Technical examination in Appendix 30B

Geneva

6-10 December 2010

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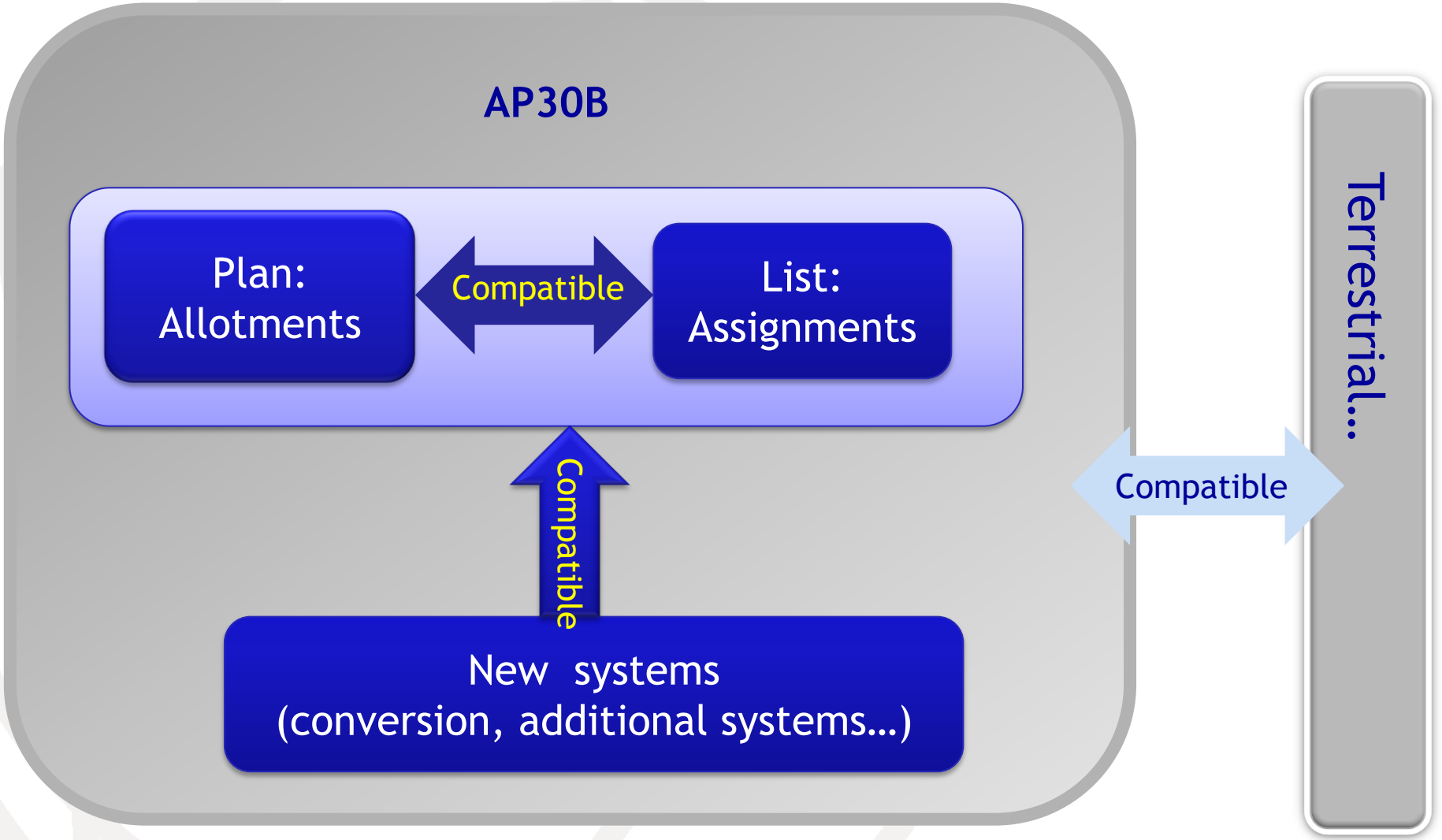
BR/SSS/SNP

