

GE84 optimization dans eTools

<https://www.itu.int/ITU-R/eTerrestrial/eBroadcasting>



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

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BR/TSD/BCD



Outils GE84



eTools: Calculations on-demand

[eTools Disclaimer](#) [eTools Documentations](#)

The processing system is currently **ONLINE** (28 processes available)

Please select the calculation type

GE84

GE84 Optimization

- GE84 Compatibility Analyses
- GE84 Optimization**
- All



Types de notices – Attention: fragment=GE84!

- Notices acceptées: T01 et TB5

- Les itérations sont des simulations

Date of notification: 12 10 2010 ID1/Unique identification code given by the Administration to the assignment: [] **T01**

Fragment: Article 11 GE84 ST61
Notification intended for: Addition Modification

Assignment characteristics: Antenna characteristics

Station information:
4A/ Antenna site name: AAZANEN
4B/ Geographic area: MRC
4C/ Longitude: 3° 7' 3" W
Latitude: 35° 15' 7" N
9EA/ Altitude of site above sea level: 184 m
3A1/ Call sign: []
3A2/ Station identification: []

Emission characteristics:
1A/ Assigned frequency: 87.7 MHz
7AB/ Bandwidth: 300.000 kHz
7D/ Transmission system: 4
9D/ Polarization: V
8BH/ Horizontal e.r.p.: [] dBW
8BV/ Vertical e.r.p.: 35.000 dBW

Antenna characteristics:
9/ Antenna directivity: D
9EB/ Maximum Effective Antenna Height: 209 m
9E/ Height of Antenna Above Ground Level: 25 m

Coordination successfully completed with the following administrations:
Available administrations: AFG, AFS, AGL, ALB, AND
Selected administrations: ALG, E

13C/ Notified remarks: []

Outil d'optimisation

- Cet outil d'optimisation a été développé pour parvenir à une utilisation efficace de la bande 87,5-108 MHz (FM) pour la radiodiffusion sonore analogique et pour attribuer de nouvelles fréquences à la radiodiffusion FM afin de répondre au besoin croissant de fréquences supplémentaires dans les pays africains.
- Cet outil peut également être utilisé par toutes les administrations faisant partie de l'Accord GE84.

Outil d'optimisation

But

- attribuer de nouvelles fréquences à la radiodiffusion FM afin de répondre au besoin croissant de fréquences supplémentaires

