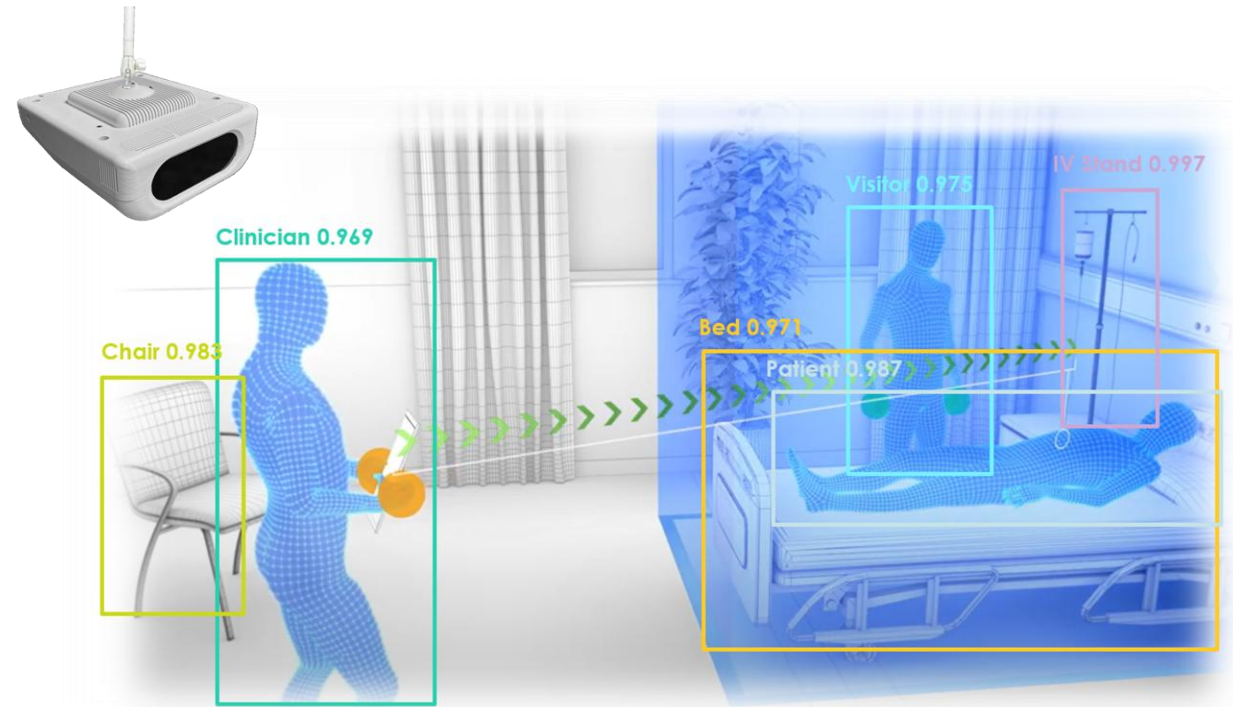
Real-time Support and Communications



- Unparalleled AI platform built to address healthcare challenges
- Harnesses ambient perceptual-action intelligence
- Generates data and predictions previously unobtainable

Unprecedented Data & Support

- AIMS is **100% anonymous**
 - No Personal Information or Personal Health Information
- **Monitors spaces in 3D**
- **Supports care teams to:**
 - Detect relevant behaviours and events
 - Predict and prevent future adverse events
 - Provide real-time support and communications
 - Deliver 3D risk event replay



Patient & Staff Safety Suite



Infection Prevention & Control Suite



Workflow & Resource Management Suite

AIMS Evaluation at The Ottawa Hospital

Use case: Hand Hygiene Application



Hand hygiene (HH) is the most important patient safety measure to prevent hospital-acquired infections



HH compliance remains one of the biggest patient safety challenges globally

AIMS use case:

AIMS Hand Hygiene Application

Objectives:

- What are staff members' perspectives of and experiences with AIMS?
- What are the effects of AIMS on HH and compliance?

