<u>London Boroughs' Management Services Unit</u>

<u>REQUEST FOR QUOTATION</u>

<u>FOR</u>

<u>NORTH EAST LONDON COMPUTER SCHEME</u>

3 Buckingham Gate,
Victoria,   H.J. DIVE
London, S.W.1.   DIRECTOR

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Notes on this Reproduction

This reproduction is the result of scanning and OCRing. The document was proofed and any OCR errors corrected. Please refer to the scanned PDF for any clarification.

The following changes were made:

1. The page size was increased to A4 and formatting ensured pages started on the page number as per the Contents page, although some paragraphs may spill over to a different page than the original report.
2. Words closely linked by an Em (—) dash have a space either side for readability and as per modern practice.
3. A few obvious spelling mistakes have been corrected with "LEO 111" corrected to "LEO III".
4. Alternative spellings, particularly hyphenated words, were kept as the original text.

Scanning and OCRing used the NAPS2 (Not Another PDF Scanner 2) software. The text was then copied and pasted into LibreOffice and after proof reading and correction, was saved in the odt format as the formatting was not preserved when using MS Word format. The final odt file was then exported as a pdf.

Local Government Terms

I have produced a separate *Local Government Glossary* to explain some of the Local Government terms in use in the 1960s that might not be familiar to present day readers.

London On-line Local Authorities

As a result of this RfQ, 3 London local authorities (Haringey, Hackney and Tower Hamlets) created a consortium to implement the system. It was called London On-line Local Authorities (LOLA). Soon a fourth local authority, Hillingdon, joined.

This document and many others have been uploaded to a dedicated LOLA website http://www.alancooper.me.uk/LOLA/lola.html pending transfer to the *The Centre for Computing History* in Cambridge, UK.

Alan Cooper
21 August 2021
Alan was one of the first LOLA employees in 1970.

CONTENTS

I. <u>INTRODUCTION</u>

This document should be read in the context of the "Report on the Initial Study - Haringey Long-term Computer Project" which describes the essential background and the broad systems requirements. Appendix 1 sets out the present situation regarding the usage of the LEO III equipment employed by the North-East London Computer Scheme based at 6 – 24, Southgate Road, London, N. 1

II. <u>CONDITIONS</u>

All manufacturers will be required to agree to the following conditions:—

(i)

That the consideration of their quotation is subject to the performance by the end of August 1969 of the required benchmark tests to the satisfaction of the LBMSU. These benchmark tests must be run on equipment which is similar to that quoted in all essential respects and use any standard software proposed for the project by the manufacturer.

(ii)

Written answers are to be supplied to all the specific questions asked below. Standard documentation may be submitted <u>in support of the answers</u> if desired.

(iii)

All documents and manuals requested below are to be supplied.

(iv)

Payment for the machine (or rental if this should be preferred) shall be subject to the satisfactory performance of such acceptance tests as the LBMSU shall require.

(v)

Written answers are to be supplied to such supplementary questions as will be asked after the tender has been received.

(vi)

All negotiations relating to this request for
quotation and subsequently relating to the
quotation itself must be conducted directly with
the nominated officers of the M.S.U. Canvassing
in thy form will disqualify.

III. OUTLINE REQUIREMENTS

(A)   Performance

Manufacturers will appreciate that it is not possible to define precisely the
requirements for the on-line system at this stage when the exact composition of the
new consortium has not yet been determined and the Working Parties (which will
establish details of the NUCLEUS applications) have not been convened. Thus the
performance requirements indicated below should be considered as first
approximations only and manufacturers will no doubt find it necessary to make
certain assumptions concerning, for instance, the peak arrival rate of messages, the
average and maximum message lengths and the number of file accesses required to
process messages; all such assumptions should be clearly stated in the quotation.

Since it is considered that the constraints imposed by the use of any standard
software which is proposed also the characteristics of the direct access storage
devices quoted will be dominant factors in determining the final organisation of the
data bank, no structure for the latter has yet been defined. Manufacturers should
however note the requirements for a very high degree of cross-referencing between
components of the data bank and give special consideration to the problems of
facilitating the gradual creation of the data bank without continual re-programming
due to the phased growth of the system also changes in requirements and extensions
to the NUCLEUS.

The initial design objectives will be to realise all those applications defined as
the NUCLEUS in the above mentioned report. The configuration should be capable of
use by up to six London Boroughs. This is assumed to involve:-

(i)

The provision of direct access storage capacity of about
100 million effective bytes for each borough.

