

Decisions on Recommendations (DORs) Matrix from the Second of Two Rounds of Public Consultation on the Spectrum Plan for the Accommodation of Public Mobile Telecommunications Services (May 2024)

The following summarises the comments and recommendations received from the second round of public consultation on the *Spectrum Plan for the Accommodation of Public Mobile Telecommunications Services* (the Plan) which took place from 30th January to 8th March 2024. The decisions made by the Telecommunications Authority of Trinidad and Tobago (the Authority) have been incorporated into the final approved Plan (Ver. 5.0), where applicable. The Authority wishes to thank the following stakeholders for all comments and recommendations received:

1. Columbus Communications (Trinidad) Limited (CCTL)
2. Digicel (Trinidad & Tobago) Limited (Digicel)
3. Neptune Communications Trinidad and Tobago Ltd (Neptune)
4. Telecommunications Services of Trinidad and Tobago (TSTT)

Item	Section	Stakeholder	Comments	Recommendations	TATT's Decision
1	General	Columbus Communications Trinidad Limited (CCTL)	Columbus Communications Trinidad Limited ("CCTL") welcomes the opportunity provided by the Telecommunications Authority of Trinidad and Tobago (the Authority) to participate in this consultation process. The views expressed herein are not exhaustive. Failure to address any issues in our response, does not in any way indicate acceptance, agreement or relinquishing of CCTL's rights.		The Authority acknowledges the appreciation expressed by Columbus Communications Trinidad Limited (CCTL) for the opportunity to comment on the Plan).

Item	Section	Stakeholder	Comments	Recommendations	TATT's Decision
2	3. Frquency Assignment Principles	CCTL	<p>In item 9 and page 8 of the DORs, the Authority sets out its decision to amend the spectrum cap from 2x25 MHz between the APT and 850 bands, to 2 x 30 MHz. In making this decision the Authority states that in the event third mobile operator is authorised, it will either reconsider its decision on the spectrum cap or identify other spectrum in the 600 MHz and 850 MHz band, to ensure parity.</p> <p>Similarly, on item 11 and page 10 of the DoRs a decision is made to amend the cap on the 1900 spectrum, and subject to a review in the even a third mobile operator is authorised.</p> <p>These decisions are reflected in Principle (9) of the consultation document, which speaks to the use of spectrum caps to limit the quantum of spectrum assignment and specifically that, <i>"The spectrum caps shall ensure sufficient spectrum is available for</i></p>	<p>CCTL recommends that the Authority clearly outlines the process to review the spectrum caps, in the event a third mobile operator is authorised.</p>	<p>The process to review the Spectrum Caps include an assessment of the bands available for public mobile telecommunications services (PMTS) to ensure an equitable distribution of the available spectrum to incumbent and new entrants. If changes to the spectrum caps are required, the Plan will be revised and undergo consultation in accordance with the Authority's <i>Procedures for Consultation in the Telecommunications and Broadcasting Sectors of Trinidad and Tobago</i> (TATT 2021) (Consultation Procedures).</p> <p>Section 3, item 6 has been revised to:</p> <p><i>"The spectrum caps shall ensure that sufficient spectrum is available for assignment to three cellular mobile operators in the bands allocated to PMTS."</i></p>

Item	Section	Stakeholder	Comments	Recommendations	TATT's Decision
			<p><i>assignment to at least two cellular mobile operators in the 700 MHz and 850 MHz bands, and three operators in the 1900 MHz, 1.7/2.1 GHz, 2.5 GHz and 3.5 GHz bands, and may be revised if a third mobile operator is authorised."</i></p> <p>However, the process to review or reconsider the spectrum cap decision is not set out. In the interest of transparency and to provide clarity to the principle, the review process should be clearly set out.</p>		
3	<p>Decisions-on-Recommendations ("DORs")-PMTS-Spectrum-Plan Item 2 (Section 2.2 National Considerations): TATT's Decision: Currently, a licensed public</p>	<p>Digicel (Trinidad & Tobago) Limited (Digicel)</p>	<p>Digicel (Trinidad & Tobago) Limited ("Digicel") would like the Authority to specify its timeline on 600 MHz being made available in the future.</p>	<p>Digicel recommends that the 600MHz band should be made available to all operators for the next three (3) years, particularly due to competitive advantage as the current challenge with 5G is indoor penetration.</p>	<p>The Authority's decisions regarding the second and seventeenth items of the decisions on recommendations (DORs) matrix from the first round of consultation state that an existing subscription broadcasting network is currently licensed in the 600 MHz band. The process to make spectrum available to migrate the existing system is already underway. The 600 MHz band will be available to all operators for PMTS upon</p>