AIMS Evaluation at The Ottawa Hospital

Setting: 36-bed transitional
care inpatient unit (IPU), E5
Civic Campus

Install

Baseline

Training

Bedding-In

Intervention

Evaluation

- A straightforward, out-of-the-box installation
- Ceiling mounted, each node requires power and an internet connection
- Does not require access to hospital servers or networks

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- Four weeks to silently collect baseline data on HH events and compliance
- AIMS' real-time audible and visual nudges were not turned on during this period

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- 18 In-person sessions
- 148 Staff across multiple departments
- 1:1 Training for patients and visitors
- Education resources

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Civic Campus

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A short period of time
when AIMS' audible
and visual nudges were
activated to allow staff
time to get used to the
nudges

AIMS Evaluation at The Ottawa Hospital

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Civic Campus

Intervention

Install
Baseline
Training
Bedding-In
Evaluation



Cleaning
hands



Reminder to
clean hands



Real-time
dashboard

AIMS Evaluation at The Ottawa Hospital

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Install
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Methods:



Semi-structured interviews with staff post-intervention



Uncontrolled before vs. after comparison of relative and absolute change in HH events and compliance per day over 5 months

Transforming Hand Hygiene Monitoring



Before AIMS:

25 hand hygiene observations per month



With AIMS:

70,000 hand hygiene observations per month

No other healthcare facility in the world has this level of performance data!

Impact: Data, Metrics, and Clinical Results

18% Absolute ↑



Sustained increase in hand hygiene compliance

**Outbreaks
Reduced >90%
(sustained)**



Sustained reduction in patient safety incidents

Positive experience



Positive adoption metrics from clinical staff, patients, and families

Validated



Clinical trial completed by federal government; clinical evaluation

Essential, Integrated Value-Add in Healthcare Delivery

- **Reveals** hidden patterns to drive continuous healthcare innovation
- **Delivers** proven, measurable improvements in patient care
- **Empowers** care teams to achieve breakthrough results and earn lasting trust
- **Provides** mutually beneficial real-time data and insights for patients and nursing staff



AIMS at The Ottawa Hospital

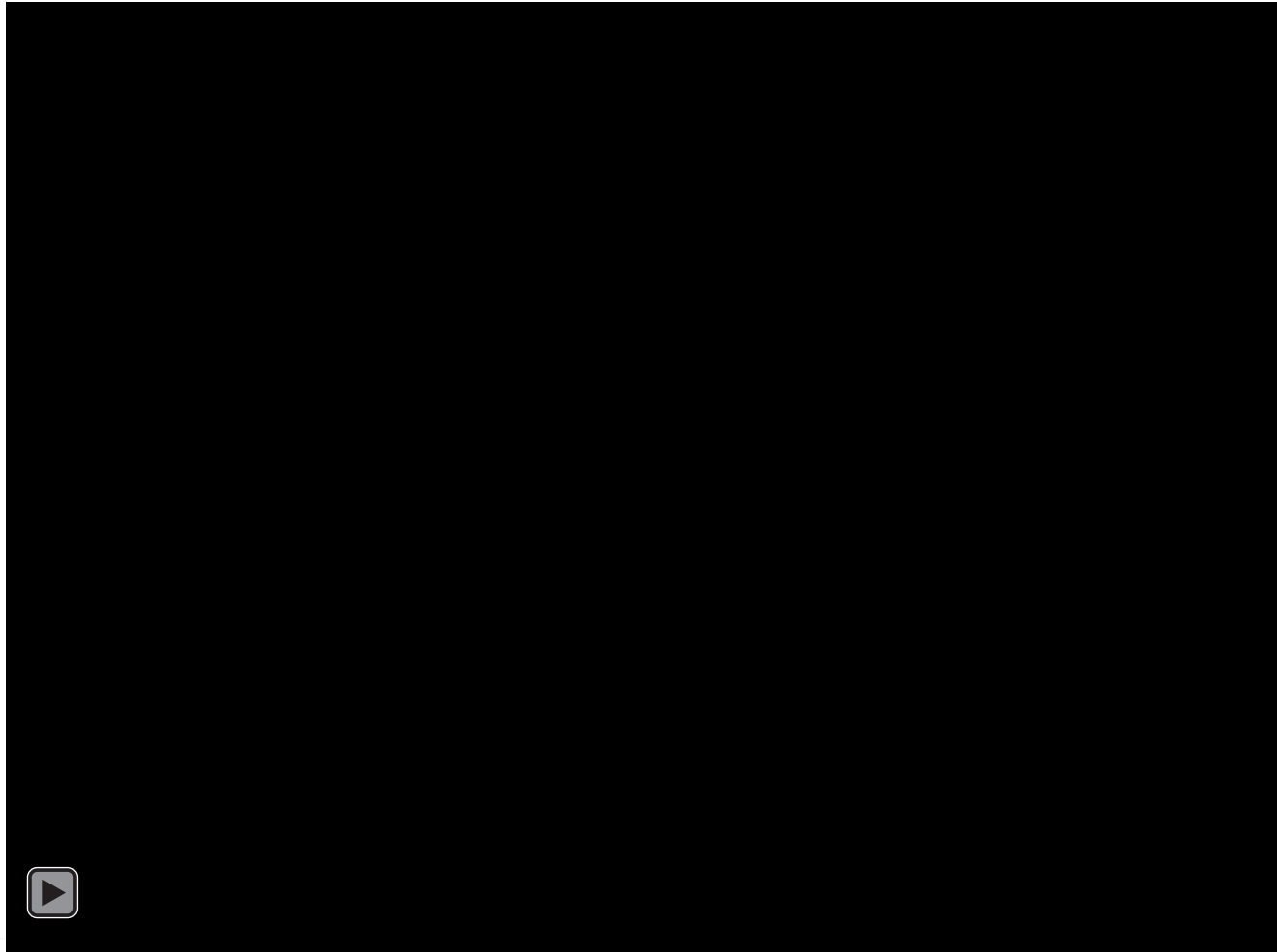
Delivering unprecedented insights for patient care and beyond

