

**Digital Terrestrial Television and the  
Digital Dividend:  
The importance of frequency  
coordination to minimize interferences”**

Mr. Mario Maniewicz  
Radiocommunication Bureau- ITU

# Outline

- ITU general and basic instruments
- Coordination according to the Radio Regulations
- Examples of regional frequency coordination



# ITU instruments

The rights and the obligations of the International Telecommunication Union Member States in the domain of international frequency management of the Spectrum are incorporated

- in the Constitution (CS) and Convention (CV) of ITU and in the Radio Regulations (RR).

These instruments are intergovernmental treaties ratified by administrations, which means that they undertake to:

- Apply these provisions in their countries;
- Adopt adequately, the national legislation to the essential provisions of this international treaty.

These instruments are further complemented by:

- Regional Agreements;
- Rules of Procedures (RoP);
- **Special Agreements;**
- ITU-R Recommendations.

# Radio Regulations (RR)

The RR, being the principal instrument of the international radio regulatory arrangement, are based on the use of two main concepts:

Frequency block allocations, as contained in the Table of Frequency Allocations in Article 5 of the RR;

- Frequency blocks are allocated to mutually compatible services operating with similar technical characteristics in specific parts of the spectrum.

Voluntary or obligatory regulatory procedures (coordination, notification and recording) that are adopted according to the allocation.

These RR are revised and updated during the World Radiocommunication Conferences (WRCs) by the ITU Member States

WRCs are generally held every 3 – 4 years.

WRC-15 took place in Geneva, 2 – 27 November 2015

WRC-19:



# Frequency coordination

Article 8 of the RR: Status of frequency assignments recorded in the MIFR

Specifically 8.3:

An administration shall take into account when making their own assignments, any frequency assignment recorded in the MIFR, in order to avoid harmful interference,

## Article 9 of the RR – Coordination

*Bilateral/  
multilateral*

*Identification of  
affected adm.  
(coordination prior to  
notification)*

*Use of standardized  
methods for  
calculating the  
potential for  
interference (AP 5,  
ITU-R)*

*Application of  
standardized steps:*

- Exchange of sufficient number of data elements (Ap. 4)
- Communicating comments within a prescribed period
- Publication of results of coordination (in case of 9.21)

In certain cases, coordination is mandatory before notifying to the Bureau:

- For Plan modification;
- For cases referred to under provision Nos. 9.16, 9.18, 9.19 and 9.21.

# Examples of application of ART 9





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GE06 planning

**Sub-Saharan Africa (ATU)  
&  
Arab Region (ASMG)**

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# WRC decisions for Region 1

**470-862  
MHz: BC**



**470-790  
MHz: BC**

**790-862  
MHz:  
MO/BC**



**470-694  
MHz: BC**

**694-790  
MHz:  
MO/BC**

**790-862  
MHz:  
MO/BC**



**Need for more DTT channels in the band 470-694 MHz**





## Start of the frequency coordination meetings

### Digital migration and spectrum Policy summits:

- December 2011: Nairobi
- September 2012: Accra

need to establish minimum  
spectrum requirements for  
broadcasting and broadband at the  
national level

Charge ATU, with the assistance of  
the BR/ITU



In accordance with the recommendation:

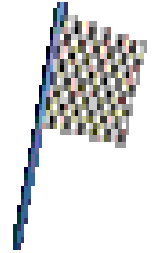
35th meeting of the Permanent Arab  
Committee for Communications and  
Information ( Cairo : 4-5/3/2014 ) ,  
and contributions of the Technical  
Secretariat of the Council of Arab Ministers  
for Communications and Information

Arab countries to ensure sufficient  
spectrum for broadcasting in the 470-  
694 MHz and be able to release the  
700/800 MHz

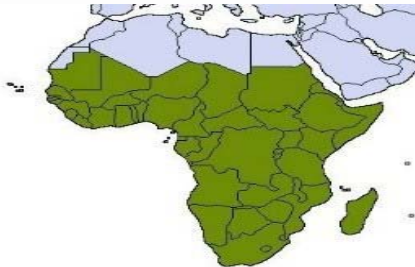
Charge ASMG with the assistance of  
the BR



