



H M Treasury

**Central Computer and Telecommunications Agency**

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Mr D Barclay  
10 Downing Street  
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cc Mr Ingham - No. 10  
Mr Stevens - CO  
Mr Childs - CO  
Mr Coe - COI  
*H. E. Brown 462*  
27 April 1984

*Dear Barclay*

**INTERDEPARTMENTAL ELECTRONIC MAIL SYSTEM**

The CCTA is about to embark on a study to assess the feasibility of an interdepartmental electronic mail (IDEM) system. As Number 10 would clearly be one of the key "nodes" in such a system, I thought I would copy directly to you some of the recent papers that we have sent to the Chairmen of Departmental IT Committees.

The attachments are for information only at this stage, as I understand that Number 10's IT matters come under the aegis of John Stevens at the Cabinet Office. We are in touch with him as Chairman of the Cabinet Office IT Committee, and I am assuming that he, or his nominee, will take the lead in Number 10's participation in the IDEM study.

I am also sending copies of this letter to Bernard Ingham and Jim Coe (at COI) because of the close relationship between the IDEM study, with its strategic aims, and the imminent CCTA study on IT in Press Offices, where we are looking for a quick, rather than a comprehensive, answer. Within the Agency the two study teams are keeping in close contact.

If you, or any of the copy recipients of this letter, would like to discuss any of the points raised in this letter or the attachments, please do not hesitate to get in touch.

*Yours sincerely*  
*Michael O'Connor*

Michael O'Connor



10 DOWNING STREET

*From the Private Secretary*

18 May, 1984.

Interdepartmental Electronic Mail System

I am sorry not to have responded earlier to your letter of 27 April. It was good of you to keep us in touch. I have spoken briefly to John Stevens at the Cabinet Office, who is quite content to represent No.10's interests in the proposed study. He has also kindly agreed to keep us informed of significant developments.

I am sending a copy of this letter to John Stevens.

David Barclay

Michael O'Connor, Esq.,  
CCTA.

K



*K. Bunting*

10 DOWNING STREET

*From the Private Secretary*

MR. WRIGHT  
CABINET OFFICE

INTERDEPARTMENTAL ELECTRONIC MAIL

I am sorry to have been slow to contribute to current consideration of an interdepartmental electronic mail system.

I start from two assumptions:

- i. that there is likely to be a strong case in principle for such a system, given the volume of interdepartmental correspondence and the urgency of much of it;
- ii. that if there were to be an electronic mail system, it would be essential for the Prime Minister's Office to be connected to it.

We do, however, have certain rather specialised needs which would need to be taken into account. Foremost among these, of course, is security: unless the system can be cleared for traffic at the highest security classification, we would need to retain document transfers between departments. We estimate that some 42 pages of documents and 24 telegrams per day are classified secret or above. No doubt similar considerations apply to MOD and FCO.

The second point is twenty-four hour cover. In silent hours, we should need some means of notifying the Duty Clerk of the receipt of urgent messages. I imagine this would not be an insuperable problem, though it would mean retaining a substantial element of human judgement on a 24-hour basis in the despatching departments.

Thirdly, we should need to give thought to control of messages within No. 10. Many incoming telegrams for example are sent not only to Private Office but also to Press Office and to the Policy Unit. We should need the flexibility to be selective about this.

Fourthly, and on a related point, it would be helpful if an electronic mail link could be provided to Chequers, either by bringing the house fully into the electronic mail system or by means of a two-way link with No. 10 only.

/Finally,

Finally, we assume that the system would not provide facilities for direct outward transmission of telegrams, and that this would continue to be handled via an interface at FCO.

I attach your completed questionnaire. This includes estimates of the volume of traffic which bear little relation to the figures in Annex A to T(83)7 (which, as I think you know, we do not recognise). Please let me know if we can help further, either now or at a later stage.

MR. D. BARCLAY

15 February 1984

MR. BARCLAY

Electrical Distribution of Telegrams

I asked Leslie Wright to send the attached Cabinet Office paper hoping it would shed rather more light on the proposed scheme. Clearly it is very much an exploratory paper and was used as a basis for the meeting held last November. Sheenagh, who attended the meeting is unable to give much information on how it might operate.

Before we complete the form which is geared more towards IT systems (Leslie has a meeting with CCTA on 9 February) we need to consider a number of points. Clearly it has been anticipated that a separate secure system will be required to prevent unwarranted access - how do the FCO see this operating? At present Hong Kong telegrams are not copied to Press Office so there would be some need to prevent the Press Office copy printer receiving these. Perhaps in such instances we should continue to rely on the FCO Private Office to forward the 'sensitive' telegrams.

