

[54] **REMOTE CONTROL OF ENGINE IDLING TIME**

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[51] **Int. Cl.⁶** **G06F 11/30**

[52] **U.S. Cl.** **364/424.045**; 364/424.03;
 364/431.09; 123/179.2; 123/179.4; 340/825.29

[58] **Field of Search** 364/424.03, 424.04,
 364/424.07, 424.05, 550, 431.09; 123/198 D,
 198 DC, 179.2, 179.3, 179.4; 340/439,
 441, 825.06, 825.29

[56] **References Cited**

U.S. PATENT DOCUMENTS

Re. 30,686	7/1981	Bucher	290/38 R
4,102,316	7/1978	Valbert	123/198 DB
4,258,421	3/1981	Juhasz et al.	364/424.03
4,307,455	12/1981	Juhasz et al.	364/900
4,804,937	2/1989	Barbiaux et al.	364/424.01
4,926,331	5/1990	Windle et al.	364/424.04
5,025,253	6/1991	DiLullo et al.	340/825.06
5,072,703	12/1991	Sutton	123/179.4
5,303,163	4/1994	Ebaugh et al.	364/550
5,426,585	6/1995	Stepper et al.	364/424.03
5,448,479	9/1995	Kemmer et al.	364/424.02

OTHER PUBLICATIONS

SAE Technical Paper Series 902215, "Data Link Overview for Heavy Duty Vehicle Applications" by Mark R. Stepper, Cummins Electronics Co., Inc. Oct. 29 -Nov. 1, 1990, pp. 81-94.
 Cummins CELECT™, "Programmable Engine Parameters; CELECT", Feb. 1993, Cummins Engine Company, Inc.

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[57] **ABSTRACT**

A system for remotely accessing an engine control system and selectively controlling and changing an existing engine algorithm. In a preferred embodiment, the system comprises an on-board vehicle communications system which receives and sends data to a remote central fixed base site. A truck operator contacts the fleet base manager via the on-board communications system and requests, for example, that the engine idle for a specified period of time. The fleet base manager at the remote central fixed based site then transmits data from a computer over a communications channel to the vehicle's on-board communications system. The data is sent through a remote command interface device which translates the data in language recognizable by an engine control device. Based on the data transmitted, the engine control device disables an existing idle shutdown system and permits the engine to remain idle for an amount of time specified by the truck fleet manager.

