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(12) **United States Patent**  
**Souissi et al.**(10) **Patent No.:** **US 6,298,233 B1**  
(45) **Date of Patent:** **Oct. 2, 2001**(54) **METHOD AND APPARATUS IN A TWO-WAY WIRELESS COMMUNICATION SYSTEM FOR DETECTION AND DEFERRED REPORTING OF A COMMUNICATION DIFFICULTY**

5,812,636	*	9/1998	Tseng et al.	455/423
5,884,163	*	3/1999	Hardouin	455/423
5,991,622	*	11/1999	Henry, Jr.	455/434
6,070,072	*	5/2000	Dorenbosch et al.	455/423
6,198,931	*	3/2001	Smith et al.	455/445
6,215,997	*	4/2001	Han	455/423

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\* cited by examiner

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

A portable subscriber unit (122) provides (402) communications for a user, and monitors (404) a parameter indicative of communication quality during the communications. The portable subscriber unit compares (406) the parameter with a predetermined threshold; and when the communication quality deteriorates (408) such that the parameter reaches the predetermined threshold, the portable subscriber unit determines (412) geographic coordinates corresponding to the location at which the communication difficulty occurred, and adds (414) a communication difficulty report identifying the parameter and the geographic coordinates to a record of communication difficulty reports stored in the portable subscriber unit. When the portable subscriber unit receives (502) a request for the record of communication difficulty reports from a fixed portion (102) of a two-way wireless communication system, the portable subscriber unit communicates (504) the record of communication difficulty reports to the fixed portion.

(21) Appl. No.: **09/373,912**(22) Filed: **Aug. 13, 1999**(51) **Int. Cl.**<sup>7</sup> ..... **H04Q 7/22**(52) **U.S. Cl.** ..... **455/423; 455/456**(58) **Field of Search** ..... 455/423, 424, 455/425, 456, 455, 67.1, 226.1, 226.2, 115, 62, 510; 342/450, 457(56) **References Cited****U.S. PATENT DOCUMENTS**

5,095,500	3/1992	Tayloe et al.	
5,490,288	*	2/1996	Wiatrowski ..... 455/54.1
5,752,164	*	5/1998	Jones ..... 455/454
5,781,101	7/1998	Stephen et al.	

**15 Claims, 6 Drawing Sheets**

	704	706	708	710
	INCIDENT CODE	LOCATION	DATE & TIME	PARAMETERS
702 →	COVERAGE-OUT	XXYY	MODAYRHRMN	RSSI, BER, C/I, C/N, LOBAT
	COVERAGE-IN	XXYY	MODAYRHRMN	RSSI, BER, C/I, C/N, LOBAT
702 →	HANDOFF FAIL	XXYY	MODAYRHRMN	RSSI, BER, C/I, C/N, LOBAT
	RETRIES FAIL	XXYY	MODAYRHRMN	RSSI, BER, C/I, C/N, LOBAT
	CAPACITY OVLD	XXYY	MODAYRHRMN	----