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Implementing the GE06 Regional Agreement

ITU-D Regional Development Forums
2010 for the African region
Banjul, The Gambia
14 – 16 July 2010

Overview



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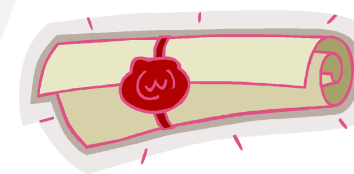
- Relevant reference documents
- Brief historical overview
- Plan modification procedures
- Notification procedures
- Transition
- Digital dividend – re-planning



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Relevant reference documents



Relevant reference documents



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- Final Acts GE06
- Rules of Procedure
- GE06 Guidelines Broadcasting Service –
http://www.itu.int/ITU-R/terrestrial/docs/notice-forms/ge06/BS_Guide.pdf
- GE06 Guidelines OPS –
http://www.itu.int/ITU-R/terrestrial/docs/notice-forms/fxm/os_guide.pdf
- GE06 Web pages –
<http://www.itu.int/ITU-R/terrestrial/broadcast/plans/ge06/index.html>
- App. 4 (WRC-2007)



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Brief historical overview



Preparation for RRC04/RRC06

- European Broadcasting Area – Re-planning ST61 – Council 2001
- Include African Broadcasting Area (GE89) by special request – Council 2002
- Plenipotentiary Conference 2002 (Marrakesh) – include the RCC countries



Reasons for a planning conference

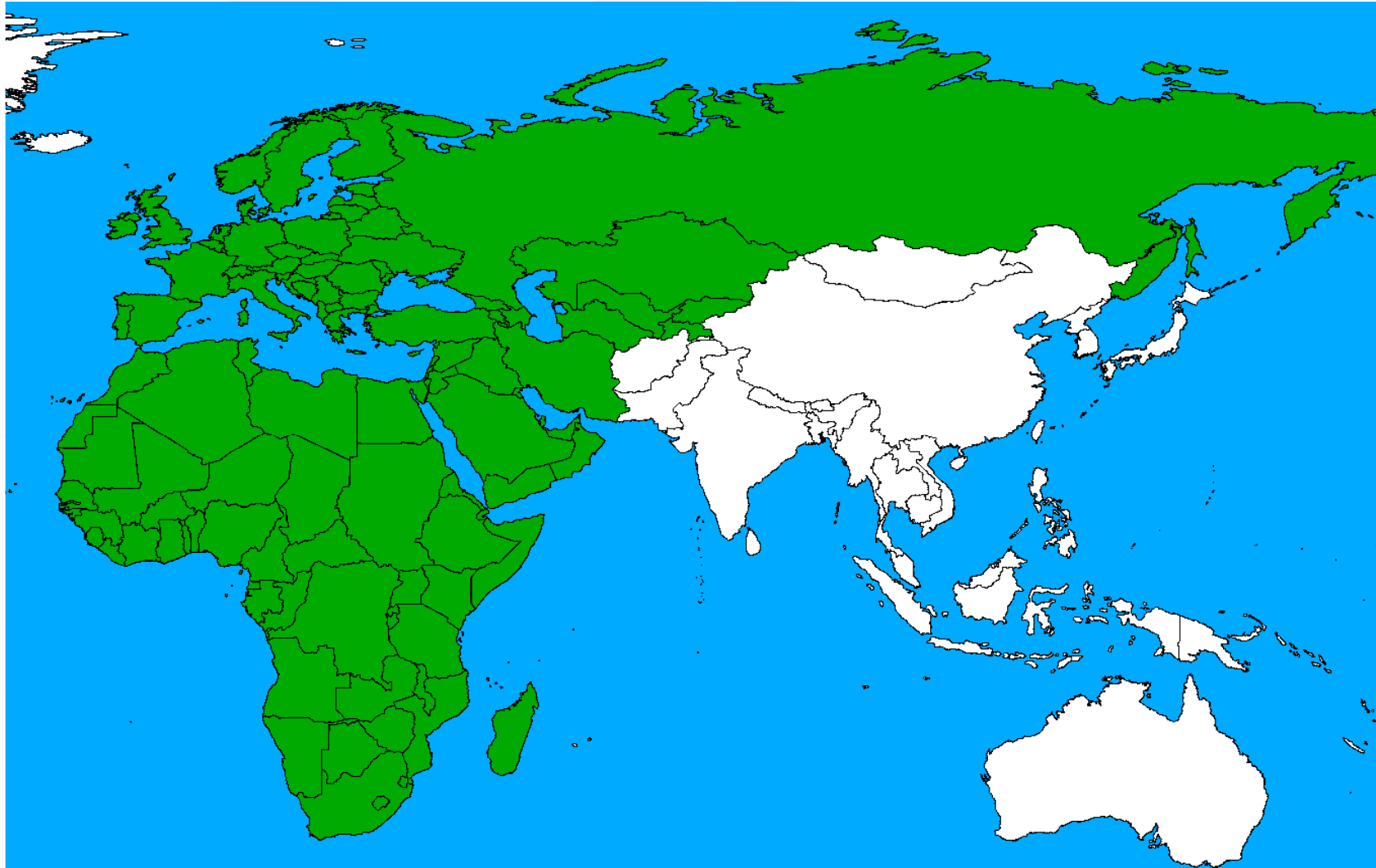
- Disparate analogue TV systems across ITU Region 1
- Conversion of analogue TV assignments → digital TV assignments under ST61/GE89 not efficient use of the spectrum
- One standard for digital TV and one standard for digital sound broadcasting

