Jersey Airtel Limited's (JAL) response to Jersey Competition Regulatory Authority (JCRA) Case T-064

(T-064: 5G Spectrum Award Process - Consultation to reassess interest and demand - 02/03/2022)

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Jersey Airtel Limited

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1.0 Executive Summary

1.1 As a key stakeholder in Jersey's telecom industry and being as a provider of critical infrastructure, JAL is pleased to provide it's response to JCRA's consultation 'to reassess interest and demand in 5G spectrum' and welcomes JCRA's plan to restart the 5G spectrum allocation process.

1.2 Government of Jersey's (GoJ) 'Telecoms Strategy Action Plan' states that '*The rollout of next-generation networks is critical for the future of Jersey's telecoms provisions. This covers future mobile networks, such as 5G, and any potential network technologies that could be provided in Jersey to support the testbed initiative*'.

Link : *https://www.gov.je/Industry/TelecomsStrategy/Pages/JerseyTelecomsStrategyActionPlan.aspx*

1.3 JAL would expect that all the underlying issues mentioned in response to previous consultation '*5G Spectrum Statement of Intent dated 3rd May 2019'* and *'Case T-012: Business Connectivity Market Review (BCMR): Remedies, published 17/02/2022'* have been factored in as part of the deliberations between JCRA and GoJ leading up to the decision to restart '5G spectrum process' including the outcomes that they expect and want to be delivered by 5G.

1.4 JAL requests JCRA to prioritise the objectives listed in the JCRA's document "5G Spectrum– Statement of Intent" released in November 2019 such as 'exclusive reasonably priced backhaul products for 5G' and 'incentivising network sharing in Jersey'.

1.5 JAL would like to highlight the requirements that need to be considered by JCRA and GoJ regarding effective roll out of 5G services in Jersey, which are explained in more detail in our responses to the individual questions 1 to 8. The support is required for following:

1.5.1 Affordable exclusive fibre backhaul for 5G,
1.5.2 Incentivise network sharing,
1.5.3 Reform planning laws and processes,
1.5.4 Facilitation of 5G use cases.

1.6 JAL would request that JCRA reviews the UK Government's '***Next Generation Mobile Technologies: An update to the 5G strategy.***

Link : *https://www.gov.uk/government/publications/next-generation-mobile-technologies-an-update-to-the-5g-strategy-for-the-uk*

1.7 JAL's network is fully compliant with guidance from UK Telecom Security Bill and NCSC regarding 'High Risk Vendors'.

1.8 JAL leverages the global supply chain benefits and subject matter expertise of two of the world's leading telecom companies, namely, Airtel and Vodafone.

2.0 Response to Question no. 1:

Question 1: Do you support the Authority's planned approach to restarting the 5G spectrum award process or have views on alternative approaches?

2.1 JAL supports the Authority's approach to restart the 5G spectrum award process with facilitation required in the 'Responses to the Questions from 2 to 8'.

3.0 Response to Question no. 2:

Question 2: Please comment on the relevance of these key influencing factors or provide others that you believe the Authority should be taking into account in developing a Revised 5G Spectrum: Statement of Intent?

3.1 The 'Revised 5G Spectrum – Statement of Intent' should include the points as below from the document No: CICRA 19/61: 5G Spectrum – Statement of Intent released in Nov'19.

Link : *https://www.jcra.je/cases/2019/t1462gj-5g-spectrum-statement-of-intent/t1462gj-5g-statement-of-intent/*

3.1.1 *3.8 in 'Government's Policy Consideration'* regarding 'incentivise mobile network sharing'.

3.1.2 *3.13 and 3.14 in 'JCRA's Policy Objectives'* regarding 'network sharing' and 'backhaul products for 5G' respectively.

3.1.3 *5.6 in 'Stage 1: Current spectrum allocation'* regarding 'network sharing'.

3.1.4 *5.12 in 'Additional Comments'* regarding 'network sharing'.

