

United States Patent [19]

Josse et al.

[11] **Patent Number:** **6,104,929**[45] **Date of Patent:** **Aug. 15, 2000**[54] **DATA PACKET RADIO SERVICE WITH
ENHANCED MOBILITY MANAGEMENT**

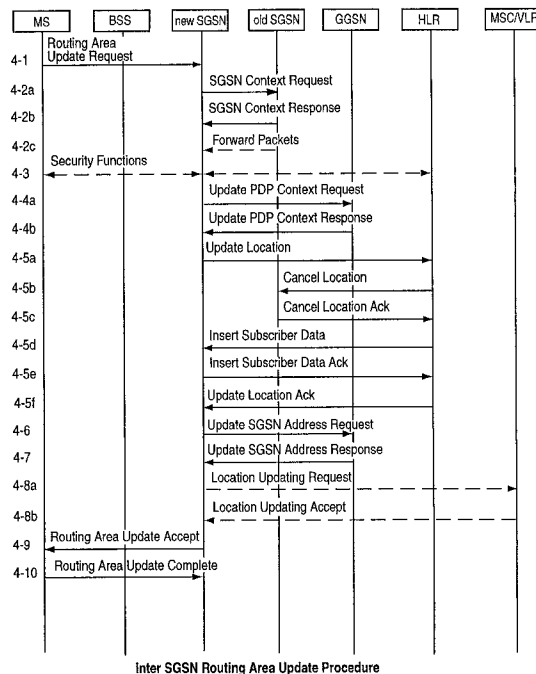
2 307 828 6/1997 United Kingdom .

[75] Inventors: **Thierry Josse**, Stockholm, Sweden;
Jose Javier Cabero Combarros;
Miguel Cobo Esteban, both of Madrid,
Spain[73] Assignee: **Telefonaktiebolaget LM Ericsson**,
Stockholm, Sweden[21] Appl. No.: **09/090,186**[22] Filed: **Jun. 4, 1998****Related U.S. Application Data**[60] Provisional application No. 60/050,306, Jun. 20, 1997, and
provisional application No. 60/050,232, Jul. 11, 1997.[51] **Int. Cl.**⁷ **H04Q 7/20**; H04B 1/38[52] **U.S. Cl.** **455/445**; 455/426; 455/560;
370/379; 370/465[58] **Field of Search** 455/426, 445,
455/560; 370/328, 329, 349, 389, 401,
465, 466; 709/230, 249; 714/748, 749,
750[56] **References Cited****U.S. PATENT DOCUMENTS**

5,729,537	3/1998	Billstrom	370/329
5,742,668	4/1998	Pepe et al.	455/415
5,793,762	8/1998	Penners et al.	370/389
5,966,378	10/1999	Hamalainen	370/348
5,987,137	11/1999	Karppanen et al.	360/28

FOREIGN PATENT DOCUMENTS196 11 947
C1 6/1997 Germany .**OTHER PUBLICATIONS**Digital Cellular Telecommunications System (Phase 2+),
General Packet Radio Service (GPRS) Service Description,
TS GSM 03.60 version 2.0.0, May 1997.Brasche et al, Analysis of Multi-Slot MAC Protocols Pro-
posed for the GSM Phase 2+ General Packet Radio Service,
1997 IEEE 47th Vehicular Technology Conference, Phoenix,
AZ, May 4-7, 1997, vol. 2, No. CONF. 47, May 4, 1997, pp.
1295-1300.*Primary Examiner*—Nguyen Vo*Assistant Examiner*—Charles N. Appiah*Attorney, Agent, or Firm*—Nixon & Vanderhye, P.C.[57] **ABSTRACT**

The address of a latest Serving GPRS Support Node (SGSN) is provided to a Gateway GPRS Support Node (GGSN) by a special Update SGSN Address Request message which is sent from the SGSN to the GGSN. For a subscriber whose subscription permits, the address of the latest SGSN node is sent in the Update SGSN Address Request message for a qualified packet data protocol (PDP) context. A qualified PDP context (1) has a static PDP address; and (2) is not activated. The Update SGSN Address Request message can be sent from the SGSN to the GGSN in either a GPRS Attach scenario or an Inter-SGSN Routing Area Update Scenario. In response to the Update SGSN Address Request message, the GGSN sends an Update SGSN Address Response message which advises whether the updating of the address for the SGSN at the GGSN has been successful.

