



Utilization of the Digital Dividend (DD)

Radiocommunication Bureau
International Telecommunication Union



Mobile Broadband

(agenda items 1.1, 1.2 of WRC-15)



Spectrum for mobile broadband



agenda items 1.1 and 1.2



■ Background

- There is a need to satisfy rapidly growing traffic requirements for IMT (estimated IMT additional spectrum by 2020: from 159 to 1075 MHz depending on Region and user density)
- Bands considered: 470 MHz - 6 425 MHz. Harmonized bands were highly desirable to facilitate global roaming and economies of scale
- As for 700 MHz band in R1, WRC-15 had to specify conditions for mobile service in 694-790 MHz already allocated by WRC-12

■ WRC-15 results

- Allocations to mobile service and/or identifications for IMT in: 470-694/698 MHz (Regions 2&3), 694 – 790 MHz (Region 1), 1427-1518 MHz, 3300-3400 MHz, 3400-3700 MHz, 4800 – 4990 MHz
- Allocations are subject to various conditions, e.g. non-interference basis, pfd limits, 9.21 -> to secure protection of incumbent services
- Action “Identification for IMT” was for the first time associated with regulatory/technical conditions imposed on this application in MS





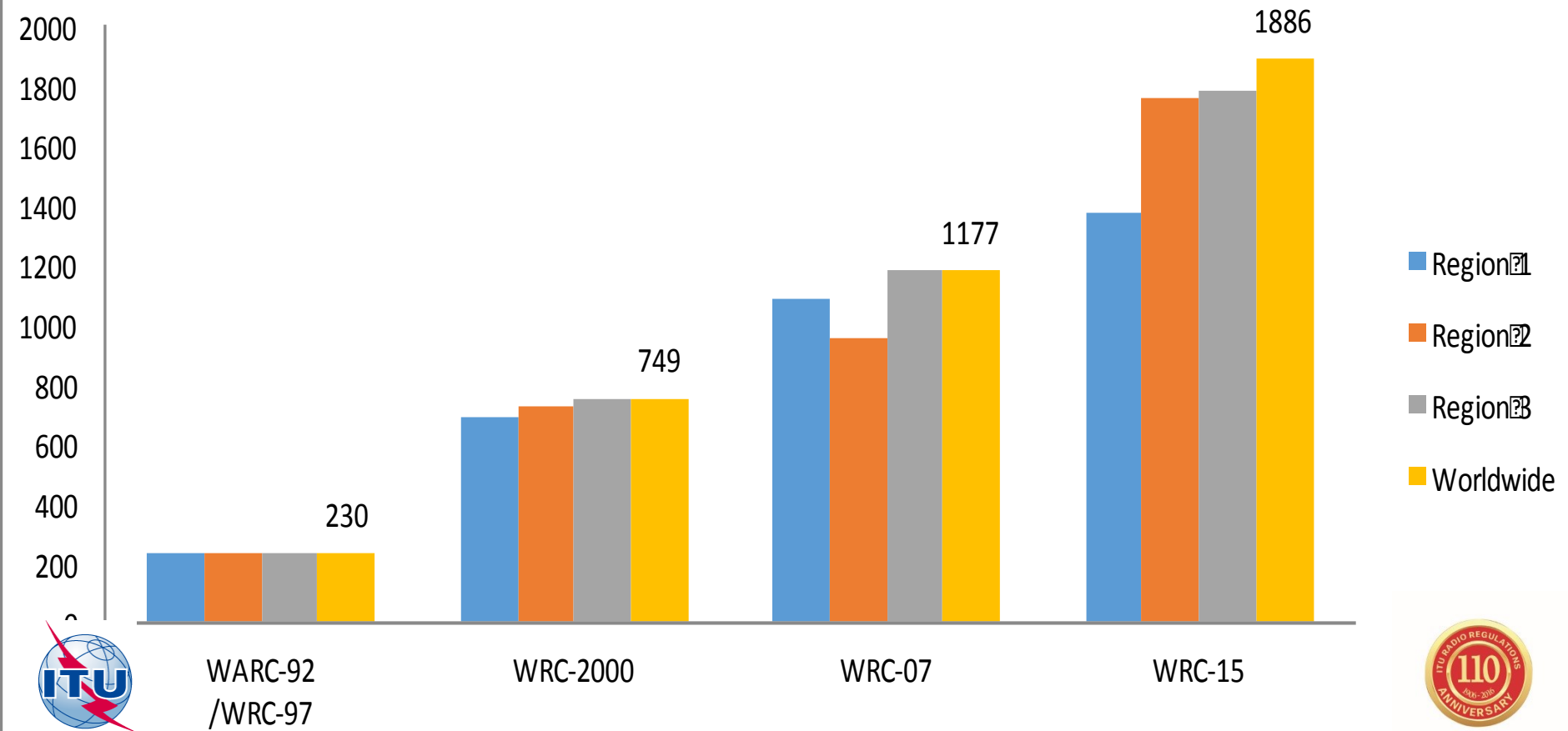
WRC-15 results for specific bands



agenda items 1.1 and 1.2

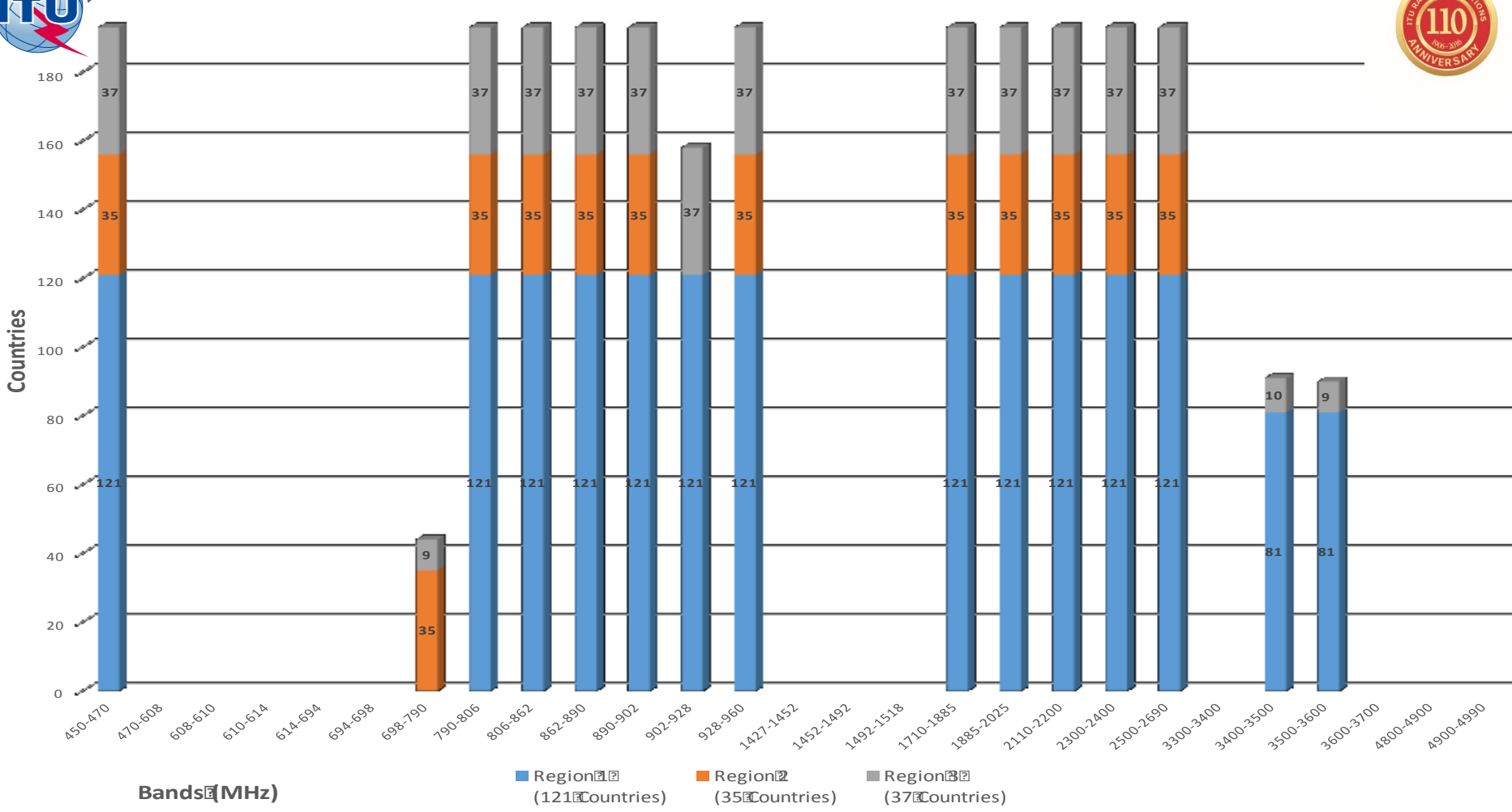
- **470–698 MHz:** IMT identification of parts of this band for 14 Regions 2, 3 countries (9.21, non-interference basis).
 - **For R1: consideration at WRC-23**
- **694 – 790 MHz in Region 1:** allocation to MS and identification for IMT.
 - **In force from 28.11.2015.**
 - Provides harmonized worldwide allocation of this band. Ensures compatibility with broadcasting and ARNS (Res. 224, 760).
 - Accommodates applications ancillary to broadcasting in 470 – 694 MHz

Total amount of spectrum identified for IMT (MHz)

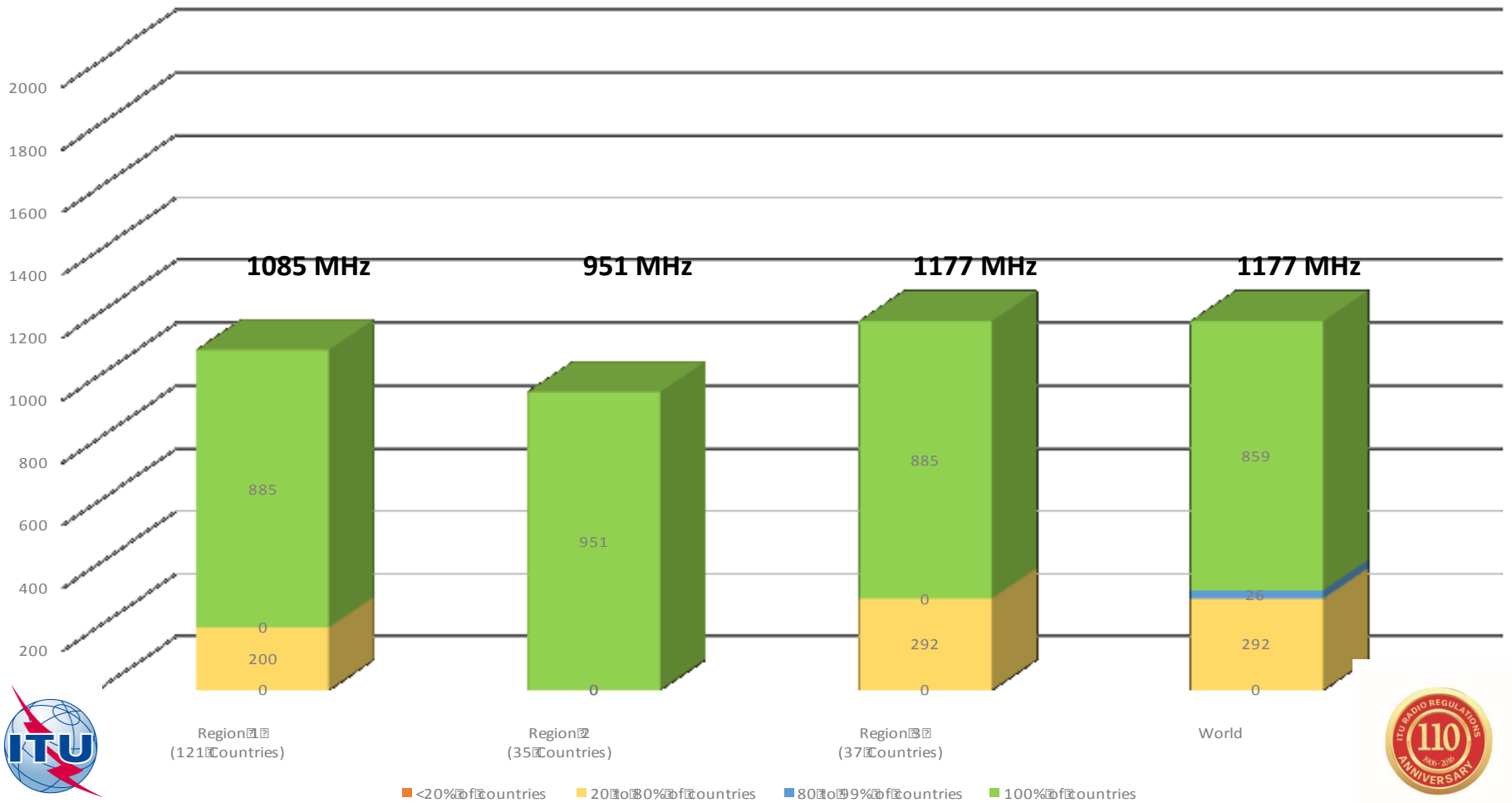




IMT Bands after WRC-07 (Number of Countries Identified)

