

GENERAL  ELECTRIC
COMPANY

Sitz

CAMBRIDGE
INFORMATION
SYSTEMS
LABORATORY

575 TECHNOLOGY SQUARE, CAMBRIDGE, MASSACHUSETTS TELEPHONE 491-6300

cc: C Clingen
D Powell
J Tibbs

DATE: AUGUST 22, 1969

TO: J. C. R. LICKLIDER ✓
R. G. MILLS

FROM: J. S. WARREN


Attached is a proposed agreement for your review. This proposal is General Electric's response to Dr. J. C. R. Licklider's letter of June 26, 1969.

The General Electric Company firmly believes that this proposed agreement is in the mutual interest of both parties.

After reviewing this agreement, we suggest that a joint meeting between representatives of General Electric Company and MIT be held at MIT. Because of the urgency of this matter we believe the meeting should be held, if possible, the first week of September. Since I will coordinate this meeting, I would appreciate your notifying me of a meeting date and time as soon as possible.

Thank you for your consideration of this matter. If you have any immediate questions please do not hesitate to call.

I look forward to hearing from you next week.

Sincerely,

JOHN S. WARREN, Manager
Northeast Federal Area
Federal Systems Operation

/ll

(enclosure)

PROPOSED AGREEMENT

GE-645/MULTICS

1. Project MAC and GE will continue their active support of and participation in the MULTICS Development Program through the third quarter of 1969 at a level that will not impede the production of a MULTICS software system sufficiently stable to reliably support on a simplex GE-645 hardware system a peak load of 30 simultaneous users of "Comprehensive MULTICS Service" with CTSS-equivalent response times.
2. As of 1 October 1969, the MIT Information Processing Center will "go public" with MULTICS utilizing the GE-645 System B hardware configuration previously planned jointly by GE and Project MAC and itemized in Attachment I as the on-line equipment base.
3. To "go public" means to offer the MULTICS service capabilities defined in paragraph 1 above to: the MIT community, including Project MAC; through reciprocal access arrangements already in effect to other universities in the New England area; to GE; and to other industrial and/or academic organizations.
4. Prior to 1 October 1969 and subsequent to 1 February 1969, GE will provide the present GE-645 System B hardware configuration at no cost and Project MAC will pay normal rental (less Educational Discount) on the present GE-645 system^A hardware configuration, plus scheduled extra shift maintenance.
5. All provisions of the following paragraphs of this agreement shall become void if the preceding conditions referenced to 1 October 1969 are not met as of that date. If said conditions are met as of that date, the provisions of the following paragraphs of this agreement shall be effective and binding upon MIT, Project MAC and GE for a period of three (3) years commencing 1 October 1969.

(negative stability w/h)

containing
software,
operation,
etc?

who
determine
who has
access

type 2

Supp. 83
only 25
was?

MSE does not
have 3 yr binding

6. During the period of 1 October 1969 to 31 December 1969, the above referenced GE-645 System B equipment base shall be augmented by GE with additional GE-645 equipment to the level of a dual system B configuration, as itemized in the attached equipment listing.

Who pays?
development
months
from 10/1 to 12/31

Just need
technical
review

7. The MIT Information Processing Center shall establish billing algorithms and resultant billing rates for the two levels of MULTICS service and shall perform all accounting of and billing for the use of such service to all users both internal and external to MIT. The billing rates established by MIT shall be predicated upon the liquidation of all equipment, maintenance, operation and communication costs when the actual peak utilization of the system is approximately 80 percent of the estimated peak capacity of the fully implemented dual system installation, taking into account a diurnal load distribution and system utilization equivalent to that shown in Attachment II. For the purposes of such billing rate calculations, total equipment and maintenance costs shall be as shown in the attached equipment listing. Billing for the use of MULTICS services shall be the same irrespective of whether the equipment is configured as a dual system or as two independent simplex systems.

unwarranted
assumption

inc
GE

GE
costs of
MIT internal
prices?