3.2 Backhaul: Since fibre backhaul is extremely critical to the success of 5G network in providing enhanced mobile broadband and low latency, high bandwidth products with service quality guarantees, JAL requests JCRA to enable the following in the 'revised 5G Spectrum: Statement of Intent';

3.2.1 JCRA to refer to the points made by JAL in its response dated 1st April 2022 to questions 1, 2, 5, 6 & 7 in consultation *'Case T-012: Business Connectivity Market Review (BCMR): Remedies, published 17/02/2022'* regarding support required for backhaul price review.

3.2.2 JCRA should prioritise the development of 'exclusive 5G backhaul fibre products' as stated in *'3.14 on page 6 under JCRA's Policy Objectives in Nov'19's 5G Statement of Intent', where in JCRA states that JCRA is also working to ensure the availability of the correct backhaul products for mobile sites for all mobile operators to support government policy.*

3.2.3 JCRA to refer to page 20 in the link below regarding '5G strategy for the UK' highlighting the criticality of affordable fibre access for backhaul.

Link : *https://www.gov.uk/government/publications/next-generation-mobile-technologies-an-update-to-the-5g-strategy-for-the-uk*

3.3 Planning:

3.3.1 JCRA and GoJ to refer to the link below regarding the UK Government's plan to reform planning laws to help with effective roll out of 5G.

Link : *https://www.gov.uk/government/news/new-laws-to-end-mobile-coverage-no-bar-blues*

3.3.2 JCRA and GoJ to provide an update on the actions set for the Department of Environment in GoJ's Telecom Strategy stating a deadline of Q4 2018 as per the link below:

Link : *https://www.gov.je/Industry/TelecomsStrategy/Pages/JerseyTelecomsStrategyActionPlan.aspx*

i. *Convene group to identify the planning requirements for 5G network and planning barriers to next-generation network rollout.*

ii. *Review the planning process for access to buildings, infrastructure and land to determine whether existing rules are sufficiently transparent, timely, and effective in supporting next-generation network rollout.*

iii. *Build on this review to set out forward-looking planning guidelines that incentivise innovation and network sharing as the default for new telecoms infrastructure.*

3.3.3 JCRA and GoJ to provide an update on the action set for the Department of Infrastructure in GoJ's Telecom Strategy stating a deadline of Q1 2018 as per the link below:

Link : *https://www.gov.je/Industry/TelecomsStrategy/Pages/JerseyTelecomsStrategyActionPlan.aspx*

i. *Ensure that the costs of accessing buildings, infrastructure and land for telecoms network deployment are not a barrier to innovation.*

3.3.4 GoJ as a key stakeholder in 5G, should provide unconditional access to all state-owned buildings, ducts, masts, poles and structures available for expansion of 5G networks. As a reference the GoJ may refer to the UK Government's announcement, as reported in the press article link below.

Link : *https://www.dailymail.co.uk/news/article-10491923/Britains-5G-boom-set-boosted-new-kit.html*

3.3.5 JAL recommends the following planning reforms:

i. The Planning Department should take a holistic view of 5G mast requirements to avoid proliferation of mast without compromising on 5G network coverage.

ii. The addition of 5G antenna and equipment to existing masts should be allowed without involving extensive approval processes.

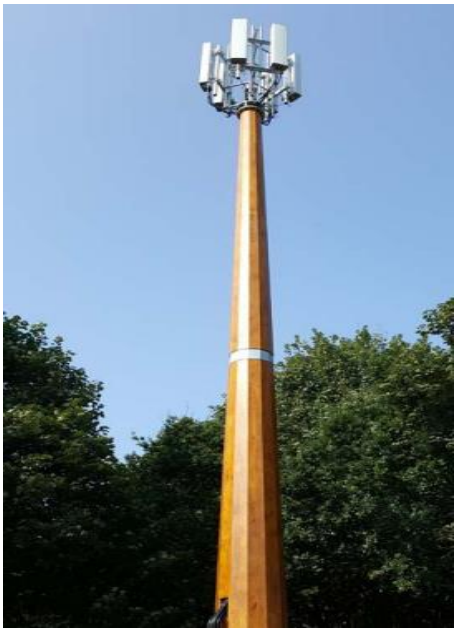
iii. New masts should be allowed to be built up to at least 25m in height in protected areas and 30m in height in unprotected areas.

