Community On-line Intelligence System (COINS)

Experiment

OBJECTIVES

1. Design, develop and implement a system for the
COINS Experiment which will operate at a Top Secret SI
security level and which will produce the necessary data
to determine the feasibility and permit an evaluation
of the utility of a secure interconnected computer based
information system with remote access capability.

    a. How is the achievement of the objective
to be identified and measured?

    (1) The first part of the objective has
already been partially achieved; i.e., the system has
been designed, the hardware installed and connected by
means of cryptoprotected communication circuits,
and some intelligence information files are available
in some agencies for remote interrogation by users at
all participating agencies. This demonstrates that it
is feasible to exchange information from various computer
based sources. When all elements of the network are
functioning together as planned and users can efficiently
access any COINS file in reasonable time during a reason-
able period of each working day, the first part will have
been achieved.

    (2) Experience and data relative to utility
cannot be acquired unless the system is used by valid
users in a few agencies as a better way to meet day to

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day tasks.

(3)   A data collection plan has been formulated to gather statistics on system utilization and performance, and user opinions and attitudes towards COINS.

(4)   The feasibility of the system is very dependent upon its ability to operate securely and to demonstrate that inadvertent violations of need to know can be limited to an acceptable level.   A COINS Security Officer has been appointed to whom all security matters, including violations of need to know, will be referred.

b.   What constitutes success or failure of this objective?

(1)   Success or failure of the objective will depend first upon the technical capability of the system to operate securely.   Since such interconnection among computers is being accomplished through communications lines and a computer based communication switch, and no serious breaches of security have occur red this at least denotes a measure of success in the employment of hardware.

(2)   The experiment will prove successful if it evokes a favorable reaction among a crossection of users in the participating agencies.   This favorable reaction need not necessarily be in terms that COINS provided useful information in support of analysts' work,

but it could include judgements that an efficient COINS-
like system containing more suitable data bases would
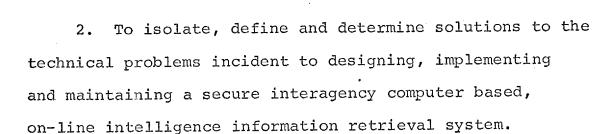have high utility in support of the intelligence analytical
function.

(3) The experiment will prove a failure if
a sufficient number of users do not react favorably to their
exposure to COINS. Adverse reaction could result from a
variety of causes either singly or in combination. For
example:

(a) Inefficient operation of the net-
work or excessive down time.

(b) Differences in interrogation
methods and lack of data standards.

(c) Poor orientation and training.

(d) Lack of user interest in COINS
data bases.

(e) Excessive interrogation response
time.

(4) The number of interrogations and
responses can be tallied and are quantitative reflections
of both system activity and the users' participation.
Less easy to evaluate are the qualitative judgements
of the users as to the effectiveness of the system, the
pertinence of the data available, or the use which is
made of the data. Presumably, after a period of time,
increased outputs either in the form of finished reports,

improved files, and/or enhanced validity of data elements
could be counted and attributed to the system. However,
the basis for a determination of this kind has not been
established. Nor is it likely that such definition could
or should be attempted until the system has operated
for a sustained period of time. The system may have
considerable impact on traditional intelligence production
methodology regardless of the efficiency of the system
in its early stages. But for this phenomenon to be obvious
a considerable history of completed interrogations will
have to be accumulated.

   (5) An excessive occurrence of accidental
spillage and violations of need to know will constitute
prima facie evidence of a failure to achieve the objective.

2. To isolate, define and determine solutions to the technical problems incident to designing, implementing and maintaining a secure interagency computer based, on-line intelligence information retrieval system.

a. How is achievement of the objective to be identified and measured?

(1) Routine, periodic reports from the COINS Test and Analysis Panel will be used to reflect statistics by lane on (a) average response time, (b) percentage of successful interrogations, and (c) percentage of time lane active during scheduled periods. In addition, reports from users of spillage, improper response, or incomplete answers will be used to identify and measure the achievement of this objective.

(2) Isolation, definition, and resolution of technical problems is a continual task engaging all COINS participants and resulting in continual system and software changes to improve network operating efficiency and insure security. It is recognized that some problems cannot be resolved in the immediate future (e.g., a common network language, or interrogation language procedure) but long term solutions are being sought by COINS participants, panels and contractors.

(3) An accounting system to positively identify system operational traffic loss must be developed.

b. What constitutes success or failure of this
objective.

