



DEPARTMENT OF THE NAVY
HEADQUARTERS UNITED STATES MARINE CORPS
WASHINGTON, D.C. 20380-0001

IN REPLY REFER TO

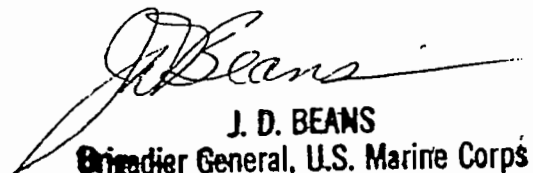
3884
INT

14 JUN 1989

FIRST ENDORSEMENT on CG MCCDC Ltr 3884 IN 06 of 14 Jun 89

From: Commandant of the Marine Corps (INT)
To: Director, Joint National Intelligence Development Staff
Subj: MARINE CORPS RESPONSE TO PROJECT V DATA CALL

1. The proposal submitted by the Commanding General of the Marine Corps Combat Development Command is forwarded with enthusiasm.
2. The highest levels of Marine Corps leadership have placed great emphasis on "fighting smart" and the development of advanced information technologies for command and control, communications, computing, and intelligence & inter-operability. This proposal addresses a problem that will make possible the inter-operability of multi-level remote data bases.
3. The value of this tool to all analysts, in every Service, Agency, and Theater, can not be exaggerated. It will significantly enhance the ability of all intelligence community analysts to support the distributed production program by facilitating a minimal standard for data collection, and eliminating redundant production by identifying existing production of immediate value.


J. D. BEANS
Brigadier General, U.S. Marine Corps
Director of Intelligence

NOTE: JNIDS STAFF CONFIRMED
WE WON ON MERIT, A NAVY
ADMIRAL THREW US OUT AND
INSISTED ON AN ANTI-SUBMARINE
"WIN." GO NAVY... SAMO SAMO. ENCLOSURE (2)

JK.



UNITED STATES MARINE CORPS
MARINE CORPS COMBAT DEVELOPMENT COMMAND
QUANTICO, VIRGINIA 22134-5001

IN REPLY REFER TO:

3884
IN 06

14 JUN 1989

From: Commanding General (IN)
To: Director, Joint National Intelligence Development Staff
Via: Commandant of the Marine Corps (INT)

Subj: MARINE CORPS RESPONSE TO PROJECT V DATA CALL

Ref: (a) DDIR/DIA Ltr U-035/DSM of 4 Apr 89
(b) D/JNIDS Ltr 3810 Ser JNIDS 048/89 of 2 Feb 89
(c) D/JNIDS Ltr Ser JNIDS 070/89 of 16 Feb 89

Encl: (1) U.S. Marine Corps Proposal for An Automated Data & Knowledge Base Research Assistant

1. In response to reference (a) data call for Joint National Intelligence Development Staff (JNIDS) Project V, enclosure (1) is submitted as a Service proposal.
2. This proposal, while very important to the specific mission of the Marine Air Ground Task Force Intelligence Center at Quantico, is presented in generic terms because of its importance to all Service and Joint intelligence production facilities.
3. It is important to the Marine Corps because, if successful, it will open the way for computer-aided data collection by analysts who can not now routinely take advantage of remote electronic data bases (both classified and open source). This is critical to this Command's Intelligence Center because no data bases are maintained at Quantico, and the Center depends totally on access to intelligence data bases and production created and maintained by others.
4. It is important to theater joint intelligence centers, and especially those concerned with portions of the Third World, because it establishes a means for analysts with limited computer expertise and limited understanding of major electronic data bases to get the information they need, when they need it, without having to master secondary technical skills.
5. The proposal has been coordinated with the staff of the Assistant Program Manager for Intelligence Processing in the Marine Corps Research, Development, and Acquisition Command (MCRDAC), with the Chairperson of the Intelligence Research & Development Council (IRDC) Interagency Committee on "The Analyst and Technology - 2000", the Director of Research, Defense Intelligence College, and several other intelligence community authorities on advanced information technology applications for intelligence.

Subj: MARINE CORPS RESPONSE TO PROJECT V DATA CALL

6. We believe this proposal addresses a major issue that is high risk/high gain in nature, and that will not be resolved by normal industry or government programs.

7. In developing the proposal we have been mindful of the criteria outlined in reference (a), as well as the guidance received during pre-data call briefings from JNIDS staff as discussed in references (b) and (c).

8. POC for this Command is the undersigned, Special Assistant and Deputy Director, MAGTF Intelligence Center, AUTOVON 278-3177, COMM (703) 640-3177/2285/2268, Secure 980-6109.



R. D. STEELE
By direction

Copy to:
Deputy Commanding General, MCRDAC (IN)

U.S. MARINE CORPS PROPOSAL

JOINT NATIONAL DEVELOPMENT STAFF PROJECT #5

"CONNIE"

An Automated Data & Knowledge Base Research Assistant

Prepared by the staff of the
Marine Corps Intelligence Center
Marine Corps Combat Development Command
Quantico, Virginia 22134-5001

15 June 1989

EXECUTIVE SUMMARY

● Project seeks to reduce labor and improve skill in the exploitation of multi-media electronic databases (both classified and open source); and to develop a single query system & interface for working with multiple remote data and knowledge bases.

● It addresses two of the most difficult and important intelligence analysis requirements identified by the "Analyst and Technology - 2000" Committee of the Intelligence Research & Development Council (IRDC/2000).

