

# Turkey's 5G Activities

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# Outline

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- ✓ Turkey's 5G policy
- ✓ ICTA Activities
- ✓ Sector Activities
  - ✓ Activities of Companies
  - ✓ Activities of Mobile Network Operators
- ✓ Activities of Universities
- ✓ 5GTR Forum
- ✓ Plans and targets

# Turkey's 5G Policy

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- ✓ Support Europe's leadership in 5G and beyond
- ✓ Be one of the pioneer countries deploying 5G technologies, in vertical sectors as well
- ✓ Be one of the key player in development and production of 5G technologies
- ✓ Increase the level of our efforts in order to contribute more in Global 5G activities, such as HORIZON 2020 programs



# ICTA Activities

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- ✓ Authorize International Mobile Telecommunication (IMT-Advanced) Services and Infrastructures
- ✓ Support companies that produce domestic goods in the electronic communication sector
- ✓ 5G Study Group has been established within BTK (August 2015).
- ✓ International and national efforts (conference, workshop and study groups).
- ✓ Co-operation with foreign counterparts (Korea, Japan, etc)
- ✓ Database has been established for academic studies on new generation mobile broadband technologies.

# ICTA Activities - 2

## By new authorisation

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- ✓ Operators must employ at least 100 researchers for the first two years and 250 researchers for the first four years besides the current requirements of 500 R&D engineers at R&D centers.
- ✓ Third party firms would employ at least 100 R&D researchers while operators would employ at most 150 R&D researchers.
- ✓ Operators' total investments for their networks must comply with following terms
  - ✓ *In the first year at least %30, in the second year at least %40, in the third and after at least %45 of the products must have domestic product certificate.*
  - ✓ *In the first four years, on average at least %30; in the second four years on average at least %40; and in the third four years on average at least %45 of the products must have domestic product certificate.*

# Sector Activities-1

## ✓ EcoSyttem



## ✓ Physical Network

- ✓ *Broadband Systems, MIMO, RF/MMIC Component Designs, Spectrum Management*

## ✓ Core Network

- ✓ *SDN,NFV,CLOUD,IOT,SON,HETNET,Security,Multimedia,APIs*



# Sector Activities-2

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- ✓ 4G/LTE Communication System Development Project (ULAK) (2013-...)
  - ✓ Software and hardware components of 4G mobile base stations have been developed in TURKEY.
  - ✓ Goal of ULAK Project is to develop next generation telecommunication infrastructure components with national resources.
  
- ✓ MILAT Project (2016-2018)
  - ✓ It would improve cyber security capabilities of Turkey.
  - ✓ It would form a national and secure 5G infrastructure, developing SDN technologies

# Universities

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- ✓ Istanbul Technical University
- ✓ Middle East Technical University
- ✓ Bilkent University
- ✓ Boğaziçi University
- ✓ Koç University
- ✓ Sabancı University
- ✓ Medipol University
- ✓ Özyeğin University
- ✓ Galatasaray University
- ✓ Hacettepe University
- ✓ Marmara University
- ✓ TOBB University of Economics and Technology



# 5GTR FORUM

***Mission:** Enforcing studies by doing joint activities with related parties; public and private institutions and organizations, universities, companies, Entrepreneurs and by monitoring their activities in the field of new generation Mobile Technologies.*

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## ***Vision:***

- ✓ *Determination of national policy*
- ✓ *Ensuring international cooperation*
- ✓ *Promotion of R&D and domestic development and production*
- ✓ *Making arrangements to facilitate transition to the new technologies*
- ✓ *Forming an ecosystem*
- ✓ *Ensuring cooperation with the global mobile industry*

## ***Plans and Targets:***

- ✓ *Organize 5G meetings, workshops, conferences, seminars and panels*
- ✓ *Enhance national and international collaborations at the public and private sectors.*
- ✓ *Encourage R&D activities, patents, standardization and domestic development and production*

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***Thanks for your attention!***