Orbimind

Off-Road Autonomy & Robotics 2026

(Deployment, Safety, and Scalable Operations)

28-29 October, 2026
Munich, Germany

Organizing Committee

Leandro O. Santos
Senior Strategic Developer
Innovation Center Europe
KUBOTA Corporation

Pablo Antonino
Department Head (Virtual Engineering)
Fraunhofer IESE

Estefanía Betancourt
Team Lead, Construction Automation & Robotics
PORR AG

Mohit Narwal
Program Development & Strategy
Orbimind AB

- **30+ Senior Technical Speakers**
- 100+ Engineering & Operations Leaders
- Tailored Exhibition & Sponsorship Zones
- Real-World Deployment Case Studies
- Focus on Safety, Integration, and ROI

Media Partners

#OffHighwayAutonomy

OFF-ROAD AUTONOMY & ROBOTICS

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DAY-01

October 28, 2026 (Wednesday)

09:00 Registrations

09:05 Moderator's Opening Remarks

09:30 What Works on Real Jobsites Today: Practical Autonomy in Construction Equipment

- Why on-site operators are still essential, even for self-operating machines
- What autonomy actually works on construction jobsites today
- Key lessons from deploying semi-autonomous systems in real conditions
- Safety, reliability, and trust as the real adoption drivers

Casper Christiansen
Lead Engineer
Husqvarna Construction

Husqvarna Group

10:05 Autonomy at Scale: How OEMs Build the Right Partner and Startup Ecosystem

- Transitioning from Pilots to Multi-Machine Operations
- What OEMs expect from partners
- Why most partnerships fail
- Scaling autonomy through ecosystems

Leandro O. SANTOS
Senior Strategic Developer
Innovation Center Europe | KUBOTA Corporation

Kubota

10:40 Mixed-Fleet Autonomy in Industrial Sites: Engineering Interoperability Beyond Pilots

- Cross-OEM coordination in confined sites
- Traffic and routing logic between autonomous machines
- Site supervision in mixed-fleet operations

Peter Sandberg
Strategic Product Manager - Autonomous Mining
Scania Group

SCANIA

11:15 Defining the Operator Role in Autonomous Worksites

- Teleoperation and remote supervision models
- Alerting, escalation, and override strategies
- **Operator workload and trust management**
- Workforce training and change management

Mohamed Bakr
Head of Artificial intelligence
Volvo Autonomous Solutions

VOLVO

11:50 Trustworthy Autonomy in Unstructured and Non-Deterministic Environments

- Operating beyond maps and models
- Robust autonomy under real conditions
- Safe degradation instead of failure
- Handling dust, weather, degradation

Patrizio Pelliccione
Director of the Computer Science
GSSI - Gran Sasso Science Institute

GSSI GRAN SASSO SCIENCE INSTITUTE SCHOOL OF ADVANCED STUDIES

12:20 Lunch Break

13:30 Designing Resilient Autonomous Vehicle Architectures for Harsh, Unstructured Environments

- Redundant perception and multi-layer sensor fusion
- Fail-operational system design and degraded mode strategies
- Edge computing under vibration, dust, and thermal stress
- Secure communication in GNSS-denied environments
- Designing autonomy for mission-critical reliability

Serkan Balbay
Vetronics and Weapon Systems Director
FNSS Defence Systems

FNSS

14:05 Functional Safety in Autonomous Mining: Designing for Mission-Critical Reliability in Underground and Surface Operations

- Safety architecture for autonomous mining equipment
- Redundancy and fail-operational design strategies
- From isolated-area to shared-space autonomy
- Validation approaches for mission-critical systems
- Fail-safe system design for underground and surface operations

Ari Konttinen
Functional Safety Expert
Sandvik

SANDVIK

14:40 Engineering Physical AI for Off-Road Autonomous Systems through Digital Twins and Co-Simulations

- Adaptive digital twins for AI
- Co-simulation across system layers
- Continuous validation of autonomy
- Predictive testing before deployment

Pablo Antonino
Department Head (Virtual Engineering)
Fraunhofer IESE

Fraunhofer IESE

15:15 Intelligent Attachments: Turning Passive Implements into Active, Data-Driven Systems

- Sensorized loader interfaces and real-time load intelligence
- Smart attachment control integration with vehicle ECUs
- Data feedback loops from implementation to autonomy stack
- Safety-critical coupling in automated operations

Gustaf Lagunoff
Head of R&D JOST Agriculture
JOST Umeå - Quicke Global

Quicke

15:45 Defining the Operator Role in Autonomous Worksites

- Teleoperation and remote supervision models
- Alerting, escalation, and override strategies
- **Operator workload and trust management**
- Workforce training and change management

Senior Representative
TBA
APM Terminals

OFF-ROAD AUTONOMY & ROBOTICS

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DAY-02 October 29, 2026 (Thursday)

09:00 Registrations

09:05 Moderator's Opening Remarks

09:30 From Pilot Projects to Scaled Deployment. What Contractors Need from Autonomous Equipment

- **Site integration and workflow alignment**
- Data ownership and system interoperability
- Reliability in harsh field conditions

Estefania Betancourt
Team Lead Construction Automation & Robotics
PORR AG

10:05 Robust Autonomy System Architecture for Off-Highway Use

- Perception, planning, and control architecture choices
- Redundancy and fault tolerance strategies
- Software update and lifecycle management
- Human interface as part of the system design

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TBA

10:40 Human–Machine Interface Design for Fleet Supervision

- **Interface design for multi-machine supervision**
- Alert prioritization and decision thresholds
- Lessons from real-world UI implementations

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TBA
Industry Case Study

11:15 Procurement, Evaluation, and Vendor Qualification

- Technical and operational evaluation criteria
- Validation and performance proof requirements
- **Service, support, and lifecycle considerations**
- Avoiding over-specification and under-delivery

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11:50 Autonomy Performance in Unstructured Terrain

- Operating without fixed maps or structured layouts
- Dust, vibration, weather, and low-visibility conditions
- Fallback logic and degraded-mode operation.
- Validation approaches for non-deterministic environments

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TBA
Industry Case Study

12:20 Lunch Break

13:30 Interoperability Across Mixed Equipment Fleets

- Integrating autonomy across different OEM platforms
- Control, data, and sensor alignment challenges
- Interface standards and abstraction layers
- Managing vendor dependencies and lock-in

Senior Representative
TBA
Volvo Construction Equipment

14:15 Energy Systems for Autonomous Fleets: Unlocking Battery Value Beyond Propulsion

- High battery costs as an adoption barrier
- V2L as a mobile power source on autonomous sites
- V2G for automated fleet charging optimisation
- Bidirectional charging as enabling technology
- V2X ecosystem for off-highway machines

Philipp Tielmann
Director Sales, Business Development & Product Management
Jungheinrich Powertrain Solutions

15:00 Cross-Industry Pathways to Scalable Autonomy Deployment

- Lessons shared across mining, construction, and agriculture
- Aligning technology, operations, and policy
- Requirements for long-term autonomy adoption
- Industry collaboration priorities

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15:45 Roles and Responsibilities in Autonomous Deployment

- OEM, integrator, and operator accountability
- Contractual and operational ownership models
- Coordination challenges during deployment
- Best practices for shared responsibility