

# GE84 Plan optimization for Africa

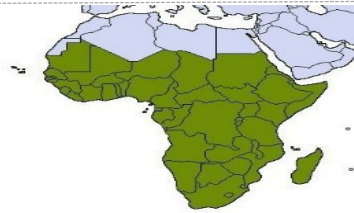
## 2<sup>nd</sup> frequency coordination meeting



AFRICAN TELECOMMUNICATIONS UNION  
UNION AFRICAINE DES TÉLÉCOMMUNICATIONS

2nd frequency coordination meeting  
on the GE84 Plan Optimization for Africa  
Deuxième réunion de coordination des fréquences  
sur l'optimisation du Plan GE84 pour l'Afrique  
28 June - 2 July 2021

# Multilateral frequency coordination meetings



## Sub-Saharan Africa (ATU)

Digital migration and spectrum Ministerial Policy summits December 2011

Digital migration and spectrum Ministerial Policy summit September 2012

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



## Arab Region (ASMG)

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

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 to release the 700/800 MHz**



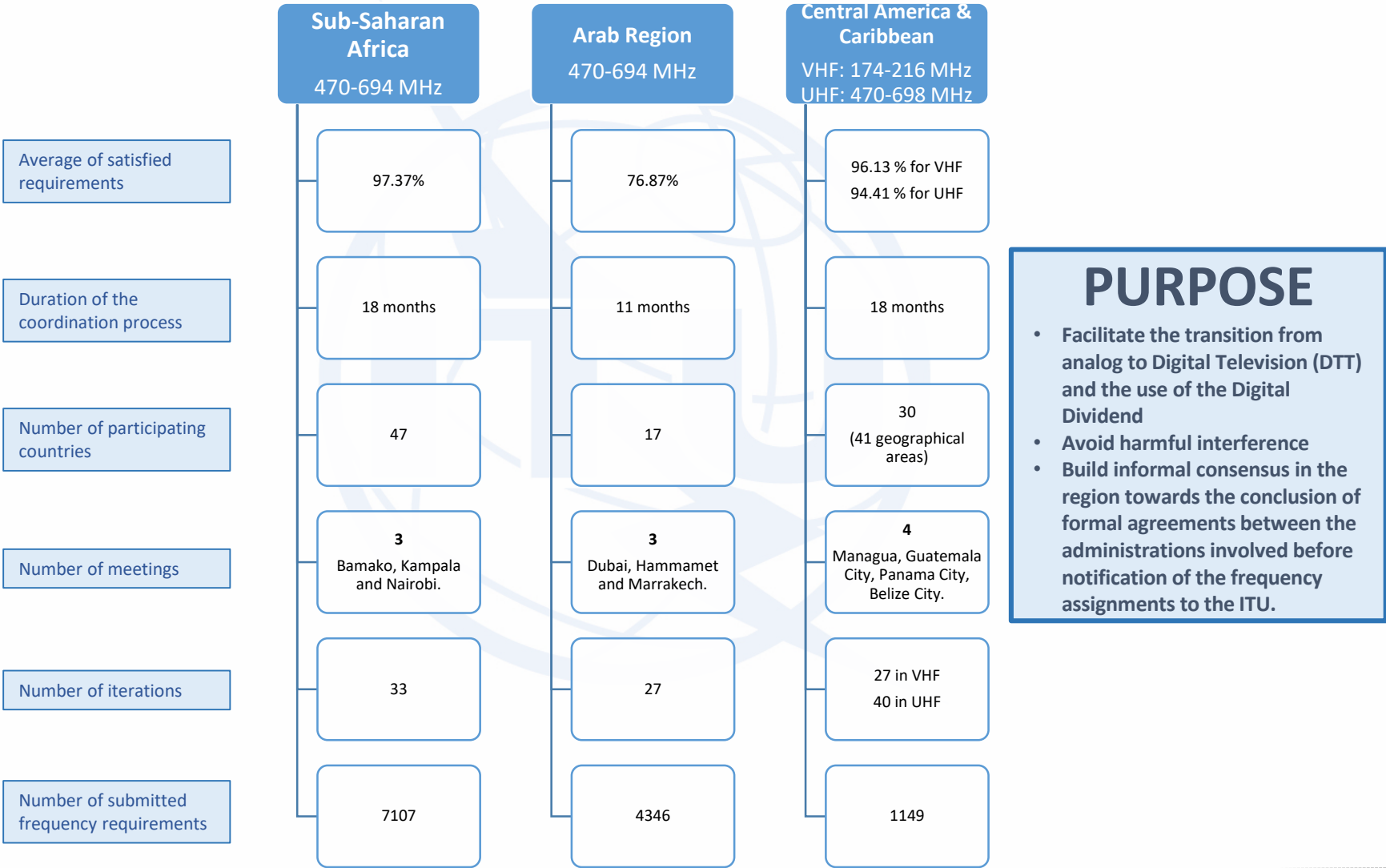
## Central America & Caribbean (CITEL, COMTELCA, CTU)