iv. Additional cabinets needed to support 5G radio equipment should be allowed alongside masts without involving extensive approval processes.

v. The Planning Department should consider 5G as an opportunity to link 'sharing of masts' to grant approval for 5G antennas and equipment on existing sites or for new sites.

vi. Planning processes should be flexible to grant approval for wooden poles for 5G (as shown below in the picture on the right). New monopoles required to support 5G will be higher and wider to accommodate the weight of larger numbers of antennas and equipment without any camouflage.

Current Wooden Camouflaged 4G Monopole



New Wooden Pole with 5G

3.4 Electricity:

3.4.1 Consumption of electricity is expected to increase substantially with the introduction of 5G technology offering download speeds up to 100 times that of 4G. A typical 5G base station is expected to consume up to twice or more the power of a 4G base station. JAL therefore requests the JCRA and GoJ to support the telecommunication sector with reliefs in industrial electricity tariff.

3.5 Infrastructure regulation and sharing: The 5G network sharing arrangements in Jersey can operate to the benefit of all the island's mobile customers. Suitable network sharing arrangements in Jersey would give rise to significant costs savings, lower prices, operators having more capital available for new technologies, operators being able to provide higher quality services (e.g., 5G and greater coverage and capacity) and aesthetical benefits.

3.5.1 Request JCRA to consider regulating rentals charged by current infrastructure providers in Jersey namely Cellnex, SOJ and OLOs.

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3.5.2 JCRA and GoJ to provide an update on the actions for the Department of Environment and the Department of Infrastructure respectively in GoJ's Telecom Strategy stating a deadline of Q4 2018 as per the link below:

Link : *https://www.gov.je/Industry/TelecomsStrategy/Pages/JerseyTelecomsStrategyActionPlan.aspx*

i. *Build on this review to set out forward-looking planning guidelines that incentivise innovation and network sharing as the default for new telecoms infrastructure.*

ii. *Put in place a policy, which ensures that building, infrastructure and land rental fees for telecoms sites incentivise network sharing and innovation.*

3.5.3 As a reference the GoJ and JCRA may refer to the link below regarding 5G strategy for the UK. It states that *'the UK Government will work with Ofcom to identify and tackle unnecessary barriers to infrastructure sharing and will explore the potential for a clearer and more robust framework to allow companies to share infrastructure, while preserving investment incentives'.*

Link : *https://www.gov.uk/government/publications/next-generation-mobile-technologies-an-update-to-the-5g-strategy-for-the-uk*

3.5.4 The JCRA to provide an update on the Government Policy Considerations mentioned in JCRA's Nov'19 5G: Statement of Intent as per the link below with specific reference to 3.8 on page no. 5 which states that *'Jersey's Strategy recommends that government and JCRA should incentivise mobile network sharing'.*

Link : *https://www.jcra.je/cases/2019/t1462gj-5g-spectrum-statement-of-intent/t1462gj-5g-statement-of-intent/*

3.5.5 JAL recommends to JCRA to include regulation and stipulations in the award of spectrum for 5G in Jersey for infrastructure sharing. Similar approaches have been adopted in other European jurisdictions. For example:

i. The Portuguese regulator referred to national legislative stipulations to oblige operators to negotiate passive infrastructure sharing agreements.

ii. In Liechtenstein, the national regulator included ancillary conditions in its spectrum awards that obliged operators to share passive assets.

iii. As a reference would request JCRA to review the European Regulators 'BEREC Report on Infrastructure Sharing' in the link below, with specific reference to page no. 7 and 8.

Link : *https://berec.europa.eu/eng/document_register/subject_matter/berec/reports/8164-berec-report-on-infrastructure-sharing*

3.5.6 Please refer to Appendix 10.1: 'Note on Benefits of Passive Network Infrastructure Sharing' for more details.

4.0 Response to Question no. 3:

Question 3: Please provide information on yourself or your organisation and explain your interest in the awarding of 5G spectrum in Jersey.

