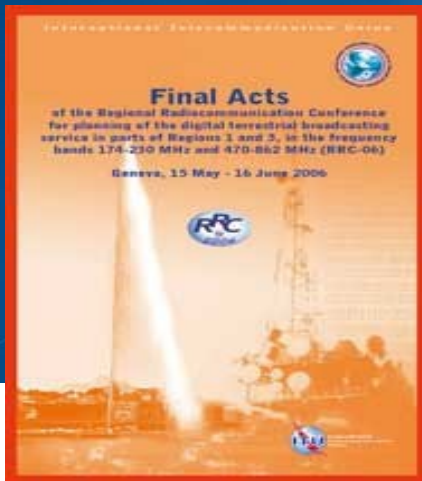


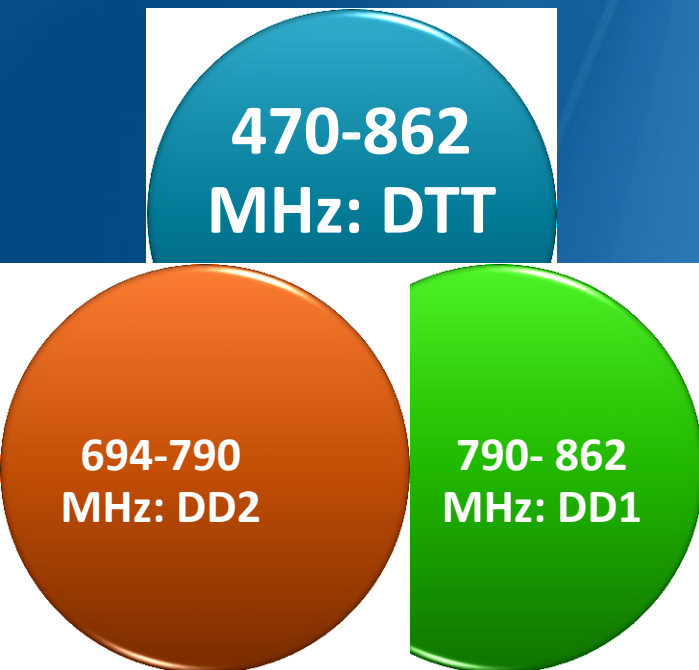


Transition to digital TV and allocation of the digital dividend







François Rancy
Radiocommunication Bureau
Director

Digital Dividend (s)



- Is the amount of spectrum in the frequency band 470-862 MHz to be released after the switch-off of analogue TV
- **DD1: The band 790-862 MHz (WRC-07) Region 1**
- **DD2 : The band 694-790 MHz band (WRC-12) Region 1**

Why 700 MHz for MEA?

- Several countries in MEA use 850MHz for other services and so cannot make the 800 MHz band available for Mobile. 
- The penetration of fixed broadband is very low or infrastructure not sufficient. 
- Demand for mobile data services is growing and more spectrum is needed to accommodate this demand 
- A dynamic wireless broadband industry to contribute in the economic growth and job creation. 

● Limited use of terrestrial TV

- Low penetration for Terrestrial broadcasting , compared with other TV platforms and/or provides few TV channels.
- **Limited number** of TV channels.
- Late introduction allows the choice of DVB-T2/MPEG4 → very efficient spectrum consuming : Larger DD

- the 700MHz allocation in Region1 raises the prospect of harmonization with other ITU world regions.



Benefits of Harmonization

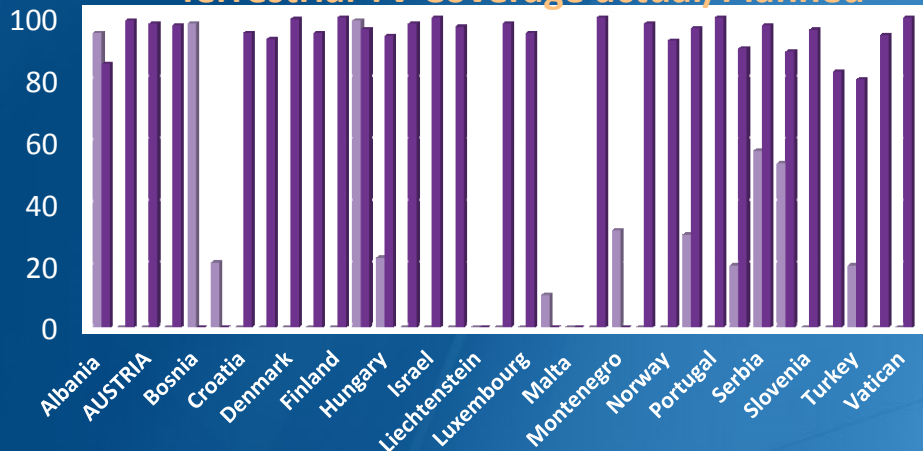
- Economies of scale,
 - Can decrease terminal costs by **50%** (also offer better performing phones, more choice)
 - Reduces the complexity of the radio design
- International roaming
- Interoperability,
 - Reduces interference with adjacent services and helps managing cross-border interference...

