



Decision Notice 2021-7

September 30, 2021

National Table of Frequency Allocations

The Commission hereby presents its decision following its public consultation on the National Table of Frequency Allocations (NTFA). The attached NTFA includes relevant changes proposed in this document.

The Commission asked a number of specific questions in the consultation including what suggestions respondents had for possible future allocations of spectrum.

Significant amounts of additional spectrum are being sought by Digicel and Flow. In many cases we do not see a problem with their requests in principle, however, considering the possibility that there may be interest from future entrants who may need access to spectrum to provide new and innovative services, it may be prudent for the Commission to withhold blocks of spectrum to attract new market players. Some of the respondents' recommendation will need further evaluation by the Commission which could involve undertaking a top-level analysis taking into account all of the additional bands potentially on the table and the state of the market and recommend an overall approach.

In such case, we note that it may be appropriate to group multiple bands into one or several consultations rather than consulting on each band separately. After the public consultations have concluded and any relevant allocations have been implemented, the Commission would update the NTFA by adding the appropriate footnotes.

Table of Contents

1. 20-80 GHz	3
Commission's Decision	3
2. LTE Band 4	3
Commission's Decision	3
3. 2500 MHz to 2690MHz	4
Commission's Decision	5
4. 3400 – 3600MHz (Band 42)	5
Commission's Decision	5
5. 5G New Radio (Bands n40 and n78)	5
Commission's Decision	5
6. Bands 12, 25, 26 and 66	6
Commission's Decision	6
7. Band 71	6
Commission's Decision	7
8. Additional Comments	7
Commission's Decision	7

1. 20-80 GHz

Digicel felt that the Commission should avoid introducing 5G on spectrum within the ranges 20-80 GHz arguing that these frequencies were extremely susceptible to climatic attenuation.

Commission's Decision

We recognise the increased levels of attenuation that exist for some of the higher frequency bands. However, we are not currently aware of other jurisdictions ruling out particular 5G bands at this time. We will certainly take attenuation into consideration when deciding on how to enable 5G in the future. The Commission in future will consult on the use of 5G bands for non-IMT purposes in the higher bands including those above 20 GHz, if operators can present good arguments for alternative use cases for the relevant bands.

2. LTE Band 4

Digicel was concerned that the Commission intended to introduce LTE Band 1 (MHz 1920 – 1980 Uplink and 2110 – 2170 Downlink). This is not the case.

Commission's Decision

For clarity we propose amending Section 5.6 (which is Section 4.5 in the revised document) in the NTFA Consultation Document to read as follows:

“Band Plan for 2000 MHz Public Telecommunications Services

The band plan for 2000 MHz is based on LTE Band 4. The frequency ranges are as follows:

Base transmit: 2110 - 2155 MHz
Mobile transmit: 1710 - 1755 MHz”

We are therefore proposing to expand this range to cover the whole of Band 4. This enables Digicel to continue operate its AWS-1 services in the relevant parts of this Band. We will amend Digicel's licence to read AWS-1 for the frequency ranges 2110-2125 MHz and 1710-1725MHz in due course. There does not appear to be any other impact on the NTFA or operators.

Consistent with this we have amended footnote T5 to read as follows

“The bands 1 710 - 1 755 MHz and 2 110 - 2 155 MHz are designated for implementation of public telecommunications services. See Channelling Plans. See also International Footnotes 5.384A and 5.388.”

We have also removed the reference to T5 from one position within the main table of frequency calculations for consistency.

3. 2500 MHz to 2690 MHz

Digicel recommended that the Commission should consider adopting Band 41 (2496 – 2690MHz; TDD; 194 MHz in total) instead of the current arrangements for the 2500 MHz to 2690MHz range.

Digicel suggested that the existing allocation was Band 7 (FDD; 140MHz in total) alone. That is partly correct. The existing allocation is Band 7 (FDD; 140MHz in total), plus Band 38 (TDD; 50MHz in total).

The advantages of Digicel’s proposal are that using Band 41 (TDD):

- enables more spectrum to be combined (through greater carrier aggregation) which in turns enables greater data throughput;
- also offers potentially more efficient use of the spectrum because it is possible to configure TDD to devote more capacity to downlinks than uplinks and for consumer purposes more downlink capacity is required than uplink capacity (but see below).

The disadvantages of Band 41 are that:

- it would be necessary to implement very precise clock synchronisation between networks because operators must all be sending data upstream at the same moment in time, and be sending data downstream at the same moment in time, in order to mitigate interference problems. This is because unlike FDD, the same frequencies are used for upstream and downstream traffic. This problem arguably declines if larger ranges are assigned to operators as there would be fewer neighbouring assignments;
- clock synchronisation also means that operators would have to fix the ratio of capacity between upstream and downstream traffic, which arguably reduces flexibility;
- all operators must use TDD instead of being able to apply for either TDD or FDD as with the current configuration. In other words, this means that all operators using this spectrum would effectively be compelled to use it for TDD LTE and this is arguably inconsistent with an approach of technological neutrality.

