



Planning and licensing IMT bands

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Introduction

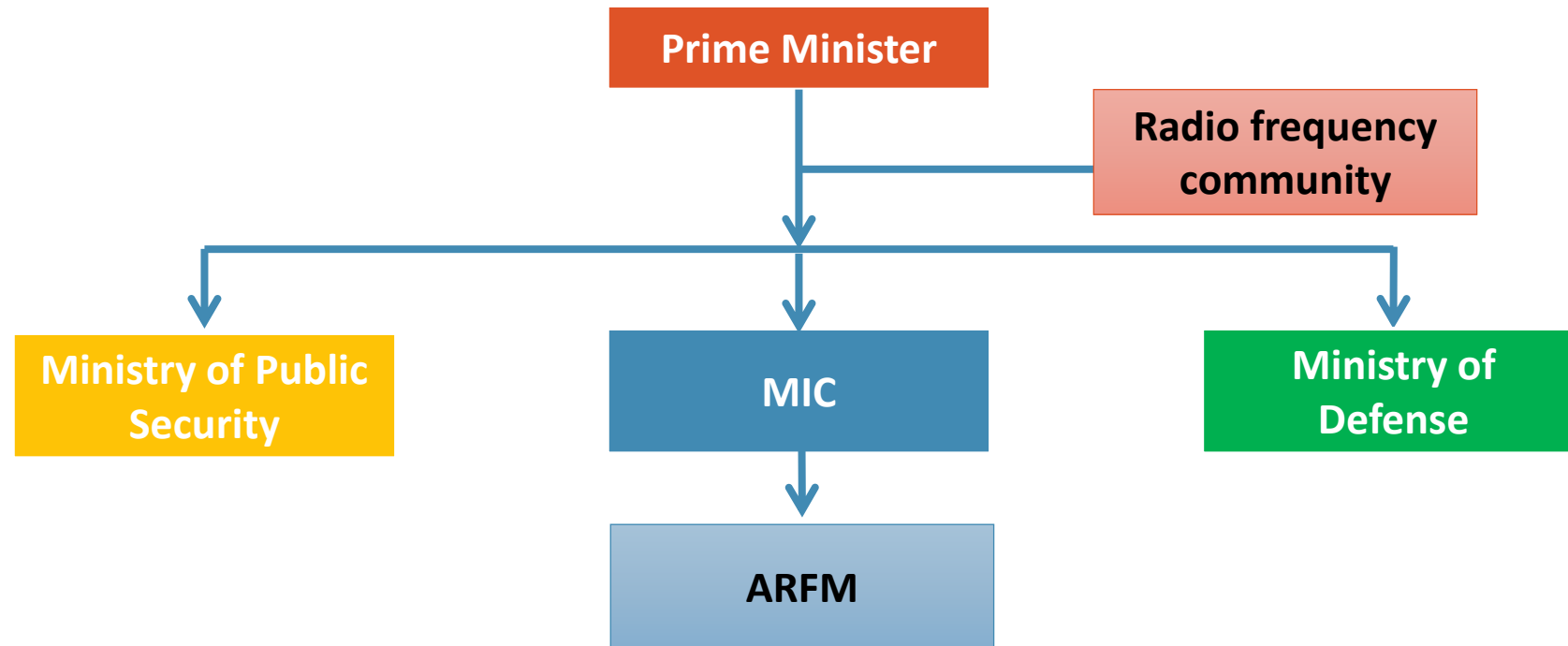
• Vietnam

- Locate in south east Asia
- Population: 95 Mil
- Area: ~ 330.000 sq. km
- Currency: dong (VNĐ)
- Language: Vietnamese