Item	Section	Stakeholder	Comments	Recommendations	TATT's Decision
	<p>subscription broadcasting network operates in the 600 MHz band. However, if a third mobile operator is authorised, the Authority will allocate the 600 MHz band for PMTS and has already commenced efforts to make this band available for PMTS. [Emphasis added]</p>				<p>completion of this process, which is expected to occur in 2026/2027, subject to operators' assignments within their spectrum caps.</p>
4	<p>4.3.3 Licensing Process and Condition</p> <p>5. The spectrum cap for the 1900 MHz band shall</p>	Digicel	<p>A standard radio can support 2 x 40MHz (i.e. 40 Uplink and 40 Downlink); thus, to fully utilise the equipment capacity and to reduce incremental capex from purchasing additional radio for</p>	<p>Digicel recommends that the Authority increase the 1900 MHz band cap from 2 x 35 MHz to 2 x 40 MHz.</p>	<p>The Authority agrees with Digicel's recommendation. Subsection 4.3.3, item 5 has been revised to:</p> <p>“5. The spectrum cap for the 1900 MHz band shall be 80 MHz (i.e., 2 x 40 MHz).”</p>

Item	Section	Stakeholder	Comments	Recommendations	TATT's Decision
	be 70 MHz (i.e., 2 x 35 MHz). 6. Each licensee assigned spectrum blocks in the 1900 MHz and 1.7/2.1 GHz bands shall not exceed a total spectrum cap of 100 MHz (i.e., 2 x 50 MHz).		another band, operators should be allowed to maximize investment.		The aggregate spectrum cap across the 1900 MHz and AWS bands will be maintained, to accommodate three mobile operators in these bands.
5	4.4.3 Licensing Process and Conditions 5. The spectrum cap for the 1.7/2.1 GHz band will be 70 MHz (i.e., 2 x 35 MHz) per cellular mobile operator	Digicel	A standard radio can support 2 x 40MHz (i.e. 40 Uplink and 40 Downlink); thus, to fully utilise the equipment capacity and to reduce incremental capex from purchasing additional radio for another band, operators should be allowed to maximize investment.	Digicel recommends that the Authority increase the n66 cap from 2 x 35 MHz to 2 x 40MHz.	The Authority agrees with Digicel's recommendation. Subsection 4.4.3, item 5 has been revised to: “5. The spectrum cap for the 1.7/2.1 GHz band shall be 80 MHz (i.e., 2 x 40 MHz).” The aggregate cap across the 1900 MHz and AWS bands will be maintained, to accommodate three mobile operators.
6	4.6.2 Frequency Assignment	Digicel	Digicel notes that n78 frequency assignment starts from 3.3GHz-	Digicel recommends including 3.65GHz to 3.8GHz in frequency	The Authority did consider the 3.65 –3.8 GHz frequency range for