COMPATIBILITY



Protection of terrestrial services

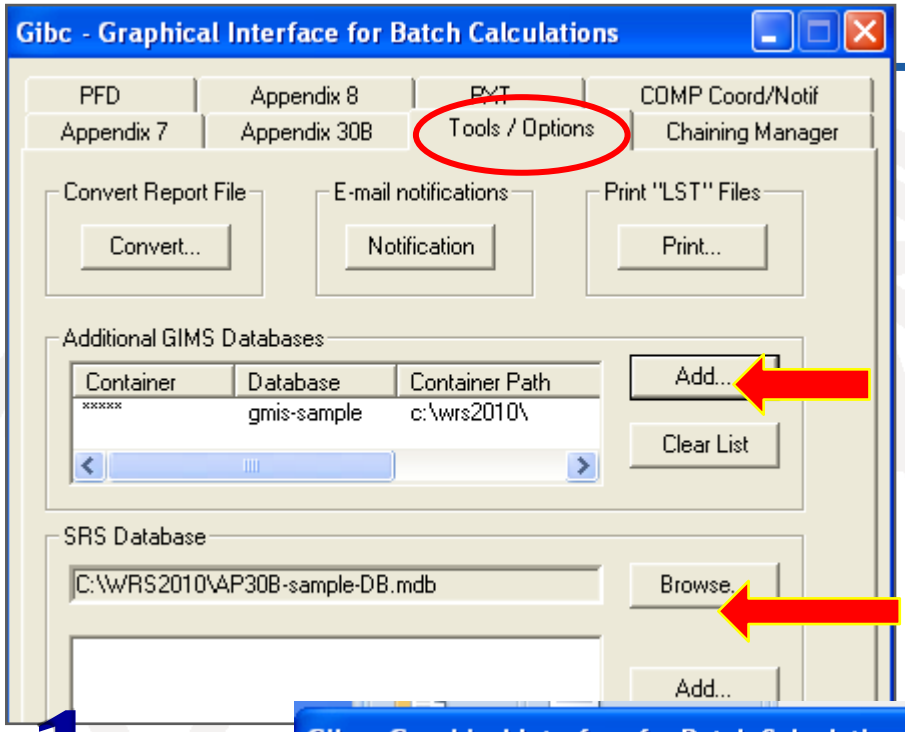
In application of Articles 6,7 and 8 of AP30B

Downlink PFD hard limit at the Earth's surface

(Article 21 of Radio regulations)

Frequency band	Service	Limit in dB(W/m^2) for angles of arrival (d) above the horizontal plane			Reference bandwidth
		0°-5°	5°-25°	25°-90°	
4 500-4 800 MHz 5 670-5 725 MHz (Nos. **5.453** and **5.455**) 7 250-7 850 MHz	Fixed-satellite (space-to-Earth) Meteorological-satellite (space-to-Earth) Mobile-satellite Space research	-152	-152 + 0.5(d – 5)	-142	4 kHz
10.7-11.7 GHz	Fixed-satellite (space-to-Earth) (geostationary-satellite orbit)	-150	-150+0.5(d – 5)	-140	4 kHz

Article 21 PFD examination



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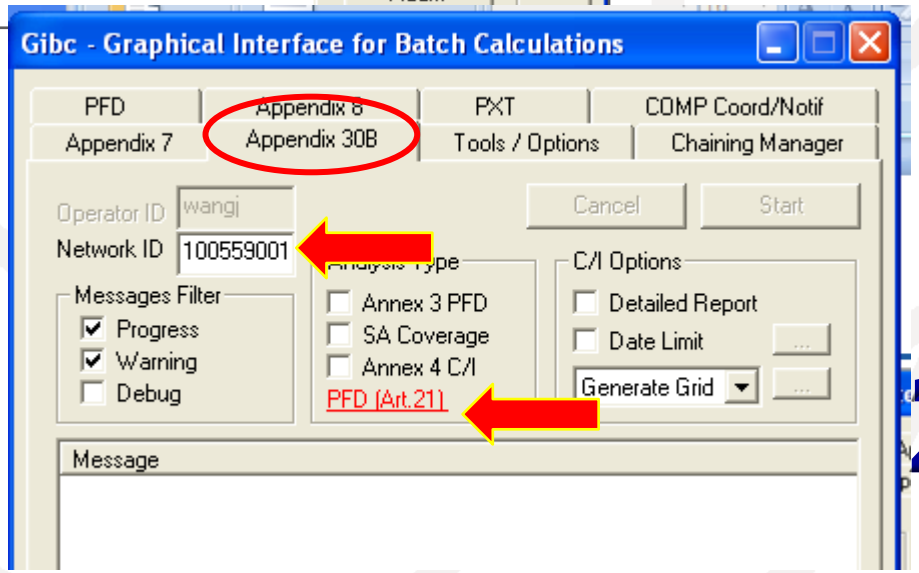

