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| Summary: | | | | |
| This ECO Bulletin provides a summary update on aspects of progress in spectrum management outside the CEPT. The items in this bulletin include:   1. Update from APT (new APT Reports, circular letter on Wireless Power Transmissions (WPT), AFIS etc.); 2. Developments on BB-DA2GC (FCC and APT) 3. FCC Emergency Alert System (EAS); 4. IETF: Managing, Ordering, Distributing, Exposing, & Registering telephone Numbers (MODERN); 5. White Space Use in the USA – Challenges; 6. Canada: revised ruling for licence-exemption of RadioLan Devices 7. FCC 76-81 GHz band - consultation; 8. 3GPP - Licensed-Assisted Access; 9. FCC Report and Order regarding 3550-3700 MHz (Spectrum Access System ‘SAS’); 10. Canada: spectrum auction 2500-2690 MHz 11. India: spectrum auction (several bands); 12. FCC –NGSO ESOMPs – O3b (27.6-28.35 GHz (Earth-to-space) and 17.8-18.3 GHz (Space-to-Earth); 13. Developments NGSO in 11-14 GHz frequency bands: OneWeb 14. FCC: Google supports HAPS 15. FCC Part 15 Regulation – Update (SRD and UWB) 16. FCC Waiver Request – Medical UWB applications | | | | |

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| Proposal: |
| This bulletin is to note by the ECC Plenary. More detailed input on some of the subjects covered is being input to the groups dealing with the respective subjects.  Several of the issues covered in this bulletin should be noted or discussed at the respective WG/ PT level. This includes information related to SRDs and UWB of interest in SRD/MG or satellite service related info in FM PT44 as well as EAS and IETF MODERN of interest in WG NaN.  The report and order of the FCC for the new Part 96 on SAS (Spectrum Access Systems) in 3550-3700 MHz is proposed to be noted in the ECC since it combines priority access (similar to LSA) and also general authorised use in a way that could possibly lead to an even more efficient use of the spectrum by using a geolocation database approach. So far, no request has been made by the European standardisation or stakeholders triggering the ECC to conduct similar considerations.  Some topics were covered in the ECC-ECC-IC information exchange / liaison meeting in May 2015. |
| Background: |
| The Office brings to each ECC meeting a bulletin on activities in radio communications in other world regions, where a regulatory dimension is raised (e.g. by innovative services or technology).  The primary objective is to identify whether the ECC needs to investigate further or consider possible new actions. A secondary but more frequently addressed objective is to enable comparison to be made with the regulatory approach in other regions to subjects already treated by the ECC (including, where relevant, to the work of the CPG). |

1. **18th Meeting of the APT Wireless Group (AWG-18)**

The Asia-Pacific Telecommunity (APT) organised the 18th Meeting of the APT Wireless Group (AWG-18) on 9 – 13 March 2015, Kyoto, Japan.

The summary records are here embedded:



The Office also received on 12 June 2015 a reply from APT on the AFIS (APT Frequency Information System). AFIS will be included on the APT homepage soon. A new section will be added to reflect the content of APT Report 15 (see below). Implementation information according APT Report 35 on SRDs has been updated (see below). All the new APT Reports have been added to the AFIS.

The recent **APT e-Newsletters** are available under: <http://www.apt.int/Publications> (at the bottom of the page)

The following new (or newly revised) APT Reports have been approved:

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| [APT/AWG/REP-07 (Rev.3)](http://www.apt.int/sites/default/files/Upload-files/AWG/APT-AWG-REP-07-R3-APT_Report_on_SRD_operations.docx) | APT Survey Report on Operation of Short-Range Devices (SRDs) | Revised 03/2015 |
| [APT/AWG/REP-15 (Rev.2)](http://www.apt.int/sites/default/files/Upload-files/AWG/APT-AWG-REP-15-R2-APT_Report_on_Frequencies.docx) | APT Report on "Information of Mobile Operator's Frequencies, Technologies and License Durations in Asia Pacific Countries"  Note: It is intended to include the licensing information in APT Report 15 in the APT frequency information system AFIS (<http://www.aptafis.org/>) in the near future similar to ECO Report 03 in EFIS. | Revised 03/2015 |
| [APT/AWG/REP-31 (Rev.1)](http://www.apt.int/sites/default/files/Upload-files/AWG/APT-AWG-REP-31-R1-APT_Report_on_SRDs.docx) | APT Survey Report on "Introduction, Application, Issues and Technology for Short Range Devices (SRDs)" | Revised 03/2015 |
| [APT/AWG/REP-35 (Rev.1)](http://www.apt.int/sites/default/files/Upload-files/AWG/APT-AWG-REP-35-R1-APT_Report_on_SRD_frequency_bands.docx) | APT Report on “Frequency bands for harmonized use of SRDs”  Note: Implementation information on SRDs according to APT Report 35 has been updated in the APT frequency information system AFIS (<http://www.aptafis.org/>). | Revised 03/2015 |
| [APT/AWG/REP-58](http://www.apt.int/sites/default/files/Upload-files/AWG/APT-AWG-REP-58-APT_Report_on_usage_of_13.75-14_GHz.docx) | APT Report on "The Usage of the Frequency Band 13.75-14 GHZ in the Asia-Pacific Region" | 03/2015 |
| [APT/AWG/REP-59](http://www.apt.int/sites/default/files/Upload-files/AWG/APT-AWG-REP-59-APT_Report_on_CRS_Deployment_Scenarios.docx) | APT Report on "CRS Deployment Scenarios and Associated Technologies" | 03/2015 |
| [APT/AWG/REP-60](http://www.apt.int/sites/default/files/Upload-files/AWG/APT-AWG-REP-60-APT_Report_on_Network_Sync_IMT.docx) | APT Report on "Network Synchronization Technologies in Radio Access Networks for IMT TDD Systems" | 03/2015 |
| [APT/AWG/REP-61](http://www.apt.int/sites/default/files/Upload-files/AWG/APT-AWG-REP-61-APT_Report_on_RSN.docx) | APT Report on "The Usage of Road Sensor Network in APT Member Countries" | 03/2015 |
| [APT/AWG/REP-62](http://www.apt.int/sites/default/files/Upload-files/AWG/APT-AWG-REP-62-APT_Report_on_WPT.docx) | APT Report on "Wireless Power Transmission (WPT)" | 03/2015 |
| [APT/AWG/REP-63](http://www.apt.int/sites/default/files/Upload-files/AWG/APT-AWG-REP-63-APT_Report_on_Air_to_Ground_Communication.docx) | APT Survey Report on "Application of Direct Broadband Radio Communication System between Air and Ground" | 03/2015 |

APT Reports 7, 31 and 35 are relevant for information for the SRD/MG, also with regard to the work in ITU-R WP1B on SRD classification (i.e. mapping of categories into a common set of SRD categories for better global harmonisation). APT Report 61 is also proposed to be provided to SRD/MG for information on TTT/ITS issues. In addition, APT is studying SRD high capacity systems in the range 275-1000 GHz (the Office will forward the information to SRD/MG, also because a new ITU-R Report has been recently approved in ITU-R SG1).

Regarding the new APT Report 63 on BB-DA2GC, Telstra (Australia) refers to Europe, Japan favours much higher frequencies and China does not disclose any firm plan information.

The new APT Report 59 describes inter-alia the deployment of cognitive radio systems in IMT to sharing the spectrum with other services, e.g. for the provision of small cells. This can be of interest for PT1.

Furthermore, in the context of work in ITU-R WP1A on Wireless Power Transmissions (WPT) (small devices such as charging electrical appliances, but also charging of e.g. electric car batteries), APT Report 62 should be noted. The Report was provided to ITU-R WP1A and there were also a number of other contributions from APT countries. This subject has the potential to become more relevant for ECC in the future (e.g. with regard to protection of radiocommunications services and radio astronomy). APT is even considering the development of a new APT Recommendation on WPT and agreed on the following circular letter:



APT is also working on a Draft New Report on Implementation of Broadband PPDR solutions. In this regard, AWG-18 agreed a liaison statement to 3GPP requesting inter-alia information on Release 13 (to be frozen in 2016) on:

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| Release 13  (APT questions to 3GPP to clarify) |          Mission critical push to talk over LTE (MCPTT)           Specify service requirements for Public Safety operations when E-UTRAN (base station) is isolated           User plane congestion management – develop & specify solutions           LTE aggregation across 3GPP Bands 1,18 & 28 |

(This information/question may also be of interest for FM PT49)

1. **BB-DA2GC**

As reported in section 1. above, APT published APT Report 63. In this Report, Telstra (Australia) refers to Europe, Japan favours much higher frequencies and China does not disclose any firm plan information.

