

PAVING THE WAY FROM 4.5G TO 5G

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TURKCELL

Turkcell: Leading Mobile Operator in the Region

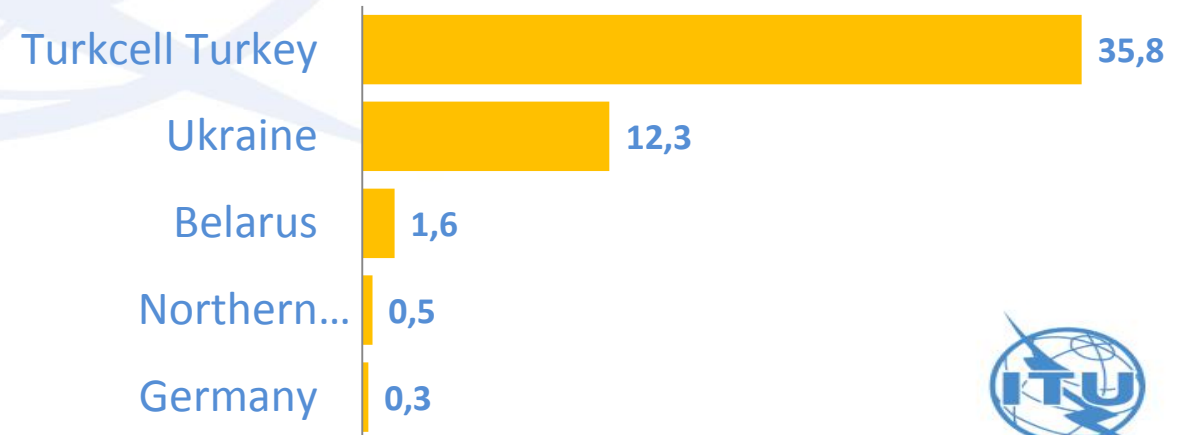
- CONVERGED COMMUNICATION AND DIGITAL SERVICES PLAYER
- 9 COUNTRIES including FinTur Companies
- 50.4M TURKCELL GROUP SUBSCRIBERS
- 2M MILLION FIXED SUBSCRIBERS
- LISTED ON NYSE & BORSA ISTANBUL WITH A \$7.3B MARKET CAP¹



TKC
LISTED
NYSE



SUBSCRIBER BREAKDOWN (M, Q1-17)



¹As of 26.05.2017

²Turkcell Europe GmbH operating in Germany changed the business model to a “marketing partnership”. Turkcell Europe operations transferred to Deutsche Telekom’s subsidiary as of January 15, 2015. Subscribers are still included in Turkcell Group Subscriber figure



Turkcell Network & Services

- 51K sites
- 99,8% coverage
- 1Gbps DL speeds, VoLTE support
- 38.000 km fiber
- TURKCELL fiber backhaul in all cities
- 3M houses with fiber access up to 1 Gpbs