Central American Summit on Digital Terrestrial Television and the Digital Dividend, El Salvador on 25 and 26 July 2016, and

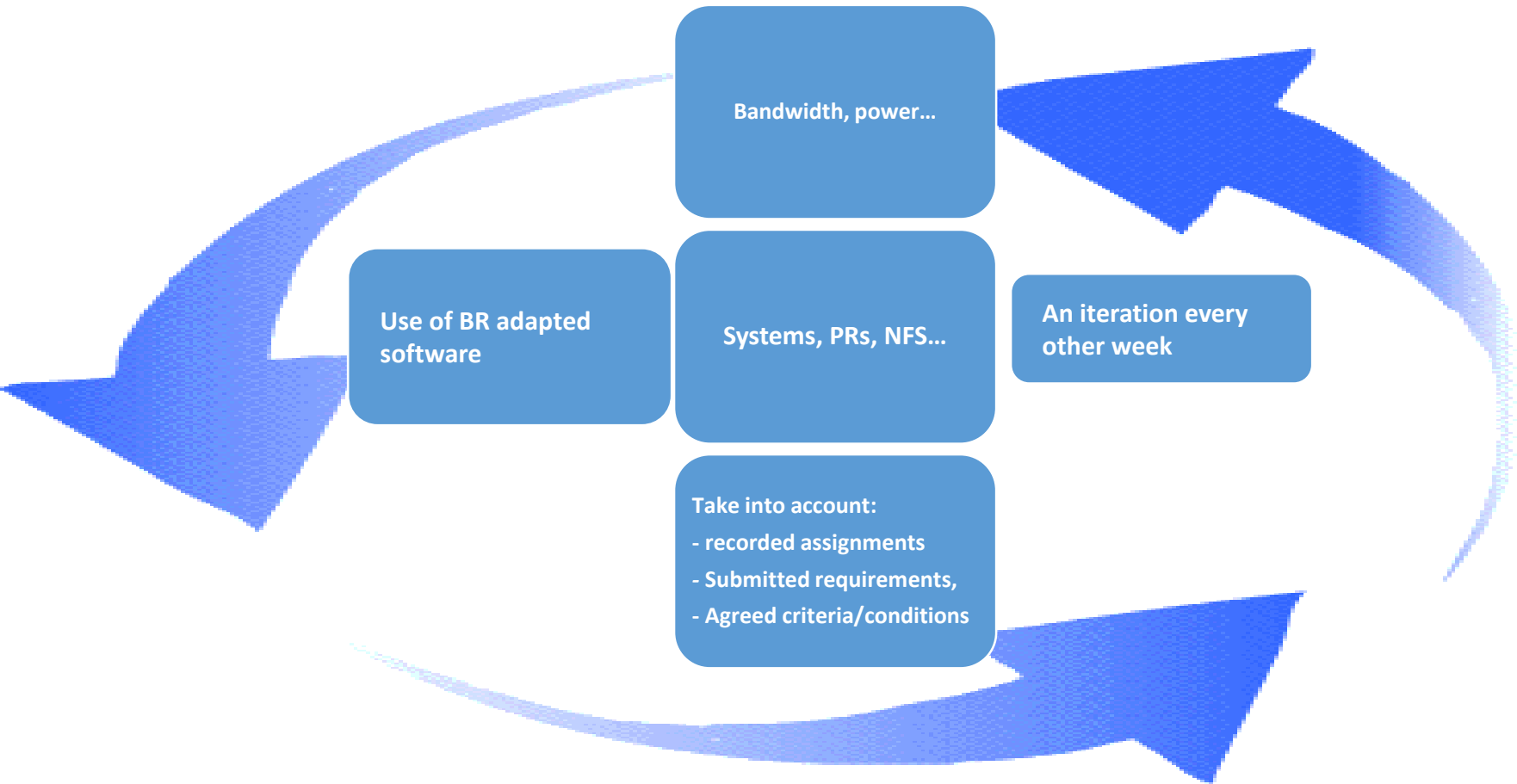
the "San Salvador Declaration" adopted by COMTELCA Members on 26 July 2016

