

Applying Value-based and Social Acceptance of Technology methodologies in the development of 6G Proof-of-Concepts

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Abstract — The transition toward AI-native 6G networks necessitates not only technological innovation but also an ethical, societal, and regulatory alignment. This paper presents the value-based and socially grounded methodology applied in 6G-DALI project to align technological Proof-of-Concepts (PoCs) with societal values and expectations. Leveraging interdisciplinary methodologies rooted in Social Acceptance of Technology (SAT) and Key Value Indicators (KVI), this paper proposes an integrated assessment model for 6G experimentation applied in the 6G-DALI project. This model supports ethical AI development, regulatory compliance (GDPR, AI Act), and sustainability goals through co-design with stakeholders and use-case-specific evaluations. The approach is illustrated through three PoCs, each addressing challenges such as trust, transparency, data sovereignty, environmental efficiency, and fairness in federated AI operations. This work contributes a novel operational framework for embedding human-centric values in software defined networks and AI-driven 6G systems.

Keywords — 6G, Social Values, Social Acceptance of Technology, Value Impact, Ethics and Regulatory compliance.

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