

(12) PATENT APPLICATION PUBLICATION

(21) Application No.202511095527 A

(19) INDIA

(22) Date of filing of Application :04/10/2025

(43) Publication Date : 05/12/2025

(54) Title of the invention : A DEVICE FOR SMART FREQUENCY DIVISION IN BROADBAND COMMUNICATION NETWORKS

(51) International classification	:H04W0072520000, H04W0072541000, H04B0007185000, H04W0072563000, H04W0072045300	(71) Name of Applicant : 1)NOIDA INSTITUTE OF ENGINEERING & TECHNOLOGY Address of Applicant :19, Knowledge Park-II, Institutional Area, Greater Noida – 201306, Uttar Pradesh, India. Uttar Pradesh India
(31) Priority Document No	:NA	(72) Name of Inventor :
(32) Priority Date	:NA	1)KANIKA JINDAL
(33) Name of priority country	:NA	2)Dr. PAVAN KUMAR SHUKLA
(86) International Application No	:	
Filing Date	:01/01/1900	
(87) International Publication No	: NA	
(61) Patent of Addition to Application Number	:NA	
Filing Date	:NA	
(62) Divisional to Application Number	:NA	
Filing Date	:NA	

(57) Abstract :

The present invention relates to a device (100) for smart frequency division in broadband communication networks, comprising a spectrum sensing unit (101), a frequency allocation controller (102), an interference mitigation module (103), a priority scheduler (104), a transceiver interface (105), and a control processor (106). The device dynamically allocates frequency channels based on traffic demand, minimizes interference, and prioritizes critical applications. Hardware-level adaptability ensures efficient spectrum utilization, reduced latency, and lower power consumption, making the invention suitable for broadband routers, IoT gateways, and communication base stations.

No. of Pages : 14 No. of Claims : 6