Question 2(a) asks for details on which other departments we might be linked to - if we are talking in terms of telegrams only, and not electronic mail, then we only need the FCO link - we have no other <sup>Soviet</sup> at present.

As for 2(b), this question is more relevant to installation of IT systems. Obviously we can expect a large number of telegrams daily - approximately 200 per day (divided between Private Office, Sir P. Cradock and Press Office). Classification will range from RESTRICTED to SECRET.

Location of the VDU (question 3) apart from cost depends largely on the ability to monitor who receives what. If the machines cannot be fixed to prevent Press Office/Sir P. Cradock receiving sensitive telegrams then only one terminal should be available. The noise factor could be important, if the PA tape is comparable then it would be an intrusion to have it located in the office. However if we relegate it to CF, there would be the problem of monitoring when the office is unmanned. (Because of the classification of material it will need to be in a secure location.)

/ If we

If we proceed, there is a lot to be said for installing the equipment at Chequers. The MUFAX is not always the most satisfactory way of sending telegrams - reproduction quality being poor.

Currently we rely on the FCO to despatch outward telegrams. Do the FCO envisage this continuing? It would seem preferable.

At present we only receive those telegrams that we need; and they are sent either by tube, box or in envelopes. Certainly, it is a tedious task opening and sorting the telegrams on arrival but the task is made easier for the Duty Clerk as important telegrams are advanced to us. It will be important, therefore, to identify easily which need particular attention. A bell/buzzer on the VDU could do this, as with the PA/Reuters machines but this does not cover the time when the Duty Clerk is not in CF/Private Office. We would perhaps need to rely on the Resident Clerk to contact us during the silent hours, as happens now.

My main concern is that whilst there are many advantages to using this during the day - up to the minute information, etc, I feel that where No. 10 is concerned it could fall down badly during the silent hours and weekends. As an office that operates twenty four hours a day we need a foolproof system and the present set-up rarely lets us down. If we are not careful, it could be easily assumed that we are better informed than we really are - especially if the Duty Clerk is distracted with other activities and is therefore unable to monitor the VDU.

With time on our side - no doubt we should proceed on the basis that these points will be sorted out before the equipment is installed.

P.E.

PETER EWING

8 February 1984



H M Treasury

## Central Computer and Telecommunications Agency

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26 April 1984

### INTERDEPARTMENTAL ELECTRONIC MAIL STUDY

In my letter of 24 February, I outlined our intention to embark upon a two-part study into the feasibility of an interdepartmental electronic mail (IDEM) system. We have now chosen the team of consultants for Stage 1 of the study and I am writing to ask if you would be willing that yours should be one of the 20 major departments to be involved in this high profile project.

If you are, could I also ask you to nominate one official in your department to take responsibility for the co-ordination of the department's involvement in the study and, where necessary, for expressing an agreed view on behalf of the department. We would also expect him to ensure that his senior departmental management were kept informed of progress and significant points arising. Given the strategic nature of the study and the fact that different areas of responsibility within certain departments will have to be covered, we would expect the nominated co-ordinator to be about Assistant Secretary level, and probably with direct responsibility for one or more of the following areas - IT/Office Automation, Management Services, Telephony/Telecommunications, ADP.

From a competitive evaluation of several teams of consultants, one firm has been selected as offering the most comprehensive and positive proposals for carrying out the study. Subject to certain details being finalised it is hoped to place the contract within a few days. For your information I have attached a two-page management summary of their proposal, together with a provisional work plan, at Annex A. There are no changes to either the scope or conduct of the study from those described in my earlier letter, although the terms of reference have been revised, and these, together with the background note supplied to the consultants, are attached at Annex B. As you will see, we have set ourselves a brisk schedule, with only 12 weeks elapsing between the start of the study on 7 May and the delivery of the final report on Stage 1 by the end of July.

.../...

A crucial part of this short study will be the collection of information about the current and expected communications flows and the IT plans of your department. The sort of information and how we propose to collect it is described in more detail in the following paragraph and the Annexes; at this point, however, I would like to stress that we see the main objective of collecting these data as being to characterise interdepartmental flows by obtaining an overview of volumes, urgency, security etc: we are not concerned with precise numbers. The focus of interest will be on the flow of "administrative" communications (particularly text) between your own and other government departments, and the study will not be concerned with the exchange of "operational" data between, or the input to, departmental ADP systems.

