



US006622017B1

(12) **United States Patent**
Hoffman

(10) **Patent No.:** **US 6,622,017 B1**
(45) **Date of Patent:** **Sep. 16, 2003**

(54) **OVER-THE-AIR PROGRAMMING OF WIRELESS TERMINAL FEATURES**

(75) Inventor: **Ted L. Hoffman**, Camp Hill, PA (US)

(73) Assignee: **Cellco Parntership**, Bedminster, NJ (US)

(*) 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.: **09/556,444**

(22) Filed: **Apr. 24, 2000**

Related U.S. Application Data

(60) Provisional application No. 60/185,131, filed on Feb. 25, 2000.

(51) **Int. Cl.⁷** **H04M 3/00**

(52) **U.S. Cl.** **455/419; 455/418; 455/412**

(58) **Field of Search** 455/412-420, 455/551, 70, 517, 186.1, 352; 709/219, 328, 329

(56) **References Cited**

U.S. PATENT DOCUMENTS

5,586,338	A	12/1996	Lynch et al.	455/433
5,594,782	A	1/1997	Zicker et al.	455/417
5,603,084	A *	2/1997	Henry, Jr. et al.	455/419
5,613,204	A	3/1997	Haberman et al.	455/432
5,761,618	A	6/1998	Lynch et al.	455/419
5,790,952	A	8/1998	Seazholtz et al.	455/432
5,842,124	A	11/1998	Kenagy et al.	455/418
5,862,475	A	1/1999	Zicker et al.	455/419
5,920,821	A	7/1999	Seazholtz et al.	455/466
5,950,130	A	9/1999	Coursey	455/432

6,023,620	A *	2/2000	Hansson	455/419
6,029,064	A	2/2000	Farris et al.	455/412
6,029,065	A	2/2000	Shah	455/414
6,052,600	A *	4/2000	Fette et al.	455/419
6,138,009	A *	10/2000	Birgerson	455/419
6,144,849	A *	11/2000	Nodoushani et al.	455/419
6,275,694	B1 *	8/2001	Yoshida et al.	455/419

FOREIGN PATENT DOCUMENTS

WO	WO 97/42782	11/1997
WO	WO 98/58506	12/1998

* cited by examiner

Primary Examiner—Dwayne Best

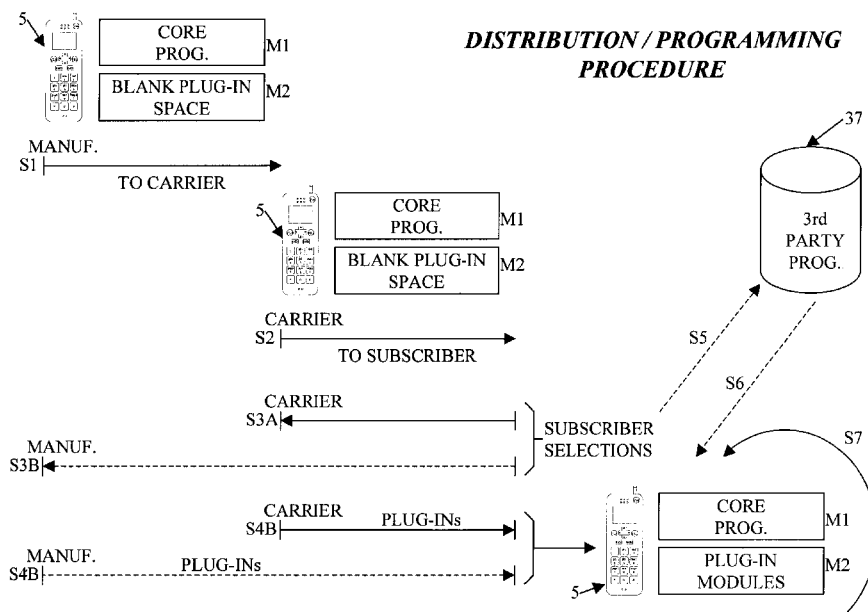
Assistant Examiner—Eliseo Ramos-Feliciano