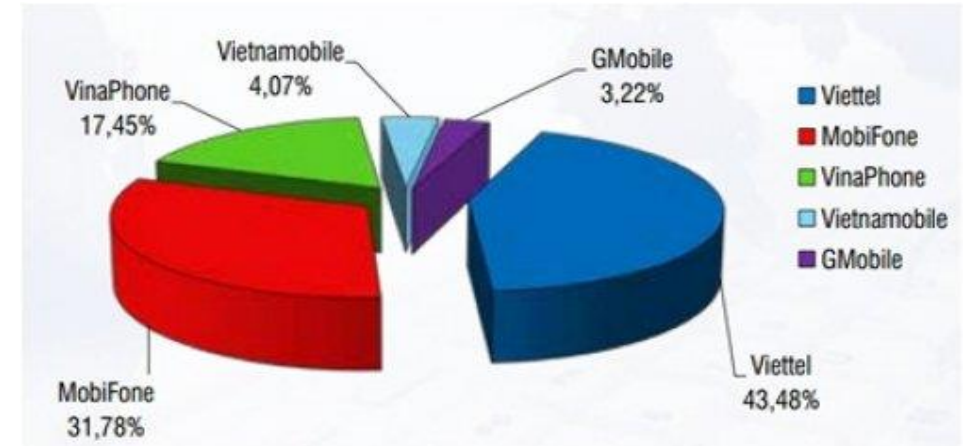
Introduction

- Radio frequency management in Vietnam

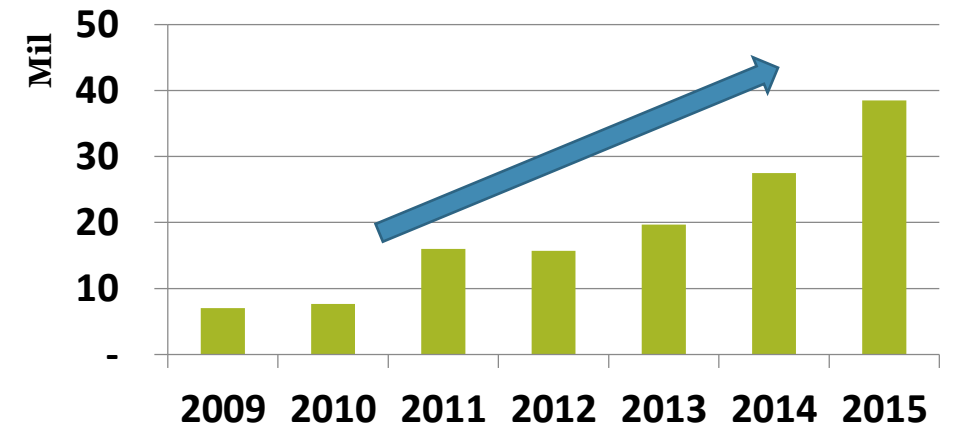


Vietnam ICT market

- ❖ **5 operators (3 big operators account for over 90% of the market)**
- ❖ **126,99 mil mobile subscribers (2016)**
- ❖ **2G mobile subscribers account for 68%**
- ❖ **3G mobile subscribers account for 32 % and fast increase**
- ❖ **4G commercial networks has been launched since early 2017**



