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INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

<p>(51) International Patent Classification⁶ : H04B 7/26, 7/216, 1/707</p>	<p>A1</p>	<p>(11) International Publication Number: WO 99/60729</p> <p>(43) International Publication Date: 25 November 1999 (25.11.99)</p>
<p>(21) International Application Number: PCT/SE99/00777</p> <p>(22) International Filing Date: 7 May 1999 (07.05.99)</p> <p>(30) Priority Data: 09/079,438 15 May 1998 (15.05.98) US</p> <p>(71) Applicant: TELEFONAKTIEBOLAGET LM ERICSSON (publ) [SE/SE]; S-126 25 Stockholm (SE).</p> <p>(72) Inventors: FRANK, Georg; Kieler Strasse 26a, D-90425 Nürnberg (DE). GRANZOW, Wolfgang; Seelachweg 6, D-90562 Heroldsberg (DE). GUSTAFSSON, Maria; Medborgarplatsen 11, S-118 26 Stockholm (SE). OLOFSSON, Henrik; Tallgatan 10, S-172 69 Sundbyberg (SE). OVESJÖ, Fredrik; Upplandsgatan 80, S-113 44 Stockholm (SE).</p> <p>(74) Agent: ERICSSON RADIO SYSTEMS AB; Common Patent Dept., S-164 80 Stockholm (SE).</p>		<p>(81) Designated States: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZA, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).</p> <p>Published <i>With international search report. Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.</i></p>
<p>(54) Title: RANDOM ACCESS IN A MOBILE TELECOMMUNICATIONS SYSTEM</p> <div data-bbox="467 1216 1034 1440" data-label="Diagram"><p>The diagram illustrates the frame structure of an uplink common physical channel. It consists of a Preamble block followed by a Data block and a Control block. The Preamble block contains a 'signature' and is labeled with 'I' and 'Q' components. The Data and Control blocks are shown as multiple parallel streams. Time intervals T_{PA}, T_G, and T_D are indicated below the frame. A total time interval $N \cdot T_{TS}$ is shown for the preamble, and T_{TS} is shown for the data/control portion.</p></div> <p>(57) Abstract</p> <p>An uplink common physical channel (random access channel) frame structure is disclosed with a separate preamble and data portion. The preamble is used by a base station to detect that a mobile station is attempting a random access request. The data portion of the channel includes user data, and pilot symbols that provide energy for channel estimation during reception of the data portion. A guard interval (T_G) is preferably inserted between the preamble and data portion of the frame, which enables data detection to occur during an idle period. As such, the frame structures for both the common physical (random access) uplink channel and dedicated physical (traffic) uplink channel are compatible.</p>		