

Toward Intelligent and Ubiquitous Connectivity: A Review of 5G/6G, IoT, Satellite, Direct-to-Cell, AI/ML, and Network Digital Twin Integration

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Abstract: *This paper reviews the convergence of advanced wireless technologies—5G, 6G, IoT, satellite communication, and Direct-to-Cell (DTC)—with Artificial Intelligence (AI), Machine Learning (ML), and Network Digital Twin (NDT) frameworks. These integrations promise intelligent, resilient, and scalable communication systems. We highlight current developments, challenges, and future directions, emphasizing the transformative role of AI-driven digital twins in managing complex hybrid networks.*

Keywords: wireless technologies

