

US 20200015200A1

## (19) United States (12) Patent Application Publication (10) Pub. No.: US 2020/0015200 A1 VILAIPORNSAWAI et al.

### Jan. 9, 2020 (43) **Pub. Date:**

### (54) METHOD AND SYSTEM FOR ENHANCING DATA CHANNEL RELIABILITY USING **MULTIPLE TRANSMIT RECEIVE POINTS**

- (71) Applicant: Huawei Technologies Co., Ltd., Shenzhen (CN)
- (72) Inventors: USA VILAIPORNSAWAI, NEPEAN (CA); MOHAMMADHADI BALIGH, OTTAWA (CA); YONGXIA LYU, OTTAWA (CA)
- (21) Appl. No.: 16/028,204
- (22) Filed: Jul. 5, 2018

### **Publication Classification**

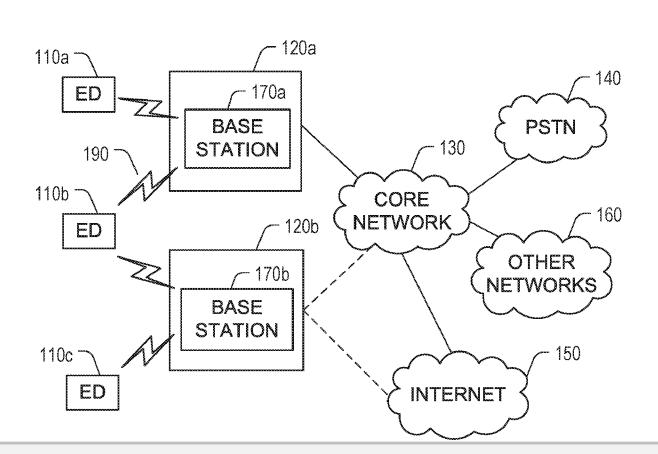
(51) Int. Cl. H04W 72/04 (2006.01)H04L 5/00 (2006.01)

### (52) U.S. Cl.

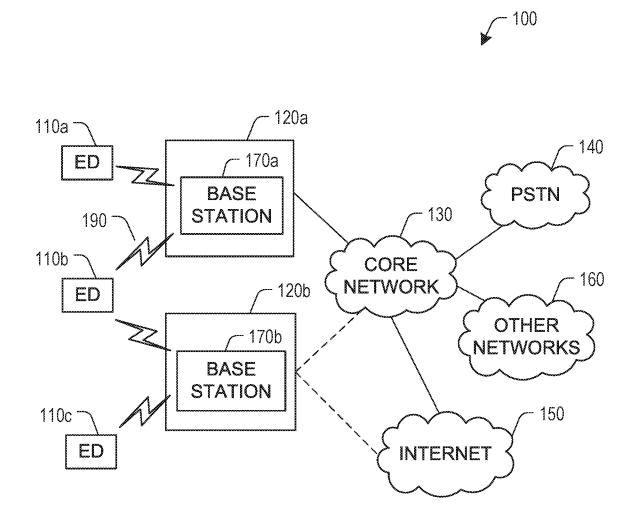
CPC ...... H04W 72/042 (2013.01); H04L 5/0048 (2013.01)

#### ABSTRACT (57)

Devices and methods are provided for receiving a first indication and a second indication, the first indication associated with a first set of transmission parameter information for a first repetition of data received in a Physical Downlink Shared Channel (PDSCH) and the second indication associated with a second set of transmission parameter information for a second repetition of data received in the PDSCH. Each set of transmission parameter information corresponds to a Quasi-Co-Location (QCL) information for the respective repetition of data. In addition, the method involves receiving a first PDSCH repetition and a second PDSCH repetition. A channel estimate can then be performed for the first PDSCH repetition based on the QCL information for the first PDSCH repetition and a channel estimate for the second PDSCH repetition based on the QCL information for the second PDSCH repetition.







