

AGREEMENT

on supplementary conditions to be observed at the stage of implementation of allotments contained in the digital plan of the GE06 Agreement as of 16th June 2006

The undersigned administrations,

Meeting in Geneva during the Regional Radiocommunication Conference (RRC-06) convened under the auspices of the International Telecommunication Union (ITU) between 15th May and 16th June 2006;

Considering that the undersigned administrations made possible the attribution of the same frequency channel/block to numerous DVB-T and T-DAB assignments and allotments and their inclusion in the GE06 Plan for the digital terrestrial broadcasting service even though these assignments and allotments have been classified as incompatible during the RRC-06 planning process;

Considering that the GE06 Agreement contains provisions to be applied before bringing into use broadcasting assignments, relating to the examination of conformity of these assignments with respect to the characteristics of the allotment in the GE06 Plan from which they are derived;

Considering that supplementary provisions relating to the examination of compatibility analysis are needed to ensure that no unacceptable interference levels occur within the allotment areas of co-block/co-channel allotments without coordination;

Considering that one or several successfully coordinated assignments have been associated with an allotment and recorded in the GE06 Plan adopted by RRC-06 (situation of 16th June 2006);

Undertake, with respect to the digital terrestrial broadcasting service in the frequency bands 174-230 MHz and 470-862 MHz, neither to bring into operation nor to notify assignments implementing their allotments recorded in the Plan adopted by RRC-06 (situation of 16th June 2006) unless they comply with the following conditions or prior consent has been obtained by the concerned administrations.

The cumulative interfering field strength of the network implementation shall not exceed the value of the threshold interfering field strength $E_{Threshold}$ determined with the method described in Annex 1 at each calculation point in the allotment area(s) of the co-channel/co-block allotment(s) of the other administration.



Unless otherwise agreed, the other administration shall be informed of the results of these calculations by the implementing administration not less than 1 month prior to the notification or start of operation of an assignment associated with an allotment. If the operation of a network, although made in accordance with the provisions of this Agreement, results in unacceptable interference¹ to services of the other administration, the administration which brought the assignment(s) into use shall in cooperation with the affected administration immediately take the necessary action to eliminate the interference.

This Agreement does not affect the rights of analogue broadcasting stations (which are recorded in the analogue plan in Annex 1 of the GE06 Agreement) during the transition period.

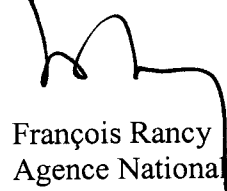
With the consent of the other administration, this Agreement may be modified at the request of one of the signatory administrations where such a modification becomes necessary in the light of administrative, regulatory or technical developments. An administration cannot withdraw unilaterally from this Agreement.

One original copy of this Agreement is handed over to each signatory administration. Each signatory administration can make public parts or the whole of the Agreement.

This Agreement shall enter into force on the date and time of provisional application of the GE06 Agreement.

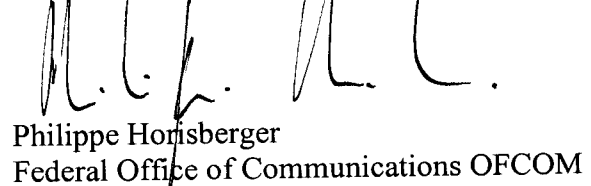
Done at Geneva, on 14th June 2006,

For the Administration of
France



François Rancy
Agence Nationale des Fréquences ANFR

For the Administration of
Switzerland



Philippe Horisberger
Federal Office of Communications OFCOM

¹ Assignments included in the plan as of 16th June 2006 are deemed to produce accepted interference.

Annex 1

The threshold interfering field strength is calculated at all the points at 10m above ground in the allotment area(s) of the co-channel/co-block allotment(s) of the other administration which are situated at an altitude below 2100 m and is given by the equation

$$E_{Threshold} = \text{Max}(E_{MaxInt}, E_{Sum}),$$

where

$E_{Threshold}$ is defined at each individual calculation point as the larger of the two values of either E_{MaxInt} or E_{Sum} ;

E_{Sum} defines the aggregated field strength of the assignments recorded in the GE06-plan (16th June 2006) that are associated with the allotment plus 0.5 dB at each individual calculation point;

E_{MaxInt} defines the value of the maximum allowable interfering field strength at each individual calculation point given

- in Table 1 for UHF co-channel allotments inside the buffer zone as defined in Annex 2; and
- in Table 2 for UHF co-channel allotments outside the buffer zone; and
- in Table 1 for VHF co-channel/co-block allotments.

