



“Omron will be presenting a look at the development from discrete robotic solutions alongside other automation technologies that support Food safety and quality.

Secondly, we will be taking a look to a new technology termed Autonomous Intelligent Vehicles [AIV] and importantly how these may transform the future factory.”

**“Autonomous vehicles to enhance Food production”**

# Speakers



**Bruno Adam**  
Mobile Robot Business Director  
Omron Europe BV

**Robert Brooks**  
Food & Beverage Industry Marketing Manager  
Omron Europe BV



# Bringing innovation to Food & Beverage manufacturers

**37,000 people  
globally**

**7% R&D  
investment**

**Innovating for 80  
years**

**PLCs, sensors,  
vision, robotics,  
motion, safety...**

**Supporting producers,  
machine builders and  
system integrators**

**A global manufacturer**

A photograph of a supermarket produce aisle. The shelves are stocked with various fresh vegetables, including leafy greens, tomatoes, and other produce. A person is visible in the background, reaching for an item on a higher shelf. The lighting is bright, typical of a grocery store.

# Food & Beverage Manufacturing

Flexible and safe production, Quality inspection, traceability through serialisation, productivity, reducing waste and resources

Innovative automation solutions

Robotic solutions, advanced vision systems, safety services, information management, energy management

# The specifics of F&B production

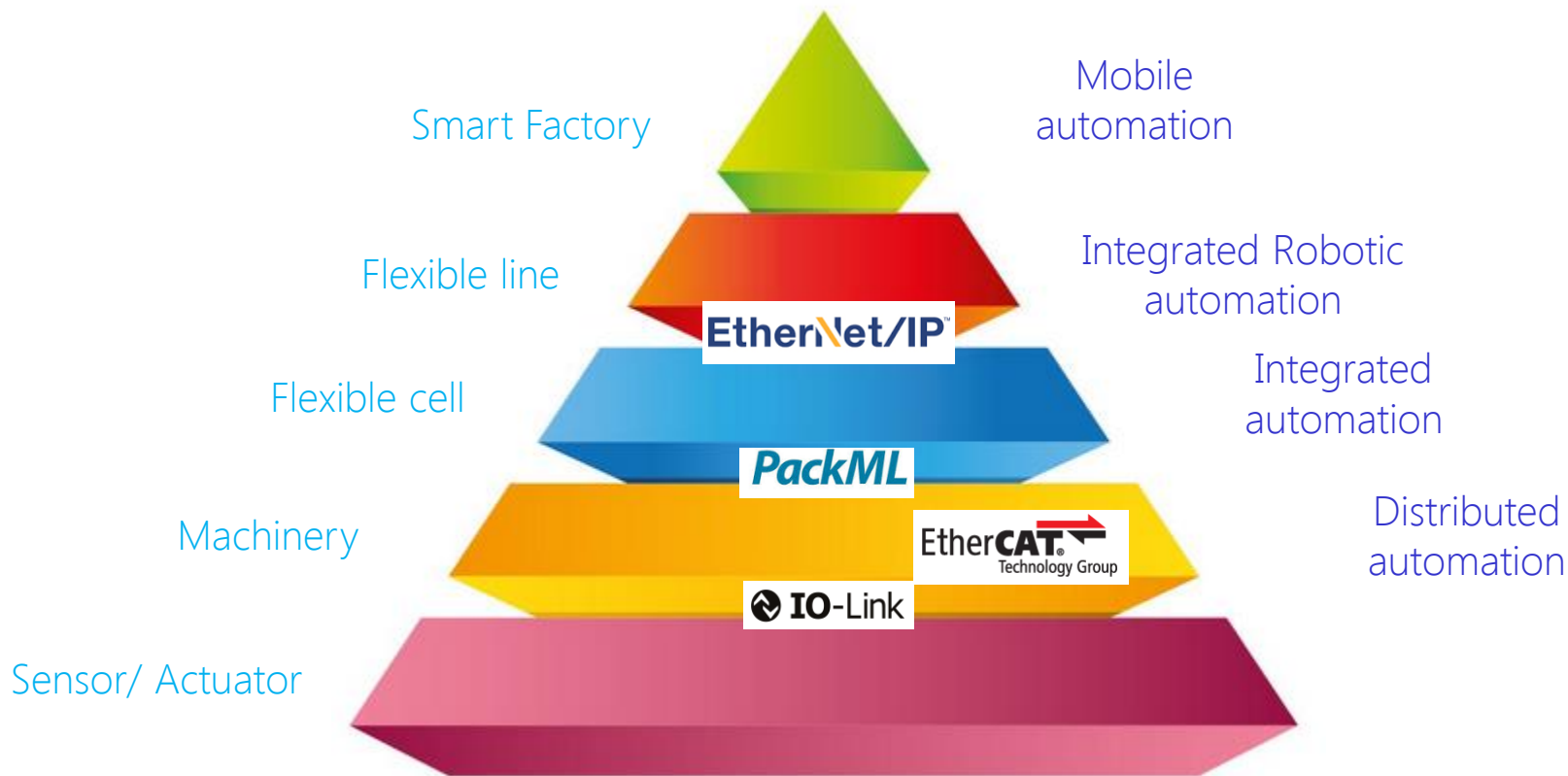


...there are particular challenges in terms of consumer habits, labour related trends, technology and regulation....

A word cloud featuring various terms related to food safety, quality, and industry practices. The words are arranged in a non-uniform, overlapping manner. The largest word is 'salt', followed by 'margins', 'labelling', 'waste', and 'GM'. Other prominent words include 'labour', 'skills', 'fraud', 'clean label', 'listeria', 'genome sequencing', 'counterfeit', 'recall', 'provanance', 'tariff', 'retailer', 'acrylomides', 'ohmic heating', 'sugar', 'clean label', and 'natural'.

tariff salt retailer margins  
genome sequencing  
counterfeit acrylomides sugar  
recall ohmic heating  
labour labelling  
skills  
provanance clean label fraud  
waste listeria  
natural GM

