

Title (en)  
DEVICE AND METHOD FOR EFFECTIVE USE OF UNLICENSED SPECTRUM

Title (de)  
VORRICHTUNG UND VERFAHREN ZUR EFFEKTIVEN VERWENDUNG EINES UNLIZENZIERTEN SPEKTRUMS

Title (fr)  
DISPOSITIF ET PROCÉDÉ POUR UNE UTILISATION EFFICACE D'UN SPECTRE SANS LICENCE

Publication  
**EP 3251317 A4 20180919 (EN)**

Application  
**EP 15880630 A 20151118**

Priority  
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• US 2015061280 W 20151118

Abstract (en)  
[origin: WO2016122756A1] Devices and methods of using a fractional subframe are generally described. User equipment may communicate with an evolved NodeB (eNB) using carrier aggregation having carriers in a Long Term Evolution (LTE) licensed spectrum and carriers in an unlicensed spectrum. The UE may receive a (enhanced) physical downlink control channel ((e)PDCCH) formed in accordance with a Downlink Control Information (DCI) format that schedules a physical downlink shared channel (PDSCH) in the fractional subframe and subsequently receive the PDSCH. The (e)PDCCH may be provided in a first full subframe of the LTE licensed spectrum after the fractional subframe, in a full subframe of the LTE licensed spectrum overlapping the fractional subframe, or in the fractional subframe when a threshold number of Orthogonal Frequency Division Multiplexed (OFDM) symbols is in the fractional subframe. The PDSCH may be scaled based on the number of OFDM symbols in the fractional subframe or a PDSCH rank.

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Citation (search report)  
• [A] CATT: "Listen before talk for LAA", vol. RAN WG1, no. San Francisco, USA; 20141117 - 20141121, 17 November 2014 (2014-11-17), XP050875712, Retrieved from the Internet <URL:http://www.3gpp.org/ftp/Meetings\_3GPP\_SYNC/RAN1/Docs/> [retrieved on 20141117]  
• [A] ETRI: "Preamble field for time-aligned load based equipment type LBT mechanism", vol. RAN WG1, no. San Francisco, USA; 20141117 - 20141121, 17 November 2014 (2014-11-17), XP050875973, Retrieved from the Internet <URL:http://www.3gpp.org/ftp/Meetings\_3GPP\_SYNC/RAN1/Docs/> [retrieved on 20141117]  
• See references of WO 2016122756A1

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