Feasibility in 700 MHz

- Countries in MEA started planning DSO later than European and are well positioned to use newer technologies, such as DVB-T2 and MPEG-4/H.256, which offer better spectral efficiency.
 - Spectrum in the 700MHz band could be made available by most regulators in the MEA **by WRC-15**, when it is expected to be allocated worldwide
- In Europe, in contrast, most countries planned DSO some years ago and hence use DVB-T with multi-frequency networks (MFNs) for an extensive DTT.
- Substantial replanning will be needed to DVB-T2 and extensive use of single-frequency networks (SFNs).
 - expected to be available in Europe in **2020–2022**

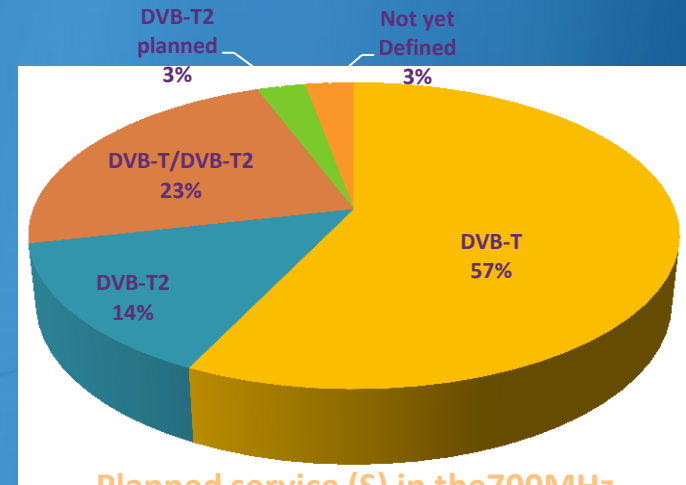
Europe (example of countries)

Terrestrial TV Coverage actual/Planned

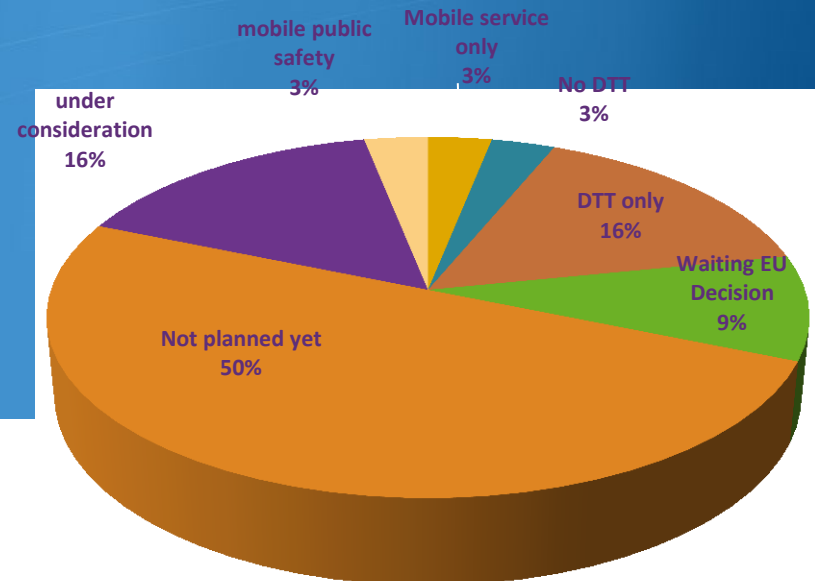


■ Terrestrial analog TV penetration (%coverage analog terrestrial TV)
 ■ Average estimated digital coverage (% population/Terrain)

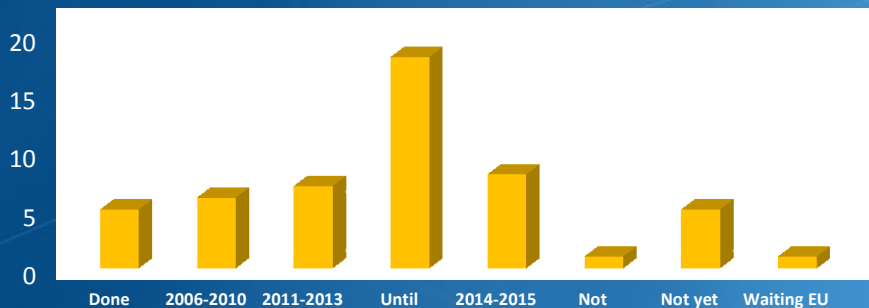
TV standard



Planned service (S) in the 700MHz



Allocation date of the 800 MHz

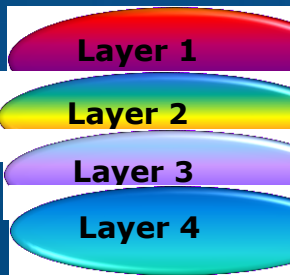


- 2010 EC Decision 2010/267/EU to harmonize the 800 MHz band the 800 MHz band for Mobile Broadband : By 1 January 2013.
- The Commission shall grant specific derogations until 31 December 2015 for Member States with exceptions