## **FIG. 1**

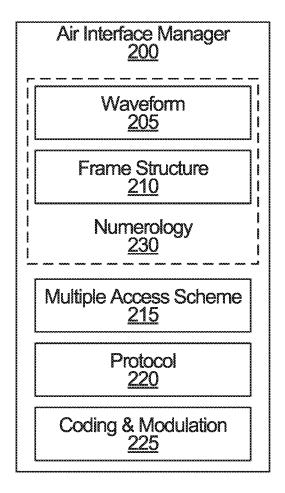
OCKET LARM Find authenticated court documents without watermarks at <u>docketalarm.com</u>.

Α

DOCKET

Δ

Α



**FIG. 2** 

**R M** Find authenticated court documents without watermarks at <u>docketalarm.com</u>.

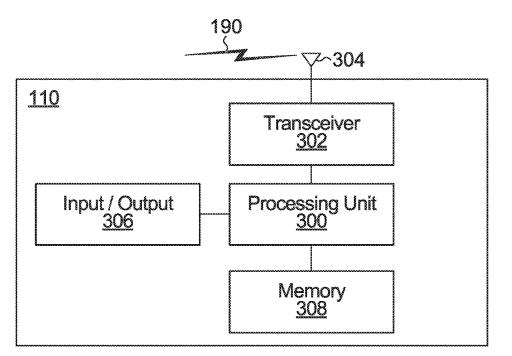


FIG. 3A

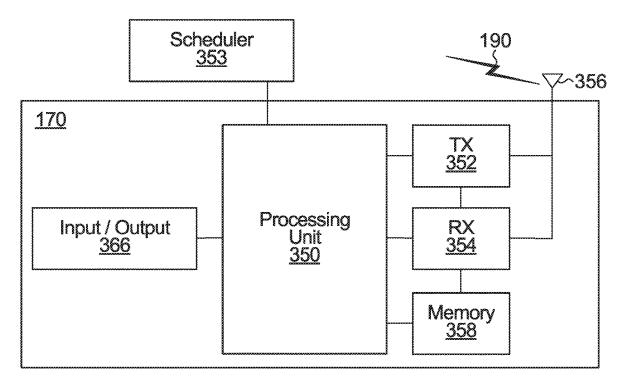


FIG. 3B

DOCKET

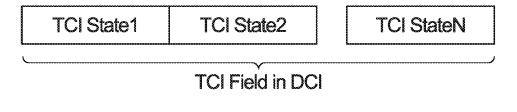
Α

R M

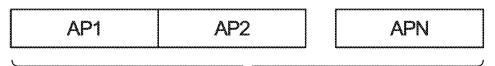
Find authenticated court documents without watermarks at docketalarm.com.

Α

Δ



# **FIG. 4**



Antenna Port Field in DCI

FIG. 5

DOCKET RM Find authenticated court documents without watermarks at docketalarm.com.

# DOCKET A L A R M



# Explore Litigation Insights

Docket Alarm provides insights to develop a more informed litigation strategy and the peace of mind of knowing you're on top of things.

## **Real-Time Litigation Alerts**



Keep your litigation team up-to-date with **real-time alerts** and advanced team management tools built for the enterprise, all while greatly reducing PACER spend.

Our comprehensive service means we can handle Federal, State, and Administrative courts across the country.

## **Advanced Docket Research**



With over 230 million records, Docket Alarm's cloud-native docket research platform finds what other services can't. Coverage includes Federal, State, plus PTAB, TTAB, ITC and NLRB decisions, all in one place.

Identify arguments that have been successful in the past with full text, pinpoint searching. Link to case law cited within any court document via Fastcase.

## **Analytics At Your Fingertips**



Learn what happened the last time a particular judge, opposing counsel or company faced cases similar to yours.

Advanced out-of-the-box PTAB and TTAB analytics are always at your fingertips.

## API

Docket Alarm offers a powerful API (application programming interface) to developers that want to integrate case filings into their apps.

## LAW FIRMS

Build custom dashboards for your attorneys and clients with live data direct from the court.

Automate many repetitive legal tasks like conflict checks, document management, and marketing.

## FINANCIAL INSTITUTIONS

Litigation and bankruptcy checks for companies and debtors.

## E-DISCOVERY AND LEGAL VENDORS

Sync your system to PACER to automate legal marketing.