Mobile market share



3G subscribers increase



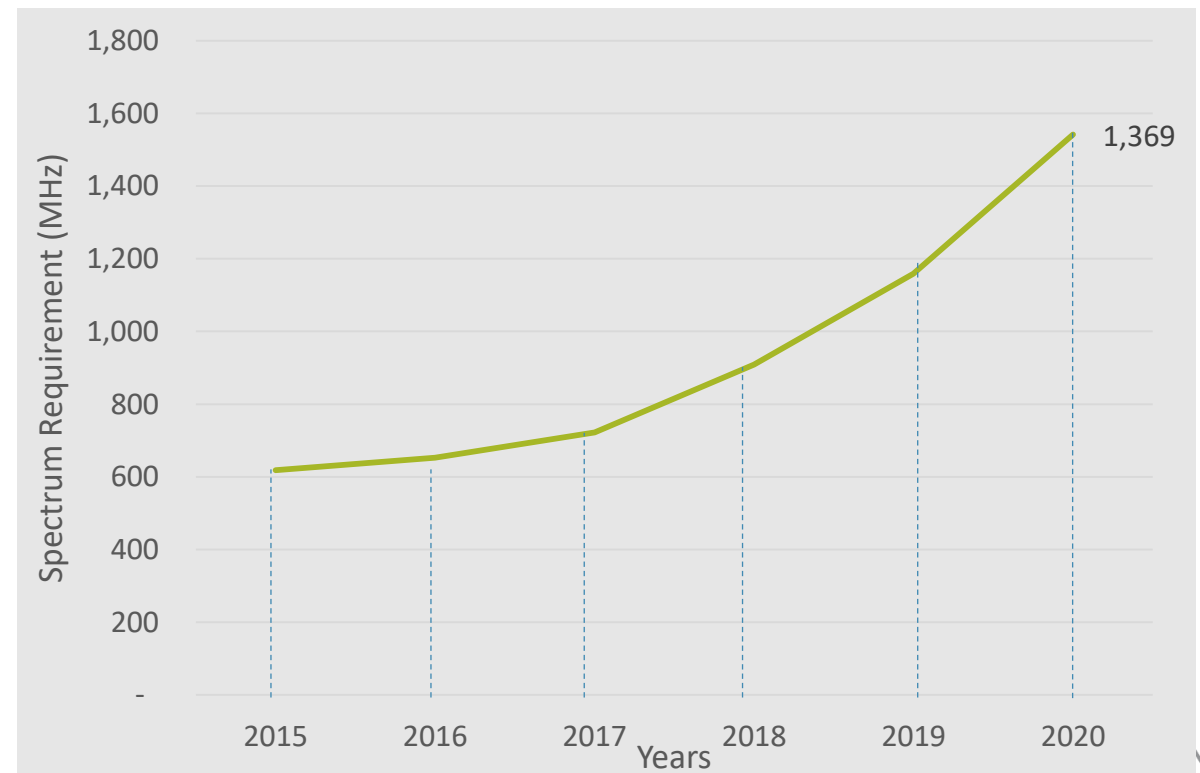
IMT spectrum requirement

Need to add approximate **460 MHz by 2020**

Requirement: 1349 MHz

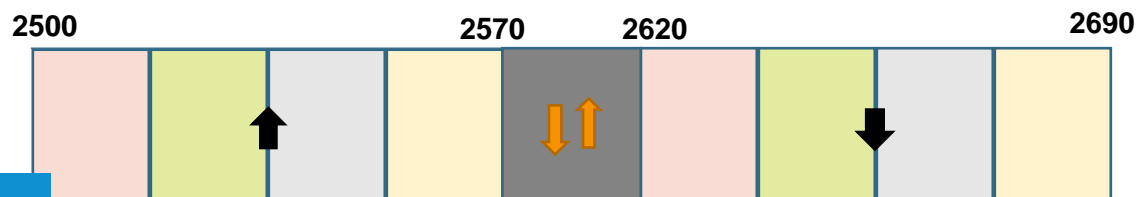
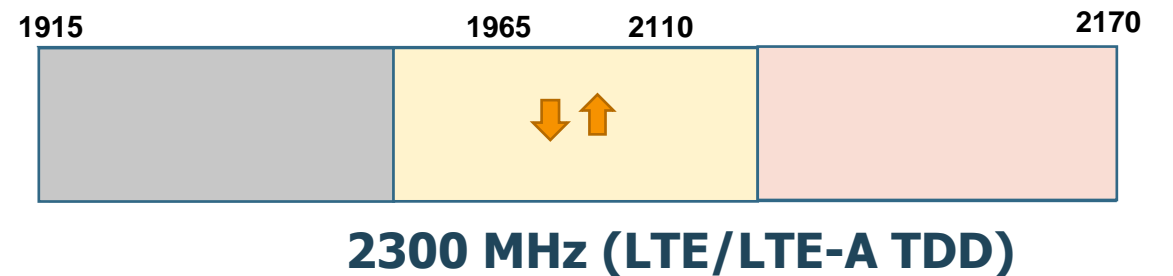