→ this
seems to mean
40 → 80%
utilized in 1
hr over 2400
period
33% of
24 hr
period

estimate
for
1/1/71 might be
120 users

no
reduction in
cost

8. Effective 1 October 1969, MIT shall pay to GE an amount equal to one-third of the basic monthly rental price of all installed equipment plus the full price of any 2nd shift maintenance required based on the prices itemized in Attachment I. In addition, MIT shall pay one-half of the gross monthly revenue received each month that is in excess of the equipment rental and additional maintenance amount paid to GE for that month.

Included in
with
exp. provision
plan.
B. 1/1/71
274

Don't
permit
MIT's own
costs to be
included

9. In consideration of the above, GE shall be credited for its use of the system subsequent to 1 October 1969 by an amount equal to the billing for such use up to a maximum of 20 percent of the estimated maximum capacity of the system, with such maximum capacity being equal to the peak capacity utilized in the billing rate computations under paragraph 7 times the period 0800 to midnite. However, such GE usage shall be given a lower priority than for other users so that the system does not become saturated during peak load conditions due to such usage.

allowed free?

Don't its use
include CISC
maintenance costs

10. In conjunction with Project MAC, GE will support the continuing refinement and evolution of the MULTICS software at a personnel level commensurate with the increasing stability of the system versus time.

decreasing?

11. Project MAC will continue to support and improve the MULTICS software and will mount a strong effort to develop user-oriented software subsystems.

CSK group or other?

12. Rights to MULTICS shall be in accordance with the prior agreement of the parties. At such time as GE offers a commercial MULTICS service, MIT will cease to offer MULTICS to new industrial users, but may continue to supply them current users. Such an offering by GE will not alter the GE commitment provided by this agreement.

13. Provisions for improved GE-645 hardware and for the support of MULTICS software for such hardware remain as stated in paragraphs G and H of GE's formal 645/MULTICS position of 15 January 1969. Such hardware, or other hardware not included in Attachment I, may be substituted with appropriate order lead times for equivalent installed equipment prior to the expiration of this agreement. Rental prices for such equipment shall be at published list price (or equivalent in the case of special order equipment) discounted by any appropriate educational discount plus any applicable provisions for long term lease.

But not on a 3/4 basis

Should get DSO 220 + 170 into this agreement.

AGREED TO: _____

Title
Large Systems Department
Information Systems
Equipment Division
General Electric Company

Title
Massachusetts Institute of
Technology

hardware
No mention of price for
1. maintenance
2. Improvements for the hardware itself.

ATTACHMENT I

BASIC "B" SYSTEM CONFIGURATION

| <u>MODEL</u> | <u>QTY.</u> | <u>BASIC MO. RENTAL</u> | <u>2nd SHIFT MAINT.</u> |
|--------------|-------------|-------------------------|-------------------------|
| CP8031 | 1 | 14 560 | 952 |
| CPP600 | 1 | 260 | 17 |
| MM8030 32k | 1 | 6 760 | 442 |
| OPT802 | 3 | 252 | 15 |
| OPT815 | 1 | 105 | 7 |
| AMW600 32k | 1 | 4 475 | 292 |
| CAB601 | 1 | 260 | 17 |
| AUV600 32k | 1 | 4 475 | 292 |
| MM8040 32k | 1 | 6 760 | 442 |
| OPT802 | 3 | 252 | 15 |
| OPT815 | 1 | 105 | 7 |
| AMW600 32k | 1 | 4 475 | 292 |
| CAB601 | 1 | 260 | 17 |
| AUV600 32k | 1 | 4 475 | 292 |
| AMW600 32k | 1 | 4 475 | 292 |
| CLK600 | 1 | 760 | 50 |
| MSW600 | 1 | 50 | 3 |
| EMU302 | 1 | 12 430 | 1 328 |
| DC8031 | 1 | 5 620 | 368 |
| MIP600 | 1 | 260 | 17 |
| PLP600 | 2 | 130 | 6 |
| CAB600 | 1 | 990 | 65 |
| HPC600 | 1 | 680 | 46 |
| CAA600 | 1 | 195 | 10 |
| CAC600 | 3 | 255 | 15 |
| TTA600 | 3 | 1 260 | 87 |