The topic was addressed during the recent ECC/FCC(USA)/IC(Canada) meeting, and it was reported that further discussions are necessary before activities on 14 GHz could proceed in the USA, in particular to further investigate the potential interferences to the satellite uplink.

In addition, the situation in the USA may be further complicated by the licence expiration of the ‘Gogo’ licence ’ in 2016, and the continued request from AT&T asking the FCC to modify Section 27 of the commission rules to add the definition for an “avionics station”, which the company described as “a station installed on an aircraft that is part of a service using the 2305-2320 MHz and 2345-2360 MHz. I.e. several technical options for BB-DA2GC are currently/still under discussions at the FCC.

(Note: ECC#40 discussing the final approval of draft ECC Decisions (15)AA and (15)BB)

1. **FCC Emergency Alert System (EAS)**

The FCC released its sixth report and order on 3 June 2015 to improve operation and exercise of the Emergency Alert System (EAS). The commission said its rules must evolve as legacy networks and services transition to next-generation technologies.

Specific operational standards are included:

* A national location code pertaining to every state and county in the USA. Equipment must be capable of processing this location code. Equipment must also be capable of processing a national periodic test. The system can be activated on a national, regional, state and local activations;
* Requires EAS participants to file test data in an electronic test report system (ETRS);
* Requires EAS participants to comply with minimum accessibility rules to ensure that EAS visual messages are readable and accessible to all members of the public, including people with disabilities.

[**Link to report and order**](http://transition.fcc.gov/Daily_Releases/Daily_Business/2015/db0603/FCC-15-60A1.pdf)(FCC 15-60)

EAS may also have a spectrum element e.g. cell broadcasting.

(for NaN PT ES)

1. **IETF: Managing, Ordering, Distributing, Exposing, & Registering telephone Numbers (MODERN)**

There is another item within IETF which is numbering related and worth mentioning:

The Internet Engineering Task Force (IETF) has recently established a working group called MODERN. This working group will define a set of Internet-based mechanisms for the purposes of managing and resolving telephone numbers (TNs) in an IP environment. Devices, applications, and network tools increasingly need to manage TNs, including requesting and acquiring TN delegations from authorities. The output of the working group is intended to make distribution, acquisition, and management of TNs simpler for all entities involved. The working group will take into consideration existing work by other IETF working groups including STIR, ENUM, SPEERMINT, DRINKS and SCIM.

Maintaining reliability, real-time application performance, security and privacy for both the data and the protocol interactions are primary considerations. The working group plans to deliver the following:

- An architecture overview, including high level requirements and security/privacy considerations

- A description of the enrollment processes for existing and new TNs including any modifications to metadata related to those TNs

- A description of protocol mechanisms for accessing contact information associated with enrollments

- A description of mechanisms for resolving information related to TNs

During preliminary discussions between participants within MODERN, the decoupling of TN Handling from Service Handling (e.g. Phone) was discussed with a suggestion to delegate responsibility to the end-user. This is an interesting concept and the ECC’s Working Group on Numbering and Networks (WG NaN) has identified an evolution in the way TNs are used in recent years where the end-user of the number demands increased flexibility. This increased flexibility suggests a decoupling of the rights to use the number from service provision and is an interesting challenge for regulators to determine how TNs are administered in the future.