RRC04/RRC06 - A brief history



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GE06 Planning Area



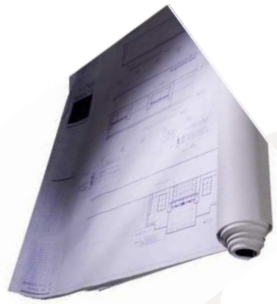


Outcome of the RRC06

- First unified region in ITU since 1984!
- Adopted System B (DVB-T) for digital television and digital System A (T-DAB) for sound broadcasting planning
- Adopted:
 - Plans for:
 - Analogue television broadcasting
 - Digital television broadcasting and digital sound broadcasting
 - List Other Primary Terrestrial Services



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Plan modification procedure



Plan modification procedures



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- Modifications to the Plan (Art. 4)
 - Add or modify Plan entries
 - Add to digital Plan - assignments stemming from an allotment
 - Cancel Plan entries (TB5)

■ Notice forms:

	Digital assignment	Digital allotment	Analogue assignment
Sound	GS1	GS2, GA1	-
Television	GT1	GT2, GA1	G02



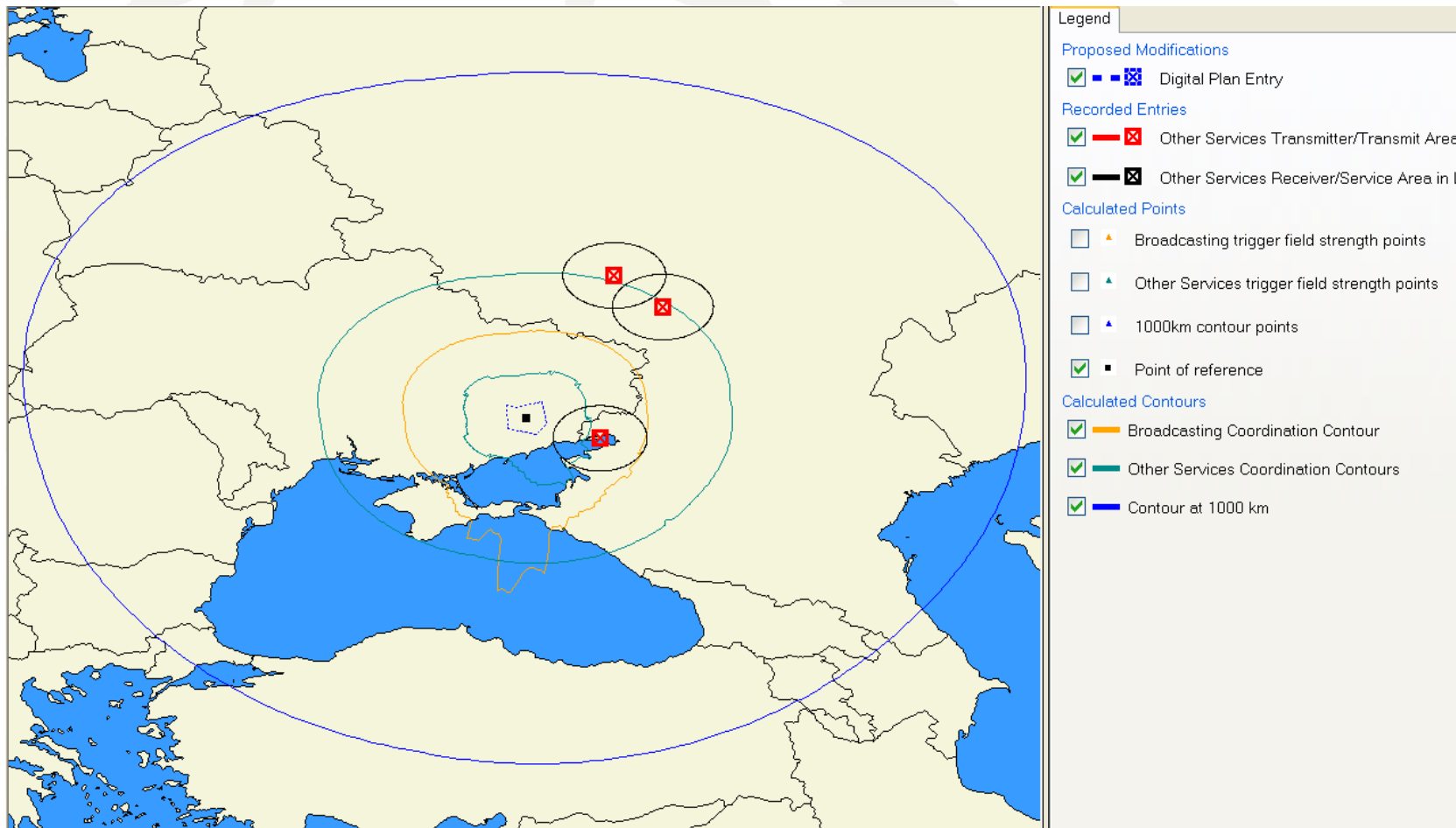
- Need for coordination examination (only for additions or modifications)
 - Section I of Annex 4 of GE06
 - Construction of coordination contours
 - W.r.t. broadcasting and OPS
 - Technical criteria of proposed modification and items to be protected (Appendices I and II to Section I of Annex 4 of GE06)

