



US008798658B2

(12) **United States Patent**
Persson et al.

(10) **Patent No.:** **US 8,798,658 B2**

(45) **Date of Patent:** **Aug. 5, 2014**

(54) **MINIMIZING DRIVE TEST LOGGED DATA REPORTING**

(75) Inventors: **Håkan Persson**, Solna (SE); **Henrik Enbuske**, Stockholm (SE); **Håkan Palm**, Växjö (SE)

(73) Assignee: **Telefonaktiebolaget L M Ericsson (publ)**, Stockholm (SE)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) Appl. No.: **13/001,687**

(22) PCT Filed: **Dec. 9, 2010**

(86) PCT No.: **PCT/SE2010/051355**

§ 371 (c)(1),
(2), (4) Date: **Oct. 14, 2011**

(87) PCT Pub. No.: **WO2012/047141**

PCT Pub. Date: **Apr. 12, 2012**

(65) **Prior Publication Data**

US 2013/0190031 A1 Jul. 25, 2013

Related U.S. Application Data

(60) Provisional application No. 61/389,581, filed on Oct. 4, 2010.

(51) **Int. Cl.**
H04B 7/00 (2006.01)
H04W 24/10 (2009.01)
G06F 11/34 (2006.01)

(52) **U.S. Cl.**
CPC **H04W 24/10** (2013.01); **G06F 11/34** (2013.01); **H04B 7/00** (2013.01)
USPC **455/517**; 455/500; 455/423; 455/67.11; 455/425; 455/426.1; 370/241; 370/252; 370/310; 370/328; 370/343; 714/45; 714/25; 714/1

(58) **Field of Classification Search**

CPC H04W 24/10
USPC 455/517, 500, 507, 514, 423-425, 455/67.11, 445, 412.1, 412.2, 422.1, 403, 455/522, 68, 69, 426.1, 426.2, 458, 453; 370/241, 252, 310, 328, 329, 338, 343; 714/45, 25, 1

See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

2011/0276838 A1* 11/2011 Zhou et al. 714/45

OTHER PUBLICATIONS

3GPP TS 37.320, 3rd Generation Partnership Project; Technical Specification Group Radio Access Network; Universal Terrestrial Radio Access (UTRA) and Evolved Universal Terrestrial Radio Access (E-UTRA); Radio Measurement Collection for Minimization of Drive Tests (MDT); Overall Description; Stage 2 (Release 10), V10.0.0, Dec. 2010.

3GPP TR 36.805, 3rd Generation Partnership Project; Technical Specification Group Radio Access Network; Study on Minimization of Drive-Tests in Next Generation Networks (Release 9), V9.0.0, Dec. 2009.

* cited by examiner

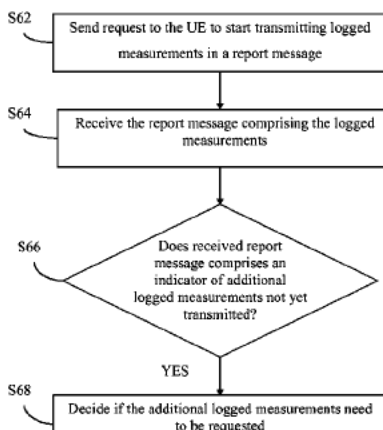
Primary Examiner — Keith Ferguson

(74) *Attorney, Agent, or Firm* — Baker Botts L.L.P.

(57) **ABSTRACT**

This disclosure pertains to a method in a network node, a method in user equipment, a network node and user equipment in a wireless communications network. More particularly, there is provided methods and platforms for network based control of report messages comprising logged measurements in a wireless communications network. In accordance with some example embodiments, a UE (30) that has stored logged data i.e. logged measurements that are bigger than a single transmission packet, i.e. report message, segments the logged measurements and sends only a portion of the logged measurements that fits into a single report message. The UE (30) also indicates to a network node (28) that additional logged measurements exist at the UE buffer (44).