25 Claims, 7 Drawing Sheets

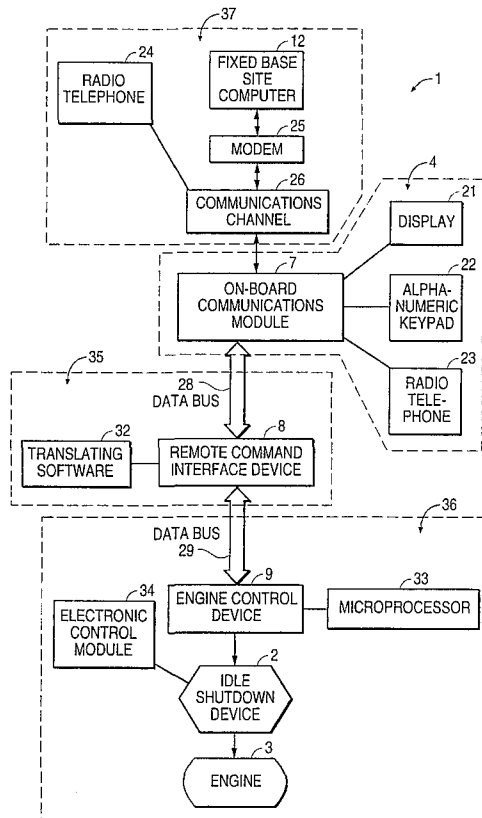
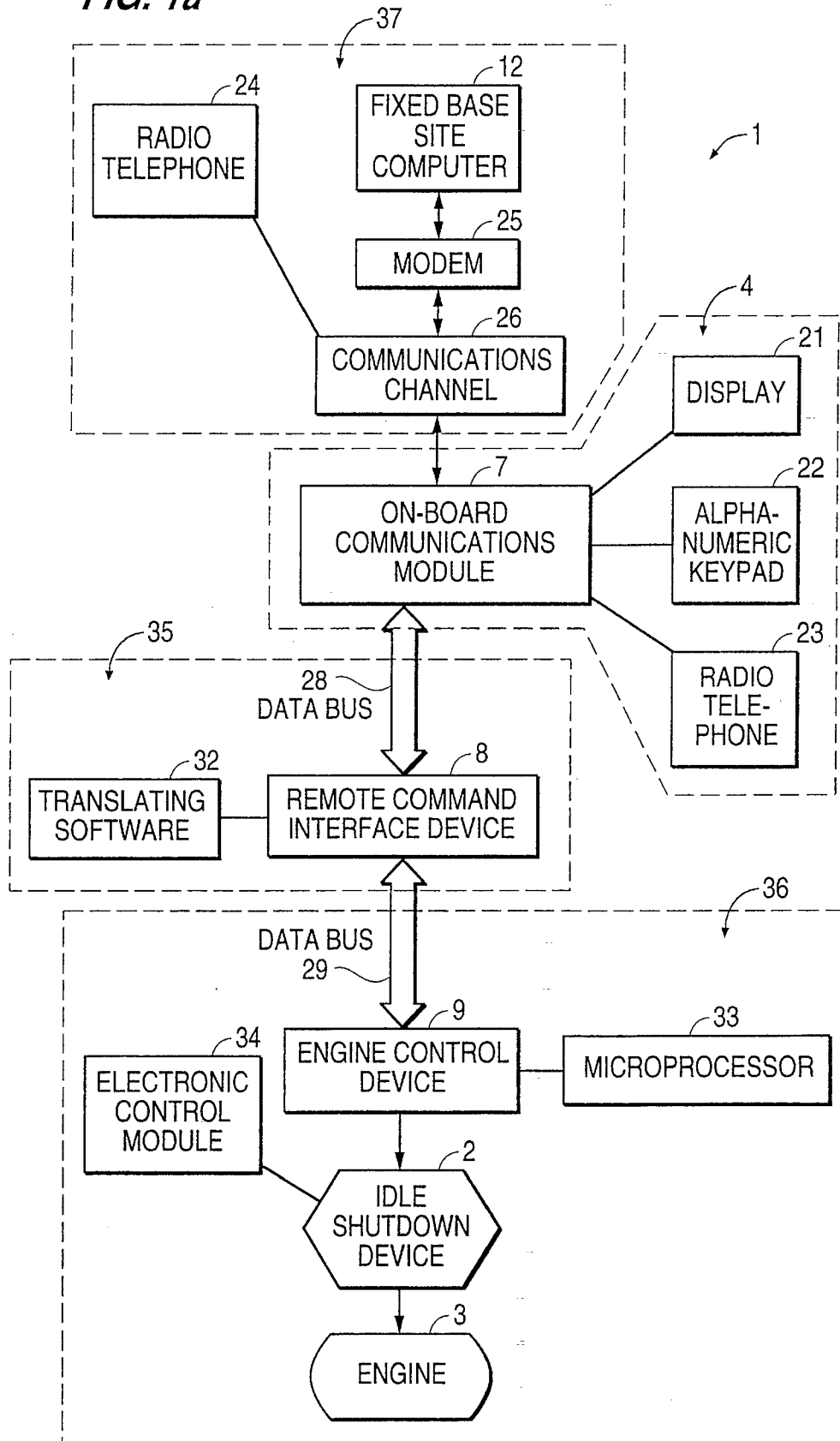