4.1 Since launching mobile services in Jersey in 2007, JAL has a successful track record of delivering innovation, value and choice to Jersey consumers. In particular, we have driven the market innovation in the following areas:

4.1.1 As the first and only operator to decommission 2G.

4.1.2 Introducing 4G Broadband catering to customer segments who do not want to pay for landline rentals to access internet service.

4.1.3 By driving down the cost of mobile by introducing unlimited packages combining text, voice and data in bundles.

4.1.4 By being the first operator to introduce the lowest roaming rates and bundles.

4.1.5 By being the first operator to launch the NB-IoT network.

4.2 JAL has interest in 5G spectrum with 5G being the next generation of mobile technology to deliver extremely fast data speeds and to further enable innovative services across sectors and to consumers.

Also, as mentioned in the Executive Summary above, JAL leverages the global supply chain benefits and subject matter expertise of two of the world's leading telecom companies, namely, Airtel and Vodafone, including but not limited to 5G services. JAL would request JCRA to refer to the links below which include 5G trials conducted by Airtel in partnership with Nokia, and 5G services by Vodafone.

Link : *https://www.airtel.in/press-release/11-2021/airtel-conducts-indias-first-5g-trial-in-the-700-mhz-band-in-partnership-with-nokia*

Link : *https://www.vodafone.com/about-vodafone/what-we-do/technology/5g*

5.0 Response to Question no. 4:

Question 4: Taking into account the key influencing factors explained in this document, or others that you believe should be taken into account, please state if you are interested in applying for local 5G spectrum through the planned Restarted Process.

5.1 Please refer to 2.1.

6.0 Response to Question no. 5:

Question 5: Considering the specific subject of pan-Channel Islands 5G spectrum alignment, please explain any particular challenges you anticipate if this is not achieved.

6.1 JAL recommends that 5G spectrum alignment and commissioning should be a pre-requisite for the Bailiwicks of Jersey and Guernsey for the following reasons of:

6.1.1 5G investments in leveraging economies of scale in terms of capital expenditure.

6.1.2 Prioritisation of equipment supplies, and deployment would be favourable in managing 5G commissioning if undertaken simultaneously.

6.1.3 Operational efficiency being enhanced by deploying common technologies due to the limited scale of the telecom sector and telecom expertise.

6.1.4 The availability of 5G to ensure consistent customer experience.

6.1.5 Spectrum allocation to ensure consistency.

7.0 Response to Question no. 6:

Question 6: If interested in 5G spectrum, please state the services you would initially envisage providing or would like seen provided by others.

7.1 5G services:

7.1.1 Please refer to 4.2 above.

7.1.2 Please also refer to the link below 'PwC The Global Economic Impact of 5G'.

Link : *https://www.pwc.com/gx/en/tmt/5g/global-economic-impact-5g.pdf*

8.0 Response to Question no. 7:

Question 7: If planning to provide 5G services, please state your ideal spectrum allocation requirement for providing them.

8.1 The three main spectrum bands identified by Ofcom for 5G are;

8.1.1 Sub 1GHz, commonly known as the 'coverage layer', to provide wide area and deep indoor coverage, and in Europe encompasses the 700MHz band. These frequencies combined with the next band enable operators to commission 5G services efficiently and cost-effectively.

8.1.2 1GHz-6GHz, commonly known as the 'coverage and capacity layer', which relies on the C-band spectrum around 3.5GHz to deliver the most optimum between capacity and coverage. European regulators have identified the 3.4-3.8GHz band as most suitable for 5G.

8.1.3 Above 6GHz, commonly known as the 'super data layer', using higher frequency millimetre-wave (mm Wave) spectrum to deliver higher data rates for specific use cases. Europe has agreed to harmonize frequencies in the 24.25-27.5GHz band, although it's commonly referred to the 26GHz band. It will be the key enabler of future 5G services and be critical to 5G networks.