# Automation architecture....





# i-automation

*Intelligent, Interactive, Integrated* **Factory**

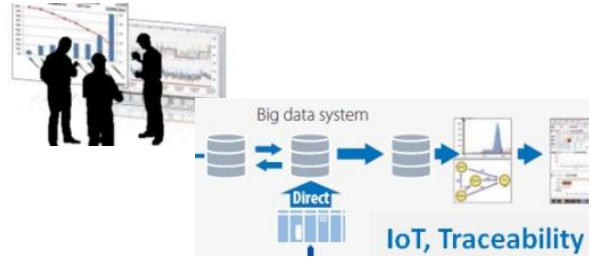
Productivity

Changeover

Food package quality

Reducing energy

Traceability



Robotic handling

Quality inspection

Temperature control

Data handling

Motion control

EtherNet/IP

**PackML**

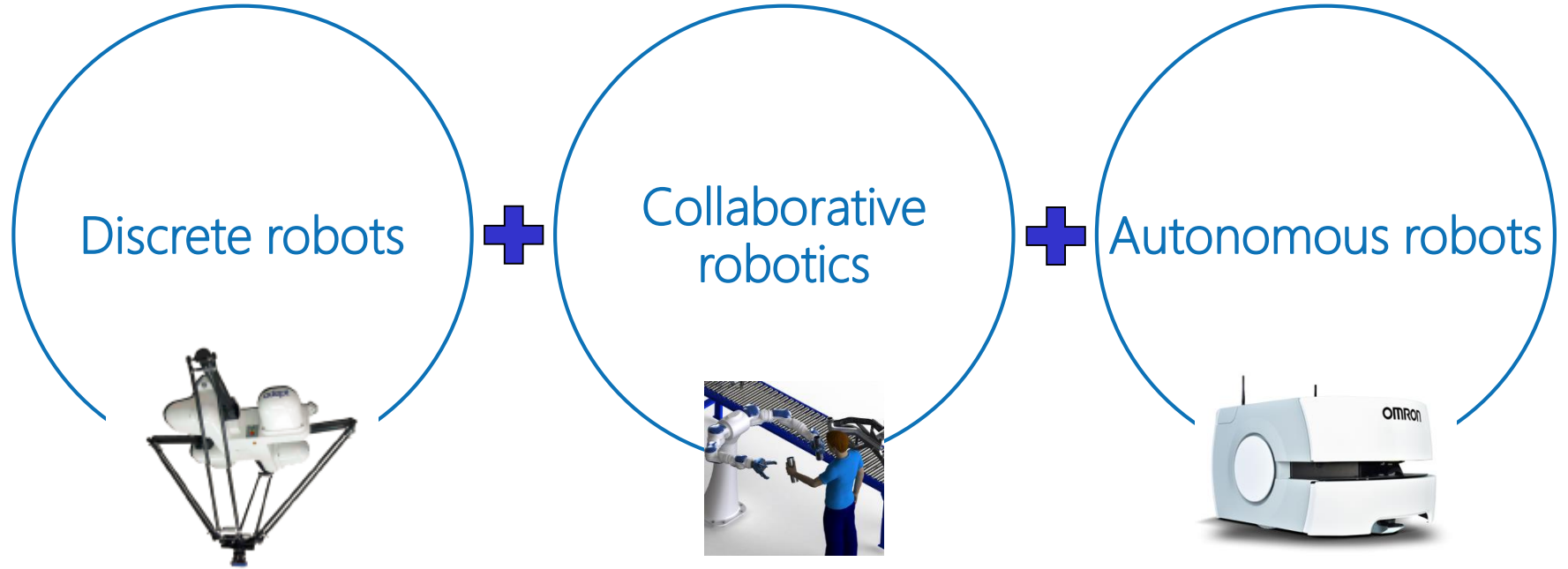
EtherCAT  
Technology Group

IO-Link

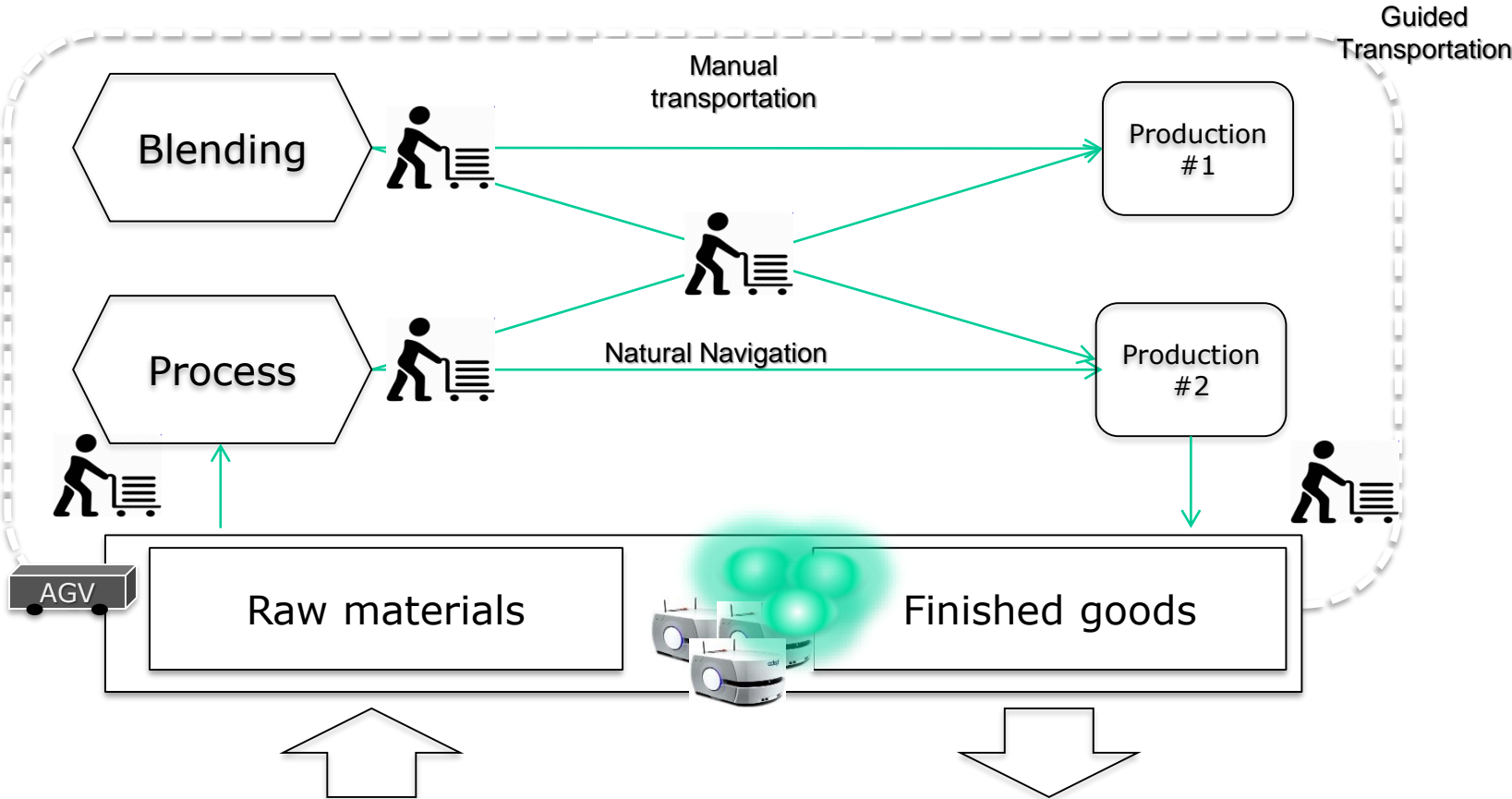




# Evolution of robotics



# Intralogistics