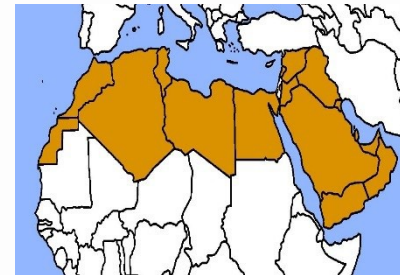
# Results of the GE06 coordination meeting



- Average of satisfied requirements: **97.37%**
- Duration: **18 months**.
- **47** countries participated (except Mauritius).
  - 2 African summits: Nairobi 2011 and Accra 2012 to launch the process.
- **3 planning and coordination meetings:** Bamako, Kampala and Nairobi.
- **33 iterations** for the compatibility analysis, based on the requirements submitted by administrations.
- **7107** submitted frequency requirements in 470-694 MHz (**11406** at the RRC-06 for the band 470-862 MHz).



- Average of satisfied requirements: **76.87%**:
- Duration: **11 months**.
- **17** countries participated.
- **3 planning and coordination meetings:** Dubai, Hammamet and Marrakech.
- **27 iterations** for the compatibility analysis, based on the requirements submitted by administrations.
- **4346** submitted frequency requirements in 470-694 MHz (**9151** at the RRC-06 for the band 470-862 MHz).



# BR actions

In order to provide support to the meeting, the ITU Radiocommunication Bureau provided the compatibility analysis software based on the GE-06 Planning, and suitably modified to take into account:

*channeling arrangements*

- *Used in the participating countries,*

*standards and sharing criteria*

- *that each of the participating countries may wish to retain for this compatibility exercise,*

Training on the:

- compatibility analysis software and
- preparation of the electronic notices for the spectrum requirements and existing assignments,

Assist in the submission of

- the spectrum requirements and existing assignments for the first compatibility iteration,

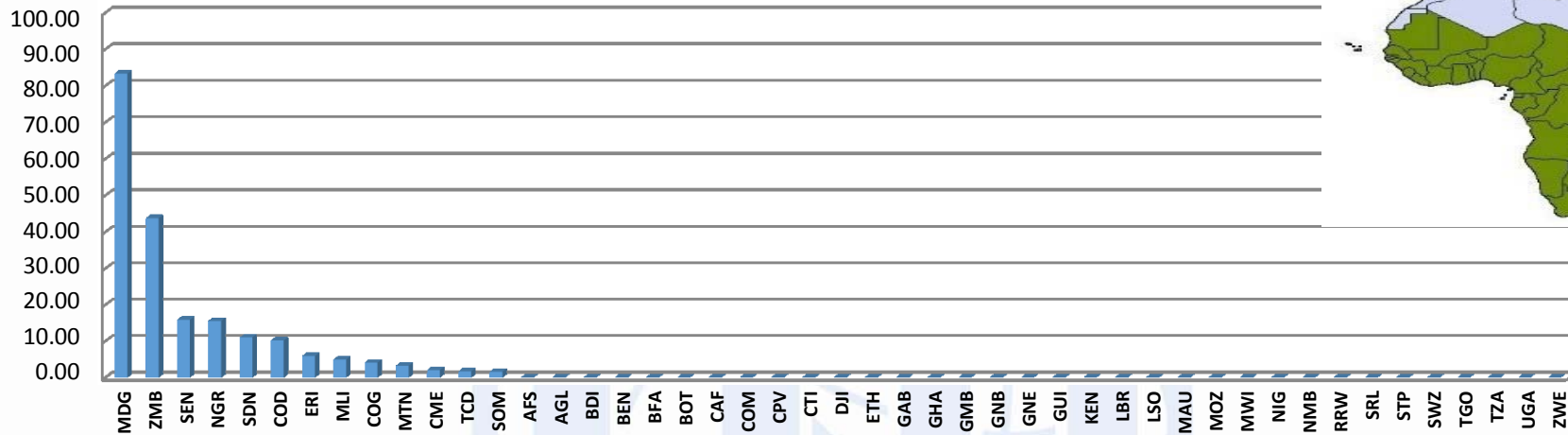
Assessment of the results

- of the compatibility iteration and
- identification of issues to be resolved in subsequent iterations.

