FERRANTI L^{td}

TEL.: EAST 1301

WEST GORTON
MANCHESTER 12

PDH/DJ/U

28th June, 1961.

Dr. M.V. Wilkes, F.R.S.,
University Mathematical Laboratory,
Corn Exchange St.,
CAMBRIDGE.

Dear *Maurice*,

Your computer problem is occupying our mind very
much at the moment. I tried to ring you today, but you
were away. Perhaps when you have read this letter you
would care to give me a ring.

If we stick to the known current parts of Atlas
you can get practically nothing in the way of a machine.
However, as you know, we are actively considering other
cheaper machines made cheaper principally by using slower
core stores and no drums or fixed store. We have not
reached a conclusion on what exactly such machines will
be or perhaps more important for the present "emergency"
how much they will cost - we have only wild guesses at
the moment. The only action already taken is a
development contract with Mullards for a 16K word store
with a target cycle time of 6 usecs. (This store is also
for Orion and we should have one in less than 12 months.)
No studies have yet been made on its connection to the
Atlas central computer.

Even with this slow store £250K is **very** little
money and being anxious to help you, I have been casting
round for ways and means. One possibility occurs to me.

Cambridge and Manchester Universities are unique
in that they are machine designers and builders. Can we
not exploit this at Cambridge? If we sold you at "Works
Cost" price uncommissioned standard parts of the present
Atlas and a slow store, could you do the necessary
connecting together, design of special bits, modifications,
etc. and commissioning? In other words, we sell you large
chunks of standard hardware and you do the rest. In return
for us letting you have this hardware at "Works Cost" price,
you would let us have all designs and information on the
work you do relating to it, e.g. connecting in the slow
store, programming, etc. At a very rough preliminary guess

7725-154

FERRANTI LTD.   TO   Dr. M.V.Wilkes.   CONTINUATION 2.

we would, under this arrangement, let you have the
following bits of hardware for £250K:

15P	Central Computer
40	Minimum Peripheral Coordinator (you might not want this)
50	2 Channel Tape Coordinator ~~& parts~~ *for special coordinator.*
90+	16K Word Core Store (Tgt 6 usec. cycle time)
70	Power Supply (identical to Manchester)
12	One Control Desk (paper tape and teleprinter)
25	Two Tape Units (Ampex)
7	One Card Reader
14	One Printer
41 8	

I must emphasise that these items would be uncommissioned
and would not just fit together. We would, of course, send
you all the information to commission them yourself - you
might like someone up here during commissioning the earlier
machines, and we could probably send a man to work in
Cambridge with you.

This is just a thought, and is very sketchy, but
what do you think - it seems to me that if you have the
necessary effort, it would help you and us.

Yours sincerely,

P. D. Hall,
Manager,
COMPUTER DEPT.

Don Marsh
alec Robinson

ATLAS CONFIGURATIONS

Component	Cost	Manchester University		Minimum		Initial desirable configurations	
Central computer	150K	1	150K	1	150	1	150
4K slow store	20K	0		4	80		
4K fast store	65K	4	260	0			
16K slow store ?	50K	0		0		4	200K
Store co-ordinator+	46K	1	46	1	46	1	46K
8K fixed store etc.*	145K	1	145	0		0	
Min. peripheral co-ordinator #	40K	1	40?	1	40	1	40
Max. peripheral co-ordinator	70K	0					
4 magnetic drums	80K	1	80	0		0	
Tape channels 2	50K			1	50	1	50
4	95K						
8	185K	1	185				
Magnetic tape units	12½K	8	100	4	50	12	100
Card Reader	7K	1	7?	0		1	7
Card out	15K	1	15?	0		0	
Printer	14	1	14?	1	14	2	28
Power supplies (Full)‡	70	1	70	1	70	1	70
Batteries	7	1	7	1	7	1	7
Control desks	12	4	48?	1	12	2	24
			1167K		519K		722K

+ The store co-ordinator may be simplified if no drum is used, or if marking is in larger blocks than 512.

* We assume that some ordinary store may be used to simulate fixed store.

This may not be necessary.

‡ A small machine may have smaller power supplies.

The speed ratio - is probably about 2. Drum transfers are eliminated, and peripheral transfers are at the same speed.

Paper tape equipment has been omitted.

Maintenance has been omitted.

Spare parts have been omitted.