

# Call for Papers

## Explainable, Interpretable & Trustworthy AI for Next-Generation Network Autonomy (EXIT-ANA 2026)

### Organizers:

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### Scope and Topics of Interest

Artificial Intelligence (AI) and Machine Learning (ML) techniques are rapidly transforming next-generation communication networks, enabling autonomous, intent-driven, and self-optimizing operations across 5G, O-RAN, and emerging 6G architectures. However, the increasing reliance on opaque “black-box” AI models raises critical concerns regarding trust, transparency, explainability, and regulatory compliance, particularly in mission-critical network environments. In response to these challenges, this special session aims to bring together researchers and practitioners working on explainable, interpretable, and trustworthy AI for network autonomy, operations, and management. The session will provide a forum to discuss novel methods, system designs, and real-world deployments that enable operator trust, human-in-the-loop decision-making, and compliance with emerging regulations, such as the EU AI Act.

The workshop will cover a broad spectrum of topics at the intersection of XAI and next-generation networking, including but not limited to:

- XAI and Trustworthy AI for network autonomy, operations, and management.
- Explainability methods for telecom AI/ML models (LIME, SHAP, Integrated Gradients, Grad-CAM, surrogate models, counterfactuals).
- Operator-centric interpretability and human-in-the-loop network decision support.
- Transparent and verifiable AI for anomaly detection, fault/failure prediction, and SLA assurance.
- Explainability challenges in 5G/6G, O-RAN, and cloud-native network architectures.
- Metrics, benchmarking, and validation frameworks for evaluating XAI in communication networks.
- Regulatory and compliance considerations, including EU AI Act, ETSI ENI, and O-RAN Alliance requirements.
- System design patterns enabling trustworthy closed-loop automation and intent-based networking.
- Case studies and real-world deployments of XAI-enabled autonomous network control.
- Future challenges and emerging research opportunities in explainable, trustworthy, and autonomous networking.
- AIOps/MLOps Applications such as anomaly triage, root-cause analysis, and SLA violation explanations.
- XAI for LLM-based network agents, multi-agent systems, and IoT-scale environments.
- Security and privacy implications of explaining AI decisions
- Digital twins and synthetic data generation for XAI model training.

As part of the 34th IEEE Signal Processing and Communications Applications Symposium (SIU 2026), to be held on July 7–10, 2026, in Tuzla, Istanbul, this special session will provide a focused forum for presenting research on explainable, interpretable, and trustworthy AI technologies for next-generation autonomous networks. We invite researchers and practitioners from academia and industry working on AI-driven networking, explainable AI, and trustworthy autonomous systems to submit their contributions and participate in this session.