



(19) **United States**

(12) **Patent Application Publication**
Deenoo et al.

(10) **Pub. No.: US 2019/0182884 A1**

(43) **Pub. Date: Jun. 13, 2019**

(54) **CONNECTIVITY SUPERVISION AND RECOVERY**

(71) Applicant: **IDAC Holdings, Inc.**, Wilmington, DE (US)

(72) Inventors: **Yugeswar Deenoo**, Chalfont, PA (US);
Ping Hsuan Tan, Montreal (CA);
Ghyslain Pelletier, Montreal (CA)

(21) Appl. No.: **16/324,481**

(22) PCT Filed: **Aug. 10, 2017**

(86) PCT No.: **PCT/US2017/046335**

§ 371 (c)(1),

(2) Date: **Feb. 8, 2019**

Related U.S. Application Data

(60) Provisional application No. 62/373,071, filed on Aug. 10, 2016.

Publication Classification

(51) **Int. Cl.**
H04W 76/18 (2006.01)
H04W 76/19 (2006.01)
H04W 16/28 (2006.01)
H04W 72/04 (2006.01)
H04L 1/00 (2006.01)
H04W 80/02 (2006.01)
H04W 24/08 (2006.01)
H04W 68/00 (2006.01)

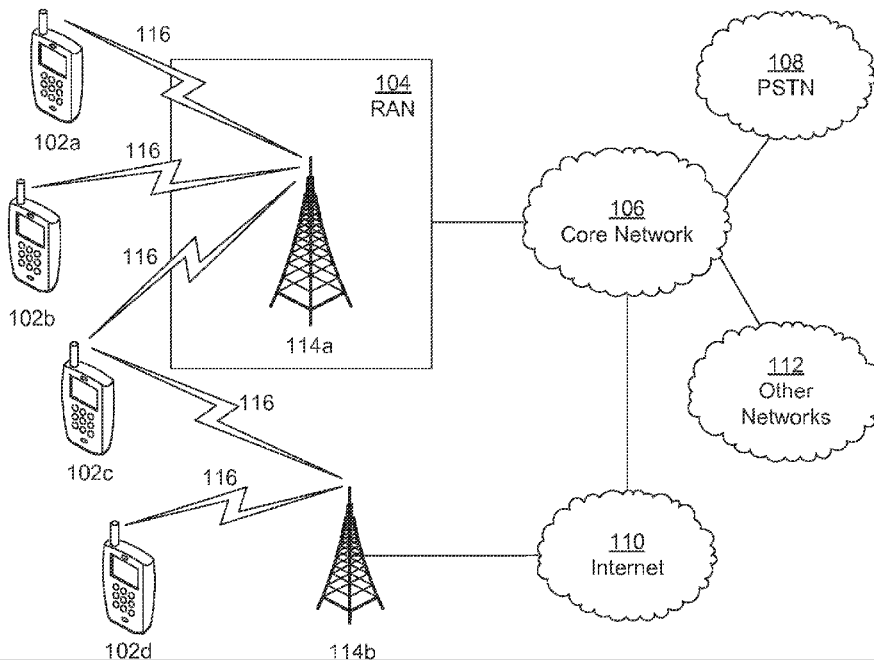
(52) **U.S. Cl.**

CPC *H04W 76/18* (2018.02); *H04W 76/19* (2018.02); *H04W 16/28* (2013.01); *H04W 68/005* (2013.01); *H04L 1/0061* (2013.01); *H04W 80/02* (2013.01); *H04W 24/08* (2013.01); *H04W 72/046* (2013.01)