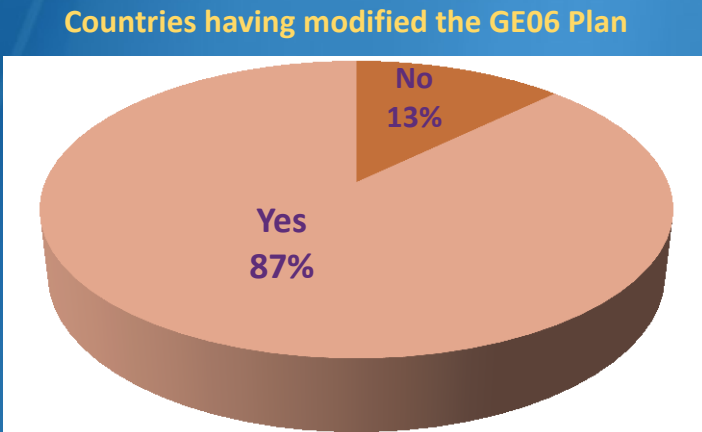
Sub-Saharan Africa

- ATU Ministerial Summits in December 2011 (Nairobi), September 2012 (Accra) and May 2014 (Nairobi)
- Decided to allocate the digital dividend to the mobile service under 694 MHz
- Recommended the adoption of DVB-T2 and MPEG4
- Decided to replan GE06 Plan on the basis of 4 national layers per country. Negotiations started in March 2012 and were completed in July 2013 at iteration 33.
- Recommended the end of analog switch-off by 17 June 2015

Coordination meetings for Sub-saharan Africa



470-694 MHz



DD1?

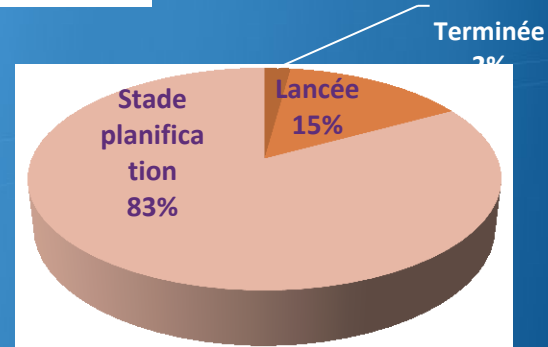
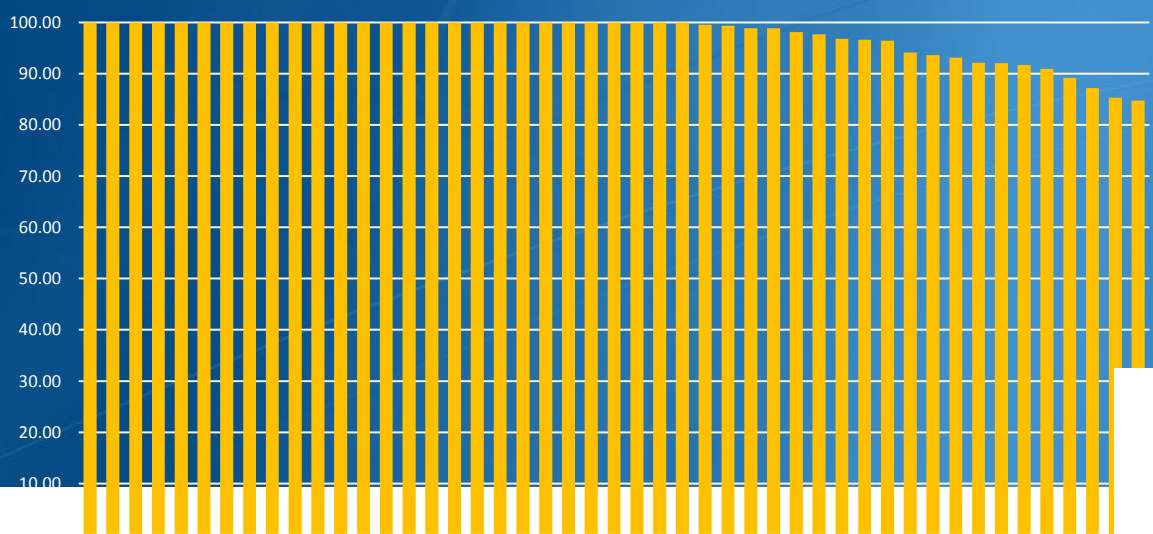
DD2?