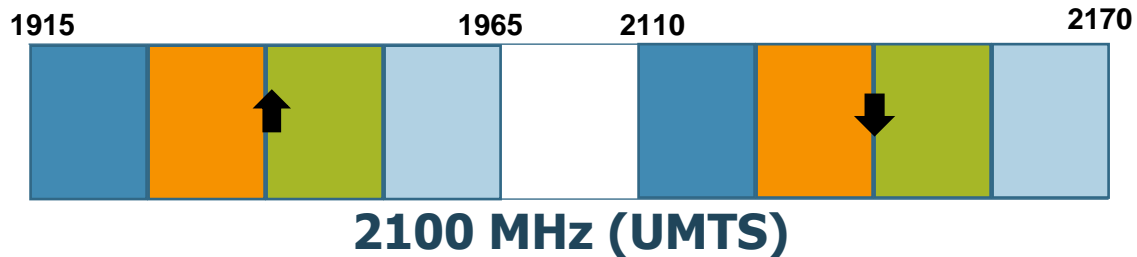
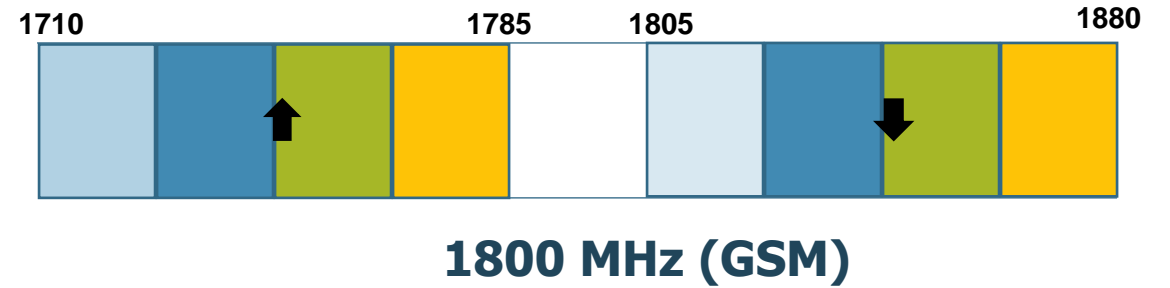
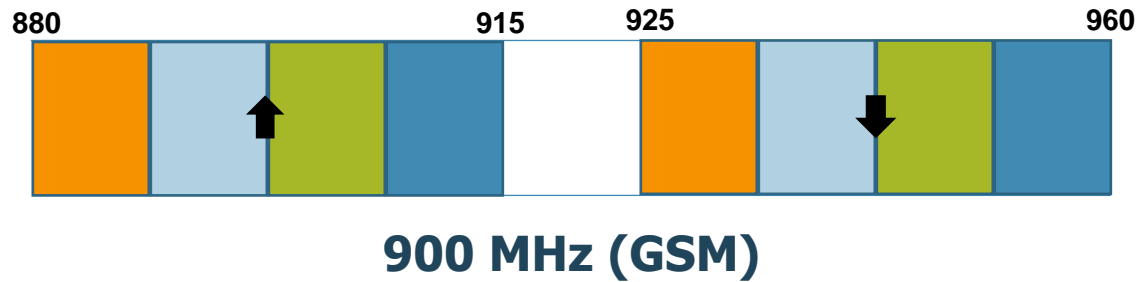
Allocated: 685 MHz

In the bands: 400MHz,
850MHz, 900MHz,
1800MHz, 2100MHz,
2300MHz, 2600MHz



Source: [GSMA report](#)

