Information & Communication Technologies Authority

Consultation Ref: ICTA/2024/01

CONSULTATION PAPER ON MAKING AVAILABLE ADDITIONAL SPECTRUM FOR IMT

23 AUGUST 2024

EXPLANATORY MEMORANDUM

The Information and Communication Technologies Authority (ICTA) recognizes the pivotal role of efficient spectrum management in supporting the ever-evolving landscape of mobile communications.

The purpose of this consultation paper is to engage mobile network operators in shaping a robust Network Spectrum Roadmap for Mauritius.

Our initiative stems from the rapid progress in mobile technologies, necessitating a forward-looking approach to spectrum management. As we move toward deploying 5G networks and beyond, reassessing mobile spectrum usage and spectrum refarming becomes essential. The ICTA aims not only to address current requirements but also to anticipate and facilitate future innovations and expansions.

Through this consultation, we seek to have insights on the following: -

(a) operational or technical challenges faced by operators in utilizing existing frequency allocations.
(b) future spectrum needs, based on anticipated technological developments, user demand growth, and new service offerings.

By collaborating with industry stakeholders, the ICTA aims to create a regulatory framework that supports sustainable growth in Mauritius' mobile telecommunications sector. Our goal is to align spectrum resources with national development objectives and international best practices. The Information and Communication Technologies Authority resolves to:

(a) make available for public consultation the Consultation Document Ref: ICTA/2024/01;
(b) invite views, contributions, and comments on the Consultation Document.

GUIDELINES ON RESPONDING TO THIS CONSULTATION

We invite all operators to actively participate and provide comprehensive responses to this consultation. Your expertise and insights will shape a forward-looking spectrum management strategy, meeting today's needs while preparing for tomorrow's technological advancements.

All comments are welcomed; however, it would make the task of analyzing responses easier if comments were referenced to the relevant question numbers from this document.

You are invited to send your written views and comments on the issues raised in this document to the **Officer In Charge, ICT Authority, 9th Floor The Celicourt, Sir Celicourt Antelme Street, Port Louis**, or by email to info@icta.mu, at latest by **16h00** on **13 September 2024.**

Should you be including confidential information as part of your responses, you are requested to clearly identify the said confidential materials and to place same in a separate annex to your response. As far as possible, the respondent should limit any request for confidential treatment of information submitted. The ICTA will not accept any submission that requests confidential treatment for all, or a substantial part, of the submission

Thank you for your cooperation and contributions towards a more connected and prosperous Mauritius.

1.0 INTRODUCTION

Mobile technology advances unceasingly, with a transformative leap in capabilities occurring approximately every decade. Each new generation introduces substantial enhancements to mobile network functionalities and ushers in shifts in the strategies for managing the spectrum. Following the World Radiocommunication Conferences held in 2023 (WRC-23), additional spectrum was allocated to the Mobile Service in Region 1 with a view to enhance mobile broadband capacity. Frequency bands and associated footnotes identifying the band for IMT in Table 1 below are extracted from Article 5 of the Edition 2020 of the Radio Regulations and the Final Acts of the World Radiocommunication Conference (WRC-23) for ease of reference.

Table 1

Band	Footnotes identifying the band for IMT in Region 1
450-470 MHz	5.286AA (WRC-19)
694-960 MHz	5.317A (WRC-23)
1 427-1452 MHz & 1492-1 518 MHz	5.341A (WRC-15), 5.346 (WRC-19)
1 710-2 025 MHz	5.384A (WRC-15), 5.388 (WRC-23)
2 110-2 200 MHz	5.388 (WRC-23)
2 300-2 400 MHz	5.384A (WRC-15)
2 500-2 690 MHz	5.384A (WRC-15)
3 300-3 400 MHz	5.429B (WRC-23)
3 400-3 600 MHz	5.430A (WRC-15)
3 600-3 800 MHz	5.434B (WRC-23)
4 800-4 990 MHz	5.441B (WRC-23)
6 425-7 125 MHz	5.457E WRC-23)
24.25-27.5 GHz	5.532AB (WRC-23)
37-43.5 GHz	5.550B (WRC-23)
45.5-47 GHz	5.553A (WRC-23)
47.2-48.2 GHz	5.553B (WRC-23)
66-71 GHz	5.559AA (WRC-23)

The aim of this consultation document is to present the current situation in Mauritius and assess the needs of Public Land Mobile Network (PLMN) Licensees for more spectrum. This document outlines the context of existing and forthcoming spectrum assignments, seeking insights from sector stakeholders regarding various alternatives for upcoming spectrum

allocation. The ICTA is soliciting industry feedback with the aim to integrate such input into the strategic framework and to identify an optimal path that ensures the greatest advantage for telecommunication service consumers in the Republic of Mauritius.