Plan modification procedures



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Coordination contours

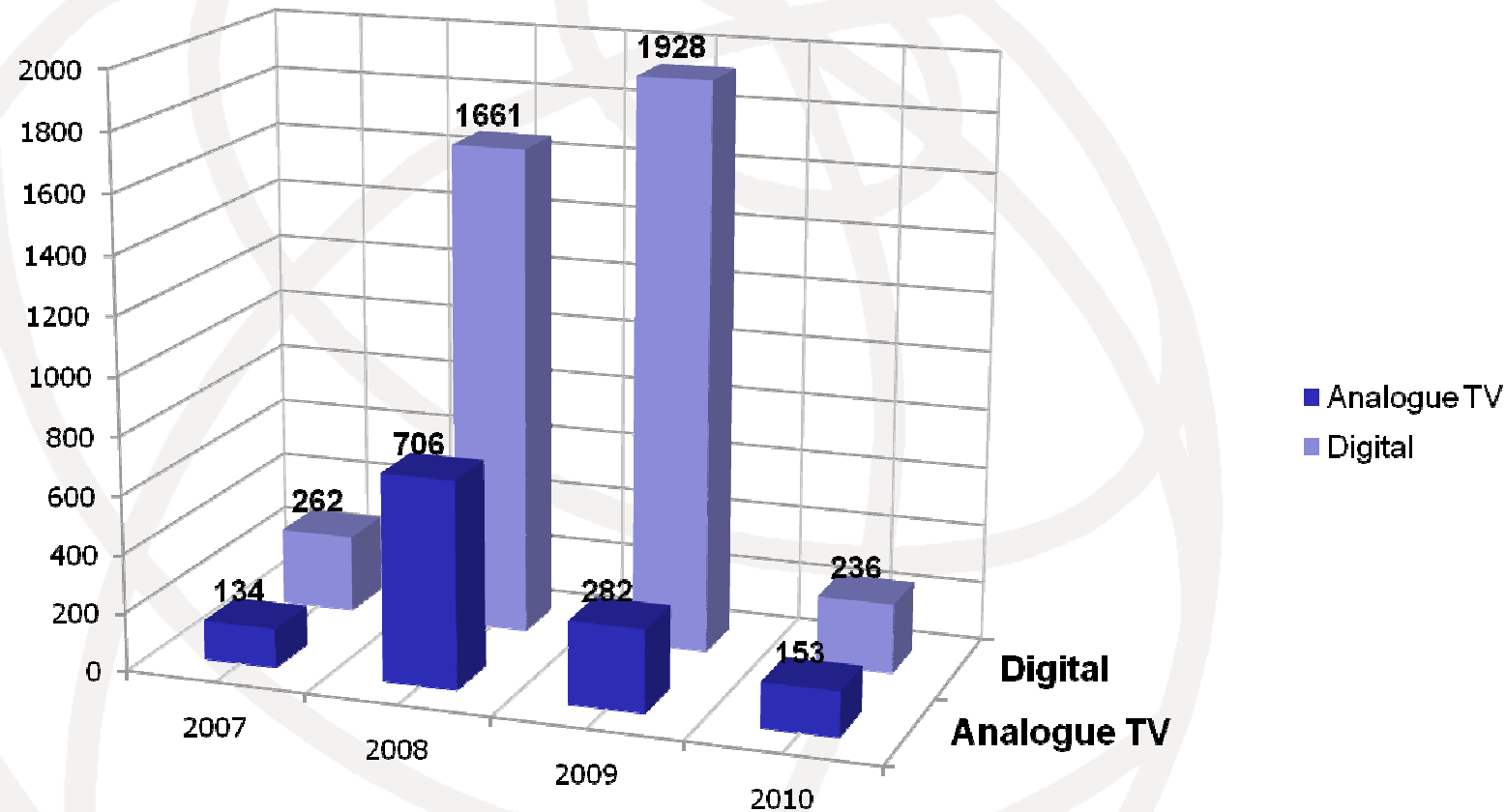


Plan modification procedures



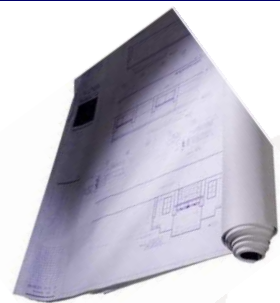
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Statistics on GE06 Plan modifications





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Notification procedures



Notification procedures



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- Notification procedures (Art. 5)
 - Bringing into operation an assignment i.t.o. a Plan entry
 - Remarks are met
 - Other broadcasting or OPS applications i.t.o. a Plan entry (5.1.3)

- Notice forms:

	Digital assignment	Analogue assignment	Other broadcasting or OPS applications
Sound	GS1	-	GB1
Television	GT1	G02	GB1



- Conformity examination w.r.t. Plan entry
 - Section II of Annex 4 of GE06
 - Construction of cut-off FS contours
 - Geometrical contours
 - Calculation points
 - Technical criteria of notified assignments and relevant Plan entry (Appendices 1 to 4 to Section II of Annex 4 of GE06)

Notification procedures



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- Other BS standard or OPS allowed under Prov. 5.1.3
 - No increased interference
 - Not more protection required
 - Same or lower spectral power density for worst 4 kHz

- Notify using GB1 notice form

- Examination of conformity with Plan entry

Notification procedures



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GB1 electronic notice form

<Untitled>* - GB1*

ID1/ Assignment's unique identifier: _____ ID3/ Unique identifier of the corresponding plan assignment: _____

Fragment: Article 11 Type of notification: E/ Resubmission Notification intended for: Addition Modification

12A/ Operating agency: _____ 2C/ Date of bringing into use: _____