● Project is "high risk/high gain" in that it must simultaneously attack three (ideally four) critical complex issues:

- the need for parallel interactive access to multi-level (security) databases;
- the need for automated assistance in exploiting unfamiliar electronic data & knowledge bases;
- the need for graphical presentation & integration of multi-media data;
- the need to integrate digital mapping data with text and images in a hyper-media environment.

● The project is particularly applicable to all military intelligence production facilities and their sponsoring Services, Agencies, and Commands, in that it establishes an automated baseline for data collection and display relevant to the new emphasis on distributed production.

● Project is a Service submission initiated by the Marine Corps Combat Development Command (MCCDC) and the Marine Corps Research, Development, and Acquisition Command (MCRDAC). The project is supported by the IRDC/2000 and the Director of Research, Defense Intelligence College (DIC-R).

● IRDC/2000 will facilitate inter-agency, cross-service advisory support regarding critical electronic databases and user interface requirements for remote database exploitation.

● DIC-R will facilitate consultation with three top-level experts in analytic methodologies and artificial intelligence applications, and will schedule time with selected DIA analysts whose database exploitation methods most merit automated emulation.

● Marine Corps will provide a minimum of one analyst man-year each year, as well as sensitive compartmented information facility (SCIF) space for the project team and its equipment.

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 Today, with existing capabilities

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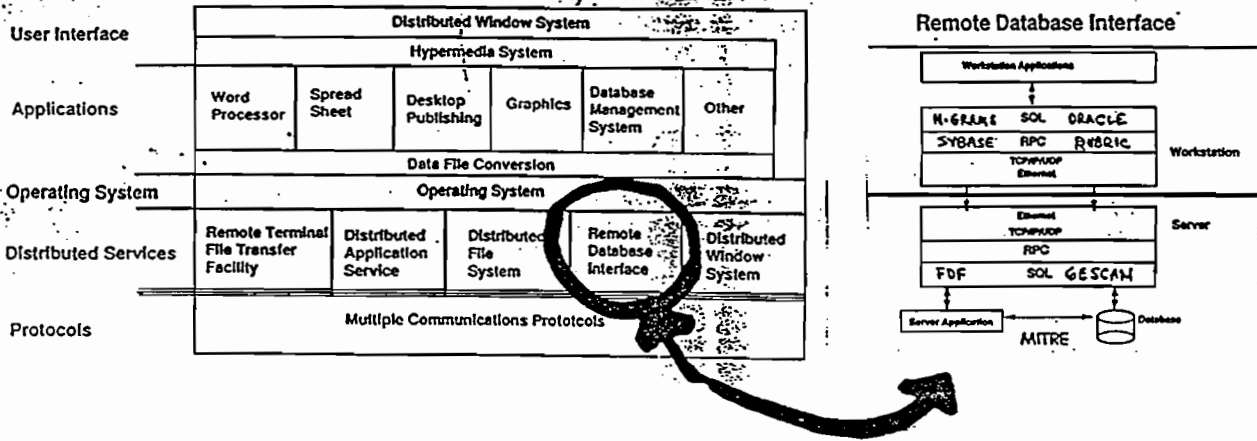
 Toward a Multimedia Distributed Intelligence Database

I. The Analytical Process

A. CONNIE (Not An Acronym)

This project seeks to develop an automated data & knowledge base research assistant by solving two critical and time-consuming aspects of all analysis regardless of domain or institution:

a) The automated identification, searching, sorting, linking, clustering, highlighting, extracting, and plotting of multimedia data as a preliminary to doing higher-order intuitive analysis; and

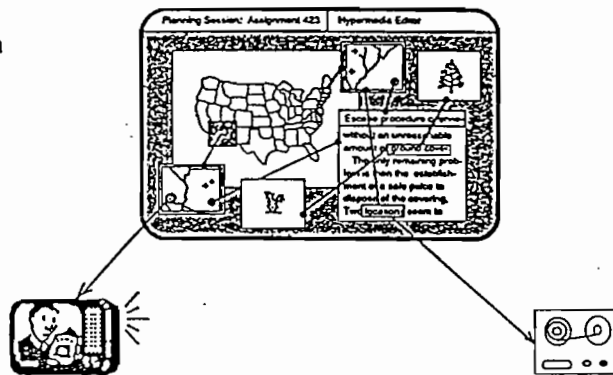


b) The development of a single user interface which permits a single natural language query and the mouse-selection of available databases to result in automated and appropriately structured queries out to each remote database, and graphically represented and automatically gisted, weighted and cross-referenced data which can be "navigated" in relation to digital maps.

● Multimedia

— Information may be from different data types

- text
- graphics
- imagery
- voice
- video



The project can develop incrementally and be prototyped rapidly by addressing one database at a time.

Among the databases to be considered should be those available through the Department of Defense Intelligence Information System (DODIIS).

Selected hardcopy reference materials should be digitized or made available online for general use.

Selected open source databases available through the Defense Gateway Information System (DGIS), such as DIALOG, Defense RDT&E Online System (DROLS), NEWSNET, BRS, The Source, LEXIS/NEXIS, and the U.S. Naval Institute Military Database, are essential elements of the intelligence analysis data collection phase.