Allocated IMT bands



2600 MHz (LTE/LTE-A)

Allocated IMT bands

Refarm current 2G/3G bands to 3G/4G

900 MHz 2G => 3G / 4G

1800 MHz 2G => 4G

2100 MHz 3G => 4G

Allocate more spectrum for IMT

700MHz will be ready to plan and license in near future

long term DTV plan

Digital dividend

470

694

806

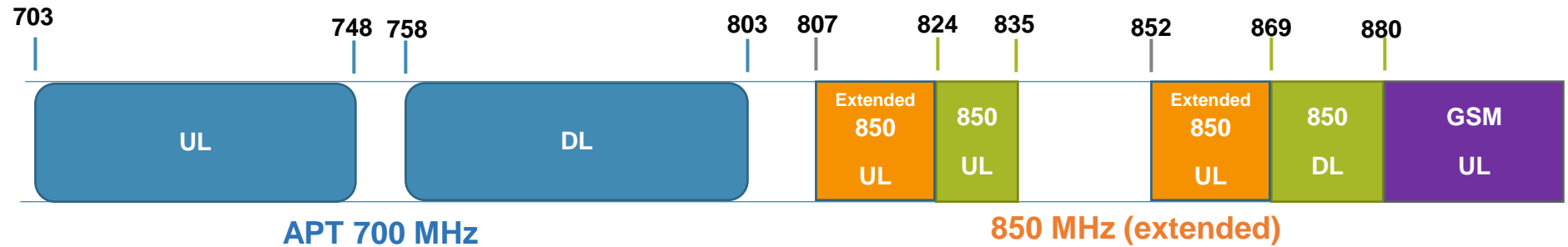
2018,

- Complete digitalization in delta areas
- Promulgate a circular on frequency arrangement in the band 694-806 MHz (base on APT700 full duplex)