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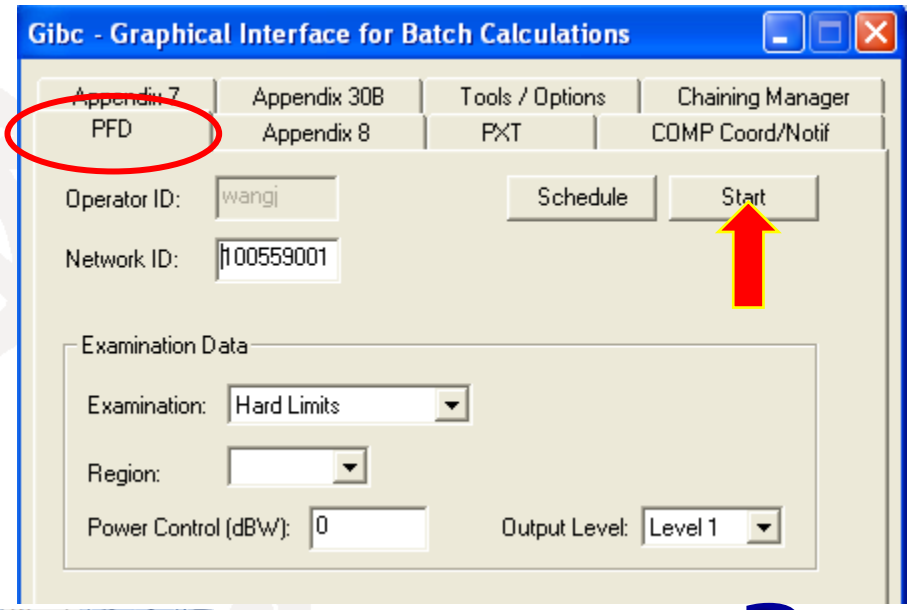

