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(54) **METHOD AND APPARATUS FOR SENDING DATA AND CONTROL INFORMATION IN A WIRELESS COMMUNICATION SYSTEM**

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H04J 1/00 (2006.01)

(52) **U.S. Cl.** **370/343**; 370/465; 370/480

(58) **Field of Classification Search** .... None
See application file for complete search history.

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(57) **ABSTRACT**

Techniques for sending control information in a communication system are described. In an aspect, control information may be sent in a first frequency location (e.g., a first set of subcarriers) if data is not being sent and in a second frequency location (e.g., a second set of subcarriers) if data is being sent. In another aspect, control information may be processed in accordance with a first processing scheme if data is not being sent and with a second processing scheme if data is being sent. In one design of the first scheme, a CAZAC sequence may be modulated with each modulation symbol for control information to obtain a corresponding modulated CAZAC sequence, which may be sent on the first set of subcarriers. In one design of the second scheme, modulation symbols for control information may be combined with modulation symbols for data, transformed to frequency domain, and mapped to the second set of subcarriers.

43 Claims, 15 Drawing Sheets
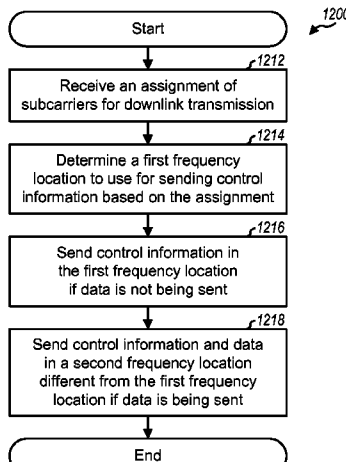
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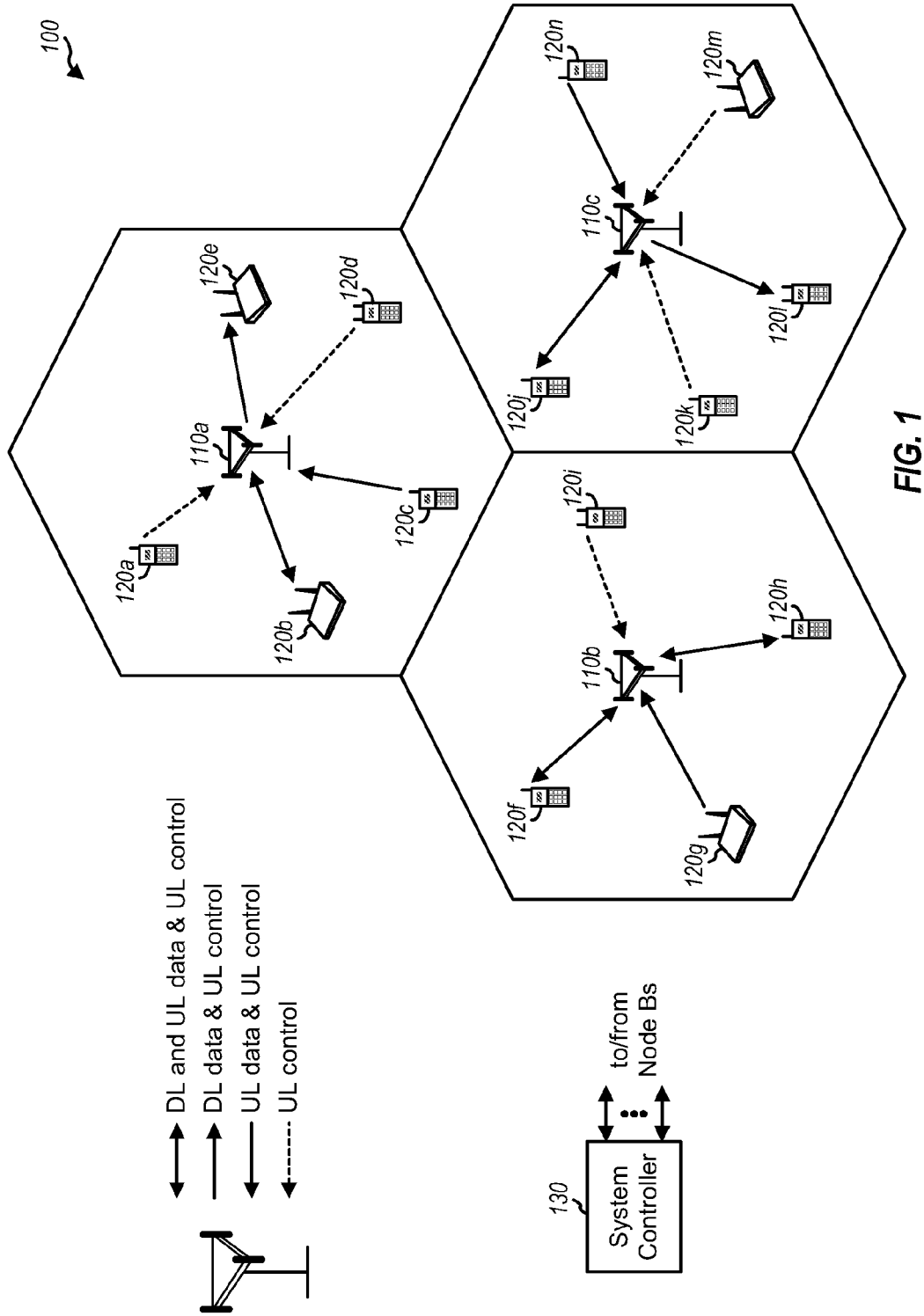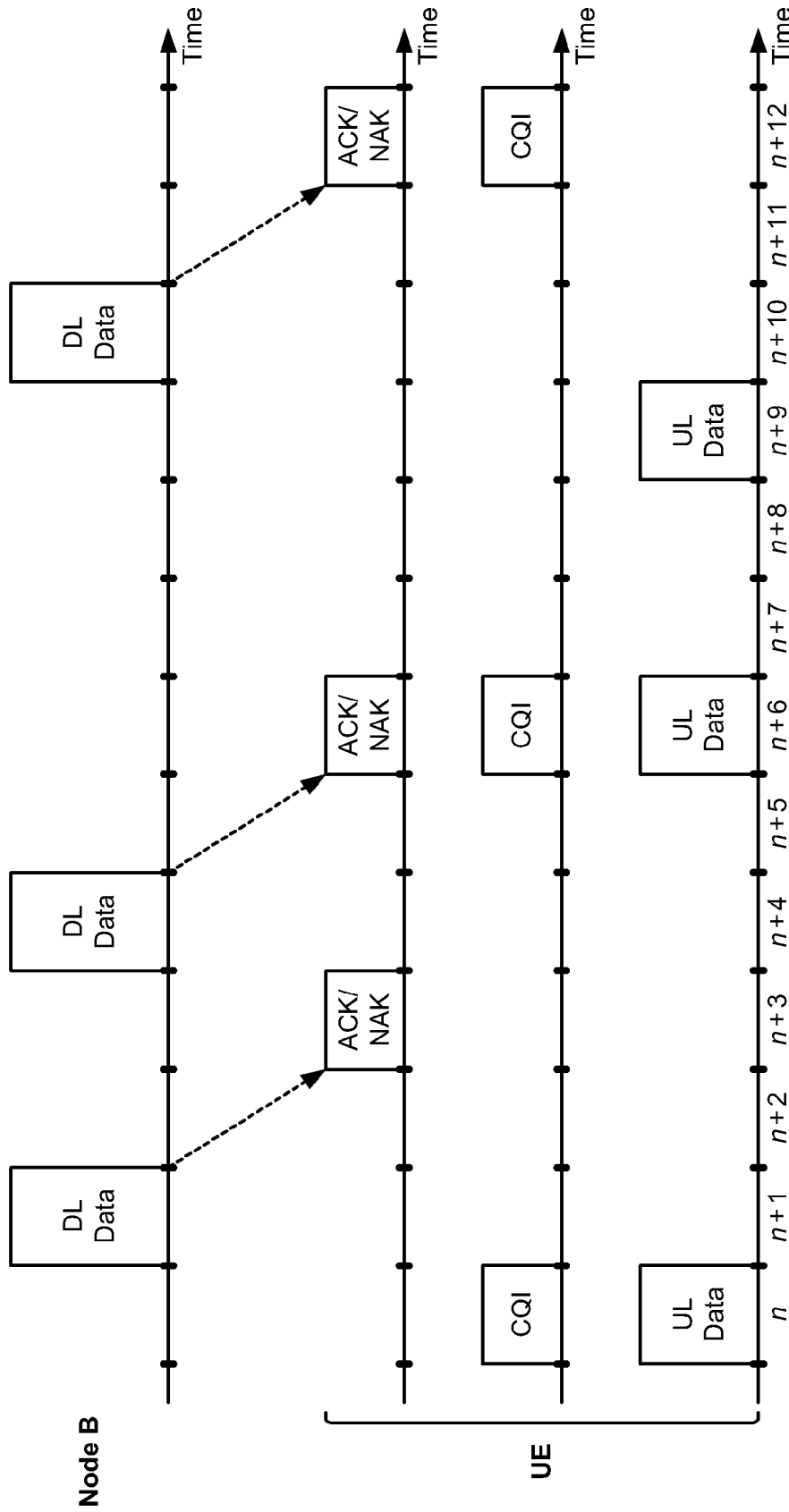Taiwan Search Report—TW096125004—TIPO—Aug. 1, 2011.