1.5 Terabytes of data
perceived and analyzed
per node daily

1.1 Million hours
of unlimited and unbiased observation
per 36-bed IPU per year

300 Million+
unique observations
daily per 36-bed IPU

4 Trillion computations
per second per node
Super Computing Capabilities



Qualitative Results

AIMS was positively embraced by staff, patients and caregivers

"We have not had a single outbreak on our unit since AIMS was installed. Our staff are really excited about this."
(Nurse Management)

"It's actually quite simple and it only took two minutes to teach me how to use it."
(Nurse)

"I felt so safe. And it is rewarding, it's for the benefit of everybody."
(Nurse)

"We genuinely love it. It's a great tool. I present it to our staff as, "think of it as a vital signs machine", so they don't get hung up on the AI portion of it and it's just there to remind you to do what you already know to do."
(Nurse Management)

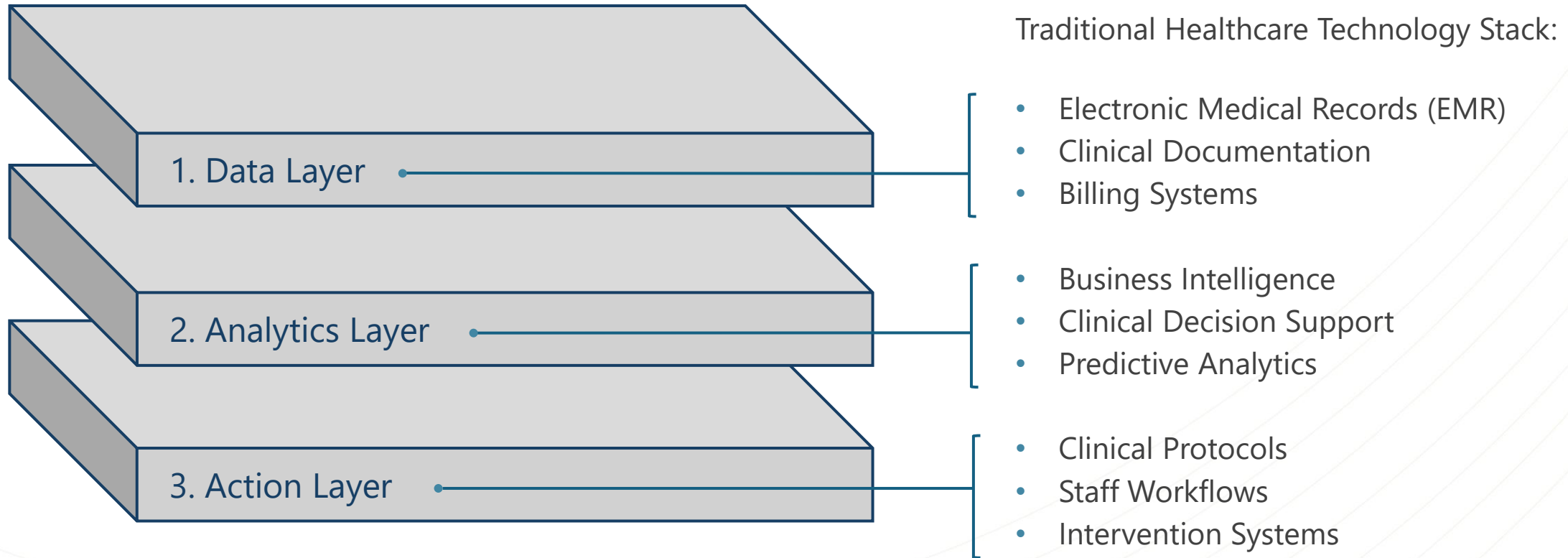
"We've never had to disable or change the operating mode of an AIMS Node. I mean that says it all."
(Nurse Management)

