Dynamic Spectrum Alliance Limited
http://www.dynamicspectrumalliance.org

Cover Sheet for Response to a TRA Consultation

BASIC DETAILS

Consultation title: Spectrum Refarming: Broadband Context and Framework

To (TRA contact): spectrum_refarming@tra.gov.lb

Name of respondent: Martha Suárez

Representing (self or organisation/s): Dynamic Spectrum Alliance

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CONFIDENTIALITY

What do you want the TRA to keep confidential?

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Whole response*		Organisation	
Part of the response*			

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Yes	√	No	

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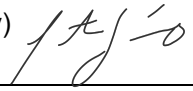
Name: Martha SUAREZ Signed (if hard copy) 

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Dynamic Spectrum Alliance Limited
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26 February 2026

Telecommunication Regulatory Authority (TRA)
Beirut Central District (Downtown), Marfaa 200 Building, Banks Street,
Ministry of Telecommunications Building,
Beirut, Lebanon

Re: DSA Response to the "Spectrum Refarming: Broadband Context and Framework

Dear Sir/Madam

The Dynamic Spectrum Alliance[1] (DSA) welcomes the opportunity to respond to the Telecommunications Regulatory Authority (TRA) consultation on "Spectrum Refarming: Broadband Context and Framework."

The DSA supports the TRA's objective of modernising Lebanon's spectrum framework, improving broadband availability, strengthening regulatory certainty, promoting efficient use of spectrum resources, and enabling future-ready digital infrastructure.

The DSA believes that future spectrum policy frameworks should remain technology-neutral, evidence-based, proportionate, and sufficiently flexible to support evolving connectivity ecosystems and efficient spectrum utilisation over the long term.

Modern communications environments increasingly depend on complementary connectivity models including fibre, Wi-Fi, mobile broadband, Fixed Wireless Access (FWA) and satellite systems. These technologies should not be viewed as competing substitutes, but rather as highly complementary components of a broader national connectivity ecosystem.

The DSA also welcomes the TRA's recognition of the need to support long-term infrastructure investment, future 5G and 6G readiness, efficient spectrum utilisation, and flexible licensing approaches.

The following comments focus primarily on strategic spectrum management principles, technology neutrality, harmonisation, coexistence frameworks, Wi-Fi and licence-exempt access, and future-ready spectrum policy approaches.

Sincerely,

Dr. Martha Suárez
President
Dynamic Spectrum Alliance

[1]The DSA is a global, cross-industry, not for profit organization advocating for laws, regulations, and economic best practices that will lead to more efficient utilization of spectrum, fostering innovation and affordable connectivity for all. Our membership spans multinationals, small-and medium-sized enterprises, as well as academic, research and other organizations from around the world all working to create innovative solutions that will benefit consumers and businesses alike by making spectrum abundant through dynamic spectrum sharing. A full list of DSA members is available on the DSA's website at: https://www.dynamicspectrumalliance.org/members.

15. CONSULTATION QUESTIONS

15.1 Strategic Options

Question 1: What are your views on the proposed market structure options (Options 1, 2, 3A, 3B, 3C)? Which option best balances competition, investment, service quality, and long-term sustainability?

The DSA supports market structures that promote sustainable infrastructure investment, efficient spectrum use, robust broadband competition, and long-term technology evolution.

In general, future licensing frameworks should support efficient and flexible use of spectrum, encourage nationwide broadband deployment, preserve incentives for long-term infrastructure investment, and avoid unnecessary fragmentation of scarce spectrum resources.

The DSA notes that modern broadband technologies, including advanced 5G systems and next-generation Wi-Fi technologies, increasingly rely on wider channel bandwidths to deliver higher throughput, lower latency, improved reliability, and enhanced user experience. Accordingly, spectrum frameworks should preserve opportunities for sufficiently large contiguous spectrum assignments while also supporting fair and sustainable competition.

The DSA also believes that future broadband ecosystems will increasingly depend on complementary combinations of fibre, mobile broadband, Wi-Fi, FWA, satellite systems, and dynamic spectrum access technologies. Future market structures should therefore preserve flexibility to support multiple evolving connectivity models rather than favouring narrowly defined technology approaches.

Question 2: Should DSPs be elevated to national FWA operators, regional operators, or should new entrants be prioritized?

The DSA has not taken a specific position on the preferred market structure for DSP participation or the prioritisation of specific operator categories. However, the DSA encourages the TRA to ensure that any future licensing framework remains transparent, non-discriminatory, proportionate, and supportive of long-term competition, innovation, and investment.

15.3 Technical & Operational Issues

Question 8: What technical coexistence conditions are required to protect incumbents while enabling broadband expansion?

The DSA strongly supports coexistence frameworks that are evidence-based, proportionate, internationally harmonised where possible, and based on sound engineering analysis.