Steps From 4.5G to 5G

Gigabit speed with
4.5G

1 Gbps

375 Mbps



Towards 5G: LTE-A
PRO

- ✓ NB-IoT
- ✓ Cat-M1



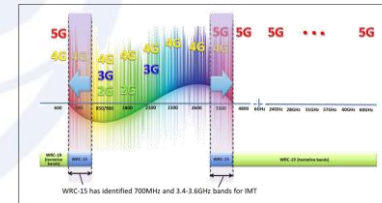
Spectral
Efficiency

- ✓ Massive MIMO
- ✓ Adaptive Beamforming



New
Spectrums

- ✓ Sub 6 GHz
- ✓ Mm-waves



New Radio

- ✓ NSA
- ✓ SA



Towards 5G: Gigabit Speeds

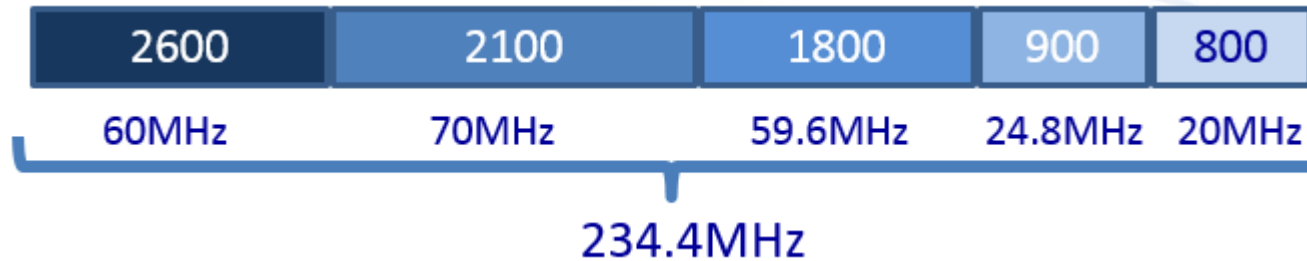


3-CA IN ALL CITIES

ALL NETWORK 4x4

64 QAM / 256 QAM

TURKCELL 4.5G network supports 1 Gbps speeds

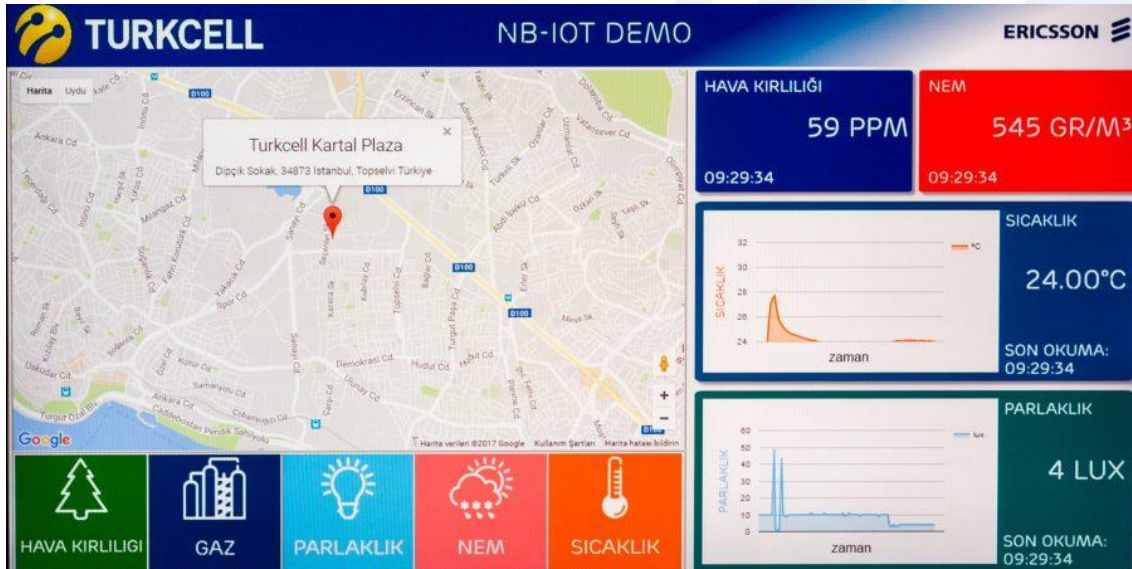


Towards 5G: NB-IoT

FIRST LIVE USE CASE @ TURKEY

Smart City Solution

Air Pollution, Humidity, Temperature, Brightness



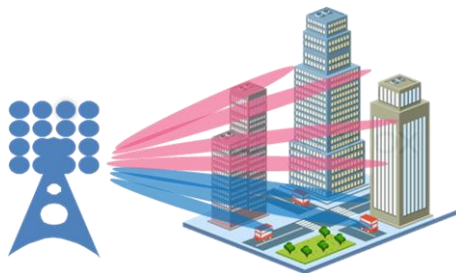
Utility Solution