694-862 MHz

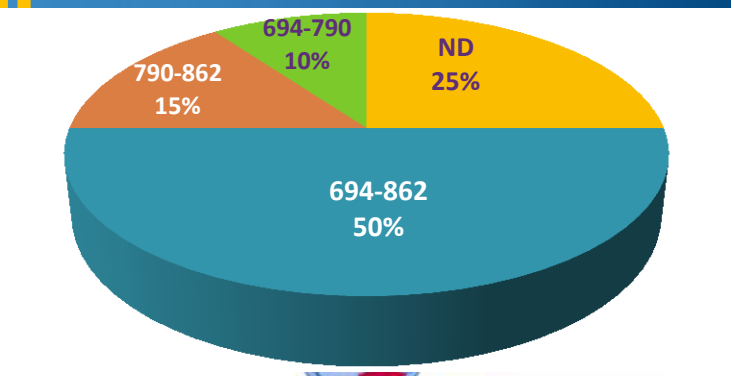
Mobile?

Sub-Saharan Africa

Percentage of assignable channels, average satisfied req.: 97.37%

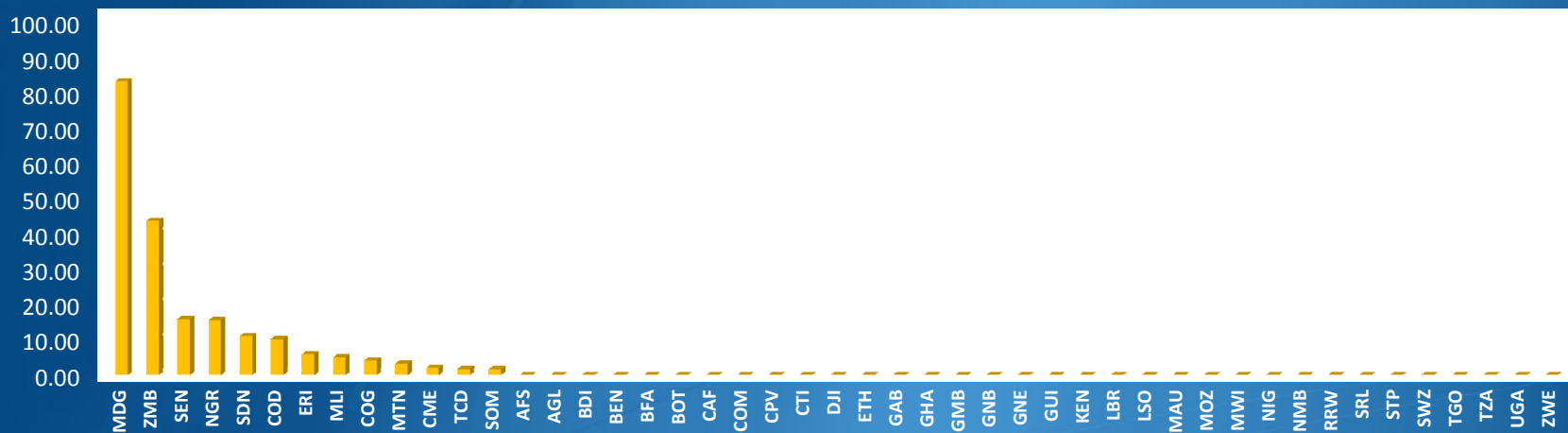


Identified DD (21 Countries)