(ii)

The provision of facilities for linking about 30 remote terminals for each borough — these terminals are to be a mixture of teletypes and videos (say half and half with some videos having hard copy facilities). Multi-dropping is to be initially rather limited in order to allow for subsequent expansion and fifteen lines per borough should be allowed.

(iii)

An on-line transaction rate i. e. a message and a response, rising from an initial 1000 per hour to over 4000 per hour within a year of installation. This transaction rate could be expected to grow to 25, 000 per hour within three years of installation. There will be considerable use of the terminals for file up-dating and data. capturing as well as for enquiry work; for the NUCLEUS the data capturing role of the terminals is most significant for job progressing and ordering when fairly large messages making full use of the video screens may be expected. Security and audit considerations will be extremely important and will involve the use of passwords with comprehensive logging of messages; the integrity of the records up-dated in the on-line context must be ensured.

Access to the data base must be possible for both on-line and batch processing programs at the same time although facilities must exist to inhibit access to any single record in the course of being up-dated by any routine. It is not intended to offer facilities for file searching, online program development or technical calculations in the first phase of the project.

(vi)

Response times of the order of three seconds to eight seconds.

(v)

Multi programming capacity providing for:-

  (a) A batch processing job stream (which may be trials or compilations)

(b) A spooling job stream.

(c) A collection of on-line programs, preferably
capable of operating in a 'multi thread mode'
and having facilities allowing a trial mode of
parts of the online system to operate
concurrently.

The configuration should be capable of providing an on-line service to the above standards between 8. 30 a.m. and 6.00 p.m. and of encompassing the NUCLEUS applications (together with an allowance of 8 hours per week for trials and development work) within a two shift system of 8.00 a. m. to 10.30 p. m. five days a week. (It is estimated that for the batch processing load envisaged, some 100 hours a week would be required for six boroughs on the present LEO III installation).

(B) Expandability

Since the NUCLEUS represents only the first phase of the project it is an essential requirement that the configuration offered should be capable of very significant up-grading – this applies to main store, channel capacity, backing storage, number of communication lines and message handling rates. Such future up-grading should not necessitate closing down of the installation for a period longer than one weekend, imply significant re-programming or recompilations.

(C) Hardware

The choice of central processor (or dual processors), size of core store, number of control units and channels, the type of communication interface and the nature of direct access storage will (subject to meeting the requirements (A) and (B) above) be a matter for each manufacturer concerned. The following peripherals for batch processing work (or nearest equivalents) must however be included as standard:-

(i)   6 x 60 KB per sec. tape decks with facilities for at
least two simultaneous data transfers.

(ii)   2 x 1000 LPM 120 print position printers.

(iii)   2 x 1000 CPS paper tape readers able to function
simultaneously.

(iv)   Console typewriter.

(v)   Real time clock.

A medium speed card reader may also be included if punched cards are the preferred medium for job control and/or program entry etc. – if a card reader is included all the uses for which it is recommended should be clearly stated. Punched paper tape will be the installation preferred medium for all current data entry. Facilities to provide for lower case printing when required would be an advantage.

Proposals should provide for the graceful degradation of the recommended system by duplicating such key items of equipment as is appropriate and providing facilities for the switching of channels etc.; where practicable modularity of all equipment should be aimed at.

The following information should be supplied for each item of hardware proposed:-

(i)   Function and performance rating.

(ii)   Capital cost.

(iii) Rental charge (excluding maintenance) for the one and two shift systems defined in section E below, on the basis of agreements for periods of one year, three years or five years.

(iv)   Maintenance charges for the one shift and two shift systems as in (iii) above.

(v)   The expected mean time between faults i. e. period of continuous use under normal maintenance conditions without breakdown.

(vi) The amount of routine periodic maintenance required.

Total costs for the installation as a whole on the basis of (ii), (iii) and (iv) above should be quoted; for this purpose the terminals, modems and control units and/or line adaptors peculiar to each terminal should be excluded. Manufacturers should state which items of equipment are provided purely for standby purposes, what margins are available for further expansion, what would be involved in this expansion and what are the critical factors which would establish the need for each level of expansion envisaged. The maximum overall simultaneous data rate for the proposed installation should be quoted and the maximum possible simultaneous data rate for the central processor proposed should also be stated; similar figures should also be given for the on-line communications interface. The anticipated use of DATEL services should be described.