No milestones have yet been set for completion of deliverables. Both WG NaN and ETSI are interested in the work and will monitor it closely. If you would like more information on MODERN please see:

IETF MODERN–WG Charter Proposal: <https://datatracker.ietf.org/wg/modern/charter/>

IETF MODERN- Problem  Statement: <https://tools.ietf.org/html/draft-peterson-modern-problems-00>

IETF MODERN - BoF Proceedings/Slides: <https://www.ietf.org/proceedings/92/modern.html>

RFC 3966 The tel URI for Telephone Numbers: <https://www.ietf.org/rfc/rfc3966.txt>

1. **White Space Use in the USA**

The National Association of Broadcasters filed an emergency petition to the FCC arguing that the databases that are supposed to map out the devices operating in TV white spaces are in fact full of errors and inaccuracies. Note that WSD do not require accurate GPS positioning information in the USA. The petition claims that some users also enter false contact information, so the FCC and licensees do not even know whom to contact to resolve any problems. Petitioner respectfully requests that the Commission suspend operation of the current database as well as its current TVWS expansion Notice and open a rulemaking proceeding to address this pressing concern.

[**NAB petition**](http://www.nab.org/documents/newsRoom/pdfs/031915_TVWS_Emergency_Petition.pdf)

The issue is critical since a wide range of companies are hoping that the FCC implements database-powered spectrum-sharing technologies more broadly, including potentially in the upcoming incentive auction of 600 MHz spectrum and in the 3.5 GHz band.

As already reported in earlier bulletins, the FCC is scheduled to conduct an incentive auction of TV broadcaster's 600 MHz spectrum next year.

There are currently four companies that operate white spaces databases: Telcordia, Spectrum Bridge, Key Bridge and Google. See here the link to the Google WSD database: [**https://www.google.com/get/spectrumdatabase/**](https://www.google.com/get/spectrumdatabase/)

NAB claims in the petition that one-third of the fixed TVWSDs in the databases contain inaccurate location information, including multiple devices registered in the middle of empty fields or to a single family home, and some even registered in foreign countries.

Note: the overall number of TVWSD in the USA is still considered very small.

The NAB requests the FCC to add geolocation requirements to white space devices that would automatically provide accurate location information to white space databases.

1. **Canada changed RSS-247 (licence-exemption of RadioLan Devices)**

On 28 May 2015, Canada published a revised Radio Standards Specifications RSS-247. The document sets out certification requirements for radio apparatus operating in the bands 902-928 MHz, 2400-2483.5 MHz and 5725-5850 MHz employing frequency hopping, digital modulation and/or a combination (hybrid) of both techniques. It also includes licence-exempt local area network (LE-LAN) devices operating in the bands 5150-5250 MHz, 5250-5350 MHz, 5470-5725 MHz and 5725-5850 MHz. Note that the upper edge was lifted to include channels up to 5850 MHz. DFS procedures have also been modified, including requirement that all RLAN devices contain security features to protect against modification of software (e.g. DFS manipulation).

[**Link to RSS-247 webpage.**](http://www.ic.gc.ca/eic/site/smt-gst.nsf/eng/sf10971.html#s5.2)

1. **FCC 76-81 GHz band**

On 5 February 2015, the FCC issued an NPRM/ Reconsideration to authorise radar applications in the 76-81 GHz band (FCC 15-16). <https://apps.fcc.gov/edocs_public/attachmatch/FCC-15-16A1.pdf>

The regulation in the US in part 95 is targeting to give the application some status (licensed by rule) and protection while still is under licence-exemption. If in part 15, no protection at all would be possible. This approach is similar to automotive short range radar in the US operating in 24 GHz (also part 95).

FCC seeks comment on, among other things, the use of aircraft “wingtip" radars in the 76-77 GHz band: This is already allowed in Europe (76-77 GHz) - Helicopter obstacle avoidance application could also be considered in this context. During the ECC/FCC/IC meeting, the FCC has been informed about helicopter obstacle avoidance radars and the approach foreseen in Europe. 76-81 GHz sensors are also of interest to be used in sensor platforms of future cars – inter-alia other sensors (-> autonomous driving).

Note: Japan has recently also changed regulation in this frequency range to include the whole 76-77 GHz range for automotive radars (before: only 500 MHz in 76-77 GHz).

