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Licensing Frameworks for Private Mobile Radio and Wireless Broadband Low Medium Power

Plum Report – Assessment of responses to ComReg Document 26/06

Consultant Report

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WBB LMP licensing issues June 2026 update

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About Plum

Plum offers strategy, policy and regulatory advice on telecoms, spectrum, online and audio-visual media issues. We draw on economics and engineering, our knowledge of the sector and our clients' understanding and perspective to shape and respond to convergence.

About this note

This note provides an update to a technical report by Plum that accompanies a ComReg consultation on a proposed licensing regime for low and medium power wireless broadband systems (WBB LMP).

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1 Introduction

In July and August 2025, ComReg undertook a public consultation[1] on a proposed licensing regime for private mobile radio services (PMR) and low and medium power wireless broadband systems (WBB LMP). The consultation document was accompanied by supporting reports from DotEcon[2] on general licensing issues for both WBB LMP and PMR services and from Plum Consulting[3] on technical issues relating to WBB LMP.

In January 2026, ComReg issued a response to consultation and further consultation [4] that addressed issues raised by respondents to the July 2025 consultation and set out further matters for consultation including a draft Decision and draft regulations. This document was accompanied by supporting reports from DotEcon[5] and Plum Consulting[6]. Responses were received from four organisations, from which only one respondent, the DECT forum, commented on WBB LMP.

This report provides Plum's consideration of the technical issues raised by the DECT forum relating to WBB LMP. Additionally, it provides updated information on the WBB LMP technical harmonisation work within CEPT, where the ECC FM60 group has been developing an ECC Recommendation giving guidance on the coordination between WBB LMP networks in the frequency band 3800-4200 MHz, and on the protection of MFCN operating in the frequency band 3400-3800 MHz. This evolving work was referenced in our original technical report. A near-final draft version[7] of this Recommendation was developed at the recent FM60 meeting in Copenhagen (18-19 March 2026). This was further updated in the meeting of 11-13 May, prior to sending to WG FM for public consultation, and we comment on the relevant changes.

[1] See ComReg Document 25/46, 11 July 2025 (link)
[2] See ComReg Document 25/46a (link)
[3] See ComReg Document 25/46b (link)
[4] See ComReg Document 26/06 (link)
[5] See ComReg Document 26/06a (link)
[6] See ComReg Document 26/06b (link)
[7] FM60 #20, Annex 4 (link)

2 Evolution of FM60 draft Recommendation on WBB LMP and MFCN coexistence

2.1 Impact on Plum technical report (ComReg document 25/46b)

There are a number of references to FM60 work in the original Plum report of July 2025. These are listed below, with a commentary on any relevant changes in the present (May 2026) draft Recommendation from FM60.

Section 3.4 Protection of WBB ECS below 3800 MHz: *"the current working text in FM60 would mandate the use of synchronisation in the lower 20 MHz in all cases and require synchronisation for medium power stations up to 3860 MHz*".

The current draft makes the same recommendation. Both versions also specify the levels of unwanted emissions that may be emitted into the 3.4-3.8 GHz band (though these were not directly referenced in the Plum study). Those for non-AAS antennas are unchanged at an eirp of -33 dBm/5 MHz, but the AAS value (previously referring to two possible values, has converged to a TRP of -40 dBm/5 MHz.

Section 3.4.1 Blocking: "*The issue of ECS and LMP compatibility is referenced in the draft ECC Recommendation, which also notes the potential need to limit WBB LMP out-of-band emissions to a level below the standard 3GPP specification when they operate close in frequency or space to an unsynchronised WBB ECS network. Depending on the deployment density of WBB LMP sites, it may be preferable to avoid such a requirement by careful consideration of assignments by ComReg*".

The parameters for receiver blocking and out-of-band emissions are unchanged in the present draft (Table 1, 'Improved WBB LMP base station receiver blocking characteristics').

Section 3.5: Licensing and planning of WBB LMP networks: "*there are two main principles for the methodologies that a national regulator can use – case-by-case planning or licence conditions with defined field strength limits. … The FM 60 document does not pursue the latter option*".

The option of defined field strength limits is now formalised for use where 'minimum coordination by the administrations' is desired. This 'minimum coordination' approach is only applicable for synchronised or semi-synchronised sharing, however.