"AIMS would be a very big help not just with hand washing, but also patient safety more broadly."
(Nurse)

Managers, Nurses, Physicians, Allied Health, & Ancillary staff

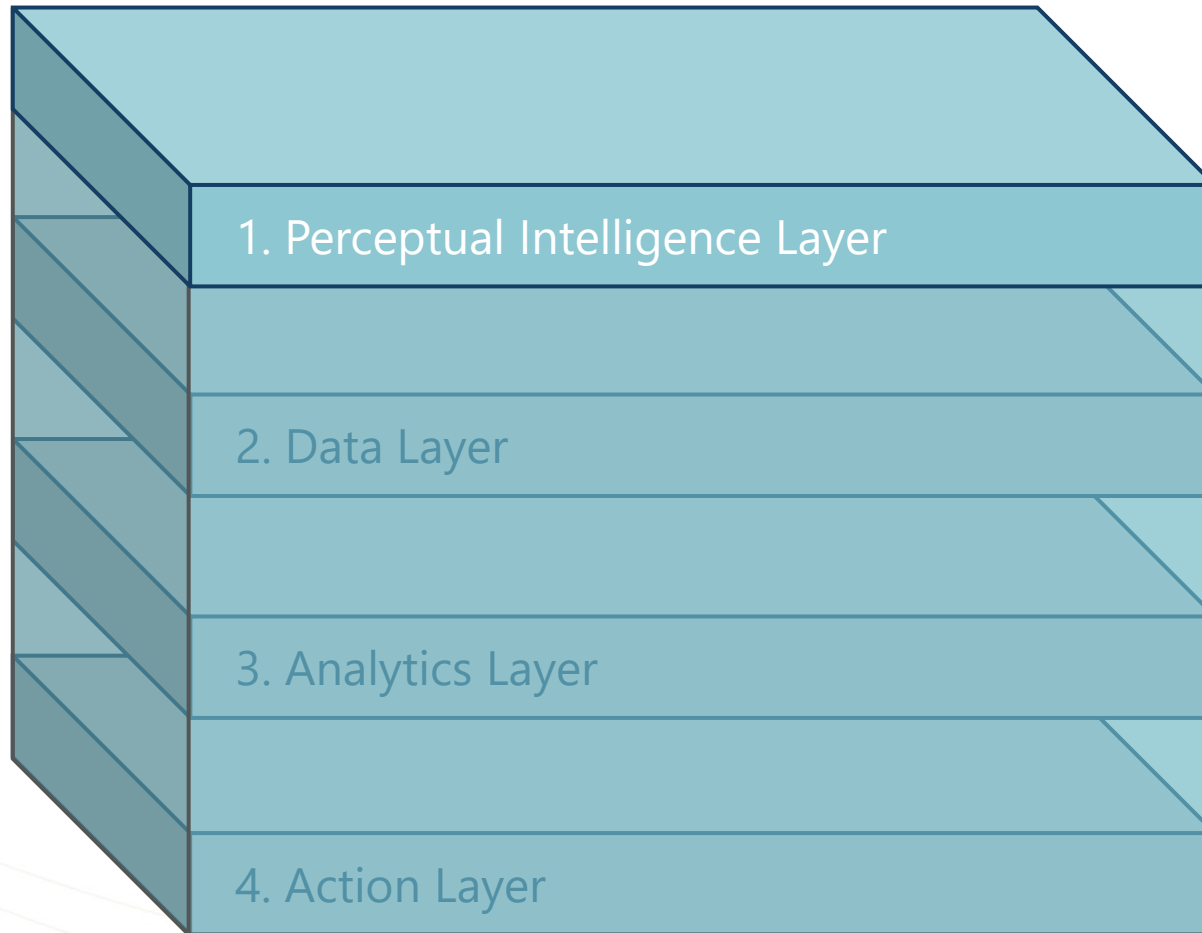
The Technology Stack Revolution in Healthcare

The technology stack in healthcare is undergoing a fundamental transformation through AI, but a critical gap exists between sensing and action.