Item	Section	Stakeholder	Comments	Recommendations	TATT's Decision
	<p>Plan</p> <p>The Authority's frequency assignment plan for the lower 3.5 GHz band is a subset of the 3GPP TDD band n78 and is shown in Table 13.</p> <p>This frequency assignment plan does not require the establishment of guard bands, as these are established, if required, within the allotted spectrum blocks</p>		<p>3.8GHz; there is still 150MHz of available spectrum. This range should be made available for PMTS</p>	<p>assignment plan for PMTS. With this inclusion, there is a total of 440MHz of available mid-band (i.e. 2.5GHz and 3.5GHz).</p> <p>Digicel further recommends that the combined spectrum cap for mid-band should be increased to 145MHz for each operator.</p>	<p>PMTS. However, the current assignments in this band and the utilization in the adjacent frequency range, as stated in the Authority's response to the 18th item in the DORs matrix from the first round of consultation, do not allow for its inclusion in this revision of the Plan. Should the situation change in the future, including identifying a suitable spectrum sharing arrangement, more spectrum in the subject frequency range could be made available for PMTS.</p>
7	4.6 The Lower 3.5 GHz Band (3300–3700 MHz)	Neptune Communications Trinidad	There is no allocation for PPDR in the mid-band frequencies.	Our recommendation is for 100Mhz of bandwidth in the lower 3.5GHz band to be allocated for PPDR specifically for future 5G overlay	Currently, the 3.5 GHz band is not included as one of the ITU-R Region 2 harmonised frequency bands for PPDR. The Authority will

Item	Section	Stakeholder	Comments	Recommendations	TATT's Decision
		and Tobago Ltd			<p>continue to monitor the developments with harmonised PPDR bands, for consideration in future revisions of the Plan.</p> <p>The allocation for broadband public protection and disaster relief (PPDR) in the 700 MHz band is in accordance with ITU-R Resolution 646 and Recommendation M.2015. This, and future allocations, will be done in accordance with Resolution 646 and Rec. M.2015, to ensure regional harmonisation which allows local agencies to benefit from the device ecosystem and economies of scale.</p>
8	4.6 The Lower 3.5 GHz Band (3300–3700 MHz)	Neptune	There is an increase in demand worldwide for private 5G/LTE self-contained networks for high-speed multimedia communications within a fixed campus location. Examples are ports, industrial parks, large storage facilities etc. The document did not specify spectrum bands for these types of networks.	100Mhz of spectrum should be allocated in the 3.5GHz band for these private 5G/LTE bubbles and assigned to the designated network operator on a case-by-case basis.	The scope of the Plan, subsection 1.4, explicitly excludes the allocation of spectrum bands for private networks. The Authority agrees that private 5G/LTE networks could be considered in the 3.5 GHz and other similar bands. The Authority will consider spectrum for private 5G/LTE networks upon review of the relevant spectrum plans, such as the

Item	Section	Stakeholder	Comments	Recommendations	TATT's Decision
					<i>Spectrum Plan for the Accommodation of Land Mobile Systems.</i>
9	General	Telecommunications Services of Trinidad and Tobago (TSTT)	<p>According to TATT's consultation procedures, a consultation must be completed within a calendar year of its initiation.</p> <p>According to the maintenance history of this document, version 4.1 was issued on March 1st, 2023. The closing of the current consultation window is March 8th, 2024 – over one year after initiating the consultation process. Given that TATT can only at that time begin considering feedback and will thus publish a final version of the document sometime thereafter (with the DoRs from this phase of consultation as also required in the same Procedures). It is evident that this process is procedurally voided.</p> <p>Consequently, in accordance with its own procedures, TATT must</p>	<p>TATT should be compliant with its own procedures.</p> <p>Accordingly, this process should be halted, and the consultation should begin again, with a view to TATT completing the same within the one-year timeframe its Procedures demand.</p>	<p>The Authority does not agree that the current consultation process should be restarted, as the Consultation Procedures allows for such instances where a consultation is not completed in the expected period.</p> <p>Specifically, subsections 3.9 and 6.3.3 of the Consultation Procedures cater for instances where the Authority may not complete the consultation process in the expected time frame.</p> <p>Subsection 3.9 establishes that consultations shall be completed within one year of commencement, provides examples of factors that could affect the time frame, and outlines that should such instances arise, it may be impractical or not be judicious for the Authority to finalise its position in the expected period.</p>

