

20 June 2004



To the IARU Region 1 Permanent HF Committee
at their Interim Meeting in Friedrichshafen, June 2004

Position Paper regarding the proposal for a new HF bandplan

The bandplans are supposed to regulate our activities within the amateur radio bands. However, we realize that our use of the bands is not static. New modulation forms and activities surge, and old modulation forms may dwindle and become less popular. Our band plans should, if possible, mirror the actual usage, so that the band plans prepare the ground for admitting all facets of our wonderful hobby to their respective places in our bands, without mutual interference.

This Position Paper regards the proposal by the IARU Region 1 Bandplan Committee appointed at the last IARU Region 1 Conference in San Marino 2002. This Bandplan Committee consists of DL1VDL (chairman), G3PSM, and OM3LU. The views of this Position Paper are supported by the HQs (Board of Directors) of NRRL and SSA.

Bandplan principles

Our earlier bandplans were based on dividing the bands into segments for each modulation form, with CW QSOs allowed across the whole bands (except in the beacon segments). For the San Marino conference there was submitted a proposal for a new bandplan, based on the principle that bandwidths should be applied for different band segments.

There was, however, a large opposition versus a number of the proposals submitted by the Bandplan Committee, beyond the bandwidth segmentation. This led the Conference to make the following decision:

[REC/02/SM/C4.3](#)

[The Doc.02/SM/C4.3 rev 2 has been accepted as a new principle of bandwidth approach for bandplanning. The existing bandplan remains. Doc C4.3 \(after harmonizing the frequency list with the actual bandplan\) will be published together with the existing band plan, in the HF Manager Handbook as a help.](#)

[In this way every society will have the opportunity to educate members to understand the new bandplan approach.](#)

I'm here in a hair-splitting discussion with the Chairman of the Permanent HF-Committee of IARU Region 1, Carine Ramon (ON7LX). My opinion is that we through the decision REC/02/SM/C4.3 got a new bandplan based on the old, unchanged bandplan, harmonized with the principle of bandwidths. Carine's opinion is that we did not get a new bandplan. The decision that the existing bandplan remains, she interprets that we still have the old bandplan (prior to November 2002), but that the new list with bandwidths only has been made to educate members to understand the principles for new bandplans to come.

This leads therefore to a new round of bandplan planning work, possibly leading to voting at the next IARU Region 1 Conference in Davos 2005.

The existing bandplan is based on the following general principles:

- (1) CW is accepted over all parts of the bands (except no QSOs in the beacon segments).
- (2) Telephony is limited to certain telephony segments.
- (3) Digital modes are limited to certain digital segments.

When we in San Marino decided on what I perceived was a new bandplan including bandwidth segments, the decision included a note saying that AM is permitted in the telephony segments. This part of the decision was important for users of old AM equipment to survive on the bands, because the telephony segments were listed with bandwidth 2.7 kHz in the proposal. Only the top 10 m has wider telephony segments (6 kHz), primarily intended for FM.

The proposal for a new bandplan

The distributed working proposal from the Bandplan Committee came with no comments. We are therefore missing a comparison between the existing bandplan and the proposal, and we find no reasons for the different changes proposed. It should have been unnecessary for each individual to investigate the nitty-gritty of the bandplans to find the diverging details.

My main objection to the proposed new bandplan is that it establishes "all modes" in large parts of the bands. This kind of establishment is in conflict with the existing bandplan's principle on dividing the bands into segments for different modes. The most important separation is between telephony and digital modes. The proposed new bandplan represents a radical change in a well-established basis for the IARU Region 1 HF Bandplan. It is also important to realize that such a change will inflict on the use of the bands world-wide, because many of the changes conflict with the bandplans of Region 2 and Region 3. *This fundamental change in policy must therefore be discussed and agreed upon before going further with the IARU Region 1 HF Bandplan work.*

My modest 35 years of experience as an active licenced ham infer that telephony and digital modes cannot share the same band segments. Especially not so with the automatic digital modes like packet radio, AMTOR, PACTOR, and similar. A number of times I have experienced that radio amateurs with such modes have started transmitting on top of a rare DX station transmitting telephony. The result is that the telephony DXer loses. While the digital QSOs, with their automatic error-correction systems and retransmissions, will hardly not be affected by a contemporaneous telephony QSO on the same frequency. This will be an uneven fight, which the telephony operators will lose, with some angry radio amateurs as the result. And we don't want a bandplan which makes radio amateurs angry?

Here we are at the very core of band planning: *How to segment the bands in such a way that different interests avoid irritating each other!* When the Bandplan Committee suggests opening up large parts of the bands for "all modes", I believe this is asking for trouble, if digital operators are supposed to share the same band segments with the telephony operators.

We also notice immediately that AM is totally excluded from the Bandplan Committee's proposal, in defiance of intense fight for the inclusion of AM in the bandplan at the conference in San Marino. My view of common sense is to not change something which is working OK. And I react negatively to that the Bandplan Committee is launching an extraordinarily radical proposal, without comprehensive arguments for what could possibly be wrong or imperfect with the existing bandplan.

