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SCIENCE AND ENGINEERING RESEARCH COUNCIL
RUTHERFORD APPLETON LABORATORY

COMPUTING DIVISION

DISTRIBUTED INTERACTIVE COMPUTING NOTE 645

CAMBRIDGE RING
Perq DCS Ring

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 RL Support/Cambridge Ring/General file
 DCS Notes file

1. INTRODUCTION

Following the machine moves to the R30 computer room, the attachment of DIC section hosts to the R27/R30 Cambridge Ring has now been completed. Figure 1 shows the current state of the ring (except see Section 4 below), including ring addresses of the attached hosts. Table 1 is an inventory of equipment in the ring, including access logics and spares.

2. SETTING UP

The ring is a 38-bit ring to accommodate Polynet and RAL-built nodes. The normal operational state is a 3-slot ring (just!) with a Polynet Monitor (R30 computer room) and one Slave Power Supply (R27, room G18).

The auto-restart feature of the Polynet Monitor will normally cope with temporary ring breaks, eg to plug in a new node. To restart at the monitor, when necessary, check that the delay switch is set at 7 (which gives a delay of 34 bits in the monitor - extra nodes may require a different setting) and switch Polynet off/on via the switch '0/1'. The Run light should come on, and the LED displays stabilise, after about 5 seconds. This will give a Gap of 5 bits (+/-1) for the present configuration. Zero the error count by pressing the small Reset button (errors during startup can be ignored).

The cabling in R30 is such that the ring may be split where the cabling enters the R30 computer room (R30.16). This will give a 1-slot ring

around R30.16 only. Note that if this is done it is necessary to alter DIP switches inside RAL nodes when the slot count is changed (Polynet nodes will adjust automatically).

3. SPARES

The previously used RAL Monitor and Master PSU remain in place in the cabinet below the 11/34's magtape controller. Consult the DCS Reference copy (or other) of RAL Cambridge Data Ring (DCS note 283) for setting up/restarting with the RAL Monitor.

Two spare RAL nodes and many Polynet nodes are held in the equipment pool (Portakabin 2 south, APF/AG).

4. FAULTY STATION

The station part of RAL node 60, which is housed in the double station/repeater unit 60/15, is currently faulty. The double unit 60/15 has been returned to Tony Cash, R36, for repair.

The spare RAL node with address 240 has been temporarily installed to cover for node 15 (LSI11/02). The other spare RAL node (unnumbered externally, but set to address 60 internally) was tried on the PDP11/34 but also found to be faulty and needs repair.

5. SOFTWARE

See DIC note 643 for Unix software implementing BBP and BSP on the PDP11/70 and 11/34.

See WPS or CPW for UCSD Pascal BBP, BSP, ICP, and ad hoc FTP software for the LSI11/23 and 11/02.

See JML for Perq software being developed.