The consultants propose to collect the information in two ways which together should result in the most efficient and least time-consuming approach. Firstly, they will be sending out a questionnaire that will ask departments to collect some information and, secondly, they will be giving advance notice of the other issues that they would like to raise at an interview. The checklist of topics to be covered is at Annex C.

The work plan calls for a two-man team from the consultants, accompanied by the Agency's Study Liaison Officer (Bill McKinley) to spend up to a day in each department to complete the collection of information, discuss the other issues and generally get a feel for significant future communications flows, work patterns, IT plans etc. as they might affect an interdepartmental electronic mail system. The interview(s) will probably involve several of the departments' staff, but over and above this we would not expect to burden departments unduly.

Could I ask you to contact us (by telephone) by 3 May to confirm your readiness to participate and to let us have the name of your nominated departmental co-ordinator. We shall then get in touch with him with a view to fixing the first interviews in week beginning 7 May 1984. In the meantime, if there are any points that you would like to raise, please contact me or, in my absence, Matthew Young or Bill McKinley on 211 8692.

.../...

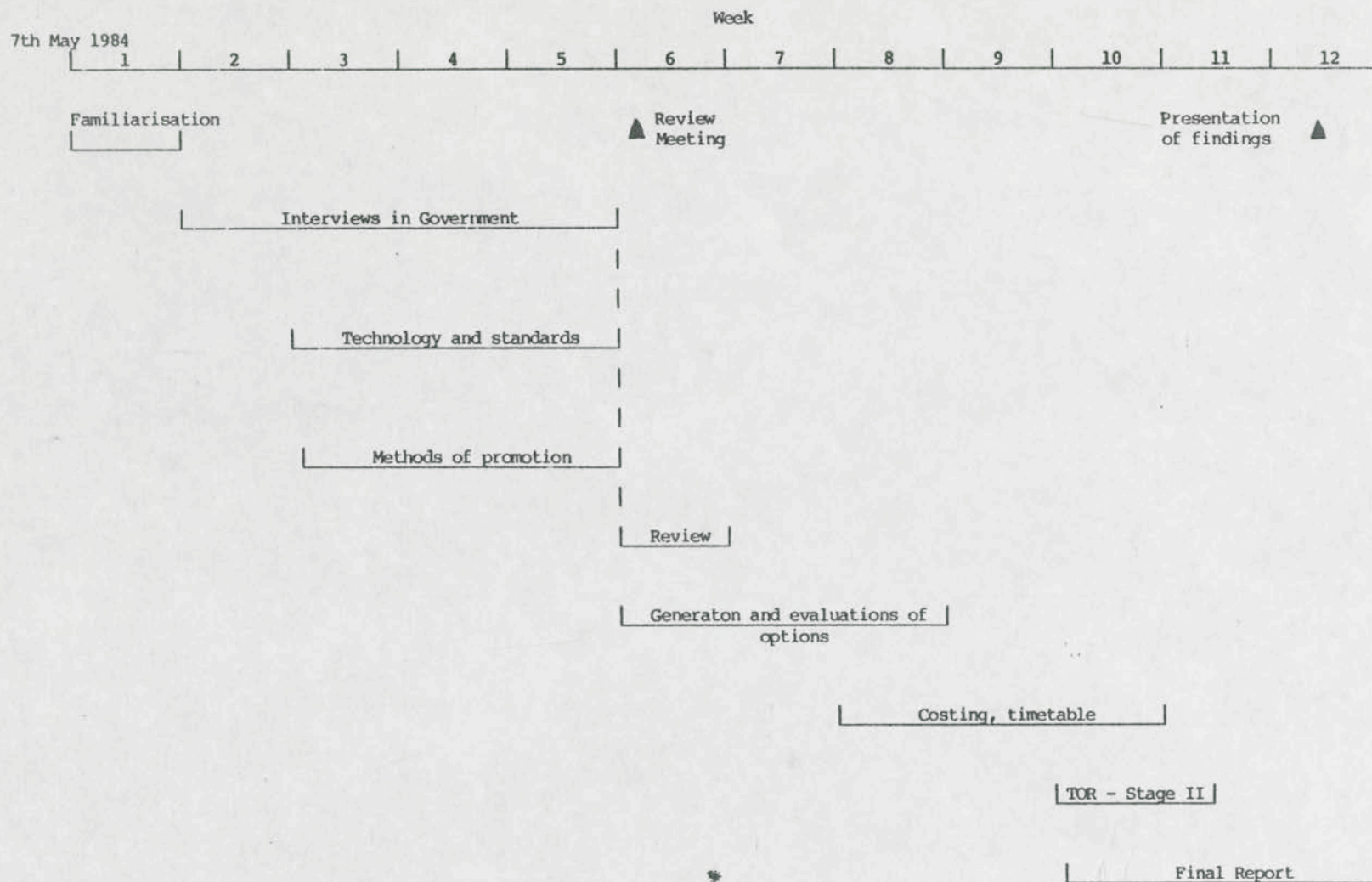


Finally, on an administrative point, may I take it that you will consider whether you need to consult your departmental trades union side about your involvement in this study and take any action as appropriate. At national level, we have already informed the CCSU of the study and provided them with copies of the terms of reference and the background note.

I am writing in similar terms to the other departments listed at Annex D. Copies of this letter also go to Ian Beesley in the Efficiency Unit, to Eddie Brown in the MPO and to the Secretariat to "T" Committee for information.

Michael O'Connor

Figure 4.1 - Timetable for Stage I of the study



EXTRACT FROM CONSULTANTS' PROPOSALS

1. MANAGEMENT SUMMARY

1.1 We are pleased to submit 's proposal to the CCTA for Stage I of a study of inter-departmental electronic mail. Assuming a start date of 7th May 1984, we would complete the programme of work outlined in this proposal by the end of July 1984.

1.2 Individual Government departments are already pressing ahead to develop electronic mail systems. With increasing use of word processors and data communications terminals this trend will accelerate. The Agency encourages individual departmental initiatives, but is also concerned to safeguard and encourage the inter-departmental exchange of information by electronic means. It has therefore commissioned a study to consider what steps it should take to enable this exchange to take place.

