

# **GIBC Appendix 8 Exercise**

Coordination between GSO Networks: ∆T/T examination exercise using GIBC Appendix 8 software



## **New Appendix 8 software**





List of affected networks per group of the incoming

Treatment of primary and secondary status



Reporting and Review results tools



Improved performance





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### **GIBC Appendix 8 Exercise**



GIBC Appendix 8 to assess the coordination requirements

Appendix 8 case I Uplink, co-directional interference

Separate treatment of up-links and down-links







## **GIBC Ap8 Exercise - Test case data**

Existing network:

•TESTSAT-1 ld:109000001 at 34°E
•R/Beam: RBEAM1, Max Gain 42dB, Noise
Temperature 550K
•Central frequency: 29.95GHz, BW 72MHz

Incoming network:

•TESTSAT-2 Id:112000001 at 40°E
•R/Beam: BEAM1R, -49.9dBW/Hz
•Central frequency: 29.96GHz, BW 72MHz

### Associated ES:

Name: TYPICAL ES1
Type: Typical Earth Station
Radiation pattern:REC-580-6
Max Gain: 54.5dB







## **GIBC Appendix 8 Exercise - Files**

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/

### Ap8\_exercise\_wrs20.mdb

SNS formatted database with information about the incoming and existing network

6	_	Contraction of the
	_	

### Ap8\_exercise\_wrs20\_gims.mdb

GIMS graphical data: service areas and gain contours that were captured and stored in the GIMS-format database



### Ap8\_exercise\_results\_wrs20

Directory containing the results of the Appendix 8 examination



Ap8\_exercise\_results\_wrs20 Ap8\_exercise\_wrs20.mdb Ap8\_exercise\_wrs20\_gims.mdb



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PFD (terrestrial serv.) PFD (span	ce serv.) Appendix 7
Power Control Tools / Opti	ons PFD NGSO
Additional GIMS Databases	
Database Container Path	
	dd Clear List
SRS Database E:\WRS\WRS-20\AP8 Workshop\Ap8_exerc	dd Clear List
SRS Database E:\WRS\WRS-20\AP8 Workshop\Ap8_exerce Additional SRS DB Path	dd Clear List
SRS Database E:\WRS\WRS-20\AP8 Workshop\Ap8_exerc Additional SRS DB Path	dd Clear List
SRS Database E:\WRS\WRS-20\AP8 Workshop\Ap8_exerc Additional SRS DB Path	dd Clear List
SRS Database E:\WRS\WRS-20\AP8 Workshop\Ap8_exerc Additional SRS DB Path	dd Clear List



In the Tools & Options we specify the location of the input databases

Click Browse and select the file: Ap8\_exercise\_wrs20.mdb

Click Add and select the additional GIMS database file:

Ap8\_exercise\_wrs20\_gims.mdb



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## **Appendix 8 Examination**

PFD (terrestri Power Conf	ial serv.)	PFD (space Tools / Optic	e serv.) Ins	PFD	pendix 7 NGSO
Appendix 30B	Appen	dix 30 30A	EPFD	A	ppendix
Network 11200	0001 TESTSAT	-2	•	Start	Cance
9.41 Examina (Please)	ation Outside of th enter Adm/Netw	ne Coordination orkOrg below)	Arc		
- Filtering Existing	g Networks				
Network			-	Adm	
Year - Month -	Date	• •	▼ Ne	etwork Org	
Message					
PROGR> Read	notice 1090000	01 T 1 - 1 24 00			
PROGR> Existin PROGR> Proce	ess pairs of assigr	nments.			
PROGR> Analy	sed existing notic	ces: 1 of 1.			
PROGR> AP8N	loticeAnalysis is f	inished.			
DDOGD- A-0 /	Analysis finished				
PROGRS Even	ort document from	n results:C:\Use	rs\roman\ITl	J\BR_SPA	CE_v9.0
PROGR> Ap87 PROGR> Exect Generating repo		14.58.12			
PROGR> Approved Appendix 8 calo	culation finished.	14.30.12			
PROGR> App 7 PROGR> Exect Generating report Appendix 8 calo	culation finished.	14.30.12			>
PROGR> Ap87 PROGR> Exect Generating repo Appendix 8 calo	culation finished.	14.30.12			>
PROGR> Ap87 PROGR> Exect Generating report Appendix 8 calo	culation finished.	14.50.12			>
PROGR> Exect     Generating report     Appendix 8 cald     C     C     S     S     S     S     S	ordiation finished, culation finished, critation tiulished	14:58:12			>