evolution



# Intralogistics of the future...Today!



# Autonomous Intelligent Vehicle (AIV) - Concept and Philosophy



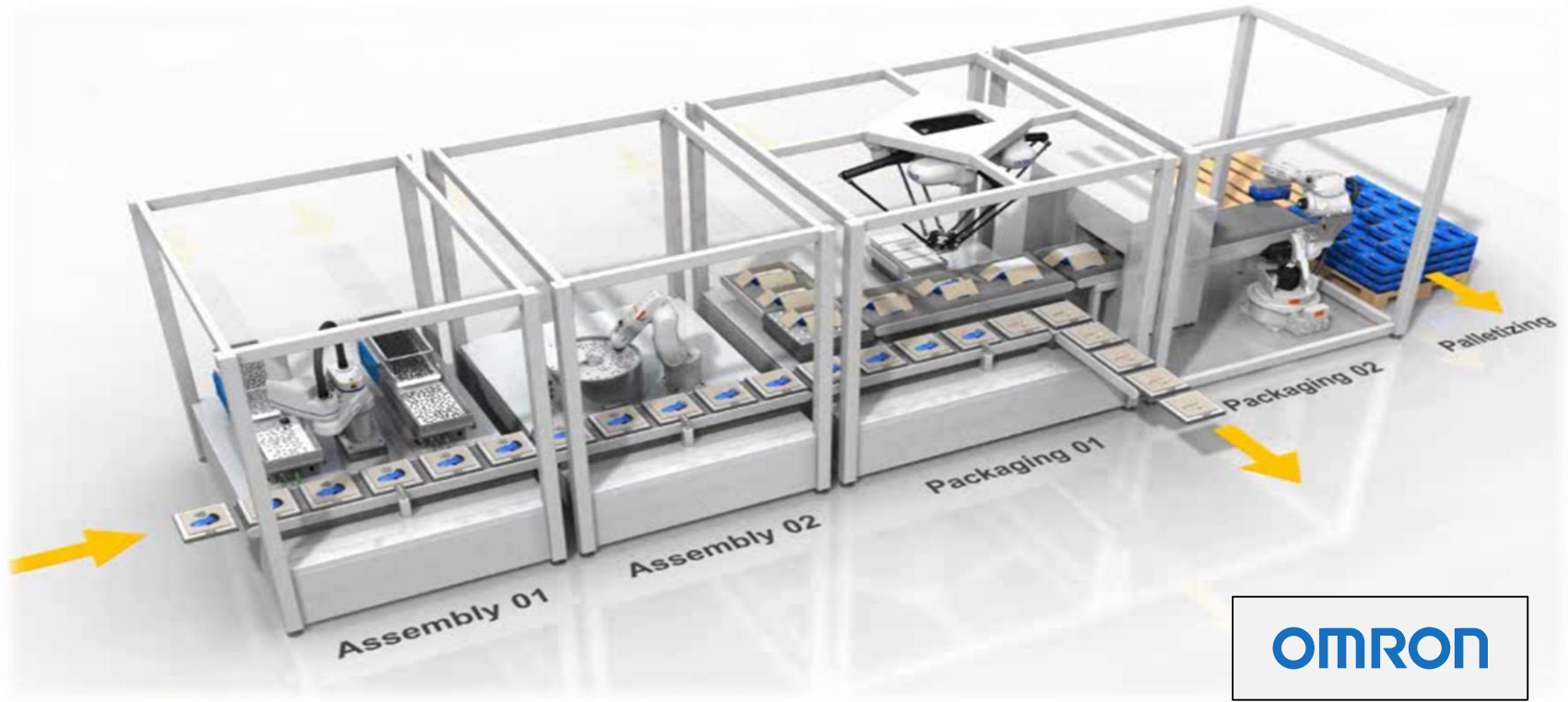
- Fixed schedule
- Fixed route
- Fixed fleet
- PUSH flow
- Break-down blocks the track