**To secure the operation of broadcasting stations and Enable the Digital Dividend**

# Coordination meetings process and results



# BR support in the coordination process



*Capacity building (training on BR software, compatibility analysis, frequency assignments...) and assistance all along the process*

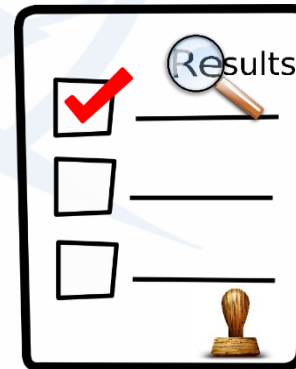
# Outcome of the frequency coordination meetings

Toward a successful coordination process

- General agreed criteria and interference level
- Achieved frequency coordination for cases outside the agreed conditions on bi-lateral level

- Reasonable number of requirements, especially close to the borders;
- Suppress the Plan assignments that are not intended to be operated.


Assignments free of interference



# Frequency Coordination is Key!



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**GE84 Plan  
Optimization**

**for African  
countries**

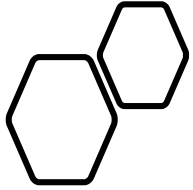
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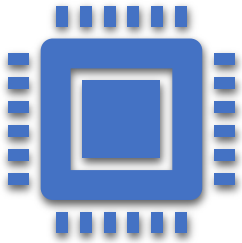
# Why optimize GE84 Plan for Africa?

- Address the **increasing demand** for new FM radio stations by enabling the assignment of new frequencies,
- GE84 Plan is **congested**, therefore, it is needed to:
  - Ensure an efficient use of the 87.5-108 MHz band for analogue sound broadcasting, by accurately reflecting the situation of the FM band in the Region, by reviewing the:
    - *GE84 Plan entries, and*
    - *corresponding entries in the MIFR.*
  - Ensure **compatibility** among the existing and new broadcasting frequency assignments,
  - Facilitate potential future introduction of digital sound broadcasting.





# Planning basis for GE84 optimization



## Technical criteria used for compatibility calculations – GE84 Agreement

Uniform 100 kHz frequency step (spacing): Section 3.2 of Chapter 3 of Annex 2 of the Agreement,  
protection ratios: Section 3.4 of Chapter 3 of Annex 2;  
propagation model: Chapter 2 of Annex 2.

### Assignments to be taken into account:

- The ones recorded in the GE84 Plan and the ones published in Part A of Special Sections GE84 : **Yes**
- Assignments to other primary services in adjacent bands: **No**



## Compatibility analysis software

ITU has adapted the existing GE84 software to a large-scale compatibility analysis necessary for the GE84 Plan optimization  
This software will be further adapted according to the agreed planning and coordination criteria.

