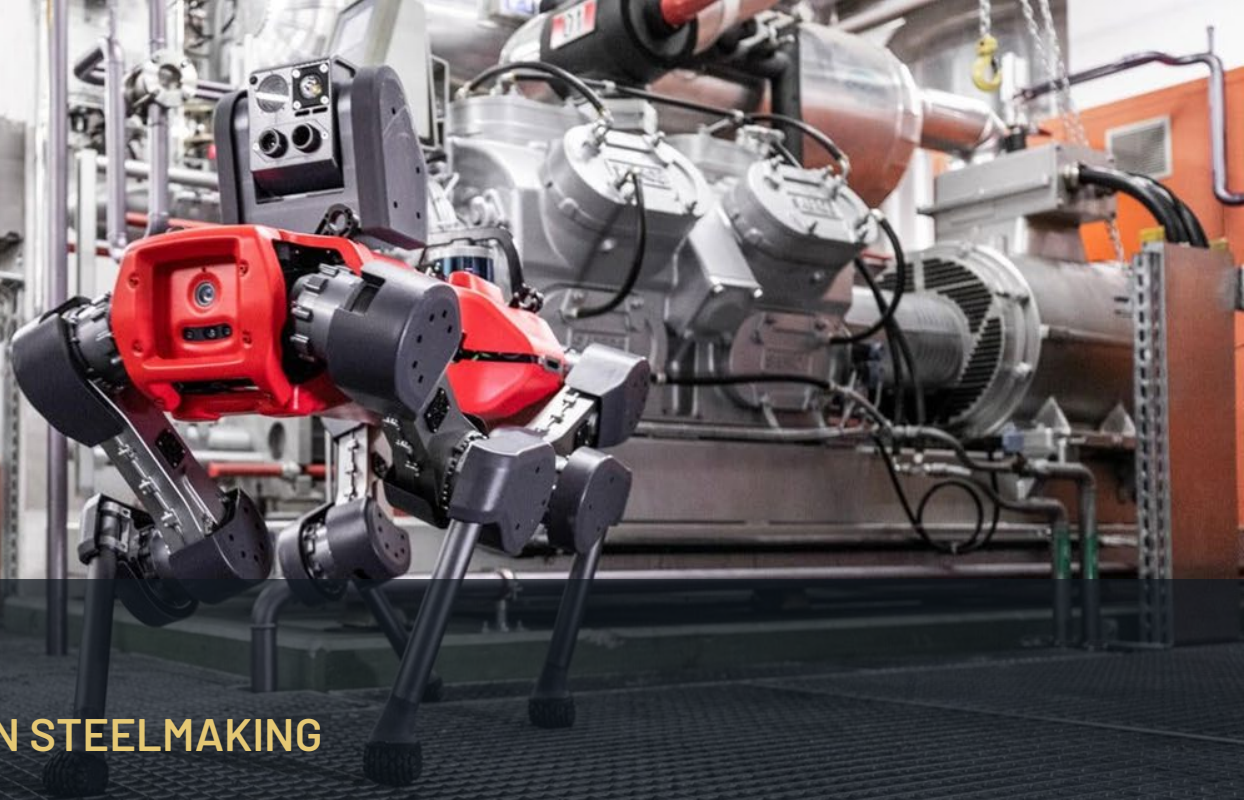


GREEN STEEL WC 2025 //



ANYbotics

AUTONOMOUS INSPECTIONS IN STEELMAKING



Luca Niccolini
Account Executive
Metals EMEA

ANYbotics

AGENDA

- Who are we: ANYbotics
- The Data problem
- How we solve the problem – Outokumpu
- Conclusion

