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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.

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        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

2

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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

3

Next 14 Page(s) In Document Exempt