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U-43,360/DS-5A

SUBJECT: Defense Intelligence Agency On-Line System (DIAOLS) Change

TO: Distribution List

1. Reference DIAM 65-7-1, DIA On-Line System (DIAOLS), 30 March 1973.

2. Information forwarded herewith constitutes interim change 1 to the reference and is effective until a formal change is subsequently received.

a. Reference paragraph 7.a., title page. Change to read "three character-position security control codes are now used in lieu of the old four-position codes."

b. Make the following page changes:

Remove Pages	Insert Pages
1 thru 7	1 thru 8
9 - 10	9, 10, 10.1
48	48, 48.1
293	293

3. The effective date of this change is 1 May 1973. Because of the lead time required for administrative publication processing, production, and distribution, the formal change cannot be made available by 1 May 1973. Therefore, it will be necessary for each addressee to insure that sufficient copies of this change are locally reproduced and made available to those individual DIAOLS users having the need.

1 Enclosure
DIAM 65-7-1 Interim
Change 1, 1 May 73

for W. T. VIERREGGER, Capt.USNF
Captain, USN
Assistant Deputy Director
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CHAPTER 1

INTRODUCTION TO DIAOLS

1. DESCRIPTION: The DIAOLS is serviced by two Honeywell G-635 computers, supported by the General Comprehensive Operating System (GCOS) as modified to meet specific requirements for the processing of classified information. It provides for user servicing in three modes; interactive time sharing, remote batch processing, and from the conventional (local) batch environment. The system is accessed from remotely located terminals (teletypewriter units, cathode ray tube displays, and mini-computers known as remote batch terminals.) DIAOLS is made up of five major components (as described below); the Intelligence Support System (ISS), Community On-Line Intelligence System (COINS), Beginners All-Purpose Symbolic Instruction Code (BASIC), Formula Translator (FORTRAN), and Card-Image Input (CARDIN). With each the user and the computer communicate in a predefined language, which may vary from a straight-forward English command language conversation (ISS) to a more technical language such as used in CARDIN.

a. ISS. ISS is a specially designed component which supports user requirements for data base/file retrieval and maintenance in an interactive time sharing mode. There is also a limited batch capability. The user is presented with a series of actions which he may apply against files for which he has an authorized need-to-know.

b. COINS. The COINS provides DIA users with a remote batch retrieval capability against ISS files and against "community" files made available at other intelligence-community organizations. COINS contains no file maintenance capabilities and does not support video (cathode ray tube) display units. COINS allows a user to input a query, sign off his terminal, and receive his answer at a later time at any appropriately cleared teletypewriter.

c. BASIC. BASIC provides an interactive computational capability. It is a simple, easy to learn, programming language which allows many complex arithmetic operations and functions. It also provides data file input and output capabilities, including some formatting controls which are suitable for handling large volumes of data.

d. FORTRAN. FORTRAN is an interactive, computational, programming language of broader mathematical scope and complexity than BASIC. In addition to the general computational capabilities provided by BASIC, FORTRAN provides for manipulating and using logical expressions and variables, increased string manipulation and more extensive formatting of input and output.

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e. CARDIN. Card-Image Input enables remote batch processing to be initiated from either teletypewriter or cathode ray terminals, including both production jobs and testing/development jobs. The user may either call a stored program or he may create a card-image program and execute it.

2. USER RESOURCES: All users have access to the BASIC, FORTRAN and CARDIN capabilities. Each user can manipulate his files/programs and receive properly classified output. Most users have access to one or more files (both internal and external to DIA) through the ISS or COINS systems. In these two systems, the user can retrieve and output specific data records. The use of each of these components and the capabilities associated with each are explained in the following chapters.

3. USER ACCESS/IDENTIFICATION: Every user of DIAOLS must have a unique User Access Code composed of a User Account Number and an Authenticator. This access code is needed when communicating with the system to enable the user to gain access to particular files and to safeguard those files from unauthorized use by others. For security reasons (because of the new DIAOLS configuration - see figure 0, page 3), each authorized user will be issued two authenticators, one for DIAOLS computer #1 and the other for DIAOLS computer #2. Access codes are controlled and issued by DS-5. Individuals are granted access to those files they need for the performance of their duties as a result of requests for access submitted via DIA Form 836, DIAOLS Access Authorization (Test). Upon approval by the file owner, the individual's assigned user number is entered against the appropriate file(s) and the DIA Form 836 is returned to the originator indicating access has been approved.