Today's industrial operations face critical challenges



WORKFORCE SHORTAGE

1.5 million unfilled plant operator
positions until 2030 in the EU alone



LIMITED PRODUCTIVITY

Undetected issues lead to downtime
costs of \$270 billion each year



SAFETY REQUIREMENTS

Human error is the leading
cause of industrial accidents

We are on the verge of the next robotic revolution

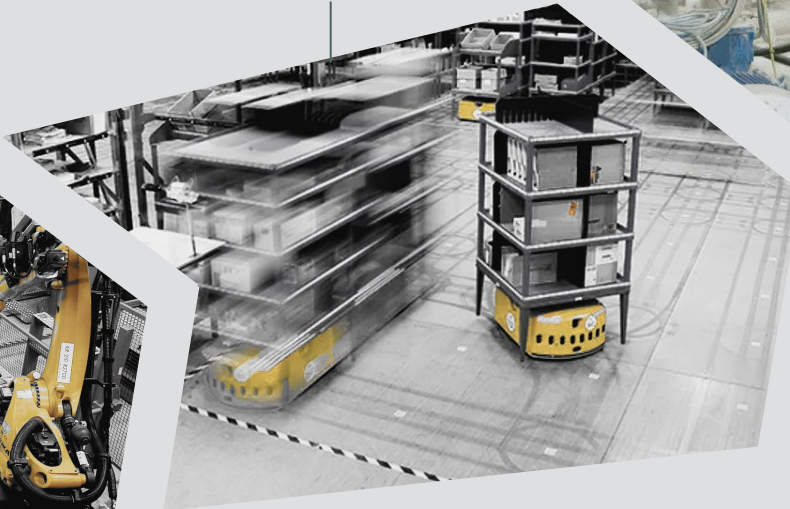
AUTOMATED MANUFACTURING

Enabled by 3 million
industrial robots in operation



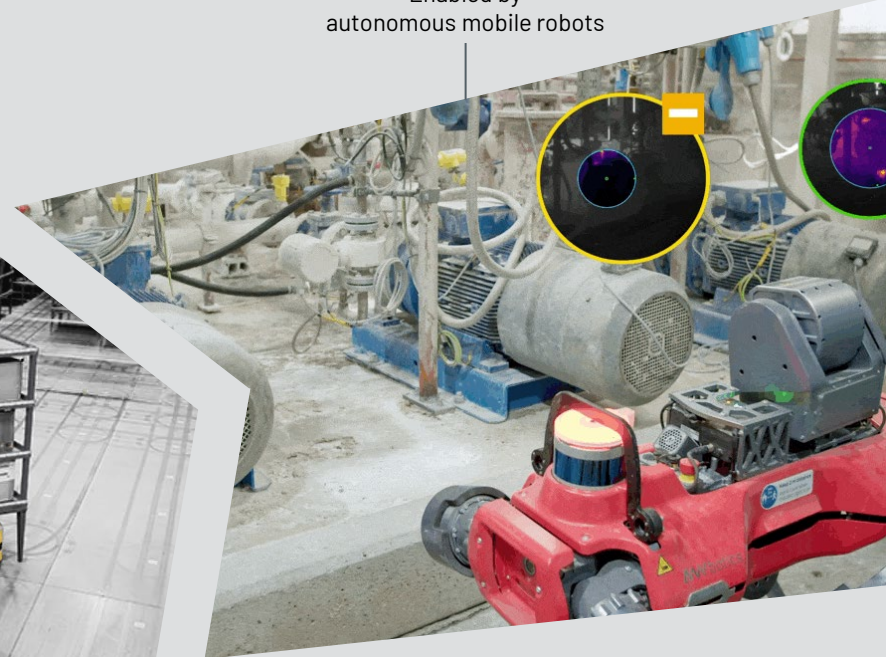
SMART WAREHOUSING

Enabled by >1 million
warehouse robots in operation



AUTONOMOUS INDUSTRY

Enabled by
autonomous mobile robots



ANYbotics is a global leader in autonomous mobile robotics

AI AGILITY

Pioneering AI-powered motion control capable of navigating the most complex terrain

LARGE-SCALE AUTONOMY

Automates tasks in large-scale facilities while leaving the environment untouched

SUPERHUMAN INSPECTIONS

Brings AI to the real world to uncover invisible risks beyond human perception & accuracy

INTEGRATED WITH ECOSYSTEM LEADERS



Integration with digital platforms provides an end-to-end robotic automation solution