1.3 Within the study would place special emphasis on certain issues. These are:

- the study and selection of appropriate standards so that any inter-departmental electronic mail system would allow the connection of a variety of equipment and interconnection with the systems of individual departments;
- the selection of appropriate technologies and bearer networks to meet the requirements of the Civil Service for inter-departmental electronic mail. In particular, the study should consider the role of the evolving Government Telephone Network;
- the security requirements of departments and the different ways of meeting these needs;
- methods for ensuring there are enough regular users of the system to make it effective and self-sustaining;
- robustness and flexibility of the chosen options under a range of assumptions about developments in user demand, technology and standards.

1.4 would divide its work programme into four principal parts:

- collecting information on the requirements and plans of Government. We propose to hold 15 to 20 indepth interviews with selected departments;

- studying the most appropriate methods for promoting inter-departmental use of electronic mail;
- reviewing the technologies and standards which are available and emerging;
- generating and evaluating robust solutions to the requirements.

In all parts . . . would draw upon extensive previous experience so that the study team could concentrate on the specific needs of the Civil Service.

1.5 We have selected the proposed five man study team to meet all the requirements listed by the Agency in Paragraphs 10 and 11 of Annex B to the Invitation to Tender. Together the team has detailed knowledge of the relevant standard issues and technologies, considerable experience in electronic mail studies - both for users and service providers, and a sound understanding of the workings of Government. In particular:

- . . . has worked on three major studies to help service and product suppliers determine how best to exploit the opportunities provided by electronic mail;
- . . . has applied his detailed knowledge of OSI and other standards to help the DTI develop standards for electronic mail;
- . . . has worked on a wide range of electronic mail studies for users, including the UK Government and the EEC;
- . . . is currently working on a study of communications technologies and has studied and forecast demand for the competing electronic mail technologies;
- . . . has helped determine the requirements of the FCO for electronic mail.

Together we believe this team could provide the CCTA with a cost-effective study which fully meets the Agency's requirements.

1.6 Chapter 2 of the proposal discusses the Agency's requirements in more detail. Chapter 3 outlines . . . 's approach to the study whilst Chapter 4

describes the proposed study team and the resources  
it can draw on. Finally, in Chapter 5, we present  
's commercial terms.