# Proposals to be approved !



## Procedural

To stop any modification to the GE84 Plan until the end of the coordination meetings.



## Practical

To submit the requirements every other Friday to [brbcd@itu.int](mailto:brbcd@itu.int) for iterations;

An iteration every two weeks.

If an administration does not submit its requirements, the requirements used for the previous iteration will be taken;

For absent administrations, the BR will generate requirements and try to contact them.

To avoid drastic changes to the requirement file, starting iterationX



## Technical

Maximum acceptable Nuisance Field Strength (NFS) value is 54 dB( $\mu$ V/m),

Min/Max number of layers,

Take into account the polarization discrimination,

...

# The generated FLEX requirements by the BR

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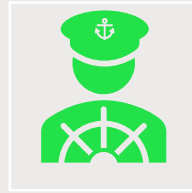


## General

Based only on RECORDED Plan Entries

Consider a 2 km tolerance

1 requirement per site

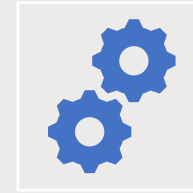


## Administrative part

Insert in each generated notice a unique Adm code like BR\_sitename (N.B. site name may be truncated due to max size of 20 characters for this field)

t\_freq\_assgn should be set to 87.7

t\_station\_id should be set to FLEX  
COORD information is not copied.



## Technical part

if t\_hgt\_agl =0, replace the value with 50m

fmtv\_ant\_hgt : where missing, SRTM3 was used.

Max effective antenna height was replaced accordingly.

For requirements with system 4, BDW= 300 kHz.

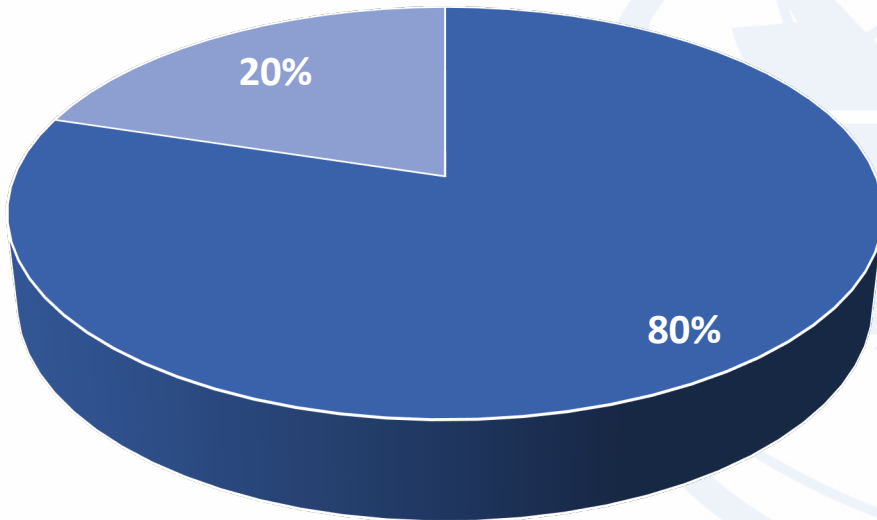
Add in the remarks the replacements made by BR for t\_hgt\_agl =0, fmtv\_ant\_hgt and BDW.

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# GE84 Plan statistics for Africa

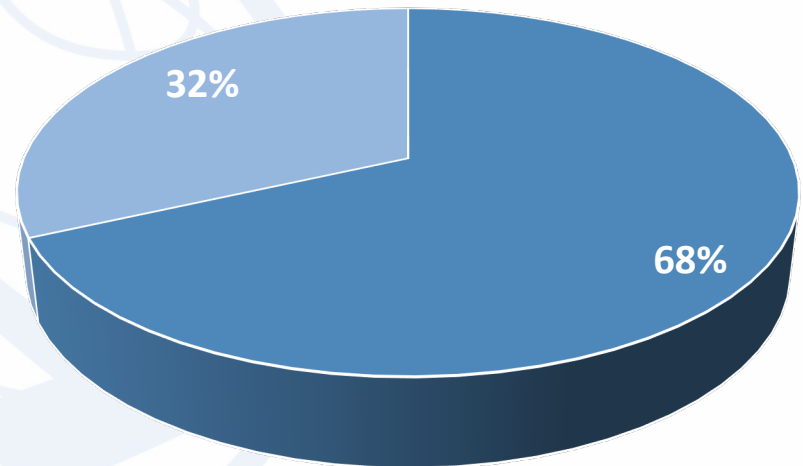
(September 2020)