- On call
- Shortest route
- Existing infrastructure
- Flexible fleet
- Pull



# Introducing the Mobile platform from Omron

# AIV in a conveyor-less flexible automation cell

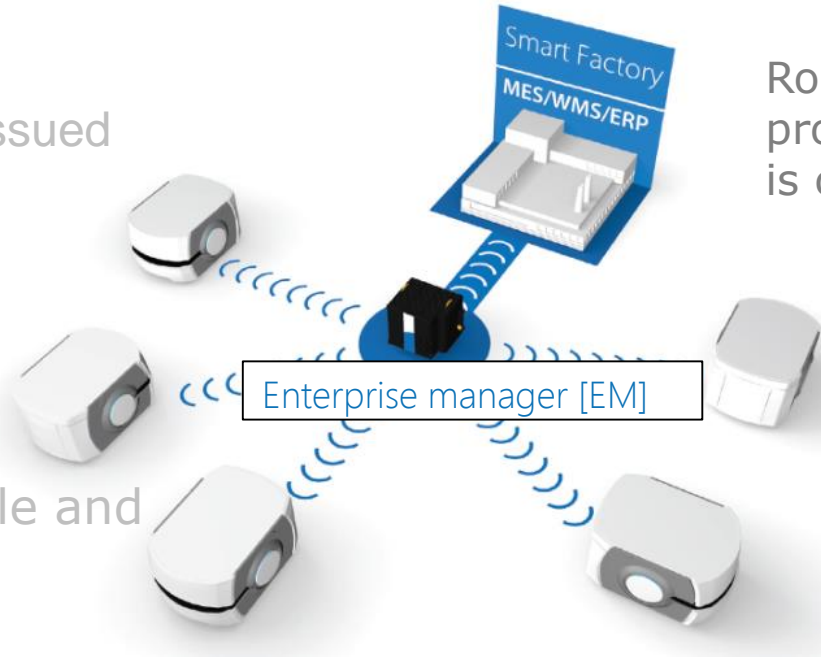


**OMRON**

# Managing Fleets of AIVs

Tasks are issued

Robot notifies EM of progress and when task is completed



Enterprise manager [EM]

