

Shaping the Future of Networks: From Global Trends to Collaborative Telecom Innovation

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Agenda



Türk Telekom in Numbers



Global Academic Trends



Network for Technological Sovereignty



Key Takeaways

Türk Telekom in Numbers


58 M
Subs


571.000 km
fiber infrastructure
in 81 provinces


2nd 
in Europe 

6G TTLAB

3 R&D Centers

**TURK
PATENT**
TÜRK PATENT VE MARKA KURUMU

1st
In Patent
Applications



WEB OF SCIENCE



2nd
among European
Telecom Operators

Roles in International Organizations



International Telecommunication Union
SG21 Vice Presidency
ITU-T Quality of Service Development
Group (QSDG) Vice Presidency



Wireless Broadband Alliance
Board Membership



Linux Foundation Broadband
Group Co-Chair



Türk Telekom Innovation Lab
and BBF Collaboration



ISAC Group Rapporteurship
*Hosting the General Assembly Meeting



Technical Working Group
International Contributions



Technical Working Group
International Contributions



Technical Working Group
International Contributions



Technical Working Group
International Contributions

Global Academic Trends

The New Areas are Developing on Academic Researches



**Volume of
Academic Research
on the Declines**

Neural Networks
Big Data
NLP
VR
Blockchain
Cybersecurity