Do we need more bandwidth for digital modes on HF?

There is an accelerating development of digital modes due to the development of the micro processor and digital signal processing. The existing bandplan allows for a 500 kHz bandwidth for digital modes in the different HF bands with digital mode segments, in addition to the 29.2 - 29.3 MHz segment where up to 6 kHz bandwidth is allowed.

One of the newer digital modes challenges the 500 kHz bandwidth limitation. The digital mode MT63 (developed by IZ8BLY) has a bandwidth of approx. 1 kHz, and is therefore not allowed in, e.g., the USA. The ARRL does not support the use of MT63 in the HF bands. Instead ARRL rather recommends the digital mode MFSK16, which has a bandwidth of approx. 300 Hz, or the digital mode PSK63F with 100 Hz bandwidth, claimed to give similarly good results as MT63 (reference: "ARRL's Digital Handbook" by WB8IMY, ARRL 2001).

ARRL is of the opinion that the HF bands already are so crowded that we rather should encourage the use of narrow-band digital modes, than open up the HF bands to wide-band digital

modes. *This fundamental policy must therefore also be discussed and agreed upon before going further with the bandplan work.*

ARRL suggests that the digital mode PSK31, with less than 80 Hz bandwidth, is perfect for RTTY-type keyboard-to-keyboard QSOs, while PSK63F is a good heir to the digital mode AMTOR if one wants FEC (Forward Error Correction) automatic error correction.

Until I'm convinced of an opposite view, I will support ARRL's view that it will be best to allow more digital mode users in the HF bands by generally keeping the bandwidth below 500 kHz. Wide band digital modes on HF can be practiced and experimented with in the upper part of the 10 m band (or in the VHF bands). My proposal for using 29.2 - 29.3 MHz as a wide band digital mode segment was previously proposed by NRRL and supported by the IARU Region 1.

For completeness: The digital mode THROB uses a bandwidth of maximum 144 Hz. Another challenge for bandplanning is the new digitized speech units like, e.g., AOR's (Authority on Radio Communications) digital SSB unit ARD9800. This unit transmits digitized audio from 0.3 to 2.5 kHz (2.2 kHz audio bandwidth) with the help of 36 carriers within the same 2.2 kHz bandwidth. This new mode has not yet found its place in the bandplans. According to the existing bandplans it should be used in the 29.2 - 29.3 MHz segment if it should be regarded as a digital mode.

The details

On **longwave** the radio amateurs a few years ago got access to a tiny segment only 2.1 kHz wide (135,7 - 137,8 kHz). The last IARU Region 1 Conference discussed a proposal from the RSGB on a very detailed bandplan for this tiny segment, but the Conference decided to not implement a detailed bandplan here. Instead the Conference decided to use the RSGB proposal as recommended guidelines in the HF Manager's Handbook. Therefore I'm surprised to see that the current Bandplan Committee nevertheless includes the guidelines as a part of its proposed new HF (LF?) bandplan. I propose that we stay with the San Marino Conference ruling.

For **160 m** the Bandplan Committee proposes a new QRP frequency at 1843 kHz. I doubt that a QRPer will be able to survive in the extremely narrow common band segment which exists for high-power telephony between 1840 and 1850 kHz.

On the other hand I note with disappointment that the committee has not reported their evaluation of the proposals by EDR and NRRL on the expansion of the common telephony segment in the 160 m band. These proposals have been the most comprehensive (and controversial?) regarding a necessary change in the HF (MF?) bandplan, and heavily discussed at the last three IARU Region 1 Conferences! The last IARU Region 1 HF Interim Meeting in Friedrichshafen (2001) accepted the EDR/NRRL idea that the 1840 kHz CW/telephony segment border could be moved 10 kHz down to 1830 kHz in the IARU Region 1 Bandplan. This because a number of countries have given radio amateurs permission to expand their lower 160 m band edge further down because of the termination of the commercial LORAN-A system in the 160 m band. Plus the fact that a number of countries will not allow radio amateurs to use high power telephony above 1850 kHz.

For **80 m** the Committee proposes that 3600 - 3800 kHz should be "all modes", however with DX-telephony given preference in the upper 25 kHz. But the "all modes" label will give 180 kHz more room for the digital modes in the 80 m band, in addition to the 40 kHz (3580 - 3620 kHz) for digital modes in the 80 m existing bandplan. I do not support such an expansion for digital modes in the 80 m band, because I consider this unnecessary.

The Committee proposes new QRP frequencies at 3690 kHz on 80 m and 10106 kHz on **30 m**. The latter is not smart, because the lower 10 kHz of the 30 meter band is used as if it is a DX segment.

For **20 m** the Committee proposes that 14125 - 14350 kHz should be "all modes". This will give 225 kHz more room for digital modes, in addition to the 40 kHz (14070 - 14099 kHz + 14101 - 14112 kHz) for digital modes in the 20 m existing bandplan. I do not support such an expansion for digital modes in the 20 m band, because I consider this unnecessary.