24 Claims, 7 Drawing Sheets

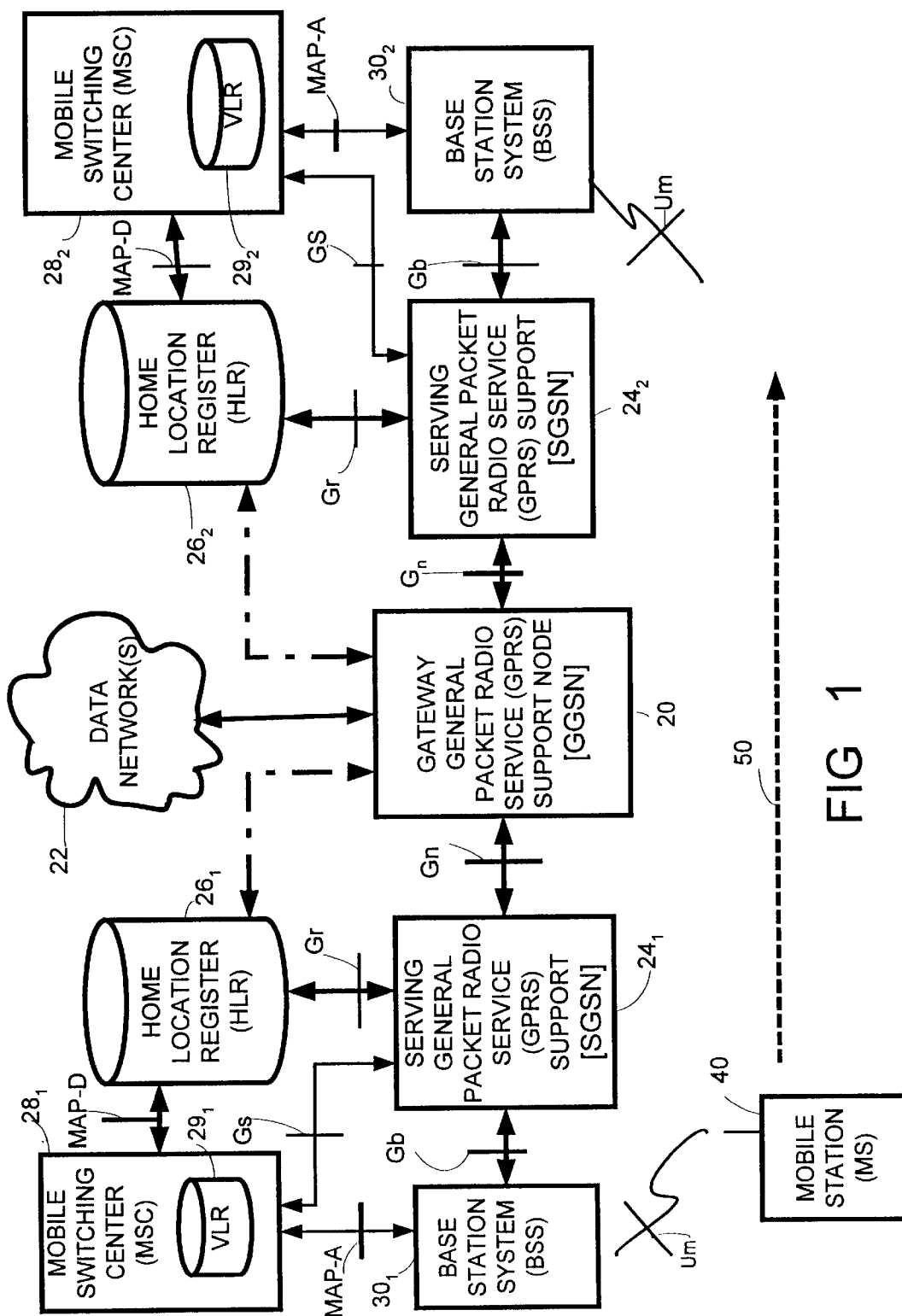