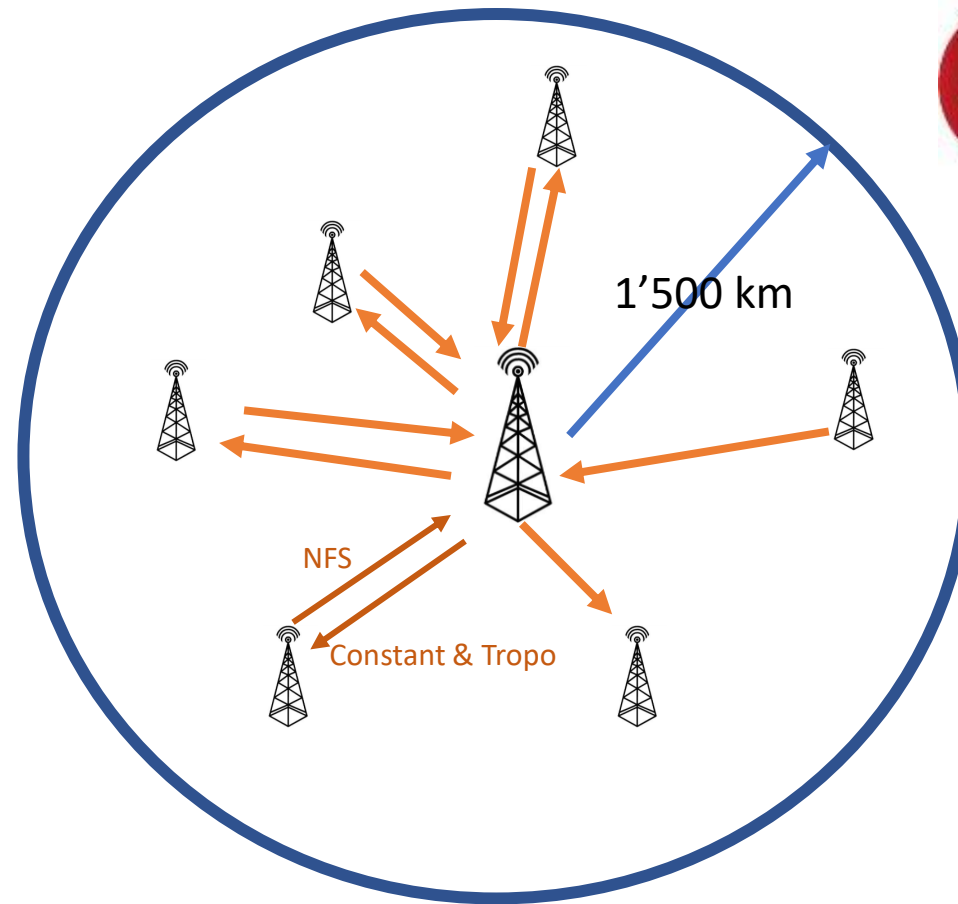
Résultats

- Champs perturbateurs (NFS) générés et reçus par un besoin proposé dans le but d'identifier des fréquences supplémentaires

Analyse des résultats

- Recherche d'une fréquence assignable sur la base de critères prédéfinis.