1. **3GPP - Licensed-Assisted Access**

3GPP has initiated studies on Licensed-Assisted Access (LAA) to Unlicensed Spectrum. IEEE has provided presentation at the IEEE 802 Interim Session, Vancouver, Canada, May 10-15, 2015, 3GPP RAN meeting.



The following work has been triggered in 3GPP RAN:

* TR 36.889:“Adjacent channel coexistence analysis between LAA and LAA in unlicensed spectrum;
* An updated version of the TP for 36.889 on a band plan for 5GHz LAA operations. In 3GPP, for LAA UE, it is recommended that radio requirements should be specified such that a single filter implementation for UE across the entire frequency range from 5150 to 5925 MHz is possible.

(of interest for FM PT55 and SE PT24; first inputs to SE PT24 noted in this context)

1. **FCC Report and Order regarding 3550-3700 MHz (Spectrum Access System ‘SAS’) FCC 15-47**

On 21 April 2015, the FCC published the Report and Order for the 3550-3700 MHz band.

<https://apps.fcc.gov/edocs_public/attachmatch/FCC-15-47A1.pdf>

The 3550-3700 MHz Band is identified in the USA as potentially suitable for commercial broadband use, subject to significant geographic restrictions to protect existing Department of Defense (DoD) radar and FSS operations and to protect new commercial systems from co-channel interference from high-powered military in-band shipborne and adjacent band DoD ground-based radar systems. This has already been reported in an earlier ECO bulletin.

Compared to the NPRM published in April 2014, the geographic exclusion zones are much greater now in the report and order (this change resulted from an NTIA input, i.e. based on compatibility studies).

The ‘Citizens Broadband Radio Service’ in the band is considered as an ‘innovation band’, to explore new methods of spectrum sharing and promote diverse network technologies, with a focus on relatively low-powered applications. If successful, the spectrum sharing model proposed for this band could ultimately be expanded to other spectrum bands.

Specifically, the rules implement a framework to authorise a variety of small cell and other broadband uses on a shared basis with incumbent federal and non-federal users of the band, with oversight and enforcement through a “Spectrum Access System”(SAS). The FCC proposes to establish a three-tiered authorisation framework – Incumbent Access, Priority Access, and General Authorised Access (GAA) tiers (over the whole 150 MHz band).

Under this framework, existing primary operations – including authorised federal users and grandfathered Fixed Satellite Service (FSS) earth stations - compose the Incumbent Access tier and receive protection from harmful interference from Citizens Broadband Radio Service users.

A SAS is intended to be implemented using databases, conceptually similar to, but more advanced than those used to manage Television White Spaces (TVWS) devices.

There is a variation to Europe’s LSA concept, and also to Europe’s existing license-exempt environment. The FCC has defined Priority Access Licenses (PALs) as authorisations to use for three years (this was extended from 1 to 3 years) a 10 MHz channel in a single defined regional area. PALs is open to any prospective licensee that meets basic FCC qualifications and mutually exclusive applications for PALs would be subject to competitive bidding. PAL channels are dynamically coordinated by the SAS and the exact spectral location of a given PAL authorisation could shift from time to time as directed by the SAS during its license term. The GAA tier is licensed-by-rule to permit open, flexible access to the band to the widest possible group of potential users.

GAA users will potentially have access to all 150 megahertz in the band in areas where there are no PALs issued or in use and up to 80 megahertz where all PALs are in use.

Devices operating on a GAA basis must provide the SAS with all information required by the rules – including operator identification, device identification, and geo-location information.

It is noted that the NTIA has been heavily involved in the USA when defining the new rules. So far, standardisation in Europe has not defined a similar request to the CEPT.

(WGFM, PT1, SRD/MG)

1. **Canada: Spectrum Auction 2500-2690 MHz**

Industry Canada published on 12 May 2015 the results of the spectrum auction for the 2500-2690 MHz band (auction result of more than 700 million Canadian $)

[**Link**](http://www.ic.gc.ca/eic/site/smt-gst.nsf/eng/sf11030.html)

1. **India: Spectrum Auction**

India's spectrum auction ended after nearly 3 weeks at the end of May 2015 and resulted in more than 15 billion Euro. The process saw eight operators -- including Aircel Ltd. , Bharti Airtel Ltd. (Mumbai: BHARTIARTL), Idea Cellular Ltd. , Reliance Communications Ltd. , Reliance Jio, Tata Teleservices Ltd. , Uninor and Vodafone India -- bid for a total of 380.75MHz in the 800MHz, 900MHz, 1800MHz and 2.1GHz spectrum bands.