4. TERMINALS: There are three kinds of terminals currently servicing DIAOLS; teletypewriter devices, cathode ray tube (video) displays with keyboard (some with printed output capability), and mini-computers known as remote batch terminals. In this manual, these terminals are referred to as TTY's, CRT's, and RBT's respectively. The TTY's are identified by the trademark nomenclature model 37 teletype, the CRT's as Raytheon DIDS 400 with Inktronic Printer (if applicable), and the RBT's as either G-115 or COPE. Terminal characteristics, general operating procedures, and user maintenance actions are outlined in enclosures 4 and 5. Particulars concerning the use of these terminals as they relate to both ISS/COINS and standard time sharing (including FORTRAN, BASIC, and CARDIN) are outlined in appropriate chapters. Each user must read and understand the contents of enclosures 4 and 5 in order to be able to efficiently and effectively operate those terminals pertinent to his activities.

5. SYSTEM SECURITY: DIAOLS operates on a dual computer configuration (two Honeywell G-635 Computers) which allows users to access either of the two systems. The highest level of data that can now be accommodated on the system is Top Secret/SAO/SI. One computer supports all SAO/SI level operations and is known as the "compartmented system." The other computer handles only non-SAO/SI level operations (i.e., TOP SECRET and below) and is identified as the "non-compartmented system." The new configuration is shown in figure 0, below. After gaining access to DIAOLS using the new sign-on procedure outlined in Chapter 2, the user types helloone for access to the compartmented system. The system will then respond with the announcement that the "compartmented system" has been accessed and the user proceeds with the normal transmission procedures. For access to the non-compartmented system supporting collateral level operations, the user types hellotwo. DIAOLS will then respond with a message indicating the "non-compartmented system" has been called. On matters involving DIAOLS security provisions, procedures, and/or administration not covered in this manual, users should contact DS-5C.

	DIAOLS Computer #1	DIAOLS Computer #2
Known As:	Compartmented System	Non-Compartmented System
Addressed As:	helloone	hellotwo
Security Level:	SAO/SI and Collateral	Collateral Only
MODES OF OPERATION		
Interactive T.S.:	ISS and COINS	BASIC and FORTRAN (See Note #2)
Remote Batch:	None (See Note #1)	RBT's/CARDIN
Local Batch:	All Security Levels	Collateral Only

NOTE #1: While remote batch processing is done only on DIAOLS Computer #2, ISS/COINS output can be redirected from DIAOLS Computer #1 to any Remote Batch Terminal (RBT) in addition to a central site printer as well as receiving it at the terminal from which the request originated.

NOTE #2: BASIC and FORTRAN programming capabilities are now available only at the collateral level. A concerted effort is being made to correct the security software deficiencies in BASIC so that this feature can be restored to computer #1 at an early date. It is not envisioned at this time that FORTRAN will ever be available on computer #1.

DIAOLS ENVIRONMENT FOR SAO/SI LEVEL OPERATIONS

FIGURE 0

6. SECURITY CONTROL INFORMATION:

a. The DIACLS security label designates the general security level of the output. It contains three fields:

(1) Classification (TOP SECRET, SECRET, CONFIDENTIAL or UNCLASSIFIED.)

(2) Compartment (noncompartmented, SI, SAO, or SI/SAO)

(3) "WORKING COPY."

An example of a security label as it would appear on output is "TOP SECRET SI WORKING COPY." The user has the option of changing only two fields, classification and compartment. "WORKING COPY" is not an option. It will appear on all system output.

b. A security label will be associated with each DIAOLS data base (i.e., each ISS/COINS file, user private file, and system permanent file). All output reports will contain the security label of the file queried. If an OPI for any ISS file wants the security classification level of a file changed, DS-5 must be notified in writing.

c. When output is removed from the output device (i.e., TTY or printer), it will be bound under a cover which contains the complete, formal security label (as determined by the recipient on the basis of input file or files) and the marking, "NO PAGE WILL BE REMOVED FROM THIS DOCUMENT WITHOUT BEING STAMPED TOP AND BOTTOM WITH THE APPROPRIATE CLASSIFICATION." Specific caveats and handling restrictions will appear only on the cover sheet, as appropriate.

d. The user will work with generic security labels using a three-character code. The following is a complete list of these codes and their corresponding labels:

CODE	LABEL
UNT	UNCLASSIFIED WORKING COPY
CNT	CONFIDENTIAL WORKING COPY
CSI*	CONFIDENTIAL SI WORKING COPY
SNT	SECRET WORKING COPY
SSI*	SECRET SI WORKING COPY
SSA*	SECRET SAO WORKING COPY
SSB*	SECRET SI/SAO WORKING COPY
TNT	TOP SECRET WORKING COPY
TSI*	TOP SECRET SI WORKING COPY
TSA*	TOP SECRET SAO WORKING COPY
TSB*	TOP SECRET SI/SAO WORKING COPY

Codes marked with an * may be used only on the "compartmented system;" i.e., that addressed for access as hellone.

e. User procedures associated with the use of security labels in DIAOLS processing subsystems will be as follows:

(1) ISS. The system will automatically generate output labels under ISS. The user will not be able to alter these labels.

(2) COINS. During request formulation, the user will assign his own security labels by entering one of the valid three character codes. When he receives his output, the system will provide the appropriate labels.

(3) BASIC AND FORTRAN. Users are responsible for classifying their own files and output by entering valid three-character codes at the appropriate point in the interaction. If a user desires to delete output markings, he may enter LISTX for deleting markings upon listing a file or RUNX for deleting markings upon running a program. If one user shares another user's program, he may add, change, or delete the security labels of the file only when working in temporary storage or when saving the file in his catalog. He may not alter the security labels of the owner's file under the owner's catalog.

(4) BATCH (local and remote, including CARDIN). If a user receives his output via SYSOUT, the system will affix a generic security label. If he receives his output via a Bulk Media Conversion (BMC) utility, he must specify his own labels. In either case he must supply a valid three-character generic-label code in columns 70-71-72 of his $ IDENT card.

7. CONTROL OF PRINTED OUTPUT: Regardless of where the output is generated (TTY, G-115, COPE, CRT/Inktronic, or a central site printer), the originator of the request is responsible for security control of the printed product once it has been made available to him. When the output is received at the location at which the job originated (i.e., TTY, CRT, or G-115/COPE), this poses no unusual problems inasmuch as normal security precautions prevail. However, when the job is originated by TTY, CRT, or G-115/COPE with the output generated at a central site printer (whether redirected ISS or remote batch output), the originator must evaluate and pick up the product from DS-5A4, "B" Building, Room 1612, Arlington Hall Station, Virginia, or request delivery through normal SI mail channels. Remote batch terminal (RBT) output will be obtained from the appropriate RBT site. In order to pick up a product, the individual must possess an SAO/SI clearance. In this regard, non-DIA customers must provide a listing of those SAO/SI cleared persons authorized to accomplish product evaluation and to effect pickup. This listing is to be provided to DS-5A4 and updated as required.

8. NOTATIONS: The following notations are used throughout this manual:

a. A choice must be made from items within braces.

b. Brackets [ ] enclose optional data, either a set of choices or an individual item.

c. An item not enclosed in either braces or brackets must be input.

d. Upper case items are reserved words and, if present at all, must appear exactly as shown.

e. Lower case items specify the meaning, extent, or nature, but not the exact content of an item.

f. Repetition of a word or group of words is indicated by three successive periods . . .

g. A (cr) denotes a carriage return.

h. A blank (or space) may be indicated by ␣.

9. NEWS FILE: Available on DIAOLS computer #2 is the NEWS file, providing new information of both a current (temporary) and a permanent nature. It provides for ready display of significant items pertinent to DIAOLS, ISS, COINS, BASIC, FORTRAN, and CARDIN users. The file is categorized so that items of specific interest to a particular user can be found quickly without having to read through all of the news. The NEWS includes current system improvements, modifications, and restrictions.

a. Structure: NEWS is a file ordered by line number. It is broken into two main categories: CURRENT NEWS (lines 1-120000) and PERMANENT NEWS (lines 120001-240000). Within each of these categories are the following subcategories structured as follows:

SUBCATEGORY	LINE NUMBER	
	CURRENT	PERMANENT
GENERAL	2 - 20000	120001 - 140000
BASIC	20001 - 40000	140001 - 160000
FORTRAN	40001 - 60000	160001 - 180000
ISS	60001 - 80000	180001 - 200000
COINS	80001 -100000	200001 - 220000
CARDIN	100001 -120000	220001 - 240000

(1) All news items will initially be placed in the CURRENT NEWS category. Items will remain in this category as long as they are applicable. If the items are still of interest after three weeks, they will be transferred to the PERMANENT NEWS category.