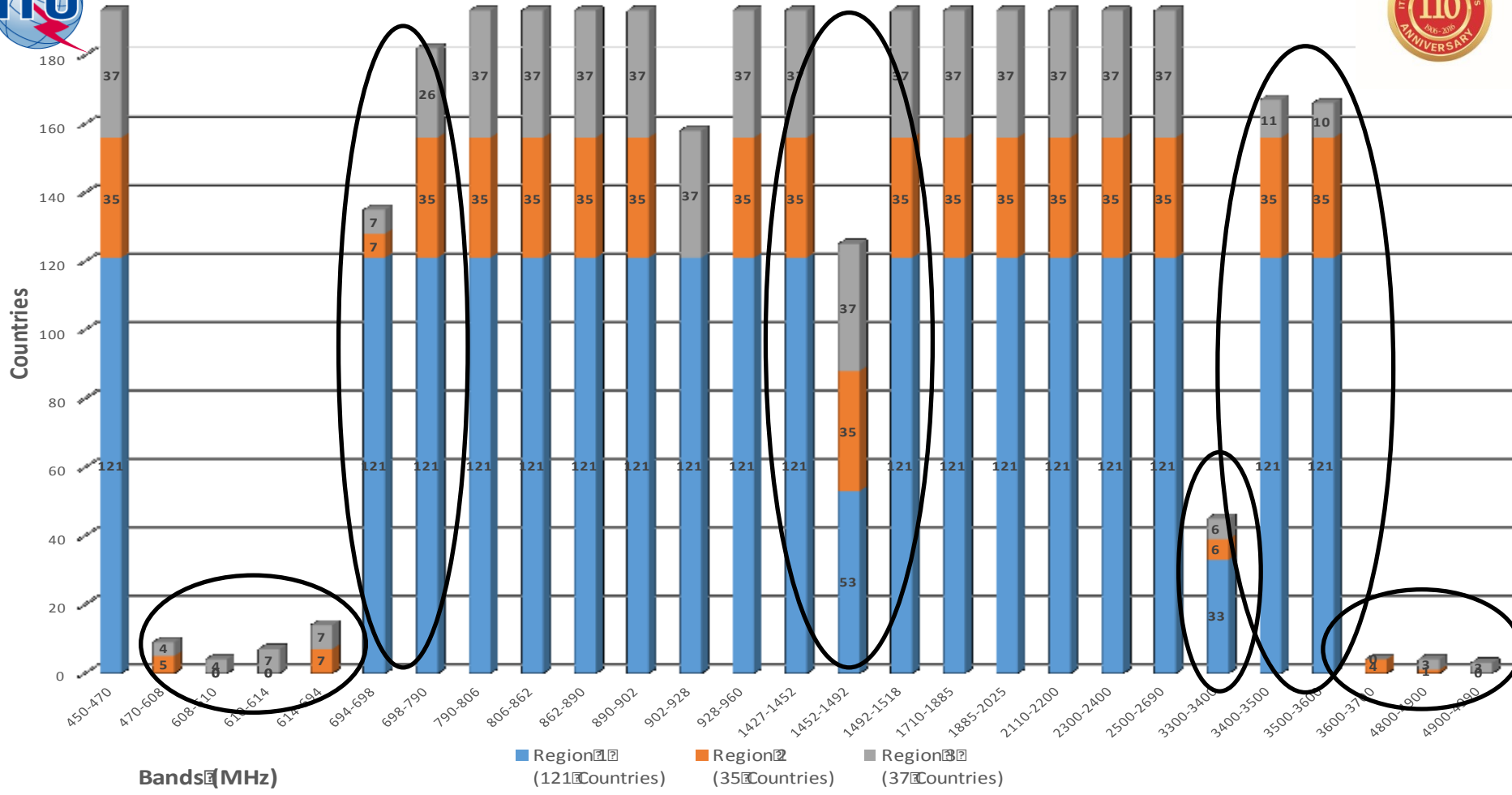


IMT Spectrum after WRC-07 (MHz)