1. **O3B waiver request accepted by the FCC**

The FCC accepted O3b’s waiver request was placed on 20 May 2015.

No comments or other pleadings have been filed. Based on O3b’s information on file with the FCC, it is believed that the proposed operations do not pose a risk of interference to other users of the band. Accordingly, the FCC grant O3b’s waiver request conditioned on operations on an unprotected, non-interference basis in the 27.6-28.35 GHz (Earth-to-space) and 17.8-18.3 GHz (Space-to-Earth) frequency bands.

O3b’s operations on non-U.S. registered maritime vessels must accept interference from any authorised users in these bands and may not cause harmful interference to any authorised user in these bands.

[**Link**](http://transition.fcc.gov/Daily_Releases/Daily_Business/2015/db0520/DA-15-601A1.pdf)

(Relates to NGSO ESOMPs; draft new ECC Decision (15)DD under final approval at ECC#40)

1. **NGSO in 11-14 GHz frequency bands (Ku-Band): OneWeb**

After the failure of Teledesic, SkyBridge etc. some 10 years ago, it looks like there is a revival of broadband via NGSO satellite plans.

The OneWeb satellite constellation—formerly known as WorldVu—is a proposed constellation of approximately 700 satellites expected to provide global internet broadband service to individual consumers as early as 2019. The constellation is proposed by the company WorldVu Satellites Ltd., which has used the alternate name L5 in various regulatory filings. The company plans to orbit a total constellation of around 700 satellites, operating in circular low Earth orbits of 800 kilometers and 950 kilometers. The communication satellites will operate in the Ku band (11-14 GHz frequency bands).

By June 2014, WorldVu had acquired the satellite spectrum that was formerly owned by SkyBridge, a company that previously failed in an attempt to offer broadband internet services via satellite. In January 2015, WorldVu, now operating under the name OneWeb LTD, had secured funding from Virgin Group and Qualcomm to build and launch the constellation. In March 2015, OneWeb indicated that they intended to select a launch service provider in mid-2015. One advantage WorldVu will have is that, as of January 2015, no other competitor has obtained a license from the International Telecommunications Union to operate a 11-14 GHz frequency bands (Ku-band) satellite network that is not placed in a geosynchronous orbit.

On 15 June 2015, it was reported that OneWeb has selected Airbus Defense and Space to be its industrial partner/prime contractor for the satellites:

[Link OneWeb picks Airbus](http://www.satellitetoday.com/technology/2015/06/15/oneweb-picks-airbus-defence-and-space-to-build-900-satellites/?hq_e=el&hq_m=3098744&hq_l=4&hq_v=33c944cd8c)

<http://www.bbc.com/news/science-environment-33136362>

It is reported that some of OneWeb’s satellites would be launched by Branson’s space company Virgin Galactic, which is developing a low-cost, small satellite launcher and trying to put a suborbital passenger spaceship into operation. OneWeb’s CEO Wyler declined to disclose how much Virgin and Qualcomm were investing so far in the project. As part of the deal, unveiled in January 2015, Branson and the Qualcomm executive chairman Paul Jacobs joined OneWeb’s board of directors.

Before starting OneWeb Wyler co-founded the satellite venture O3b Networks and briefly worked at Google on another project to beam internet access from space. Wyler left Google in 2014 to work on his own satellite project, named WorldVu, which later became OneWeb.

A competitor of OneWeb will be Space-X which raised $1 billion in funding from investors, including Google and Fidelity recently. SpaceX filed an application with the Federal Communications Commission to begin testing such a system. Space X plans even calls for launching a constellation of 4 000 (very) small satellites.