The project is "high risk" in that it will require advanced automated multi-level security fusion of data from inter-actively queried databases including open source databases, and the development of a generic multi-media data fusion system with the flexibility to recognize and manipulate unstructured text, images, and digital mapping data.

B. The CONNIE Process

Process Inputs:

- (1) Hardcopy Products
- (2) Electronic Messages
- (3) Softcopy Search Results
 - (a) Classified databases
 - (b) Open Source databases
- (4) Hardcopy Images
- (5) Voice or Video Clips
- (6) Handwritten Notes

Analysis Process (Data Collection Stage):

- (1) Establish general outline of requirement
- (2) Obtain preliminary open source search results
- (3) Obtain preliminary classified search results
- (4) Check hard-copy references & lists of publications
- (5) Compile preliminary bibliography
- (6) Obtain hardcopy materials
- (7) Review microfiche records
- (8) Interview other analysts over secure telephone
- (9) Draft preliminary outline of product
- (10) Read available materials
- (11) Highlight and/or extract portions
- (12) Determine relevance, reliability, weight of extracts
- (13) Maintain records of sources & level of classification

Analysis Process (Data Display Stage):

- (1) Obtain hard-copy map
- (2) Plot order-of-battle and other graphic information
- (3) Prepare spreadsheets or other detailed appendices
- (4) Select photographs and images essential to product
- (5) Prepare "storyboard"

Process Products:

Today, with existing capabilities

- (1) Hardcopy text, photocopied maps & images

FY 90, with procurement of mainstream data processing HW/SW

- (1) Electronically retrievable text & images
- (2) Electronically retrievable voice & video clips
- (3) Hardcopy text & images (including maps) not scannable

FY 94, at FOC with integrated advanced applications

- (1) Multi-media reports
- (2) Layered & compartmented reports with menu-driven review
- (3) Smart maps & charts with embedded information
- (4) Automated updates to previously disseminated reports (especially threat intelligence for acquisitions)
- (5) Automated text extraction & early warning notices to specific action officers and program managers

C. Process Priority

The single greatest "lever" for improving intelligence fusion and near-real-time exploitation for both the policy maker and the tactical commander is that of a general purpose "automated assistant" residing in a generic intelligence analyst's workstation - together this powerful software and hardware should reduce to a minimum the extraordinary number of hours required to turn data into finished intelligence, while substantially increasing the timeliness, pertinence, utility, and accuracy of that intelligence.

One well-developed concept for integrating computer assistance into the fundamental data collection stage of analysis is provided by a project called "Computer Aided Tools for Analysis of S&T" (CATALYST), as put forward by individuals from CIA/DI/OSWR, ICS/OSWG, and the Office of Information Resources in the Directorate of Intelligence at CIA (CIA/DI/OIR).

The CATALYST project recognizes that the highest over-all information technology application payoff to the intelligence community will not be provided in the near-term by isolated expert

systems and domain-specific artificial intelligence applications attempting to duplicate "higher-order" analytical functions, but rather from the application of more limited automated intelligence to the mundane but critical tasks associated with data collection by the analyst: finding, sorting, gisting, clustering, and linking data in distributed multi-media databases.

The establishment of an automated assistant for data collection, with access to standard intelligence and open source databases (hence applicability to any general intelligence analysis problem) should be a very high priority because of the decreasing availability of analytical manpower, the frequent turnover in analytical positions, and the increased emphasis on distributed production.

Distributed production will require automated tools which support a minimal standard of methodological rigor and scope in the data collection stage of analysis. This project is therefore particularly applicable to all military intelligence production facilities and their sponsoring Services, Agencies, and Commands.

Time spent in the data collection phase is time not spent on production. Data overlooked in the data collection phase can not be retrieved.

D. Level of Effort

At least one detailed intelligence requirements study (including interviews with 75 individuals) has established that as a rule of thumb an individual with analytical responsibilities might spend up to fifty per cent of their time on data collection (searching for, reviewing, filing, gisting, sorting, etcetera). Assuming for the sake of this estimate that the intelligence community employs 10,000 analysts worldwide, each spending only twenty-five per cent of their time in data collection tasks, then 2,500 man-years will be recovered by the development of a generic "automated assistant" for data collection. The importance of this requirement simply can not be exaggerated.

The complexity of the data collection phase is likely to increase as data continues to grow and be fragmented by domain, institution, storage medium, location, level of classification, and type (structured, relational, object oriented). In essence, what is required for the data collection and display stage is an "automated assistant" able to identify, connect to, examine, and exploit known and new databases regardless of their type and level of classification.

Three elements of the existing level of effort by all analysts will be affected by this project: the effort required to identify and search remote data bases one at a time; the effort required to compare & contrast data from each of those isolated data bases; and

the effort required to integrate multi-media data in a product.

E. Current Support Systems

DODIIS provides automated access to electronic databases as well as an electronic mail network for analysts. The need for special training, an understanding of special commands for the various files, and the absence of an interactive feedback mechanism alerting users to errors in their commands make this collection of electronic databases very difficult to exploit.

At individual agencies a number of internal or specialized electronic and hardcopy databases are maintained, some not suitable for integration for technical or security reasons.

Existing hardcopy and microfiche references, themselves produced electronically, are time-consuming and difficult to use - and sometimes not readily available to every intelligence analyst.

Existing commercial technology allows for sequential electronic access to open source databases, but does not permit integration of interactive open source access from classified workstations.

