



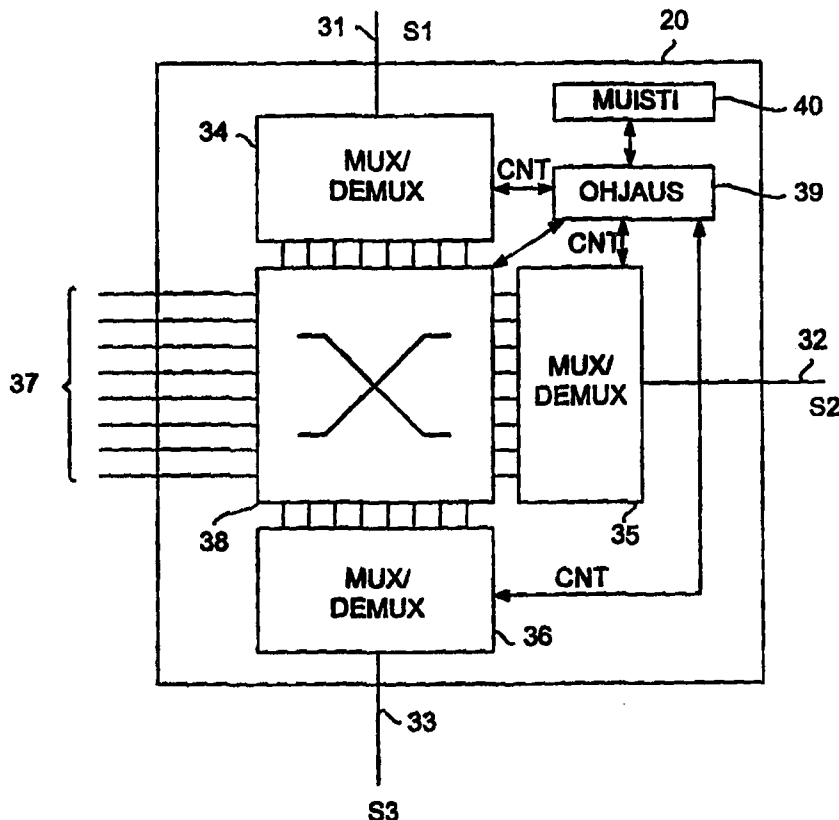
INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

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<p>(21) International Application Number: PCT/FI98/00557 (22) International Filing Date: 25 June 1998 (25.06.98) (30) Priority Data: 972788 27 June 1997 (27.06.97) FI (71) Applicant (for all designated States except US): NOKIA TELECOMMUNICATIONS OY [FI/FI]; Keilalahdentie 4, FIN-02150 Espoo (FI). (72) Inventor; and (75) Inventor/Applicant (for US only): TÖRMÄ, Esa [FI/FI]; Puistokaari 12 B 18, FIN-00200 Helsinki (FI). (74) Agent: KOLSTER OY AB; Iso Roobertinkatu 23, P.O. Box 148, FIN-00121 Helsinki (FI).</p>	<p>(81) Designated States: AL, AM, AT, AT (Utility model), AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, CZ (Utility model), DE, DE (Utility model), DK, DK (Utility model), EE, EE (Utility model), ES, FI, FI (Utility model), GB, GE, GH, GM, GW, 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, SK (Utility model), SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, 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, 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. In English translation (filed in Finnish).</i></p> <p>(88) Date of publication of the international search report: 18 March 1999 (18.03.99)</p>	

(54) Title: CROSS CONNECTION ELEMENT AND DATA TRANSMISSION NETWORK

(57) Abstract

This invention relates to a cross connection element (20) which comprises at least one input (31), outputs (32, 33, 37) and branching means (38 to 40) for forwarding through predetermined outputs (32, 33, 37) at least some signal components of a first serial data signal (S1) received through the input. To provide such a cross connection element that considerably facilitates the management of the data transmission network, the branching means comprise means (38, 39) for transparently forwarding single signal components of a serial data signal (S1) received through said input (31), as serial data signals (S2, S3) through the output (32, 33) indicated by the routing data stored in the memory means (40) of the cross connection element (20). In addition, the cross connection element (1) comprises at least one output (37) for transparently forwarding a single signal component of a first serial data signal (S1) indicated by the routing data stored in the memory means (40).



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INTERNATIONAL SEARCH REPORT

International application No.

PCT/FI 98/00557

A. CLASSIFICATION OF SUBJECT MATTER		
IPC6: H04Q 7/20, H04Q 11/04, H04L 12/24 According to International Patent Classification (IPC) or to both national classification and IPC		
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Minimum documentation searched (classification system followed by classification symbols)		
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Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched		
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WPIL, EDOC		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	"W.S. Lee, D.C. Brown, Advances in Telecommunications Networks, 1995, Artech House, Boston, London, page 26 - page 27" --	1,3,6-8
Y	EP 0541410 A1 (MATRA COMMUNICATION), 12 May 1993 (12.05.93), column 5, line 16 - column 6, line 14 --	1,3,6-8
A	WO 9428644 A1 (NOKIA TELECOMMUNICATIONS OY), 8 December 1994 (08.12.94), page 7, line 2 - page 14, line 6, figures 2,3 --	1-9
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C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	WO 9400959 A1 (NOKIA TELECOMMUNICATIONS OY), 6 January 1994 (06.01.94), page 8, line 4 - page 9, line 24 ---	1-9
E	WO 9828935 A1 (NOKIA TELECOMMUNICATIONS OY), 2 July 1998 (02.07.98), page 1, line 1 - page 3, line 16 --- -----	1-9

INTERNATIONAL SEARCH REPORT

Information on patent family members

01/12/98

International application No.

PCT/FI 98/00557

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
EP 0541410 A1	12/05/93	SE 0541410 T3 AT 138235 T DE 69210761 D,T DK 541410 T ES 2086691 T FI 924508 A FR 2682246 A,B GR 3019924 T	15/06/96 02/10/96 03/06/96 01/07/96 08/04/93 09/04/93 31/08/96
WO 9428644 A1	08/12/94	AU 682369 B AU 6797594 A CN 1126008 A EP 0700603 A FI 932373 D FI 942382 A JP 8510604 T NO 954785 A US 5648962 A	02/10/97 20/12/94 03/07/96 13/03/96 00/00/00 26/11/94 05/11/96 24/01/96 15/07/97
WO 9400959 A1	06/01/94	AU 668744 B AU 4502593 A EP 0648402 A FI 96565 B,C FI 923034 A JP 7508379 T US 5678178 A	16/05/96 24/01/94 19/04/95 29/03/96 31/12/93 14/09/95 14/10/97
WO 9828935 A1	02/07/98	AU 5189998 A FI 964877 A	17/07/98 06/06/98