(57) **ABSTRACT**

Systems, methods, and instrumentalities are disclosed for connectivity supervision and recovery. A WTRU may supervise its capability to transmit and receive data, including in the absence of a control channel (e.g. grant-less transmission). A supervision framework may permit a WTRU to supervise, for example, quality of a feedback channel, quality of reciprocal resources and/or transmission attempts. A supervision process may be a function of a control channel structure or WTRU state. A supervision process may be associated with a quality of service. A supervision process may be based on WTRU transmission for energy/resource efficient operation. Multiple Recovery procedures may be defined. A recovery procedure may be a function of a supervision process. A recovery procedure may be optimized for low latency services. Recovery procedures may involve dedicated resources for recovery, transition to light connection, grant-less resource, etc. User plane recovery may include reuse of layer2 context, data replication to companion MAC instances, etc. Control plane recovery may use RAN paging, WTRU triggered multi-connectivity, etc. A recovery procedure for a supervision process associated with a beam process may include WTRU triggering beam training/beam refinement, etc.

100



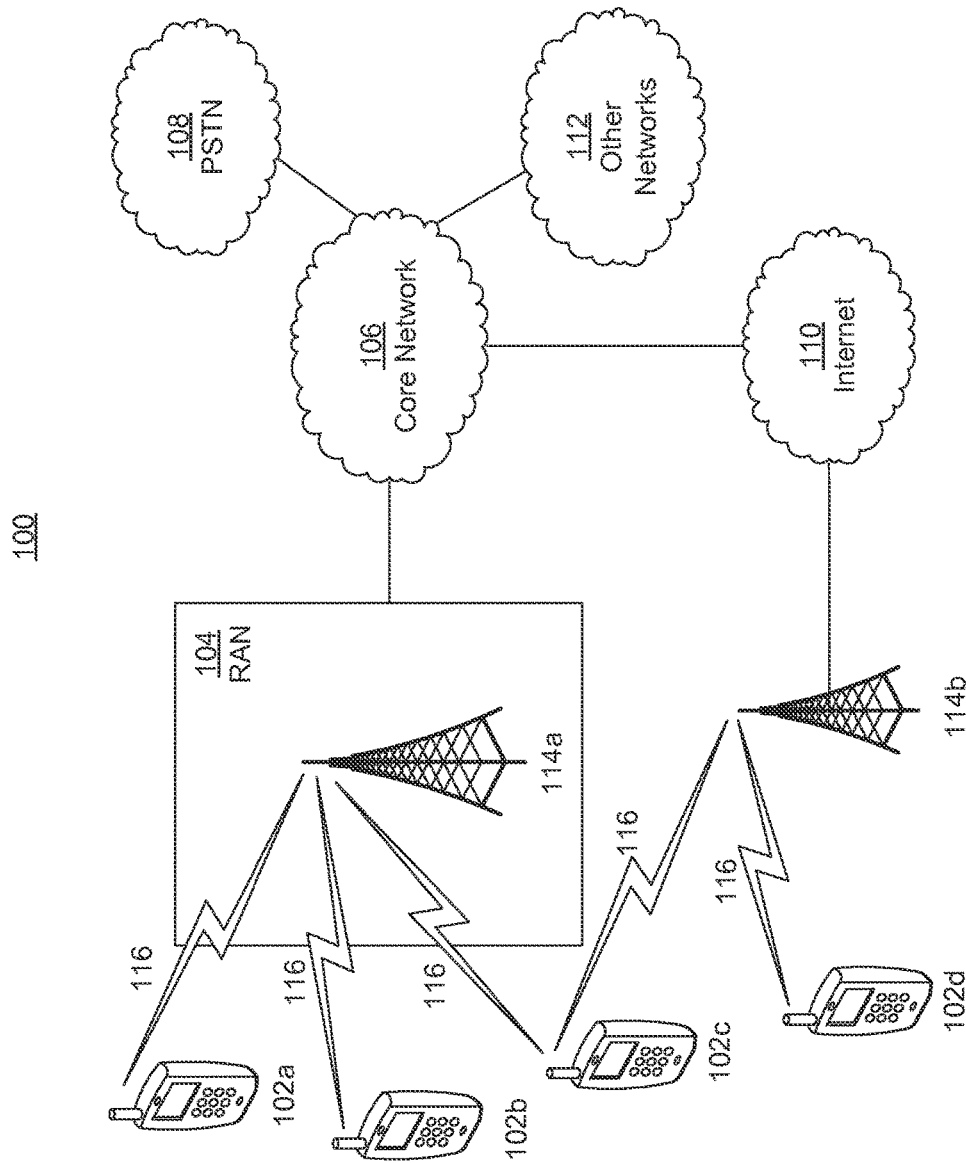


FIG. 1A

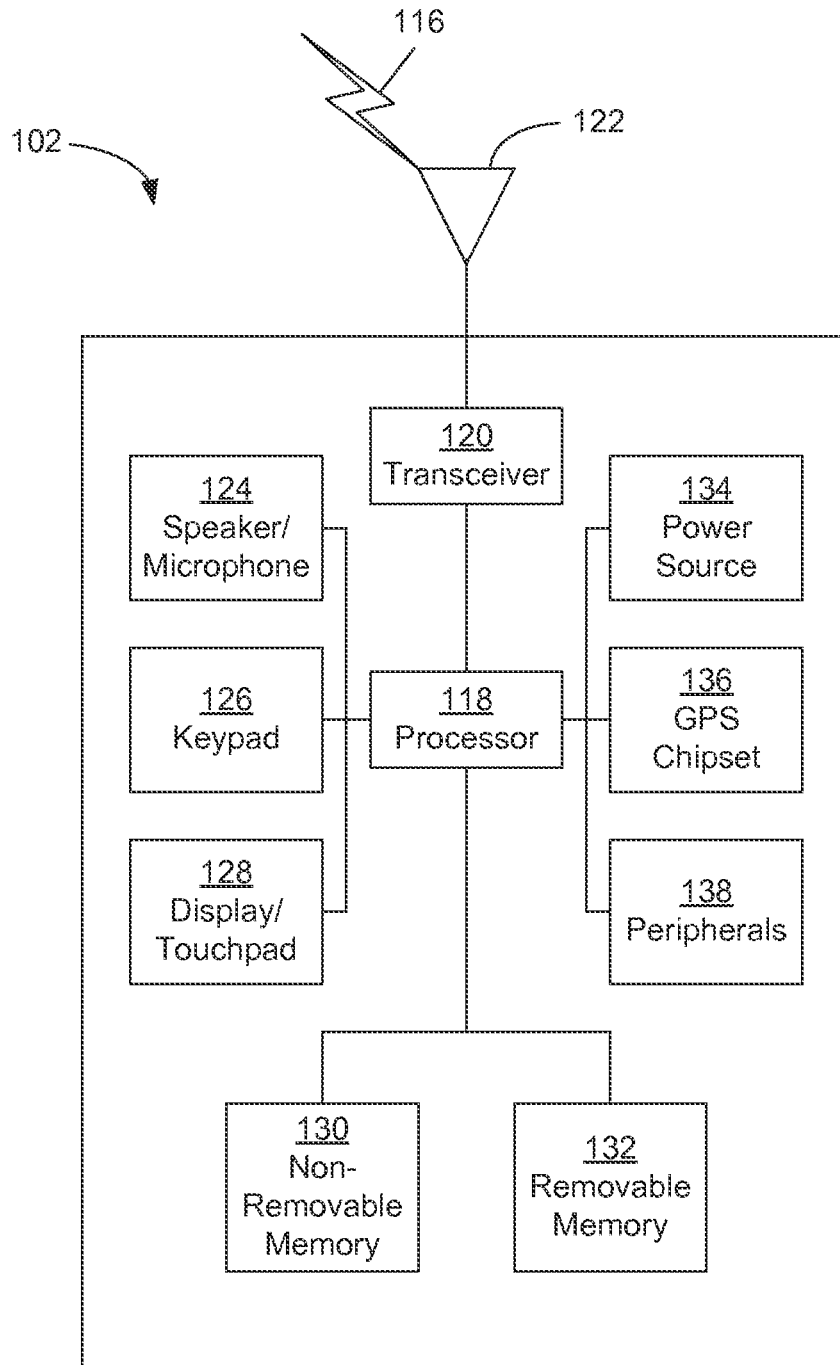


FIG. 1B

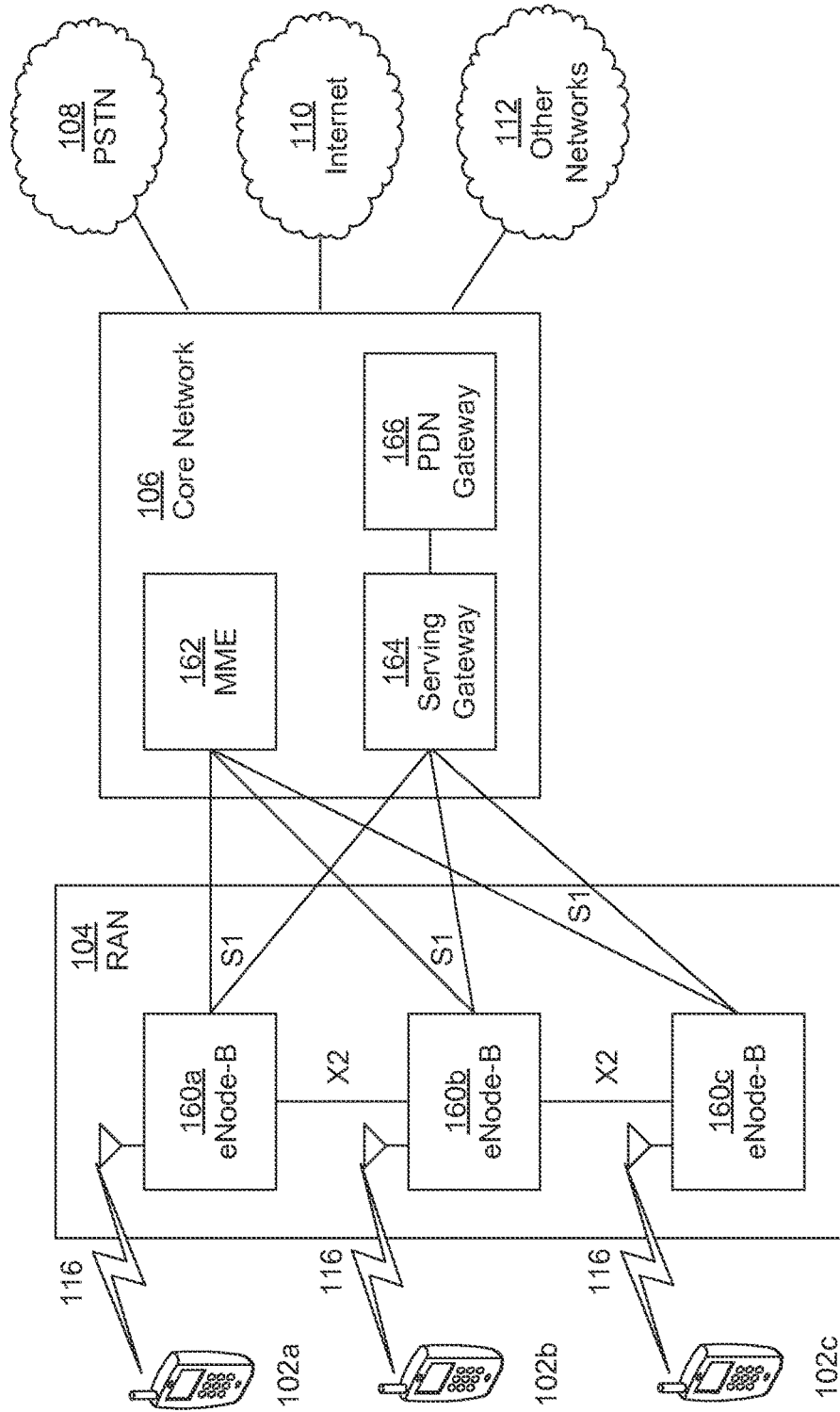


FIG. 1C

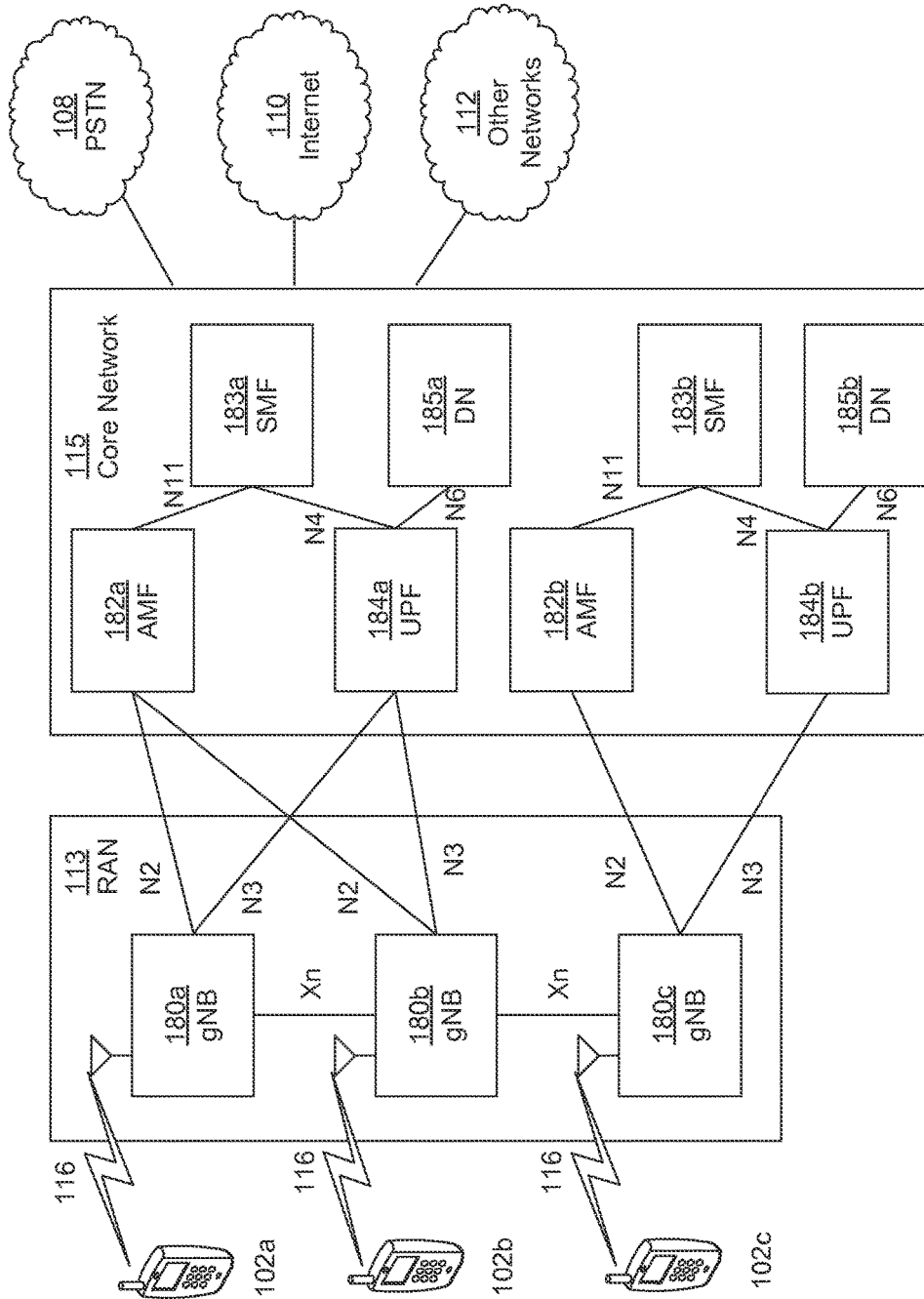


FIG. 1D

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.