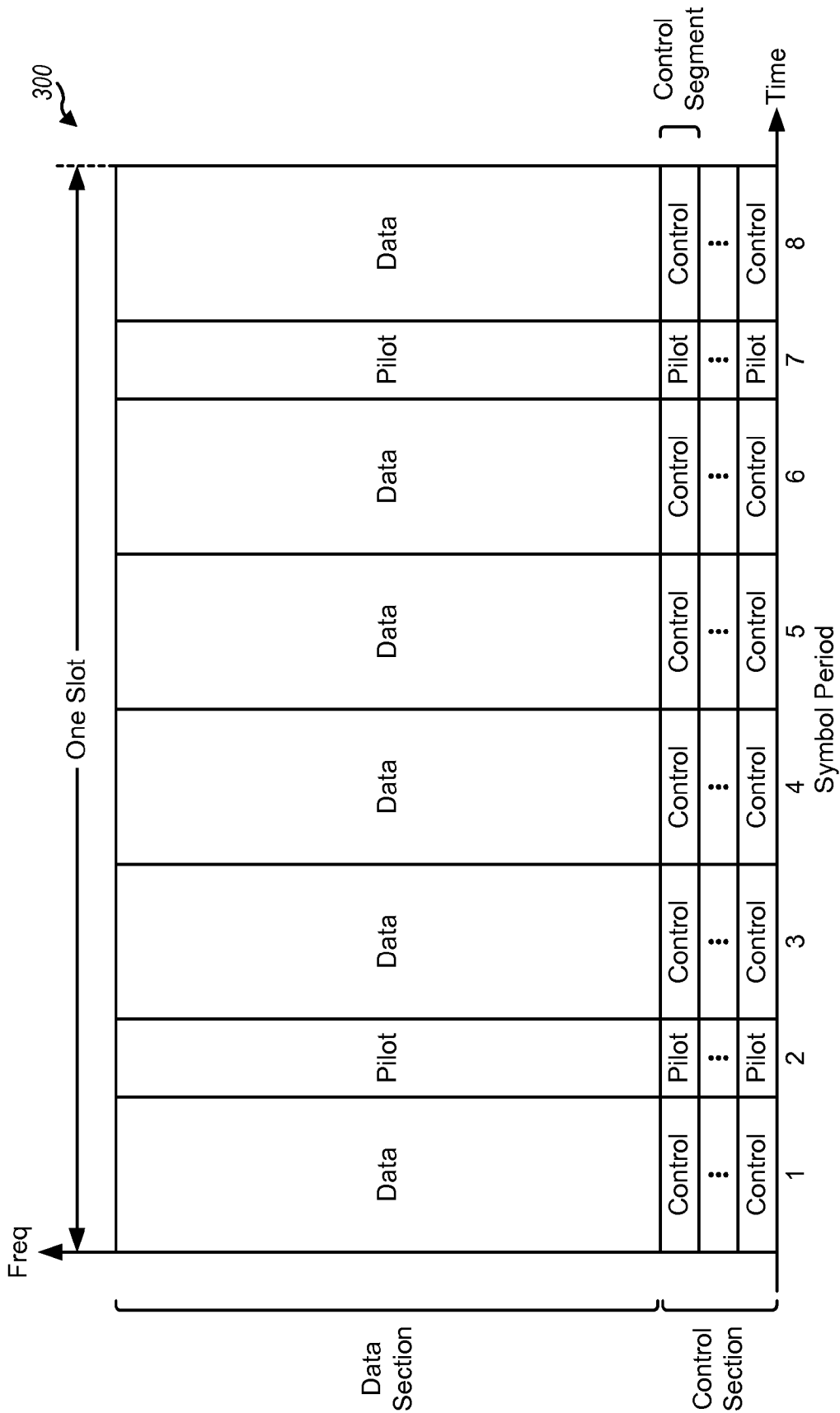* cited by examiner

FIG. 1

FIG. 2

300

One Slot

Data Section

Control Section

Control Segment

	Data	Pilot	Data	Data	Data	Data	Pilot	Data
	Control	Pilot	Control	Control	Control	Control	Pilot	Control
	...	...	...	...	...	...	...	...
	Control	Pilot	Control	Control	Control	Control	Pilot	Control
	1	2	3	4	5	6	7	8

Freq

Time

Symbol Period

FIG. 3

DOCKET ALARM

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