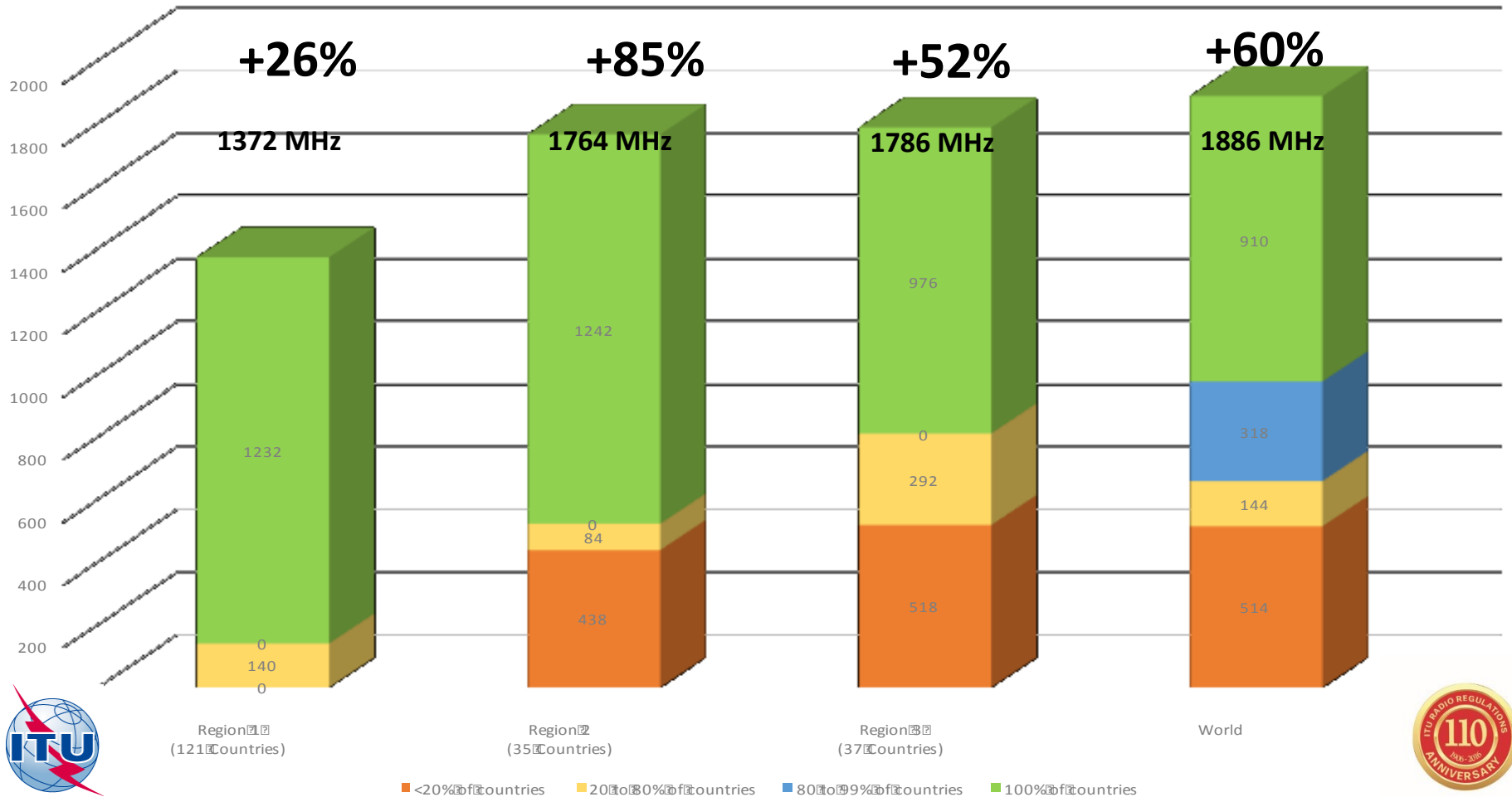




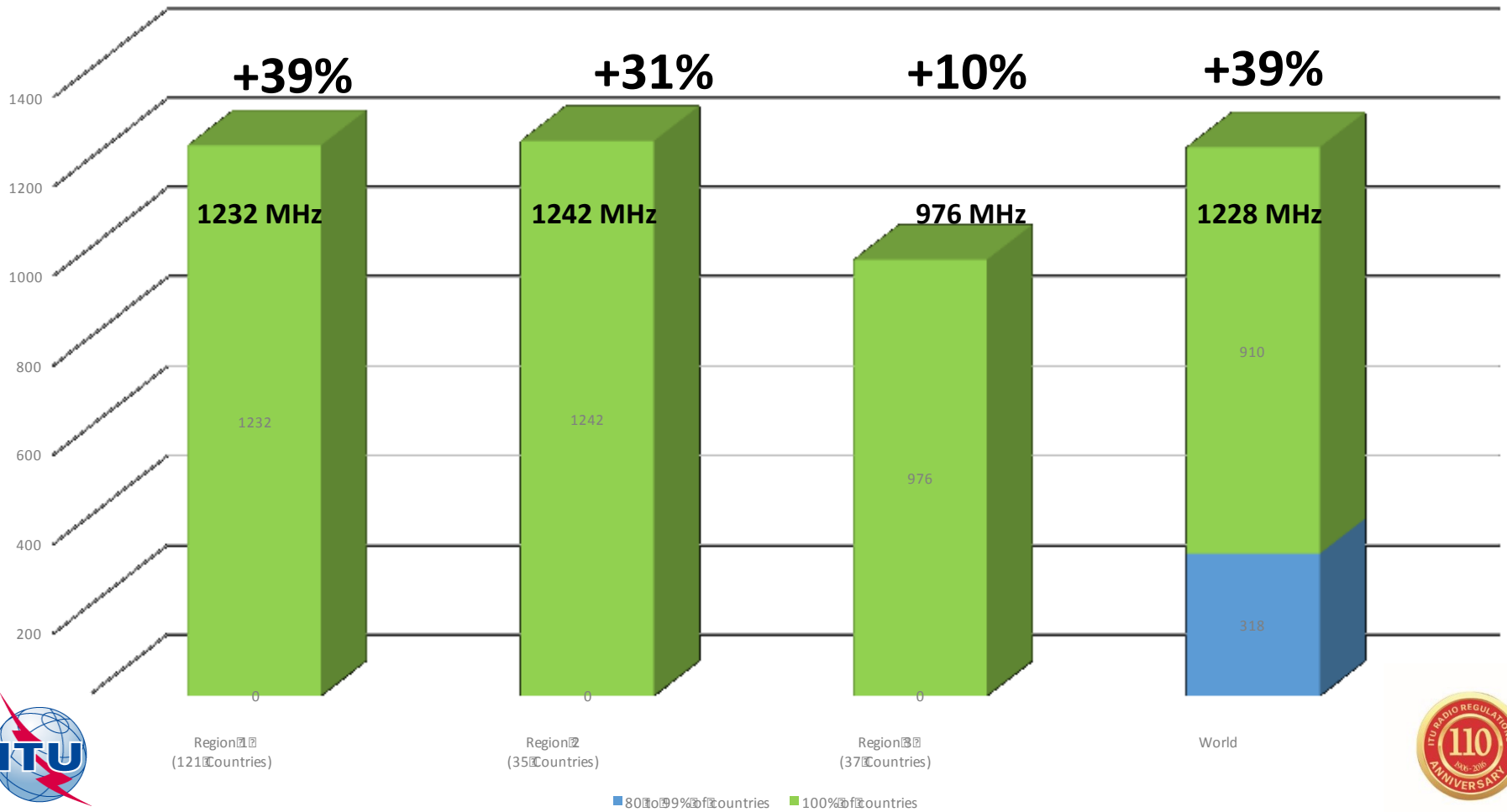
IMT Bands after WRC-15 (Number of Countries Identified)



IMT Spectrum after WRC-15 (MHz)



IMT harmonized spectrum after WRC-15 (MHz)





Importance of WRC-15 decisions



agenda items 1.1 and 1.2

- Satisfy growing IMT **broadband spectrum requirements**:
 - 60% increase in IMT bands after WRC-15
 - total IMT spectrum of 1886 MHz
- Provide **harmonization of IMT bands**:
 - 39% increase in globally harmonized spectrum after WRC-15
 - 318 MHz of harmonized bands in more than 80% of countries:
- Secures **future of other services** through coordination procedures, technical restrictions, in some cases operation on a non-interference basis



