



# A Functional Overview

October 1983

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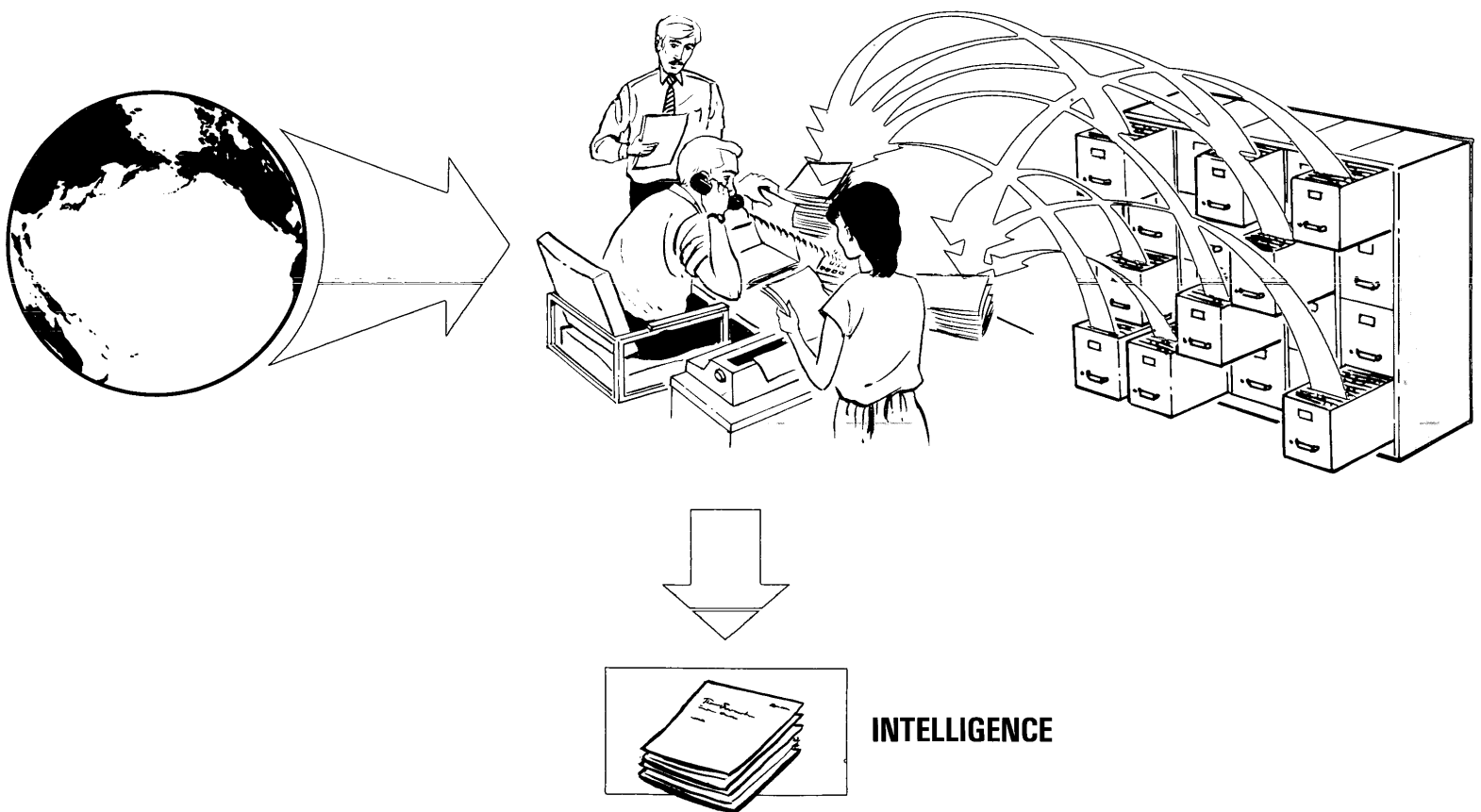
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# Intelligence Production Today



# Introduction

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Timely, comprehensive, carefully analyzed information is needed by those who formulate and implement U.S. foreign policy. Such intelligence may be produced to maintain current awareness, to focus on long-term trends or in response to an international crisis. Analysts in CIA and DIA analyze and synthesize available material from many sources; the end result is finished intelligence. Simply stated, this is the purpose of the intelligence process.

