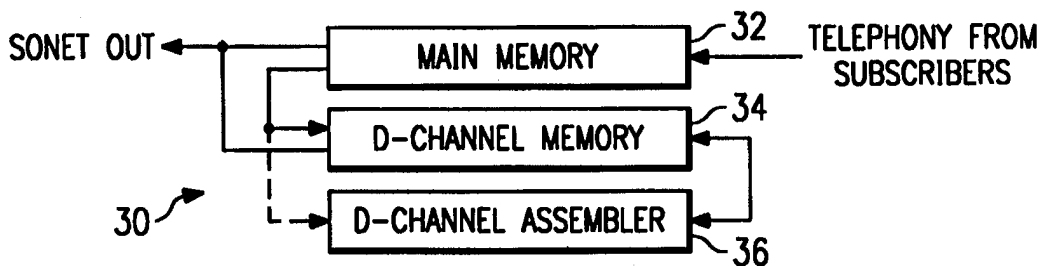




INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

<p>(51) International Patent Classification ⁶ : H04Q 11/04, H04J 3/16</p>	<p>A3</p>	<p>(11) International Publication Number: WO 98/24265 (43) International Publication Date: 4 June 1998 (04.06.98)</p>
<p>(21) International Application Number: PCT/US97/20682 (22) International Filing Date: 5 November 1997 (05.11.97) (30) Priority Data: 60/032,064 29 November 1996 (29.11.96) US 08/775,131 31 December 1996 (31.12.96) US (71) Applicant: DSC TELECOM L.P. [US/US]; 1000 Coit Road, Plano, TX 75075 (US). (72) Inventors: LE, Phu, Son; 6081 Dawn Drive, Rohnert Park, CA 94928 (US). BHADAR, Ajaib, S.; 7501 Mitchell Drive, Rohnert Park, CA 94928 (US). TRINH, Lac; 1255 Marlene Court, Rohnert Park, CA 94928-5433 (US). (74) Agent: FISH, Charles, S.; Baker & Botts, L.L.P., 2001 Ross Avenue, Dallas, TX 75201-2980 (US).</p>	<p>(81) Designated States: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, HU, ID, IL, 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, ZW, ARIPO patent (GH, KE, LS, MW, SD, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG).</p> <p>Published <i>With international search report.</i></p> <p>(88) Date of publication of the international search report: 17 September 1998 (17.09.98)</p>	

(54) Title: APPARATUS AND METHOD FOR PROCESSING SIGNALLING BITS OF INTEGRATED SERVICES DIGITAL NETWORK SIGNALS



(57) Abstract

A time slot interchanger (10) includes a D-channel processing device (30). The D-channel processing device (30) includes a main memory (32), a D-channel memory (34), and a D-channel assembler (36). The main memory (32) receives telephony data and signaling traffic from a subscriber in the form of integrated services digital network signals. Two-bit D-channel signaling portions of each integrated services digital network signals are extracted and placed into the D-channel memory (34). The D-channel assembler (36) assembles the two-bit D-channel signaling portions into eight-bit digital signal level zero (DS0) signals. The eight-bit DS0 signals are stored in the D-channel memory (34) for subsequent transfer with selected telephony data traffic from the main memory (32) over a synchronous optical network link.

FOR THE PURPOSES OF INFORMATION ONLY

Codes used to identify States party to the PCT on the front pages of pamphlets publishing international applications under the PCT.

AL	Albania	ES	Spain	LS	Lesotho	SI	Slovenia
AM	Armenia	FI	Finland	LT	Lithuania	SK	Slovakia
AT	Austria	FR	France	LU	Luxembourg	SN	Senegal
AU	Australia	GA	Gabon	LV	Latvia	SZ	Swaziland
AZ	Azerbaijan	GB	United Kingdom	MC	Monaco	TD	Chad
BA	Bosnia and Herzegovina	GE	Georgia	MD	Republic of Moldova	TG	Togo
BB	Barbados	GH	Ghana	MG	Madagascar	TJ	Tajikistan
BE	Belgium	GN	Guinea	MK	The former Yugoslav Republic of Macedonia	TM	Turkmenistan
BF	Burkina Faso	GR	Greece	ML	Mali	TR	Turkey
BG	Bulgaria	HU	Hungary	MN	Mongolia	TT	Trinidad and Tobago
BJ	Benin	IE	Ireland	MR	Mauritania	UA	Ukraine
BR	Brazil	IL	Israel	MW	Malawi	UG	Uganda
BY	Belarus	IS	Iceland	MX	Mexico	US	United States of America
CA	Canada	IT	Italy	NE	Niger	UZ	Uzbekistan
CF	Central African Republic	JP	Japan	NL	Netherlands	VN	Viet Nam
CG	Congo	KE	Kenya	NO	Norway	YU	Yugoslavia
CH	Switzerland	KG	Kyrgyzstan	NZ	New Zealand	ZW	Zimbabwe
CI	Côte d'Ivoire	KP	Democratic People's Republic of Korea	PL	Poland		
CM	Cameroon	KR	Republic of Korea	PT	Portugal		
CN	China	KZ	Kazakstan	RO	Romania		
CU	Cuba	LC	Saint Lucia	RU	Russian Federation		
CZ	Czech Republic	LI	Liechtenstein	SD	Sudan		
DE	Germany	LK	Sri Lanka	SE	Sweden		
DK	Denmark	LR	Liberia	SG	Singapore		
EE	Estonia						

INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 97/20682

A. CLASSIFICATION OF SUBJECT MATTER
 IPC 6 H04Q11/04 H04J3/16

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 6 H04J H04Q

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 practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	GB 2 249 927 A (NORTHERN TELECOM, LIMITED) 20 May 1992 see the whole document	1,3,4,6, 7
A	---	2,5
X	EP 0 418 851 A (FUJITSU, LIMITED) 27 March 1991 see column 8, line 28 - column 10, line 54 see figure 5	1,7
A	---	
A	US 5 467 353 A (FUKUDA K) 14 November 1995 see abstract see column 6, line 38-50 see figures 3-6,10	1,7

Further documents are listed in the continuation of box C.

Patent family members are listed in annex.

* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search

8 July 1998

Date of mailing of the international search report

14/07/1998

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
 NL - 2280 HV Rijswijk
 Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
 Fax: (+31-70) 340-3016

Authorized officer

Gijssels, W

INTERNATIONAL SEARCH REPORT

Int. l. Application No

PCT/US 97/20682

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
GB 2249927	A	20-05-1992	US 5157656 A	20-10-1992
			CA 2047254 A,C	01-02-1992
			JP 2607407 B	07-05-1997
			JP 4256236 A	10-09-1992
EP 0418851	A	27-03-1991	JP 3104334 A	01-05-1991
			JP 2538082 B	25-09-1996
			JP 3177145 A	01-08-1991
			AU 629394 B	01-10-1992
			AU 6267690 A	11-04-1991
			CA 2025645 A	20-03-1991
			DE 69029444 D	30-01-1997
			DE 69029444 T	15-05-1997
			US 5430708 A	04-07-1995
US 5467353	A	14-11-1995	JP 6205475 A	22-07-1994
			AU 662458 B	31-08-1995
			AU 5269693 A	21-07-1994