

Title (en)  
PROTECTION OF TOLLING SYSTEMS FROM V2X SPURIOUS EMISSIONS

Title (de)  
SCHUTZ VON MAUTSYSTEMEN VOR V2X-STÖREMISSIONEN

Title (fr)  
PROTECTION DE SYSTÈMES DE PÉAGE VIS-À-VIS D'ÉMISSIONS PARASITES V2X

Publication  
**EP 3903513 A4 20221207 (EN)**

Application  
**EP 19902723 A 20191223**

Priority  
• US 201862785505 P 20181227  
• US 2019068404 W 20191223

Abstract (en)  
[origin: WO2020139854A2] Systems, methods, and devices protect tolling systems from spurious emissions from vehicle-to-everything (V2X) communications. A V2X device may, for example, determine whether a maximum number of vehicles are to transmit using a wireless medium at a particular time. If less than the maximum number of vehicles are to transmit using the wireless medium at the particular time, the V2X device starts transmitting using the wireless medium at the particular time. If, however, the maximum number of vehicles are to transmit using the wireless medium at the particular time, the V2X device delays transmission until less than the maximum number of vehicles are transmitting.

IPC 8 full level  
**H04W 4/40** (2018.01); **H04W 4/02** (2018.01); **H04W 4/021** (2018.01); **H04W 4/44** (2018.01); **H04W 4/80** (2018.01); **H04W 72/54** (2023.01); **H04W 74/08** (2009.01)

CPC (source: EP)  
**H04W 4/44** (2018.02); **H04W 74/0808** (2013.01); **H04W 4/021** (2013.01); **H04W 72/51** (2023.01)

Citation (search report)  
• [I] US 2018242190 A1 20180823 - KHORYAEV ALEXEY [RU], et al  
• [A] US 2018103441 A1 20180412 - LIM SUHWAN [KR], et al  
• [A] US 8908620 B2 20141209 - KIM JUN-WOO [KR], et al  
• [A] QUALCOMM INCORPORATED: "Discussion on Coexistence with CEN DSRC Requirements in Region 1", vol. RAN WG4, no. Ljubljana, Slovenia; 20161010 - 20161014, 19 October 2016 (2016-10-19), XP051164048, Retrieved from the Internet <URL:http://www.3gpp.org/ftp/tsg\_ran/WG4\_Radio/TSGR4\_77/Docs/> [retrieved on 20161019]  
• [A] "Broadband Radio Access Networks (BRAN); 5 GHz high performance RLAN; Mitigation techniques to enable sharing between RLANs and Road Tolling and Intelligent Transport Systems in the 5 725 MHz to 5 925 MHz band", vol. BRAN, no. V1.1.1, 17 August 2017 (2017-08-17), pages 1 - 94, XP014301500, Retrieved from the Internet <URL:http://www.etsi.org/deliver/etsi\_tr/103300\_103399/103319/01.01.01\_60/tr\_103319v010101p.pdf> [retrieved on 20170817]  
• See also references of WO 2020139854A2

Designated contracting state (EPC)  
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

DOCDB simple family (publication)  
**WO 2020139854 A2 20200702**; **WO 2020139854 A3 20200806**; EP 3903513 A2 20211103; EP 3903513 A4 20221207

DOCDB simple family (application)  
**US 2019068404 W 20191223**; EP 19902723 A 20191223