F. Parallel & Preceding Initiatives

There are no parallel initiatives for this project even though the requirement is recognized and different organizations have attempted piece-meal solutions.

The combination of three (ideally four) major challenges makes this project very "high risk/high gain" in character, with its need for:

- 0 parallel access to multi-(security)level databases
- 0 automated assistance in exploiting unfamiliar databases
- 0 graphical presentation & integration of multi-media data
- 0 integration of digital mapping data for positional accuracy and "navigation" through multi-media data

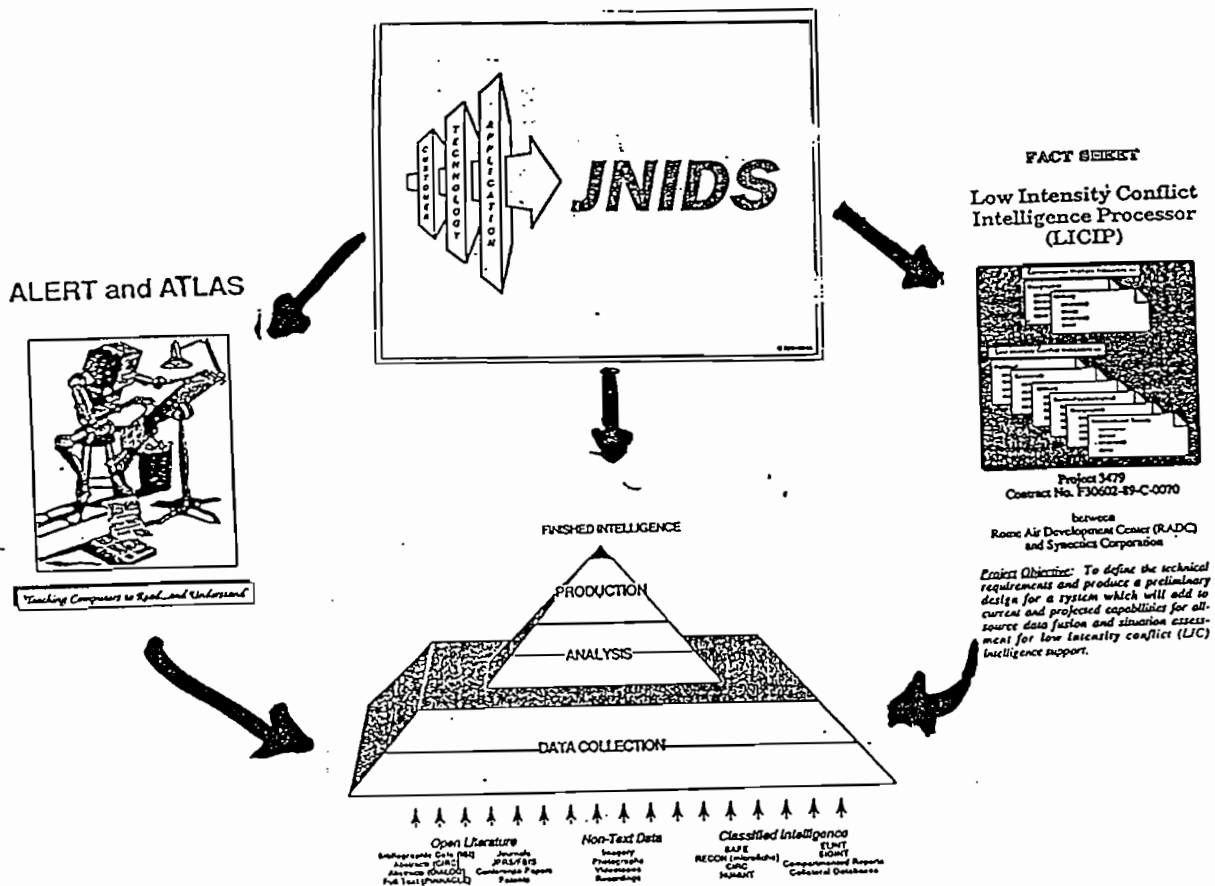
Several established projects have provided a base of knowledge and experience for this effort; among them are the earlier projects of the Joint National Intelligence Development Staff (JNIDS), the on-going activities of the Rome Air Development Center (RADC), and the elements of the CATALYST project including the All-Source Trends & Linkages Analysis System (ATLAS) and its companion All-Source Extraction and Reporting from Text (ALERT). The latter program is sponsored by the Open Source Working Group of the Intelligence Community Staff (ICS/OSWG).

Within JNIDS, earlier projects developed software applicable to this requirement in that knowledge and experience gained in those projects is fundamental to success in this proposed quantum leap forward.

At the CIA and co-sponsored by the ICS, the ATLAS and ALERT projects seek to provide software of community-wide value; its capabilities should not be duplicated - this proposal should go well beyond ATLAS and ALERT in that it would create a generic capability that is domain and database independent.

At the Rome Air Development Center (RADC), the Low Intensity Conflict Intelligence Processor (LICIP) contract has been awarded, and will focus on all-source data fusion, flexible handling of varying data content and sources, automated assessment of the current situation based on fused data, and display of fusion data and assessments. This requirements analysis could be integrated into the JNIDS implementation.