8.2 Would request JCRA to refer to the links below for additional details;

Link : *https://www.ofcom.org.uk/__data/assets/pdf_file/0021/97023/5G-update-08022017.pdf*

Link : *https://www.gsma.com/spectrum/5g-spectrum-guide/*

8.3 JAL would like to recommend to the JCRA the following;

8.2.1 To allocate 25MHz in sub 1GHz and 100MHz in 1-6GHz concurrently.

8.2.2 To refarm into contiguous spectrum bands of 100 Mhz in the frequency bands between 3.4-3.8GHz, and allocate accordingly.

8.2.3 To evaluate spectrum allocation in the sub 2Ghz and sub 3Ghz to facilitate better indoor coverage and the proliferation of masts. As a reference, please see the link below with respect to spectrum allocation for 5G in sub 2GHz and sub 3Ghz in Mauritius.

Link : *https://www.icta.mu/documents/2021/10/Spectrum_consultation.pdf*

9. Response to Question no. 8:

Question 8: Are there any further points you would like to make or information you believe valuable and relevant to the Authority for taking into consideration during this consultation process.

9.1 JAL requests JCRA to consider the following;

9.1.1 Inter-Island Backhaul: All the OLOs have a pan island infrastructure with a shared resilience requirement in between the two islands as per the CNI of both islands respectively. The inter-island backhaul should be classified as 'local connectivity' and not as an 'off-island connectivity'. The cost of inter-island backhaul is highly prohibitive. JAL's pan islands 5G commissioning would require enhanced inter-island backhaul capacity and therefore JAL requests the JCRA to regulate the prices of 'inter-island backhaul'.

9.1.2 ISP Connectivity: JCRA should regulate ISP connectivity cost as they are highly prohibitive. JAL's 5G commissioning will rely on enhanced ISP connectivity bandwidth.

10.0 Appendix:

10.1 Note on Benefits of Passive Network Infrastructure Sharing

We wholeheartedly support the view that sharing of network infrastructure is the most viable, cost-effective and environmentally friendly roll out model, this will also pave the way and set a viable platform for launch of newer technology such as 5G, 6G and beyond in the Bailiwick of Jersey.

This document, which has been shared with Government of Jersey, defines our view of how a sharing model might work, practically and commercially as outlined below, allows the industry to reduce duplication in CAPEX and Operating Costs whilst investing in quality of services giving the consumer best possible value and choice.

The Telecom industry offers several interesting perspectives to countries wanting to replicate the model of cost-effective service rollout. Understanding these perspectives and the strategic planning for implementing them can immensely aid the transition from an operator-owned to an independent-owned infrastructure model, especially for mast and fibre infrastructure.

1. Background

Historically, operators saw captive masts as offering a strategic advantage. The need for monetisation of assets, focus on customer acquisition and efficient Capex utilisation lured operators to hive off their mast assets to other entities in order to secure the advantages of infrastructure sharing.

2. Need for sharing telecom infrastructure

- Sliding ARPUs (Average Revenue Per User) in a hyper-competitive market
- Deeper penetration to rural unprofitable areas
- Energy cost too high for single usage
- Higher capital investment seen as a non-value creator for Telco's
- Cost reduction through sharing and bringing Opex efficiencies

3. Benefits to operators

- Faster time-to-market
- Focus on core business
- Economies of scale & optimal utilization of infrastructure
- Improved network quality – better uptime and asset management
- Inherent cost benefits of sharing
  - No Passive Infra Capex outlay
  - Lower Opex led by sharing
  - Lower Energy Cost due to sharing

4. Benefits to the economy

- Helps avoid creation of duplicate infrastructure which is unproductive and improved aesthetics
- Enhanced rate of telecom penetration and deeper rural coverage
- Price affordability for end consumer
- Lower carbon emissions led by lower energy consumption
- Lower foreign exchange outlay for import of equipment and supplies

In summary, the huge benefits of sharing driven by telecom infrastructure companies promote a faster and economical penetration for operators and thus, help drive the country's economic development at large.

