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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/245,173	04/04/2014	Wanshi CHEN	132535US	5007
15055	7590	01/06/2020	EXAMINER	
Patterson & Sheridan, L.L.P. Qualcomm 24 Greenway Plaza, Suite 1600 Houston, TX 77046			SMITH, MARCUS	
			ART UNIT	PAPER NUMBER
			2467	
			NOTIFICATION DATE	DELIVERY MODE
			01/06/2020	ELECTRONIC

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte WANSHI CHEN, PETER GAAL, and HAO XU

Appeal 2019-000732
Application 14/245,173
Technology Center 2400

Before, JUSTIN BUSCH, JASON J. CHUNG, and JAMES W. DEJMEK,
Administrative Patent Judges.

BUSCH, *Administrative Patent Judge.*

DECISION ON APPEAL

Pursuant to 35 U.S.C. § 134(a), Appellant¹ appeals from the Examiner's decision to reject claims 1–6, 8, 10–14, 16–22, 24–28, and 30, which constitute all the claims pending in this Application. We have jurisdiction under 35 U.S.C. § 6(b).

We REVERSE.

¹ We use the word Appellant to refer to “applicant” as defined in 37 C.F.R. § 1.42(a) (2017). Appellant identifies the real party in interest as QUALCOMM Incorporated. Appeal Br. 3.

CLAIMED SUBJECT MATTER

Appellant's "disclosure relates generally to wireless communication, and more particularly, to methods and apparatus for employing multiple subframe configurations for HARQ [(hybrid automatic repeat request)] operations." Spec. ¶ 2. According to the Specification, the invention addresses inefficiency and other issues with using a single reference downlink/uplink (DL/UL) subframe configuration in conventional LTE-A (Long Term Evolution-Advanced) systems by using multiple reference UL/DL configurations. Spec. ¶¶ 65–68, Abstract. The claimed invention identifies a first configuration for HARQ operations uplink transmissions (sent/received in a System Information Block Type 1 (SIB1) broadcast signal) and a second configuration for HARQ operations downlink transmissions, determining transmission of feedback information based on the second configuration, and communicating based on the configurations.

Claims 1, 11, 18, and 25 are independent claims. Claim 1 is reproduced below:

1. A method for wireless communications by a user equipment (UE), comprising:
 - identifying a first reference subframe configuration to use as a reference for hybrid automatic repeat request (HARQ) operations for transmissions on an uplink;
 - identifying a second reference subframe configuration to use as a reference for HARQ operations for transmissions on a downlink;
 - determining transmission of at least one of a periodic channel state information feedback and a periodic scheduling request based on the second reference subframe configuration;
 - and
 - communicating with at least a node on the uplink and the downlink based on the first and second reference subframe configurations,

wherein at least the first reference subframe configuration for transmissions on the uplink is received via broadcast signaling including a System Information Block (SIB) Type 1.

REJECTION

Claims 1–6, 8, 10–14, 16–22, 24–28, and 30 stand rejected under 35 U.S.C. § 103 as obvious in view of Yin (US 2014/0301255 A1; Oct. 9, 2014) and Wang (US 2013/0039231 A1; Feb. 14, 2013). Final Act. 4–12.

ANALYSIS

The Examiner finds a combination of Yin and Wang teaches or suggests every limitation recited in independent claims 1, 11, 18, and 25. Final Act. 4–10. More specifically, the Examiner finds Yin teaches or suggests everything in the independent claims except the determining transmission step. Final Act. 4–10. The Examiner finds a combination of Ying and Wang teaches or suggests the determining transmission step. Final Act. 6–7, 9–10. More specifically, the Examiner finds Yin teaches a secondary cell's (SCell) configuration information includes physical uplink control channel (PUCCH) and physical uplink shared channel (PUSCH) configuration fields and that "physical configuration information includes HARQ-ACK feedback information." Final Act. 6–7 (citing Yin ¶¶ 183, 249), 9–10 (citing the same). The Examiner finds Wang, similar to Yin, teaches configuring user equipment (UE) to communicate using different cells having different TDD UL-DL (time division duplex uplink-downlink) configurations. Final Act. 6 (citing Wang ¶ 54, Fig. 7), 9 (citing same). The Examiner further finds Wang teaches transmitting uplink control information (on a PUCCH), which can include ACK/NACK (acknowledgement/negative-acknowledgement) feedback; channel state