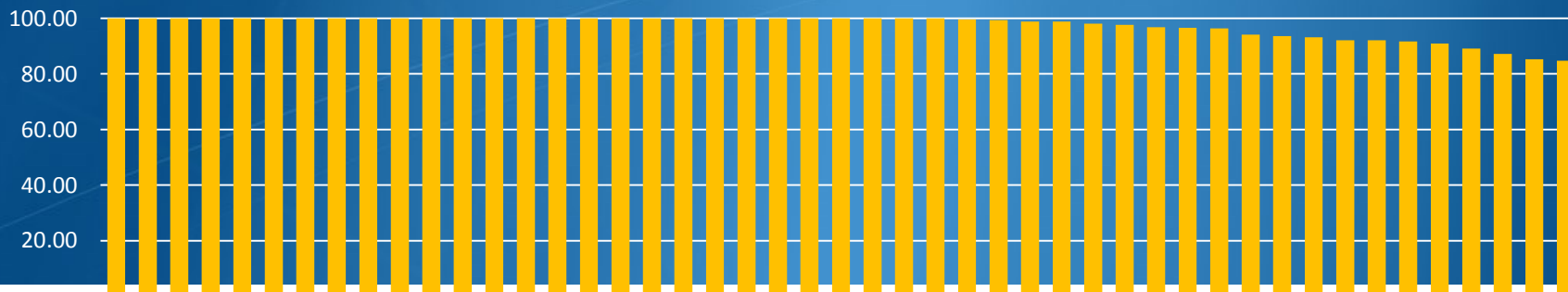


1st and last iterations for SSA

Iteration 1, percentage of assigned channels

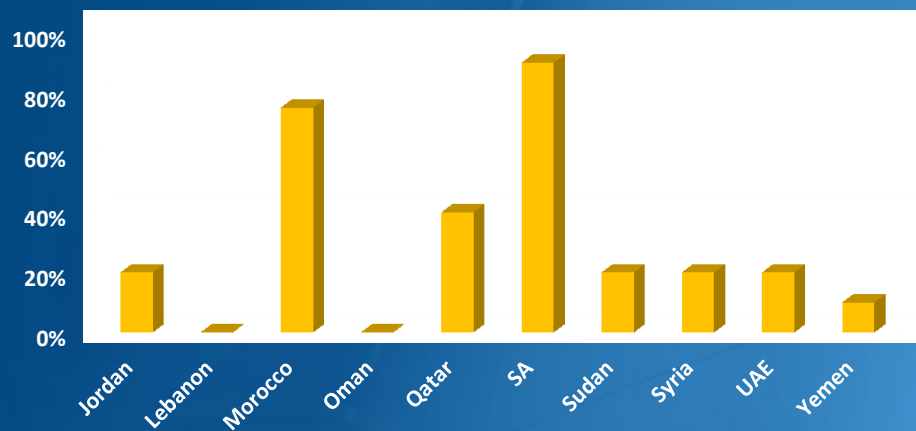


Iteration 33- Nairobi-2

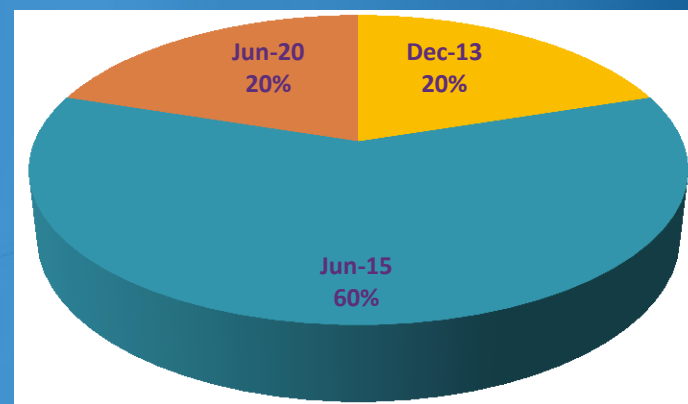


Arab countries (Questionnaire replies nov .2011)