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Downlink PFD hard limit

on any portion of the surface of the Earth

-127.5dB (W/m^2.MHz) in 4GHz

-114.0dB (W/m^2.MHz) in 10/11GHz

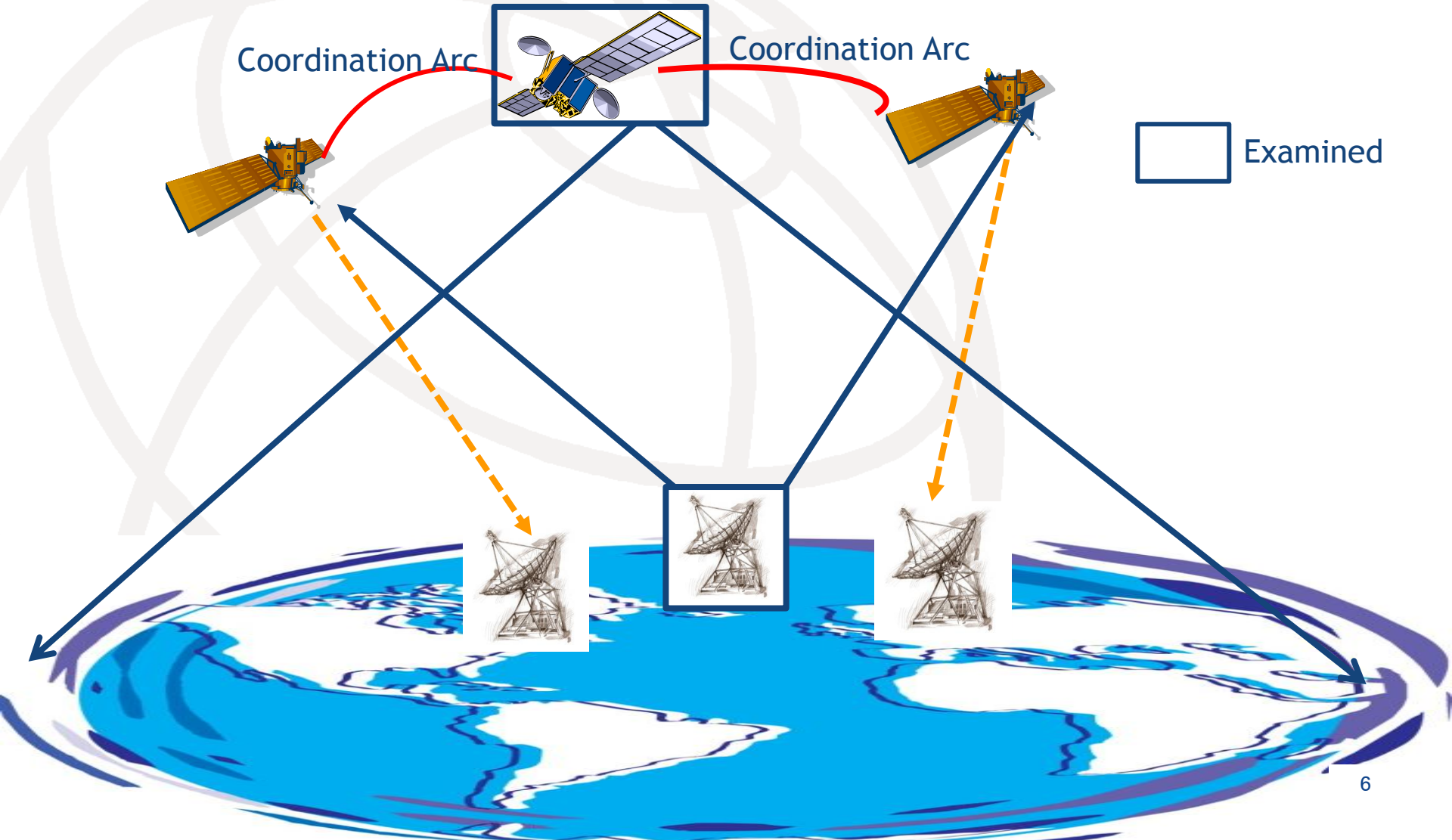
Uplink PFD hard limit

towards any location in the geostationary-satellite orbit located beyond the coordination arc

-140.0dB (W/m2.MHz) beyond10° in 4GHz

-133.0dB (W/m2.MHz) beyond 9° in 10/11GHz

Annex 3 PFD limits



Annex 4 of Appendix 30B

Compatibility within coordination arc,

agreement is required when at least one of the following three conditions is not satisfied

Uplink single-entry C/I ≥ 30dB, or (C/N)up +9dB,
or accepted value

Downlink single-entry C/I ≥ 26.65dB or (C/N)down +11.65dB
or accepted value

Over all aggregate C/I ≥ 21dB or (C/N)total+7dB
or accepted value

Computation precision is 0.05dB for all
Tolerance of 0.25dB for aggregate C/I criteria of assignments not stemming from conversion (beyond the envelop characteristics of the initial allotment)

Grid points for downlink examination

The examination at grid points was introduced by WRC-07 to properly protect the service area of allotments and assignments from shaped beams whose antenna diagrams contain a number of “holes” towards certain specific downlink test points.

The grid points are regularly generated within the service areas of interfered with networks. To ensure good coverage of irregularly shaped service areas, points are also added on the border of the service areas.

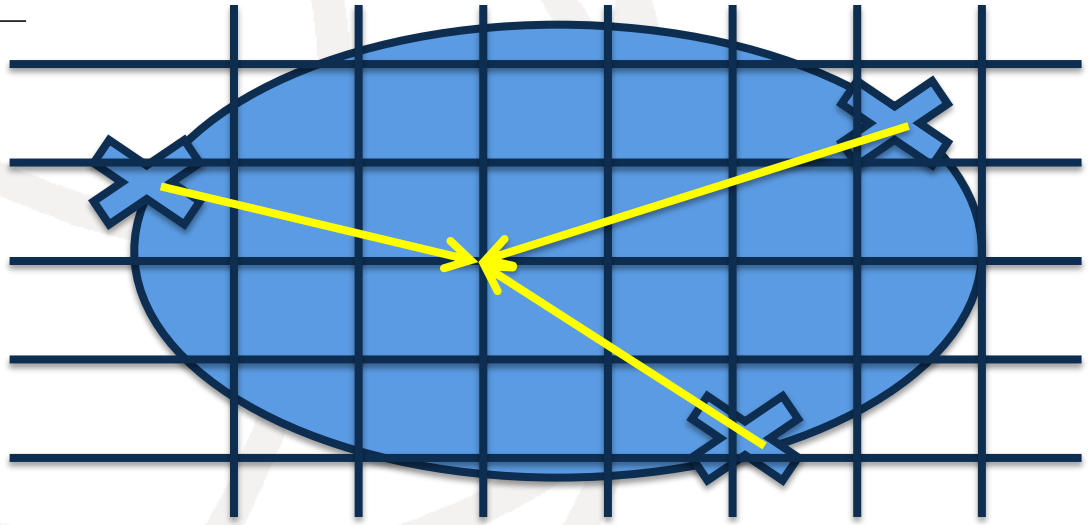
At grids points as well as the test points, the calculated space-to-Earth (downlink) single-entry *C/I* are examined against the corresponding reference values. The reference value at a grid point is interpolated from the reference values on the test points.