12B/ Address code: _____ 10B/ Regular hours of operation (UTC): From 00:00 To 24:00

Station information

4A/ Antenna site name: _____ 4B/ Geographic area: F 4C/ Longitude: _____ E 4D/ Latitude: _____ N 9EA/ Altitude of site above sea level: _____ m 3A1/ Call sign: _____

Emission characteristics

1A/ Assigned frequency: _____ MHz 8BH/ Horizontal e.r.p.: _____ dBW 7AB/ Bandwidth: _____ kHz 8A/ Class of emission: _____

6A/ Class of station: _____ 9D/ Polarization: H 8BV/ Vertical e.r.p.: _____ dBW 8C/ Beam tilt angle: _____ Deg 8B/ Maximum e.r.p. at Beam tilt angle: _____ dBW

Antenna characteristics

9/ Antenna directivity: ND 9E/ Maximum Effective Antenna Height: _____ m 8AB/ Maximum power density: _____ dBW/Hz 9EB/ Height of Antenna Above Ground Level: _____ m

Digital plan entry parameters

DEC/ Plan entry: _____ DAC/ Assgn. code: _____ SYNC/ SFN id: _____ associated allotment: _____ ID2/ Unique identifier: _____ SFN id: _____

Coordination

11C/ Signed commitment 2E/ Expiry date: _____ 11D/ Plan remark conditions met

Coordination successfully completed with the following adm

Available administrations	Selected administrations
AFS	
AGL	
ALB	
ALG	
AND	
ARM	
ARS	
AUT	
AZE	
BDI	

13C/ Notified remarks: _____

GB1



Conformity Examination (5.1.3)

- Examination of basic technical characteristics
 - Polarisation
 - Occupied bandwidth
 - Distance from Plan entry... etc.

- Not more protection required
 - Protection ratios
 - Minimum median FS
 - GE06 Agreement / ITU-R BT.1368



Conformity Examination (5.1.3)

Continued

- Same or lower spectral power density for worst 4 kHz
 - Approved RoP – 6-10 July 2009 – Rules of Procedure Rev. 1, Part 10A, section 5.1.3, paragraph 2)
 - Treat as DVB-T or T-DAB depending on Plan entry
 - Use Plan entry bandwidth and notified maximum power spectral density for worst 4 kHz to calculate an equivalent ERP