International experience increasingly demonstrates that coexistence between incumbent users and modern wireless broadband technologies can often be successfully achieved through harmonised technical conditions, appropriate emission limits, Automated Frequency Coordination (AFC) database-assisted coordination, and proportionate operational safeguards.

The DSA encourages the TRA to consider opportunistic access mechanisms, where technically feasible and appropriately safeguarded, as a complementary tool to improve spectrum efficiency while protecting incumbent users (for example enabling standard power license exempt access to the 6 GHz band using an AFC System).

The DSA therefore encourages the TRA to leverage existing international coexistence studies and mature regulatory frameworks wherever possible in order to avoid unnecessary market fragmentation or overly restrictive local requirements.

Question 9: Should Lebanon adopt technology-neutral licensing?

Yes. The DSA strongly supports technology-neutral spectrum frameworks because technology neutrality encourages innovation, supports evolving broadband ecosystem development, enables efficient spectrum use, avoids unnecessary regulatory constraints, and preserves flexibility for future technological evolution.

Technology-neutral approaches are increasingly important to accommodate evolving combinations of 5G, advanced FWA, Wi-Fi, private networks, satellite integration, dynamic spectrum access frameworks, and future 6G systems.

15.4 Investment & Market Development

Question 10: What measures are needed to encourage investment in broadband infrastructure?

The DSA supports regulatory frameworks that provide long-term regulatory certainty, transparent and non-discriminatory licensing conditions, harmonised technical frameworks, predictable spectrum access, fair and proportionate pricing, and technology neutrality.

Stable and predictable regulatory environments are important to support broadband infrastructure investment, long-term ecosystem development, equipment availability, and consumer broadband deployment.

Question 11: How should Lebanon balance FTTH and FWA deployment obligations?

The DSA supports technology-neutral approaches that allow operators flexibility to deploy the most appropriate broadband solutions based on geography, economics, deployment feasibility, consumer demand, and market conditions.

The DSA notes that fibre, Wi-Fi, and FWA increasingly function as complementary components of a broader connectivity ecosystem, rather than as competing substitutes. Fibre provides high-capacity fixed broadband infrastructure, Wi-Fi carries the majority of indoor broadband traffic, while mobile systems deliver mobility, flexibility, and wide-area coverage. The DSA also notes that FWA can be provided using both licence-exempt access technologies and IMT technologies, and therefore recommends a technology-neutral approach.

Advanced Wi-Fi technologies such as Wi-Fi 6E and Wi-Fi 7 are increasingly important to enable users to fully benefit from next-generation fibre broadband investments. These technologies increasingly depend on access to wider contiguous spectrum channels — particularly in the 6 GHz band — to support high throughput, low latency, dense-environment operation, and next-generation enterprise and consumer applications.

Accordingly, sufficient spectrum availability for Wi-Fi should be recognised as a core enabler of successful national broadband policy and overall broadband user experience.

18. Annex C — Band-Specific Consultation Questions

18.6 6 GHz Lower Band (5925–6425 MHz)

Question 1: Allow Wi-Fi 6E/7: Should Lebanon allow licence-exempt use of 5925–6425 MHz, and should operation be limited to low-power indoor or broader models? Provide technical safeguards.

The DSA supports making the 5925–6425 MHz band available for licence-exempt WAS/RLAN use to enable Wi-Fi 6E, Wi-Fi 7, and future generations of wireless technologies. Access to the lower 6 GHz band has already been authorized in a growing number of jurisdictions worldwide[2] and has become an important component of national broadband and digital transformation strategies.

The lower 6 GHz band provides a unique opportunity to address growing demand for high-capacity wireless connectivity by enabling wider channels, including 160 MHz and 320 MHz channels, which are essential for achieving the full performance benefits of Wi-Fi 6E and Wi-Fi 7. These capabilities support a wide range of applications, including enterprise networking, education, healthcare, public services, industrial automation, cloud-based applications, and emerging AI-enabled services.

The DSA encourages Lebanon to align with internationally harmonised approaches for lower 6 GHz wherever possible and supports coexistence frameworks based on internationally recognised standards and evidence-based engineering analysis. Low Power Indoor (LPI) operation has demonstrated a strong coexistence record internationally and can provide immediate benefits while minimizing interference risks to incumbent services.

In addition, Lebanon should consider enabling Very Low Power (VLP) operation for portable and outdoor use cases, where appropriate, to support innovative applications such as wearable devices, augmented and virtual reality, and short-range outdoor connectivity.

Over time, Lebanon may also wish to evaluate Standard Power (SP) operation supported by an Automated Frequency Coordination system. AFC-enabled operation has emerged as an effective mechanism for allowing higher-power outdoor Wi-Fi deployments while protecting incumbent fixed and other licensed services through database-assisted frequency coordination. This approach can support wider-area connectivity in campuses, industrial facilities, public venues, transportation hubs, and rural broadband environments.

