

INTERNATIONAL TELECOMMUNICATION UNION

Radiocommunication Bureau
(Direct Fax No. +41 22 730 57 85)



Circular letter
CR/36

12 April 1995

To Administrations of Members of the ITU

Subject: Modernization of BR's database for terrestrial services

To the Director-General

Dear Sir,

The ITU is in the process of modernizing its information systems, including moving from its current mainframe operations to a client-server configuration using PC's and relational data bases.

A presentation of the intentions of the Bureau was made to the Council in 1994 (see Document C94/47). Among the global benefits to be achieved by this modernization are:

- Improving services to administrations;
- facilitating the sharing of PC-based software and data with administrations and other interested users;
- maximizing flexibility and minimizing the cost impact of changes to the Radio Regulations, new procedures from regional conferences or enhancements in information system technology.

All this is intended to lead in the longer term to a better utilization of resources in administrations and in the Radiocommunication Bureau and a reduction of costs.

The BR's existing space software, the Space Network System (*SNS*), was developed after the 1988 WARC-ORB conference. Because of its recent design, it is not anticipated that major changes will be required as the *SNS* is migrated to the new environment.

On the other hand, the change to the new environment requires a redesign and rewrite of the Bureau's existing terrestrial software, the Frequency Management System (*FMS*), rather than a simple migration. The *FMS* has its origins in the late 1970's before many of the regional and world conferences (GE84, GE85, RJ88, GE89), and before the introduction of now common technology such as relational data base management systems.

Subsequently, over the years, the *FMS* was modified to add features to cope with the results of many of these conferences. During this time, other changes, such as electronic notification, have been introduced or are being introduced.

The Bureau intends to take advantage of the need to redesign and rewrite the *FMS* to create an entirely new system, the *Terrestrial Radiocommunications System (TerRaSys)*. *TerRaSys* is intended to be a coherent system. It is also intended to be more easily manageable to keep up with the fast-paced world of telecommunications and information systems. In addition

to taking into account the changes discussed above, the design of *TerRaSys* will also take advantage of the Bureau's experience in processing notices by proposing modifications to the structure that should match more closely the operational requirements corresponding to various services.

While *TerRaSys* will include many changes, only some of these changes will be visible to outside users. All of the visible changes are intended to provide benefits to administrations. It is the purpose of this circular-letter to explain these proposed changes and to solicit your comments on these proposals.

The preliminary work for *TerRaSys* has resulted in a design that divides terrestrial services into three separate areas:

- LF/MF Broadcasting;
- VHF Sound and VHF/UHF Television broadcasting;
- Fixed, Mobile and other services, including tropical-band broadcasting.

Some of the changes which the Bureau proposes are applicable to all three of these areas. These are discussed in detail in Annex 1 of this circular-letter.

Other changes are limited to LF/MF Broadcasting, and are discussed in Annex 2 of this circular-letter.

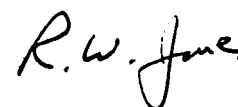
Changes limited to VHF Sound and VHF/UHF Television Broadcasting are discussed in Annex 3 of this circular-letter.

Changes related only to Fixed, Mobile and other services are not discussed in this circular-letter. Rather, the Bureau is postponing detailed consideration until WRC-95 has considered the VGE report and until the potential consequences of any related decision on the system design can be analyzed. However, the general changes discussed in Annex 1 would nonetheless be applicable to these services.

The complete conversion from *FMS* to *TerRaSys* is planned for completion by the end of 1998. This will be accomplished in phases. The first phase will involve VHF Sound and VHF/UHF Television Broadcasting. This phase will be followed by the conversion of LF/MF Broadcasting.

The Bureau would appreciate receiving your comments on these proposals.

Yours faithfully,



R. W. JONES
Director

Annex

Distribution:

- Administrations of Members of the ITU
- Members of the Radio Regulations Board

Annex 1 -- General Changes

Proposed Change	Discussion	Benefits to Administrations
<p>Merging notice forms, such as AP1/A2 and GE75, AP1/A7 and RJ81, so that a common form would be used for notices under Article 12 of the Radio Regulations and for notices under applicable Plans.</p>	<p>Currently, there are, in general, separate notice forms for Article 12 and for the Plans, even though the data is almost identical. For example, Article 12 notice forms require the power to be expressed in dBW, while the notice forms for certain Plans require the power to be expressed in kilowatts. In other cases, the differences are more substantial.</p>	<ul style="list-style-type: none"> • Only one notice form (for each service) would be required, using common units, a common format, etc. • Discrepancies related to the different notice forms would be eliminated.
<p>When an administration is proposing to bring into operation under Article 12 an assignment that has previously been notified under one of the Plans, it would not be necessary to resubmit all of the technical data if it is identical to what is in the corresponding updated Plan.</p>	<p>Currently, separate complete notices must be submitted again for Article 12, once a Plan has been modified.</p>	<ul style="list-style-type: none"> • Reduction of work for administrations. • Better ensures compatibility between Plan parameters and Article 12 parameters, where desired.
<p>Following the concepts for electronic notices explained in BR Circular-letter CR/26 of 9 September 1994, paper notices for modifications of existing assignments would also require that all data be submitted instead of only those fields which have changed.</p>	<p>Currently, administrations must mark on notice forms which fields are to be modified. Since all fields would be submitted under the proposed system, it would no longer be necessary to mark which fields are intended to be modified.</p>	<ul style="list-style-type: none"> • Administrations would no longer need to keep track of what was previously submitted to the Bureau (or search their old records) so that they can indicate which fields are to be modified. • The amount of information maintained by administrations and submitted on the notice forms would be reduced. • There would be no ambiguity about the real wish of the Administration, thus reducing the amount of correspondence.

<p>As an exception to the above:</p> <p>For modifications, administrations would include <i>both</i> old and new values of a few key fields (e.g., frequency and geographic coordinates) that uniquely identify the assignment for which the modification is submitted.</p>	<p>Currently, it is often not clear to which assignments a notice is referring. For example, consider five television stations sharing a single antenna site. One changes frequency. With the existing system, the Bureau receives only the new frequency, and it is not clear which of the five is changing frequency. With the proposed change, it would become clear.</p>	<ul style="list-style-type: none"> • A significant amount of correspondence with administrations (requesting clarification) would be eliminated, resulting in faster processing of the notices. • Errors where the Bureau has made incorrect assumptions as to which assignments are affected by the proposed modifications would be eliminated.
<p>As an alternative to the above method of specifying a few former parameters, the Bureau reserved a 20 character field that administrations may use as their unique identifier.</p>	<p>Same as above.</p>	<ul style="list-style-type: none"> • Same as above.
<p>As the paper notice forms change, the electronic notice format would change to match the data required for specific services.</p>	<p>The current format for electronic notices is based on the internal data base structures used within ITU and in electronic publications, without necessarily following the paper notice forms.</p>	<ul style="list-style-type: none"> • This change would maintain the consistency necessary between the paper notice forms and the electronic notice formats. • Administrations using electronic notices would no longer be dependent on the internal structure of the BR data base and subsequent changes to it.
<p>The Master Register and the corresponding publications (paper, electronic, and microfiche) would be changed to match all of the proposed changes.</p>	<p>Everything should change to match the changes.</p>	<ul style="list-style-type: none"> • This change would maintain the consistency between the submitted data and the data as viewed in the publications.

Annex 2 -- LF/MF Broadcasting

Proposed Change	Discussion	Benefits to Administrations
<p>The same notice form would be used for all LF/MF Broadcasting notices in Regions 1 and 3, including those under Article 12 and those under the GE75 Regional Plan. Similarly, the same notice form would be used for all MF Broadcasting Stations in Region 2, including those under Article 12 and those under the RJ81 Regional Plan. Note, however, that the notice form for Regions 1 and 3 would be different than the notice form for Region 2. The BR has not yet prepared draft proposed notice forms for LF/MF Broadcasting. These will be distributed at a later time.</p>	<p>Currently, there are different LF/MF Broadcasting notice forms for Article 12 and for the Regional Plans. In addition, there are significant differences between the forms for Regions 1 and 3, on one hand, and Region 2, on the other hand. This proposed change would eliminate the differences between the Article 12 notice forms and the Regional Plans notice forms, while maintaining the differences between Regions 1 and 3 and Region 2.</p>	<ul style="list-style-type: none"> • Administrations would be able to keep their data in a single format for the LF/MF Broadcasting Service. • Preparation of notices would be simplified by the use of a single, common form.
<p>The precise hours of operation would no longer be mandatory. However, the precise hours of operation values which the Bureau already has would continue to be maintained, and those notified would be captured. In addition, it would be necessary to indicate in future notices whether the parameters are for daytime operation, night-time operation, or both.</p>	<p>The precise hours of operation are not used in any analyses performed by the Bureau. They do not even appear in the RJ81 Plan. There is one set of engineering requirements, propagation algorithms, etc., for daytime, and another set for night-time. A finer-grain distinction is normally not necessary.</p>	<ul style="list-style-type: none"> • Reduction in the amount of information required. • Less confusion as to whether a given set of parameters is intended to be used only for daytime, only for night-time, or for both. • Clear criteria for day-time or night-time technical examination.
<p>The value of compression (Regions 1 and 3 only) would be required separately for daytime and night-time, instead of the current practice of requiring it once for the entire operation.</p>	<p>The compression is related to operational parameters rather than assignment data. It may differ during day-time and night-time. The existing system provides no means of handling these differences.</p>	<ul style="list-style-type: none"> • More exact consideration of compression in the calculations.