} only handle 3 ARDS

← no provision for 7N300

ATTACHMENT 1 (continued)

| <u>MODEL</u> | <u>QTY.</u> | <u>BASIC MO. RENTAL</u> | <u>2nd SHIFT MAINT.</u> |
|----------------------|-------------------------|-------------------------|-------------------------|
| TTC600 | 6 - currently installed | 750 | 54 |
| TTL600 | 6 | 390 | 12 |
| CSA600 | 1 | 195 | 10 |
| CSC600 | 3 - wh. 17 (to POP 8) | 255 | 15 |
| DDA600 | 1 | 680 | 52 |
| DSCIIF | 1 | 3 360 ← full price | 257 |
| DSU10F | 2 | 8 200 | 1 070 |
| AMM600 32K | 1 | 4 475 | 292 |
| CO8030 | 1 | 420 | 28 |
| MTC404 | 1 | 1 545 ← full price | 114 |
| MTH373 (Tape Drives) | 6 | 5 370 | 780 |
| CRZ201 | 1 | 680 | 121 |
| CPZ201 | 1 | 860 | 154 |
| PRT202 | 1 | 1 665 | 320 |
| PSC200 | 1 | 175 | 13 |
| OPT510 | 15 | 630 | 45 |
| MG8031 | 1 | 320 | 36 |
| OPT325 | 1 | 17 | 1 |
| | | <u>104 566</u> | <u>8 760</u> |

AUGMENTATION EQUIPMENT

| <u>MODEL</u> | <u>QTY.</u> | <u>BASIC MO. RENTAL</u> | <u>2nd SHIFT MAINT.</u> |
|--------------|-------------|-------------------------|-------------------------|
| DSU10F | 1 | 4 100 | 535 |
| CP8031 | 1 | 14 560 | 952 |
| MM8040 32K | 1 | 6 760 | 442 |
| OPT302 | 1 | 64 | 6 |
| OPT315 | 1 | 105 | 7 |
| AMM600 32K | 1 | 4 475 | 292 |

Phone A
or B
2

ATTACHMENT I (continued)

| <u>MODEL</u> | <u>QTY.</u> | <u>BASIC MO. RENTAL</u> | <u>2nd SHIFT MAINT.</u> |
|-------------------|-------------|-------------------------|-------------------------|
| CAB601 | 1 | 260 | 17 |
| CLK600 | 1 | 760 | 50 |
| AMM600 32K | 1 | 4 475 | 292 |
| AUM600 32K | 1 | 4 475 | 292 |
| MSW600 | 1 | 50 | 3 |
| EMU302 ← 2nd Drum | 1 | 12 430 | 1328 |
| DC8031 | 1 | 5 620 | 368 |
| HPC600 | 1 | 680 | 46 |
| TTA600 | 2 | 840 | 58 |
| TTC600 | 4 | 500 | 36 |
| TTL600 | 4 | 260 | 8 |
| CSA600 | 1 | 195 | 10 |
| CSC600 | 3 | 255 | 15 |
| CO803D | 1 | 420 | 28 |
| MTC404 | 1 | 1 545 | 114 |
| MTH301 | 4 | 2 460 | 352 |
| PRT202 | 1 | 1 665 | 320 |
| OPZ201 | 1 | 860 | 154 |
| CRZ201 | 1 | 680 | 121 |
| MG8031 | 1 | 320 | 36 |
| OPT825 | 1 | 17 | 1 |
| | | <u>68 831</u> | <u>5 883</u> |

