



THz INDUSTRIAL MESH  
NETWORKS IN SMART SENSING  
& PROPAGATION ENVIRONMENTS

# 6G CONNECTIVITY IN FACTORY FLOORS

Ubiquitous unlimited machine-2-machine  
connectivity in industrial environments



Co-funded by  
the European Union

**6G**SNS

# CURRENT PROBLEMS

Future **wireless networks** are envisioned to support novel applications that **require similar performance as wired networks** in terms of data rate (Tbps), ultra-low-latency, and reliability, while also enabling new applications such as integrated communications and sensing, with mm-level localization accuracy requirement.

The current 5G approaches have a hard time keeping up with such envisioned applications

# OUR SOLUTION

TIMES addresses this problem by **combining novel radio channel propagation measurements and modelling approaches**, spectrally efficient and reliable communications at Terahertz spectrum bands with **intelligent mesh networking protocols and smart sensing and shaping** of the propagation environment through **reconfigurable meta-surfaces**.

TIMES extends the state-of-the-art on three fronts:

1. **Propagation channel measurements and characterization in THz bands**, including measurement and modelling of meta-surfaces and electromagnetic leakage in complex scenarios;
2. Developing **technological enablers for reliable THz communications** (e.g., smart beam management, ultra-massive MIMO, THz-tailored PHY and MAC design, meta-surfaces, and new mesh-based architecture);
3. **Implementation of a THz mesh network prototype**, including design and fabrication of both active (transceivers) and passive (meta-surface) nodes, to validate selected technological enablers developed in TIMES.

# THE PARTNERS

TIMES is a consortium of 10 european partners from both the Academic and the Industrial world:





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## CONTACT

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