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**Shri Arvind Kumar,**

Advisor (Broadband & Policy Analysis),  
Telecom Regulatory Authority of India,  
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Jawaharlal Nehru Marg, New Delhi: 110 002

GSMA submission on consultation paper on  
Proliferation of Broadband through Public Wi-Fi Networks

Dear Sir,

This is with reference to the comments submitted by stakeholders to TRAI with reference to the consultation paper issued on 'Proliferation of broadband through Public Wi-Fi Networks'.

We note that some stakeholders have highlighted the use of TV white spaces (TVWS) to provide wifi services. On paper, white spaces seem to be offering some advantages but we need to understand how it works.

TV white spaces are portions of spectrum unused by digital TV, characterized by an unpredictable allocation in bandwidth, time and space. The TV white space scenario relies on the model with "no individual rights of use" as well as "no individual frequency planning/coordination". As a consequence, users can only expect best-effort service.

- License Vs Unlicensed: The stringent rules governing dedicated licensed spectrum define: the level of protection from interference emissions; efficient mobility and coverage of large areas; dependable service quality at all system loads and regulatory certainty necessary to promote investment for mass-market deployments.  
Licensed spectrum offers a critical cornerstone of certainty on which billions of dollars of capex have been and will continue to be committed.
- Market Distortion: The use of TV white spaces must not distort the market through inappropriate regulation. Eliminating the cost of acquiring spectrum and then providing cellular-type mobile services could create an unfair advantage.





- Quality/Interference: The TV white space approach is made possible by a spectrum-use database including geo-location data, which cannot offer a predictable quality of service or spectrum availability. For TV white space, there is no a priori determination of the spectrum to be eventually accessed. Interference management therefore remains a top priority. The use of TV white space, on a secondary unlicensed basis, will require careful planning with primary users, such as existing TV broadcasters, as well as services in adjacent bands to avoid interference.

It is also important to note that TV white spaces would not guarantee high-quality mobile broadband data services due to:

- non-homogeneous geographical coverage and fragmented bandwidth availability
- extremely inefficient use of the bandwidth due to very extended guard bands to be adopted
- device complexity along with scarce equipment availability due to a lack of scale resulting in high costs for customers

In this context, we note that some internet players are advocating use of spectrum below 700 MHz (470-698 MHz) for TVWS and licence-exempt services which are not protected from interference. In countries with a large geographic area (and 70% of population living in rural areas) such as India, the spectrum below 700 MHz will be important for providing extensive and affordable mobile broadband coverage in rural areas beyond 2020. This band already has a co-primary allocation to mobile services in Asia- Pacific. Allocating part of the band for IMT, would harness this valuable spectrum for the greater good.

Betting on white space spectrum and closing the door for licensed usage could also have an impact on future network development, including 5G and applications such as Internet of Things. Once spectrum is authorised for white space, it can't be recovered for licensed use. Unlicensed spectrum has a role to play, as has been shown by WiFi but it can't offer ubiquitous coverage or service offerings that have made mobile networks the real backbone of global connectivity. Indian Government should be commended for their efforts in this regard. The DoT has already provided clarification that the 470-698 MHz band or part thereof will not be delicensed. The Honourable Telecom Minister has also stated in the Rajya Sabha that "It has been decided that part of the spectrum in the band 470-698 MHz, after coordination with Ministry of Information and Broadcasting, will be put to use for International Mobile Telephony (IMT) services, when ecosystem for IMT services is developed".

Yours Sincerely,

A handwritten signature in blue ink, appearing to read "Sandeep Karanwal", is positioned above the typed name.

Sandeep Karanwal,  
Director, GSMA India