FIG. 1a



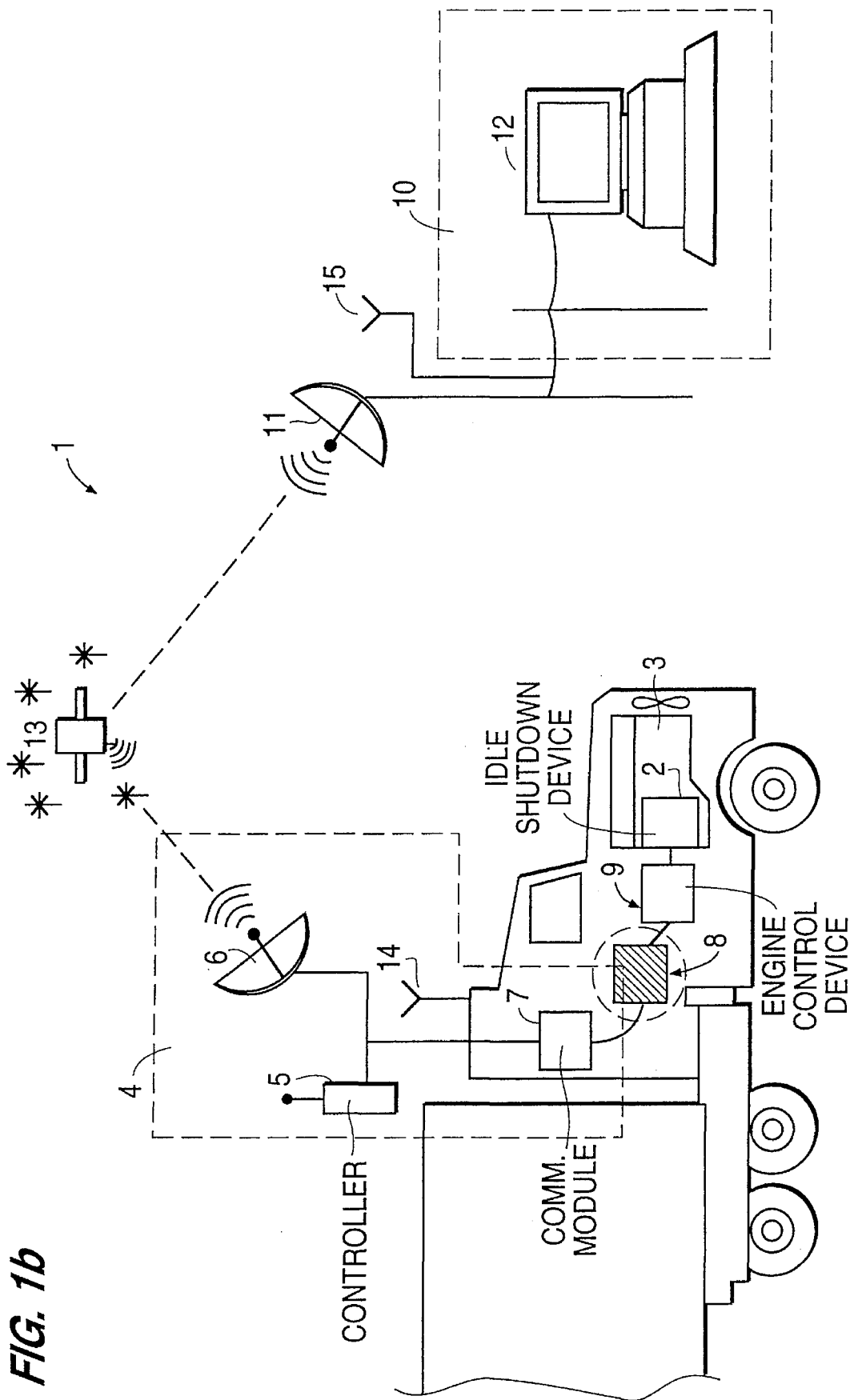


FIG. 1b

FIG. 2