The JNIDS Multiplier



II. Process Inputs

A. Information Sources

Hardcopy References: Among the standard hardcopy references which an analyst should be able to exploit electronically are:

- Collateral Recurring Document Listing (CDRL)
- Counterintelligence Publications Registry (CIPR)
- Defense Intelligence Production Schedule (DIPS)
- Defense Intelligence Thesaurus (DIT)
- DIA Reference Library
- Register of Intelligence Publications (RIP)
- Scientific and Technical Intelligence Register (STIR)
- SCI Recurring Document Listing (SCI RDL)

These in turn will identify predominantly hard-copy or microfiche sources which must be manually retrieved and reviewed. Electronic sources are listed below.

Hardcopy Images: Annotated imagery, hand-held photographs, order of battle schematics, sketches of prototype equipment, graphics prepared by others, and maps & charts essential to the understanding of text are available in numerous locations and must be obtained and then copied, modified, and integrated into reports.

Voice & Video:

Voice products, including signals from the National Security Agency (NSA), original voice clips from the Foreign Broadcast Information Service (FBIS), scientific & technical conference and meeting recordings, and oral debriefings of defectors and/or other experts all constitute a rich source of raw data which is not automatically exploitable at this time.

The sophistication and timeliness of Cable News Network (CNN) have led to this source's being of particularly high value to policy makers and commanders. Complemented by video-teleconferencing products produced for the Director of Naval Intelligence (DNI) and within the intelligence community (e.g. the morning brief from the National Photographic Interpretation Center (NPIC)), these video products urgently need some means of automated cataloging, retrieval, and exploitation to meet desktop presentation and intelligence briefing requirements.

B. Historical Data. Historical data is not included for consideration within this project. In selected cases, with the establishment of distributed production, the individual intelligence production facility should undertake the scanning of selected historical hard-copy materials for general benefit.

C. Data Changes. The increase of open source media, classified traffic, and sensor information projected for the 1990's can not be reliably estimated. However, there appears to be a clear consensus that the "load" will at least double if not triple, and that the "noise" surrounding key elements of information will at least equal if not exceed the growth of "signal". It is absolutely critical that the intelligence community develop a strategy and domain and hardware independent automated tools for dealing with this explosion of available but potentially unexploitable data.

D. Automated Data Sources. Among the automated data sources are all the files accessible through the DIA Online System (DIAOLS), the Community Online Intelligence System (COINS), and other systems under the umbrella of the Department of Defense Intelligence Information System (DODIIS), as well as agency or service specific electronic databases. Also available, but subject to security constraints in terms of interactive search & retrieval from the same hardware base as the classified databases, are open source electronic databases.

Standard Classified Electronic Databases (DIAOLS)

All Source Document Index (ASDIA)
All Source Document Index (SI/SAO) (ASDIAZ)
Computed Mission Coverage Index (CMCI)
Air Order of Battle - Collateral (DIAOB-COL)
Air Order of Battle - SI (DIAOB-SI)
DIA Ports File (DIAPF)
Electronic Order of Battle (DIEOB, 5 Vol)
Defense Intelligence Equipment Index (DIEQP)
Ground Order of Battle - Collateral (DIGOB, 3 Vol)
Ground Order of Battle - SI (DIGOB-SI)
Naval Order of Battle - Collateral (DINOBS-COL)
Grouped Files by Family Name (FILE-FAMILY)
Foreign Military Assistance - Agreements (FOMA-AGREE)
Foreign Military Assistance - Equipment (FOMA-EQUIP)
Foreign Military Assistance - Value (FOMA-VALUE)
DIAOLS Analyst Training Aid (GUIDE)
Intelligence Collection Requirements (ICR2)
Intelligence Defector Source File (IDSF)
Installations (IN..., 15 Vol)
Intelligence Report Index (IR..., 13 Vol)
Imagery Reconnaissance Objectives (IR..., 5 Vol)
Military Facilities (MILFAC)
Military Production (MILPRO)
Originator Controlled All Source Document Index (ORCON-ASDIA)
Originator Controlled Intelligence Index (ORCON-IRISA)
S&T Intelligence Products (STPROD)
S&T Intelligence Production Requirements (STREQ)
S&T Intelligence Production Tasking (STUNIT)
Worldwide Reconnaissance Operations (WRECON)

Open Source Electronic Databases of Intelligence Utility

BRS.- Provides access to over 100 comprehensive databases in all areas of biomedicine and health care, the life sciences, engineering, business, economics, social sciences, and general reference. Of particular interest are the Academic American Encyclopedia Database, the Index to U.S. Government Periodicals, and the Corporate and Industry Research Reports Online Index.

Defense RDT&E Online System (DROLS). Provides online access to information about on-going DoD research and technology efforts, bibliographic records of technical reports, and a database of independent contractor's independent research & development efforts.

DIALOG. Contains over 120 million records covering virtually every subject area. Among key databases of interest are the Biography Master Index, the Conference Papers Index, Congressional Records Abstract, Facts on File, Geobase and Geoarchive, SCISEARCH and SOCIAL SCISEARCH, and the USA Today Decisionline.

EASYPNET. Among the contents of interest are Advanced Military Computing, BBC Summary of World News Broadcasts, C3I Report, Commerce Business Daily, Counter-Terrorism Intelligence Report, Directory of Federal Laboratories, National Bureau of Standards Bulletin, global series on Political Risk (one for each region), and Soviet Science and Technology.

Foreign Broadcast Information Service (FBIS) Online Wire. Similar to commercial wire services, providing coverage of print and voice media.