TABLE 1: Perq DCS Ring - Inventory *

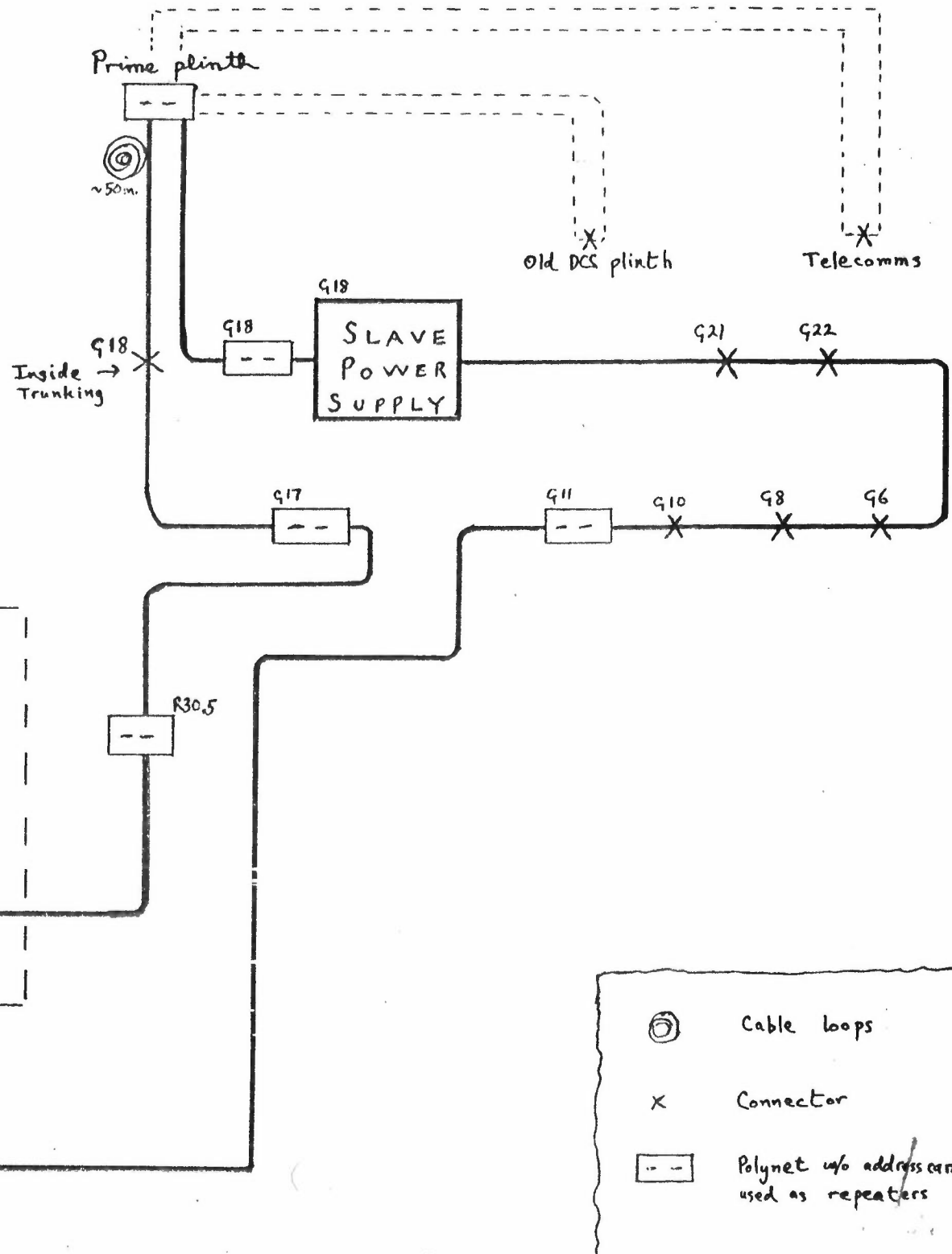
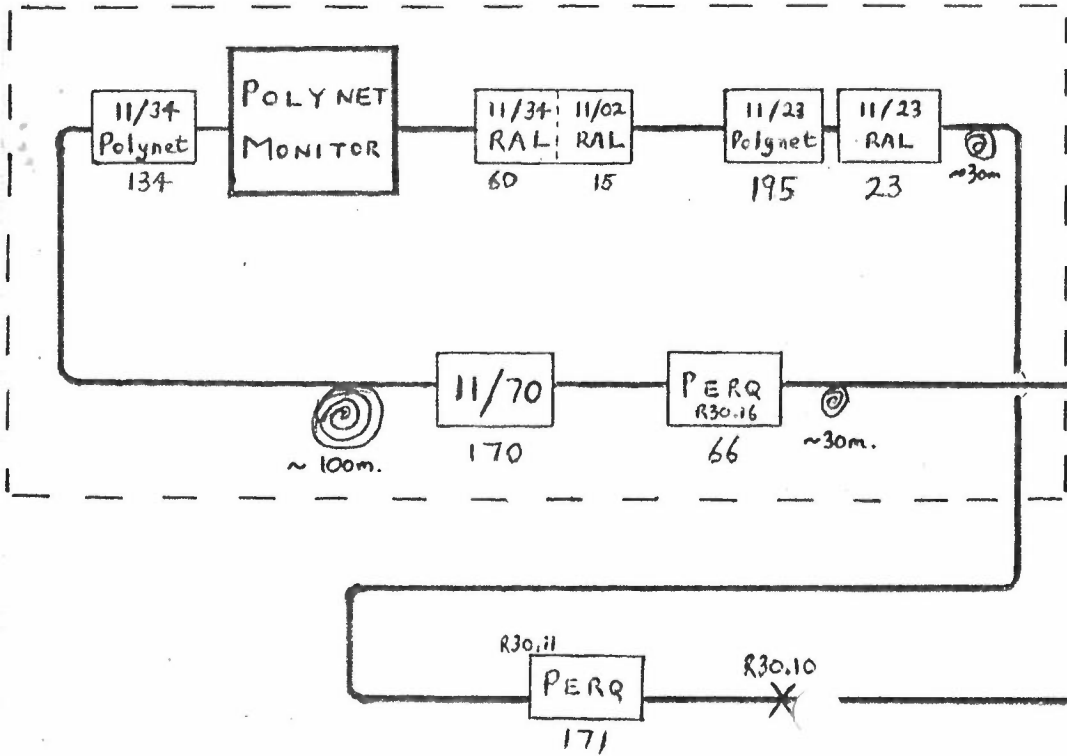
<u>Item</u>	<u>S/n</u>	<u>RAL no.</u>	<u>Location</u>	<u>Host</u>	<u>Address</u>
Polynet Monitor	00105	14454	R30.16	n/a	n/a
Polynet Slave PSU	00107	14438	R27.G18	n/a	n/a
Polynet Node	00170	17913	R30.16	PDP11/70	170
Polynet Node	00143	14457	R30.16	PDP11/34	134
Polynet Node	00149	14456	R30.16	LSI11/23	23
Polynet Node	00118	14455	R30.16	Perq	66
Polynet Node	00111	17912	R30.11	Perq	171
Polynet Node	00138	14451	R30.5	--	--
Polynet Node	00104	14450	R27.G11	--	--
Polynet Node	00130	14453	R27.G17	--	--
Polynet Node	00158	14452	R27.G18	--	--
Polynet Node	00164	14449	R27 m/c	PRIME ?	--
RAL Node			R30.16	PDP11/34	60 **
RAL Node			R30.16	LSI11/02	15 **
RAL Node	5		R30.16	LSI11/23	195
<u>Access Logics</u>					