(D) <u>Software</u>

It is intended to make use of manufacturers' standard software wherever possible for the non-application oriented aspects of the work. Both on-line and batch processing programs should be able to use standard software and common routines to interface with the data base; interface to the input and output message queues should be provided by standard software. The version of the operating system or executive should provide for the multi-programming situation envisaged in (A) (v) above and facilities for all line handling functions, message assembly and message transmission are expected to be provided. It is hoped to ensure that the problems of 'data base management' should, as far as possible, be divorced from the application and on-line transaction programming, this is in order that the problems of growth and future maintenance of the programs should be reduced to an acceptable level – manufacturers will be expected to comment on the extent to which this goal is already feasible with their existing software or will become so within the immediate future.

COBOL will be the preferred programming language for application programs and where possible also for on-line transaction handling. An efficient COBOL compiler (with all major facilities implemented) and a debugging system which relates to the source language are therefore essential.

Special facilities appropriate to testing on-line programs must be provided e. g. terminal transaction simulators, modular testing, saturation testing etc. Manufacturers are asked to state how all the above requirements will be met by their software, making it clear where they consider their standard software is appropriate and where no standard software exists indicating the extent of the responsibility which they will assume for defining, writing and maintaining the basic software required.

(E) <u>Delivery</u>

The required delivery date for the new installation is October 1971 and the scheduled date for the first major live application (probably rate accounting) is April 1972 – by that time it is expected that at least 15 of the terminals should be operational for each member of the consortium. No definite site has yet been determined for the new installation. Manufacturers should proceed on the assumption that the installation will be based at the present LEO III site in Southgate Road, working initially on a one shift system of from 9.00 a.m. to 5. 30 p.m. Monday to Friday changing to a two shift system of from 8.00 a. m. to 10.30 p.m. Monday to Friday as the batch processing load is transferred.

(F)   <u>Documentation</u>

Specimens of the following items should be submitted:-

>(i)   Purchase contract.
>
>(ii)   Rental contract.
>
>(iii)   Maintenance contract.
>
>(iv)   Any other standard manufacturer's contracts which might be appropriate to the installation.
>
>(v)   Catalogue of documentation available to customers.
>
>(vi)   Details of training course facilities and timetable.
>
>(vii)   Catalogue of standard application packages available to customers.

IV. QUESTIONS

<u>Support Services</u>

Q. 1

How much assistance will the manufacturer supply in each of the following areas and what charges (if any) will apply in each case ?

>(a)   General consultancy
>
>(i) Systems programming
>(ii) Operating and installation
>
>(b)   Seconded Systems Analysts
>
>(c)   Seconded Programmers
>
>(d)   Liaison with G.P.O. concerning lines etc.
>
>(e)   Conversion of LEO III magnetic tape files
>
>(f)   Conversion of such LEO III programs as will be transferred to the new installation.
>
>(g)   Recruitment and selection of staff.

Q. 2

How large is the customer systems and programming support group for the London Area ?

      (a)   How many of these staff are allocated specifically to Local Government support.

      (b)   How much experience have they of on-line systems.

Training

Q. 3

What training facilities will be provided for LBMSU's staff ?

      (a)   How long will this training take for:-

          (i) Experienced programmers.

          (ii) Experienced systems analysts.

          (iii) Operating staff.

      (b)   Can this training be provided on the LBMSU's premises.

      (c)   What charges will be made.

      (d)   If training is conducted on a manufacturer's premises will there be special courses for the LBMSU, if not how far in advance will it be necessary to book in order to ensure places and how many places can be allowed to one customer on each standard course.

Q. 4

What training facilities will be provided for London Boroughs' staff ?

Q. 5 Trials

What arrangements will be made for testing facilities prior to installation ?
In particular:-

      (a)   Where will testing take place.

      (b)   Will all the items of equipment quoted be available on the trials configuration – in

particular what terminals will be available and how will the eventual complete network be simulated.

(c) From what date will these facilities be available.

(d) At what times of day and for what periods will the facilities be available.

(i) How much trial time can be guaranteed on a daily basis

(ii) How much can be guaranteed on a weekly basis

(e) Will the operating normally be done by trained operating staff.

(f) Will data preparation facilities be available i. e. both equipment and punch operators.

(g) Who will supply magnetic tapes and magnetic discs for testing purposes.

(h) Who will supply consumable stationery i. e. punched cards, paper tapes and paper.

(i) How much testing time will be supplied free of charge.

(j) What charges will apply if the free period is exhausted.

Software

Q. 6

What are the requirements in order to obtain optimum efficiency using the recommended configuration is the manner indicated, in terms of main memory storage, backing storage and dedicated peripherals for each item in the following software ? If the software indicated is not standard, but will be specially written by the manufacturer, estimates should be provided.