Annex 3 -- VHF Sound and VHF/UHF Television Broadcasting

Proposed Change	Discussion	Benefits to Administrations
<p>The same notice form would be used for all VHF Sound Broadcasting notices, including those under Article 12 and those under the various regional plans (ST61, GE84). A draft proposed notice form is attached.</p>	<p>Currently, there are three different VHF Sound Broadcasting notice forms, collecting different data. These would be merged into a single notice form.</p>	<ul style="list-style-type: none"> • Administrations would be able to keep their data in a single format, instead of in as many as three different formats (including two for the same station), for the VHF Sound Broadcasting Service. • Preparation of notices would be simplified by the use of a single, common form.
<p>The same notice form would be used for all Television Broadcasting notices, including those under Article 12 and those under the various regional plans (ST61, GE89). A draft proposed notice form is attached.</p>	<p>Currently, there are three different Television Broadcasting notice forms, collecting different data. These would be merged into a single notice form.</p>	<ul style="list-style-type: none"> • Administrations would be able to keep their data in a single format, instead of as many as three different formats (including two for the same station), for the Television Broadcasting Service. • Preparation of notices would be simplified by the use of a single, common form.
<p>Related to the above two items, it should be noted that this means that, for Article 12 notices and notices related to ST61, information on effective antenna height and antenna attenuation would be submitted every 10 degrees, except where a single value is desired to be used in all directions.</p>	<p>Currently, for Article 12 notices and notices related to ST61, effective antenna height values and effective radiated power are submitted in given azimuths and sectors. This can lead to conflicting information (e.g., overlapping sectors) and missing information (sectors not covered).</p>	<ul style="list-style-type: none"> • Eliminates the possibility of conflicting information, and the need for correspondence to resolve these discrepancies, thereby speeding the processing of notices. • Eliminates the possibility of missing information.
<p>Redundant VHF Sound Broadcasting data currently requested would be eliminated. Specifically, the FM transmission system would be requested, avoiding the necessity of notifying the class of emission and the necessary bandwidth.</p>	<p>Currently, redundant information on the notices leads to discrepancies, which slows the processing of the notices.</p>	<ul style="list-style-type: none"> • Administrations would have less data to notify. • Eliminating the possibility of discrepancies would eliminate the need to contact administrations to resolve the discrepancies, thereby speeding the processing of the notices.

<p>Redundant Television Broadcasting data currently requested would be eliminated. Specifically, the vision carrier frequency, the television system, and the color system would be requested, avoiding the necessity of notifying the assigned frequency, sound carrier frequency, class of emission, and necessary bandwidth.</p>	<p>Currently, redundant information on the notices leads to discrepancies, which slows the processing of the notices. The choice of which information to request (e.g., asking for vision carrier frequency instead of assigned frequency) is based on the belief that administrations know more about the basic operating parameters of their stations (such as vision carrier frequency) than about administrative parameters (such as assigned frequency).</p>	<ul style="list-style-type: none"> • Same as above.
<p>For Television Broadcasting, it would no longer be necessary to submit effective antenna height information and antenna pattern information separately for vision and sound.</p>	<p>Currently, the notice form for Article 12 and ST61 requires that this information be submitted separately for the vision and sound carriers. However, the same antenna is used for both vision and sound. Therefore, this information should be submitted only once.</p>	<ul style="list-style-type: none"> • Significant reduction in the amount of data required. • Eliminates the possibility of inconsistent data (one set of values for vision and a different set of values for sound).
<p>For both VHF Sound and VHF/UHF Television Broadcasting, the hours of operation would no longer be mandatory. However, the hours of operation values which the Bureau already has would continue to be maintained. When missing, they would be considered as 24 hours per day.</p>	<p>The hours of operation are not used in any analyses performed by the Bureau. They do not appear as parameters in the assignment Plans (ST61, GE84 and GE89), and, as a practical matter, the parameters for VHF Sound and VHF/UHF Television Broadcasting stations, unlike those for LF/MF Broadcasting stations, do not change with the time of day.</p>	<ul style="list-style-type: none"> • Reduction in the amount of data to be submitted. • Consistency with assignment Plans and operational characteristics in these bands.