**Academic Research
Momentum on the Rise**



AI



Quantum Computing



NTN



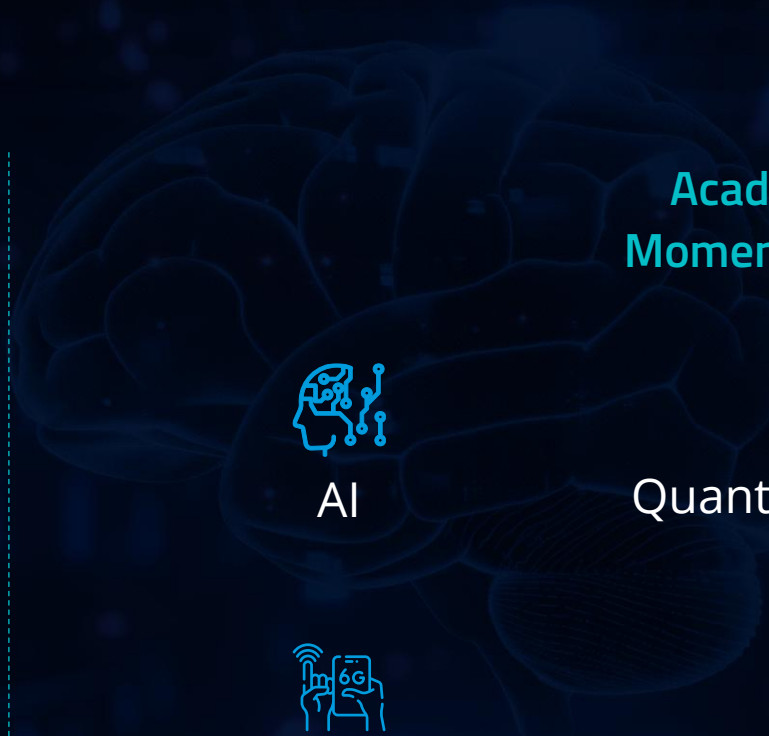
6G



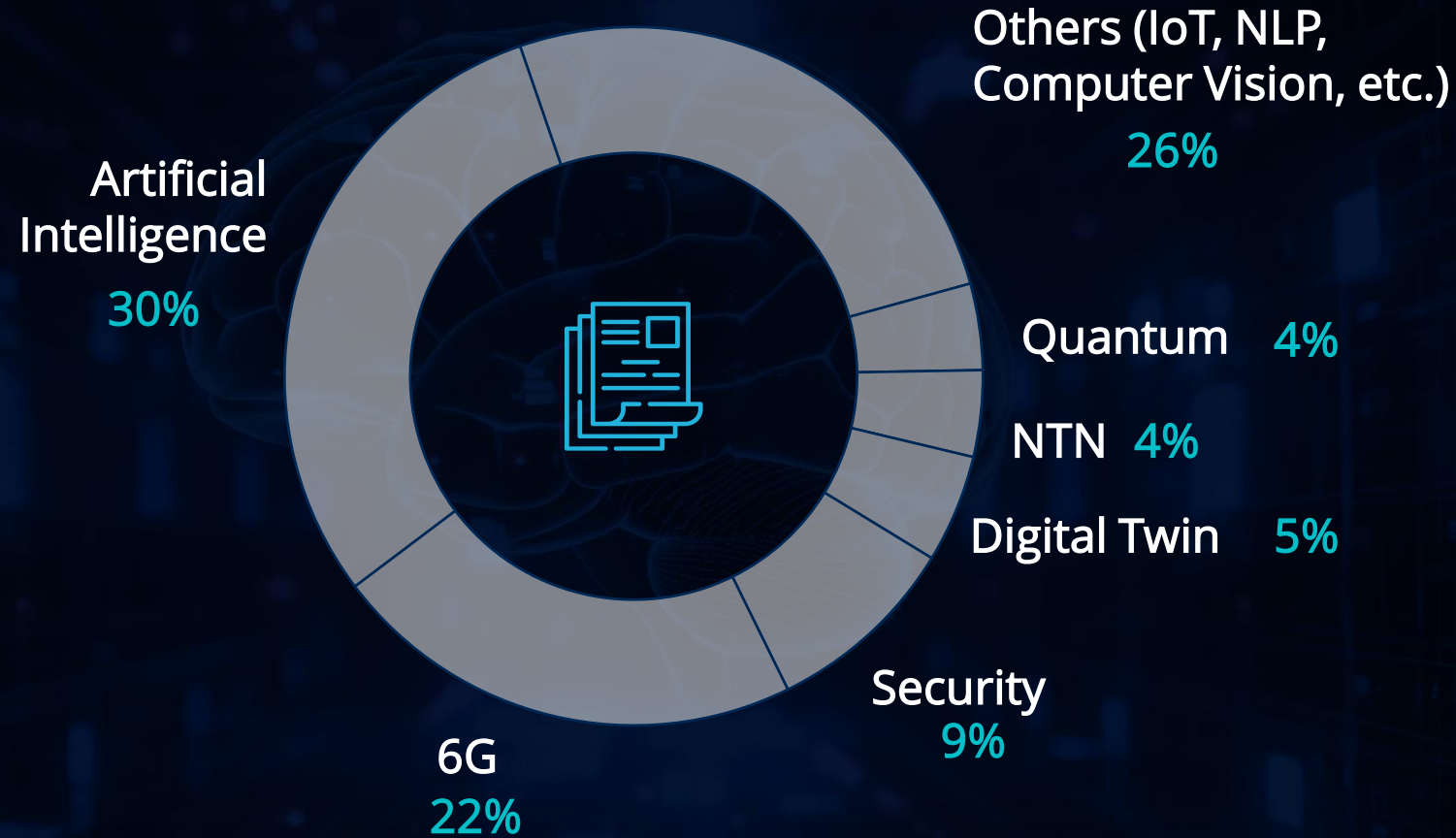
Digital Twin



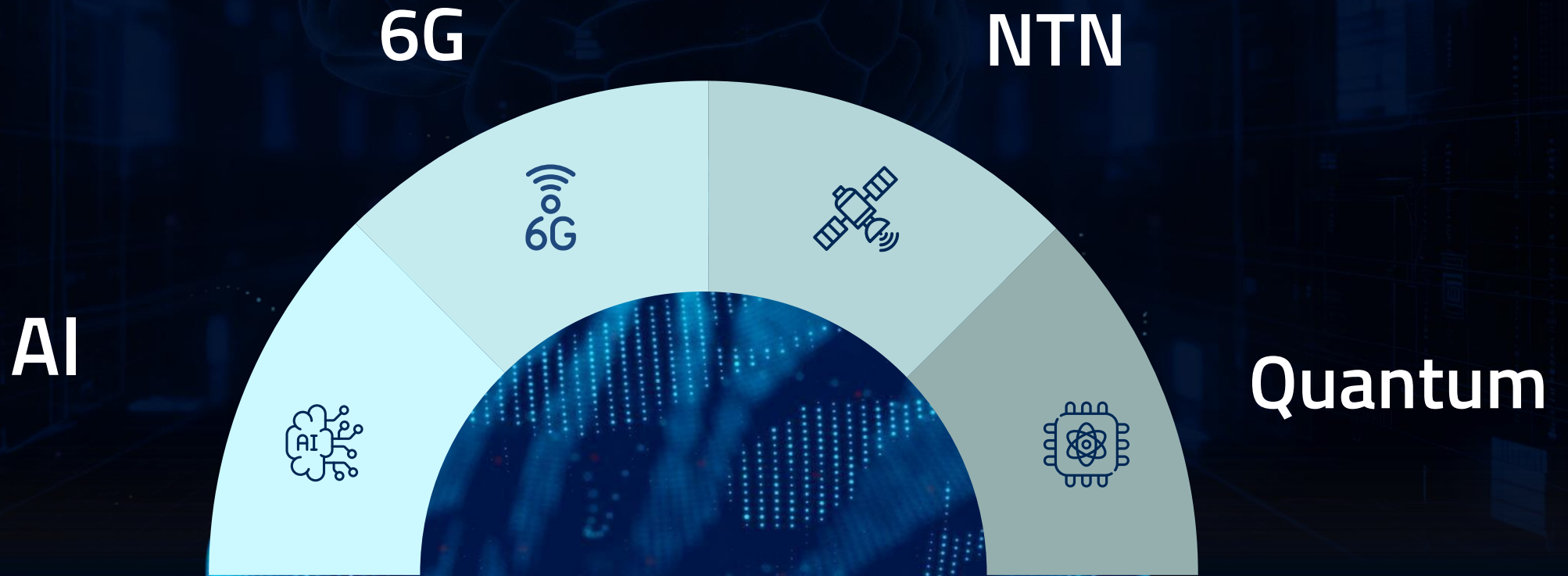
Energy Efficiency



Türk Telekom's Academic Perspective



Network for Technological Sovereignty



Artificial Intelligence

L4 autonomy for networks till 2030

280 use-case



Optimization



Anomaly
Detection



Image
Processing



Predictive
Maintenance



Call Center
and Media



Success

- Ministry of Industry and Technology – Productivity Project Awards, 1st Place in Digital Transformation – 2025
- 9th Istanbul Carbon Summit – ITU, Low Carbon Hero Award – 2024
 - Gartner Eye on Innovation Europe – 1st Place – 2024
- IDC Turkey – Future of Intelligence – 1st Place – 2023, 2021, 2019
 - TM Forum Excellence Awards – Finalist – 2020, 2022, 2023
 - Futurenet World, Glotel Finalist
 - Gartner Eye on Innovation 2026
 - TT Vision and NEO Projects - Finalist



GAPS

Energy Efficiency
Hardware Cost
AI Security

6G

Develop national 6G infrastructure



TÜBİTAK 1515-Supported 6G Laboratory



6G Vision Document



Standardization Contributions to ITU, 3GPP, and ETSI



MWC'26 World's First 6G Wi-Fi Integrated Sensing Demo



A First in Europe: ISAC Use Case