Mobile service assignments in the ITU database

GE06L and MIFR

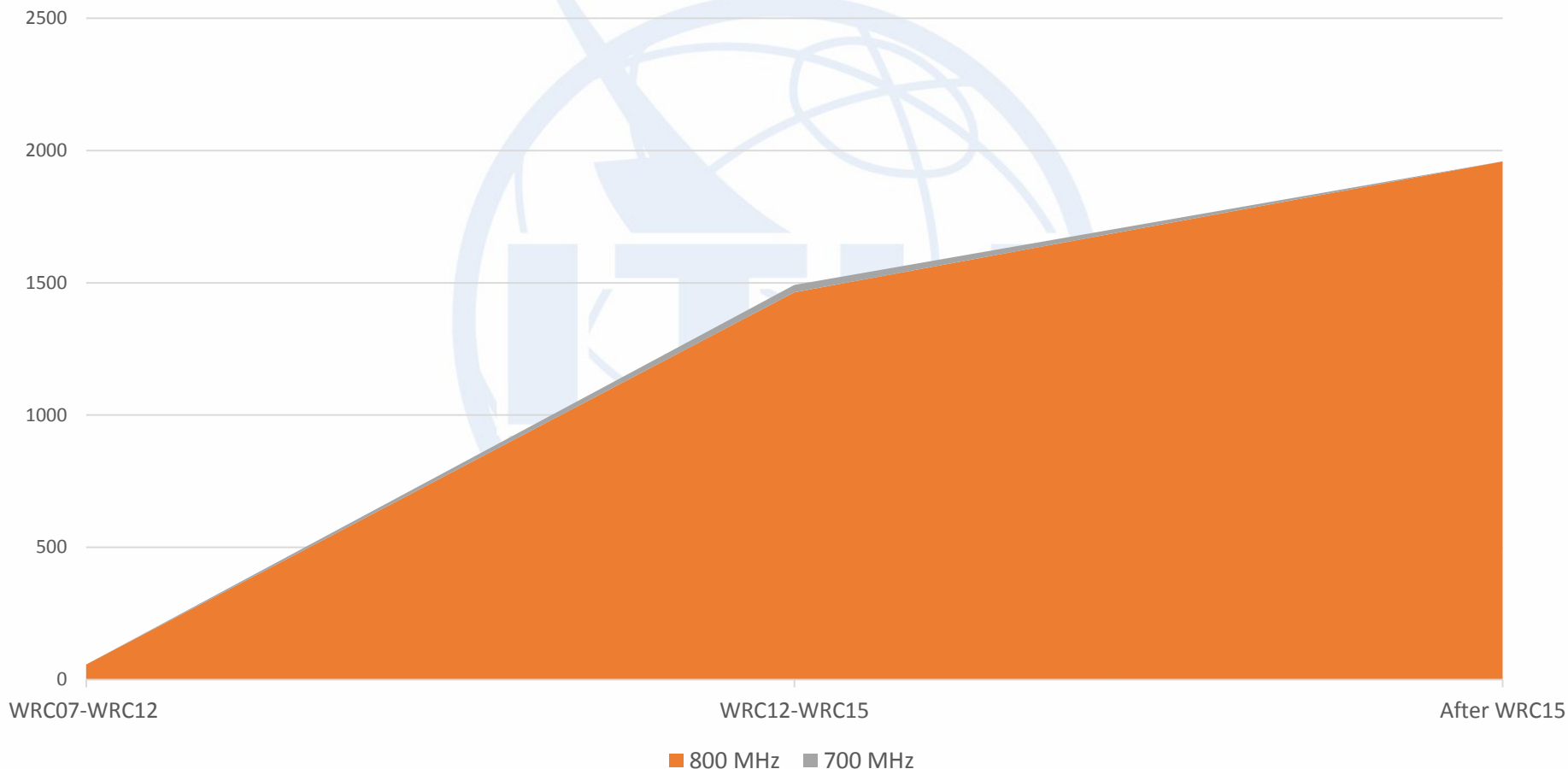




Mobile assignments in GE06L



Mobile assignments in GE06L



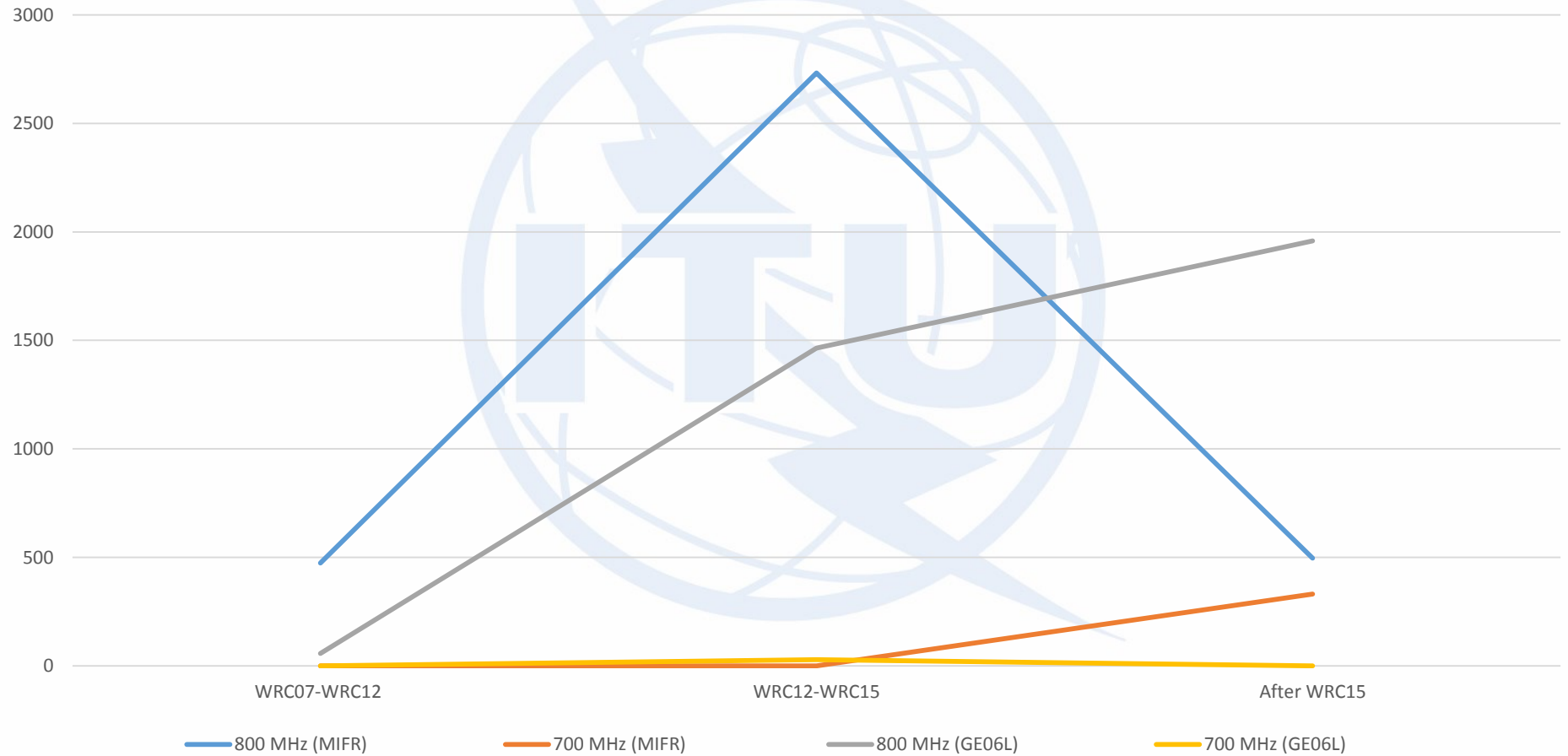
ARS AZE BEL CTI EGY F GEO IRN ISR JOR