NEWSNET. Full-text online business news service with over 320 specialized databases. Covers 35 industries and professionals, including international affairs, defense, taxation, telecommunications, investments, and computers. Cable & Satellite Express News, Federal Research Report, Frost & Sullivan's Political Risk Newsletter, International Travel Warning Service, and World Environment Report are among its databases.

LEXIS/NEXIS. LEXIS is legal research service combined U.S. and foreign case law, statutes, and codes. NEXIS is news service with access to over 100 international and national news, trade, and professional publications; twenty-two news, publicity, business, and financial wire services; and an extensive library of U.S. federal government information.

The Source. Includes news and weather, business research and investment data, communications, travel planning and support groups offering computing advice, free software, and buyers guides. The Source is most popular for timely delivery of fast-changing news beamed by satellite from AP and UPI.

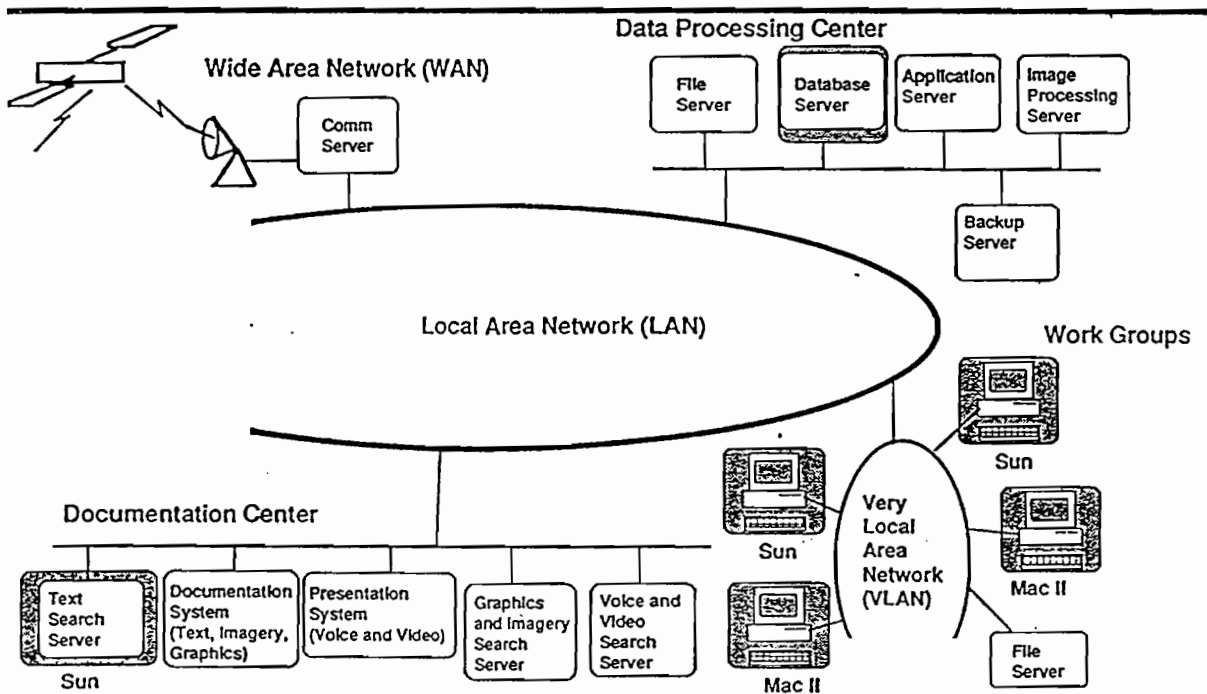
U.S. Naval Institute. Online source of military databases providing information in the following areas: armed forces of each nation - air, ground, naval, special warfare, and strategic forces; complete coverage of military equipment used today as well as equipment in production; information on the current assignment of all active US and USSR flag and general officers; military terms and programs, current military news events. Exceptionally good source for preparing unclassified versions of order of battle and other military intelligence reports for use in training.

Illustration of Server Based Architecture

Premise #1: Servers dedicated to database & security functions.

Premise #2: Database systems such as Gemstone/Opal, Ingres/Star, Non-Stop SQL, Oracle, Sybase, and Vbase will be exploitable from a single user interface.

Database Demonstration



MITRE

III. Process Outputs

A. Products

Generic products characteristic of most intelligence production facilities include electronic messages, hardcopy reports, voice or video production, and slides or viewgraphs with accompanying hardcopy text.

Products within the Marine Corps Intelligence Center are not representative of those facilities with formal production responsibilities, but include tailored materials in support of Service level missions, including doctrine, requirements pronency, acquisitions, and training for expeditionary operations.

B. Product Importance

The importance of intelligence products has been established by the policy-makers, tactical commanders, and intelligence analysts receiving and exploiting specific items. The point to stress here is that time spent on manual data collection is time not spent on production and presentation. Also, with the geometric increase in information and attendant "noise", the risk of missing critical data elements in the data collection phase is rising exponentially.

C. Growth

The demand within the Marine Corps for Intelligence Center products will grow exponentially as capabilities come on line and tailored intelligence support to individual Marine Corps entities with Service-wide missions begins to affect Marine Corps force structure, doctrine, training, and acquisitions programs.