Section 3.5: Licensing and planning of WBB LMP networks: "*FM60 suggest a series of coexistence limits, based on predicting the interference power present at the output port of a victim antenna of representative gain. The levels currently being considered in FM60 are summarised below in Table 3.1. These levels, although still in draft form, appear to consider all interference scenarios. While they may be refined over the course of the work of FM60 they appear to be an appropriate approach*".

In the revised version of the Draft Recommendation, the absolute interference levels quoted by Plum in Table 3.1 have been removed and the associated I/N value (-6dB) and receiver noise figures (13dB for low-power, 10dB for medium power) are now only given as examples. These changes are intended to allow more flexibility to administrations, but if the recommended equations and example values given in the draft Recommendation are applied, the results are unchanged from those we quoted in Table 3.1.

When reviewing Table 3.1 again, an editorial error was observed for values relating to the Adjacent channel (BS-BS) limits, where the values for the low-power case was repeated for medium power. Therefore Table 3.1 of Document 25/46b is updated below to reflect the correct values.

Table 2.1: Corrected version of Table 3.1 of Document 25/46b

Interference scenario		Low power (Imax)	Medium Power (Imax)
Unsynchronised	Co-channel (BS-BS)	-100dBm/5MHz	-103dBm/5MHz
	Co Channel (BS-UE)	-98dBm/5MHz	
	Adjacent channel (BS-BS)	<20MHz: -57dBm/5MHz >=20 MHz: -48dBm/5MHz	<20MHz: -60dBm/5MHz >=20 MHz: -51dBm/5MHz
	Adjacent channel (BS-UE)	Typically not an issue	
Synchronised	Co Channel (BS-UE)	-98dBm/5MHz	
	Adjacent channel	Typically not an issue for 3GPP systems	

It is also noted that the ongoing work in FM60 on developing a draft recommendation uses a different set of ACLR and ACS values than what was used in developing the above I max levels. Plum is of the view that the above table represents a solid approach and remains appropriate as a basis for determining WBB LMP coexistence, while noting that they might be refined by ComReg in the future on the basis of operational experience.

Annex D5. FM60 work on development of ECC Recommendation for WBB LMP coexistence: This section summarised the various issues that were then under discussion in FM60.

One unresolved issue was "*whether interference limits should be defined at a base station location and/or an edge/inside of WBB LMP coverage area*". As noted above, field strengths at coverage area boundaries are now proposed in the 'minimum coordination' approach while limits on the interference power (in terms of I/N) received at base stations are used in the 'detailed coordination' approach. The FM60 Recommendation, however, does not specify specific I/N limits, noting only as an example that Ofcom applies a value of 0dB[8].

Annex F4: FM60 work on development of ECC Recommendation for coexistence with MFCN below 3.8 GHz: The Plum text in this Annex notes that FM60 state that synchronised or semi-synchronised operation will ensure that the MFCN uplink is protected, and that unsynchronised operation should only be permitted above 3820 MHz for low-power or above 3860 for medium power. These positions are unchanged in the present draft.

Plum had also noted that "*There is ongoing discussion in FM60 regarding the interference criterion for base-station-to-base-station analysis. In some administrations (Norway, UK) an interference criterion of I/N=-6dB is applied, while elsewhere, throughput loss is estimated. These approaches can lead to very different results.*". The conclusions in the present draft Recommendation do not make any reference to the specific analysis used.

2.2 Other updates observed in latest FM60 recommendation

Measures for the coexistence between WBB LMP networks

The current draft ECC recommendation[9] providing '*Guidance on the coordination between low and medium power terrestrial wireless broadband networks (WBB LMP) in the frequency band 3800-4200 MHz, and on the*

[8] Ofcom UK, OfW 590 - Technical Frequency assignment Criteria for Shared Access Radio Services, https://www.ofcom.org.uk/spectrum/frequencies/shared-access
[9] Document 'TEMP01Rev4_Working doc on Draft ECC Recommendation on WBB LMP and MFCN.docx'

protection of MFCN operating in the frequency band 3400-3800 MHz', was updated by FM60 in May 2026 and will be sent for public consultation. The updates cover various matters relating to guidance on the coordination between WBB LMP services and also on the protection of MFCN below 3.8 GHz. In particular, 'recommends 4' provides that administrations should consider the in-band planning methodologies and coordination measures described in Annex 3 to facilitate coexistence between WBB LMP networks when issuing licences to WBB LMP networks in the frequency band 3800-4200 MHz;

Annex 3 provides further guidance to administrations on the various approaches for managing coexistence between 3GPP systems, in co-channel / adjacent channel and synchronised / unsynchronised situations. Further information is provided on the various interference management systems in place in the DECT system.

