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MEMORANDUM FOR: Chip Cameron
Office of the General Counsel

FROM: Joyce Amenta, Deputy Director
for Information Resources Management
Office of Administration and Resources
Management

SUBJECT: COMMENTS ON DOE LSS CONCEPTUAL DESIGN REPORT

My staff has completed review of the above referenced report and our comments are as follows:

General

As indicated in the report, this is a concept which is responsive to the requirements identified in earlier reports. The report is written as a "high level" design concept which is stated in sufficiently broad terms so as to capture any potential questions or shortcomings which may be raised.

As a concept, and in generic terms, this report identifies a plausible design for the LSS. The complex issues associated with integrating the various components of the system (communications, office automation, records management...) are not addressed. The requirements for the Patent and Trademark system, for example, could have easily been represented by a similar generic concept. The road from concept to implementation is fraught with many uncertainties. There is, a sufficient base of similar operation systems, government and commercial (Mead Data, Dialog...), which should be used as a base for comparison, cost estimation and evaluation of risk, in addition to the collective wisdom of the project participants.

Data Capture and Conversion

The report does not fully address the design implications for data capture and conversion. The focus seems to be more on the concepts of digitizing information and on a possible document flow and less on integration of record management, office automation, - an equally important design consideration when one considers the source and volume of the documentary material which will be generated. DOE needs to extend the E-mail concept in section 2.1.2.2.4 to the capture of all future documentary material.

A clearer distinction needs to be drawn between the "backlog" and future document capture process. This will have important cost implications when evaluating the different alternatives for creating the database.

In their discussion on optical character recognition, the zoning and the use of a mouse to separate images from text may not be required if documents are prepared in accordance with new procedures. Here again DOE's discussion assumes a "backlog" document data entry approach. Also, given the labor intensive

effort for converting backlog documents into ASCII, without the benefit of any other preprocessing, would necessitate the use of a data conversion service bureau. The distinction that database creation is accomplished via OCR or via rekeying, or via direct ASCII capture is inconsequential. All of these methods will be used, regardless of the final storage/distribution media (microform, optical...). The extent to which any of these methods will be used will depend upon the nature of the backlog data and on the implementation of procedures for future data capture for interim agency systems.

With close to 90 percent of the documents (both DOE [Table 4, Data Scope Report] and NRC [TLSS]) being correspondence and reports, it appears that source capture from word processing is an important design consideration which needs further attention. How all this will impact the office automation environments of the potential parties is a design consideration which needs to be addressed. The DOE needs to address potential connectivity issues which may not be apparent in the generic and modular concept of the LSS.

Figure 1 and the general discussion about the capture process needs to address the combined receipt of ASCII text (2.1.2.2.3) and hard copy.

Expert Systems

The application of expert type systems (section 2.3) may need to be applied not only for information access but also for data capture. For data capture an expert system could be used for document coding, linkage to issues, and to other parts of the LSS. For document retrieval expert systems could assist the user in preparing for the search and performing the actual search. Given the large number of documents in the database various retrieval aids should be available. The use of hypertext for combined text and image retrieval needs to be addressed as well.

Hardware Design Alternatives

None of the variants looked at the feasibility of using satellite transmission for images (from optical disk). The public telephone system can be used for document requests and satellites can be used for image transmission. Satellite transmission has always been viewed as too costly. There are new development in satellite based systems, however, that can handle digitized images at speeds ranging from direct channel 512 kb/second to 1.54 Mb/second (t1) or 6.31 Mb/second (T2). There are various bands widths (space segments) which are becoming available for use which could make satellite transmission a viable alternative. The report needs to look at this option.

If you have any questions on these comments please contact Avi Bender at x29026.

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