### Select incoming network: 112000001

### Click Start





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## **Results of the Analysis**



Results	
C:\Users\roman\ITU\BR_SPACE_v9.0\TEX_RESULTS\112000001\AP8_201	
< >	
View Results Report File Open Folder Log File Database	





GENEVA2020

## **Appendix 8 Report**

	Appendix 8 report for ntc_id:112000001
	APPENDIX 8 ANALYSIS FINISHED OK
Analysis Information	Started at: 22/10/2020 20:41:47 Finished at: 22/10/2020 20:41:48 Exec time: Os Production: Test vrs Run by: roman Version: C:\Program Files (x86)\Itu\BR_Space_v9.0\Gibc\AP8
r that your micrimation	ANALYSIS DETAILS
	Ntc id:     112000001     Exi id:     0     9.41:     N       Existing Adm:     none     Existing Ntwk:     none     Date before:     none
C	DATABASE DETAILS
Summary	SRS Database: E:\WRS\WRS-20\AP8 Workshop\Ap8_exercise_wrs20.mdb SRS Additional:none Results db: C:\Users\roman\ITU\BR_SPACE_v9.0\TEX_RESULTS\112000001\AP8_201022204146\AP8_RESULTS.MDF
	INCOMING NETWORK DETAILS
Affected Networks	Admin:     NOR     Sat name:     TESTSAT-2     Longitude nom: 40       Date of rcv:     23/10/2012     Status:     50     Notif rsn:     C       Action code:     A     Target ntc id:     Plan id:
	SUMMARY FOR PROVISION 9.7 T (DELTA T/T METHOD)
	LIST OF POTENTIALLY AFFECTED ADMINISTRATIONS: LUX
Messages	R BEAM1R 000000552 29GHz LUX
	AFFECTED NETWORKS UNDER 9.7-CI T (DELTA T/T METHOD)
	LUX 109000001 TESTSAT-1 34.00 R
	NO ERROR MESSAGES



User friendly

Standalone

application

of a pair of

assignments

Navigate all the

results in a folder

 $\Delta T/T$  calculations

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## **Appendix 8 Result: Interactive tool**





Easy way to get details of the examination



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Export into different formats



Filter, search, Group, sorting...

C:\Users\roman\ITU\BR\_SPACE\_v9.0\TEX\_RESULTS\114520011\AP8\_200928095357\AP8\_RESULTS.MDB









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## **Ap8Results Tool – What's for?**