The external demand for the kind of automated assistant proposed by this project should be exceptional if the project delivers a transferable generic tool that can be used by analysts from any service or agency against any target domain (within the bounds of the specific electronic databases and hardcopy scanning constraints established during the formal JNIDS functional specification phase).

IV. Other

A. Security

The project software and hardware should be developed at the unclassified level and should be transferable to community users at any level of classification.

The project itself, however, should be at the SI/TK level to permit fullest possible access to electronic data bases.

The principal security constraint will be the establishment of some means to simultaneously and interactively query both open source and SI/TK databases from the same workstation. If that is not do-able, then a process is needed for down-loading the open source query to a floppy, transferring it to a stand-alone device capable of automatically dialing and querying external open source databases (e.g. as done through DGIS SearchMAESTRO), and then screening returned data for computer viruses prior to clearing the floppy for re-intergration into the SCI network.

B. Points of Contact

Marine Corps Intelligence Center, Marine Corps
CombatDevelopment Command (MCCDC)

Mr. R. D. Steele, Special Assistant to the Director
AUTOVON 278-3177, COMM (703) 640-2285/2268, Secure 980-6109

TBD Oct 89: System Manager (AI background), Librarian,
Analyst

Intelligence Program, Marine Corps Research, Development,
and Acquisition Command (MCRDAC)

LtCol M. J. Brock, Assistant Program Manager for Intelligence
Processing, AUTOVON 278-2581, COMM (703) 640-2581

IRDC Committee on "The Analyst and Technology - 2000"

Dr. Norton Baron, Executive Secretary
COMM (703) 373-4832, Secure 681-2234

Defense Intelligence College (DIC)

Dr. Robert Slater, Director of Research
COMM (202) 373-3342

C. Additional Information

This project addresses critical data collection and user interface requirements identified by the Analyst Sub-committee of the IRDC/2000, and presented in draft at the 1 June 1989 meeting of the Committee. Among the functional and associated technological requirements stressed by the cross-Agency, cross-Service group:

Functional Requirements

Capability for each analyst to import-export-sort-search-and display data stored in structured data bases that reside in analyst's microcomputer

Use analyst's microcomputer to query automatically different databases that may be resident in any database management system (DBMS) and hosted on any platform

Direct electronic access from analyst's micro-computer to digitized library materials

Technological Requirements

Relational DBMS that is easily used, quickly learned, and allows customizable menus

Stores large text fields (up to 30KB, stores picture fields, can routinely import/export data from/to any other DBMS, does multiple sorts/queries, allows customizable input/output layouts, built-in graphics capability

DBMS, resident in analyst's microcomputer, that provides connectivity language for interfacing to different data bases in a transparent manner

Fast search procedure for text that permits easy modification of search profile and evaluates degree of relevance

Hypercard-like linking of data in different data bases

Natural language understanding to expedite querying different data bases

Document retrieval using artificial intelligence techniques (e.g. rule base system reflecting expert knowledge of DODIIS/DIAOLS retrieval codes and field contents)

Long-term program to establish open source exploitation strategy (e.g. digitization of library references, distributed scanning program for hard copy Third World media)

Geographically referenced
databases

Interactive Geographical
Information Systems (GIS)

The established information technology architectures serving the various elements of the intelligence community are aging quickly; the nature of the emerging threat is so radically different from that of the strategic and conventional threat against which the community has labored for so long that entirely new collection, analysis, and production methodologies and tools will be required. The earlier generations of information technology and analytical methodology, including as they do heavy reliance on sequential processing, structured databases, and manual data entry and manipulation, are simply not adequate to the challenge posed by the emerging threat.

CHANGING THREAT DECAPITATES CONVENTIONAL CAPABILITIES

CONVENTIONAL THREAT

GOVERNMENTAL ONLY
CONVENTIONAL
STATIC OOB
LINEAR
RULES OF ENGAGEMENT
KNOWN DOCTRINE
STRATEGIC WARNING
KNOWN INTEL

EMERGING THREAT

NON-GOVERNMENTAL
NON-CONVENTIONAL
DYNAMIC OR RANDOM
NON-LINEAR
NO CONSTRAINTS
UNKNOWN DOCTRINE
NO WARNING
UNLIMITED 5TH COLUMN

Solving this problem is not just a case of realigning resources overnight. The time has come to consolidate the gains that JNIDS and other advanced information technology projects have made in the past few years, and to begin establishing generic advanced applications that can serve as a foundation for the quantum leap that intelligence processing technology must make in the next decade if it is to keep pace with the explosion of multi-media inputs that the average analyst must consider in producing quality intelligence.

In order to most effectively integrate this project with the on-going advancing information technology efforts of others, as well as analytical data collection and display methodologies of the best analysts, this project seeks to integrate the expertise represented by the IRDC/2000 and individuals associated with or identified by the Defense Intelligence College.

This project shares and contributes to the achievement of the goals of JNIDS, including its commitment to high pay-offs, the use of advanced technology to reduce manpower requirements, and the transition to graphics vice text as the principal analyst interface for navigating through and exploiting raw data.