Item	Section	Stakeholder	Comments	Recommendations	TATT's Decision
			<p>scrap the current process and begin again. In that new process TATT should, in accordance with its own procedures, complete the consultation – which would include two rounds of consultation and the publication of associated DoRs for both rounds of consultation – within one year of initiating the process.</p>		<p>Subsection 6.3.3 outlines that where the Authority does not finalise a document in the time frame stipulated, the Authority shall notify contributors of the reasons for any inordinate or unforeseen delay that would have affected the timelines for completion of the consultation process, and advise on the finalisation of the document, via the Authority's website or such other media as it considers appropriate.</p> <p>As the Authority limits the number of documents simultaneously released for public consultation, unfortunately, extensions granted to the rounds of public consultation for other documents, namely, the <i>Framework on Illicit Media Streaming in Trinidad and Tobago</i>, the <i>Determination: Retail Domestic Mobile Telephony Market Definitions</i> and the <i>Determination: Domestic Retail Fixed Telephony and Fixed Broadband Market Definitions</i>, constrained the</p>

Item	Section	Stakeholder	Comments	Recommendations	TATT's Decision
					<p>Authority from completing the two rounds of public consultation on this Plan within one year of the commencement of the consultation process.</p>
10	<p>2.2 National Considerations</p> <p>The Authority considered the need to balance facilitating the spectrum requirements of the existing PMTS providers to meet future consumer data demands and the introduction of a third PMTS provider. The spectrum caps in the Plan will allow the two existing PMTS providers to maximise the</p>	TSTT	<p>Please confirm that from this statement that you are stating that the existing operators in the 700 band would not also be allowed to acquire spectrum in the 600MHz range.</p>	<p>It is recommended that all operators should be given the opportunity to acquire 600MHz band spectrum if needed and not locked to a specific band.</p>	<p>The Authority did not state or imply that current operators would not be allowed to acquire spectrum in the 600 MHz band. All operators will have access to the 600 MHz band once available subject to the spectrum caps that have been established.</p> <p>TSTT is also reminded that the allocation of spectrum in the 600 MHz band for the third mobile operator was supported on the basis of allowing incumbents to augment services in the 700 and 850 MHz bands, without the need to invest in equipment for the unassigned 600 MHz band.</p> <p>Nevertheless, to address TSTT's concern, subsection 2.2 was revised as follows:</p>

Item	Section	Stakeholder	Comments	Recommendations	TATT's Decision
	<p>spectrum in the 700 MHz, 850 MHz, 2.5 GHz and 3.5 GHz bands. In the event that a third PMTS provider is authorised, similar spectrum, as deemed by the current mobile operators, will be allocated in the 600 MHz (612–652/663–703 MHz), extended 850 MHz (814–824 MHz/859–869 MHz) and 3.5 GHz (3.3–3.7 GHz) bands.</p>				<p>“The Authority considered the need to balance facilitating the spectrum requirements of the existing PMTS providers to meet future consumer data demands and the introduction of a third PMTS provider. The spectrum caps in the Plan will allow the two existing PMTS providers to access additional spectrum, while ensuring access to, if authorised, a third mobile operator, in the existing bands.</p> <p>Aggregate spectrum caps were introduced to support the deployment of wider RF channels across contiguous spectrum while ensuring equal spectrum assignments across similar bands. This will allow PMTS providers to benefit from the spectral efficiency and cost-effectiveness of contiguous spectrum compared to carrier aggregation.</p> <p>If a third PMTS provider is authorised, spectrum will be allocated in the 600 MHz (612–</p>

Item	Section	Stakeholder	Comments	Recommendations	TATT's Decision
					<p>652/663–703 MHz) and extended 850 MHz (814–824 MHz/859–869 MHz) and spectrum caps will be established to ensure parity in the accommodation of the three mobile providers in the bands below 1 GHz, with all bands available to the three providers.”</p> <p>Additionally, the aggregate spectrum caps for the 700 and 850 MHz bands have been adjusted as follows:</p> <p style="padding-left: 40px;">Each licensee assigned spectrum blocks in the 700 MHz and 850 MHz bands shall not exceed a total spectrum cap of 40 MHz (i.e., 2 x 20 MHz).</p>
11	<p>2.2 National Considerations</p> <p>Table 2. Frequency allocations for cellular mobile networks</p>	TSTT	The table specifies several times that spectrum will be assigned for future use.	Please identify the range of spectrum that will be assigned per this description.	For clarification, Table 2 provides a summary of the allocations and assignments in the bands that are available for PMTS and the bands under consideration for PMTS, prior to the revision of the Plan. This has been revised in subsection 2.2, as follows:

Item	Section	Stakeholder	Comments	Recommendations	TATT's Decision
					<p>“These considerations, together with the current availability of spectrum in each of the respective bands, are summarised in Table 2.”</p>
12	<p>4.1.1 Selection of the Frequency Assignment Plan “For national security reasons, the Authority will maintain an exclusive allotment of 700MHz spectrum for PPDR...the Authority shall identify an allotment of 2x10MHz in the 700MHz for PPDR”</p>	TSTT	<p>TSTT reiterates that allocating of TDD spectrum in the duplex spacing between FDD 700MHz uplink and downlink bands may be the more efficient approach to achieving the policy directive of 10MHz LTE spectrum for PPDR.</p> <p>This approach will free up additional spectrum to be made available to the mobile operators in this band.</p> <p>This position is only strengthened by Frequency Assignment Principle number 3, which states that both FDD and TDD modes of operation will be supported in an assignment plan.</p>	<p>TATT asked to reconsider the allocation of spectrum for PPDR in 700MHz Band to 10MHz within the duplex spacing between APT uplink and downlink allocations.</p>	<p>The PPDR allocation in the 700 MHz band is guided by the ITU-R Recommendation M.2015 <i>Frequency arrangements for public protection and disaster relief radiocommunication systems in accordance with Resolution 646</i>. The harmonised frequency arrangements for ITU-R region 2 in 1-2.1 and 1-2.2 are all FDD arrangements. The proposed allocation in this version of the Plan aligns with frequency arrangement a) in 1-2.1 in ITU-R Rec. M.2015. To ensure PPDR agencies will have access to an existing device ecosystem, the spectrum for PPDR in the 700 MHz band will be planned in accordance with the FDD arrangements in the regionally harmonised plans. Therefore, the duplex spacing of the APT 700 MHz cannot be considered.</p>

Item	Section	Stakeholder	Comments	Recommendations	TATT's Decision
13	<p>4.1.2 Licensing Process and Conditions</p> <p>5. The spectrum cap for the 700MHz band shall be 40MHz (i.e. 2 x 20MHz)</p> <p>6. Each licensee-assigned spectrum block in the 700MHz and 850MHz bands shall not exceed a total spectrum cap of 60MHz (i.e. 2 x 30MHz)</p>	TSTT	<p>TSTT appreciates the policy decision that TATT seems to be pursuing, i.e. allocation of all available spectrum in the 700MHz band to the incumbent operators.</p> <p>However, with PPDR using up 20MHz (2 x 10MHz) of the available 90 MHz (2 x 45 MHz), only 70MHz (2 x 35 MHz) is left for allocation to operators.</p> <p>The proposed spectrum cap of 40MHz (2 x 20MHz) creates a situation where one operator would be given an advantage over the other, who would be limited to only 30MHz (2 x 15MHz). This creates the opportunity for bias against one operator over the other.</p> <p>In an ideal world this would suggest that simple competition would win, and this approach would create an opportunity for competitive scarcity. However, the world is not ideal, and TSTT is</p>	<p>TSTT strongly recommends that there are systemic assurances of balance built within the framework that limits the discretion of TATT to be prejudicial against TSTT, or any other concessionaire.</p> <p>In that regard, the spectrum cap in all bands should be equally split, and in the case of 700MHz, it should be either:</p> <p>a) 44MHz (2 x 22MHz) if PPDR is reallocated to the duplex spacing; or</p> <p>b) 34MHz (2 x 17 MHz) if PPDR's allocation remains as proposed by TATT.</p>	<p>The Authority has always been fair and non-discriminatory in its spectrum planning for PMTS and the treatment of its stakeholders accordingly.</p> <p>The spectrum caps ensure there is parity in the assignments of spectrum to the two existing operators and a third mobile operator if authorised across the 700 and 850 MHz bands. Both existing operators will have equal access to a maximum of 40 MHz (2 x 20 MHz) across the two bands, with in-band caps of 2 x 10 MHz for the 700 MHz band and 2 x 10 MHz for the 850 MHz band.</p>

