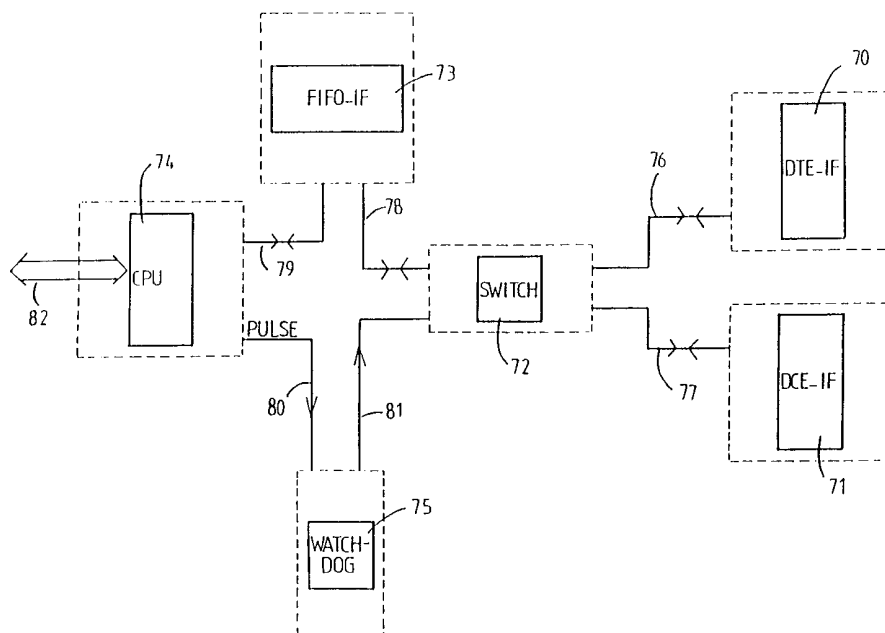




## INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification <sup>6</sup> : <b>H04J 3/14</b>	<b>A3</b>	(11) International Publication Number: <b>WO 98/00925</b> (43) International Publication Date: <b>8 January 1998 (08.01.98)</b>
<p>(21) International Application Number: <b>PCT/NZ97/00086</b></p> <p>(22) International Filing Date: <b>27 June 1997 (27.06.97)</b></p> <p>(30) Priority Data: <b>286908</b>                      <b>28 June 1996 (28.06.96)</b>                      <b>NZ</b></p> <p>(71) Applicant (for all designated States except US): <b>DIGI-TECH RESEARCH AND DEVELOPMENT LIMITED [NZ/NZ];</b> 3rd floor, 104-112 Daniell Street, Wellington (NZ).</p> <p>(72) Inventors; and (75) Inventors/Applicants (for US only): <b>ATKINS, Peter, David</b> [NZ/NZ]; 78 Seatoun Heights Road, Wellington (NZ). <b>LITTEK, Arnim, Holger</b> [CA/NZ]; 26a Liffey Crescent, Island Bay, Wellington (NZ). <b>WORTHINGTON, James, Stephen</b> [NZ/NZ]; 98b Waiwhetu Road, Lower Hutt (NZ).</p> <p>(74) Agents: <b>HAWKINS, Michael, Howard et al.; Baldwin Son &amp; Carey, NCR Building, 342 Lambton Quay, Wellington (NZ).</b></p>		<p>(81) Designated States: <b>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, HU, IL, IS, JP, KE, KG, 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), TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, 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).</b></p> <p><b>Published</b> <i>With international search report.</i> <i>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>(88) Date of publication of the international search report: <b>28 May 1998 (28.05.98)</b></p>

## (54) Title: COMMUNICATION METHOD AND APPARATUS



## (57) Abstract

A method of transmitting secondary data (63) over a communications link (44, 45, 46) which transmits blocks of primary data (57) in a data stream between a sending station (43, 47, 52) and a receiving station (43, 47, 52). Secondary data (63) is formatted according to a protocol other than that used to format the primary data and is inserted between the blocks of primary data. At a receiving station (43, 47, 52) the secondary data is extracted and the data stream is reinstated to its original form. An apparatus for effecting the method includes interface ports (70, 71) and a first in/first out interface (73) interconnected via a cross connect switch (72). A CPU (74) provides secondary data to the first in/first out interface to be inserted between blocks of primary data and routed via cross connect switch (72) to an interface port (70, 71). A watchdog means (75) monitors the CPU and controls the cross connect switch (72) to effect a direct connection between the interface ports (70, 71) if the CPU is inactive.

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## INTERNATIONAL SEARCH REPORT

International application No.  
PCT/NZ97/00086

## A. CLASSIFICATION OF SUBJECT MATTER

IPC(6) :H04J 3/14

US CL :370/433, 435, 437, 465, 468, 487, 492, 493, 528, 529; 375/222

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)

U.S. : 370/433, 435, 437, 465, 468, 487, 492, 493, 528, 529; 375/222

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)

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5,121,385 A (TOMINAGA ET AL) 09 June 1992, col. 3-4 and Fig. 3 and 4.	1, 2, 3, 15, 16, 17, 26, 27 and 28



Further documents are listed in the continuation of Box C.



See patent family annex.

* Special categories of cited documents:	*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
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Date of the actual completion of the international search

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Date of mailing of the international search report

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# INTERNATIONAL SEARCH REPORT

International application No.  
PCT/NZ97/00086

## Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This international report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:  
because they relate to subject matter not required to be searched by this Authority, namely:
  
2. ☒ Claims Nos.: 31  
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:  
  
Claim 31 fails to point out what is included or excluded by the claim language.
  
3. ☒ Claims Nos.: 4-14, 18-25, 29 and 30  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

## Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
  
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
  
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
  
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.  
☐ No protest accompanied the payment of additional search fees.