FIG 1

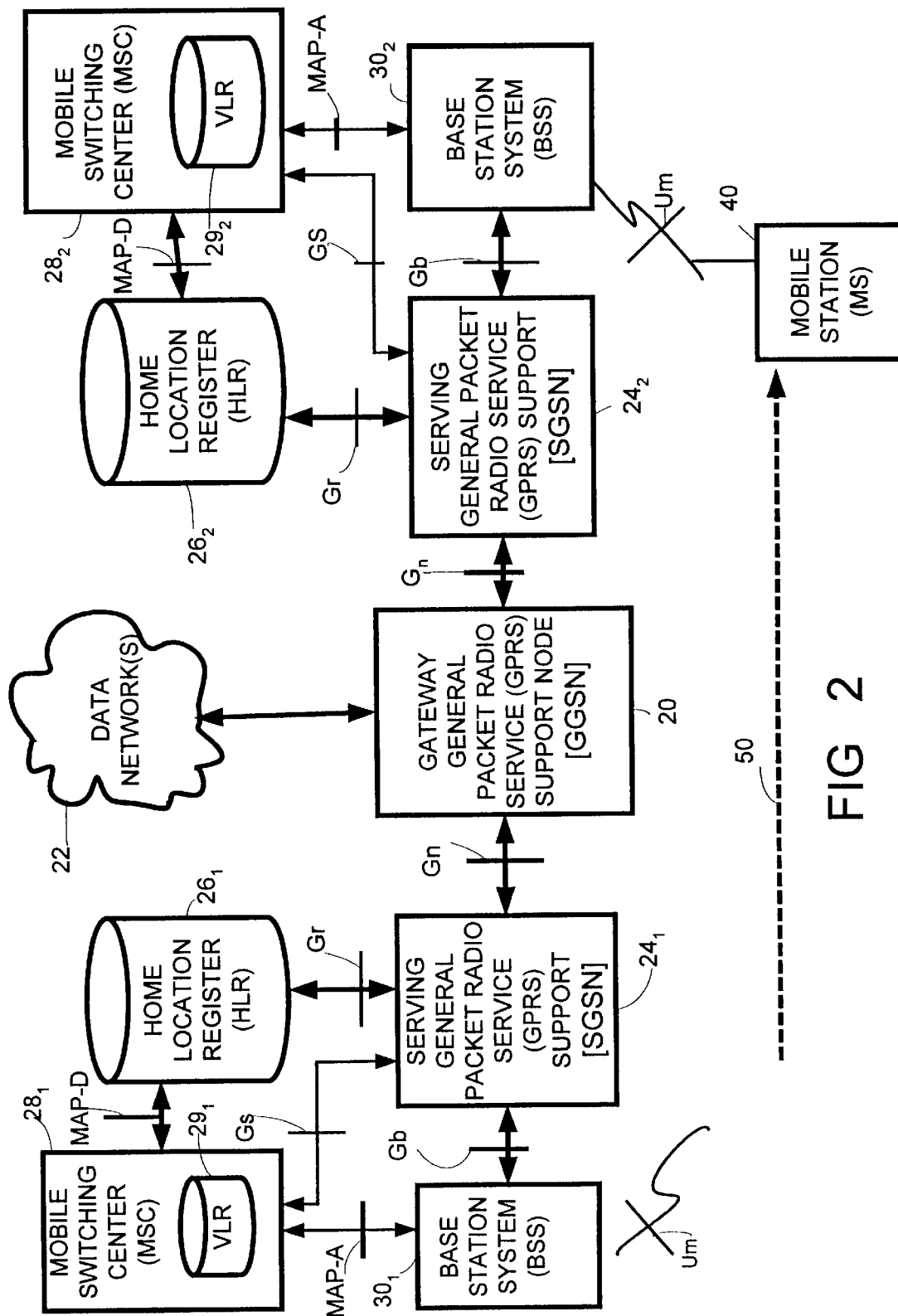


FIG 2