? does not provide full backup

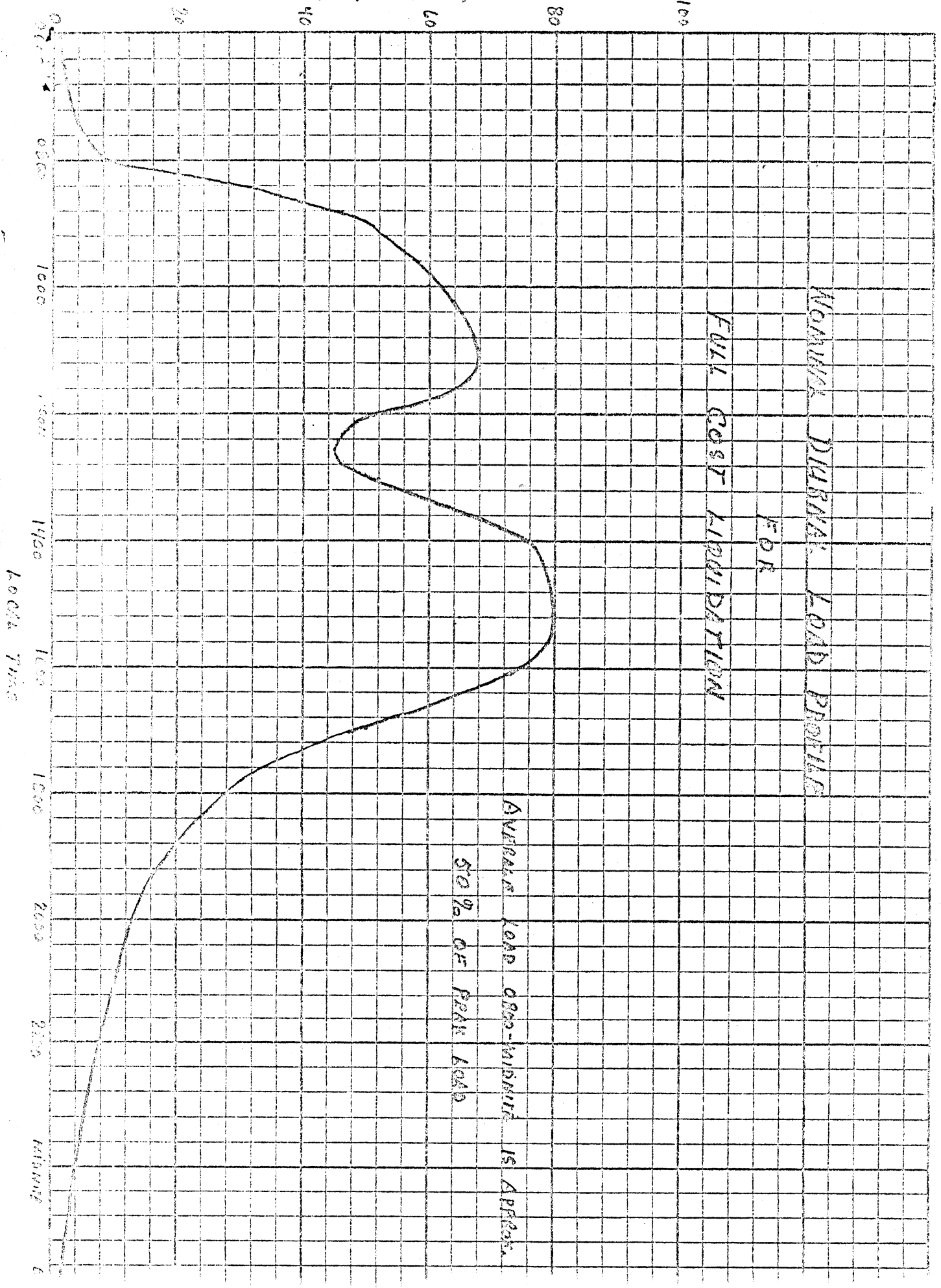
CRA } would
 AA } be
 CAC } more appropriate

3 more ARDS

Second Type Controller?

Backup
 Mgr sets?

PERCENT PEAK CAPACITY - DUAL SYSTEM



MONTHLY DIURNAL LOAD PROFILE

FULL COST ALLOCATION

FBR

AVERAGE LOAD OVER-MIDNIGHT IS APPROX. 50% OF PEAK LOAD

LOCAL TIME