Conformity Examination

Continued

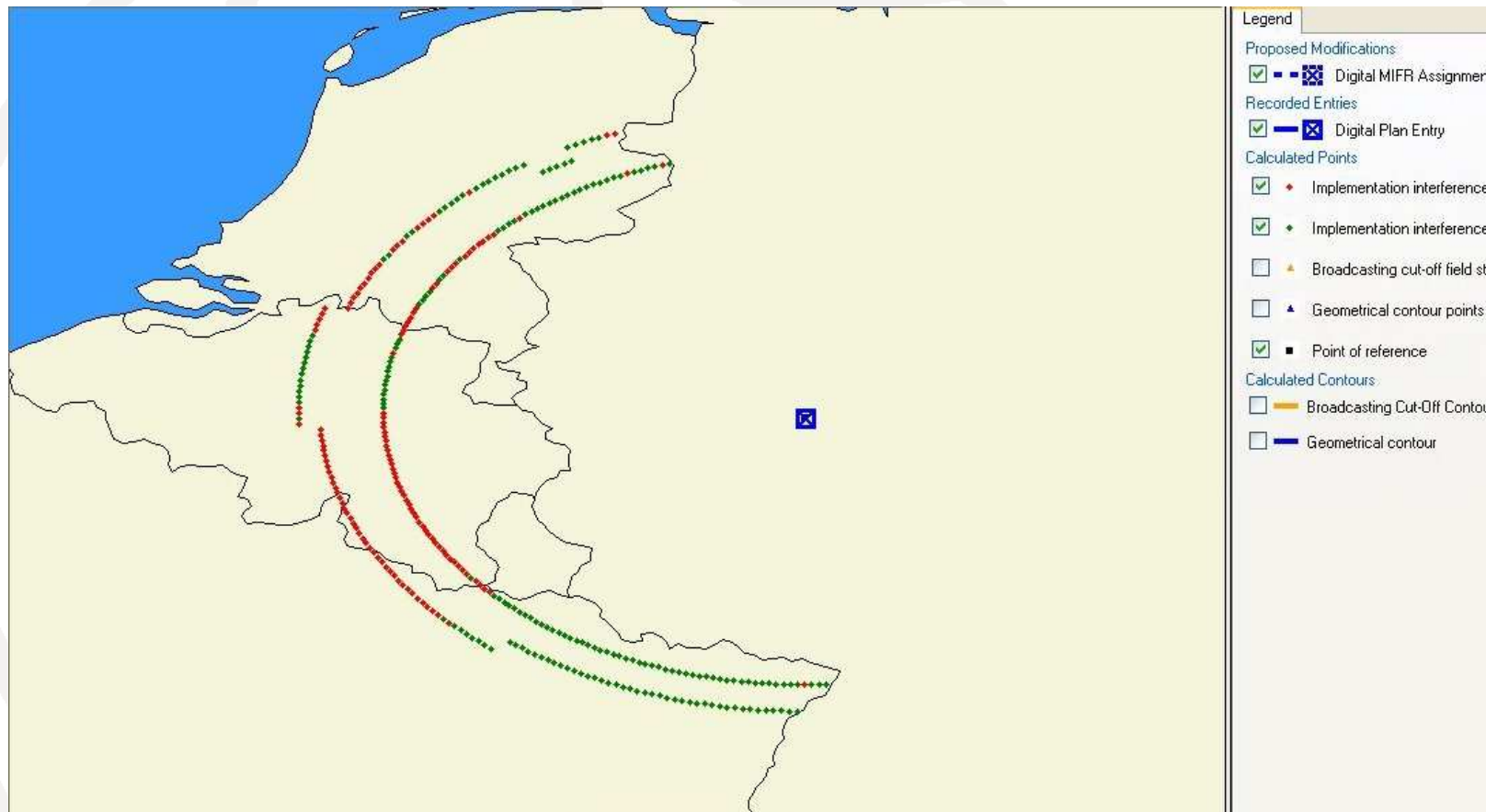
- Compare potential interference FS of assignment with interference FS envelope of Plan entry at predetermined calculation points (Section II of Annex 4)
 - FS assignment \leq FS Plan entry at all calculation points → Favourable finding
 - FS assignment at any single calculation point $>$ FS Plan entry → Unfavourable findingand
 - All Plan remarks satisfied

Notification procedures



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Conformity Examination Continued





Practical implications

- Notifications not in conformity
 - Returned to notifying administration
 - Unfavourable finding

- Insistence for notified assignments not in conformity to be recorded in MIFR – (5.1.7 – 5.1.9):
 - Shall not cause harmful interference to assignments operating in conformity with the Plan
 - Shall not seek protection from assignments operating in conformity with the Plan
 - Shall be responsible to eliminate interference immediately

Implementing allotments

- Allotments using Reference Planning Configurations;
 - RPC1 – Fixed reception;
 - RPC2 – Portable outdoor and mobile reception;
 - RPC3 – Portable indoor reception;
- RPC - System variants relation (recommended only, source PXT):