Recorded in GE84 Plan



- Toutes les administrations parties de GE84
- Les administratoins d'Afrique (54 administrations)

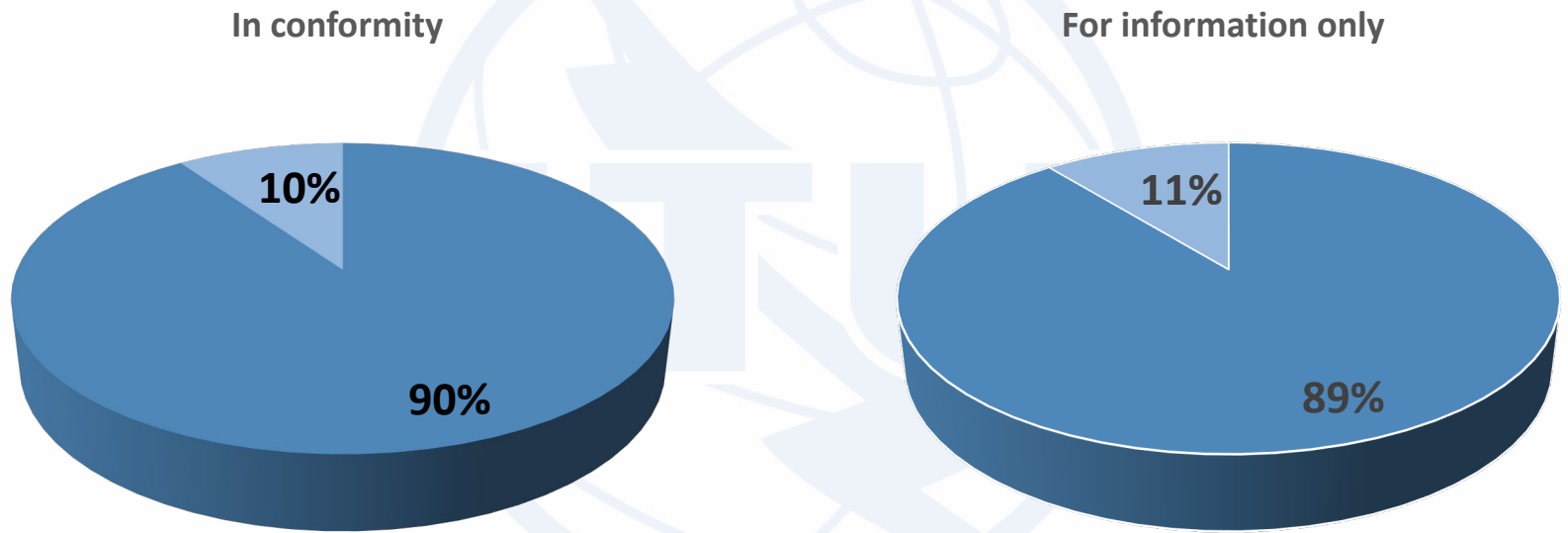
In coordination stage



- Toutes les administrations parties de GE84
- Les administratoins d'Afrique (54 administrations)

# MIFR statistics for FM

(September 2020)



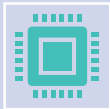
- MIFR: all administrations membres of GE84 Agreement
- MIFR African countries (36 administrations):

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# Ensure success!