ETSI ISAC Rapporteurship



6G-Wi-Fi Convergence Project Leadership

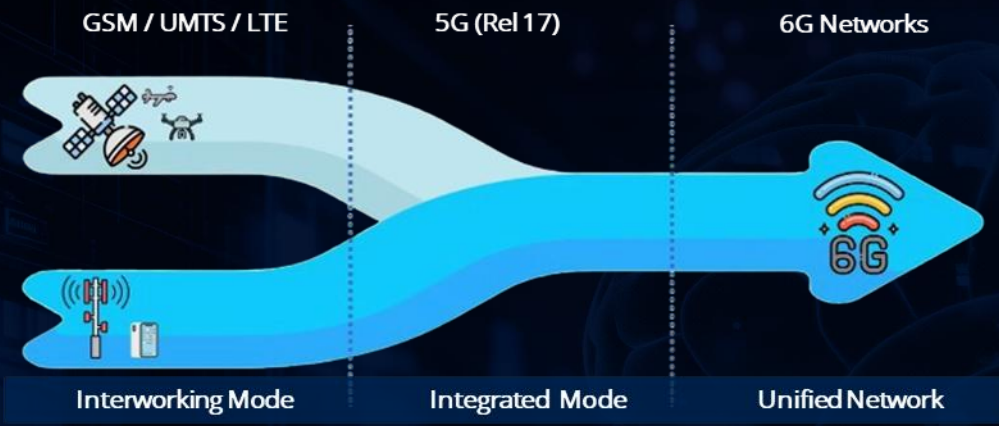


Wi-Fi and Mobile on 6GHz Automated Frequency Coordination (AFC)

GAPS

6G Services
Convergence / Integration

NTN



Backhaul



IoT



R&D / University
Collaborations



Timing and
Synchronization



Emergency
Communication



GAPS

Frequency standards must be established for NTN (WRC27)

Terminal support for D2D satellite connectivity

Quantum Readiness at Türk Telekom

3 Pillars of Quantum: Security, Communication, Optimization

Threat & Opportunity



“Store Now Decrypt Later” threat



Quantum Safe Connectivity as a Service



Quantum Enabled AI Service

Quantum at Türk Telekom

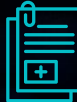


Photonics Lab Setup

QKD over Fiber



EUREKA CELTIC-NEXT



TRACA
Q-TRUST6G

GAPS

Talent Shortage

Accuracy of Quantum Computing

Key Takeaways and Call to Action



Ensure Future Resilience

Smart, space-integrated, quantum-safe and environmentally sustainable.



Co-Innovate on Testbeds

Open innovation for global joint trials on transformative technologies such as AI-nativeness, ISAC, NTN



Drive Global Standards

Collaborative R&D in ITU, ETSI, WBA, etc for unified next-gen connectivity Technologies



THANKS

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