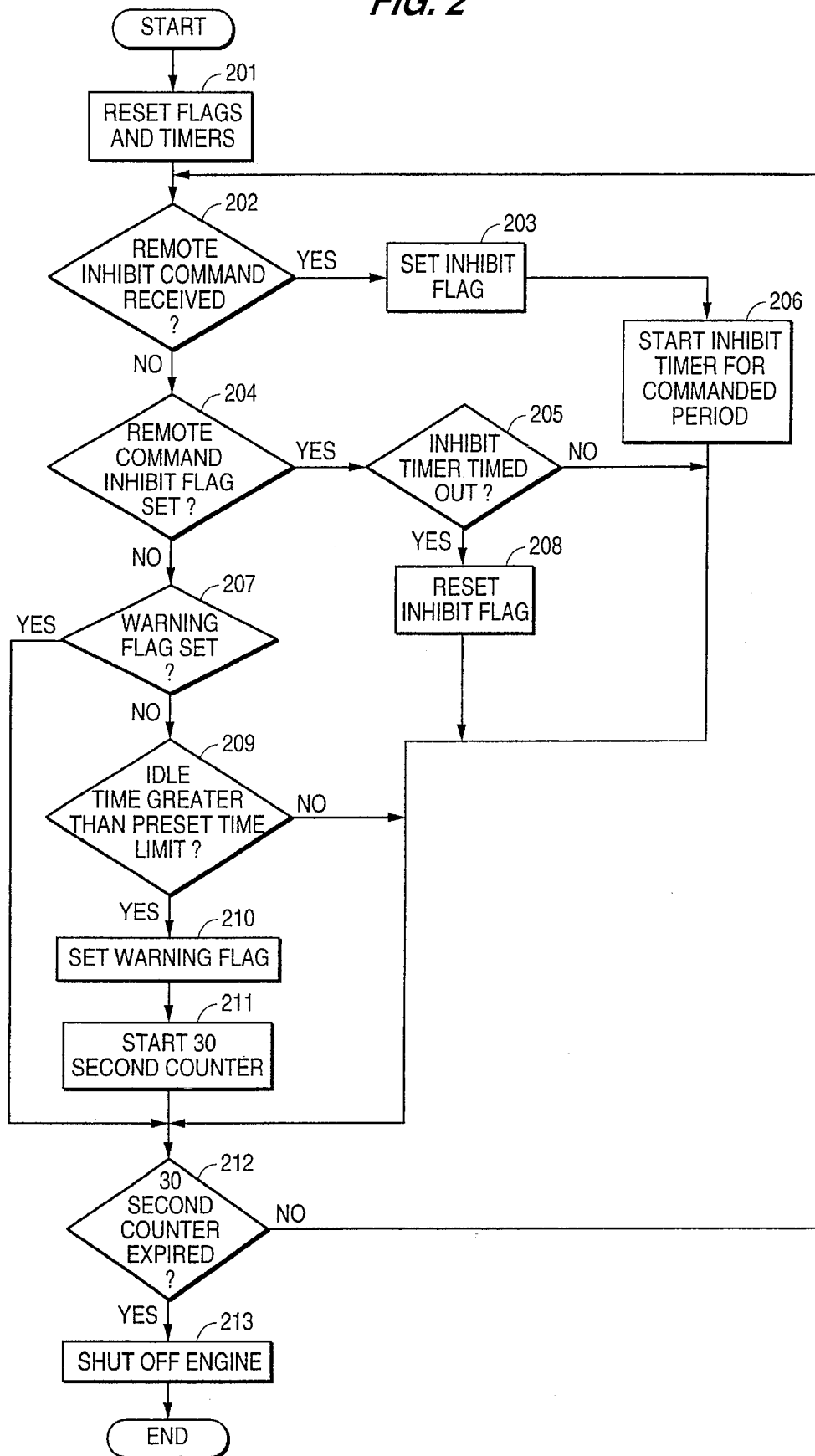
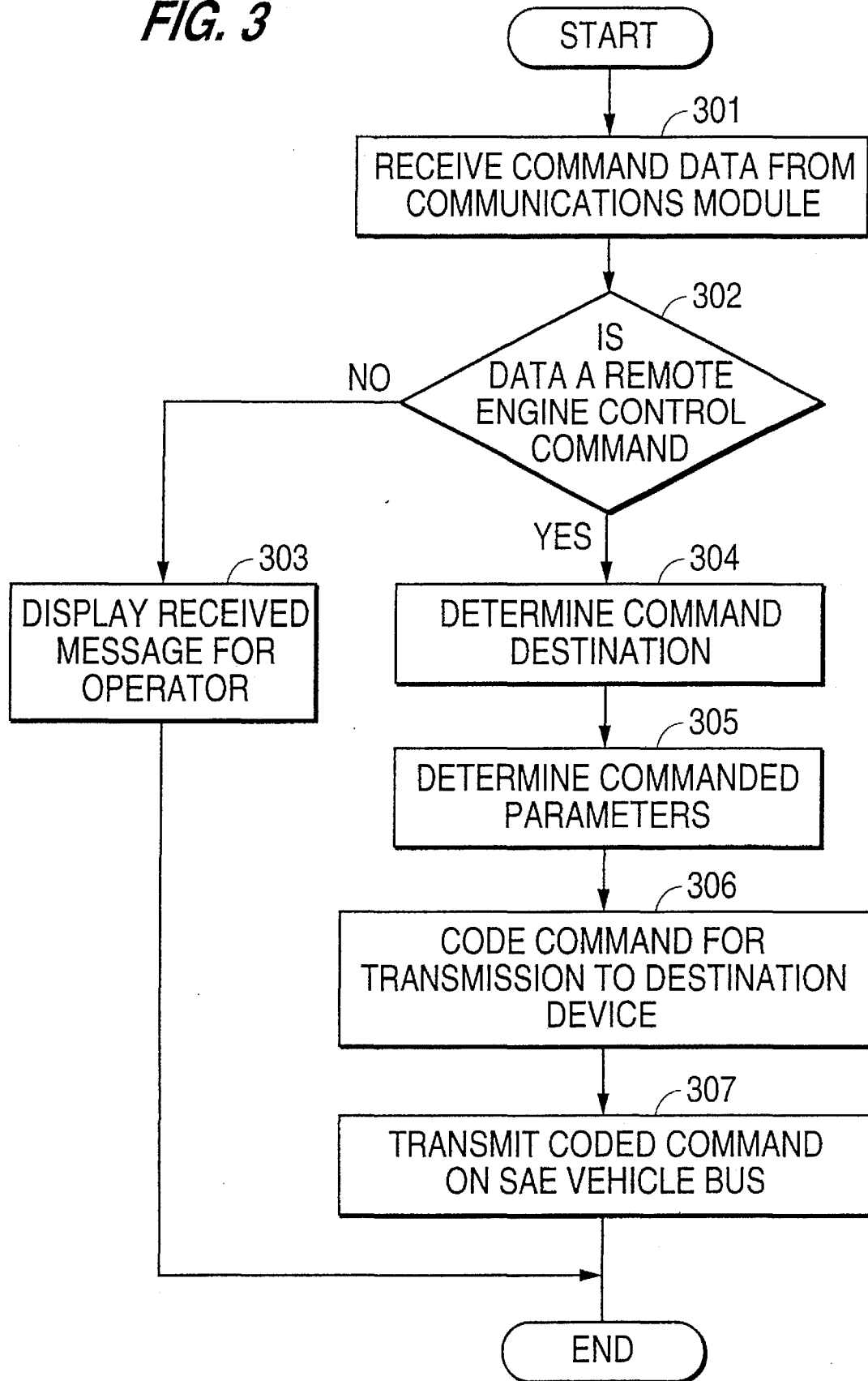


FIG. 3



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