#### Manage all your results databases Ap8Results 1.0.0.0 X Administration Satellite name Date of receipt Status Notification reason Nominal longitude LUX TESTSAT-1 3/12/2009 50 C 34 Incoming Id Existing Id Finished Ok Production User name Started at Finished at Run time 109000001 112000001 10/19/2020 9:41:21 PM 10/19/2020 9:41:22 PM 0s roman C:\Users\roman\ITU\BR SPACE v9.0\TEX RESULTS Select Folder The number of Appendix 8 result files found in the folder is: 30 C:\Users\roman\ITU\BR\_SPACE\_v9.0\TEX\_RESULTS\103591290\AP8\_200925163615\AP8\_RESULTS.MDB 1152 KB C:\Users\roman\ITU\BR\_SPACE\_v9.0\TEX\_RESULTS\103591295\AP8\_200925185057\AP8\_RESULTS.MDB 1140 KB C:\Users\roman\ITU\BR\_SPACE\_v9.0\TEX\_RESULTS\109000001\AP8\_201019190136\AP8\_RESULTS.MDB 1180 KB C:\Users\roman\ITU\BR\_SPACE\_v9.0\TEX\_RESULTS\109000001\AP8\_201019214121\AP8\_RESULTS.MDB 1304 KB C:\Users\roman\ITU\BR\_SPACE\_v9.0\TEX\_RESULTS\112000001\AP8\_201019190214\AP8\_RESULTS.MDB 1284 KB G:\Users\roman\ITU\BR\_SPACE\_v9.0\TEX\_RESULTS\112000001\AP8\_201019190410\AP8\_RESULTS.MDB 1156 KB C:\Users\roman\ITU\BR\_SPACE\_v9.0\TEX\_RESULTS\112000001\AP8\_201019213847\AP8\_RESULTS.MDB 1304 KB C:\Users\roman\ITU\BR SPACE v9.0\TEX RESULTS\112000001\AP8 201019213953\AP8 RESULTS.MDB 1304 KB C:\Users\roman\ITU\BR\_SPACE\_v9.0\TEX\_RESULTS\112000001\AP8\_201019214004\AP8\_RESULTS.MDB 1304 KB C:\Users\roman\ITU\BR\_SPACE\_v9.0\TEX\_RESULTS\112000001\AP8\_201019214153\AP8\_RESULTS.MDB 1304 KB C:\Users\roman\ITU\BR\_SPACE\_v9.0\TEX\_RESULTS\112000001\AP8\_201020090532\AP8\_RESULTS.MDB 1304 KB C:\Users\roman\ITU\BR\_SPACE\_v9.0\TEX\_RESULTS\112000001\AP8\_201020090611\AP8\_RESULTS.MDB 1304 KB C:\Users\roman\ITU\BR\_SPACE\_v9.0\TEX\_RESULTS\112000001\AP8\_201020091047\AP8\_RESULTS.MDB 1140 KB C:\Users\roman\ITU\BR\_SPACE\_v9.0\TEX\_RESULTS\112000001\AP8\_201020091206\AP8\_RESULTS.MDB 1128 KB C:\Users\roman\ITU\BR\_SPACE\_v9.0\TEX\_RESULTS\112000001\AP8\_201020091347\AP8\_RESULTS.MDB 1284 KB C:\Users\roman\ITU\BR\_SPACE\_v9.0\TEX\_RESULTS\112000001\AP8\_201022110505\AP8\_RESULTS.MDB 1284 KB G:\Users\roman\ITU\BR\_SPACE\_v9.0\TEX\_RESULTS\112000001\AP8\_201022121907\AP8\_RESULTS.MDB 1156 KB C:\Users\roman\ITU\BR\_SPACE\_v9.0\TEX\_RESULTS\112000001\AP8\_201022204146\AP8\_RESULTS.MDB 1284 KB C:\Users\roman\ITU\BR\_SPACE\_v9.0\TEX\_RESULTS\112000001\AP8\_201023145810\AP8\_RESULTS.MDB 1284 KB C:\Users\roman\ITU\BR\_SPACE\_v9.0\TEX\_RESULTS\114520011\AP8\_200928095357\AP8\_RESULTS.MDB 2220 40

C:\Users\roman\ITU\BR\_SPACE\_v9.0\TEX\_RESULTS\109000001\AP8\_201019214121\AP8\_RESULTS.MDB



View Results

Generate reports

Show every result



Get information for each program run

Go to View Results

1	C:\Users\roman\ITU\BR_SPACE_v9.0\TEX_RESULTS\109000001\AP8_20101921412	21\AP8_RESULTS.MDB	
1	C:\Users\roman\ITU\BR_SPACE_v9.0\TEX_RESULTS\112000001\AP8_2010191902		
1	C:\Users\roman\ITU\BR_SPACE_v9.0\TEX_RESULTS\112000001\AP8_2010191904	View Results	Alt+F4
	C:\Users\roman\ITU\BR_SPACE_v9.0\TEX_RESULTS\112000001\AP8_201019213	Open Report	Alt+F6
	C:\Users\roman\ITU\BR_SPACE_v9.0\TEX_RESULTS\112000001\AP8_201019213	Open Access	Alt+F7
	C:\Users\roman\ITU\BR_SPACE_v9.0\TEX_RESULTS\112000001\AP8_201019214(	Open Folder	Alt+F7
	C:\Users\roman\ITU\BR_SPACE_v9.0\TEX_RESULTS\112000001\AP8_2010192141	53\AP8_RESULTS.MDB	
1	C:\Users\roman\ITU\BR_SPACE_v9.0\TEX_RESULTS\112000001\AP8_2010200905	32\AP8_RESULTS.MDB	



Select Resu

## **Ap8Results Tool- What else...**



Get details of the examination



Navigate the results



Re-arrange the view ( that better suits you



Get information per group, adm, affected notice etc...