30 Claims, 6 Drawing Sheets



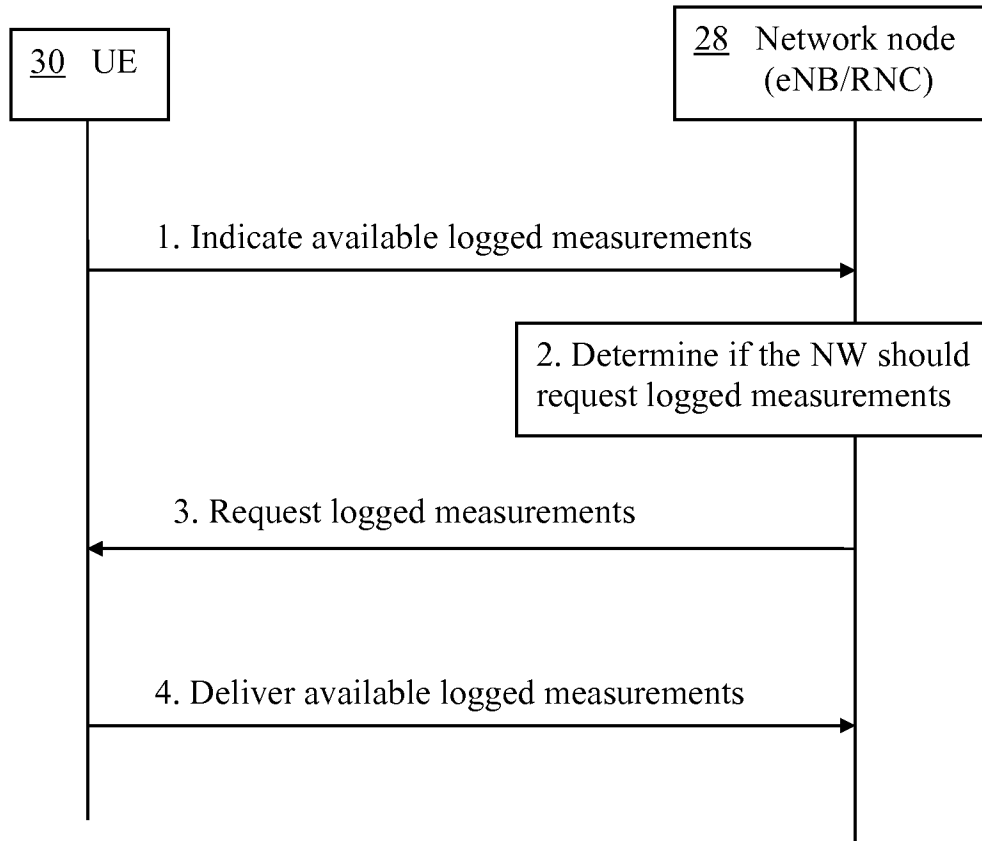


Fig. 1 (Prior art)

