3rd Workshop on Data Driven and AI-Enabled Digital Twin Networks and Applications (TwinNetApp)

**Workshop organized in conjunction with
IEEE Global Communications Conference (GLOBECOM) 2025**

Scope and Motivation

The next generation of technologies is envisioned to connect the physical and digital worlds. In this regard, Digital Twins (DT) is an emerging technology that has taken the world by storm due to its multiple benefits and deployment in interdisciplinary applications ranging from real-time remote monitoring to healthcare, industrial control systems and predictive maintenance in aerospace. DT connects the physical and digital worlds by building an accurate virtual replica of system objects in real-time. Real-time network monitoring, performance testing, optimization, and fast simulation are some examples that exploit DT advantages in the communication domain and beyond. DT delivers a new generation platform to analyze and test complex systems that is not currently available in traditional simulations and evaluations. Therefore, the use of DT is required in communication systems. Further, DT can deliver seamless analysis, monitoring, and predictions between digital and virtual counterparts of real-world systems, when it is used together with next-generation mobile communications (5G/6G), Virtual Reality (VR), Internet of Things (IoT), Artificial Intelligence (AI), Transfer Learning (TL), 3D models, Augmented Reality (AR), distributed computing and intelligent health applications. The workshop will invite authors to submit papers presenting new research on all aspects of DT networks, systems and applications.

Important Dates

Submission Deadline
~~15 July 2025~~
7 August 2025 (FIRM)

Notification of Acceptance
1 September 2025

Camera Ready
1 October 2025

Best Paper Award (800$) sponsored by BTS Group

Topics of Interest

Topics of interest include, but are not limited to:

- Data-driven and IoT-based DT networks for real-time communication systems
- Real-time communication protocols for DT networks
- DT-enabled health applications
- Wireless communications for cyber-physical DT applications
- Security and privacy concepts in DT
- Trustworthy AI enabled DT applications
- DT-assisted AI applications for smart cities
- Communications protocols for enabling DT deployment in real-world applications
- AI applications of DT systems
- DT in Edge/Fog/Cloud Computing
- DT for enhanced Mobile Broadband (eMBB), massive Machine Type Communications (mMTC), and Ultra Reliable Low Latency Communications (URLLC) applications
- DT for resource management and network optimization
- Connected networking systems for environmental sensing
- DT for precision agriculture, smart city and industry 4.0 applications
- Real-world DT simulations, prototypes, and testbed demonstrations

General Chairs

- Berk Canberk, Edinburgh Napier University, UK (B.Canberk@napier.ac.uk) (IEEE Senior Member)
- Octavia Dobre, Memorial University, Canada (odobre@mun.ca) (IEEE Fellow)
- Marco Di Renzo, Université Paris-Saclay, CNRS, CentraleSupélec, Laboratoire des Signaux et Systémes, France (marco.di-renzo@universite-paris-saclay.fr) (IEEE Fellow)