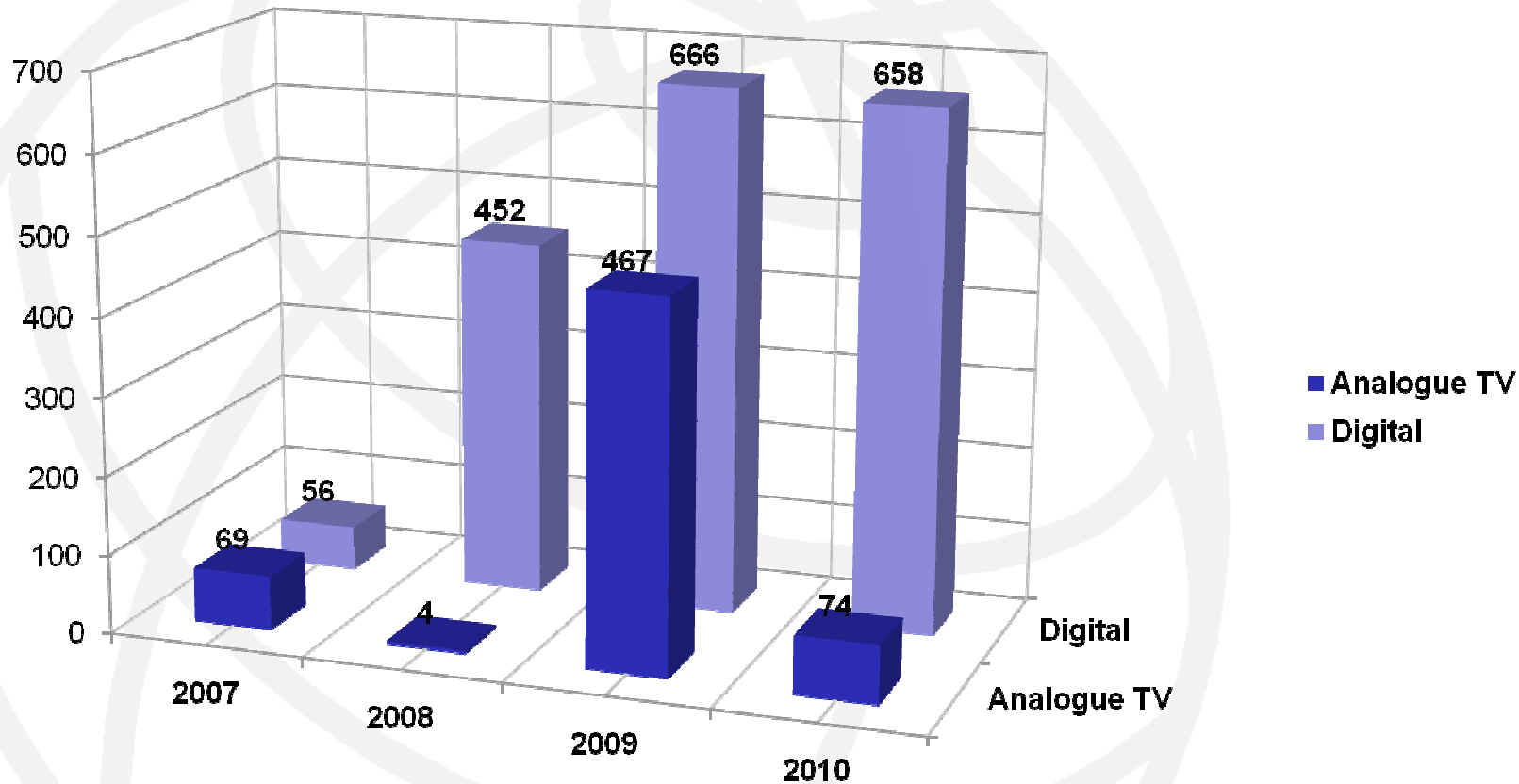
	Modulation	Code rate	Reception mode
RPC1	64-QAM	2/3; 3/4; 5/6	Fixed
	QPSK	2/3	Fixed
RPC2	64-QAM	2/3	PO or MO (PI)
	16-QAM	2/3; 3/4	PO or MO
	QPSK	2/3	PO or MO
RPC3	16-QAM	2/3; 3/4	PI

Notification procedures



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Statistics on GE06 notifications





