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Executive Registry

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22 AUG 1969

MEMORANDUM FOR: CIA Member, Intelligence Information
Handling Committee

SUBJECT : Proposal for COINS Technical Redesign

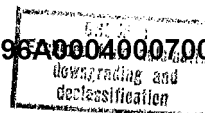
1. The frustrating technical delays in getting COINS activated have generated renewed interest in the fundamental question of whether the multi-computer network concept is appropriate. I suggest that it is not and propose that COINS be reconfigured using a single master computer that would handle all files.

2. The present multi-computer configuration was dictated by the Director, NSA because he felt it was the only way to protect sensitive NSA data. This point has been questioned throughout the developmental period. For example, a rather full discussion of the issue took place in the CODIB meeting of 30 August 1966 (see paragraphs 8-13 of the minutes, attached), but the views of NSA prevailed (see paragraph 18 of the minutes of the 3 November 1966 meeting, attached). I understand the possibility of a single-computer system was raised recently by the COINS Manager at a briefing for the Baker Panel of PFIAB.

3. The difficulty can be traced to the literal interpretation CODIB gave to the original PFIAB directive--to use TIPS in NSA. Since TIPS and its associated hardware were involved in processing internal NSA data, the fear of accidental transmission outside of NSA arose. However, the multi-computer set-up seemed just as vulnerable, so NSA's arguments failed to convince the technical people at least. Although many components of the system have changed since the original design and the security argument has been somewhat compromised by the addition of State and other terminals to various computers in this system, the multi-computer concept has remained.

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4. The problems of building the current system have been staggering. (Note: I am concerned here only with those aspects of COINS that are in the domain of the computer and communications technicians--the issue of file selection, standards, and user needs and modifications remain whether one or several computers are involved.) Opportunities for going wrong have been many and Murphy's law has prevailed. The basic technical problems:

- There are many black boxes through which data must flow, and all of them must work perfectly to get a single path to do its job.
- Not only are there several different kinds of computers involved, but each of them has a different software and operational philosophy. This came about because there is insufficient justification for a dedicated machine in each of the agencies, so COINS is forced into existing internal environments.
- There is no precedent for the degree of interagency technical cooperation required to design and debug the system.
- The digital communications problems are virgin territory for most of the people involved.
- The technical environment (new computers, et cetera) has undergone significant change.

5. What I propose is the substitution of a single computer dedicated solely to the COINS operation. Each participant in COINS would have terminals tied to this one machine. For data transmission, the system would accommodate the use of both existing secure telephone systems in the community and dedicated wide band encrypted lines. In the former case, terminals would be coupled to phones and activated by dialing the computer number. The latter would be used for those participants who had enough terminals to warrant the use of a compatible "data concentrator" at their agency. The computer would use a single package of user

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software agreed on by the Community. All files would have the same program format. Provision would be made for updating files dynamically on line (item by item) or by replacing the total file (by mailing tapes). Initially, the current COINS security philosophy would apply--all users and hardware cleared to the highest level of data in the system. Discussions on modifying this constraint, augmenting the facilities of the user language, applying standard data elements and codes, and file review would continue as they have.

6. CIA could volunteer to assume the central processing role--housing and operating the computer, building the software packages, specifying the communications interface--but this is not a precondition for presenting the proposal. NSA or DIA could do it as well. Nor do I argue that OCS must play this role; CRS could do it also, perhaps with some technical help from OCS. Another possibility is to create a working technical staff and facility reporting directly to and operating out of CIA Headquarters.

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7. I believe this proposal should be given immediate attention. The bureaucratic temptation is to wait until ASPIN makes its recommendations or wait until COINS experiment results are in or wait until some other undefined but inevitable study is completed. My point is not that the present concept can't be made to work. Anything can, but the system as presently designed is and will continue to be a kludge. A simpler solution is needed--better now than not at all.

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Acting Director of Computer Services

Attachments: a/s

cc: DDI Planning Officer
Director of Communications
CIA COINS Manager

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