The success of this optimization will require:



Intensive involvement by administrations in:

updating the GE84 Plan,  
updating the MIFR,  
providing the necessary data/requirements,  
mastering the software and tools provided by ITU,



Active and fruitful participation in the future frequency coordination meetings

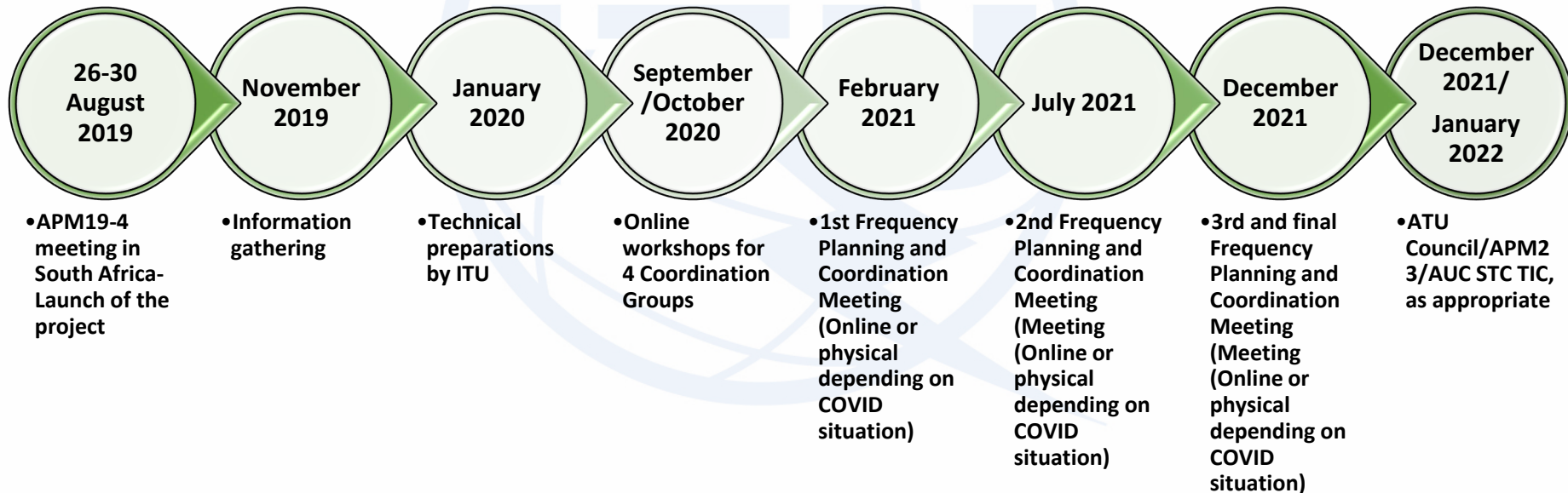
Engineers in charge of the GE84 Plan and/or frequency assignment for FM radio,  
Same participating experts from all administrations involved along the process,



To identify additional mutually compatible assignments.