KAZ KGZ MRC POL PSE RUS TJK UAE UZB



Mobile assignments evolution



Mobile frequency assignments in ITU database

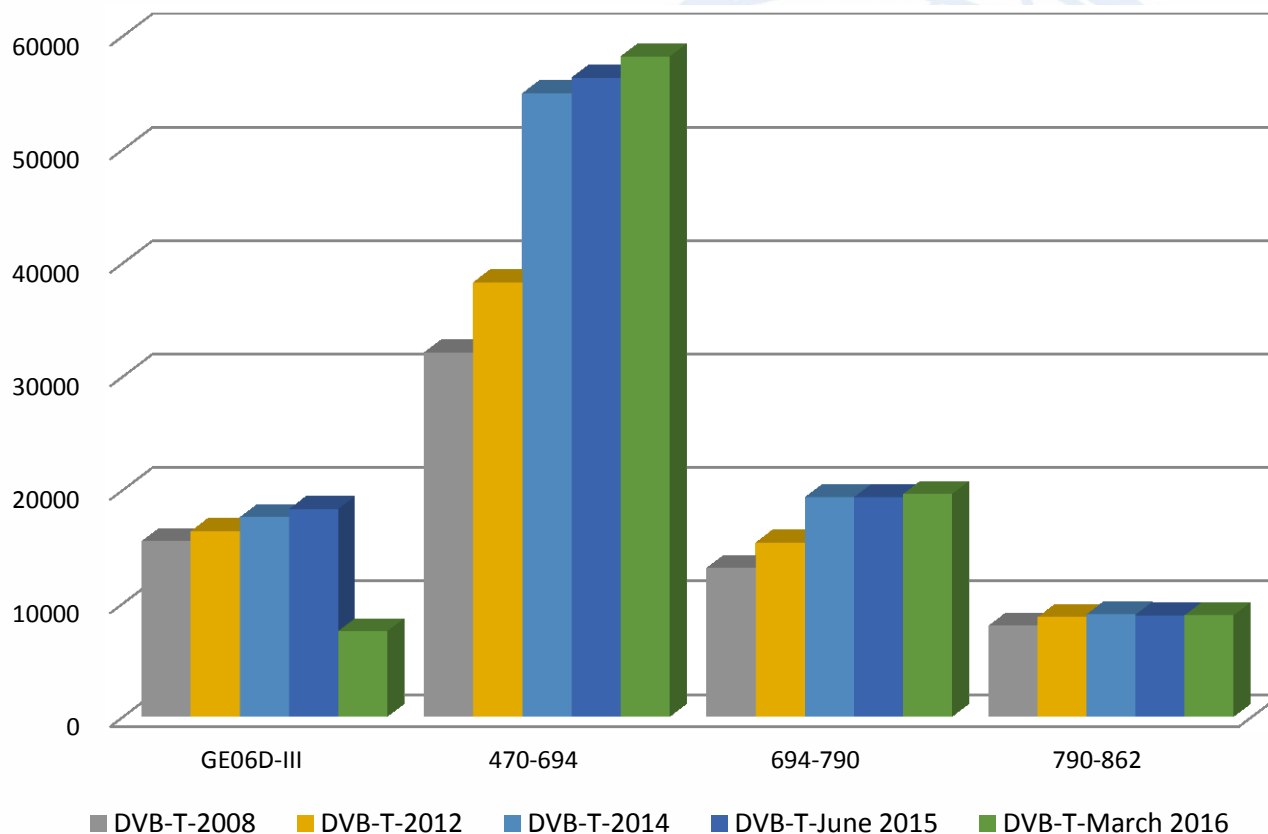




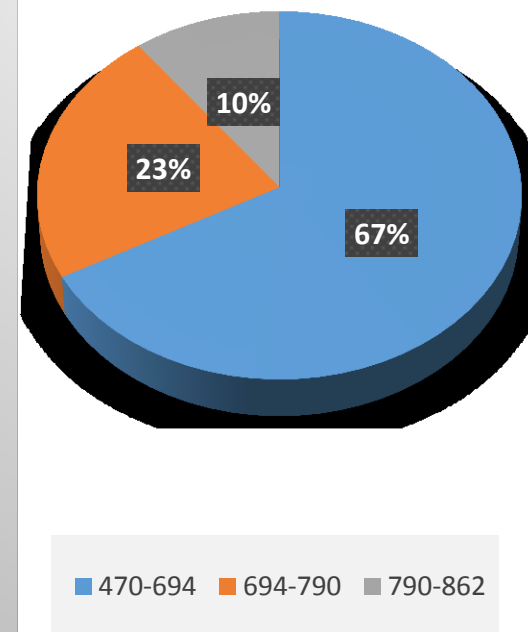
Digital Dividends' impact on GE06D activity