(74) *Attorney, Agent, or Firm*—McDermott, Will & Emery

(57) **ABSTRACT**

Terminal devices for a wireless communication network are manufactured and distributed with predetermined communication capabilities and a minimal operation capability. Each unit includes a substantial memory for plug-in feature programming, which initially is empty. A terminal user selects a desired feature or set of features and contacts a service provider. The provider's equipment downloads software programming corresponding to the desired feature into the memory of the terminal device. The software takes the form of a plug-in module, written to the program interface specification of the core software of the terminal device. When loaded into memory and interfaced through the core software, the module allows the terminal device to implement the desired feature. Features can be sold in predefined packages or individually. Features can be added, upgraded or replaced at any time by downloading new feature modules into the memory.

8 Claims, 4 Drawing Sheets



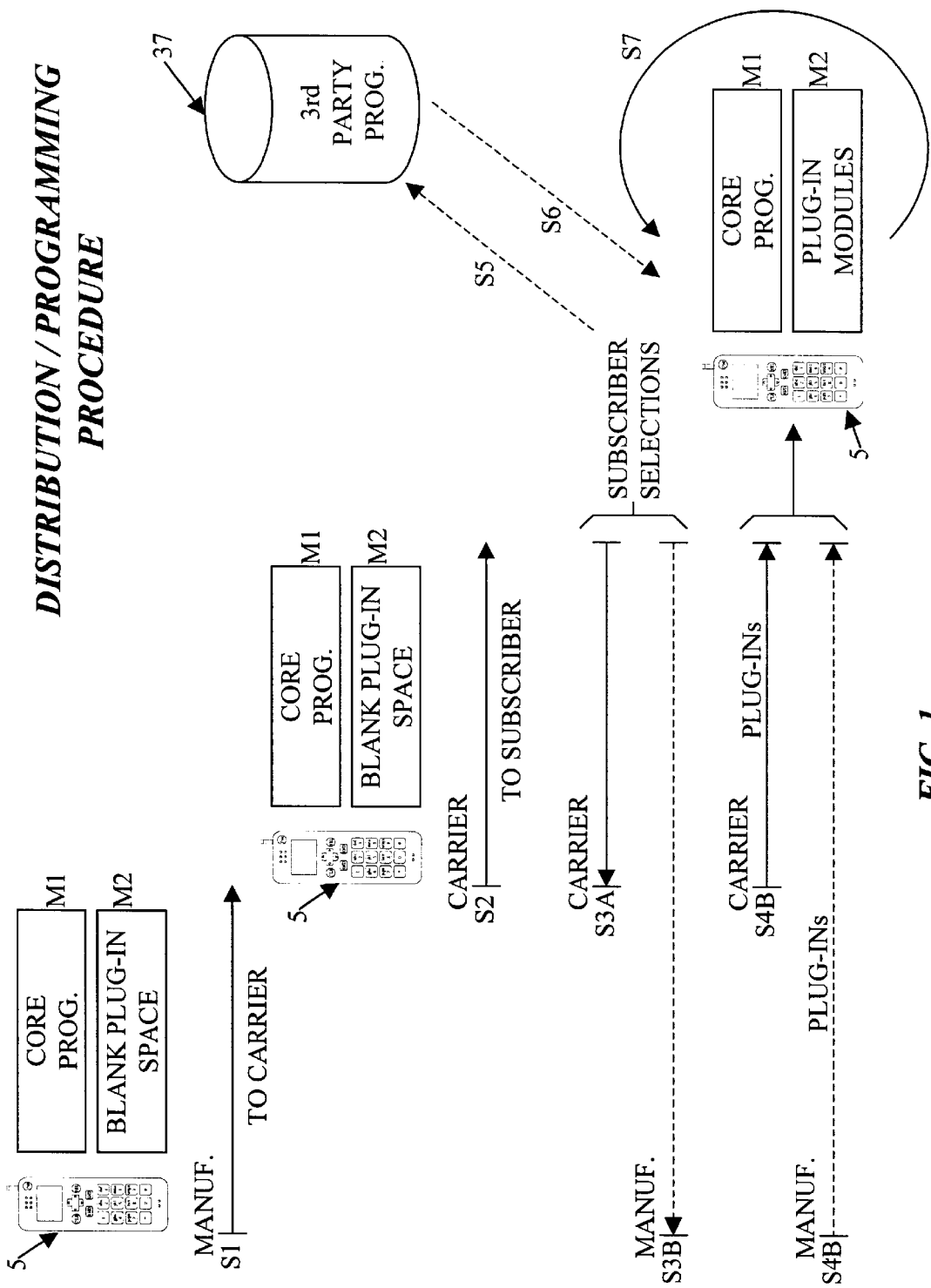


FIG. 1

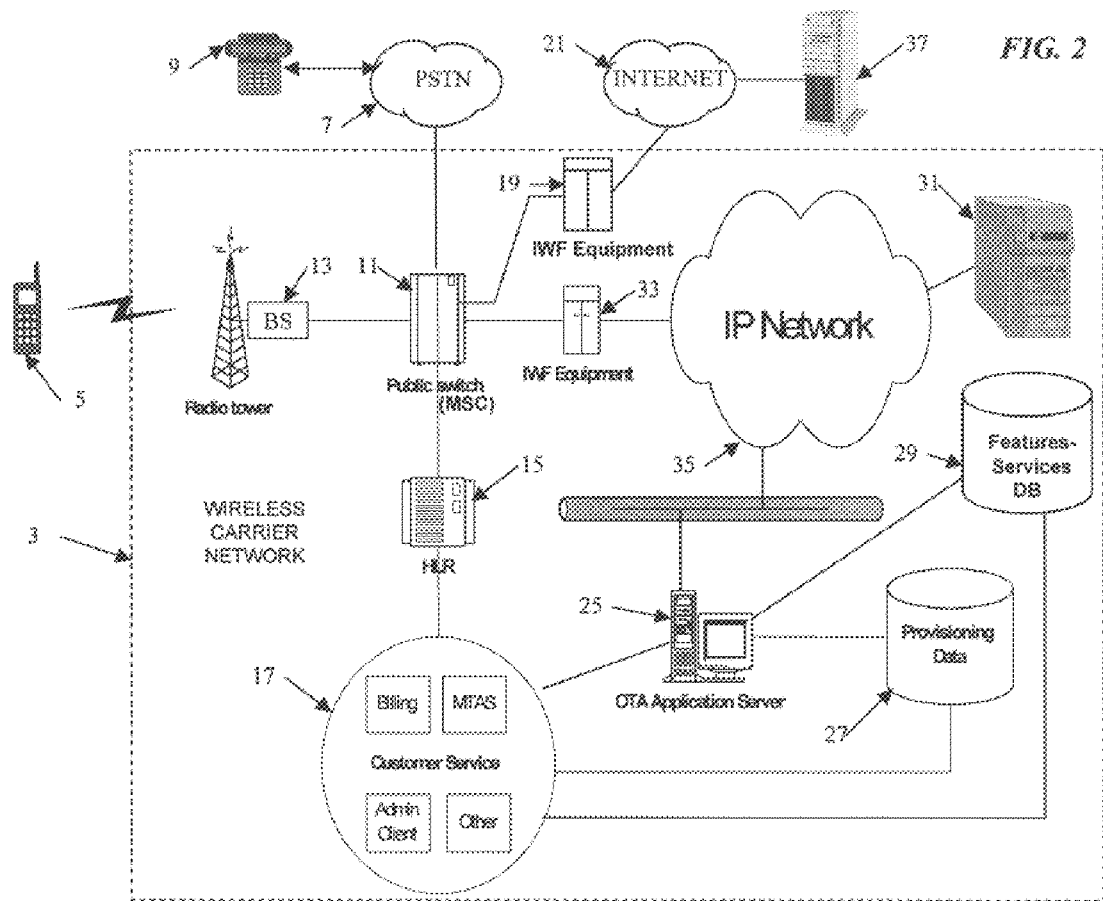


FIG. 2

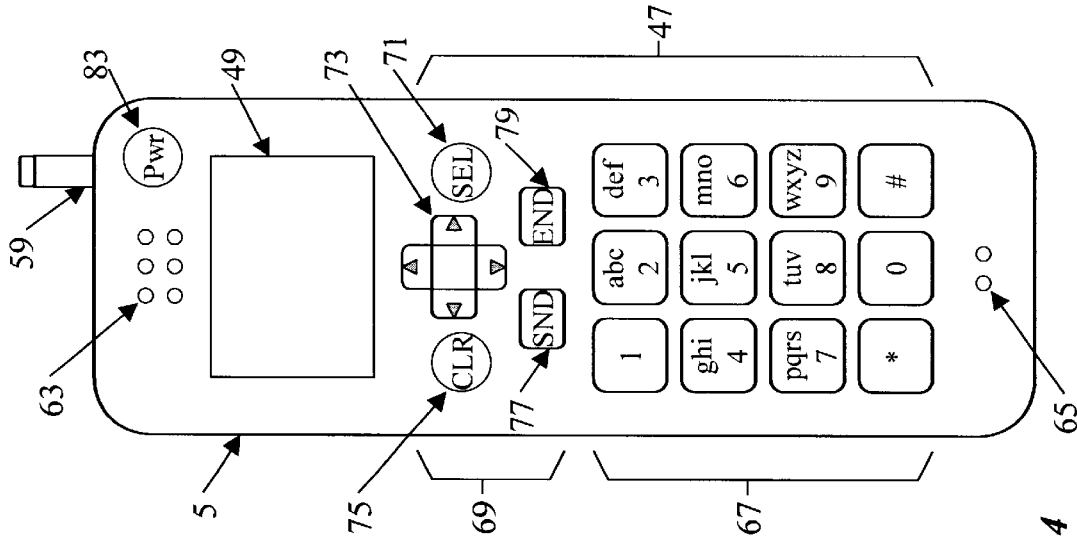


FIG. 4

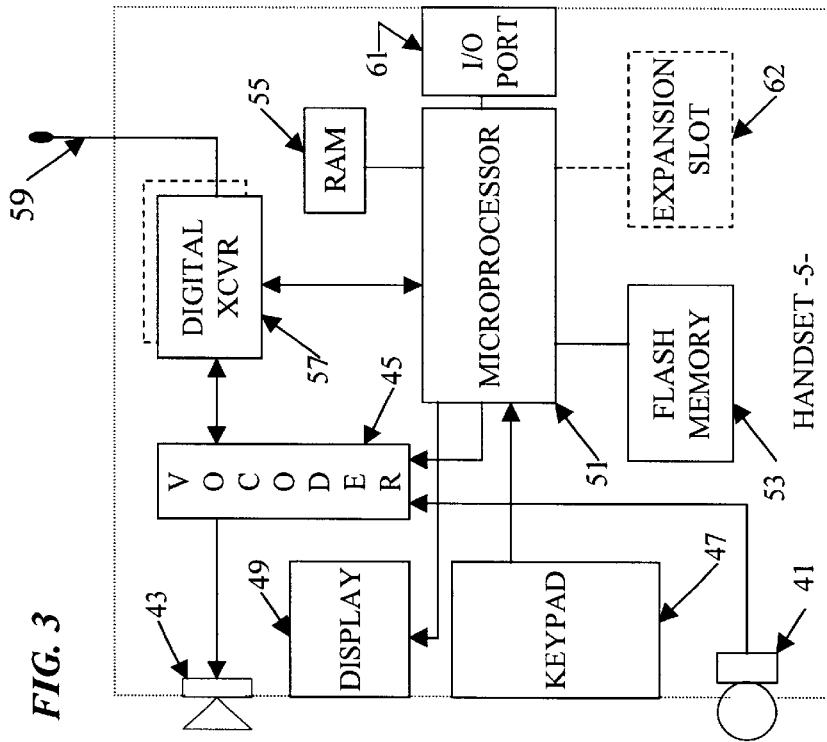


FIG. 3

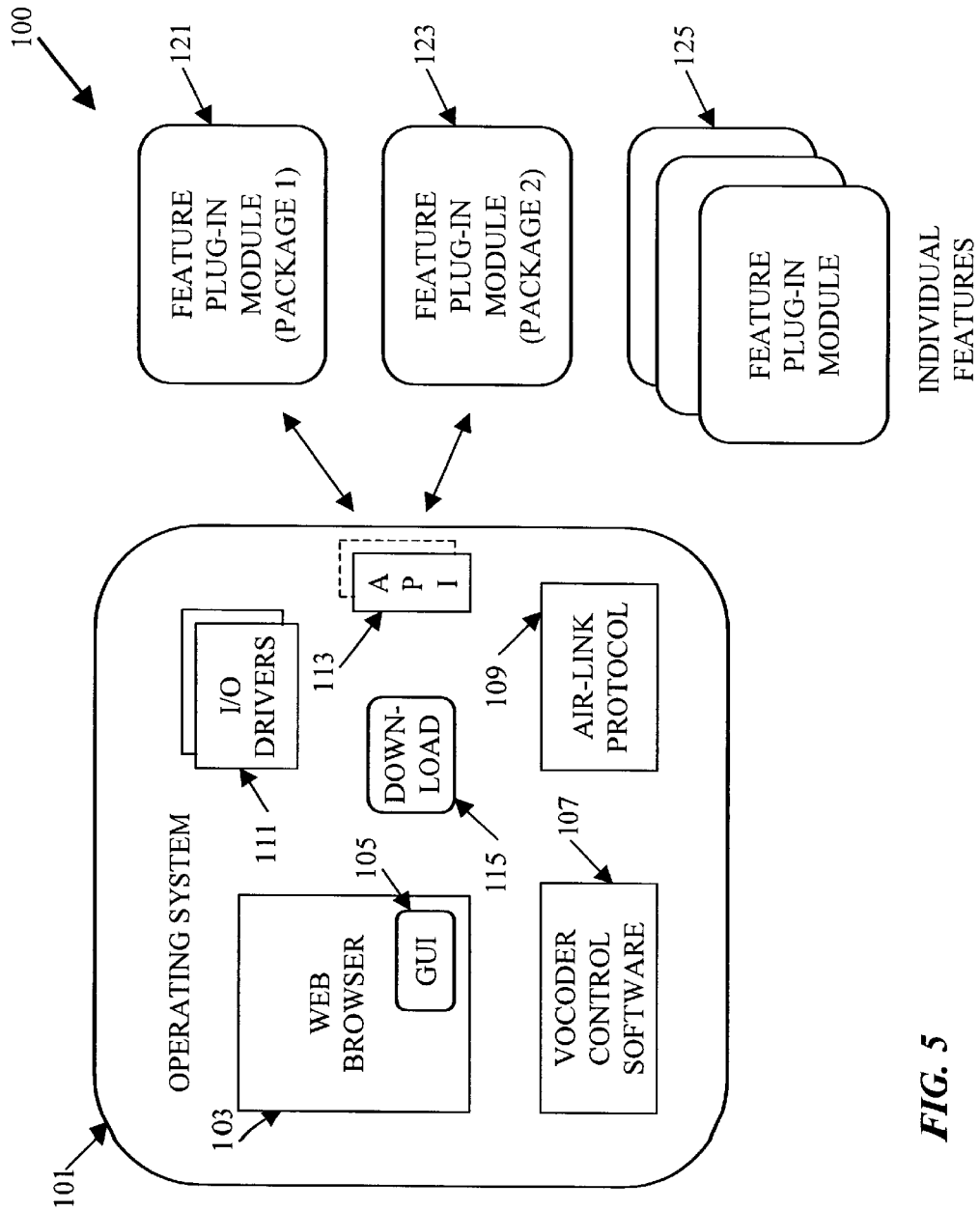


FIG. 5

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.