2.0 FREQUENCY BANDS CURRENTLY USED FOR TERRESTRIAL MOBILE SERVICE IN MAURITIUS

Table 2

Range	IMT bands	Remarks	Current Use
Below 1 GHz	800 MHz (UL: 832-862 MHz; DL: 791-821 MHz)	Consultation paper on the opening of 700 MHz and 800 MHz bands for IMT-Advanced of 18 June 2018 & response dated 08 May 2019	LTE
	900 MHz (UL: 880-915 MHz; DL: 925-960 MHz)	Decision of 23 June 2017	GSM, UMTS, LTE
Mid-band	1800 MHz (UL: 1710-1785 MHz; DL: 1805-1880 MHz)	Decision of 05 June 2012	GSM, LTE
	2100 MHz (UL: 1920-1980 MHz; DL: 2110-2170 MHz)	Decision of 21 August 2018	UMTS, LTE
	2600 MHz 2.50-2.69 GHz TDD	Decision of 15 April 2021	LTE, 5G
	3500 MHz 3.40-3.60 GHz TDD	Decision of 15 April 2021	5G

While provisions have already been made for all of the above bands to operate IMT technologies, it is observed that GSM is still being operated in the 900 MHz and 1800 MHz bands while UMTS is prominent in the 900 MHz and 2100 MHz band. The ICTA therefore seeks an indication from stakeholders on the following:

A. 900 MHz and 1800 MHz bands

The ICTA issued a Decision on 23 June 2017 where it was decided that the 900 MHz band will be fully IMT upon GSM switch-off.

(note: DECT phones being used in 1880-1900 MHz)

Q1 Do you foresee a phase-out of GSM operations in the 900 MHz and 1800 MHz band? If so, what is the anticipated timeline and factors that will influence such decision? Operators are requested to provide us with an indication of the number of active GSM-only clients on your network.

Q2 Provide an indication of any new technology to be used in these band? If yes, what is the estimated timeframe and constraints, if any, for deployment?

Q3 Do you think that the 900 MHz band should be combined with higher band spectrum?

Additional questions to Mobile Network Operators

Q4 What are your plans regarding UMTS and/or LTE operations in the 900 MHz and 1800 MHz band?

B. 2100 MHz band

Q5 Do you foresee continued operations of UMTS in the 2100 MHz band? If yes, for how long?

Q6 Do you eventually foresee a phase out of UMTS operations in the 2100 MHz band? If so, what is the anticipated timeline and factors that will influence such decision?

Q7 Do you foresee any new technology to be used in this band? If yes, what is the estimated timeframe and constraints, if any, for deployment?

C. 800 MHz, 2600 MHz and 3500 MHz bands

Q8 Do you foresee any new technology to be used in any of these bands? If yes, what is the estimated timeframe and constraints, if any, for deployment?

3.0 FREQUENCY BANDS CONSIDERED FOR ALLOCATIONS IN THE NEAR FUTURE

Table 3

Range	IMT bands	Remarks
Below 1 GHz	700 MHz (UL: 698-718 MHz; DL: 753-773 MHz)	As per consultation in 2018, 20 MHz duplex in FDD mode available. Possibility to allocate further 20 MHz.
Mid-band	2.3 GHz (2.3-2.4 GHz)	100 MHz TDD
	3.3 GHz (3.3-3.4 GHz)	100 MHz TDD
	3.6 GHz (3.6-3.8 GHz)	200 MHz TDD to be assigned in blocks of 100 MHz

The ICTA has earmarked the above-listed frequency bands for the next spectrum assignment exercise.

Q9 Please provide indications of industry interest in the allocation of long-term rights in the above bands, as well as planned services, and target market segments for the use of each of these bands.

Q10 Are there any co-existence issues with other services or bands that need to be addressed?

Q11 Should the 700 MHz band be allocated as a standalone, or coupled with higher band spectrum? Please provide the reasons in support of your answer.

Additional questions to Mobile Network Operators

Q12 What would be your interest in obtaining additional spectrum, for IMT downlink only, in the 738-758 MHz frequency band?

Q13 Describe how the use of each of the above bands, as applicable, fits into your overall spectrum strategy and long-term vision?

Q14 What technology would you be interested to deploy and how much bandwidth would you require for such deployment?

Q15 What would be the timeframe for deployment and start of service in each of the above bands?

Q16 What potential challenges do you anticipate in deploying and utilising each of the above frequency band, as may be relevant?

Q17 How will such deployment impact your existing services and spectrum usage in other bands?

4.0 OTHER FREQUENCY BANDS UNDER CONSIDERATION

Table 4

Range	IMT bands	Remarks
Below 1 GHz	400 MHz (450-470 MHz)	This band is currently used for Fixed links (PTP), Private Mobile Radio (PMR) and Public Protection and Disaster Relief (PPDR) in the Republic of Mauritius.
Mid-band	1 427-1452 MHz, 1492-1 518 MHz	Allocated to fixed and mobile (except aeronautical mobile) services.
	1880-1920 MHz, 1980-2010 MHz, 2010-2025 MHz, 2170-2200 MHz	115 MHz of currently unallocated frequency in the 1800 MHz and 2100 MHz bands.
	6425-7125 MHz	Currently being used for Fixed-satellite uplinks and fixed links (PTP).
High-band	24.25-27.5 GHz	Frequency bands identified for IMT in WRC-23
	37-43.5 GHz	
	45.5-47 GHz	
	47.2-48.2 GHz	
	66-71 GHz	

Q18 Please provide indications of industry interest in the allocation of long-term rights in the above bands, as well as planned services, and target market segments for the use of each of these bands.

Q19 Are there any co-existence issues with other services or bands that need to be addressed?

Additional questions to Mobile Network Operators

Q20 Describe how the use of each of the above bands, as applicable, fits into your overall spectrum strategy and long-term vision?

Q21 What technology would you be interested to deploy and how much bandwidth would you require for such deployment?

Q22 What would be the timeframe for deployment and start of service in each of the above bands?

Q23 What potential challenges do you anticipate in deploying and utilising each of the above frequency band, as may be relevant?

Q24 How will such deployment impact your existing services and spectrum usage in other bands?