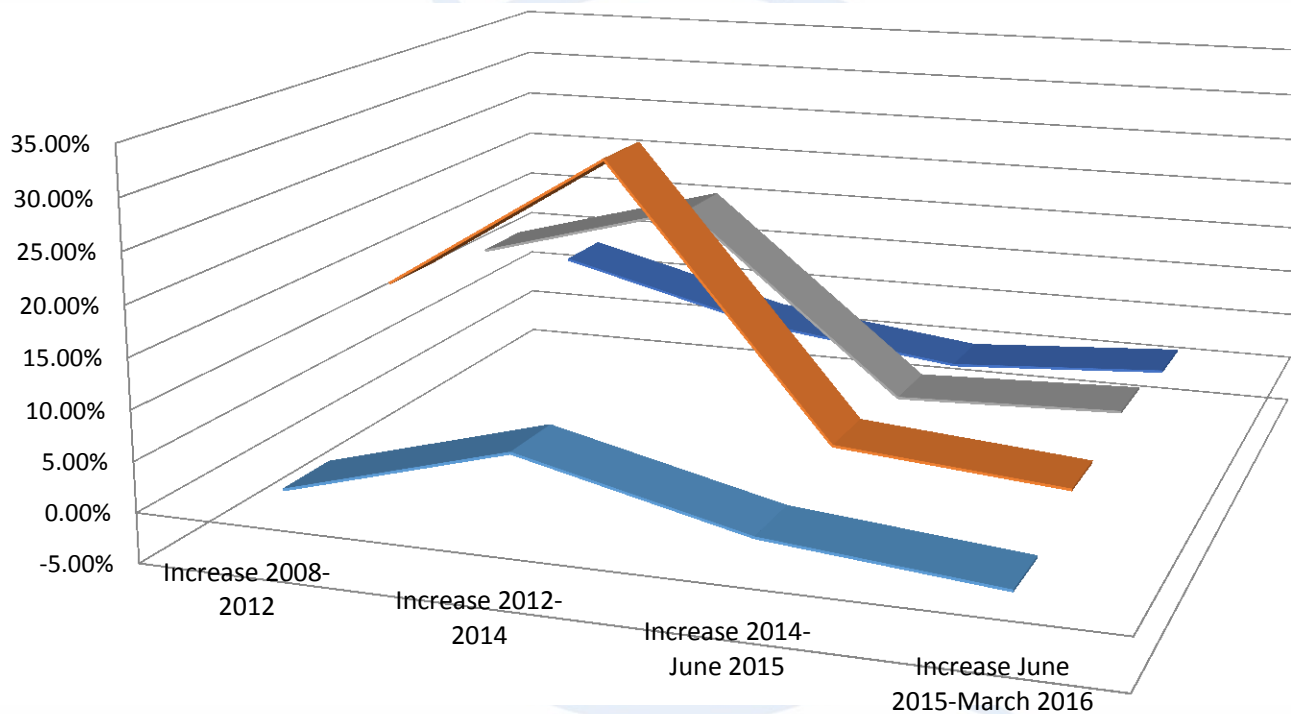
DVB-T Plan entries (March 2016)



GE06D- UHF occupancy (March 2016)



GE06 Plan modification activity (Until March 2016)



	Increase 2008-2012	Increase 2012-2014	Increase 2014- June 2015	Increase June 2015-March 2016
■ GE06D- III	1.41%	7.50%	2.15%	0.08%
■ 470-694	16.14%	30.32%	3.91%	2.06%
■ 694-790	14.52%	20.62%	2.42%	3.22%
■ 790-862	8.48%	2.78%	-0.01%	1.44%



Notification of Mobile assignment

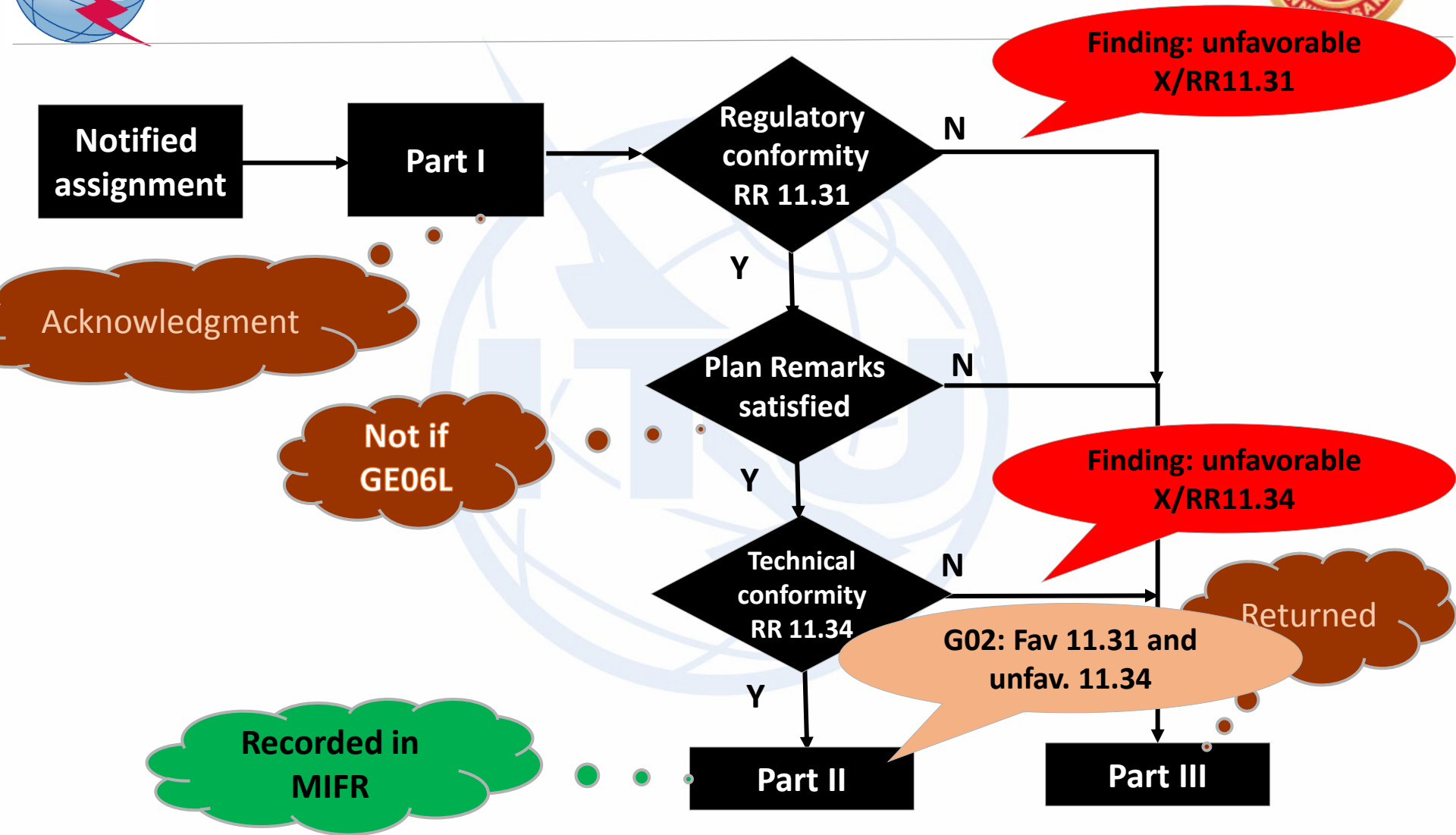


Two options:

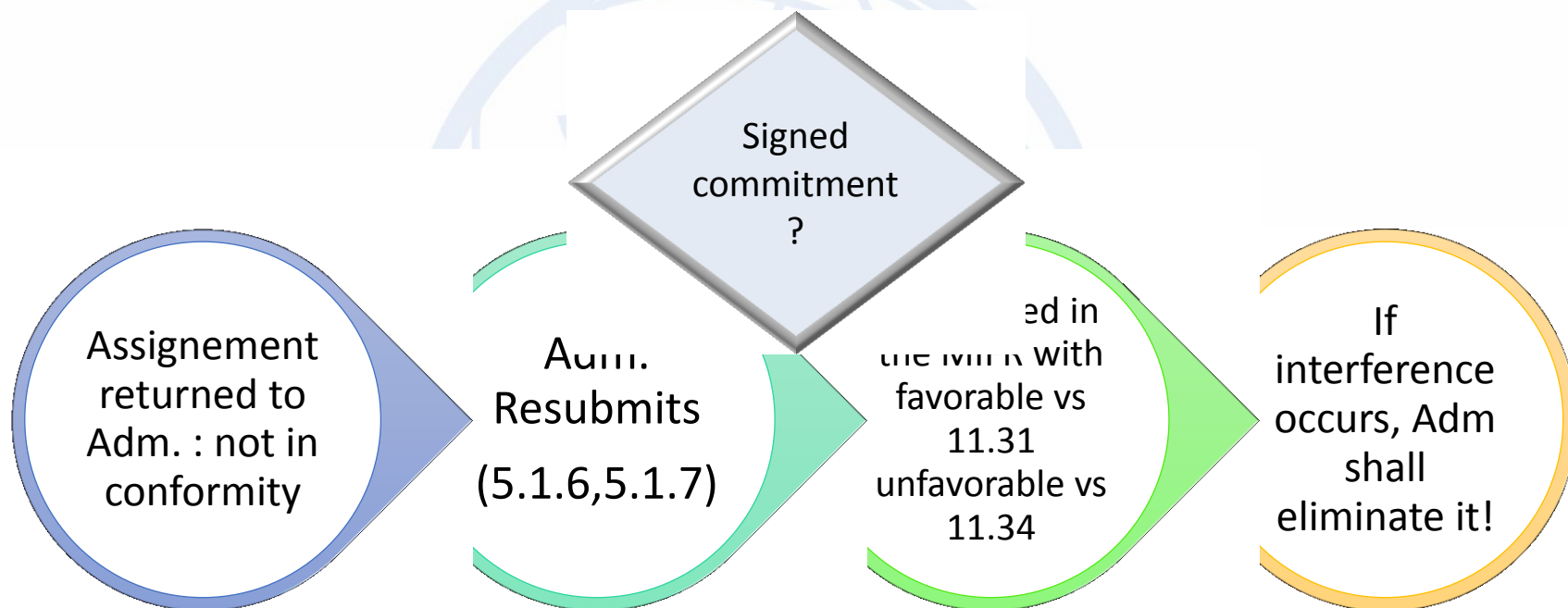
- **The assignment is notified and has a target in the List:**
 - Is in conformity, then recorded in the MIFR
 - Not in conformity:
 - *Notice is returned by the BR*
 - *Adm. may apply the provision 5.1.7 and resubmit*
- **Notify the Mobile assignment, pointing to a digital Plan entry in the GE06D Plan, i.e. provision 5.1.3 of the GE06 Agreement**
 - *This assignment shall not exceed the interference envelope of the digital Plan entry.*



Article 5 procedure of the GE06 Agreement



Procedure of notifying assignments not in conformity-GE06



No protection is provided. The assignment is recorded in the MIFR for information only.



Notification according to 5.1.3

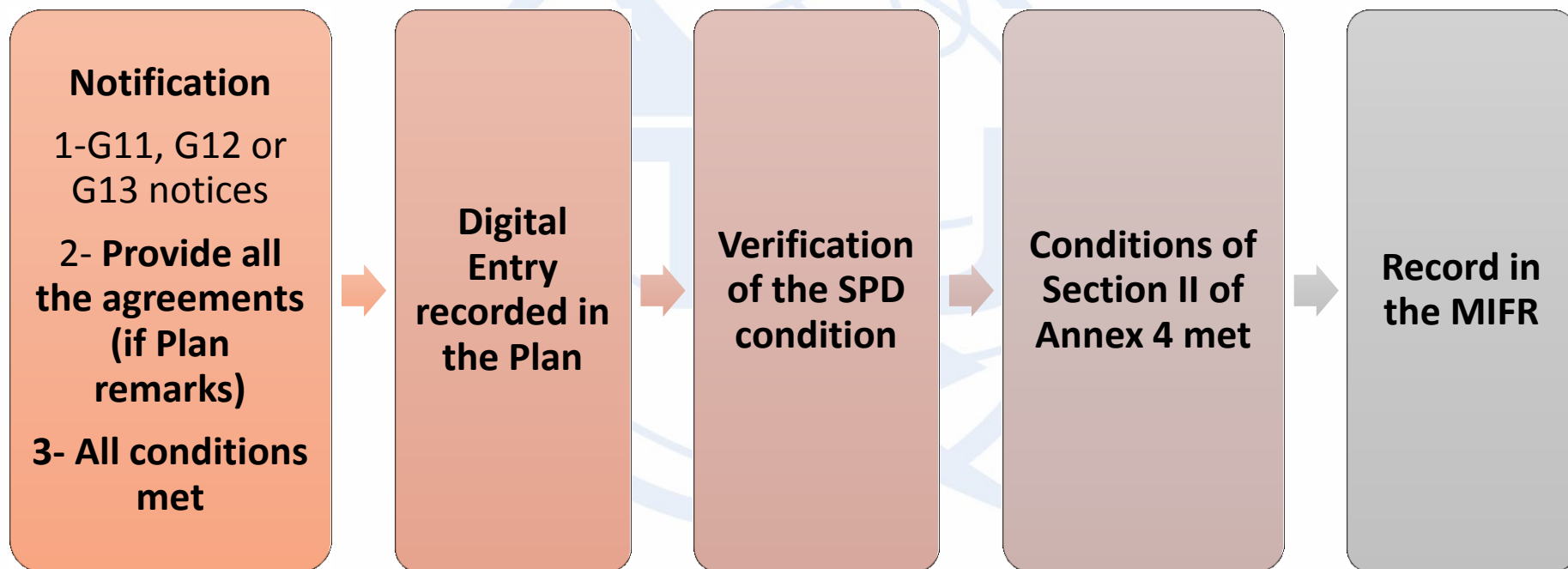


- 5.1.3: A digital entry in the Plan may also be notified with *characteristics different* from those appearing in the Plan, for transmissions in the *broadcasting service or in other primary terrestrial services* operating in conformity with the *Radio Regulations*, *provided* that the peak power density in any *4 kHz* of the above-mentioned notified assignments shall not exceed the spectral power density in the same *4 kHz* of the digital entry in the Plan. Such use shall not claim more protection than that afforded to the above-mentioned digital entry.



Notification according to 5.1.3

Rules of Procedures - Partie A10





Thank you

ITU

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