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Transition



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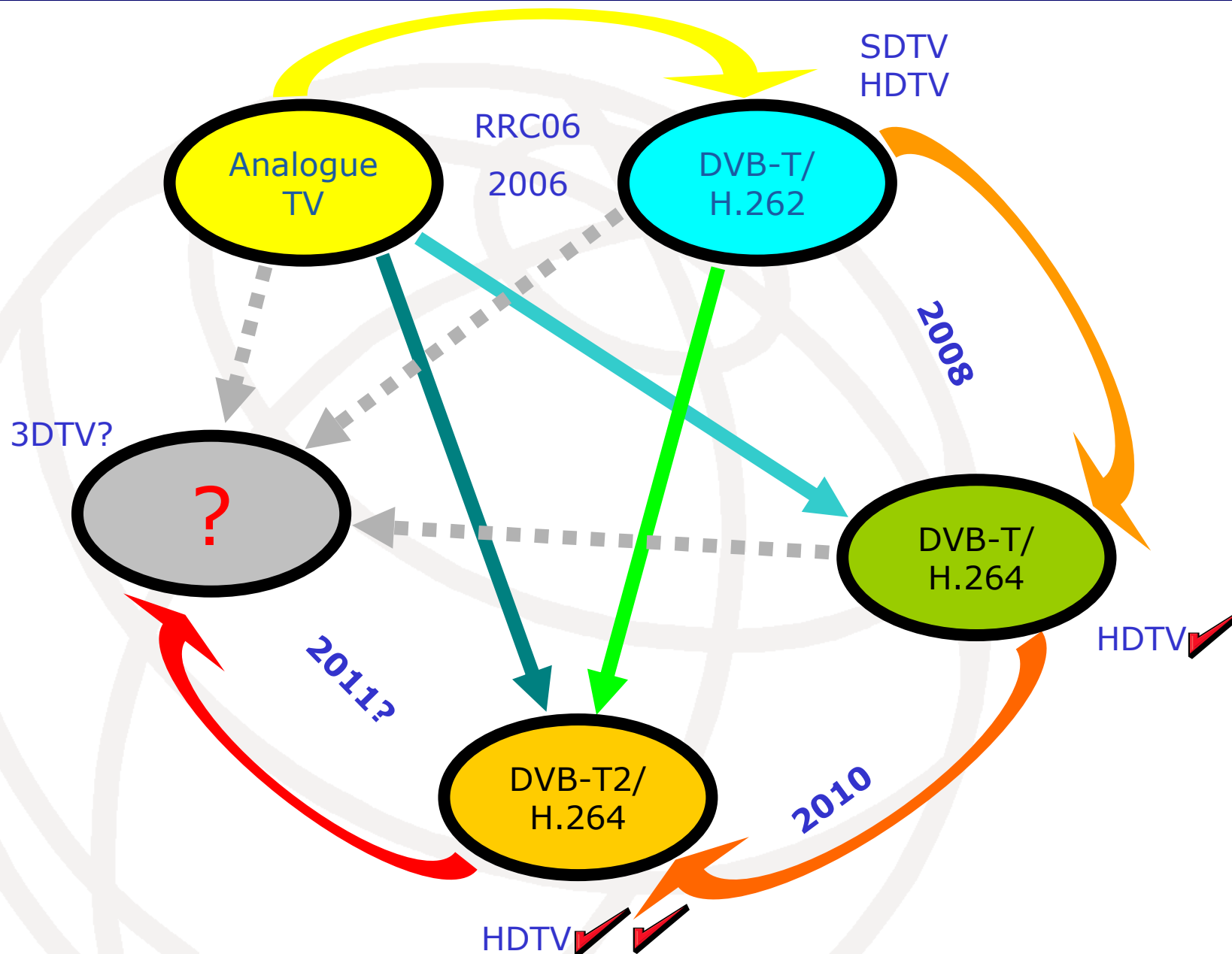
Transition period

- ***Transition period started on 17 June 2006 at 0001 hours UTC:***
 - Analogue TV assignments in the analogue Plan (as specified in § 3.1.2 of Article 3) shall be protected.
- ***The Transition period shall end on :***
 - 17 June 2015 at 0001 hours UTC (for UHF bands in all countries; for VHF in all countries except those that opted for 17 June 2020) .
 - 17 June 2020 at 0001 hours UTC for the some countries (listed in GE06 Agreement)