Smart Parking, Smart Water Meeting



Towards 5G: Massive MIMO

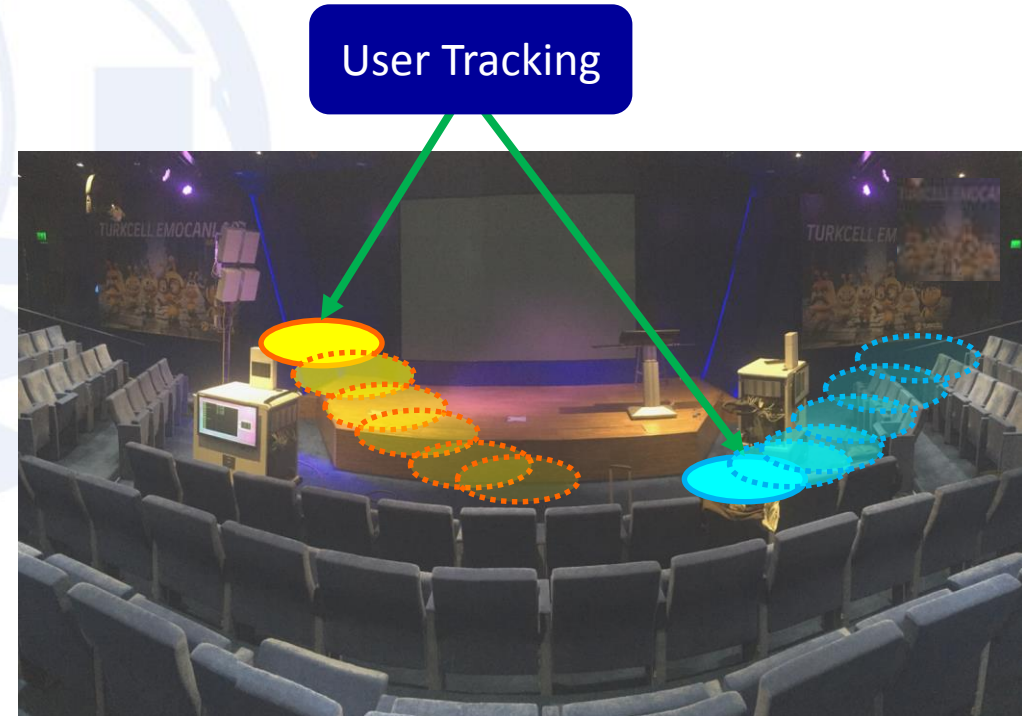
- TDD (2.6 GHz B38) in Ankara
- FDD (1.8 GHz B3) in Antalya
 - 6x more efficient
- **First 5G field demo in Turkey and in the Region**



Towards 5G: eMBB

24.7 Gbps FIRST 5G DEMO IN TURKEY

@15 GHz with 800 MHz bandwidth



Towards 5G: eMBB

70+ Gbps achieved...

@70 GHz with 2GHz bandwidth



Turkcell 5G Ecosystem



Collaborations



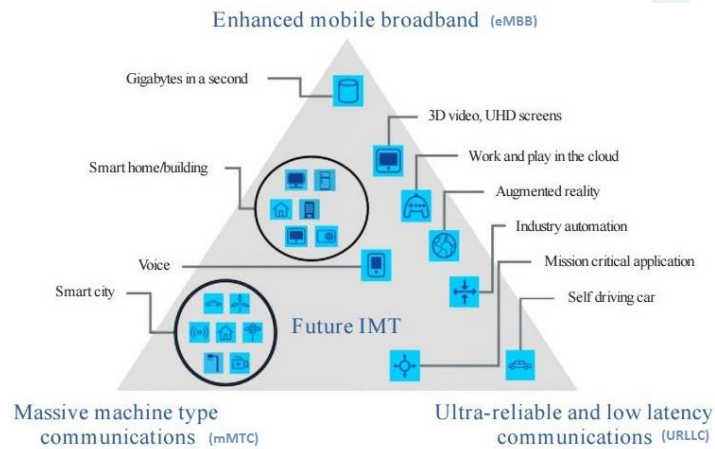
Alliances



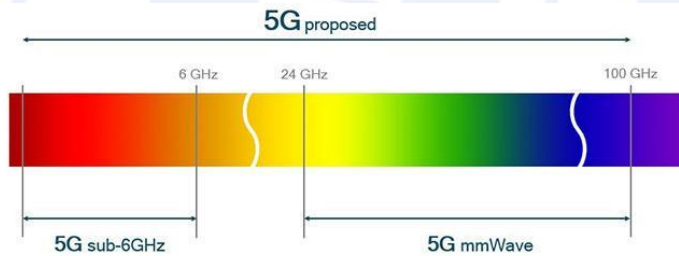
R&D

Progress, Challenges, Opportunities

1 Technology



2 Spectrum



3 Applications





4.5G ile di... anı

THANK YOU

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