Grid points for downlink examination

Interpolation of reference value:

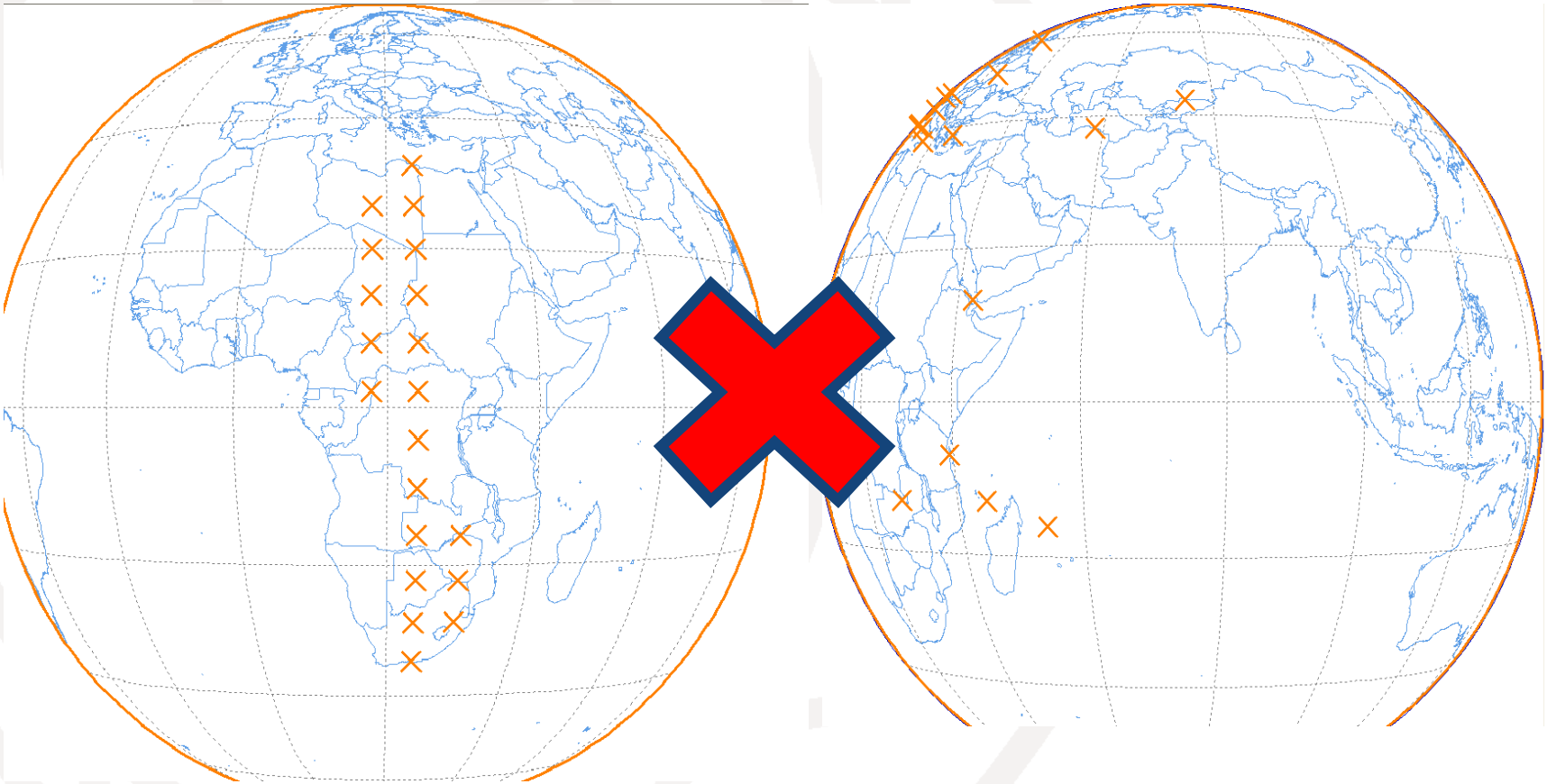
The note 19 of Annex 4 to Appendix 30B (WRC-07)

$$V_{Eg} = \frac{\sum_{h=1}^{Nt} R_{Th} \times (d_{Th})^{-2}}{\sum_{h=1}^{Nt} (d_{Th})^{-2}}$$