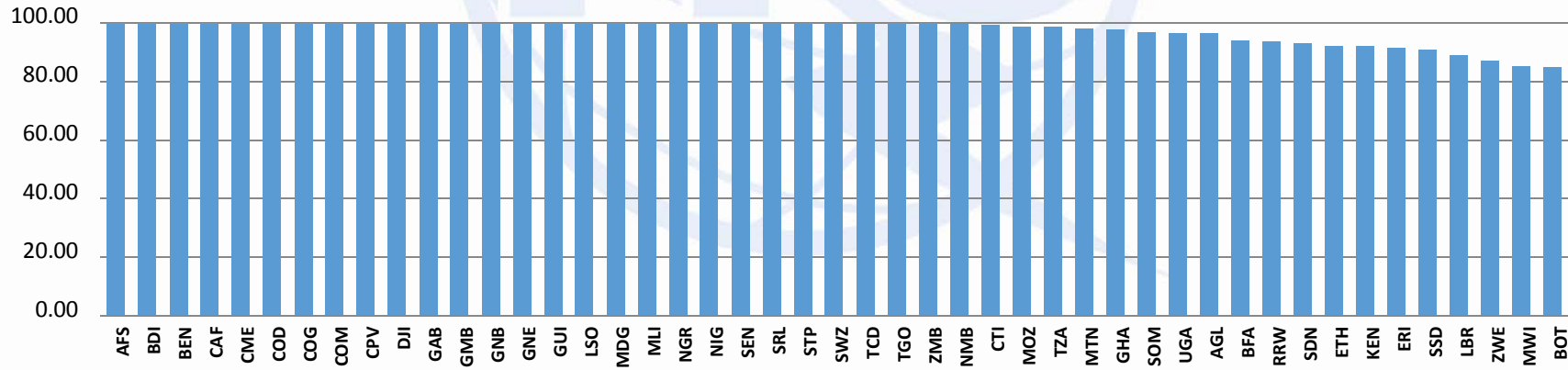


# Results: 1<sup>st</sup> and last iterations for SSA

Iteration 1, percentage of assigned channels



Iteration 33- Nairobi-2

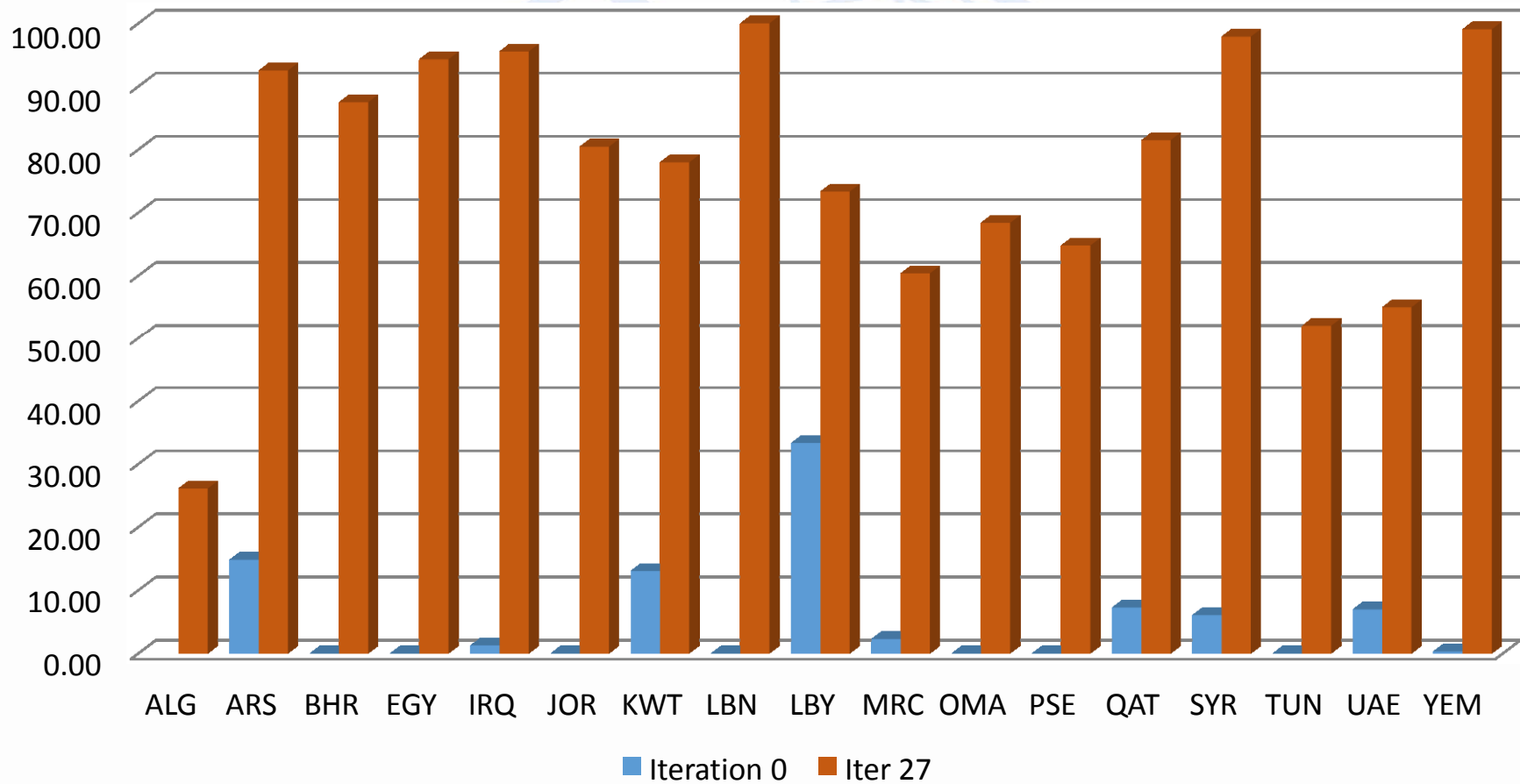


■ Percentage Assignable/submitted