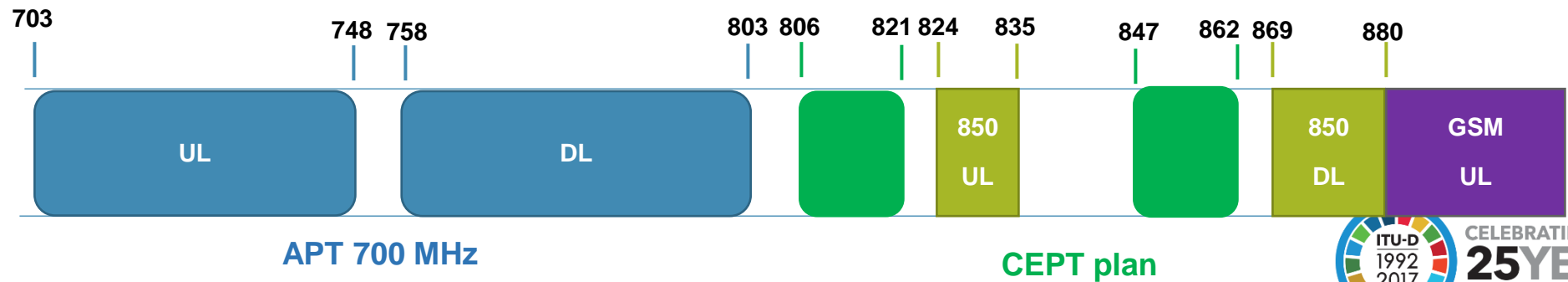
Allocate more spectrum for IMT

800/850 MHz will be planned in harmony with 700 MHz band plan

Case 1

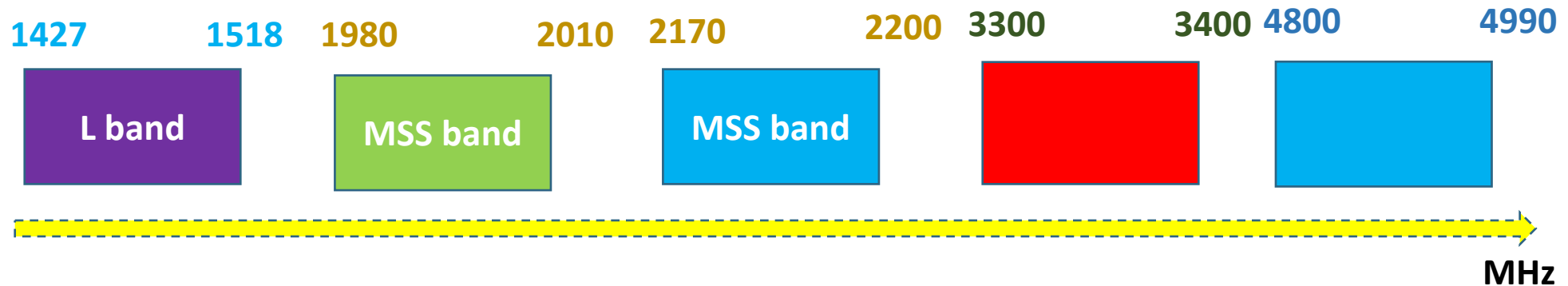


Case 2



Allocate more spectrum for IMT

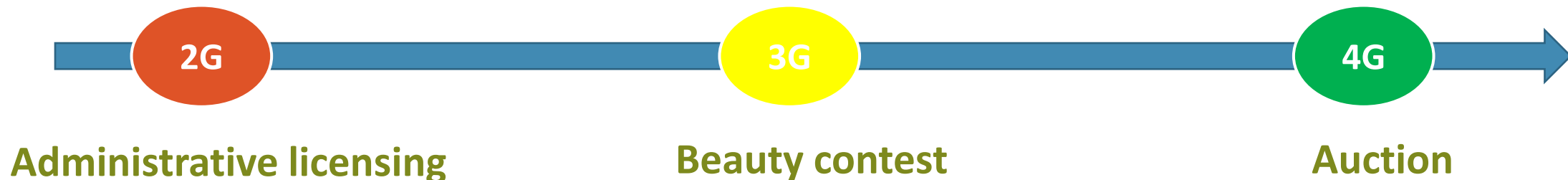
441 MHz additional spectrum for IMT after WRC15