On synchronisation, it is noted that administrations may consider licensing on either a 'first-come, first-served basis or by specifying a default frame structure. As set out previously, Plum supports the approach being adopted by ComReg in which a light band-segmentation approach is applied, where those operators that can synchronise with MFCN below 3.8 GHz are licensed at the bottom of the band, while operators with other frame structures will be licensed elsewhere in the band in accordance with frame structures suited to their needs. Plum observes that if the band becomes heavily used it may be necessary for ComReg to consider establishing common frame structures between licensees in certain parts of the band or geographic areas. This will facilitate more efficient use if new licences are not possible in a particular area based on the existing frame structure. This could be particularly important in areas where there is a high concentration of networks, so as to facilitate the licensing of more networks in a proportionate manner.

2.1.1 Summary

The only change made by FM60 to the draft Recommendation text that might impact the Plum conclusions is the removal of the absolute interference levels quoted in Plum's Table 3.1. We believe that these levels, updated as noted above, remain appropriate as a basis for determining WBB LMP coexistence, while noting that they might be refined by ComReg in the future on the basis of operational experience.

2.2 Treatment of DECT in FM60 draft Recommendation

In the earlier draft considered by Plum, the FM60 text on sharing between WBB LMP systems simply noted that the use of 'listen before talk' and active transmitter power control minimise the possibility of interference and geographical or frequency separation less critical. There was no specific text on coexistence between DECT and MFCN. The Plum report did not specifically refer to any FM60 text on DECT issues.

The present version of the draft Recommendation states: "*The studies show that the coexistence between MFCN operating in the frequency band 3400-3800 MHz and DECT-2020 NR network operating in the frequency band 3800-4200 MHz is feasible, although some additional measures may be required as described in A2.3.3*" The latter reference is to standard site-engineering measures such as the use of antenna downtilt, use of lower antenna height or power, etc.

For coexistence between WBB LMP, more detail is now given on the 'polite protocols' used by DECT-2020 NR to simplify sharing. The specific new Recommendation made is that "*In a geographical area with multiple DECT-2020 NR networks, an administration could choose to allocate the same extended frequency band (e.g. larger than the sum of bandwidths needed by the individual networks) to these networks. Using the spectrum management protocols inherent in DECT-2020 NR, these networks could, autonomously, organise themselves in the spectrum.*"

3 Submission from the DECT Forum to ComReg consultation 26/06

The DECT forum raises two matters.

3.1 Technology neutrality

3.1.1 Submission

The DECT forum submits that some aspects of the proposals remain 3GPP-centric (e.g. paragraph 5.35) and give the impression that DECT-2020 NR is not seen as a viable candidate technology for local area connectivity. The submission notes that DECT-2020 NR is optimized for local area wireless applications, particularly for URLLC and mMTC.

Paragraph 5.181 of ComReg 26/06 references interference levels (taken from the draft ECC Recommendation) that are based on 3GPP coexistence requirements, which might imply that only that technology is being considered.

3.1.2 Response

Paragraph 5.181 refers to Table 3.1 of Plum Report and notes that as no consultation responses had been received on these interference levels, they would be used by ComReg.

As noted above, these absolute values are no longer explicitly given in the FM60 draft Recommendation, although they follow from the example values in that text. Plum considers that these values, although originally derived with reference to 3GPP systems will provide protection on a technology-neutral basis.

3.2 Guard-band applicable to DECT systems

3.2.1 Submission

It is highlighted that the latest FM60 work shows that only a 20 MHz guard band is required to protect MFCN from DECT interference.

Clarity is requested on the proposal to licence deployments synchronised with MFCN in 'the lower part of the band', and whether it is the case that DECT operation would be allowed from 3820 MHz upwards.

3.2.2 Response

We would expect that, as DECT systems would fall within the low-power category, they *could* be licensed from 3820 MHz upwards. The ComReg proposal, however, is to license synchronised systems in the lower part of the band in the first instance, with non-synchronised systems allocated elsewhere. The intention is that there should be no rigid partition between synchronised and non-synchronised system, but that this will evolve flexibly to reflect demand.

The application of this strategy to DECT systems could be stated explicitly in ComReg's licensing guidance.