Item	Section	Stakeholder	Comments	Recommendations	TATT's Decision
			<p>mindful of TATT's past behaviors which, in TSTT's opinion, have been prejudicial to TSTT.</p> <p>TSTT is wary of assuming that TATT's officers will always operate in a fair and unbiased fashion.</p> <p>The proposed approach seeks to neutralise that systemic assurance of balance. TSTT objects to this.</p>		
14	4.1.4 Technical Operating Conditions and Specifications	TSTT	It is noteworthy that the parameter for Base Station transmission powers in Tables 4 and 6 is ERP and stated in absolute "W", while the parameters in Tables 8 and 10 is EIRP and stated in "W EIRP in any MHz band segment".	TATT should normalise the parameter-setting to either ERP or EIRP, absolutely or per MHz band segment across all Tables for Base Station requirements.	<p>For this Plan, the Authority considered the limits set by the Federal Communications Commission (FCC) in the US and Innovation, Science and Economic Development Canada (ISED). The parameters for each band were adopted as established by the FCC and ISED, i.e., ERP or EIRP, absolutely or per MHz as they were deemed appropriate for our jurisdiction.</p> <p>Propagation characteristics, while key, are one of several factors in determining power limits, such as</p>

Item	Section	Stakeholder	Comments	Recommendations	TATT's Decision
			<p>TSTT presumes this is based on TATT's referral to the FCC-defined constraints for these bands. If accurate, TSTT would like TATT to consider the following:</p> <p>1) Historically, the 850MHz band was used for analogue and early digital signals which were narrowband systems, while the 1900MHz and AWS bands were used for spread spectrum systems.</p> <p>2) Narrowband systems are no longer deployed in Trinidad and Tobago's Mobile Market. All current and future deployment of systems will be spread spectrum systems.</p> <p>If the variation in parameter definition is based on this historical consideration, TATT should undertake to relieve itself from such constraints. Accordingly, TATT should normalise the parameter-setting to either ERP or EIRP, absolutely or per MHz band segment across all</p>	<p>TATT should consider revising the power requirements so that there is consistency across bands, or where there are increasing power limits with higher band usage, so that power thresholds will counteract the negative effects of reduced propagation characteristics</p>	<p>radiofrequency radiation safety limits. Hence, the Authority adopts such limits from other ITU-R Region 2 regulators, who give due consideration to all factors.</p>

Item	Section	Stakeholder	Comments	Recommendations	TATT's Decision
			<p>Tables for Base Station requirements.</p> <p>TSTT also notes that the maximum power limits do not reflect a coherent, congruent rationale based on the propagation characteristics of the various spectrum bands.</p> <p>For example, it should be noted that the Base/ Mobile Station powers for 700, 850, 1900 and AWS bands are as follows: 700: 1000W/3W (ERP) 850: 500W/7W (ERP) 1900: 1640W/MHz/ 2W (EIRP) AWS: 1640W/MHz/1W (EIRP)</p> <p>Given that signals within lower bands/ frequencies propagate further than signals in higher band frequencies, it seems incongruous that:</p> <p>1) Mobile Station powers are generally decreasing the higher the band, with the exception of 850 band;</p>		