## INTERDEPARTMENTAL ELECTRONIC MAIL STUDY

## STAGE 1: TERMS OF REFERENCE

1. To conduct a study and to produce 12 copies of a report to the CCTA by the end of July 1984 characterising and specifying the requirement for interdepartmental electronic non-voice communications, and setting out a range of options for meeting it. The report should provide:

a. an overview of interdepartmental traffic, including current communications flows by volume, urgency and security (including any requirement for audit trails);

b. a description of the requirements for interdepartmental electronic communications classified as immediate and perceived needs, and those that are prospective, and including the security and privacy aspects of those requirements;

c. a brief description of current and emerging plans for interdepartmental non-voice communications - significant activities by CCTA, central departments generally, and other departments whose plans are expected to carry important implications for an interdepartmental service;

d. a description of the available and emerging technology and standards for electronic communications, trends in the market, and the opportunities that they present;

e. an assessment of the range of technically robust and resilient options and migration paths for meeting the requirement described at b. above, modified as appropriate by departmental plans at c., and taking account of the analysis of the technology and standards at d.;

f. proposals for accelerating widespread acceptance and use of any new facility (in particular, addressing the difficulties associated with an initially small and dispersed community of users);

g. a statement of the costs and timetables associated with each option and how the new services might be implemented, managed and financed (identifying costs associated with any central facility);and

h. suggested precise terms of reference, together with a costed plan for a detailed study to investigate the options identified and to make recommendations on the implementation of any interdepartmental electronic mail facility.

2. The report must, in its descriptions and arguments:

- o provide an expert and defensible assessment of the points at paragraph 1 above;
- o be a complete and self-contained account of the work carried out according to these terms of reference;
- o be succinct and comprehensive, and include a 3 page management summary;and
- o provide a basis for detailed consultations with departments and with potential suppliers.

## INTERDEPARTMENTAL ELECTRONIC MAIL STUDY

### BACKGROUND NOTE

1. An important aspect of the application of Information Technology in the office is electronic mail, providing for the interconnection of text processing equipment for document and message transfers, for the distribution and display of notices, circulars etc, and for image transmission using digital fax and remote copying technologies.

2. Several departments are pressing ahead with the development and implementation of internal electronic mail facilities, primarily for the transfer of both classified and non-classified text. To assist in this, an emerging aim of many departments is that all text should be produced electronically and be capable of being transmitted electronically.

3. Inevitably, such facilities will differ between departments, as will the technical standards they employ for interworking with other systems. CCTA has encouraged these departmental initiatives, but is now looking to the prospect of enabling interdepartmental exchange of information by the provision of a networking facility and/or by the definition of a set of standards.

4. It will therefore be necessary to consider technological trends and opportunities and the developing ISO Open Systems Interconnection Standards (including the DTI Intercept Strategy) in order to come to an expert view on possible options.

5. The presumption is that text transfer (both formatted documents and unformatted messages) is the most important and immediate requirement; but it is essential that robust migration paths (in terms of technologies and standards) are adopted which will provide for the subsequent development of the facility to allow for the incorporation of other non-voice communications.

6. A further consideration will be the CCTA's plans for the Government Telecommunications Network (GTN). The GTN is a star network of analogue circuits interlinking some 700 government offices throughout the country and supporting a large proportion of their telephone traffic. Digitalisation and modernisation of the GTN will lead to a digital mesh network to be known as the Integrated Services Government Network (ISGN) in the 1987-88 timeframe. Fuller plans on this, together with other background information relevant to



the conduct of the study, will be made available for the commencement of the study.

7. There is, therefore, an urgent need for a study to analyse existing and emerging needs and opportunities for interdepartmental electronic transfers, to specify any government-wide requirement, and to identify the organisational and technical options (including technical standards) to meet that requirement.

#### THE SCOPE AND TIMETABLE FOR THE STUDY

8. The CCTA envisages a study in two parts:

Stage 1 - would establish what was required in government, and would set out a range of options for meeting that requirement; and

Stage 2 - would investigate those options in more detail, would determine how best to meet the requirement and would provide a detailed plan for the implementation of its recommendations.

It is not envisaged that Stage 1 will involve an attempt at a detailed quantification of communications flows between departments, but rather that it would provide a general assessment of information flows accompanied by a defensible view of the potential for and implications of widespread electronic non-voice communications. It is envisaged that Stage 1 will involve interviews with approximately 15 selected government departments.

9. The planning assumption for the study is that the report on Stage 1 would be completed by end July 1984, and that Stage 2 would start in Autumn 1984 and be completed by January 1985, with the implementation of its recommendation starting later in 1985. It is also assumed that the same consultants would be available for both Stages of the study, but this would be subject to the satisfactory completion of Stage 1, acceptance of the findings and recommendations and a decision to proceed to Stage 2.