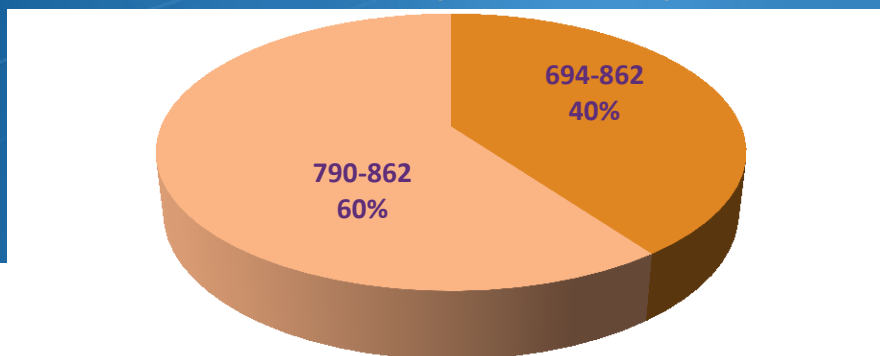
Level of implementation of digital TV



ASO date

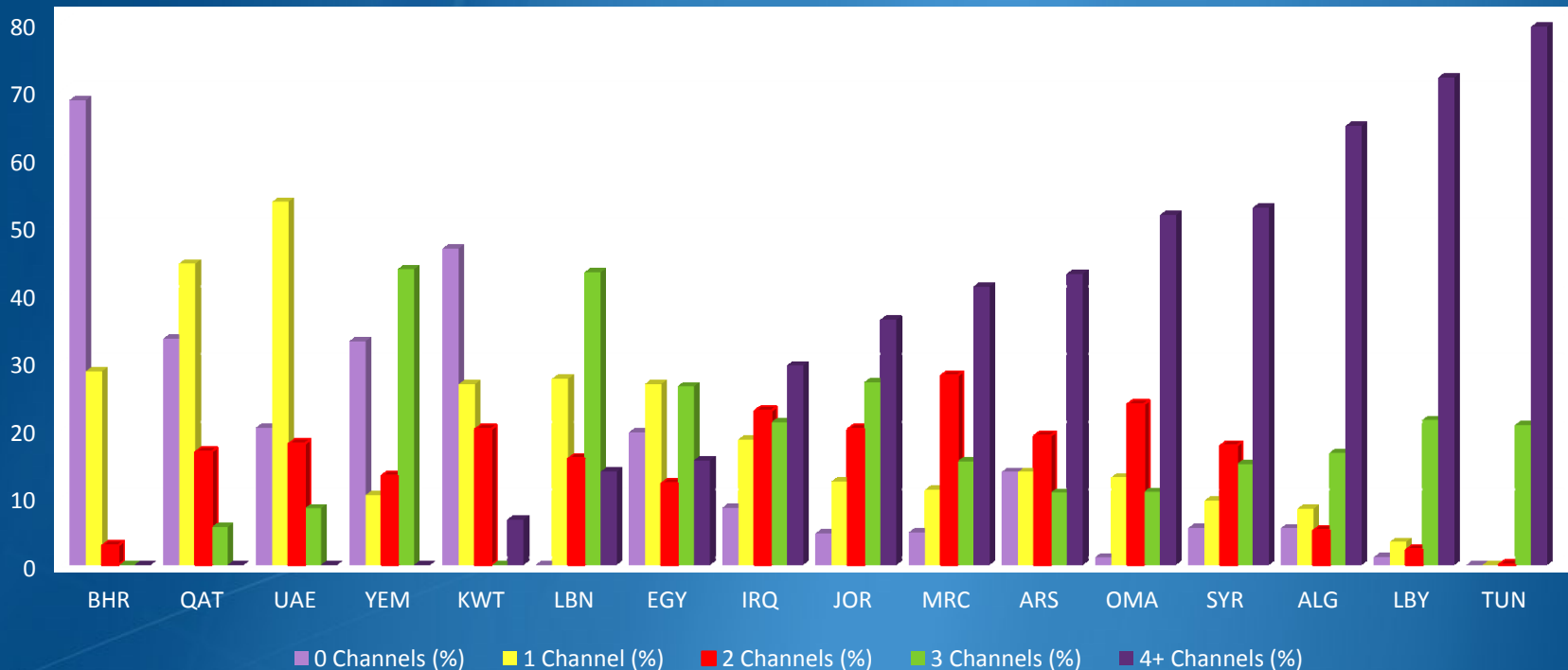


Identified DD (10 countries)