(2) Each subcategory is structured so that the second line will have the date of the most current entry. The most current news will be placed at the top of each subcategory.

(3) The subcategory titles are self-explanatory. The GENERAL subcategory will include information which is of interest to all users. Items in this area will include system status, new capabilities, and restrictions.

b. Use: An example of the method used in accessing this file is as follows (user responses are underlined):

SYSTEM
basi

old or new - lib system:news (See NOTE)

old file(s) classified:
system - UNT

news - UNT
classify your working file
unt

ready
*list (listx if no classification headings are desired)

NOTE: If the response "lib system:news" is given, the entire file will be read. However, if it is desired to read only a portion of the file either "lib system:news(x)" or "lib system:news(x,y)" can be used, where "x" represents a starting line number and "y" is the ending line number. The former entry allows one to start listing all the news from some point other than at the beginning of the file. The latter entry enables a user to specify the range of line numbers that he wants to list.

10. ASSOCIATED DOCUMENTATION: Some chapters refer to Honeywell/General Electric publications which are to be used in conjunction with this manual. Due to a shortage of these documents, they have been

reproduced with special permission of Honeywell for DIA use only. These three supplements to this manual are BASIC, FORTRAN, and CARDIN; they are identified as DIAM 65-7-1 (Supp.1), (Supp.2), and (Supp.3) respectively, and may be obtained from DS-4. Copies of other documentation referenced are available for review in the DS-5A Technical Reference Collection (TRC).

CHAPTER 2

USING DIAOLS

1. INTERPRETING CONVERSATION: In the ensuing sample conversation throughout this manual, information supplied by the user to the system is represented in lowercase letters and underlined to set it apart from the system responses which are given in uppercase letters.

2. SIGN-ON PROCEDURE:

a. To gain an understanding of how to use the DIAOLS, consider a typical "conversation" between a user and the computer.

(1) After the user turns the terminal on, he must notify DIAOLS of the computer to be accessed. This is initiated by depressing the CONTROL key and hitting the letter A. If the user fails to hit CONTROL A during the sign-on procedure, there will be no response from DIAOLS. This use of the CONTROL key and the letter A provides a procedural spoofing check required to implement the necessary security safeguards to prevent a user of computer #2 from gaining access to computer #1 or to prevent information held by computer #1 from being siphoned by computer #2.

(2) Provided this procedure has been followed, the system will respond with PLEASE INPUT SYSTEM DESIRED, at which time the user types in helloone or hellotwo (depending on which system, compartmented or non-compartmented, he wishes to access); then he depresses the RETURN key on the TTY or the END key on the CRT to transmit the message to the computer.

(3) A message identifying the system, date, time, and channel (terminal) number is then sent back to the user.

(4) The computer then asks for an ACCOUNT # and its associated AUTHENTICATOR. The user enters his complete User Access Code in the format displayed on the TTY or CRT (X99999,ABCDEFGH) and depresses the RETURN or END key. The terminal will "shift out" when the user inputs his User Access Code thus allowing only numeric characters to be displayed. The computer will overprint and then check this code for validity. If the code is not valid, the computer will repeat the next page and interaction will continue. If a terminal or communications problem prevents a successful "shift in," the user's terminal will print only numeric characters. When this occurs, the user should simultaneously depress the "control" and "shift in" (Alpha O) keys to correct this condition.

b. Figures 1 and 2 illustrate the sign-on sequences for both the compartmented and non-compartmented systems.

```
control A

PLEASE INPUT SYSTEM DESIRED

     helloone

***     DIAOLS NOTIFIED      ***


DIAOLS COMPARTMENTED SYSTEM ON 05/01/73 at 12:56  CHANNEL 1010

ACCOUNT  ,AUTHENTICATOR (EG:X99999,ABCDEFG)
$$$$$$$$$$$$$$$$
```

Figure 1 Compartmented System

```
control A

PLEASE INPUT SYSTEM DESIRED

hellotwo

***     DIAOLS NOTIFIED    ***


DIAOLS NONCOMPARTMENTED SYSTEM ON 05/01/73 at 12:57  CHANNEL 1010
SELECT BASIC, FORTRAN OR CARDIN.  DO NOT ENTER COMPARTMENTED
   MATERIAL
ACCOUNT ,AUTHENTICATOR (EG:X99999,ABCDEFG)
```

Figure 2 Non-compartmented System

3. SYSTEM OPTIONS: If the user provides a valid user access code, the computer will then ask for the SYSTEM to be used. There are two options on the compartmented system; ISS and COINS. There are three options on the non-compartmented system; BASIC, FORTRAN, and CARDIN.

