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To Whom It May Concern,

Medtronic is pleased to offer comments in response to certain questions posed by Gazette Notice SLPB-010-17 "Consultation on the Spectrum Outlook 2018 to 2022" as detailed below.¹

Q21 – Are there any other bands that should be considered for release in the next five years for commercial mobile, fixed, satellite, or licence-exempt that are not discussed above? Provide rationale for your response.

Q22 – Are there specific frequency ranges/spectrum bands that should be made available for specific applications?

Wireless capsule endoscopy is a noninvasive medical procedure that supports medical observation of the human gastrointestinal tract by means of small capsule camera, ingested by the patient, which transmits images to an external dedicated receiver. In many situations, the only alternative diagnostic procedure is a colonoscopy.

Task Group 30 (Wireless Medical Devices), European Telecommunications Standards Institute (ETSI), developed a System Reference document (SRdoc) for capsule endoscopy transmitters with a center frequency near 433 MHz. This document was published in November 2016 as an ETSI technical report, ETSI TR 103 451 *System Reference document (SRdoc); Short Range Devices (SRD); Technical characteristics for UHF wideband Ultra Low Power Wireless Medical Capsule Endoscopy*, and is available in the public domain.² ETSI TR 103 451 provides an overview of capsule endoscopy operational scenarios, technical requirements, and market information.

¹ Please copy Ms. Janet Gavidia (janet.g.gavidia@medtronic.com) on any correspondence pertaining to this filing since she leads RF certification of products in Medtronic's capsule endoscopy portfolio.

² http://www.etsi.org/deliver/etsi_tr/103400_103499/103451/01.01.01_60/tr_103451v010101p.pdf

ETSI TR 103 451 contains a clause titled "Radio spectrum request and justification" (clause 8). In response to this request, CEPT³ studied sharing of the frequency band 430-440 MHz with incumbent users and, in September 2017, approved publication of ECC Report 267 *Coexistence of Wideband Ultra-Low Power Wireless Medical Capsule Endoscopy Application operating in the frequency band 430-440 MHz*. This report concluded that capsule endoscopy operation in the 430-440 MHz frequency band is feasible and "... would not create significant risk of interference to other established users of the band." ECC Report 267 is also available in the public domain.⁴

Finally, to formally designate 430-440 MHz as a Short Range Device (SRD) frequency band, CEPT added "Ultra-Low Power Wireless Medical Capsule Endoscopy (ULP-WMCE)" to Annex 2 of *ERC Recommendation 70-03*.⁵

Q23 – Are there any factors that would impact the potential release of these frequency bands between 2018 and 2022?

In parallel with CEPT efforts, ETSI initiated development of EN 303 520 *Short Range Devices (SRD); Ultra Low Power (ULP) wireless medical capsule endoscopy devices operating in the band 430 MHz to 440 MHz; Harmonised Standard for access to radio spectrum*. ETSI EN 303 520, when published, will specify a maximum of -40 dBm/10 MHz ERP (100 nW ERP) in alignment with *ERC Recommendation 70-03*.

The Australian Communications and Media Authority recently proposed allocation of the 430-440 MHz frequency band for capsule endoscopy in the consultation "Variations to the LIPD Class Licence IFC 31/2017" that closed on 19 Jan. 2018. IFC 31/2017 references the draft ETSI standard noted above (EN 303 520).

We look forward to engaging with the ISED in future discussions about capsule endoscopy applications and related spectrum needs.

If there are any questions related to these comments, please contact me at charles.s.farlow@medtronic.com (+1 763 742 5158).

Respectfully,



Charles S. Farlow

cc:

Ms. Janet Gavidia, Program Manager, Regulatory Affairs (RF), Medtronic Respiratory, Gastrointestinal, & Informatics (RGI)

³ European Conference of Postal and Telecommunications Administrations; <https://cept.org/>

⁴ <http://www.erodocdb.dk/Docs/doc98/official/pdf/ECCREP267.pdf>

⁵ <http://www.erodocdb.dk/Docs/doc98/official/pdf/REC7003E.PDF>