GE06 Plan for the Arab countries

Number of layers in GE06 Plan- May 2014



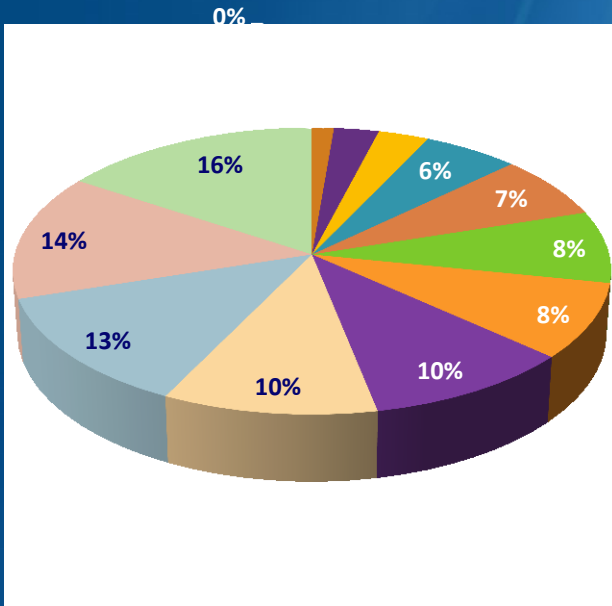
From Bad



To better

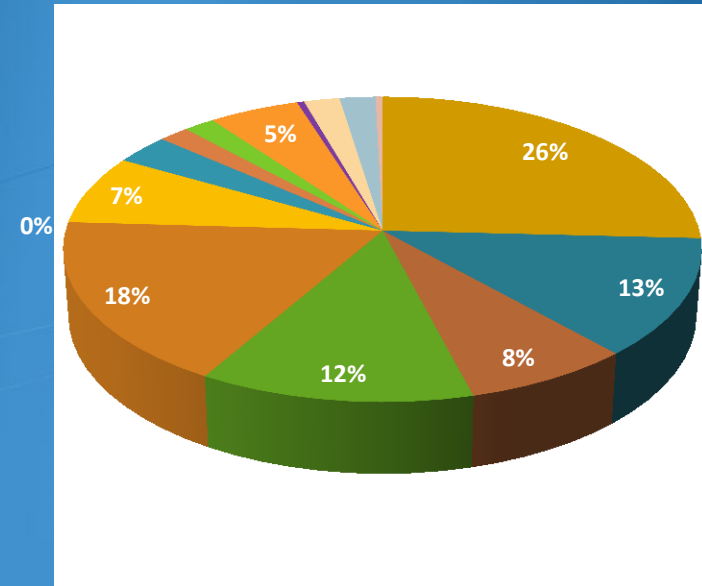
Worst and best cases- Layers (GE06)

4+ Channels (%)



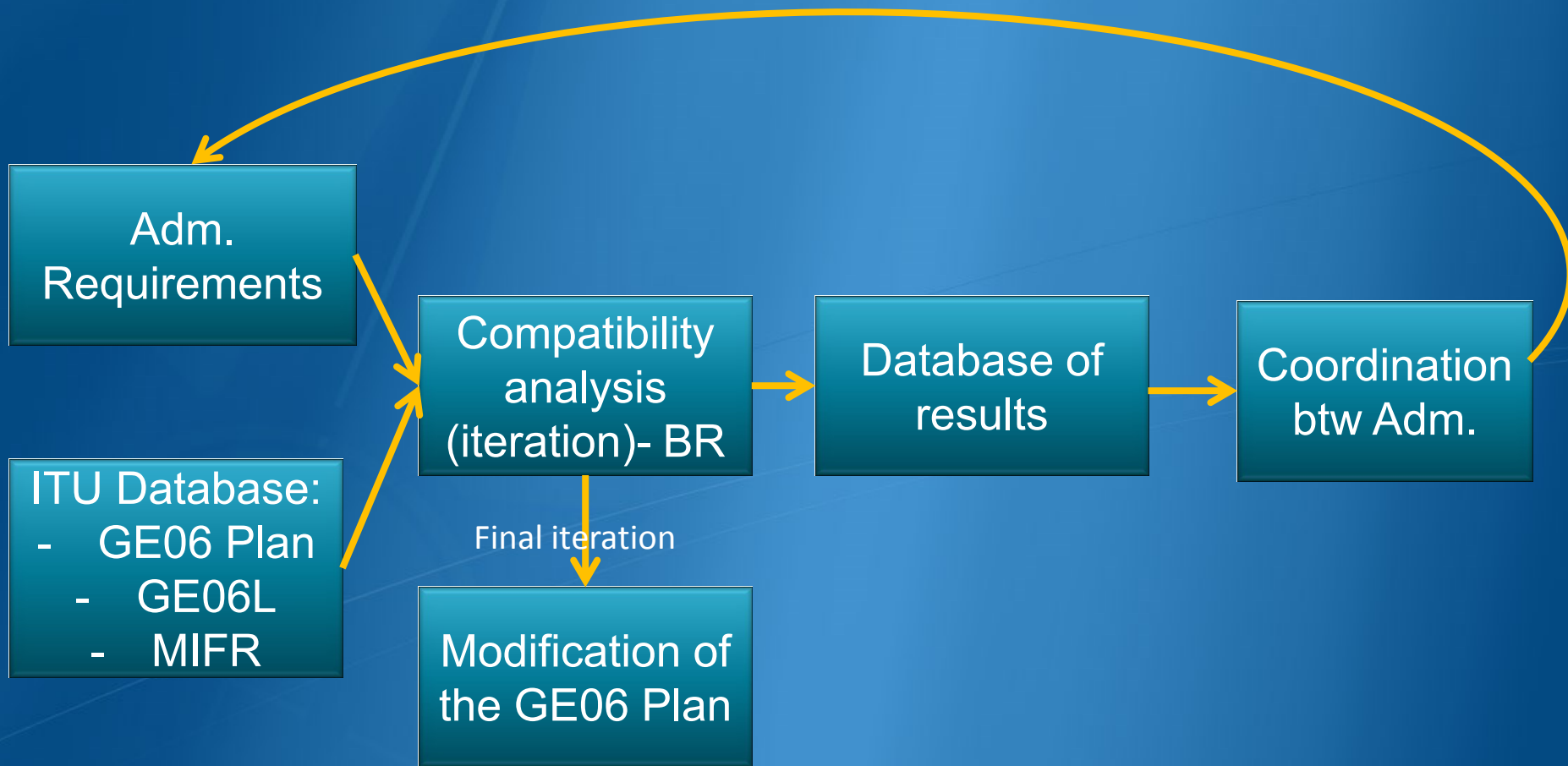
- BHR
- QAT
- UAE
- YEM
- KWT
- LBN
- EGY
- IRQ
- JOR
- MRC
- ARS
- OMA
- SYR