Outil d'optimisation



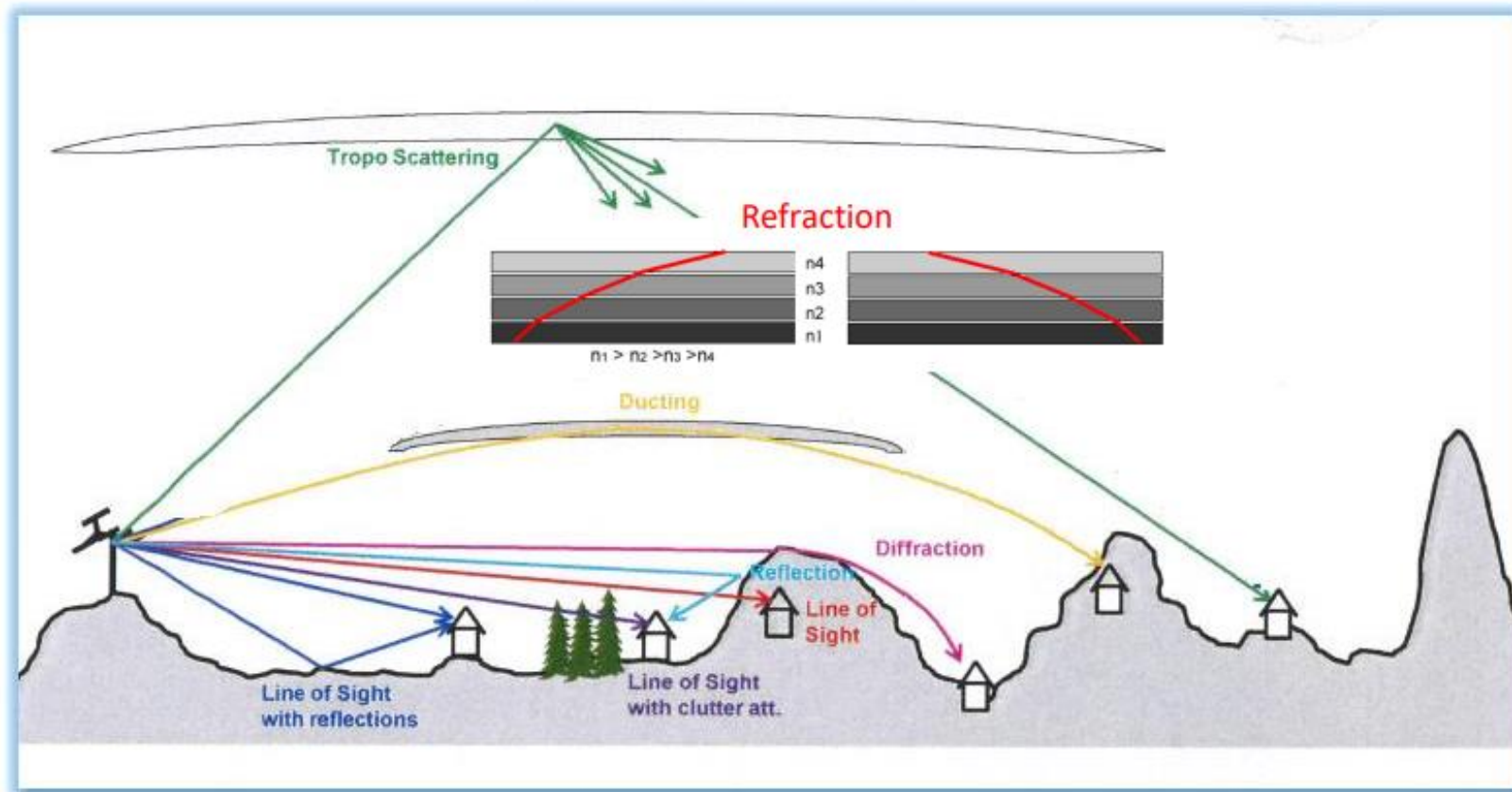
GE84
Plan
optimization

Sur la base des coordonnées d'une station, l'outil évalue toutes les sources de brouillage identifiées dans un **rayon de 1'500 km pour une fréquence donnée et les fréquences adjacentes jusqu'à ± 400 kHz**



Rec. ITU-R P. 1812

Propagation mechanisms in the VHF/UHF band



Adapted from LS Telecom Propagation training material



Outil d'optimisation

- **compatibilité entre les besoins soumis** aux calculs prise en compte (ce n'est pas le cas pour l'outil précédents)
- Plusieurs fichiers admis (1 par administration)
- Introduction de la notion de **besoins à fréquence flexible**.
- Dans le cas d'un besoin à fréquence flexible, **toute la bande FM (de 87,6 à 107,9 MHz) est analysée par pas de 100 kHz**.
- L'objectif est, dans **un premier temps**, de soumettre des **besoins à fréquence flexible** en vue d'identifier les fréquences les plus adaptées. **Dans les étapes suivantes**, l'utilisateur pourra commencer à fixer les fréquences jusqu'à ce que toutes les besoins se voient attribuer une **fréquence fixe** appropriée.
- IMPORTANT:
 - **les canaux FLEX ne sont plus acceptés depuis l'itération 9 (jeudi 13 mai 2021).**
 - **Pas de changements profonds des besoins depuis l'itération 12 (jeudi 24 juin 2021).**



Outil d'optimisation

*Besoin à
fréquence
flexible*

T01

Date of notification: [dropdown] ID1/ Unique identification code given by the Administration to the assignment: [text box]

Fragment: Article 11 GE84 ST61
Notification intended for: Addition Modification [...]

12A/ Operating agency: [dropdown] 2C/ Date of bringing into use: [dropdown]

12B/ Address code: [dropdown] 10B/ Regular hours of operation (UTC): From [dropdown] To [dropdown]

Assignment characteristics | **Antenna characteristics**

Station information
4A/ Antenna site name: KIBWEZI
4B/ Geographic area: KEN
4C/ Longitude: 37° 55' 0" E
Latitude: 2° 22' 0" S
9EA/ Altitude of site above sea level: 1087 m
3A1/ Call sign: [text box]
3A2/ Station identification: FLEX

Emission characteristics
1A/ Assigned frequency: 87.7 MHz
7AB/ Bandwidth: 300.000 kHz
7D/ Transmission system: 4
9D/ Polarization: H
8BH/ Horizontal e.r.p.: 47.800 dBW
8BV/ Vertical e.r.p.: [text box] dBW

Antenna characteristics
9/ Antenna directivity: D
9EB/ Maximum Effective Antenna Height: 342 m
9E/ Height of Antenna Above Ground Level: 100 m

Coordination successfully completed with the following administrations

| Available administrations | Selected administrations |
|---------------------------|--------------------------|
| AFG | |
| AFS | |
| AGL | |
| ALB | |
| ALG | |

13C/ Notified remarks: [text area]



Outil d'optimisation

Critères de calcul

Consider Tip TV also Polarization Discrimination (dB)

Critères pour définir les fréquences assignables

Ignore self interference Ignore interference received Acceptable NFS (dB ($\mu\text{V}/\text{m}$))

Sélectionner l'adm à analyser

Configuration Information (only results with Nuisance Field Strength (NFS) ≥ 30 dB ($\mu\text{V}/\text{m}$) will be displayed):

Consider Tip TV also Polarization Discrimination (dB)

Job Output

Input notice file validated by the OnlineValidation process on 4/19/2021 7:50:13 AM

Ignore self interference Ignore interference received Acceptable NFS (dB ($\mu\text{V}/\text{m}$))

Select Administration

SOM

Evaluate Statistics

S'applique UNIQUEMENT aux besoins à fréquence
FIXE!!!!

