



Policy Brief October 2025

AI Your Way: Trusted, Scalable, and Ready to Deliver

Findings from AI Data and Robotics Forum (ARDF) workshop | 23 September 2025 | Stavanger, Norway

Abstract

Artificial Intelligence (AI) is reshaping Europe's economy, governance, and society. Yet, trust remains the decisive factor determining whether AI strengthens Europe's resilience and autonomy – or deepens divides between innovation and accountability.

At the 2025 AI, Data, and Robotics Forum (ADRF), the workshop *AI, Your Way: Trusted, Scalable, and Ready to Deliver* brought together researchers and practitioners from five Horizon Europe projects. **THEMIS 5.0**, **TANGO**, **AI4RealNet**, **PEER AI**, and **HumAIne**, to explore how

trustworthy, human-centric, and scalable AI can serve Europe's strategic priorities.

Main Finding:
Europe is converging on a shared framework for operationalizing trustworthy AI - embedding explainability, ethics, and compliance throughout the AI lifecycle to deliver human-aligned, accountable innovation.

The workshop confirmed that Europe's path to AI leadership lies not in speed, but in trustworthiness as a strategic advantage, making AI that citizens, industries, and institutions can confidently use and govern.

Key Points

Trust must be built in, not added on. Each project demonstrated that explainability, oversight, and ethical safeguards need to be embedded throughout the AI lifecycle, from design to deployment.

Human-AI collaboration is Europe's differentiator. Rather than pursuing full automation, European AI research emphasizes hybrid intelligence – systems that reason, learn, and decide with humans in the loop.

Operational alignment with the EU AI Act is achievable. Projects like THEMIS 5.0 and HumAIne showed that compliance can be integrated into innovation processes through structured pipelines, knowledge graphs, and reference architectures.

Open collaboration strengthens sovereignty. By promoting interoperability, transparency, and open-source infrastructures, Europe can maintain control over critical technologies while accelerating adoption and trust.



AI, Data,
Robotics
Forum
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Challenge: Bridging the AI Trust Gap

Prof. Gregoris Mentzas (ICCS/NTUA) highlighted AI's growing "trust deficit". Adoption is rising, but confidence among citizens and institutions lags behind. He identified three core tensions:

- **Transparency vs. Performance:** Powerful systems remain opaque.
- **Autonomy vs. Accountability:** Responsibility blurs as AI decisions increase.
- **Innovation vs. Regulation:** Rapid progress must align with ethical safeguards.

Trust must be built in by design through transparency, oversight, and governance as an enabler, not a barrier, to innovation.

Five Horizon Europe projects in Action to Advance Trustworthy AI



TANGO: Cognitive Foundations for Hybrid Decision-Making

- **Goal:** Enable humans and AI to co-reason, negotiate, and learn collaboratively.
- **Approach:** Game-theoretic "virtual bargaining" for shared understanding between humans and AI.
- **Applications:** Perinatal decision support, surgical coaching, fair credit scoring, social policy design.
- **Policy relevance:** Demonstrates how participatory and explainable AI can enhance decision quality, safety, and legitimacy in public and private domains.

THEMIS 5.0: Trustworthiness Assessment Through Agentic AI

- **Goal:** Make trust operational through a TRUST framework.
- **Approach:** A neuro-symbolic, multi-agent system assessing robustness, fairness, and compliance across AI lifecycles.
- **Innovation:** Combines a Trustworthiness Knowledge Graph with a four-phase process — Identify → Assess → Explore → Enhance.
- **Policy relevance:** Provides a structured pathway for AI Act compliance, translating ethical principles into measurable practice.

AI4REALNET: Trustworthy AI for Critical Infrastructures



- **Goal:** Integrate explainable and safe AI into energy and transport networks.
- **Approach:** Distributed reinforcement learning, predictive monitoring, and human-AI co-learning.
- **Innovation:** Interactive assistants that give operators interpretable insights and early warnings.
- **Policy relevance:** Strengthens safety and resilience in Europe's critical infrastructures, a cornerstone of technological sovereignty.



PEER AI: Human-Centered AI for Sequential Decision-Making

- **Goal:** Build adaptive AI assistants for manufacturing and smart cities.
- **Approach:** *Hyper-Expert Collaborative AI Assistant* supporting bi-directional learning.
- **Applications:** Accessibility-aware route planning, in-store navigation, pharmaceutical inspection, and warehouse optimization.
- **Policy relevance:** Promotes responsible automation, AI that supports human judgment and inclusion rather than displacement.



humAIne: Toward a Unified AI Reference Architecture

- **Goal:** Overcome fragmented AI architectures by defining a unified, modular framework.
- **Approach:** Lifecycle coverage from data preparation to monitoring, with embedded privacy, fairness, and explainability.
- **Innovation:** Supports deployment across cloud, edge, and on-premise environments; prevents vendor lock-in.
- **Policy relevance:** Advances interoperability and compliance, reinforcing Europe's digital autonomy and open-standards leadership.

Policy Analysis: Building Trust into European AI

A. Operationalize Trustworthiness

Projects demonstrated that trust can be quantified, managed, and audited through structured frameworks.

Recommendation: Integrate trust metrics and certification schemes into EU R&I programmes and public procurement.

B. Strengthen Human-AI Collaboration

Europe's competitive edge lies in hybrid intelligence.

Recommendation: Fund research and innovation that enhances human oversight, interaction design, and participatory AI.

C. Align Innovation with Regulation

EU projects are proving that compliance and creativity can coexist.

Recommendation: Embed THEMIS 5.0 and HumAIne methodologies in AI Act implementation guidelines and regulatory sandboxes.

D. Promote Open and Interoperable Ecosystems

Transparency and modularity are critical for adoption and sovereignty.

Recommendation: Support open-source architectures, data spaces, and reference models to ensure interoperability across sectors.



The Way Forward

Europe's leadership in AI will not be defined by speed, but by trustworthiness as a strategic advantage. The workshop confirmed that:

- **Trustworthiness** is measurable and actionable.
- **Human–AI synergy** is central to performance and ethics.
- **Regulation** can accelerate innovation when embedded early.
- **Open collaboration** strengthens sovereignty.

Together, THEMIS 5.0, TANGO, AI4RealNet, PEER AI, and HumAlne illustrate how Europe can align technology, regulation, and values – making trust Europe's defining contribution to global AI governance.

Stakeholder Call to Action

To turn research into real-world results, Europe must act decisively.

- **Policymakers:** Embed project outcomes into AI Act implementation and develop EU-wide trust certification schemes.
- **Researchers & Innovators:** Build interoperable trust toolkits and scale human-centric, open-source AI solutions.
- **Industry & Public Sector:** Integrate trust metrics into procurement, invest in AI literacy, and join European data and trust ecosystems.

Together, Europe can make trust its global advantage – creating AI that is transparent, accountable, and aligned with European values.



Acknowledgements

Projects

THEMIS 5.0 - www.themis-trust.eu

TANGO - www.tango-horizon.eu

AI4RealNet - www.ai4realnet.eu

PEER - www.peer-ai.eu

HumAlne - www.humaine-horizon.eu



All projects have received funding from the European Union's Horizon 2020 Programme under Grant Agreements (GA) #10011121042 (THEMIS 5.0), 101120763 (TANGO AI), 101119527 (AI4RealNet), 101120406 (PEER) and 101120218 (HumAlne).