0 Channel (%)



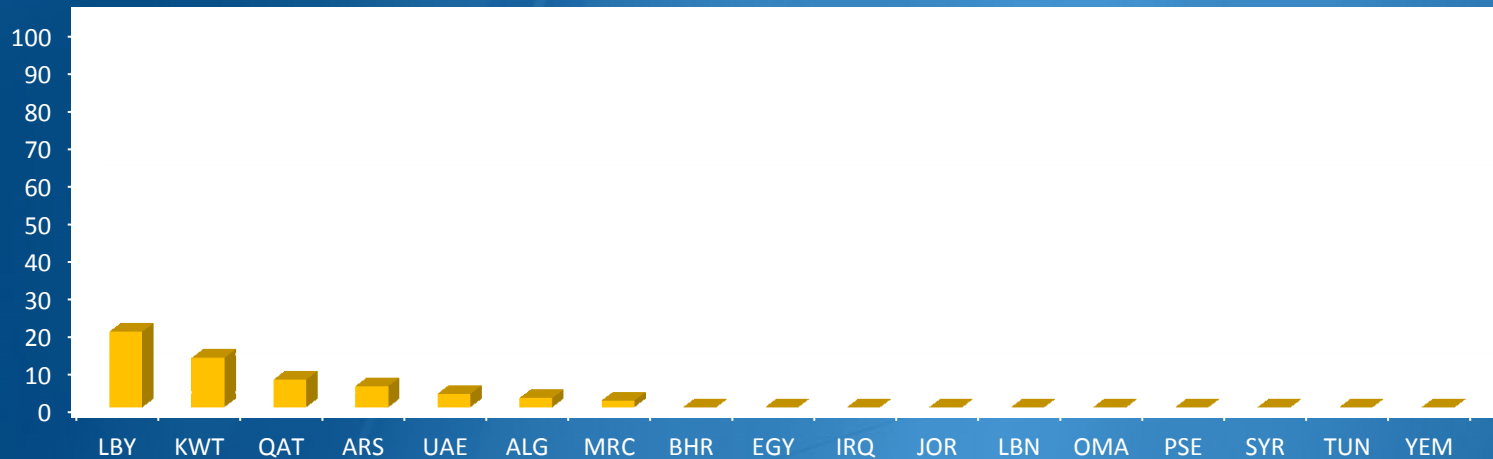
- BHR
- QAT
- UAE
- YEM
- KWT
- LBN
- EGY
- IRQ
- JOR
- MRC
- ARS
- OMA
- SYR

Proposed process of coordination for the Arab countries



1st iteration for Arab countries (flexible channels)

Percentage of assignable channels with margin: 1.25dB



Percentage of assignable channels with margin: 4dB



The requirements generated by the BR as to reach 4 layers, with analysis for channels in the whole band 470-694 MHz

BR actions

- Generated the initial requirements with flexible channels (to reach 4 layers);
- Adapted the necessary software and tools for the Arab Region;
- Will assist in the frequency coordination meetings, regional iterations (compatibility analysis), ...
- One iteration each 2 weeks until the 3d and final meeting;
- Will take in charge to find available channels for the 'absent' administrations' (4 layers), if any;
- Assistance all along the process.
- ...

Proposed timeline and activities

Iterations/Activity	Meeting place	Dates
1		Apr-14
Tools and Planning criteria	1st ASMG/ITU meeting Dubai-UAE	18/5/14
Channel search and coord.		19/5/14
2		20/5/14
Results analysis, channel search and coord.		21/5/14
3		22/5/14
4		Jun-14
5		6/6/14
6		20/6/14
7		Jul-14
8		4/7/14
9		18/7/14
Results analysis, channel search and coord.	2nd ASMG/ITU meeting TBD	1/8/14
10		16/8/14
Results analysis, channel search and coord.		17/8/14
11		18/8/14
Results analysis, channel search and coord.		19/8/14
12		20/8/14
13		Sep-14
14		5/9/14
15		19/9/14
16		Oct-14
Results analysis, channel search and coord.	3rd ASMG/ITU meeting TBD	3/10/14
17		17/10/14
Results analysis, channel search and coord.		31/10/14
18		14/11/14
Results analysis, channel search and coord.		15/11/14
19		16/11/14
Results assessment. GE06 Article4		17/11/14
		18/11/14
GE06 Plan modification		

Next step

- You need to decide on the process of assigning additional channels and the criteria for the Regional coordination, such as min/max number of layers, the protection margin...

Thank you for your attention

Francois Rancy
Director of the BR