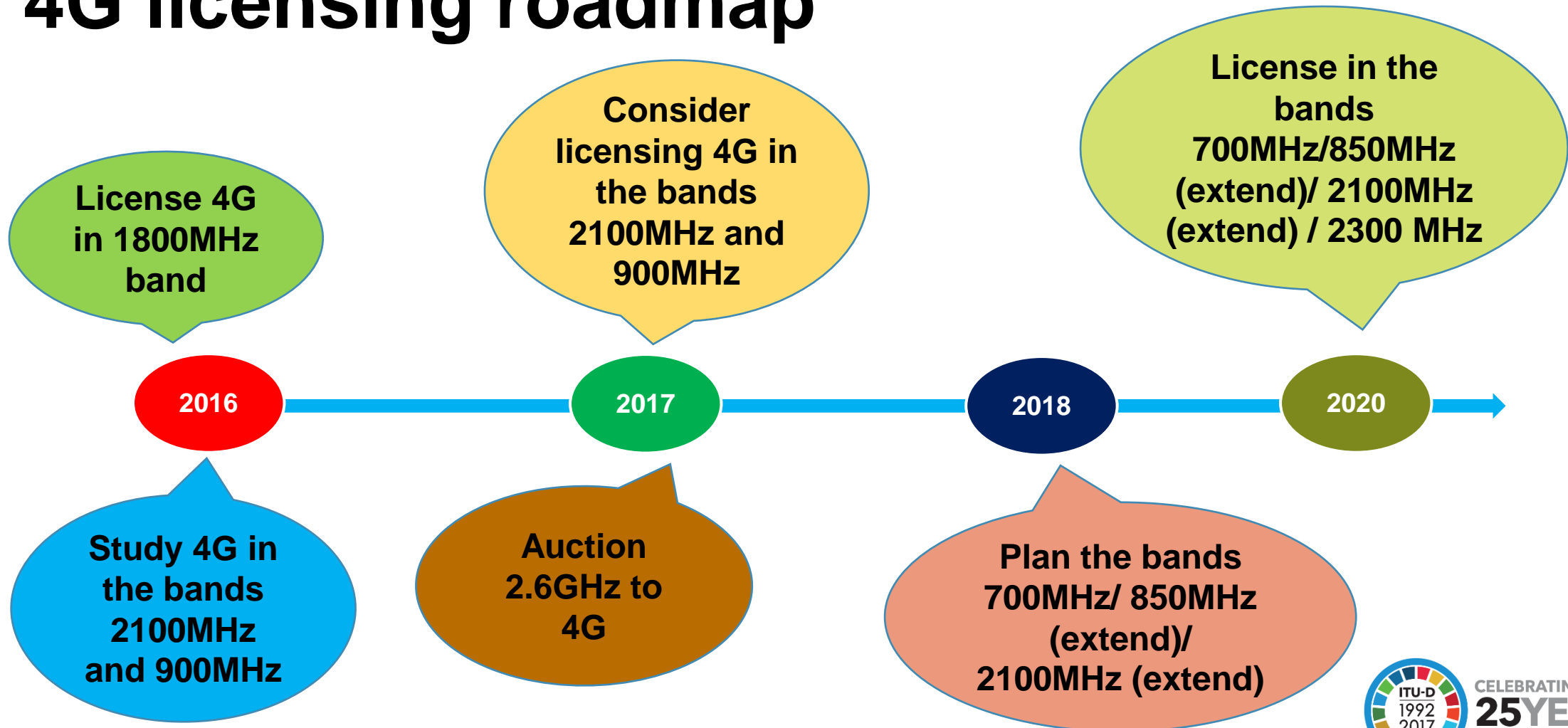
IMT spectrum licensing

Principles:

- Harmonization on IMT Spectrum
- Neutrality in technology
- Enough BW but balance between big operators
- Right time on the market, refarming is feasible...



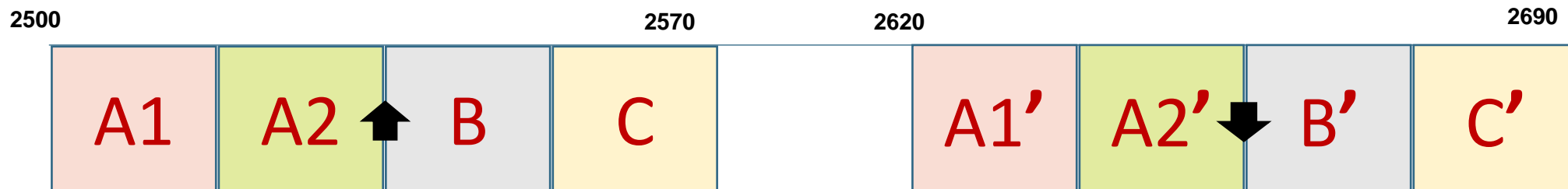
4G licensing roadmap



2600 MHz auction for 4G

Purpose:

- License 4 FDD blocks
- Transparent in licensing
- Highest value, based on market
- Encourage to use spectrum efficiently



A1: 10MHz

A2, B, C: 20 MHz

2600 MHz auction for 4G

Regulations

- **An operator must stop after it wins 1 block (no more than 1 block/winner)**
- **Rollout: deploy certain number of eNodeB in 2-3 year, require a typical download speed**
- **Spectrum fee = annual fee + winning auction price**

2600 MHz auction for 4G

Roadmap

- **2012**, PM had a Decision 16/2012/QĐ-TTg on auction and transfer of the right to use radio frequency.
- **2014**, PM had a Decision 835/2014/QĐ-TTg on approving bands (include 2.6 GHz) which will be auctioned
- **2016**, MIC study regulations on the auction of the band 2600 MHz
- **2017**, MIC will hold auction 2600 MHz, expect to license this band by the end of this year.

Conclusions

- **ICT market is growing fast, IMT requires more spectrum**
- **Need to look for new bands, also reform traditional bands**
- **Future licensing will be through spectrum auction to increase transparency and spectrum value**



Thank you very much