L'info de coordination des entrées du Plan n'est pas prise en compte

Outil d'optimisation

Introduction de la coordination

T01

Date of notification: ID1/ Unique identification code given by the Administration to the assignment:

Fragment: Article 11 GE84 ST61
 Notification intended for: Addition Modification

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

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

Assignment characteristics | **Antenna characteristics**

Station information

4A/ Antenna site name: 4C/ Longitude: E 9EA/ Altitude of site above sea level: m 3A1/ Call sign:

4B/ Geographic area: Latitude: S 3A2/ Station identification:

Emission characteristics

1A/ Assigned frequency: MHz 7D/ Transmission system: 8BH/ Horizontal e.r.p.: dBW

7AB/ Bandwidth: MHz 9D/ Polarization: 8BV/ Vertical e.r.p.: dBW

Antenna characteristics

9/ Antenna directivity: 9EB/ Maximum Effective Antenna Height: m 9E/ Height of Antenna Above Ground Level: m

Coordination successfully completed with the following administrations

| Available administrations | Selected administrations |
|---------------------------|--------------------------|
| AFG | NMB |
| AGL | |
| ALB | |
| ALG | |
| LAND | |

13C/ Notified remarks:

AFS Augrabies – Accord de NMB



Outil d'optimisation Introduction de la coordination

Ignore self interference
 Ignore interference received
 Acceptable NFS (dB (µV/m))

Showing results for submitted requirements from AFS

Select requirement:

104 MHz-AUGRABIES (020°24'00"E-28°34'00"S) System 4 Polarization V - Id: 1

GE84 Optimization Description

Summary [104 MHz-AUGRABIES (020°24'00"E-28°34'00"S) System 4 Polarization V - Id: 1]

Details of the requirement under consideration

Show top 5 interferers in the summary
 Show top 5 affected in the summary
 Show assignable frequencies on top

Excel

| Frequency (MHz) | Max NFS Received (dB(µV/m)) | Max NFS Generated (dB(µV/m)) | Top five affected | | | | | | | | | | | | | | | |
|-----------------|-----------------------------|------------------------------|-------------------|------|----------|-------|-------|------|------------|-------|----------|----------|------------|-----|-------|-------------|-------|--------|
| | | | Assign ID | Adm. | Intent | Class | Freq. | Pol. | Site Name | Dist. | Cold Sea | Warm Sea | Sup. Refr. | ERP | Azim. | Prot. Ratio | NFS | Coord. |
| 104 | 49.11 | 58.15 | 2 | NMB | ADD | BC | 104.2 | V | ARIAMSVLEI | 73 | 0 | 0 | 0 | 37 | 310.9 | 7 | 58.15 | Yes |
| | | | 084002558 | NMB | RECORDED | BC | 103.7 | H | ARIAMSVLEI | 73 | 0 | 0 | 0 | 37 | 310.9 | -7 | 34.15 | Yes |



AFS AUGRABIES (Assign ID 1) – Accord de NMB – Impact sur l’interférence reçue par NMB ARIAMSVLEI de AUGRABIES(AFS)

Outil d’optimisation

Introduction de la coordination

Showing results for submitted requirements from NMB

Select requirement:
104.2 MHz-ARIAMSVLEI (019°50'00"E-28°08'00"S) System 4 Polarization V - Id: 2

GE84 Optimization Description

Summary [104.2 MHz-ARIAMSVLEI (019°50'00"E-28°08'00"S) System 4 Polarization V - Id: 2]

