**RF Spectrum Open Issues**

**Frequency Bands and Center Frequencies**

It was suggested on the Nov 20 Ad Hoc call that we combined the FDD DS frequency band and center frequency increment into a set of mandatory and another sent of optional center frequencies. So the following table does just that.

**FDD Downstream Channels (Center Frequencies)**

|  |  |  |
| --- | --- | --- |
| **Parameter** | **Possible Values** | **Recommendation to TF** |
| Mandatory Channel Set | [648, 650, … 904, 906] |  |
| Optional Channel Set | [204, 206, … 644, 646] and[908, 910, … 1702, 1704] |  |

We may also want to take the same approach for the FDD US and for TDD once we have an idea of the channel bandwidth.

**FDD Upstream Band**

|  |  |  |
| --- | --- | --- |
| **Parameter** | **Possible Values** | **Recommendation to TF** |
| FDD US Lower Band Edge | * 5 MHz
* 15 MHz
 |  |
| FDD US Upper Band Edge | * 200 MHz
* 250 MHz
 |  |

**TDD Band1**

|  |  |  |
| --- | --- | --- |
| **Parameter** | **Possible Values** | **Recommendation to TF** |
| TDD Band1 Lower Band Edge | * 5 MHz
 |  |
| TDD Band1 Upper Band Edge | * 200 MHz
 |  |

**TDD Band2**

|  |  |  |
| --- | --- | --- |
| **Parameter** | **Possible Values** | **Recommendation to TF** |
| TDD Band2 Lower Band Edge | * 860 MHz
* 960 MHz
 |  |
| TDD Band2 Upper Band Edge | * 1200 MHz
* Approx. 1800 MHz
 |  |

**Center Frequency Tunability**

|  |  |  |
| --- | --- | --- |
| **Parameter** | **Possible Values** | **Recommendation to TF** |
| FDD US Center Frequency Tunability Resolution | * 2 MHz
 |  |
| TDD Center Frequency Tunability Resolution | * 2 MHz
 |  |

**OFDM Channel Bandwidth**

|  |  |  |
| --- | --- | --- |
| **Parameter** | **Possible Values** | **Recommendation to TF** |
| FDD DS OFDM Channel Bandwidth | * 192 MHz
 | TF selected 192 MHz |
| FDD US OFDM Channel Bandwidth | * 192 MHz
 |  |
| TDD OFDM Channel Bandwidth | * 192 MHz
 |  |

**Exclusion Sub-Band Rules**

Note, the standard may include multiple exclusion sub-band rules, so the TF may have multiple recommendations to the Task Force on exclusion sub-band rules.

|  |  |  |
| --- | --- | --- |
| **Topic** | **Possible Rules** | **Recommendation to TF** |
| FDD DS Exclusion Sub-Band Rules | * Definition: Sub-carriers of the exclusion sub-bands are set to zero (i.e. nulled)
* Exclusion sub-band can be on the lower portion of the channel, the upper part of the channel, or within the channel
* Exclusion sub-bands are for reducing the channel bandwidth, protection of legacy cable services and for controlling egress in specific spectrum.
* ~~They are not intended to address ingress, which can be handled with bit-loading/variable MCS~~
* Two possible approaches
	1. Exclusion sub-bands are a multiple of 2 MHz and on a 1 MHz grid
	2. Alternative method would be to specify the start and stop index for the exclusion sub-band.
* If we used approach #2 the minimum exclusion sub-band width is **TBD** subcarriers (possible minimum bandwidth of 500 kHz)
* After exclusion sub-bands there must be a continuous sub-band of at least 24 MHz wide. (Do we want to make sure this is the middle 24 MHz?)
* A minimum amount of cumulative bandwidth
* Do not support exclusion sub-bands for analog TV services within the 192-MHz OFDM channel.
 | * Exclusion sub-band can be on the lower portion of the channel, the upper part of the channel, or within the channel
* Exclusion sub-bands are configured by the operator
* Exclusion sub-bands are for reducing the channel bandwidth, protection of legacy cable services, for controlling known egress/ingress in specific spectrum.
* An exclusion sub-band is a group of contiguous subcarriers
* Exclusion sub-bands consist of a multiple of TBD subcarriers on a TBD MHz grid
 |
| FDD US Exclusion Sub-Band Rules |  |  |
| TDD Exclusion Sub-Band Rules |  |  |

**Out-of-Band Emission Requirements**

|  |  |  |
| --- | --- | --- |
| **Parameter** | **Possible Values** | **Recommendation to TF** |
|  |  |  |
|  |  |  |