# GE84 Optimization- Adapted timeline

## GE84 Optimization- Adapted timeline



# GE84 Plan Optimization Workshop

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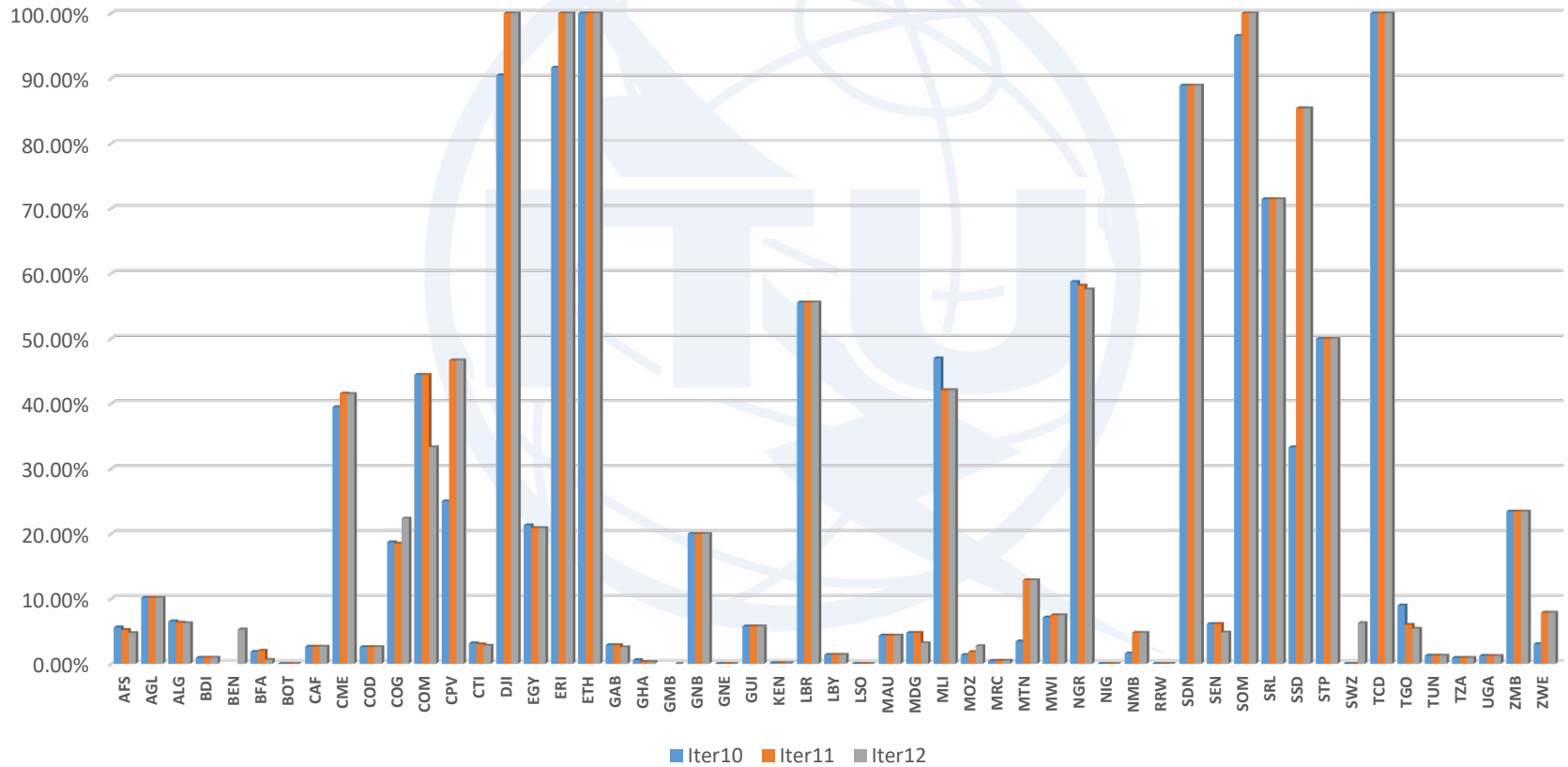
- **Workshops provided online trainings based on demonstrations and presentations on the project, its mainstreams, the use of BR software, and provide learning materials. Presentations and demos will be done on:**
  - the tools adapted by the BR to run compatibility analysis of new requirements,
  - General view on the GE84 Agreement applicable procedures





# Status so far

Percentage of assigned channels  
-Internal and received interference taken into consideration-



# GE84 Optimization- main information

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- Web page: <https://www.itu.int/en/ITU-R/terrestrial/broadcast/africa/Pages/default.aspx>
  - GE84 online workshop material (September-October 2020): <https://www.itu.int/en/ITU-R/terrestrial/broadcast/africa/Pages/Workshop.aspx>
  - GE84 Software, part of eBroadcasting: <https://www.itu.int/ITU-R/eTerrestrial/eBroadcasting>
  - Final Acts of the GE84 Agreement: <https://www.itu.int/pub/R-ACT-RRC.5-1984/en>
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Thank you!