Details of the requirement under consideration

Show top 5 interferers in the summary Show top 5 affected in the summary Show assignable frequencies on top

| Frequency (MHz) | Max NFS Received (dB(µV/m)) | Max NFS Generated (dB(µV/m)) | Top five interferers | | | | | | | | | | | | | | | |
|-----------------|-----------------------------|------------------------------|----------------------|------|----------|-------|-------|------|--------------|-------|----------|----------|------------|-----|-------|-------------|-------|--------|
| | | | Assign ID | Adm. | Intent | Class | Freq. | Pol. | Site Name | Dist. | Cold Sea | Warm Sea | Sup. Refr. | ERP | Azim. | Prot. Ratio | NFS | Coord. |
| 104.2 | 58.15 | 49.11 | 1 | AFS | ADD | BC | 104 | V | AUGRABIES | 73 | 0 | 0 | 0 | 37 | 310.9 | 7 | 58.15 | Yes |
| | | | 084002199 | NMB | RECORDED | BC | 104.3 | H | KEETMANSHOOP | 241 | 0 | 0 | 0 | 47 | 136.1 | 25 | 52.23 | --- |
| | | | 084000416 | AFS | RECORDED | BC | 104.5 | H | AUGRABIES | 73 | 0 | 0 | 0 | 47 | 310.9 | -7 | 44.69 | --- |
| | | | 084000284 | AFS | RECORDED | BC | 104.3 | H | GARIES | 296 | 0 | 0 | 0 | 37 | 35.4 | 25 | 38.92 | --- |

Démonstration en ligne

<https://www.itu.int/ITU-R/eTerrestrial/eBroadcasting>

*Outil
d'optimisation*


*Introduction
des cartes
... et bien plus!*

Job Output
Input notice file validated by the OnlineValidation process on 6/14/2021 10:31:11 AM
 Ignore self interference Ignore interference received Acceptable NPS (dB (µW/m²)) 54

Select Administration
NMB

| Adm | Submitted | Assignable | Non Assignable |
|-----|-----------|------------|----------------|
| NMB | 1 | 2 | 0 |

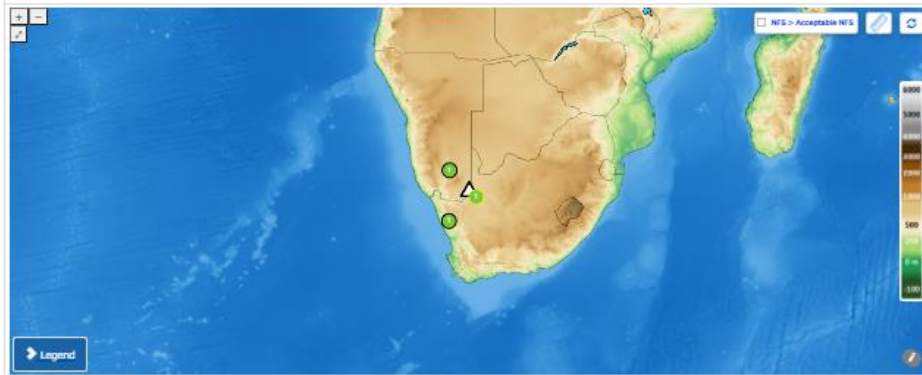
Show Terrain Data
Administration:
Coordinates:



Showing results for submitted requirements from NMB
Select requirement:
104.2 MHz-ARIAMSVLE1 (019°50'00"E-28°08'00"S) System 4 Polarization V - Id: 2

GE84 Optimization Description
Summary [104.2 MHz-ARIAMSVLE1 (019°50'00"E-28°08'00"S) System 4 Polarization V - Id: 2] | 104.2MHz | List of Interferes | 104.2MHz | List of Affected

Show Terrain Data
Administration:
Coordinates:



Excel

| Assign ID | Adm | Inband | Site Cls | Assigned Frequency (MHz) | Polar | Site Name | Total Distance | Cold Sea Path (Km) | Warm Sea Path (Km) | Super refractivity Path (Km) | ERP (dBW) | Azimuth (deg) | Protection Ratio (dB) | NPS (dB(µW/m ²)) | Coord. |
|-----------|-----|----------|----------|--------------------------|-------|--------------|----------------|--------------------|--------------------|------------------------------|-----------|---------------|-----------------------|------------------------------|--------|
| 1 | AFS | ALO | BC | 104 | V | ALGARBIAS | 73 | 0 | 0 | 0 | 37 | 131.3 | 7 | 45.11 | Yes |
| 054002109 | NMB | RECORDED | BC | 104.3 | H | KEETMANSHOOP | 241 | 0 | 0 | 0 | 37 | 315.4 | 25 | 37.42 | --- |
| 054002084 | AFS | RECORDED | BC | 104.3 | H | GARUSS | 296 | 0 | 0 | 0 | 37 | 214.5 | 25 | 32.36 | --- |

Merci pour votre attention
Questions ?