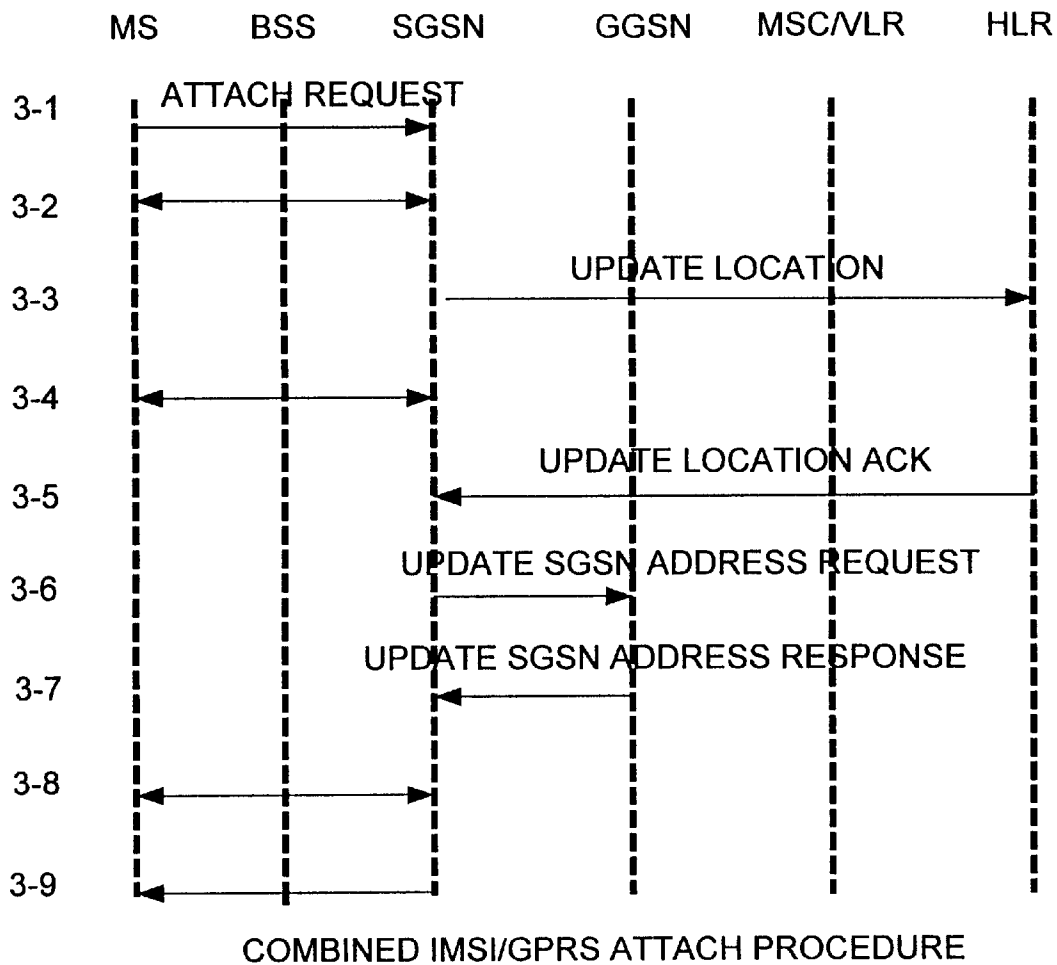


FIG 3

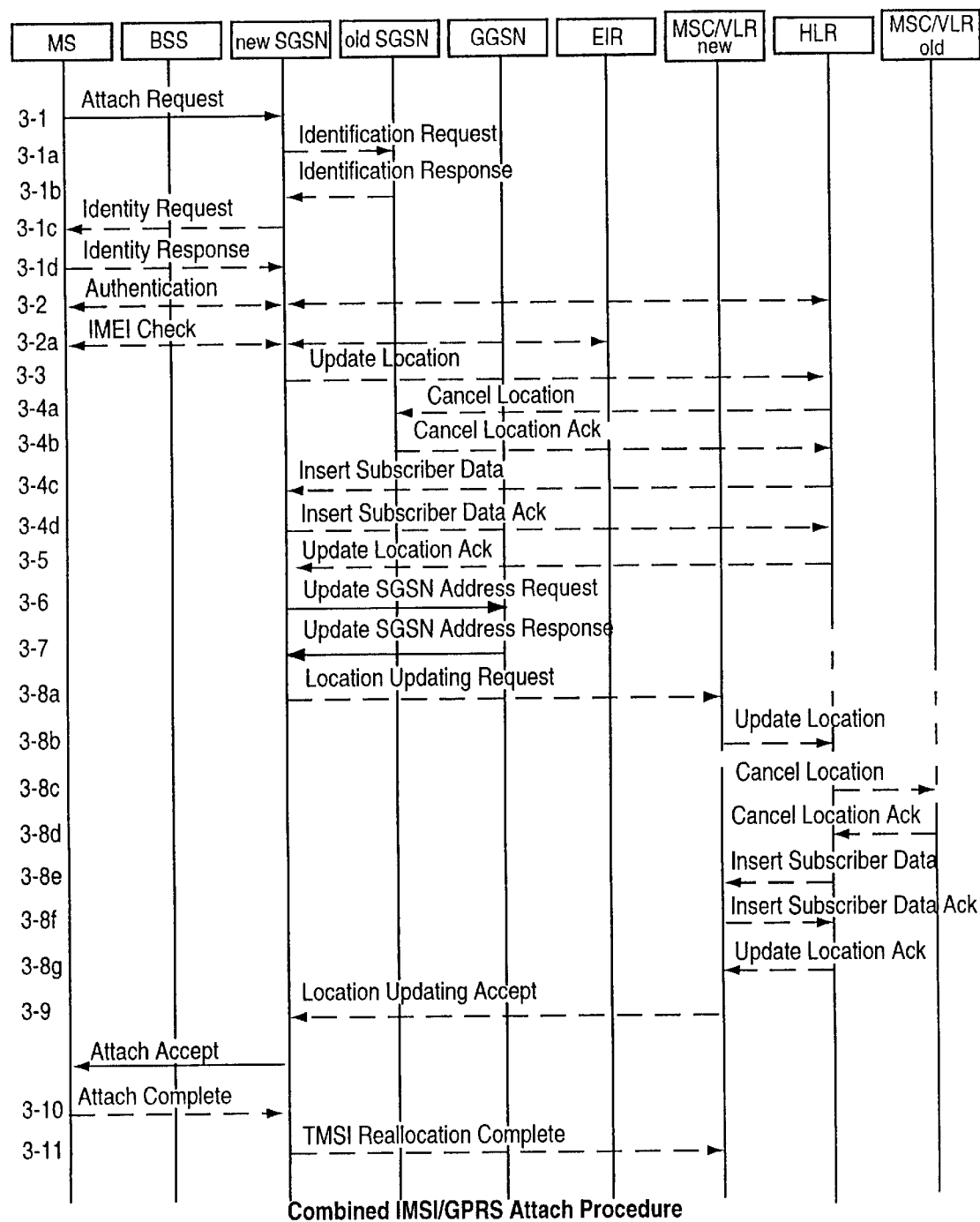


FIG 3A



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.