(1) This objective has largely been achieved.
Full achievement will be realized when all participating
agency computer systems operate simultaneously in the
COINS network during at least 75 percent of a scheduled
period each day.

(2) If, by the end of the experiment, at
least 75 percent of the queries levied by a COINS parti-
cipant on all other participants are correctly answered
in a reasonable time frame without accidental spillage,
and all messages can be accounted for then the technical/
security aspects of the Experiment will have been successfully
tested.

3. To provide practical training and actual experience for intelligence analysts in the use of an interagency on-line intelligence retrieval system as a better way to meet day to day tasks.

a. How is the achievement of the objective to be identified and measured?

(1) Each COINS participating agency has conducted, is conducting, and will conduct training sessions for potential COINS users. Each agency has produced written training materials describing how to use various portions of the COINS network. The COINS Environment Report, which the Test and Analysis Panel has asked each COINS participant to prepare, will detail the measures taken by each agency to interest analysts in the use of COINS and the level and detail of training provided.

(2) Periodic reports from the COINS Training Panel will provide information on training activities, status and progress.

(3) In depth interviews of users which are planned by the Test and Analysis Panel will provide insight into the degree of training provided, experience gained and additional training required.

b. What constitutes success or failure in the

achievement of the objective?

       The objective will be successfully achieved
if a representative group of analysts in each COINS
participating agency are able to query COINS files with
a minimum of difficulty. In addition, those who are
so trained must exercise the system sufficiently to
gain a level of experience which would permit their
evaluation of system utility.

4. To ascertain the essential characteristics of
files which make them suitable for inclusion in an inter-
agency on-line intelligence retrieval system including
user requirements for timely, accurate and complete
information.

a. How is the achievement of the objective to
be identified and measured?

(1) The COINS switch log will maintain data
on file usage, and, in addition, each analyst who queries
a COINS file will provide file usage satisfaction information
via the User Log Form. The in depth interviews which each
COINS participating agency is required to conduct to
obtain reactions from COINS users should be particularly
fruitful for obtaining data on user file preferences. In
addition, the IHC has requested that each of its members
provide data on the types of files recommended for inclusion
in an operational COINS.

(2) The proof of suitability of a file for
inclusion in an interagency system will be largely, but not
entirely, determined by the rate of usage by the agencies
other than the file sponsor. Files which are not used
frequently would not be very suitable unless a very short
response time is required whenever it is queried. Files
used only by the sponsor would not be suitable for an inter-
agency system. On the other hand, files which get frequent
interagency use but wherein most of the requirements could
be satisfied by overnight or 1-2 day service may not be

very suitable for an on-line interagency system. The question is whether, after determining by experience and interviews of users that a given file is suitable for an on-line interagency system, its characteristics can be identified and assigned meaningful values against which to measure the suitability of proposed new files without resorting to actual on-line retrieval experience with the new files. If possible, an attempt should be made about midway of the T&A period to identify those files that appear to be suitable for interagency use and to evaluate the characteristics which determine that suitability. Some of the factors to be examined are: subject and area coverage, data elements included; size of each record; date span; update frequency; types of service materials; number of users by agency (potential users for a proposed file); response time required by users; alternative methods of data exchange.

    b.   <u>What constitutes success or failure in the</u> <u>achievement of the objective?</u>

    (1)   This objective will be successfully met if a set of files can be identified which would have high utility in an interagency on-line system. This objective would not be met if the results of the Experiment were inconclusive regarding file usage and preferences.

    (2) Experience with other on-line information
retrieval systems has shown that with an increase in system
efficiency and experience gained by users, increased confi-
dence is realized and more specific requirements come into
focus. If the mechanism provided by COINS management for
data base modification (COINS Operational Procedure No.
1-1968, 22 November 1968) is utilized a measure of success
will be realized.

5. To determine those elements of the total system
design which encourage and facilitate analyst usage and
those elements which discourage or hinder usage.

a. How is the achievement of the objective to
be identified and measured?

(1) COINS system designers are already aware
of certain unavoidable problems implicit in the COINS
system which will inhibit usage, e.g., multi-query languages,
lack of data standards in COINS files, etc. The seriousness
of these problems and those aspects of COINS which are
viewed in a more favorable light will be fully brought
out by the reactions obtained from COINS users through
log forms and interviews.

(2) Each of the following factors must be
examined to determine the threshold between encouraging
and discouraging analyst use. For example; analysts
might be encouraged to use a system that was 90 percent
reliable but would be discouraged from using a system
that was less reliable.

(a) Solution of data bases; number, type,
location and ease of operation of remote terminals.

