



(12) **CORRECTED EUROPEAN PATENT SPECIFICATION**

(15) Correction information:  
**Corrected version no 1 (W1 B1)**  
**Corrections, see**  
**Bibliography INID code(s) 72**

(51) Int Cl.:  
**H04W 72/04** <sup>(2009.01)</sup> **H04W 28/04** <sup>(2009.01)</sup>

(86) International application number:  
**PCT/JP2013/003733**

(48) Corrigendum issued on:  
**12.04.2017 Bulletin 2017/15**

(87) International publication number:  
**WO 2013/187072 (19.12.2013 Gazette 2013/51)**

(45) Date of publication and mention  
of the grant of the patent:  
**01.02.2017 Bulletin 2017/05**

(21) Application number: **13804949.9**

(22) Date of filing: **13.06.2013**

(54) **DEVICES FOR SENDING AND RECEIVING FEEDBACK INFORMATION**

VORRICHTUNGEN ZUM SENDEN UND EMPFANGEN VON FEEDBACK-INFORMATIONEN  
DISPOSITIFS POUR ENVOYER ET RECEVOIR DES INFORMATIONS DE RÉTROACTION

(84) Designated Contracting States:  
**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**

(30) Priority: **14.06.2012 US 201261659892 P**  
**28.09.2012 US 201213631433**

(43) Date of publication of application:  
**22.04.2015 Bulletin 2015/17**

(73) Proprietor: **Sharp Kabushiki Kaisha**  
**Osaka-shi, Osaka 545-8522 (JP)**

(72) Inventors:  
• **YIN, Zhanping**  
**Camas, Washington 98607 (US)**  
• **YAMADA, Shohei**  
**Camas, Washington 98607 (US)**

(74) Representative: **Müller Hoffmann & Partner**  
**Patentanwälte mbB**  
**St.-Martin-Strasse 58**  
**81541 München (DE)**

(56) References cited:  
**WO-A2-2012/070839**

- **3GPP: "3GPP TS 36.213 V10.5.0 (2012-03) 3rd Generation Partnership Project; Technical Specification Group Radio Access Network; Evolved Universal Terrestrial Radio Access (E-UTRA); Physical layer procedures (Release 10)", 3RD GENERATION PARTNERSHIP PROJECT (3GPP); TECHNICALSPECIFICATION (TS), , no. 3GPP TS 36.213 V10.5.0 1 March 2012 (2012-03-01), pages 1-125, XP008175542, Retrieved from the Internet: URL:http://www.3gpp.org/DynaReport/36213.htm**
- **CATT ERICSSON AND ST-ERICSSON: 'Way forward on HARQ-ACK transmission for TDD inter-band CA' 3GPP TSG RAN WG1 MEETING #69, RL-112966 21 May 2012, XP050601200**
- **3RD GENERATION PARTNERSHIP PROJECT: 'Technical Specification Group Radio Access Network; Evolved Universal Terrestrial Radio Access (E-UTRA); Physical layer procedures (Release 10)' 3GPP TS 36.213, V10.5.0 March 2012, pages 68-74 - 106, XP008175542**
- **AD-HOC SESSION CHAIRMAN (SAMSUNG): 'Summary of PUCCH TxD and CA TDD Session' 3GPP TSG RAN WG1 MEETING #69, RL-122995 21 May 2012, XP050601222**

Note: Within nine months of the publication of the mention of the grant of the European patent in the European Patent Bulletin, any person may give notice to the European Patent Office of opposition to that patent, in accordance with the Implementing Regulations. Notice of opposition shall not be deemed to have been filed until the opposition fee has been paid. (Art. 99(1) European Patent Convention).

- **SHARP: 'Remaining issues for HARQ-ACK reporting on PUSCH adjusted by UL grant for TDD inter-band CA' 3GPP TSG-RAN WG1 #70, RL-123258 13 August 2012, XP050661148**