4. ERROR CORRECTION: There is always the possibility of a typing error. To correct a message that has been typed on the TTY or CRT, but not transmitted to the computer, the backspace key is used to back over character(s) in error. It is then possible to retype the correct character(s) and continue the procedure.

5. TERMINATING ACTION: A user may terminate an on-going process (i.e., return to ACTION or READY) as follows:

a. At any time from a TTY by simultaneously depressing the CONTROL key and the NAK character ("U" Key).

b. On a CRT, termination of an on-going process can take place only at two specific instances. First, at any time the computer is awaiting input from a CRT, return to ACTION or READY can be effected by simultaneously depressing both the CONTROL key and the NAK character, releasing, and then depressing the END key. The second instance occurs when paging sequence operations are in progress. Again both the CONTROL key and NAK character must be simultaneously depressed, released, and the END key then depressed.

6. SIGN-OFF PROCEDURE: The user may terminate his dialog with the computer at any time the system is awaiting a response to action merely be typing "BYE";i.e.,

```
ACTION
bye
**time sharing off at 15.33 on 01/28/72
```

```
ACTION
route
OLD OR NEW QUERY?
new
ENTER COORDINATE NAMES.

000 4,5
ENTER QUERY.

002 if along route-1
ENTER THE NUMBER CORRESPONDING TO THE DESIRED MAP PROJECTION.
1 FOR MERCATOR
2 FOR EQUI-DIST RECTILINEAR
3 FOR TRAVERSE MERCATOR
4 FOR LAMBERT CONFORMAL

004 2
FOR ROUTE-1  ENTER NUMBER OF NODES.

006 3
ENTER ONE HALF TOTAL WIDTH.
20
ENTER LATITUDE AND LONGITUDE FOR NODE 1.

008 111111n,1111111w
FOR NODE  002
010 111111n,1111112w
FOR NODE 003
012 111111n,1111113w
OPTION (LIST, RUN, MODIFY, SAVE, OR RESEQUENCE)
```

i. OUTPUT. The OUTPUT function provides a user with the capability to control the content and appearance of the retrieved data which is to be displayed. Control over the content and appearance of output data is afforded by user options pertaining to (1) element label form, (2) line spacing, (3) suppression of blank values, (4) specification of the elements to be displayed and (5) sorting. The user also has the option of redirecting his output to a remote printer or the central site printer. For non-sorted output from a multi-file query, the first record of each file will always start a new page. NOTE: When the amount of work space required to process a Phase I MFQ exceeds 30% of the total work space allocated on a media, the user will be returned to ACTION with the following message:

```
WORK SPACE REQUIRED EXCEEDS LIMIT.  PLEASE REFINE REQUEST.

ACTION
```

(1) Standard Output.

(a) The standard output option available allows the user to output retrieved information with a minimum of interaction with the system. If standard output is indicated, the following is automatically assumed:

DATANET 30 MESSAGES

MESSAGE	MEANING
LINE DELETED	The last line has been ignored. Initiated by cancel ('CAN') function from terminal.
ERROR RETRANSMIT	An error was encountered in the HELLOONE OR HELLOTWO transmission. Re-input.
FILE ABORT REASON 001	You have been disconnected with the system due to a system problem. If this persists contact DS-5C.
LINE TOO LONG	More than 80 characters were input on the last line. Re-input the line with less than 80 characters.
NO RESPONSE FR. DIAOLS	The DATANET 30 is unable to communicate with the 600 Computer. The system you have asked for is not available. Try again later.
PARITY ERROR	A parity error has been encountered in the last line. Re-input the line.
THIS TERMINAL WAS STILL ON PLEASE SIGN ON AGAIN.	1 - Your terminal has been idle too long. You are signed off the system. 2 - Your terminal was connected to the system and a CONTROL A (SOH) start of sign on sequence, was typed. You are signed off the system.
DIAOLS DISCONNECTED	The DIAOLS 600 Computer has terminated all output. You are signed off the system.
DIAOLS NOTIFIED	You have signed on properly. The DATANET 30 has notified the 600 Computer you wish to log on.