#### REQUIRED QUALITIES FOR THE CONDUCT OF THE STUDY

10. Particular qualities and skills will be required to take such a study forward. Stage 1 will require an in-depth knowledge of trends in technology, and the consequent effects on products, their applications and costs. This will include traditional telecommunications and Packet Switched Services; the development of new services, such as the integration of voice and text and teletex; and developments

in modems, message handling systems and message document interchange architecture. A thorough understanding of developments in the formulation of ISO Open Systems Interconnection Standards (the "7-layer model") will be essential, as will be the ability to determine and analyse the needs of departments, and to assess the relevant impact and benefits of any facility to them. An understanding of the structure and method of working of government would also be highly desirable.

11. For Stage 2 additional skills will be required. In particular, it will be the ability to identify a critical mass of potential users of any facility, where minimum costs can be allied to maximum effectiveness, and to devise a strategy to ensure early and widespread acceptance and use of any facility. A proven record in the design and implementation of such facilities will be essential.

#### THE CONDUCT AND MANAGEMENT OF STAGE 1 OF THE STUDY

12. The conduct of the study will be overseen by a Steering Group, chaired by Mr M O'Connor (Head of CT3 Division, CCTA), and supported by Mr D Tatham (Head of CT4 Division) and Mr W Beard (Head of CT1 Division) or their representatives, together with representatives from other departments. It is anticipated that the Steering Group will meet at least twice at which meetings the project manager from the chosen consultancy will be invited to make oral presentations to report progress and emerging findings. The Steering Group will appoint a Study Co-ordinator from CT3 Division; CT3 Division will also appoint a Study Liaison Officer who will provide a basic level of support to the consultants. He will discuss and agree with the consultants the key departments and individuals to be interviewed, will provide the consultants with briefing material that is already available to CCTA, and will accompany the consultants to some or all of their interviews. The provision of other support facilities by CCTA (eg accommodation and telephones) will be subject to negotiation between CCTA and the consultants.

ANNEX C

TYPES OF INFORMATION FOR IDEM STUDY

1. This annex gives an outline of the kinds of information which we will be seeking from your department so that you can identify the appropriate staff for the joint consultants/CCTA team to interview. There are three types of information required:

- information on electronic processing and communications systems used or planned for use by your department;
- an overview of the current flows of information between your department and other government departments; and
- views on the sorts of interdepartmental flows of information which might usefully be transferred to an interdepartmental electronic mail system.

Each of these is described in more detail below.

2. First we will require information on the electronic processing and communications systems used or planned for use by your department. The systems for which we seek information include:

- electronic text preparation equipment;
- existing or planned electronic mail systems for use in your department (please include any existing use of telex or facsimile); and
- information retrieval systems.

The information required on each of these systems includes:

- the number and type of terminals used;
- their location;
- the implementation timetable for any planned system;
- the uses to which the system is or will be put; and
- any links the system has with other departments.

In addition we would appreciate an overview of any private communications networks in use in your department.

.../...

3. We will also be seeking qualitative and, if possible, quantitative information on the main flows of information between your department and other government departments. We will be especially interested in information on flows which involve special urgency or where the content of the information has high value to the recipient and/or the originator. We are not concerned with detailed enumeration of information flows nor with flows of operational data between or within ADP systems. Ideally we would seek to identify for each of the main information flows of interest:

- the purpose of the information;
- which department or departments are involved other than your own;
- what sort of staff are involved and where are they located;
- the current medium used for transferring the information;
- its urgency and the level of security desired;
- whether or not the information is prepared electronically;
- the volume of information transferred measured in terms of the number of pages and frequency of transmission; and
- any peaking problems in flows.

4. Finally we would wish to identify, through discussion with the department's staff, information flows which might usefully be transferred to an interdepartmental electronic mail system. In the course of our discussion we would wish, for each of the applications of electronic mail identified, to:

- assess the benefits which electronic mail might bring;
- identify who in your department might use the electronic mail system in its early phases of development;
- highlight any problems which might deter potential users of the system eg union reactions, security requirements, keyboard resistance; and
- identify any special features which the system would need to offer eg confirmation of delivery.

5. A detailed questionnaire will be forwarded to each department's IDEM co-ordination officer in early May.

LIST OF 20 DEPARTMENTS FOR INCLUSION IN THE IDEM STUDY STAGE 1

Ministry of Agriculture, Fisheries and Food

Cabinet Office (including MPO)

Prime Minister's Office

Treasury

Customs and Excise

Inland Revenue

Central Office of Information

HM Stationery Office

Ministry of Defence

Department of Employment (including MSC)

Department of the Environment (including PSA)

Foreign and Commonwealth Office

Home Office

Lord Chancellor's Department

Northern Ireland Office

Scottish Office

Department of Health and Social Security

Department of Trade and Industry

Department of Transport

Welsh Office