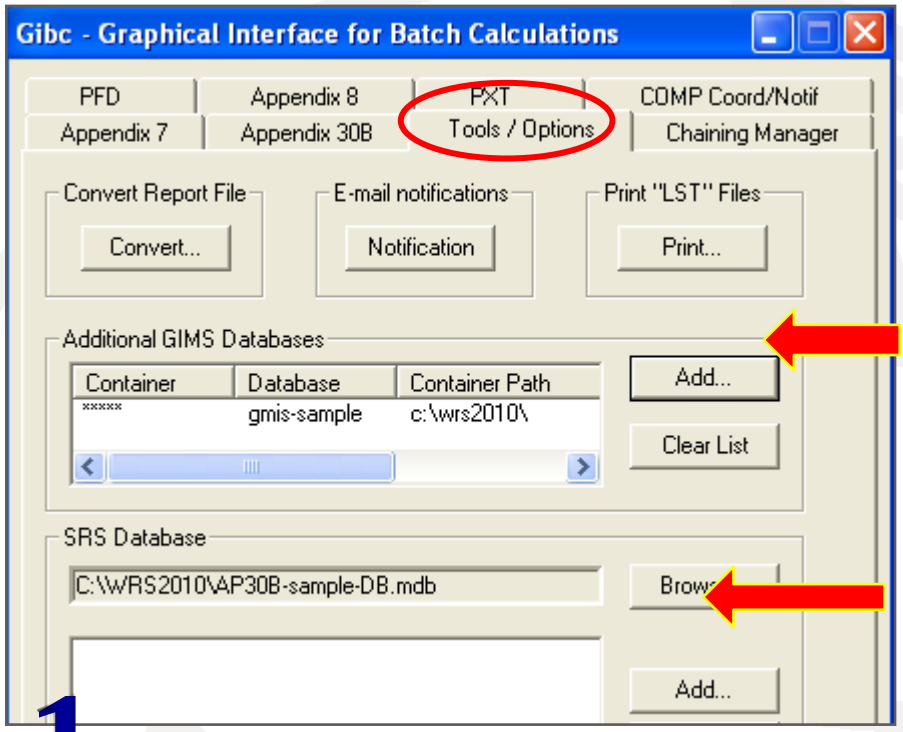


Distribution of Test Points

In order to get reasonable reference values on the grids in the whole service area, the locations and distribution of test points should be consistent with their corresponding service area.



Annex 4 Examinations



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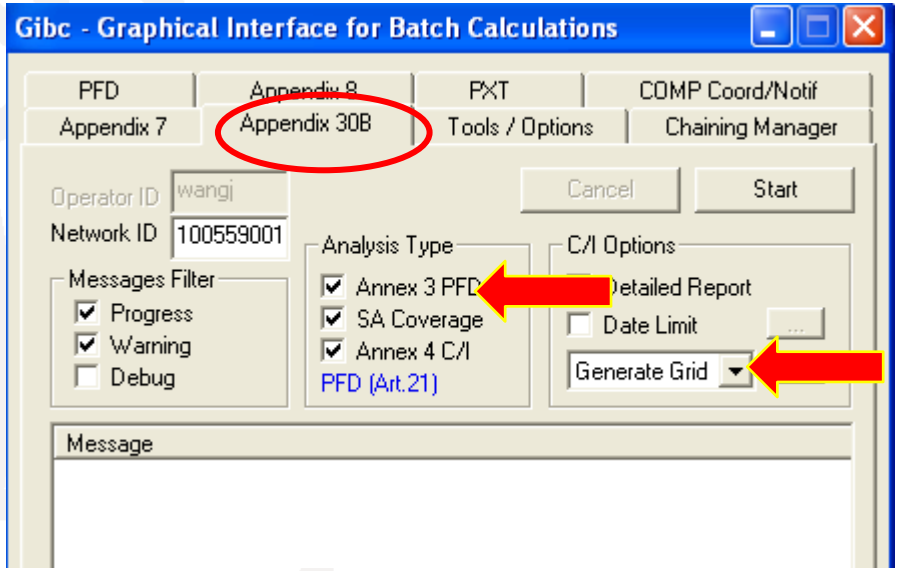

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Results of GIBC

Located at C:\BR_TEX_RESULTS

Article 21: C:\BR_TEX_RESULTS\PFD

Annex 3 and 4: C:\BR_TEX_RESULTS\AP30B

A subfolder is created for each examined network (named after its notice ID)

Any question ?