Radiocommunication Bureau

DRAFT

FORM OF NOTICE VHF / FM SOUND BROADCASTING STATION

Date of notice

Day	Month	Year
<input type="text"/>	<input type="text"/>	<input type="text"/>

REGIONAL AGREEMENT
GENEVA, 1984

Article 4 Plan update

REGIONAL AGREEMENT
STOCKHOLM, 1961

Article 4 Plan update

RR ARTICLE 12
NOTIFICATION

Appendix 1 Section A
of the Radio Regulations

Notification intended for

Add Mod Sup

IDENTIFICATION No.

<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
----------------------	----------------------	----------------------	----------------------	----------------------	----------------------	----------------------	----------------------

Notifying
Administration

<input type="text"/>	<input type="text"/>	<input type="text"/>
----------------------	----------------------	----------------------

Administration Serial No.

<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
----------------------	----------------------	----------------------	----------------------	----------------------	----------------------	----------------------	----------------------	----------------------	----------------------	----------------------	----------------------	----------------------

Call sign

<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
----------------------	----------------------	----------------------	----------------------	----------------------	----------------------	----------------------	----------------------	----------------------	----------------------	----------------------	----------------------	----------------------

Assigned frequency

<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
----------------------	----------------------	----------------------	----------------------	----------------------	----------------------

Country

<input type="text"/>	<input type="text"/>	<input type="text"/>
----------------------	----------------------	----------------------

Name of transmitting station

<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
----------------------	----------------------	----------------------	----------------------	----------------------	----------------------	----------------------	----------------------	----------------------	----------------------	----------------------	----------------------	----------------------	----------------------	----------------------

Longitude

<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
----------------------	----------------------	----------------------	----------------------	----------------------	----------------------	----------------------	----------------------

Latitude

<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
----------------------	----------------------	----------------------	----------------------	----------------------	----------------------	----------------------	----------------------

Polarization

<input type="text"/>

H / V / M

Effective Radiated Power (dBW)

Horizontal

<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
----------------------	----------------------	----------------------	----------------------

Vertical

<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
----------------------	----------------------	----------------------	----------------------

Directivity of antenna

<input type="text"/>	<input type="text"/>
----------------------	----------------------

D / ND

Transmission System

<input type="text"/>

Height of antenna above ground level (m)

<input type="text"/>	<input type="text"/>	<input type="text"/>
----------------------	----------------------	----------------------

Altitude of site above sea level (m)

<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
----------------------	----------------------	----------------------	----------------------

Maximum effective antenna height (m)

<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
----------------------	----------------------	----------------------	----------------------

ARTICLE 12 ONLY

Provision	Operating agency	Responsible administration	Regular hours of operation	Date of bringing into use
RR <input type="text"/>	<input type="text"/>	<input type="text"/>	From (UTC) Hours <input type="text"/> minute <input type="text"/> To (UTC) Hours <input type="text"/> minute <input type="text"/>	Day <input type="text"/> Month <input type="text"/> Year <input type="text"/>

COORDINATED WITH ADMINISTRATIONS

<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
----------------------	----------------------	----------------------	----------------------	----------------------	----------------------	----------------------	----------------------

OTHER INFORMATION

Old frequency (if changed)

<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
----------------------	----------------------	----------------------	----------------------	----------------------	----------------------

Old coordinates (if changed)

Longitude

<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
----------------------	----------------------	----------------------	----------------------	----------------------	----------------------	----------------------	----------------------