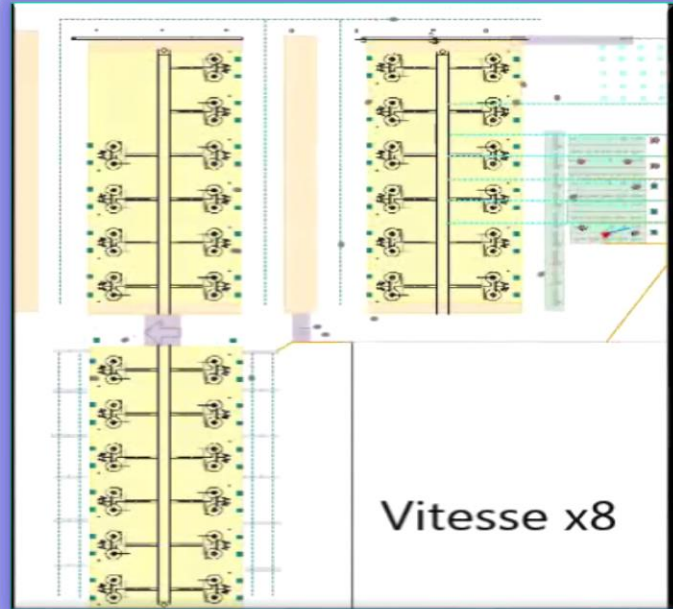
EM selects vehicle and issues command

EM communicates status - traceability

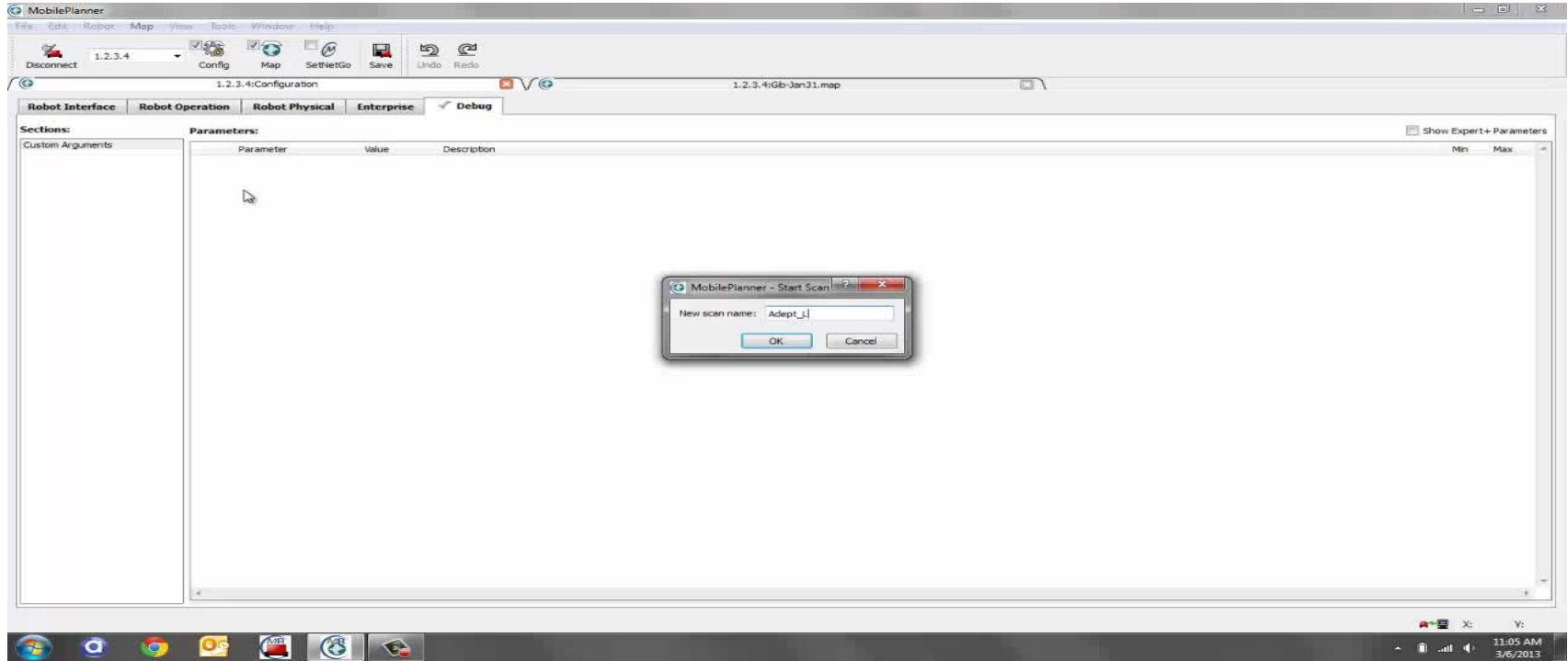


# AIV fleet operation in action

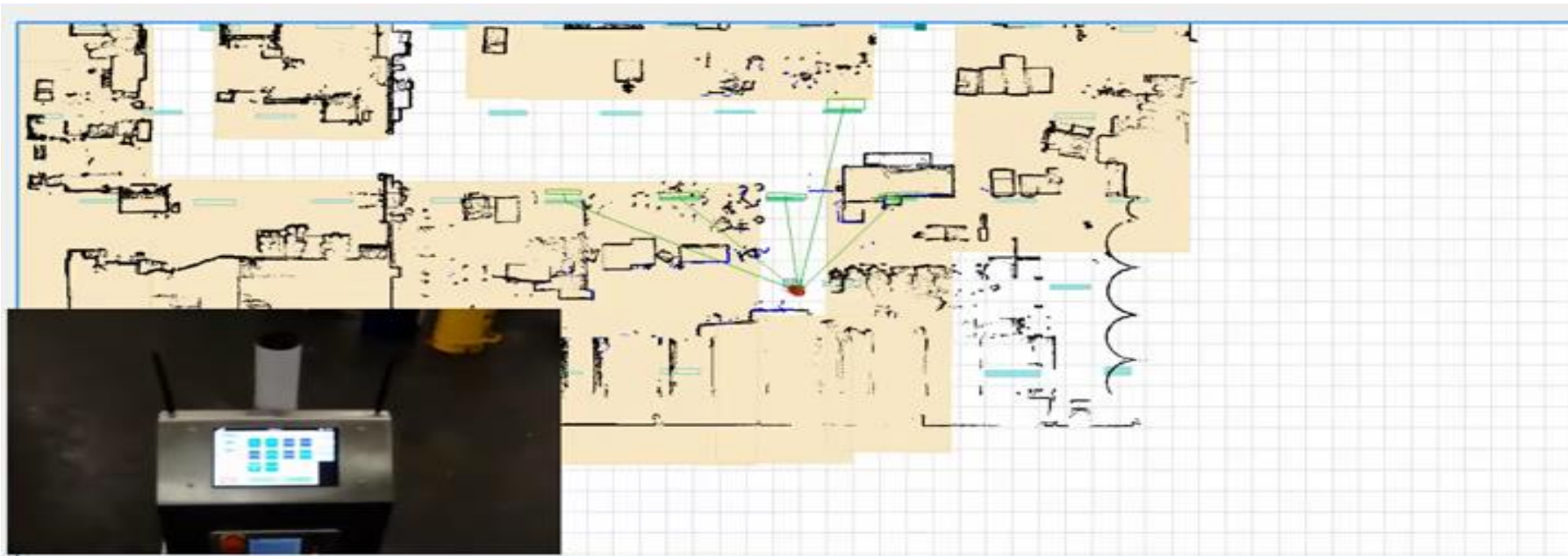
- Three shift operation
- Improved quality due to elimination of repetitive and physical handling
- Simulation of a fleet of 24 AIVs



# Mapping the work space



# Natural navigation in a Dynamic environment



# Summary

## Applications

Line side replenishment  
Work In Progress transport  
Finished Goods Inventory deployment  
Maintenance task integration  
Sample/ testing



Defects

Efforts caused by rework, scrap, and incorrect information.



Overproduction

Production that is more than needed or before it is needed.



Waiting

Wasted time waiting for the next step in a process.



Non-Utilized Talent

Underutilizing people's talents, skills, & knowledge.



Transportation

Unnecessary movements of products & materials.



Inventory

Excess products and materials not being processed.



Motion

Unnecessary movements by people (e.g., walking).

## Benefits

- Reduced wasted stock and labour movements
- Integrated platform ensures traceability
- Less stress on labour force
- Use labour in added values areas

# Summary

## Customisation



## Integration

- AIVs operate as part of a fleet
- Linked to Enterprise level
- Provide efficient, flexible, safe and traceable solutions

**Modernize** your workflow OMRON | 

**Flexible**

**Customizable Payload Designs**

- Easy conveyor-top integration
- Supports collaborative robotic arm
- Transports carts and totes
- Power, IO, Wi-Fi

**Safe**

**Full safety compliance**

- Works collaboratively with people
- Able to avoid static and moving obstacles
- Easy addition of E-Stop equipment



## Safety design

# Thank you for your attention

Please take some time to come and speak to  
Omron in the networking area....