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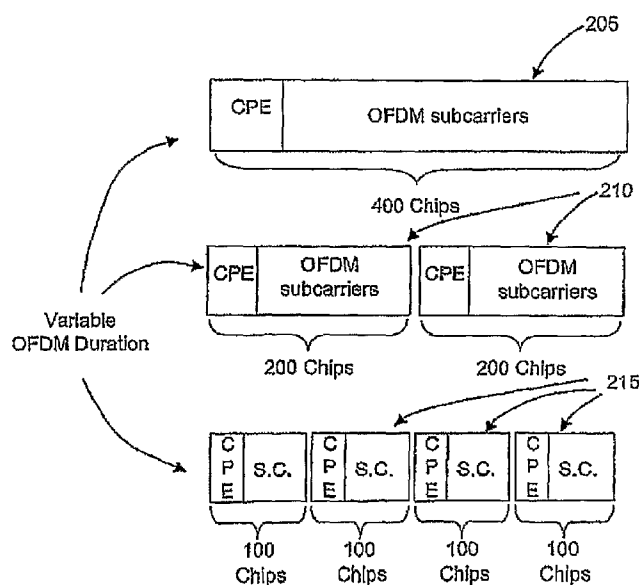
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[Continued on next page]

(54) Title: METHODS FOR GENERATING A TRANSMISSION SLOT HAVING OFDM VARIABLE DURATION SYMBOL AND MOBILE TERMINAL USING THESE METHODS

[Fig. 6]



(57) Abstract: Disclosed are methods for generating a transmission slot receiving a transmission slot that includes a plurality of data regions and a plurality of control regions, in which each of the data regions include digital spread spectrum data, further substituting each of the plurality of data regions with at least one OFDM symbol having variable duration, in which each of the at least one OFDM symbol has a cyclic prefix extension (CPE). Disclosed is a mobile terminal (2) using these methods as well.

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B. FIELDS SEARCHED

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Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

EPODOC, WPI, NPL

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	WO 1997/030531 A1 (TELIA AB) 21 August 1997 (21.08.1997). <i>abstract; page 3 line 11 to page 6 line 8; claims 16 to 22</i>	1-18

A	US 6 115 354 A (Christfried Weck) 05 September 2000 (05.09.2000). <i>Whole document</i>	1-18

☐ Further documents are listed in the continuation of Box C.☒ See patent family annex.

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Patent document cited in search report			Publication date		Patent family member(s)	Publication date
WO	A	9730531			NO A 983589	1998-10-14
					WO A1 9730531	1997-08-21
					EP A1 0880837	1998-12-02
					DE T2 69730414T	2005-09-08
					SE A 9600537	1997-05-26
					SE C2 504897	1997-05-26
US	A	6115354			JP T 9512156T	1997-12-02
					FI A 970204	1997-01-17
					US A 6115354	2000-09-05
					PL A1 318348	1997-06-09
					JP B2 2901018B2	1999-06-02
					HU A2 77417	1998-04-28