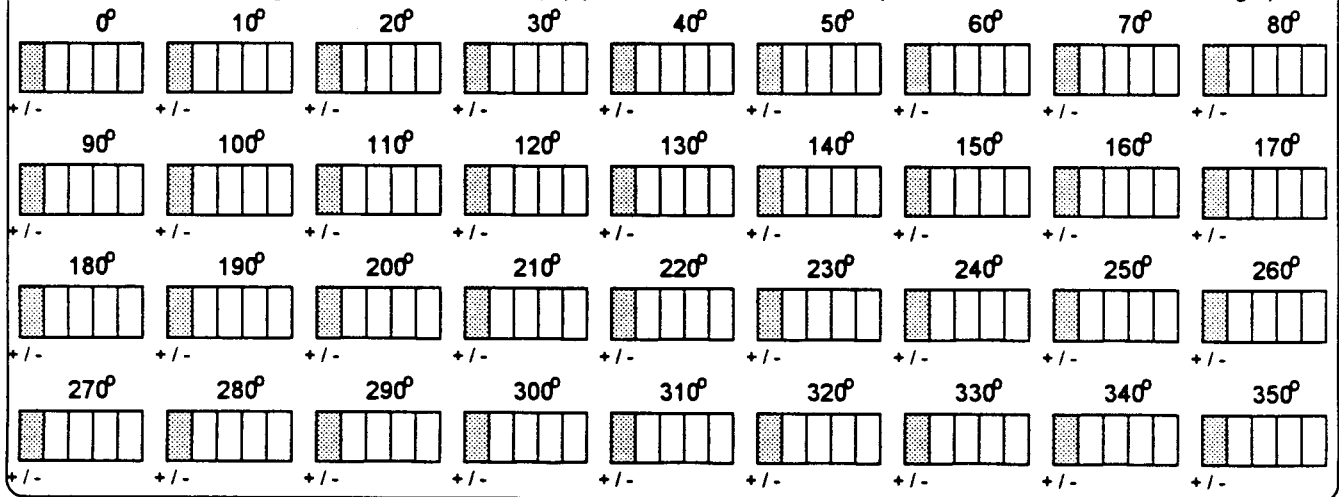
Latitude

<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
----------------------	----------------------	----------------------	----------------------	----------------------	----------------------	----------------------	----------------------

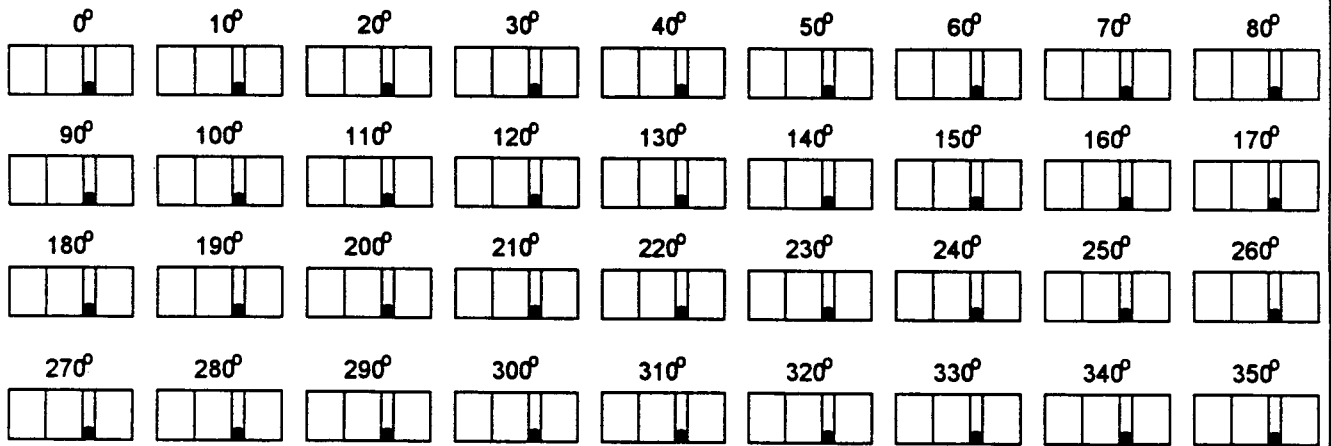
Old administration Serial No. (if changed)

<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
----------------------	----------------------	----------------------	----------------------	----------------------	----------------------	----------------------	----------------------	----------------------	----------------------	----------------------	----------------------	----------------------