The Missing Link: Perceptual Intelligence

AIMS introduces a **revolutionary new layer/link** in the healthcare technology stack

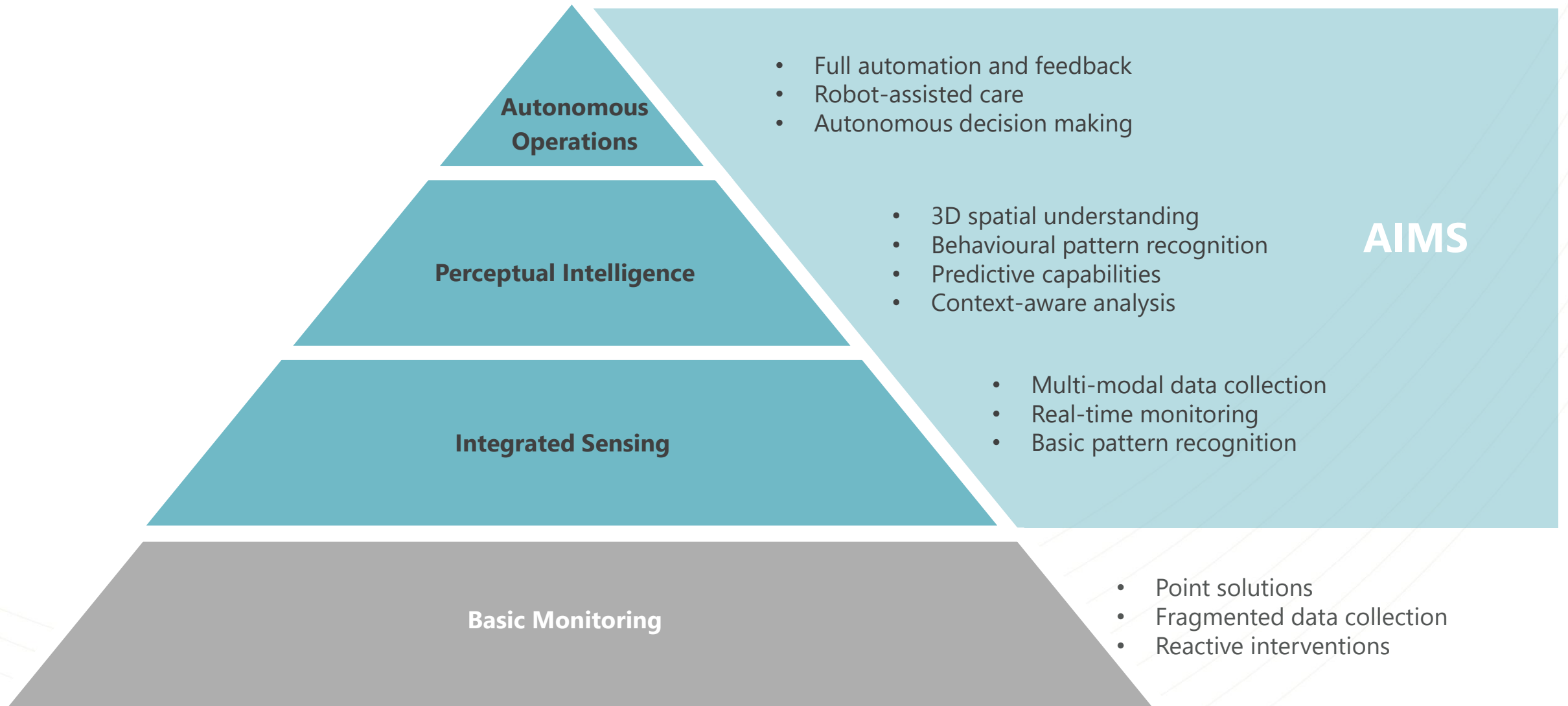


Perceptual Intelligence Layer/Link:

- Real-time 3D environmental understanding
- Continuous behavioural analysis
- Predictive risk assessment
- Autonomous protocol monitoring
- Ambient workflow optimization

Why Perceptual-Action AI Matters in Healthcare

The hierarchy of healthcare intelligence



Scaling Innovation and Collaboration Across Canada

- **Expanding the national vanguard of healthcare innovation** through collaborative partnerships with leading institutions
- Launching and integrating new health applications, developed inclusively by Lumenix and our partners, **to improve patient safety, operational efficiency, and care outcomes**
- Collaborating with the **PRAIRIE Hub**, supported by **the Canadian Government** to apply AIMS for vaccine manufacturing and pandemic preparedness, and monitoring of pre-clinical trials



Questions?

Learn
more
about
AIMS



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