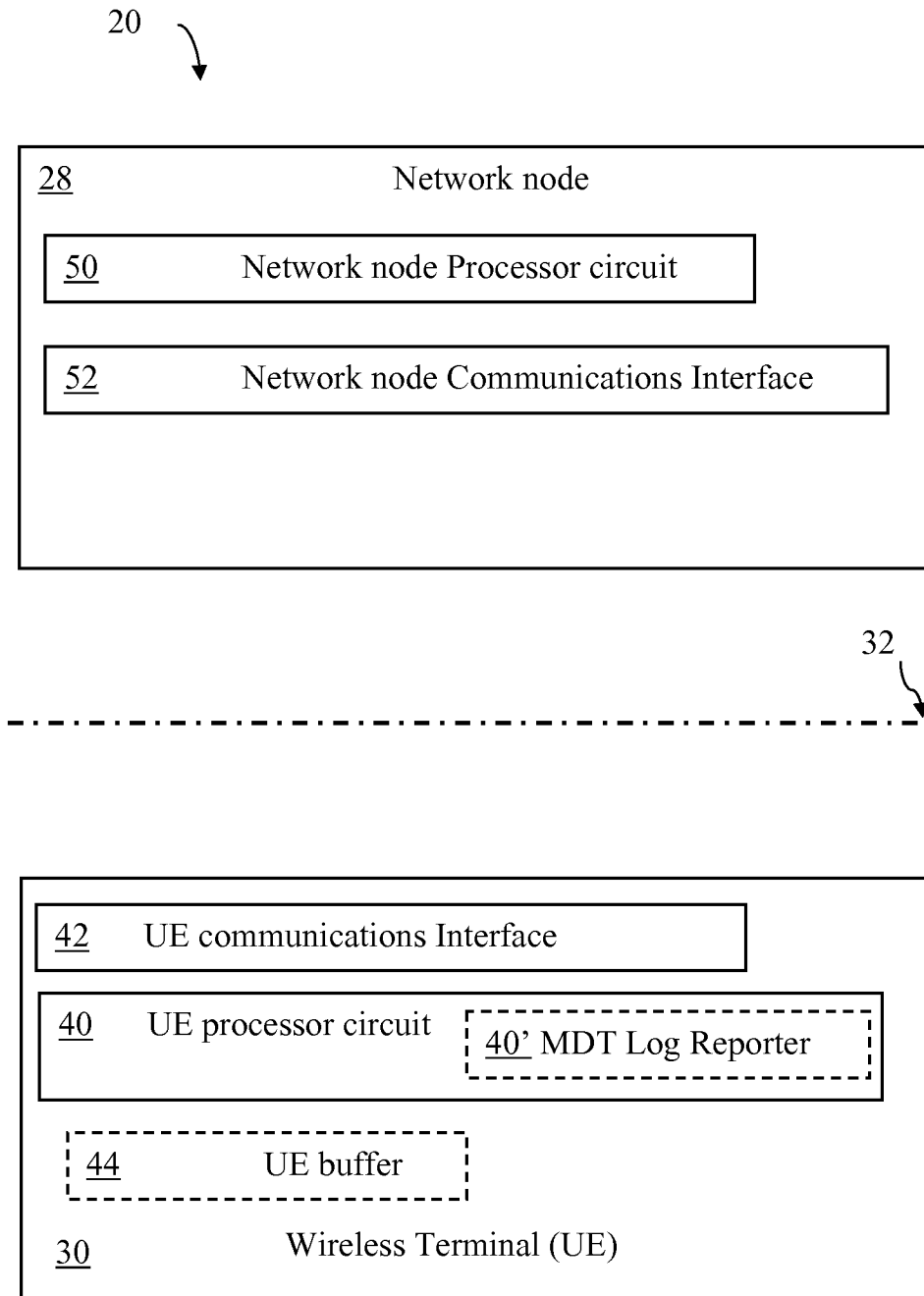


Fig. 2

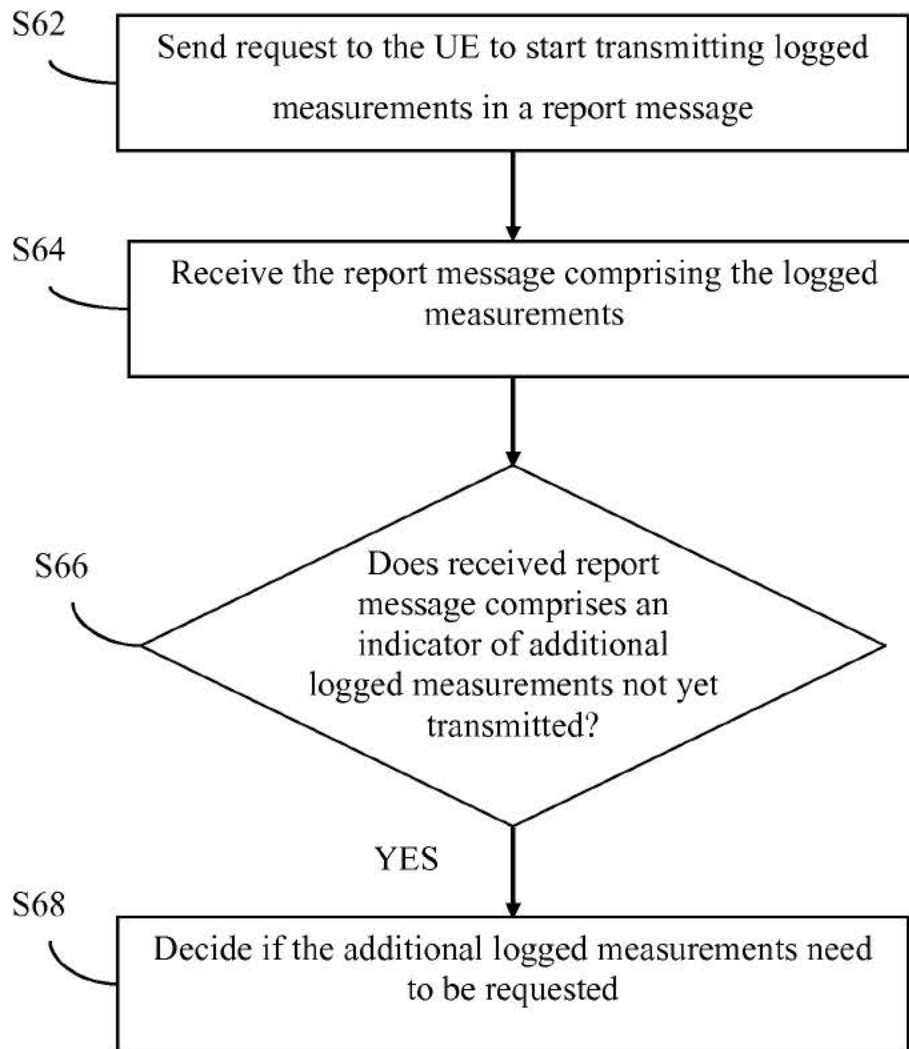


Fig. 3