World-leading robotics technology since 2009

2009
Robotics research
ETH zürich



2012
World's first agile electrical four-legged robot



2015
Patented robotic drive technology



2016
ANYbotics spin-off
ANYbotics



2018
World's first autonomous offshore inspection robot



2020
First robot sales to industrial customers



2021
Certified & industrial-grade inspection solution



2026
World's first legged robot for Oil & Gas and Chemicals





A better way to collect better data



Boost revenues

by increasing facility
uptime with **multisensory**
insights



Reduce costs

by enhancing
maintenance efficiency
with **automated data**
collection



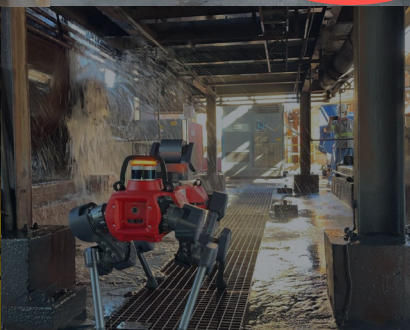
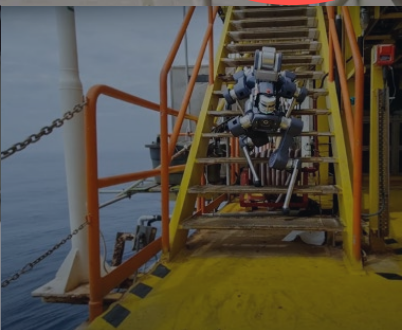
Keep workers safe

by reducing hazard
exposure with **robotic**
access to all
environments



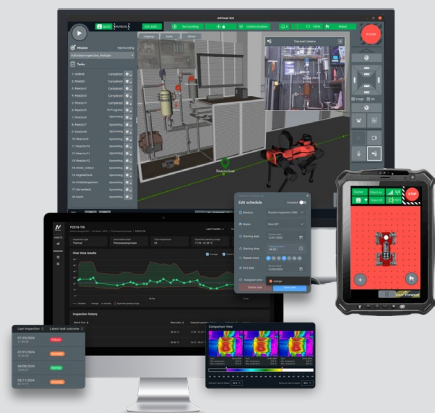
Reduce env. impact

by detecting gas leaks
with **advances gas**
monitoring



ANYBOTICS VALUE PROPOSITION//

The world's most advanced industrial inspection solution



WORKFORCE Software

Desktop and mobile interface for mission planning and robot control.

Data insights software



WiFi and 4G/5G/LTE connectivity
with enterprise WPA2 security



CE FC ANATEL

ANYmal

Industrial-grade & safety certified autonomous robot. IP67 water- and dust protected.

Features

ANYmal feature advanced mobility, built-in edge computing, 360° perception, fused-sensor autonomy, and automatic docking for recharging.