(b) Query languages: one vs. many, abbreviations/
mnemonics vs. plain language; query procedures; preprogram-
med queries vs. on-line query programming.

(c)   Response time

(d)   System reliability

(e)   System availability (days and hours)

(f)   Usability and readability of outputs

(g)   Coded vs. plain language output

(h)   Type and amount of training (and
motivating) of users

(i)   On-line vs. off-line file update
procedures

(j)   Interactive vs. non-interactive
systems

(k)   Time sharing vs. batch processing

(l)   Type and quality of analyst aids
(handbooks, on-line file and query descriptions, etc.)

   b.   <u>What constitutes success or failure in the
achievement of the objective?</u>

      This objective will be successfully met if
each agency is conscientious in its collection of data on
user reactions to COINS. Low user paritcipation in COINS
could result in inadequate data collection.

6. To collect the necessary data on file usage, system efficiency and reliability and user reaction to permit an evaluation of the feasibility and utility of operational implementation of a follow-on COINS-like system.

    a. <u>How is the achievement of this objective to be identified and measured?</u>

    The Test and Analysis Panel has developed a plan, procedures, and forms for collecting the desired data and this plan has been approved by all COINS participants. However, it should be constantly reviewed (monthly at least) during the T&A period to see if additions, deletions, or modifications are necessary.

    b. <u>What constitutes success or failure in the achievement of the objective?</u>

    If the data collection plan is followed as recommended, and if there is sufficient usage of the network to obtain the desired user reaction then this objective will be partially or fully met. Partial failure could result from gaps in the data collection plan which were not anticipated during the planning stage.

7. Determine the elements and attributes which would
be critical to the success of a full system for continuing
community operations, and develop objectives and specifi-
cations for an operational system.

a. How is the achievement of this objective to
be identified and measured?

If objectives 1-6 above are met, the data
will be available to develop a system plan for an operational
COINS network. In other words, this objective is unique
in that it is completely dependent on the satisfaction of
all the other objectives. Development of objectives and
specifications for an operational system will be the
culmination of the total experience of the COINS Experiment.
That experience, properly evaluated, will dictate the
objectives and specifications. The problem is to properly
evaluate the experience gained by the Experiment.

b. What constitutes success or failure in the
achievement of this objective?

This objective could fail on two counts:

(1) It will fail if inadequate or inconclusive
data is collected in an area critical to the design of an
operational system.

(2) It will fail if the data collected during
the operational test conclusively proves that an operational

COINS network is not required at this time.

If neither of the above conditions exist, this objective can be successfully satisfied.

8. To gain insights into COINS capability to (a) improve utilization of resources of the participating agencies by the centralization of selected information files at one agency for access by all. (b) enhance the value of intelligence information data bases.

    a. <u>How is achievement of the objective to be identified and measured?</u>

    Bilateral efforts are currently underway between DIA and NSA to establish two such intelligence information files; a file on elite and other key Soviet military personalities, and a file containing information on Soviet airfields. Conclusion of a Technical Memorandum of Agreement on these files and implementation of procedures specified therein will signal partial achievement of the objective. The number of interrogations and responses can be tallied and are quantitative reflections of user access. In depth interviews of users to be conducted under the auspices of the Test and Analysis Panel will provide a measure of file utility.

    b. <u>What constitutes success or failure of the objective.</u>

    If the two files mentioned previously are successfully implemented, if maintenance procedures specified in the technical memorandum of agreement are strictly adhered to, and if the files receive frequent use and

general user satisfaction is realized the objective can

be said to be successful.

USERS LOG FOR TEST OF COINS "EXPERIMENT"   PAGE ____ OF ____

TEST NO. __

FROM ____ TO ____
(DATE)   (DATE)

DATE (YYMMDD)	TO ORGN	FM ORGN	FILE INTG	TIME IN	TIME SWITCH RCPT	TIME RESULTS	RECEIPT NUMBER	TYPE OF RESULTS (ANSR,ABRT,NONE)	REMARKS

Attachment B

ANALYSIS OF NETWORK ACTIVITY IN COINS "EXPERIMENT"   PAGE ___ OF ___

TEST NO. ____

FROM ____ TO ____
(DATE)   (DATE)

REPORTING ORGANIZATION: AAA

DATE (YYMMDD)	INITIAL TIME UP	TIME DOWN	TIME UP	Reason	FINAL TIME DOWN	REMARKS
690512	0810					
	.	0820	0830	compu		System went down and recovered
		0845	0855	commo		Line to switch out
					0958	
690513	0805					
		0830	0845	compu		
		0910	0820	commo		
		0940	0950	commu		
					0955	