5. Governments proactive efforts to promote sharing

The change in infrastructure ownership has unfolded on the back of a series of actions undertaken by regulators.

- Telecom mast sharing regulations can be simple and easy to administer through an IP-1 (Infrastructure Provider 1) registered locally at a nominal one-time registration fees.
  - No license is issued for IP-1 and hence no consumer service
  - Companies registered as IP-I can provide assets such as Dark Fibre, Right of Way, Duct space and Masts to Telecom operators
  - The sharing should be done on a non-discriminatory manner

- Government can allow 100% Foreign Direct Investment (FDI) in the telecom mast infrastructure industry

6. Recommendations for Bailiwick of Jersey

- Open mast industry to have seamless sharing and remove all entry barriers by defining simple guidelines for registration of telecom infrastructure providers providing for:
  - Right to provide all passive infrastructure sharing services including masts, dark fibre, right of way (ROW), duct space, etc., to telecom operators
  - Services to be offered on a non-discriminatory basis to all telecom licensees in the area.
  - Nominal one-time fees for registration
  - No License fee

- Considering the larger economic need of capital, and also the highly capital-intensive nature of tower and fiber infrastructure, Government should allow 100% Foreign Direct Investment (FDI) for telecom infrastructure providers.

- Considering telecom masts are critical infrastructure for economic growth of the country and has a direct multiplier effect on the GDP, Government could look at incentivizing the sector by grant of benefits in the form of:
  - Tax holidays, say for a period of 10 years
  - Accelerated tax depreciation on assets
  - Lower Excise duties
  - Higher External Commercial Borrowing (ECB) limits
  - Softer lending rates
  - Viability Gap funding particularly for investments on green energy initiatives, etc.

7. Impact of 5G on radio networks

5G key technical takeaways:

- Higher speeds greater than 1Gbps
- IoT and connected devices (10-100x)
- Low latency (<= 1ms)

} Higher frequency bands with large bandwidth and fibre as a backhaul

For a good 5G user experience, the pre-requisite would be a large number of sites connected on fiber for the following reasons:

1. Need for uniform high speeds – bringing sites closer to the user
2. Higher frequency signals travel lesser distances (most 5G trials are happening in 3.5Ghz)– thus reducing the inter-site distances to a few hundred meters

3. Need for lower latency and higher data backhaul fiber becomes a necessity
4. Large bands of spectrum (>100MHz) would be required (different bands of spectrum for different industries) – leading to multiple masts for the same coverage required

Multiplier of number of masts in a given area at various frequencies						
		New Frequency Band				
		900 MHz	1800 MHz	2100 MHz	2600 MHz	3500 MHz
Base Frequency Band	900 MHz	1.0x	1.6x	1.9x	3.7x	5.0x
	1800 MHz		1.0x	1.2x	2.3x	3.1x
	2100 MHz			1.0x	2.0x	2.7x
	2600 MHz				1.0x	1.3x
	3500 MHz					1.0x

Therefore, each operator would be rolling out nearly 5x sites along with fiberisation of nearly all sites. Hence, large amount of capital investment is needed by the operator to rollout.

Most of the infrastructure is sharable, and sharing will avoid by:

1. Eliminating multiple digging of roads for fiber by each operator
2. Multiple masts at similar location (saving skyline); and use of existing street furniture and small cells
3. Aesthetic impact (esp. outside of St. Helier)
4. Electricity consumption
5. Prudent capital allocation

Recommendation: The Government of Jersey can take proactive steps in incentivising sharing of tower and fiber to save on capital and also avoid multiple installations on public infrastructure for 5G rollout and existing infrastructure.

Whilst our suggested approach in the Bailiwick of Jersey is a view derived from our associate's global position on network sharing, below are some links to leading network infrastructure companies globally, for your reference:

https://www.crowncastle.com/network-infrastructure/

https://www.americantower.com/index.html

http://www.heliostowers.com/about-us/overview/

http://www.bharti-infratel.com/cps-portal/

https://eatontowers.com/