UMCZ80	00787	14439	R30.16	PDP11/70	
UMCZ80	00790		R30.16	PDP11/34	
Polynet UNIBUS DMA	00121	15914	R30.16	PDP11/70	
Polynet UNIBUS DMA	00110		R30.16	PDP11/34	
Polynet Q-BUS PI	00119		R30.16	LSI11/23	
RAL UNIBUS PI	2	12801	R30.16	PDP11/34	
RAL Q-BUS PI	23		R30.16	LSI11/23	
RAL Q-BUS PI	4		R30.16	LSI11/02	
Perq GPIB PI		<prototype>	R30.11	Perq (JML)	
<u>Spares</u>					
RAL Monitor	26		R30.16	n/a	n/a
RAL Master PSU	24	04410	R30.16	n/a	n/a
RAL Q-BUS PI i/f	5		R30.11	--	n/a
RAL Node	3		PKBN 2S	--	240 **
RAL Node	33	04436	PKBN 2S	--	60 (inside)
Polynet Nodes		<many>	PKBN 2S		<to be assigned>




* Also name server for the time being!
 ** See Section 4 of body of DIC 645.

Fig. 1: PERQ DCS RING

38-bit, 3-slot ring
 Delay setting ≈ 7
 Gap ≈ 5

R30.16



-  Cable loops
-  Connector
-  Polynet w/o address card used as repeaters