	114620757	R	UL2	90500066 L
	Details			
Coordination Arc	Wanted: I	nterferer: Ear	th Station: Result	ts:
ΔT/T Up Case I	114520011\UL2\1149 14125 MHz 1	90500066\UJ2\9899TYF 14016.25 MHz 130	PICAL-TK1 (6.4M)14002 W263230N2435∆T/Ts: Power	.75-14029.75 =8.848399%
ΔT/T Up Case II			Noise	Temperature=

Administration	Satel	lite n	ame D	ate of re	eceipt	Status	Not	ification	reason	Nomi	nal long	itude				
ISA	USAS	AT-5	5Y 1/	9/2014		50	С			-76	-					
ncoming Id Exi	sting Id	Finis	shed Ok	Produ	ction	User na	ame	Started a	at No o so s		Finish	ed at	1 07 444	Run time		
14520011 0		Y		Y		roman		9/28/202	20 9:53:5	9 AM	9/28/2	020 10:0	1:37 AM	/m38s		
•																
Basulta C.							Res	ults for	each gro	oup of	the inco	ming ne	twork			
	mmary						Dra	ag a colun	nn heade	r here t	o group	by that o	olumn			
Affected I	Vetworks	5	Inc o	urp id	Coor	d prov	Aff n	tc id	Satellit	e name		Adm/N	twk.o	Nomi	Inc beam name	
		-	▶ 114	520755	9.41		90	9500228	EUTELS	AT 3-1	2.5W	F/EUT		-12.5	UL1	
Incoming	groups		114	520755	9,41		103	3500132	JCSAT-	2R		J		154	UL1	-0
Coordination Arc			114	520755	9.41		103	3500133	JCSAT-	1R		J		150	UL1	
			114	520755	9.41		103	3500280	EUTELS	AT 3-7	E	F/EUT		7	UL1	
AT/T IIn Case I			114	520755	9.41		103	3500286	EUTELS	AT 3-1	OE	F/EUT		10	UL1	
T 2000			114	520755	9.41		103	3500287	EUTELS	AT 3-1	3E	F/EUT		13	UL1	
📩 ΔΤ/Τ Up (	Case II		114	520755	9.41		103	3500288	EUTELS	AT 3-1	6E	F/EUT		16	UL1	
· ·		_	114	520755	9.41		103	3500312	EUTELS	AT 3-2	1.5E	F/EUT		21.5	UL1	
🕁 ΔT/T Dow	n Case I		114	520755	9.41		103	3500313	EUTELS	AT 3-3	3E	F/EUT		33	UL1	
40		-	114	520755	9.41		103	3500314	EUTELS	AT 3-3	6E	F/EUT		36	UL1	
CC ΔT/T Dow	n Case I		114	520755	9.41		104	1500485	B-SAT-	Q		В		-61	UL1	
			114	520755	9.41		105	500530	N-STA	R-B2		J		136	UL1	•
ΔT/T Ove	rall		Tota	l: 1147												
	sages		•													•
- ciror wes	sayes		P								83		F		B	٦
			ц р	rint .			col.		Taxt		Imag	1	Saval	avout	MyLayout	

Navigate Results



C:\Users\roman\ITU\BR\_SPACE\_v9.0\TEX\_RESULTS\114520011\AP8\_200928095357\AP8\_RESULTS.MDB

## **Ap8Results: Navigate the results**

### View ∆T/T Details

#### Drag a column header here to group by that column

	Inc grp id	Inc E/R	Inc beam name	Exi ntc id	Exi beam n
Ξ	552	R	BEAM1R	1090000	01 RBEAM1
	Details				
	Wanted:	Interferer: Ear	th Station: Re	esults:	
	109000001\RBEAM1	112000001\BEAM1FTYP	ICAL ES1 29	924-29986 MHz	
	29950 MHz	29960 MHz 030	W521116N1544Δ1	T/Ts=7.614356%	
	EC	El	Po	ower Density Max=	
			Ne	oise Temperature=	