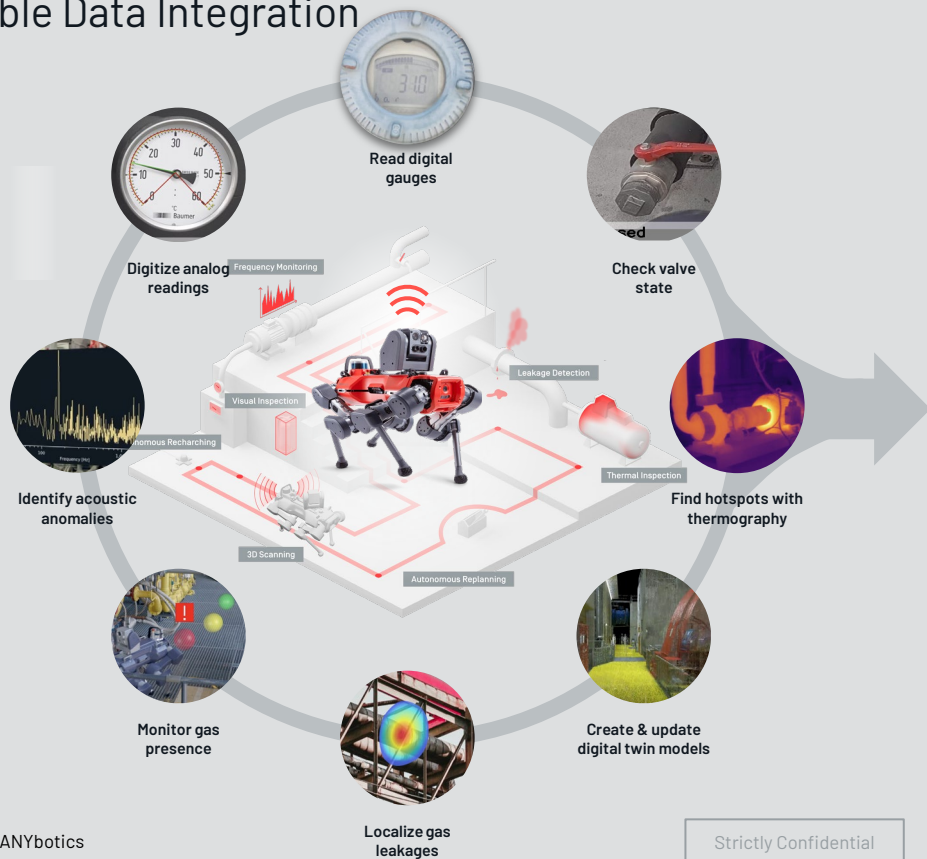


Additional payload – Gas detection system



Data Navigator

Flexible Data Integration



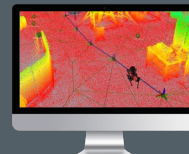
Data Navigator

Out-of-the-box data solution for immediate insights and short time-to-value. Start simple and avoid complex IT integrations.



Integration with digital platforms

API integration with leading digital twin, data ops, and CMMS solutions provides an end-to-end robotic automation solution.



Working with innovation leaders across industries

METALS



MINING & MINERALS



OIL & GAS



CHEMICALS



POWER



GE Power



Talent | Technology | Trust™



ANYbotics x Outokumpu



Purpose



Keep workers safe

Robotics to support
ZERO INCIDENTS



Reduce env. impact

Heat
Dust
Chemicals



Reduce costs

Maintenance
efficiency
Automated data
collection



Boost revenues

Data driven decision



The journey

May 2023

Site: Krefeld, Germany
Robot#1: "ROSIE"

- Reduction of exposure to pickling chemicals
- Enabling improved preventive maintenance
- Strong collaboration with the workers council
- Headcount neutral implementation

Sept 2023

Site: Avesta, Sweden
Robot#2: "ANGIE"

- Acid regeneration plant
- Isolated facility
- Reduction of exposure to pickling chemicals
- Enabling preventive maintenance
- Headcount neutral implementation

Jan 2024

Site: Tornio, Finland
Robot #3: "Jokkeri"

- Isolated crushing facility
- Headcount neutral implementation
- Reduction of exposure to asbestos containing dust, noise, vibration
- Enabling preventive maintenance

May 2025

Site: Tornio RAP5

- Reduction of exposure to pickling chemicals
- Enabling improved preventive maintenance
- Reduce workload
- Headcount neutral implementation



Business case – yearly benefit

AUTONOMOUS INSPECTION



Asset Condition Monitoring

Capture asset health parameters to prevent unplanned downtime.

\$0.5mil

downtime cost reduction



Autonomous Routine Inspections

Free up maintenance hours for higher level tasks.

\$200k

maintenance inspection hours



Compressed Air Leakages

Continuously monitor for compressed air leakages & localize leak source.

\$200k

energy cost savings



Gas Leakage Detection

Continuously monitor hazardous gas presence.

\$150k

savings



Reduce Hazard Exposure Time

Keep people out of harm's way

72% reduction exposure time in hazardous zones.



Why is ANYmal the right tool for the job?



INDUSTRIAL DESIGN

Rugged, impact resistant, anti-corrosive. Swiss engineering.




WATER & DUST-PROOF

Industrial-grade IP67 protection for the harshest environments.



ROBUST AUTONOMY

Autonomous capabilities built-into ANYmal's core



DYNAMIC NAVIGATION

Real-time obstacle avoidance and global re-routing with full site model



SEAMLESS INTEGRATION

API & SDK for integration in 3rd-party digital twin and CMMS.



ON-SITE SERVICES

Global support and partner network for effective services.





Thank you!

ANYbotics AG

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