Attachment D

COMMUNITY ON-LINE INTELLIGENCE SYSTEM

COINS

OPERATIONAL PROCEDURES (FIRST DRAFT)

Number ?-1969   30 April 1969

NEW COINS PARTICIPANTS

References: (a) DIA Letter, C-15,117/MS-1, Subject:

"Release of COINS Documentation and Files

to Unified and Specified Commands," dated

27 August 1968.

(b) NSA Memorandum, Serial: COINS/161, Subject:

"same as above," dated 16 December 1968.

I - Authority

1. USIB-D-39.1/9, "Community On-line Intelligence

System," 11 April 1968.

2. USIB-D-71.4/1, "Management of the COINS Experiment,"

3 June 1968, paragraph 4k, page 3.

3. COINS Master Plan Part I FY 1969 - 1970, dated 2

December 1968. Part III, Para 3h, page 21.

GROUP-1
Excluded from automatic
downgrading

II - Purpose

These operational instructions set forth procedures
and criteria by which new organizations can be connected
into the COINS network with either a remote terminal or
central computer system.

III - Scope

Instructions in this operating procedure applies
only to the operations of the COINS network between parti-
cipating organizations. It does not preclude a participa-
ting organization from connecting other non-particpating
organizations to its computer system for non-COINS activity,
providing specified security requirements are satisfied.

IV - Background

1. On 27 August 1968, DIA requested authority to (a)
release COINS documentation to the Unified and Specified
(U & S) Commands and (b) permit them to have on-line access
to the COINS network through the store-and-forward switch
at DIA. (See reference a). In addition this letter set
forth a tentative schedule for the connection of the U & S
Commands to the DIA switch.

2. After consultation with the COINS sub-system managers
DIA was informed to proceed with their plans to bring the
U & S Commands into the DIA system on the dates indicated.
Access to the full COINS network will be decided on a case-
by-case basis, after a period of successful operations with
the DIA systems (See reference b).

V - Types of Participants

There are at the present time two types of participants
in the COINS program, namely:

1. Contributors - A contributor is a participating
organization which has a computer system and files which it
is making available to the other participating organizations.
In the present COINS Experiment the contributors are DIA,
Hq CIA, CIA/NPIC and NSA.

2. Subscribers - A subscriber is a participating organ-
ization which does not have a computer systems in the network,
but does have access to the network through a remote terminal
connected to another contributor's computer systems. A
subscriber may or may not be sponsoring a file stored in a
contributor's system. In the present COINS Experiment the
subscribers are the Department of State and National Indica-
tions Center (NIC).

VI - Procedures for Submitting and Handling Request

1. Requests to connect into the COINS Experiment must
be forwarded in writing to the Director, National Security
Agency, Executive Agent for the COINS Experiment. Each
request will be handled on a case-by-case basis. At a
minimum each request must contain the following information:

    a. Name and location of organization

    b. Requirement for participation

    c. Type of participant (i.e., subscriber or contributor)

d. Date expected to be connected into the COINS network

e. Statement on the willingness to accept the costs to connect into the network, as well as current operating procedures.

f. Statement certifying that the current security procedures and constraints can be satisfied

g. The files to be made available in COINS by the requesting organization.

2. Military services, except cryptologic agencies (i.e., ASA, AFSS and NSG) and the Unified and Specified Commands, must submit their requests through DIA. The Cryptologic services must submit their requests through NSA.

3. Upon receipt of a request the COINS Project Manager will submit copies of the request to all sub-system managers for consideration. Sub-system managers will respond within 30 days, indicating whether or not their organizations concur or non-concur in the request. Non-concurrence must be accompanied with a statement of the reasons for non-concurrence.

4. Requesting organizations will be notified within 60 days after their requests are received by NSA as to whether or not they have been accepted as a COINS participant.

VII - Criteria for Acceptance

Acceptance will depend on the following points:

1. The requirement of a:

    a. Requesting organization to have access to shared data bases in the COINS Experiment.

    b. COINS participant to have access to data bases in the requesting organization's system.

2. The willingness of the requesting organization to pay the costs to connect into the network and adapt to existing COINS operating procedures and conventions.

3. The willingness and ability of the requesting organization to operate within the prescribed security constraints. Currently all computer systems including their remote terminal and communications lines and facilities must operate at the TOP SECRET SI level while participating in the COINS network.

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