In relation to the above (OneWeb), at the time of writing this bulletin, there are proposals in ETSI for the adoption of new work items for an ETSI SRDoc as well as creation of a new harmonised European Standard, led by OneWeb (originating TC SES), for fixed and moving earth stations transmitting towards satellites in non-geostationary orbiting systems (NEST) in the 11-14 GHz frequency band.

(for information for WGFM and FM PT44)

1. **FCC: Google supports HAPS**

Another approach for broadband delivery is supported by Google. Google supports the idea of the FCC authorising resources for the study of broadband delivered from high-altitude platform stations (HAPS), which are 20 to 50 kilometers above ground. Google says it is developing unmanned aircraft that will circle for months at about 20 kilometers in the stratosphere to maintain coverage of a constant service area on the ground. Such nominally fixed aircraft, which could be considered HAPS, are one promising model for delivery of broadband, particularly to underserved communities, according to the search giant. In a May 15 meeting with the FCC Chairman it was said that Google and others in the U.S. have been investing in unmanned aerial systems (UAS), including for the delivery of broadband communications to underserved communities, and for disaster relief.

As the ITU-R has recognised, stations operating at an altitude of approximately 20 km are high enough to provide service to a large footprint but low enough to provide dense coverage at low latency. High-altitude stations, located in the stratosphere above weather incidents, are also resilient to storms below and therefore can be an effective tool during and after a natural disaster, according to Google.

While tests of unmanned aircraft at high altitudes for broadband Internet service are recent, high altitude base stations have been studied by the ITU for about two decades. HAPS are defined in Article 1.66A of the Radio Regulations "[a] station located on an object at an altitude of 20 to 50 km and at a specified, nominal, fixed point relative to the Earth," the filing states.

With demand for broadband continuing to grow, the identifications for HAPS, now limited, may need to be expanded, geographically and spectrally, in order to allow lightweight, nominally fixed-position UAS to deliver broadband at current generation speeds, according to Google.

Google says a HAPS study would continue U.S. leadership in the nascent UAS industry and in broadband technology innovation in general.

Google's Project Loon is designed to deliver Internet to remote parts of the globe using balloons released into the stratosphere.

[Link](http://apps.fcc.gov/ecfs/document/view?id=60001048093)

1. **FCC Part 15 Regulation - Update**

The FCC has updated the FCC Part 15 data on regulation for SRDs and UWB (June 2015). This can be found under the current links:

[Link FCC Part 15 SRD](http://www.ecfr.gov/cgi-bin/text-idx?tpl=/ecfrbrowse/Title47/47cfr15_main_02.tpl) (SRD)

[Link FCC Part 15 UWB](http://www.ecfr.gov/cgi-bin/text-idx?mc=true&node=sp47.1.15.f&rgn=div6.tpl) (UWB)

This is to provide a direct link to the relevant rulings which may be used, e.g. in SRD/MG when mapping SRD and UWB categories from different regions.

(WGFM, SRD/MG, WGSE, SE24)

1. **Medical UWB: FCC Waiver Request**

On May 14, 2015, Kyma Medical Technologies Ltd filed a request for waiver of Sections

15.503(d), 15.513(a), 15.521(d), and 15.525 of the Commission’s rules to allow the marketing and operation of its stepped frequency ultra-wideband (UWB) medical imaging and diagnostic device known as uCor 3.0 (uCor). Kyma states that the uCor device is an advanced RF diagnostic device that non-invasively monitors lung fluid levels and trends to treat patients with congestive heart failure. The device employs a very low power RF signal that is directed into the patient’s torso via a small transmitter that is temporarily attached to the skin. Signals from the uCor propagate through the chest and lungs and reflect back from the heart. Data collected by the uCor is transferred via standard wireless interface over the internet and on to a data center where it can be analyzed by a healthcare provider.

[Waiver request](https://www.fcc.gov/document/kyma-medical-technologies-seeks-part-15-waiver-request)

Foreseen frequency use is in the range 530- 2 100 MHz as well as 3 100-10 600 MHz.

Note that ETSI is currently also developing also an ETSI SRDoc for medical UWB applications.

(WGFM, SRD/MG, WGSE, SE24)