

October 7, 2024

Communications, Space & Technology Commission
Al-Nakheel District-Prince Turki Bin Abdul Aziz | Street Intersection with Iman Saud Bin Abdul Aziz Road
P.O. Box 75606
Riyadh 11588, Saudi Arabia

Re: DSA Comments to CST on “Public Consultation on Spectrum Outlook for Commercial and Innovative Use 2024-2027”

The Dynamic Spectrum Alliance (DSA)¹ respectfully submits the following comments to the Kingdom of Saudi Arabia (KSA) Communications, Space & Technology Commission’s (CST) public consultation on “Spectrum Outlook for Commercial and Innovative Use 2024-2027”.² The DSA applauds CST for advancing light-licensing frameworks in its previous Outlook Cycle and proposing to explore implementation of dynamic spectrum access techniques in the current outlook cycle as means to increase shared access to spectrum. CST’s Spectrum Outlooks confirm that its fundamental approach to spectrum management is to “[e]nable shared access to bands unless it is clear that this is not possible”³.

Last year, DSA submitted comments to CST’s “Request for Public Consultation on the Spectrum Light Licensing Regulations” and “Request for Public Consultation on the Light Licensing Regulations for the 4 GHz Frequency Band.”⁴ The Consultation examined the possibility of enabling users to operate their own 5G private networks in the 4000-4200 MHz band under a light-licensing framework. The DSA looks forward to the expected release of CST’s decision later this year.

Our priority in the 2024-2027 cycle is for CST to release its rules in 3Q25 for authorizing outdoor operations of Standard Power 6 GHz devices under control of an Automated Frequency Coordination (AFC) system under a light-licensing regime. Enabling outdoor use of Standard Power devices under control of an AFC in the 6 GHz will enable point-to-multi-point Fixed Wireless Access (FWA) in the band. It builds upon CST’s actions in its first Spectrum Outlook for Commercial and Innovative Use in

¹ The Dynamic Spectrum Alliance is a global, cross-industry alliance focused on increasing dynamic access to unused radio frequencies. The membership spans multinational companies, small- and medium-sized enterprises, academic, research, and other organizations from around the world, all working to create innovative solutions that will increase the utilization of available spectrum to the benefit of consumers and businesses alike. A full list of the DSA members is available on the DSA’s website at www.dynamicspectrumalliance.org/members/.

² “Public Consultation on: Spectrum Outlook for Commercial and Innovative Use 2024-2027”, Kingdom of Saudi Arabia Communications, Space & Technology Commission, released 9 September 2024. (Consultation), available at <https://regulations.citc.gov.sa/en/Pages/PublishedPublicConsultations.aspx#/PublishedPublicConsultationDetails/58>

³ See Consultation at 8.

⁴ [DSACommentstoCSTon4GHzLightLicensing.pdf \(dynamicspectrumalliance.org\)](#)

Saudi Arabia released in 2021 that led to the opening of the entire 6 GHz frequency band to low power indoor license-exempt operation. KSA should take great pride that it was the first country in the Middle East, and also in Asia, Europe, and Africa to adopt regulations to open the entire 6 GHz band to low power indoor devices.

The DSA is providing a response to the following questions:

Section #	Question #	Response & Comment
	14	<p>CST proposes a technology-neutral definition of FWA. Do you agree with this definition.</p> <p>CST is proposing to adopt the definition of FWA in ITU-Recommendation F.1399-1 [05/001]. The DSA supports a technology-neutral definition of FWA and a regulatory framework-neutral definition of FWA. FWA can be provided in licensed 5G bands as noted in the consultation document, lightly licensed bands (such as CBRS in the United States) and license-exempt bands. A technology-neutral, regulatory framework-neutral approach will enable CST to ‘foster all forms of provision of FWA services’.⁵</p>
	15	<p>Which technologies and bands do stakeholders believe are key to delivering cost-effective FWA solutions?</p> <p>The DSA believes that the Standard Power (SP) devices operating across the 6 GHz band under control of an Automated Frequency Coordination (AFC) system can provide cost-effective point-to-multi-point FWA access.</p>
	16	<p>Are there any other bands in which FWA is not currently enabled but should be?</p> <p>In the United States, under experimental license, there is some use of the lower 37 GHz band (37.0-37.6 GHz) to provide fixed wireless access to homes and multi-dwelling unit (apartment buildings). At this time there is no need for CST to take additional actions outside of monitoring developments in the band.</p>
	24	<p>Do you agree with CST’s direction to monitor uptake and retain flexibility with regard to the lower part of the 5.9 GHz range? If not, please clarify.</p>

⁵ See Consultation at 29.