For **17 m** the Committee proposes 18086 kHz as a new QRP frequency; surprisingly because 18096 kHz was adopted for 17 m QRP in San Marino only one and a half years ago. Bandplans should be consistent; we cannot move bandplan frequencies around every second year.

For **15 m** the Committee proposes that 21151 - 21450 kHz should be "all modes". This will give 299 kHz more room for digital modes, in addition to the 40 kHz (21080 - 21120 kHz) for digital modes in the 15 m existing bandplan. I do not support such an expansion for digital modes in the 15 m band, because I consider this unnecessary.

For **12 m** the Committee proposes that 24931 - 24990 kHz should be "all modes". This will give 59 kHz more room for digital modes, in addition to the 9 kHz (24920 - 24929 kHz) for digital modes in the 100 kHz wide (total) 12 m band in the existing bandplan. I do not support such an expansion for digital modes in the quite narrow 12 m band, because I consider this unnecessary.

For **10 m** the Committee proposes that 28225 - 29200 kHz should be "all modes". This will give as much as 975 kHz more room for narrow-band digital modes, in addition to the 100 kHz (28050 - 28150 kHz) for such digital modes in the 10 m band in the existing bandplan. In addition comes namely the 100 kHz wide band (up to 6 kHz bandwidth) digital mode segment between 29200 and 29300 kHz, as of the existing bandplan. And if this isn't enough, the Committee proposes that 29510 - 29700 kHz should be opened for "all modes", including digital traffic, where there today is a modest segment for telephony, mainly for FM and AM. Is such an increase in availability for digital modes in the 10 m band, more than 1 MHz, really imperative? I do not support such an expansion for digital modes in the 10 m band; I consider this completely unnecessary.

And the **AM** note (AM is permitted in the telephony segments) is gone from the Committee's proposal, which I object.

More and more countries now waive the morse code (CW) requirement for new radio amateurs, following the recent change in the ITU rules for the amateur radio service. My opinion is that this will lead to an increasing interest for and use of the telephony segments in the amateur radio bands. My experience infer that it will be poor judgement to make a new bandplan which mixes digital modes with telephony in the very same frequency segments (the so-called "all mode" segments). No doubt the telephony operators will be the losing part in the anarchistic interference battle we then will see on the amateur radio bands. Such an action will not support the new radio amateurs that we want to welcome on the telephony segments of our bands. Am I right?

How has NRRL treated this matter?

The proposal from IARU Region 1 HF Bandplan Committee was presented and discussed by NRRL's HF Manager in NRRL's journal "Amatørradio" for April (No. 4/2004). The same article was also printed in the journal "SARTG News" No. 1/2004. The article has been on the "Members Only" web pages of NRRL, and the views have also been presented on the web pages of SSA (www.ssa.se). This very document will also be available on the open English web pages of NRRL (www.nrnl.no).

The views of NRRL's HF Manager received full support from NRRL's HQ (Board of Directors) in May 2004. There has been an unanimously support for NRRL's view by LA and SM radio amateurs. SSA's HQ also supports this view, and will most likely ask NRRL's HF Manager to represent them at the HF Interim Meeting in Friedrichshafen 2004.

See the next page for proposals ...

How to proceed with the HF bandplan planning for IARU Region 1?

I propose the following sequence of topics to be discussed and decided upon regarding the IARU Region 1 HF bandplan matters:

1. We need to establish what principles should form the basis for the bandplan.

I propose that we stay with the already established 3 principles for our existing HF bandplan:

- (1) CW is accepted all over the amateur radio bands (except no traffic in the beacon bands)
- (2) Telephony is limited to certain telephony segments
- (3) Digital modes are limited to certain digital segments.

2. We need to establish if wide band (> 500 Hz bandwidth) digital modes should be accepted in the HF amateur radio bands (except 29.2 - 29.3 MHz, where digital modes with bandwidths up to 6 kHz are already permitted).

I propose that we support ARRL's view that wide band (> 500 Hz bandwidth) digital modes should not be permitted in the HF amateur radio bands, except in the 29.2 - 29.3 MHz segment.

It must be decided if digitized speech is considered a digital mode or not.

3. I propose that we then discuss and decide what detailed bandplan changes would be pertinent, based on the principles 1 and 2 discussed and decided upon above, plus the fact that the bandplan should not divert much from the corresponding bandplans for Region 2 and 3.
4. My opinion is, based on the extensive text of this Position Paper, that the Bandplan Committee has done a poor job when presenting a proposal containing radical changes to the IARU Region 1 HF Bandplan without presenting any reasoning, discussion, or comparison with the existing bandplan. If the discussions and decisions on the Friedrichshafen Interim Meeting 2004 show that the proposed bandplan changes are not supported by and large by the Permanent HF Committee,

I propose that the Bandplan Committee should be dismissed.

Tom V. Segalstad (LA4LN)
NRRL HF Traffic Manager