### Export

Print	MS Excel	Text	Image

### Print

#### Appendix 8 Results: Cases of Coordination Arc

nc grp id	Inc freq(MHz)	Inc E/R	Exi ntc id	Exi grp id	Coord prov	Agree st	Arc value
119719415	6062.5	R	101500482	105646065	9.7	A	1
119719417	6062.5	R	101500482	105646065	9.7	A	7
119719419	6062.5	R	101500482	105646065	9.7	A	1
119719421	6062.5	R	101500482	105646065	9.7	A	1
119719423	6062.5	R	101500482	105646065	9.7	А	ī
119719425	6062.5	R	101500482	105646065	9.7	A	1
119719427	6062.5	R	101500482	105646065	9.7	A	7
119719429	6062.5	R	101500482	105646065	9.7	A	1
119719431	6062.5	R	101500482	105646065	9.7	A	1
119719433	6062.5	R	101500482	105646065	9.7	A	1
119719435	6062.5	R	101500482	105646065	9.7	A	1

### Generate Report

SUMMAI	RY F	OR PI	ROVIS	SION	9.21	/A B																	
THERE	ARE	NOT	ANY	POT	ENTIF	LLY	AFFE	CTED	ADM	INIS	STRAT	TION	FOR	TH	IS PR	ROVIS	ION						
R RX		119	71946	58	7GHz																		
R RX		119	71946	59	7GHz																		
R RX		119	71947	70	7GHz																		
R RX		119	71947	71	7GHz																		
SUMMAI	RYP	OR PI	ROVIS	SION	9.7	A (C	OORD	INAT	ION	ARC	METH	IOD)											
LIST (	OF P	OTEN	TIALI	LY AL	FFECT	ED A	DMIN	ISTR	ATIC	NS:	ARS	AR	S/AR	в.	AZE	BLR	CHN	CY	ΡĽ	E	ETH	F	G
HOL	ΙI	ND	IRN	ISR	J	KAZ	KOR	LU	XM	ICO	MLA	NI	G O	MA	PAK	THA	. TU	R U	JAE	UKR	USI	£	
E TCG		119	71937	72	4GHz	ARS,	/ARB	AZE	BLR	CHN	CYP	DE	ETH	Εı	G GRC	HOL	IND	IRN	ISR	KAZ	KOR	MCO	MLA
						NIG	PAK	THA	TUR	UAE	UKR												
E TCG		119	71937	73	4GHz	ARS,	/ARB	AZE	BLR	CHN	CYP	DE	ETH	F (	G GRC	HOL	IND	IRN	ISR	KAZ	KOR	MCO	MLA
						NIG	PAK	THA	TUR	UAE	UKR												

E TCG 119719374 4GHz ARS/ARB AZE ELR CHN CYP D E ETH F G GRC HOL IND IRN ISR KAZ KOR MCO MLA NIG PAK THA TUR UAE UKR

### Filter, Group, Search

	tehf		8 Close		
	Inc gr	rp id 🔺 Exi grp id			
		Inc E/R	Inc beam name	Exi ntc_id	Exi be
Þ		Inc grp id: 119719390	)		
		🖃 Exi grp id: 11474	42137		
		⊞Ε	TK1R	11452027	78 <mark>TEHF</mark>

### Rearrange columns

Affected Administrations

+		Inc grp id Drag	a column header here	to group by that colum
	Coord prov	Inc grp id	Adm/Ntwk org	Agree st
F	9.21/A	119719470		В
	9.21/A	119719471		В
	9.21/A	119719469		В
	9.21/A	119719468		В
	9.7	119719414	ARS/ARB	A





## Non-mandatory cases for 9.41 submissions



List of optional administrations calculated on demand



Option in the interface to produce a list for further analysis under RR No. 9.41



Satellite networks outside coordination arc



It is required to specify the administration and/or international organization

PFD (terrestrial serv	.) PFD (space se	erv.)	Appendix 7
Power Control	Tools / Options		PFD NGSO
Appendix 30B	Appendix 30 30A	EPFD	Appendix 8
<ul> <li>9.41 Examination Or (Please enter A</li> </ul>	utside of the Coordination Arc Adm/NetworkOrg below)		Cancer
<ul> <li>9.41 Examination Or (Please enter A Filtering Existing Netw</li> </ul>	utside of the Coordination Arc Adm/NetworkOrg below) orks		
<ul> <li>✓ 9.41 Examination Ou</li> <li>(Please enter A</li> <li>Filtering Existing Netw</li> <li>Network</li> </ul>	utside of the Coordination Arc Adm/NetworkOrg below) orks		Adm





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### **Appendix 8 Exercise Sum Up**





They are located under: ...\AP8\_Workshop





## More information...







Please note that all the technical data in this presentation and associated exercise files are only intended for demonstration purposes.