		<p>Over two decades ago a number of administrations set aside the 5850-5925 MHz range for Intelligent Transportation Systems (ITS). In the intervening years, many of the functions envisioned for ITS (e.g., services for the driver and passengers such as locating parking garages) can be performed readily on individuals’ mobile phones. DSA maintains that given all the consumer services accessible through one’s mobile device today, ITS’ exclusive focus should be on safety. At present, CST has identified the 5905-5925 MHz range for C-V2X, while reserving the remainder of the band for future identifications.</p> <p>DSA participated in the United States Federal Communications Commission’s (FCC) 5.9 GHz band consultation. DSA concurs with the FCC Report and Order that a total of 30 MHz of spectrum is required for C-V2X safety applications. The DSA suggests that in a future Spectrum Outlook, CST should consider identifying 5895-5905 MHz for C-V2X and designating 5850-5925 for license-exempt Wi-Fi use, under the technical rules for the 5470-5725 MHz band. Additionally, CST should consider authorizing 5825-5850 MHz for Wi-Fi under the technical rules for the 5470-5725 MHz band to create a large contiguous Wi-Fi spectrum block.</p>
	26	<p>Do you agree with CST’s direction to consult on exclusive-use licensing for BVLOS drones? If not, please clarify.</p> <p>The DSA agrees with CST’s direction to consult on making dedicated spectrum available for BVLOS drones. Ideally the consultation will include consideration of the use of dynamic frequency management systems to manage and coordinate access to the spectrum.</p>
	77	<p>Should CST reintroduce Fixed Service (FS) point-to-point links in the 6 GHz band?</p> <p>The DSA doesn’t have a view on this issue except to note that SP access points operating under control of an AFC will be able to protect existing and any new licensed fixed links operating in the 6 GHz band.</p>
	79	<p>Should CST enable outdoor use in the 60 GHz band on a license-exempt basis or under a light-licensing regime? Please elaborate on the advantages of your preferred approach.</p> <p>CST should authorize outdoor use in the 60 GHz band on a license-exempt basis for both low-power and higher-power use. License-exempt operations cannot cause harmful interference nor seek protection from interference.</p>

		<p>Outdoors, the technology can be used for relatively short FWA Point-to-Point links and Point-to-Multipoint Links, and for wireless backhaul. The path loss at 60 GHz is much greater than the losses at other frequency bands below 100 GHz due to the oxygen absorption, which peaks between 60 and 61 GHz. The oxygen absorption in the 66-71 GHz portion of the band is considerably less than the lower portion of the band, making it feasible to consider fixed links that utilize a high-gain antenna to transmit data over a few kilometers. The combination of greater frequency reuse due the relatively high attenuation and narrow beam due to the higher gain antenna, conceptually will allow for a greater density of outdoor line-of-sight 60 GHz links in more urbanized areas. Narrow beams and high spectra re-use also reduces the potential of causing interference.</p>
	80	<p>Do you think that requiring a (light) license for low power use would deter such use?</p> <p>Absolutely. The DSA believes that there is no need for CST to consider a light licensing regime in the 60 GHz band for low power outdoor uses such as Wi-Gig or field disturbance sensor devices (e.g., radar on a mobile phone). Given the short device range and high spectrum re-use primarily due to high oxygen absorption, combined with the low EIRP limit, the risk of causing harmful interference to licensed incumbents is low. Requiring a light license would deter uses such as WiGig and might cause manufacturers to not incorporate the field disturbance sensors into devices for the KSA market that operate outdoors.</p>
	81	<p>Is a light licensing regime needed for interference management or it is sufficient to rely on the Wi-Gig standard – in particular if users want to deploy in the same area.</p> <p>A light-license regime is not needed for interference management between outdoor WLAN devices operating in the 60 GHz band utilized for FWA. Due to the high oxygen absorption, high-gain antennas will be required for the links to achieve ranges of up to a few kilometers. The use of the high-gain antennas creates narrow beams, which lower the potential of interference. Additionally, these links will be line-of-sight, allowing other WLAN operators with outdoor 60 GHz links to identify potential interfering systems.</p>
	114	<p>114. Do stakeholders foresee a different use of the monitored bands than the current or suggested use?</p>

		The DSA suggests that CST should consider the 7125-7250 MHz portion of the 7125-8400 MHz band for future WLAN use. The additional 125 MHz would create an additional 160 MHz and 320 MHz wide channels in the 6 GHz, enabling greater frequency diversity in high-density deployments in enterprises.
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We appreciate the opportunity to participate in this consultation and we are available to discuss these comments and provide any additional information to CST if requested.

Respectfully submitted,



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President
Dynamic Spectrum Alliance