information (CSI); and a scheduling request (SR), on a secondary cell. Final Act. 6–7 (citing Wang ¶¶ 34, 41–45, Fig. 6), 9 (citing same). The Examiner concludes it would have been obvious to a person of ordinary skill in the art to have Yin’s PUCCH configuration information include the particular configuration information (i.e., periodic CSI and scheduling request) taught by Wang “in order to improve network efficiency for configuring uplink control resources for TDD cells/carriers.” Ans. 16; Final Act. 7 (citing Wang ¶¶ 44–45).

Appellant acknowledges Wang teaches transmitting uplink control information, such as CQI and SR, but contends Wang fails to teach “determining transmission of at least one of a periodic channel state information feedback and a periodic scheduling request based on the second reference subframe configuration” (i.e., the configuration used as a reference for transmissions on a downlink), as recited in independent claim 1 and commensurately recited in independent claims 11, 18, and 24. Appeal Br. 9. Appellant asserts Yin teaches dynamic TDD UL-DL configurations that use the *DL*-reference configuration for *downlink* HARQ (e.g., physical downlink shared channel (PDSCH) HARQ associations) and *UL*-reference configurations for *uplink* HARQ (e.g., PUSCH HARQ associations). Reply Br. 4. Appellant argues Wang does not teach or suggest dynamic TDD UL-DL configurations and the combination of Wang and Yin fails to teach the disputed determining transmission limitation—namely, determining transmission of uplink feedback control information *based on the second reference* subframe configuration, which is the configuration used as a reference for HARQ operations for downlink transmissions. Appeal Br. 10–11; Reply Br. 3–4; *see also* Appeal Br. 11 (arguing that, even

accepting Yin teaches a secondary TDD UL-DL configuration including PUCCH configuration, the combination of Yin and Wang still fails to teach determining transmission of CQI and SR based on the reference configuration used for downlink transmissions).

We agree with Appellant that the Examiner has not explained sufficiently how the proposed combination of Yin and Wang teaches or suggests the particular relationship claimed in the determining transmission limitation recited in independent claim 1 and commensurately recited in independent claims 11, 18, and 25. Specifically, even accepting the Examiner's findings regarding Yin's and Wang's teachings, the Examiner's proposed combination results in determining transmission of CQI and SR based on the reference subframe configuration used for *uplink transmissions*, whereas the claim recites the determination is based on the reference subframe configuration used for *downlink transmissions*. The Examiner reproduces various portions from Yin and Wang in support of the above findings, Ans. 13–18, but the Examiner fails to explain sufficiently how the combined disclosures from Yin and Wang would have taught or suggested to a person of ordinary skill in the art the recited step of determining transmissions of CQI and SR based on the configuration for downlink transmissions as recited in claim 1 and commensurately recited in claims 11, 18, and 25.

Accordingly, we are constrained by this record to reverse the Examiner's rejection of independent claims 1, 11, 18, and 25 under 35 U.S.C. § 103 as obvious in view of Yin and Wang. Claims 2–6, 8, 10, 12–14, 16, 17, 19–22, 24, 26–28, and 30 ultimately depend from one of claims 1, 11, 18, and 25, and incorporate the limitations of the respective

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independent claim. Therefore, for the same reasons, we also reverse the Examiner's rejection of dependent claims 2-6, 8, 10, 12-14, 16, 17, 19-22, 24, 26-28, and 30 under 35 U.S.C. § 103 as obvious in view of Yin and Wang.

CONCLUSION

The Examiner's rejection of claims 1-6, 8, 10-14, 16-22, 24-28, and 30 under 35 U.S.C. § 103 is reversed.

DECISION SUMMARY

In summary:

Claims Rejected	35 U.S.C. §	References	Affirmed	Reversed
1-6, 8, 10-14, 16-22, 24-28, 30	103	Yin, Wang		1-6, 8, 10-14, 16-22, 24-28, 30

REVERSED