

87° IFIP WG 10.4 MEETING

Summary for Session 1

An industry overview on mission-critical challenge

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Session overview

This session focused on mission-critical infrastructure, enterprise connectivity, and industrial policy for future challenges.

Presentations covered real-world applications from mining, oil & gas, and industry 4.0 perspectives.

Mario Azevedo, Vale, BR

- Connected and intelligent mission critical applications for pit-to-port operations
- Key points
 - Autonomous mining and mission-critical infrastructure.
 - Challenges in digital transformation: availability, reliability, and safety.
 - The role of edge computing, AI, and predictive maintenance in modern mining.
 - Expanding LTE and connectivity in mining operations for better efficiency.

Maximilliam Nunes Starling Vieira, Petrobras, BR

- Mission critical at Petrobras - Challenges and solutions
- Key points:
 - Mission-critical operations at Petrobras(oil & gas extraction, refining, and distribution), where failures are unacceptable.
 - Challenges in operational communication and the convergence of different systems.
 - Private LTE networks as enablers of transformation in offshore operations.
 - -Autonomous operations and submarine wireless technology advancements.

Marcio Veronesi, Nokia, BR

- Going Beyond Connectivity: architecture for Enterprise use cases
- Key points:
 - The role of private wireless LTE/5G in enterprise digital transformation.
 - Industry 4.0 and its impact on connectivity, automation, and predictive analytics.
 - Digital twins, smart factories, and remote monitoring applications.
 - Challenges in integrating IT and OT in industrial environments.

Valdenio Araujo, ABDI, BR

- Industrial policy challenges for critical systems of the future
- Key points:
 - Industrial policy challenges for critical systems of the future.
 - The importance of national sovereignty in technology and defense.
 - Investment trends across ICT, automotive, and health sectors.
 - The role of private-public partnerships in industrial digital transformation.

Common Themes and Future Directions

- Connectivity is crucial for mission-critical operations across industries.
- AI, automation, and digital twins are transforming operations.
- The balance between private and public infrastructure investments.
- Future challenges: cybersecurity, reliability, and sustainability.
- Open questions: How can we ensure infrastructure resilience in an evolving digital landscape?