Transition



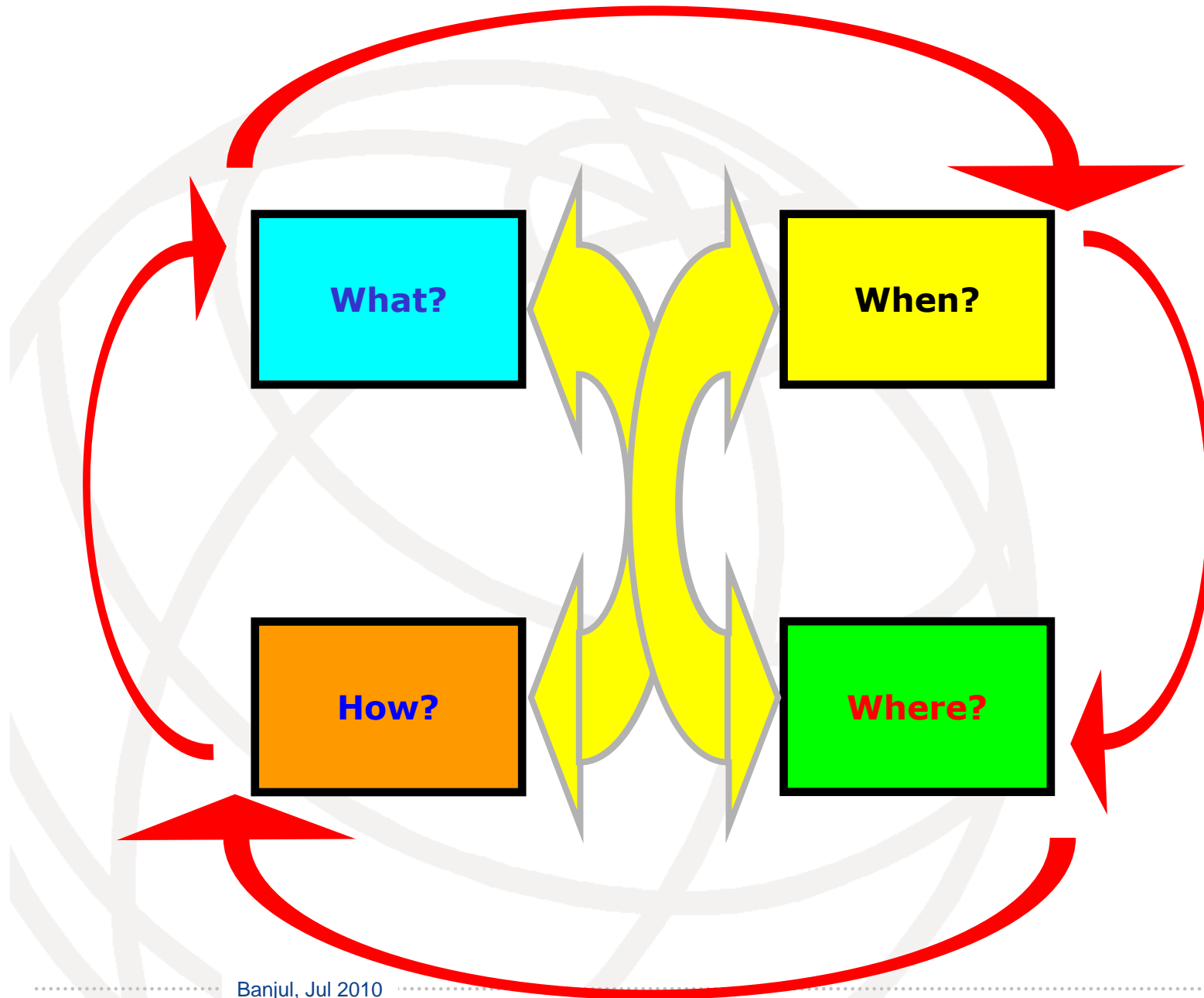
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Pertinent transition questions



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Constraints



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- Time period for transition
- Transition procedure
- Available spectrum
- Available/mature technology
- Costs



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Digital dividend – re-planning

.....| Banjul, Jul 2010 |

Digital dividend – re-planning



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- Decisions of WRC-2007 5.317A and 5.317B
- Voluntary vacating band 790 – 862 MHz
- Recover coverage lost – re-planning
- Prepared proposed modifications as standard notices

Digital dividend – re-planning



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- On-line calculations available at:
<http://www.itu.int/ITU-R/terrestrial/broadcast/index.html>
- eTools beta
- TIES account required
- Submit proposed modifications as text files
- Notified by e-mail when results are available
- Use GE06 Calc to examine results

Digital dividend – re-planning



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The screenshot shows a web browser window with the URL <http://www.itu.int/ITU-R/eBCD/MemberPages/eCalculations.aspx>. The page header includes the ITU logo, navigation links for 'Español', 'Français', and 'Русский', and a search bar. The main content area features the 'eTools' logo and a section for 'eCalculations Utility' with a sub-tab 'SRTM3'. Below this, it states 'Information from a daily copy of the BR database' and 'The processing system is currently ONLINE: 6 processes available'. There are buttons for 'New Calculation' and 'Refresh'. A 'Jobs History for user: botha' section is expanded to show a table of test packages.

Job Id	Job Name	Results	Job Status	Job Type	Date of Start Run	Elapsed Time (minutes)
1042	BEL_test	View	Success	Art4_Compatibility_Server	7/7/2010 12:05:46 PM	3

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Thank you
Merci beaucoup

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