# 1st and last iterations for ASMG

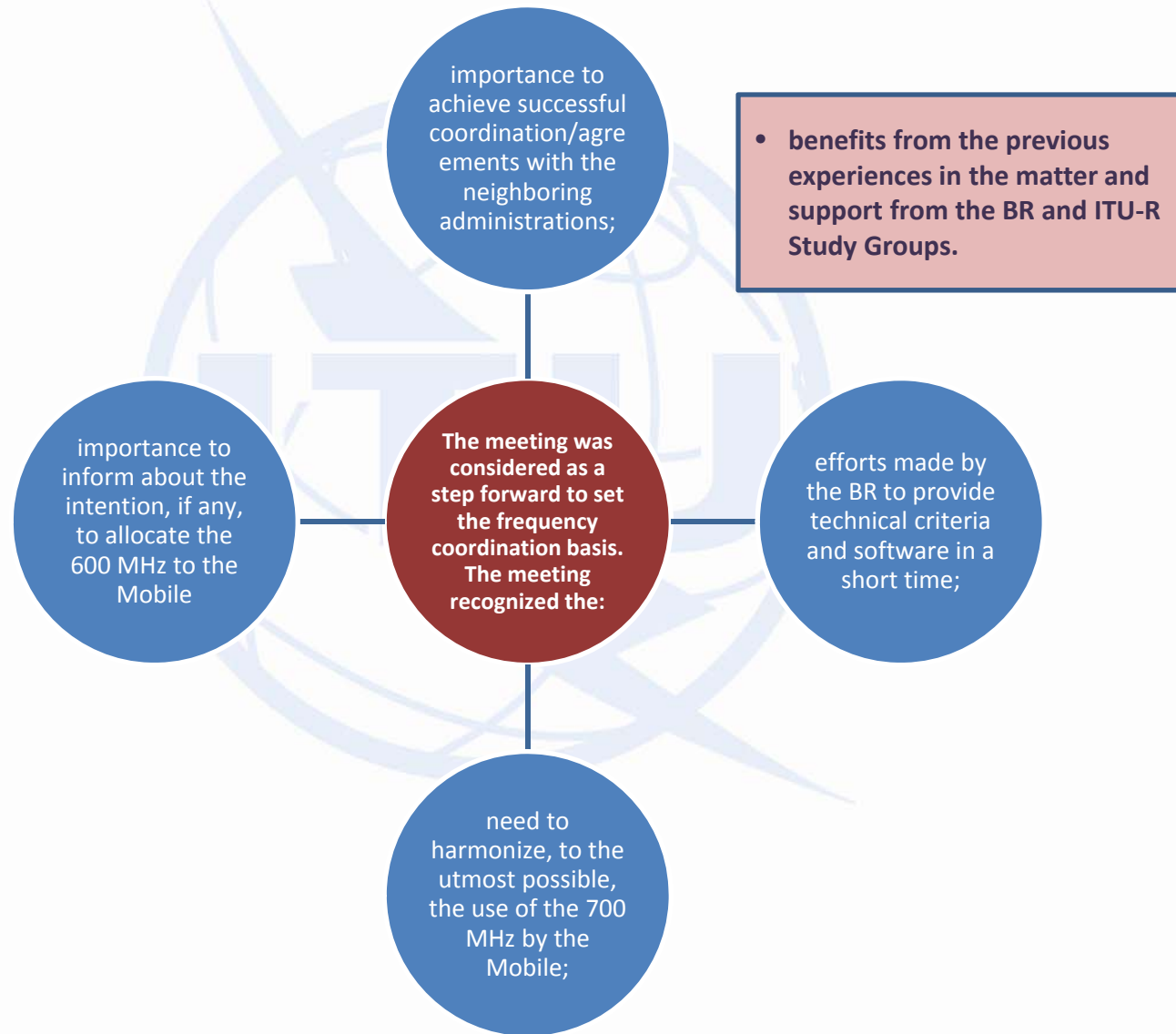


Evolution of assignable channels



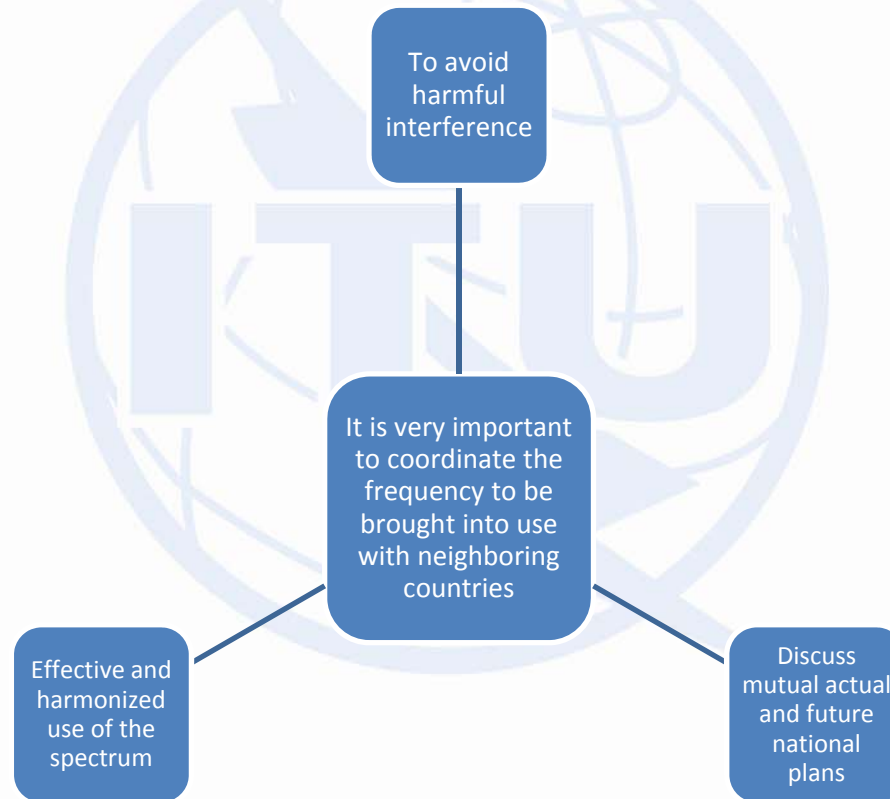
# Learning from the Process

- to avoid WRC complications relating to the addition of country names in the footnotes, and
- to avoid the assignment of DTT channels in the 600 MHz during the frequency coordination meeting, if the administration intends to allocate the 600 MHz to the Mobile service.



- benefits from the previous experiences in the matter and support from the BR and ITU-R Study Groups.

# CONCLUSION





**THANK YOU**