Item	Section	Stakeholder	Comments	Recommendations	TATT's Decision
			<p>2) Base Station powers in the 850 band is the lowest, of any band. Other than copying the power requirements of the FCC, is there any rationale – via other operators adjacent to this band or otherwise – that explains these anomalous trends in Station power transmission requirements?</p> <p>If there is no justification, TATT should consider revising the power requirements to ensure consistency across bands, or where there are increasing power limits with higher band usage. This will allow for power thresholds that will counteract the negative effects of reduced propagation characteristics – while remaining within the demands of human exposure to radiation limits.</p>		
15	4.2.2 Frequency Assignment Plan	TSTT	TATT to explain why the channel assignment plan for 850 does not adhere to the 5MHz assignment plan implemented in all other assignment plans in this Spectrum	Can TATT confirm an intention to: 1) Regularise the channel assignment plan to either: a. 5 pairs of 5MHz channels; or b. 4 pairs of 5MHz channels and 2	The Authority agrees there is a need to revise the 850 MHz channel plan to better accommodate the recent generations of IMT. The 2.5 MHz channels were included to allow the

Item	Section	Stakeholder	Comments	Recommendations	TATT's Decision
			<p>Plan.</p> <p>This abnormal plan has resulted in the assignment of non-contiguous spectrum to operators, which has not allowed for optimal use of spectrum in deploying spread spectrum technologies. Can TATT confirm an intention to:</p> <p>1) Regularise the channel assignment plan to either:</p> <p>a. 5 pairs of 5MHz channels; or</p> <p>b. 4 pairs of 5MHz channels and 2 pairs of 2.5MHz channels</p> <p>2) Reassign frequencies to incumbent operators to ensure they are contiguous.</p>	<p>pairs of 2.5MHz channels</p> <p>2) Reassign frequencies to incumbent operators to ensure they are contiguous.</p>	<p>operators flexibility and accommodate existing assignments to the mobile operators, without forcing operators to either acquire or surrender spectrum currently assigned. The Authority has adopted TSTT's recommendation of 4 pairs of 5 MHz channels and 2 pairs of 2.5 MHz channels.</p> <p>The Authority will initiate the process of reassigning channels to the existing operators, to ensure contiguous assignments of spectrum, based on the revised channel plan, when deemed necessary.</p>
16	<p>4.2.3 Licensing Process and Conditions</p> <p>5 The spectrum cap for the 850MHz band shall be 30MHz (i.e. 2 x 15MHz)</p> <p>6 Each licensee assigned</p>	TSTT	<p>TSTT appreciates the policy decision that TATT seems to be pursuing. That is, allocating all available spectrum in the 850MHz band to the incumbent operators.</p> <p>The proposed spectrum cap of 30MHz (2 x 15MHz) creates a situation where one operator would be given an advantage over the other who would be limited to</p>	<p>TSTT must insist that there are systemic assurances of balance built within the framework that limit the discretion for TATT to be prejudicial against TSTT, or any other concessionaire.</p> <p>In that regard, the spectrum cap in all bands should be equally split, and in the case of 850MHz, should</p>	<p>The spectrum caps ensure there is parity in the assignments of spectrum to the two existing operators and a third mobile operator if authorised across the 700 and 850 MHz bands. Both operators will have equal access to a maximum of 40 MHz (2 x 20 MHz) across the two bands, with in-band caps of 2 x 10 MHz for the 700 MHz</p>

Item	Section	Stakeholder	Comments	Recommendations	TATT's Decision
	spectrum blocks in the 700MHz and 850MHz bands shall not exceed a total spectrum cap of 60MHz (i.e. 2 x 30MHz)		<p>only 20MHz (2 x 10MHz). This creates the opportunity for bias against one operator over the other.</p> <p>In an ideal world this would suggest that simple competition would win, and this approach would create an opportunity for competitive scarcity. However, the world is not ideal.</p> <p>TSTT reaffirms that the proposed approach seeks to neutralise that systemic assurance of balance. TSTT objects to this.</p>	<p>be: a) 24MHz (2 x 12MHz)</p>	band and 2 x 10 MHz for the 850 MHz band.
17	4.2.4 Technical Operating Conditions and Specifications	TSTT	See comments above in response to section 4.1.4	TATT should normalise the parameter set to ERP or EIRP, absolutely or per MHz band segment across all Tables for Base Station requirements.	For this Plan, the Authority considered the limits set by the FCC and ISSED. The parameters for each band were adopted as set by FCC and ISSED, i.e., ERP or EIRP, absolutely or per MHz as they were deemed appropriate for our jurisdiction and satisfied the limits required to support coverage obligation and ensure more users reach the desired quality-of-service (QoS).