(a) Operating system

(b) COBOL compiler

(c) Assembly language compiler

      (d)   Communications packages i. e. line handling etc.

      (e)   Data base management packages

      (f)   FORTRAN compiler

Q. 7

Supply storage maps of both main memory and backing store (indicating type of backing store) indicating the allocation of all non application software under the following conditions:-

      (a)   When running in the normal mode defined in III (A) (v) above.

      (b)   When running in trials mode, but providing the on-line service.

Q. 8

Under what circumstances is the use of COBOL not recommended ? What percentage increase in running time and in the number of instructions should be estimated if compared with assembly language programs ? How far will the recommended structure for the data bank permit the use of COBOL for:-

      (a)   On-line transaction programs.

      (b)   Batch processing programs using the data bank.

Q. 9

What standard application packages can be provided ? In particular can the following be supplied:-

      (a)   PERT network analysis including resource allocation.

      (b)   Survey analysis

      (c)   Regression analysis

      (d)   Standard mathematical routines

      (e)   Basis statistical routines.

Q. 10

Are there any packages available to assist in planning the on-line system e. g. network simulation ?

Q.11

What access is there to programs developed by other users using similar configurations ?

Q.12

What access is there to programs developed by the manufacturer for his own bureau work ?

Maintenance

Q.13

What will be the general arrangements for the maintenance of the new installation:-

(a) Will on site maintenance be standard, if so how many Engineers will be supplied. If not what is the maximum delay to be expected before an Engineer appears on site in the event of a breakdown.

(b) What routine maintenance is required to be done by the operating staff.

(c) How much total routine maintenance time is required each day. At what intervals and for how long will each access be required.

(d) When are hardware modifications effected by the Engineers. Is the Computer Manager consulted beforehand. How much time per month should be allowed for this purpose.

(e) What equipment spares and facilities for Engineers' use are expected to be provided by the customer.

(f) What special arrangements apply for the maintenance of the remote terminals. How far is maintenance possible without affecting the system as a whole e. g. on-line diagnostics etc.

Delivery and Installation) Questions to follow after initial short-listing of
Environmental Factors) manufacturers.

Documentation

Q. 14

What is the general situation concerning the supply of documentation ?

       (a)   What manuals are supplied as standard.

       (b)   How many copies are supplied free and what charges are made for additional copies.

       (c) What is the standard system for the notification of:-

           (i) Software problems.

           (ii) Developments in software and hardware.

       (d)   What system of notification of software errors and hardware faults is in operation.

Q. 15

How is standard software up-dated ?

       (a)   Are amendments only distributed necessitating recompilations on site or are complete new versions distributed.

       (b)   On what medium are the changes distributed.

       (c)   How many changes can be expected each quarter and how much machine time should be allowed for changes to be effected.

Policy

Q. 16

How will any special software developed for the project by the manufacturer be maintained ?

Q. 17

What guarantees will the manufacturer give concerning the average and minimum serviceability of the installation ?

Q. 18

What is the estimated life of the recommended equipment ?

> (a) How long will elapse before a completely new product range is announced.
>
> (b) For how long will full maintenance support be guaranteed.
>
> (c) For how long will the full range of training facilities continue to be available.
>
> (d) For how long will some training facilities continue to be available.
>
> (e) When will the further development of current standard software cease.

Q.19

Is a manufacturer prepared to guarantee that the next range of computers in his development will provide for full compatibility with the configuration proposed i. e. that magnetic files will be acceptable and that all software can operate on the new range subject only to any necessary recompilations ?

Q.20

What is the Company's policy towards the linking of other manufacturers' equipment – of particular significance will be modems and terminal equipment ? What is the policy towards the use of other manufacturers' supplies e. g. magnetic tapes, discs, punched cards etc. ?

Q. 21

What penalties are incurred in the event of early return of rented items of equipment in substitution for more expensive items of equipment ?

Q. 22

Is the manufacturer prepared to undertake the development of special software for the project on a repayment basis ?

Q. 23

Is the manufacturer prepared to offer any trade-in allowances for the LEO III installation ?

<u>Experience</u>

Q. 24

Provide a list of all equipment similar to that quoted which is installed or on order and which is (or will be used) for the implementation of large data bank projects in an on-line environment i.e. direct access to files of more than 50 million bytes from more than 50 remote terminals. The list should indicate the configuration used for each project, the date of delivery or expected delivery, the type of project involved and be subdivided into United Kingdom and abroad installations under each main type of customer.

Note: the following sections were missing from this historic copy:

      Appendix 1   Present LEO III facilities and usage
                   2   Benchmark Tests