18.7 6 GHz Upper Band (6425–7125 MHz)

Question 1: Should Lebanon consider 6425–7125 MHz for IMT or license-exempt use? Provide evidence and preferred regulatory approach?

The DSA considers the 6425–7125 MHz band to be an important spectrum resource capable of supporting Lebanon's broadband connectivity, digital transformation, and economic development objectives. In evaluating future use of the band, the DSA encourages Lebanon to adopt an evidence-based and technology-neutral approach that takes into account ecosystem maturity, deployment readiness, spectrum efficiency, affordability, and the broader public benefits that different regulatory models can deliver.

From the DSA perspective, there is strong evidence that licence-exempt use of the upper 6 GHz band can deliver significant and immediate benefits. Wi-Fi technologies operating in the 6 GHz range are already commercially available, widely deployed, and supported by a rapidly growing global ecosystem of Wi-Fi 6E and Wi-Fi 7 devices. Access to the full 6425–7125 MHz band would enable wider contiguous channels, including multiple 320 MHz channels, allowing next-generation Wi-Fi technologies to achieve their full performance potential. These capabilities support high-capacity and low-latency applications such as cloud

[2] See https://6ghz.info/

computing, artificial intelligence, immersive technologies, industrial automation, advanced education platforms, healthcare applications, and smart infrastructure.

The DSA further notes that Wi-Fi serves as the primary access technology connecting users to fixed broadband networks. As broadband speeds continue to increase, additional licence-exempt spectrum is necessary to prevent wireless connectivity from becoming a bottleneck. Expanding access to the 6 GHz band can therefore help maximize the value of existing and future broadband infrastructure investments while improving connectivity affordability for consumers, enterprises, and public institutions.

By contrast, the future use of the upper 6 GHz band for IMT remains the subject of ongoing international studies and regulatory discussions. While some administrations are considering IMT use of the band, commercial ecosystems, equipment availability, and deployment timelines remain less mature than those for Wi-Fi. As a result, allocating the entire band exclusively for IMT may delay the realization of benefits that can already be delivered through licence-exempt technologies.

The DSA also encourages Lebanon to consider modern spectrum-sharing approaches that can enable more intensive spectrum use while still protecting incumbent services, including mechanisms such as AFC, which has shown strong potential to support higher-power licence-exempt operation through database-assisted coordination with existing licensed users. In addition, DSA supports continued consideration of dynamic spectrum access, AFC-controlled operation, shared-access frameworks, and opportunistic access mechanisms where technically feasible, as these approaches can improve spectrum efficiency while preserving regulatory flexibility and encouraging innovation across multiple connectivity ecosystems.

Accordingly, the DSA believes that making the 6425–7125 MHz band available for licence-exempt use represents the regulatory approach best suited to delivering near-term connectivity, innovation, affordability, and economic benefits. DSA therefore encourages Lebanon to consider a framework that supports LPI, VLP, and AFC-enabled Standard Power operations, while continuing to monitor future developments relating to IMT and other broadband technologies. To maximise the overall utility and efficiency of the band, TRA could refer to the framework proposed by Ofcom in the United Kingdom.[3]

Such an approach would maximize spectrum efficiency, support digital inclusion, encourage investment and innovation, and enable Lebanese consumers, enterprises, educational institutions, and public-sector users to benefit from the full potential of next-generation wireless technologies.

Conclusion

The DSA welcomes the TRA's efforts to modernise Lebanon's broadband and spectrum framework.

The DSA believes that long-term success will depend on maintaining technology neutrality, regulatory flexibility, efficient spectrum utilisation, support for innovation, coexistence-based spectrum management, and balanced treatment of both licensed and licence-exempt connectivity ecosystems.

Future-ready connectivity increasingly depends on complementary broadband models including fibre, Wi-Fi, FWA, mobile broadband, satellite systems, and dynamic/shared spectrum frameworks. Accordingly, future spectrum policy should seek to maximise flexibility, preserve future innovation opportunities, support internationally harmonised ecosystems, and enable efficient use of scarce spectrum resources for the benefit of consumers, enterprises, and the broader digital economy.

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[3] https://www.ofcom.org.uk/siteassets/resources/documents/consultations/category-3-4-weeks/consultation-expanding-access-to-the-6-ghz-band-for-commercial-mobile-and-wi-fi-services/main-document/expanding-access-to-the-6-ghz-band-for-commercial-mobile-and-wi-fi-services.pdf

Sufficient access to mid-band spectrum, including licence-exempt access to the entire 6 GHz band, will play an increasingly important role in enabling future broadband capacity and digital transformation.

The DSA appreciates the opportunity to contribute to this consultation and would welcome continued engagement with the TRA as the framework evolves.