Item	Section	Stakeholder	Comments	Recommendations	TATT's Decision
				<p>TATT should consider revising the power requirements so that there is consistency across bands, or where there are increasing power limits with higher band usage, so that power thresholds will counteract the negative effects of reduced propagation characteristics</p>	<p>Propagation characteristics, while key, are just one of several factors, such as radiofrequency radiation safety limits, used to determine power limits. The Authority therefore adopts such limits from other ITU-R Region 2 regulators, who give due consideration to all factors.</p>
18	<p>4.3.3 Licensing Process and Conditions</p> <p>5. The spectrum cap for the 1900MHz band shall be 70MHz (i.e. 2 x 35MHz)</p> <p>6. Each licensee assigned spectrum blocks in the 1900MHz and 1.7/2.1GHz bands shall not exceed a total spectrum cap of</p>	TSTT	<p>TSTT appreciates the policy decision that TATT appears to be pursuing. That is allocating all available spectrum in the 850MHz band to the incumbent operators.</p> <p>The proposed spectrum cap of 30MHz (2 x 15MHz) creates a situation where one operator would be given an advantage over the other who would be limited to only 20MHz (2 x 10MHz). This creates the opportunity for bias against one operator over the other.</p> <p>In an ideal world this would suggest that simple competition</p>	<p>TSTT strongly recommends that there are systemic assurances of balance built within the framework that limits the discretion of TATT to be prejudicial against TSTT or any other concessionaire.</p> <p>In that regard, the spectrum cap in all bands should be equally split, and in the case of 1900MHz, should be: 68MHz (2 x 34MHz)</p>	<p>While TSTT's comment references the 850 MHz band, the Authority assumes TSTT is referring to the 1900 MHz band. On its recommendation, TSTT is reminded that the 1900 MHz band consists of 2 x 65 MHz. An equal split would therefore only result in 2 x 32.5 MHz of spectrum per operator, not 2 x 34 MHz, neither of which will permit optimal use of the band for 5G. The spectrum caps – band and cross-band – are meant to ensure there is parity in the assignments to the two existing operators across the AWS and 1900 MHz bands. Both operators will have equal access to a maximum of 100 MHz (2 x 50</p>

Item	Section	Stakeholder	Comments	Recommendations	TATT's Decision
	100MHz (i.e. 2 x 50MHz)		<p>would win, and this approach would create an opportunity for competitive scarcity. However, the world is not ideal.</p> <p>TSTT reaffirms that the proposed approach seeks to neutralise the systemic assurance of balance. TSTT objects to this.</p>		<p>MHz) across the two bands, with in-band caps of 2 x 40 MHz for each of the bands. Any increased assignment in one band for one operator will make additional spectrum available in the other band for the other operator.</p>
19	4.3.4 Technical Operating Conditions and Specifications	TSTT	<p>See comments above in response to section 4.1.4</p>	<p>TATT should normalise the parameter setting to either ERP or EIRP, absolutely or per MHz band segment across all Tables for Base Station requirements.</p> <p>TATT should consider revising the power requirements so that there is consistency across bands, or where there is increasing power limits with higher band usage, so that power thresholds will counteract the</p>	<p>For this Plan, the Authority considered the limits set by the FCC and ISSED. The parameters for each band, i.e., ERP or EIRP, absolutely or per MHz, were adopted as set by the FCC and ISSED as they were deemed appropriate for our jurisdiction.</p> <p>Propagation characteristics, while key, are just one of several factors, such as radiofrequency radiation safety limits, used to determine power limits. Hence, the Authority adopts such limits from other ITU-R Region 2 regulators, who give due consideration to all factors.</p>

Item	Section	Stakeholder	Comments	Recommendations	TATT's Decision
				negative effects of reduced propagation characteristics.	