Flow recommended that the wording in T13 should be amended to refer to “LTE-Advanced or higher mobile technologies”. We agree with this in principle. In this case, in addition, the reference to a broadband service deployment status report would omit the acronym “LTE” and relate to whichever technology was used.

Flow also recommended increasing the spectrum cap of 40MHz for this band which Digicel also supported. What happens here depends on the Commission’s policy with respect to attracting new market entry. Increasing the spectrum cap makes sense if the TCI is committed to having just two mobile operators.

Commission's Decision

Some countries have chosen to use Band 41. Because moving to Band 41 would involve clock synchronisation between operators it would be necessary for the Commission to consult separately on this proposal. The Commission will therefore invite licencees to say whether they would support a move to Band 41 TDD. The consultation would also propose Flow's updated wording and relevant other changes to the wording of footnote T13. We will consider lifting the spectrum cap and whether there should remain a cap, based on the Government's view on attracting new market entry.

4. 3400 – 3600 MHz (Band 42)

Digicel and Flow suggested that the Commission should consider 3400 - 3600MHz (Band 42) for the delivery of mobile services. Digicel specified its use for 4G LTE services and said that it could also form an evolutionary path for 5G (Band n78). Flow suggested that footnotes T7 and T8 could then be altered accordingly. Footnotes T7 and T8 currently state that the spectrum can be licensed for WiMax or used for Public Safety and Government use.

Commission's Decision

We note that there has been opposition to the use of this band for mobile from some satellite operators in other jurisdictions. There are also requirements under ITU procedures to seek agreement from other jurisdictions that want to use these bands for IMT services.

Consequently, the Commission recommends that it consults on the future use of this band before considering applying the ITU procedures to determine if its use for public mobile services is possible.

5. 5G New Radio (Bands n40 and n78)

Digicel suggested that 2300 - 2400 MHz (5G Band n40) is used for mobile. This band appears unused therefore we recommend that the Commission includes the use of this band for mobile subject to consultation.

Digicel and Flow suggested that 3300 - 3800 MHz (5G Band n78) is made available for mobile: this band is partially used by Andrew's Communications and the use of much of these frequencies is subject to agreement by other jurisdictions via the ITU processes.

Commission's Decision

In respect of 5G Band n40 the Commission agrees with this proposal in principle as it relates to a potentially useful and unused band that can add data capacity for operators, and that the Commission should consult separately before considering implementation.

5G Band n78: as stated previously, this band is partially used by Andrew's Communications and the use of much of these frequencies is subject to agreement by other jurisdictions via the ITU processes. Therefore, the Commission will consult on the future of this band, other than for spectrum already assigned to Andrew's, before considering whether the Commission should commence the ITU procedures to seek agreement from other jurisdictions for any changes.

6. Bands 12, 25, 26 and 66

Digicel suggested some 4G band reclassification in order to allow more spectrum availability as follows:

- Change Band 17 to Band 12 (729 - 746 MHz DL + 699 - 716 MHz UL): increases spectrum contiguous with a band already partly used by Digicel
- Change from Band 2 to Band 25: increases spectrum contiguous with a band partly used by Digicel (1930 - 1995 MHz DL + 1850 - 1915 MHz UL)
- Change from Band 5 to Band 26 (859 - 894 MHz DL + 814 - 849 MHz UL): increases spectrum contiguous with a band partly used by Flow

In Flow's reply response it disagreed with the change from Band 17 to Band 12 because it said that would cause interference with Band 71 if put in to use. However, the operational part of Band 12 starts at 699 MHz leaving a 1 MHz guard band between the band 71 and band 12 uplinks. Consequently, the potential for interference is questionable.

The main points of discussion before considering allocating both band 12 and band 71 are:

- a) it is arguably inefficient to allocate all this spectrum for only two market participants;
- b) consumers might be tied to just Flow or Digicel because their handsets might not support both bands without extra filters.

Digicel and Flow recommended:

- Change from Band 4 to Band 66 (2110MHz - 2200MHz DL + 1710MHz - 1780MHz UL)
- : increases spectrum contiguous with a band partly used by Digicel

Commission's Decision

In principle we do not see any problem with these band changes as the additional spectrum appears unused and we agree that these proposals should form part of a larger consultation.

7. Band 71

Flow recommended, and Digicel agreed with them, a band plan for:

- Band 71: (617MHz - 652MHz DL + 663MHz - 698MHz UL)

Commission's Decision

Band 71 is currently occupied by People's Television (PTV), a television network operator which offers television services over the air. Due to the existing service within the band, the Commission cannot apply the recommendations as suggested by Flow and Digicel. The Commission will review these recommendations later when the circumstances regarding the use of the band have changed.

8. Additional Comments

Digicel was concerned that an assignment could be made in the GSM 1800MHz band (Band 3) that could affect existing Band 4 or Band 2 assignments.

Digicel commented also on the limited allocation within Band 4.

Commission's Decision

Since the 1800MHz band is not being used currently we have deleted previous references to the 1800MHz Band (former section 5.4).

Regarding Band 4, we will expand the possible allocation to the full Band 4 range as detailed previously with immediate effect and pending consultation Band 4 could be replaced by Band 66.