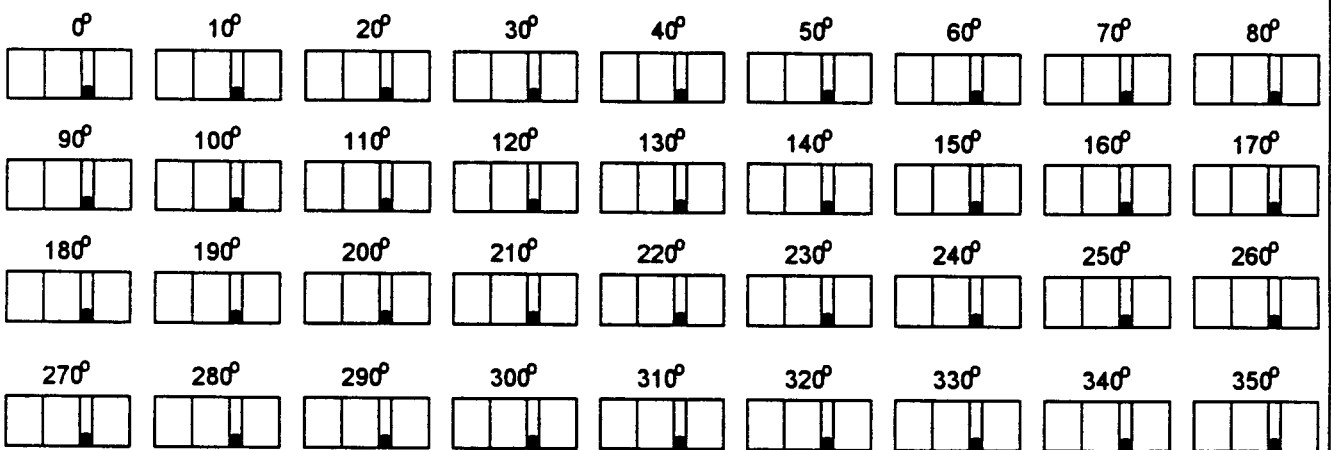
Effective antenna height at different azimuths (m) (Do not fill if all values are equal to the maximum effective height)



Attenuation at different azimuths with respect to maximum e.r.p (dB) - Horizontal plane



Attenuation at different azimuths with respect to maximum e.r.p (dB) - Vertical plane



INTERNATIONAL TELECOMMUNICATION UNION



Radiocommunication Bureau

DRAFT

FORM OF NOTICE VHF / UHF TELEVISION BROADCASTING STATION

Date of notice
Day Month Year

--	--	--	--	--	--

REGIONAL AGREEMENT
GENEVA, 1989
Article 4 Plan update

REGIONAL AGREEMENT
STOCKHOLM, 1961
Article 4 Plan update

RR ARTICLE 12
NOTIFICATION
Appendix 1 Section A
of the Radio Regulations

Notification intended for
Add Mod Sup
IDENTIFICATION No.

--	--	--	--	--	--	--	--	--	--

Notifying Administration

--	--	--

Administration Serial No.

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Call sign

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Vision carrier frequency

--	--	--	--	--	--	--

Country

--	--	--

Offset

--	--	--

+ / -

Name of transmitting station

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Longitude

--	--	--	--	--	--	--	--

Latitude

--	--	--	--	--	--	--	--

Television System

--	--

Color System

--

Polarization

--

H / V / M

Effective Radiated Power (dBW)
Horizontal

--	--	--	--	--	--

+ / -

Vertical

--	--	--	--	--	--

+ / -

Directivity of antenna

--	--

D / ND

Vision / sound power ratio

--	--

Height of antenna above ground level (m)

--	--	--	--

Altitude of site above sea level (m)

--	--	--	--	--	--

+ / -

Maximum effective antenna height (m)

--	--	--	--	--	--

+ / -

ARTICLE 12 ONLY
Provision

--	--	--	--	--

Operating agency

--	--	--

Responsible administration

--	--

Regular hours of operation
From (UTC) To (UTC)
Hours minute Hours minute

--	--	--	--	--	--	--	--

Date of bringing into use
Day Month Year

--	--	--	--	--

COORDINATED WITH ADMINISTRATIONS

--	--	--	--	--	--	--	--	--	--

OTHER INFORMATION
Old frequency (if changed)