The interfering field strength of the network implementation is calculated for 1% of time by aggregating the interfering field strength of each of the assignments associated with the allotment in cause (summation method: power sum).

Assignments associated with an allotment are all assignments within a perimeter extending up to 20 km from the allotment boundaries sharing the same frequency as the one allocated to the allotment, which have been notified or already brought into use or are planned to be notified or to be brought into use.

The field strength prediction model to be used to calculate the cumulative interfering field strength is Fresnel-Deygout, with a resolution of 100m, unless otherwise agreed.

Table 1: Maximum allowable interfering field strength E_{MaxInt} for DVB-T and T-DAB co-channel/co-block allotments

Band	Interfering service	Affected service	E_{MaxInt} [dBμV/m]
VHF	DVB-T	DVB-T	$44 + f_{corr}$
VHF	T-DAB	DVB-T	$39.6 + f_{corr}$
VHF	DVB-T	T-DAB	$45 + f_{corr}$
VHF	T-DAB	T-DAB	$39 + f_{corr}$
UHF	DVB-T	DVB-T (inside the buffer zone)	$49 + f_{corr}$

where f_{corr} is the frequency correction (in dB), for UHF given by $30 \cdot \log(f/650\text{MHz})$, for VHF $30 \cdot \log(f/200\text{MHz})$, f is the center frequency of the respective channel.

Interfering service: as defined by the technical characteristics of the (real) interfering network implementation.

Affected service: as defined by the technical characteristics of the affected co-block/co-channel allotment plan entry (DS2 (T-DAB) or DT2 (DVB-T)).

The above maximum allowable interfering field strength E_{MaxInt} is calculated as follows:

$$E_{MaxInt} = E_{med} + f_{corr} - CF - PR + IM$$

where

E_{med} is the minimum median field strength (in $\text{dB}\mu\text{V/m}$) for 200 MHz and 650 MHz, respectively;

f_{corr} is the frequency correction (in dB), for UHF given by $30 \cdot \log(f/650\text{MHz})$, for VHF $30 \cdot \log(f/200\text{MHz})$, f is the center frequency of the respective channel;

CF is the combined location correction factor: $CF = q \sqrt{(\sigma_w^2 + \sigma_i^2)}$;

q is the correction factor obtained from the complementary cumulative inverse lognormal function $Q(x\%)$, where $x\%$ represents the fraction of locations where a certain field strength is present. In order to ensure a coverage at 95 % of locations q becomes $Q(95\%)=1.64$;

σ_w is the standard deviation of the lognormal distribution of the wanted signal (5.5 dB);

σ_i is the standard deviation of the lognormal distribution of the interfering signal (5.5 dB);

PR is the appropriate protection ratio;

IM is the implementation margin (in dB).

The values for E_{maxint} given in Table 1 correspond to the reference planning configurations RPC2 for DVB-T in UHF, RPC3 for DVB-T and RPC5 for T-DAB in VHF, with an implementation margin IM of 3 dB (except for DVB-T in VHF). They are applicable in the buffer zones defined in Annex 2.

For UHF allotments outside the buffer zones, the values for E_{MaxInt} will be calculated with regard to the RPC of the affected allotment. See Table 2 for values.

Table 2: Maximum allowable interfering field strength E_{MaxInt} for DVB-T co-channel allotments outside the buffer zone

Vs		UHF (affected)		
		RPC1	RPC2	RPC3
UHF (Interf)	RPC1	$31 + f_{corr}$	$49 + f_{corr}$	$59 + f_{corr}$
	RPC2	$31 + f_{corr}$	$49 + f_{corr}$	$59 + f_{corr}$
	RPC3	$28 + f_{corr}$	$46 + f_{corr}$	$56 + f_{corr}$



Annex 2

French UHF-buffer zone relevant for Switzerland



Swiss buffer zone relevant for France: the whole country