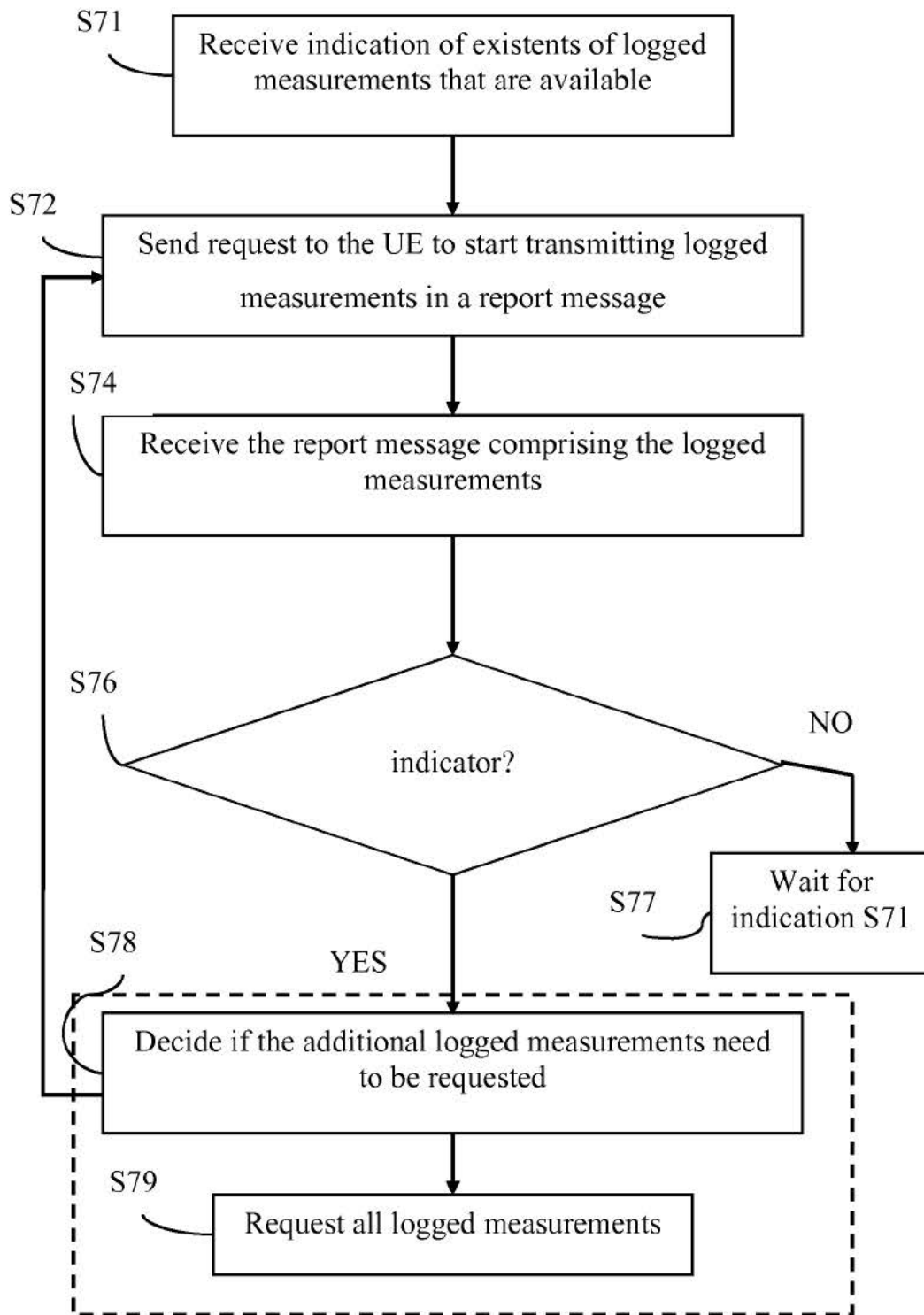


Fig. 4

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.