--	--	--	--	--	--

Old coordinates (if changed)
Longitude

--	--	--	--	--	--	--	--

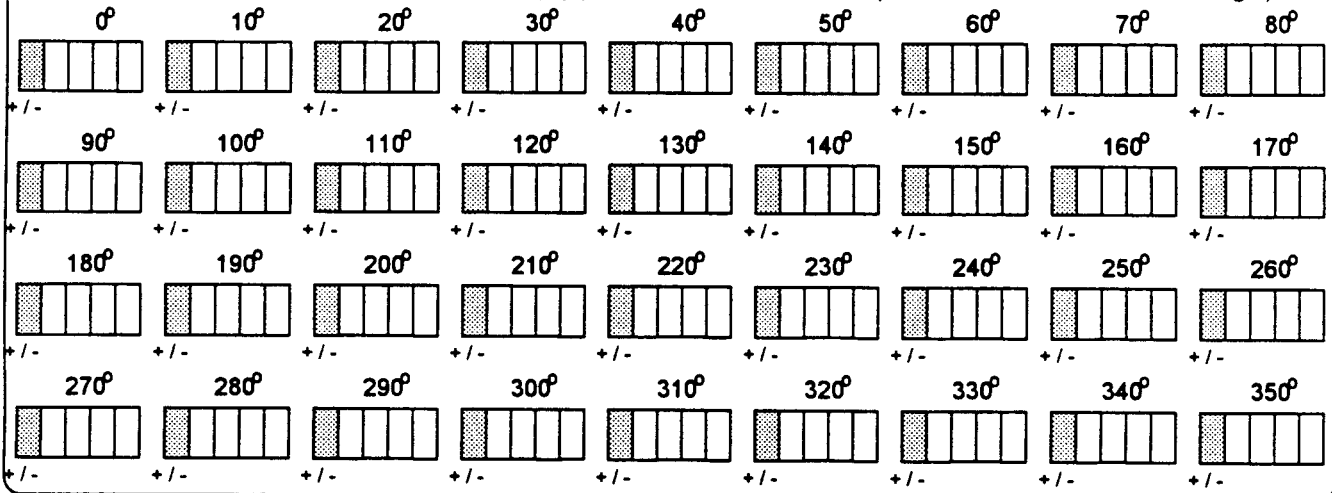
Latitude

--	--	--	--	--	--	--	--

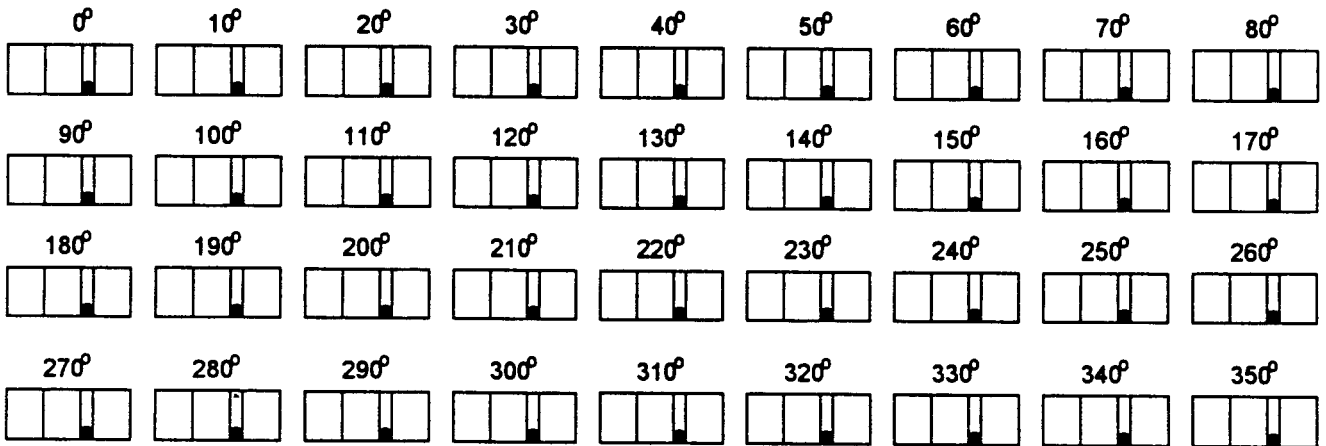
Old administration Serial No. (if changed)

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Effective antenna height at different azimuths (m) (Do not fill if all values are equal to the maximum effective height)



Attenuation at different azimuths with respect to maximum e.r.p (dB) - Horizontal plane



Attenuation at different azimuths with respect to maximum e.r.p (dB) - Vertical plane