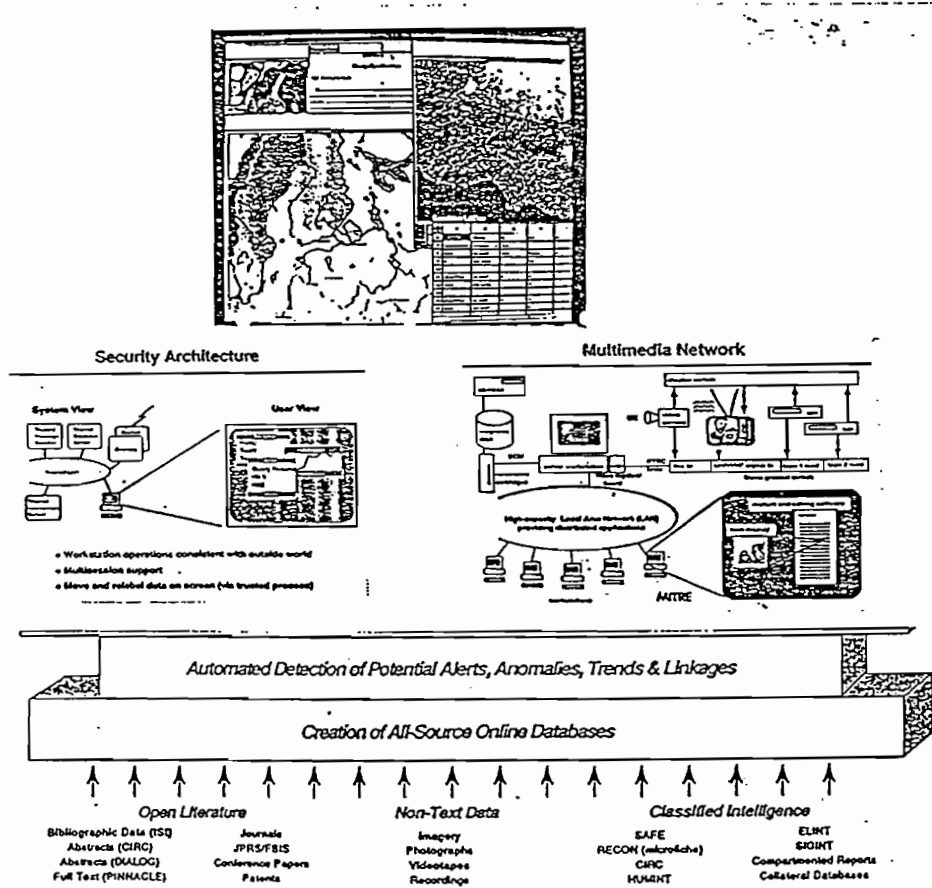
The emphasis on a single user interface supports the JNIDS approach of embedded documentation or intuitive understanding vice traditional documentation.

As the project matures, the prototype could develop a capability to exploit previously unknown databases by "learning" their structure and protocols without instruction, automatically integrating new databases into the "automated assistant's" standard searches.

The sponsors, and members of the IRDC/2000, believe this project addresses a high risk advanced application that is not likely to be attempted by industry or other government entities.

The sponsors are totally open to redefinition of the project in the functional specification stage in order to ensure the greatest possible cross-fertilization with other advanced information technology endeavors within the intelligence community.

Toward a Multimedia Distributed Intelligence Database



NATIONAL AND THEATER DATA FUSION

HEURISTICS AND FUSION: A FIVE DIMENSIONAL MONSTER

INTELLIGENCE CYCLE
TARGET DOMAIN
AGENCY
STORAGE MEDIUM
LEVEL OF AGENCY

CIA
NSA
DIA
STATE
FBI
ARMY
NAVY
ETC.

SOV 3RDW TERR DRUGS ECON NBC ETC

COLL RQMT	SOURCE
COLL PLAN	USG INDIVIDUAL
COLLECTION	LOCAL FRIENDS
FILTRATION	LOCAL OFFICE
TRANSMISSION	AMBASSADOR
STORAGE	REGIONAL STAFF
INTEGRATION	DEPARTMENTAL STAFF
PRODUCTION	INTER-AGENCY COMMITTEE
EXPLOITATION	NATIONAL PRINCIPALS

UNEXPLOITED OPEN SOURCE PRINT
UNEXPLOITED OPEN SOURCE VOICE
UNEXPLOITED OPEN SOURCE IMAGE
INDEX CARDS
MICROFICHE
PAPER
SOFTCOPY FLOPPIES
DEPARTMENTAL STORAGE
CENTRALIZED STORAGE
HUMAN MEMORY

TYPE HEURISTICS: ACQUISITION, INTERPRETATION, DECISION-SHAPING

DATA ACQUISITION HEURISTICS

WHAT TO INTAKE

WHAT TO FILE

WHAT TO FUSE

WHAT TO LOOK FOR

DATA INTERPRETATION HEURISTICS

DETERMINING RELEVANCE OF DATUM

DETERMINING ACCESS OF SOURCE

DETERMINING RELIABILITY OF SOURCE

DETERMINING WEIGHT OF DATUM

DECISION-SHAPING HEURISTICS

INDIVIDUAL COGNITIVE MAP

PERSONAL POWER POLITICS (P3)

FUNCTIONAL OFFICE MISSION & TASKS

EMBASSY/THEATER OBJECTIVES

DEPARTMENTAL STRATEGIC GOALS

NATIONAL GRAND STRATEGY

NOTE: The above are cumulatively complex and distorted, i.e. the heuristics at the national level are forced to rely on data that has been subject to heuristics at lower levels and individual & office heuristics (hidden agenda) at the national level.