For many years, analysts have received raw intelligence information through a dissemination system that distributes many millions of new items per year in paper form. The process is normally slow at best, involving considerable manual review and dissemination. Interest profiles indicate who is to receive which new items and then prompt distribution of mail to central locations rather than to individuals. Alterations to an interest profile can take days.

Advances in technical collection systems and collateral reporting are making even more information available. Yet a disproportionately small effort has been devoted to providing an integrated set of automated tools to support the people who must review and assimilate this increasing flow of information. This is especially burdensome as the scope of intelligence reporting broadens and deadlines tighten.

To meet today's challenges in producing comprehensive, accurate and timely intelligence, analysts must have easy access to material from the entire body of available information. This increasing body of information includes not only the traditional sources of classified reports from the Department of State, NSA, military commands, CIA and DIA, but also open source technical reports, journals, news media, magazines and books. Analysts screen incoming material and correlate it with information held in personal, branch or other files.

They frequently also retrieve relevant data from central libraries (among others, RECON at CIA; ARISA and ASDIA at DIA) whose indexes provide access to additional information.

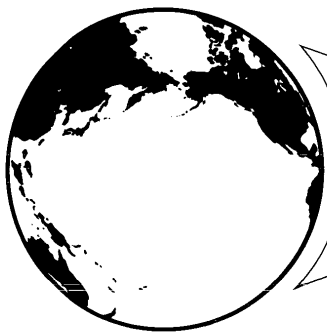
The plain fact is, however, that analysts have difficulty in both getting at and effectively utilizing the vast all-source intelligence resources available. This difficulty increases to near impossibility as the time available for analysis decreases.

In many cases, analysts depend on memory or data they can easily locate, usually in personal files. Documents, if put into central libraries at all, are often indexed for only a few major subjects. There is no way to gain access to the files of colleagues other than through personal contact.

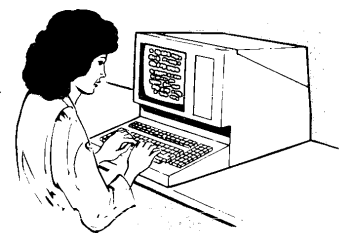
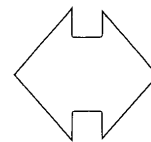
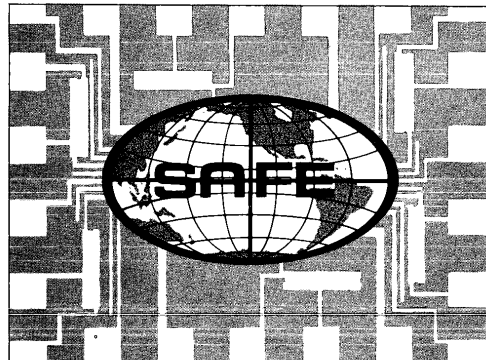
To enhance analysts' ability to provide the most comprehensive intelligence analyses, systems are needed that will give them easy access to any information available to them within applicable security considerations. Specifically, analysts need facilities that will enable them to define and alter interest profiles rapidly and precisely; quickly and conveniently acquire, scan and dispose of incoming information; develop specialized files that can be shared by designated colleagues; maintain extremely large files and data bases; gain access to and use multiple files; and to prepare, coordinate and distribute finished intelligence items.

The goal of SAFE (Support for the Analyst's File Environment) is to provide analysts in the DIA and the Intelligence Directorate in CIA with a single information processing and handling system which supports each of them directly and makes other facilities readily available for use in any aspect of the intelligence process.

# Intelligence Production with SAFE

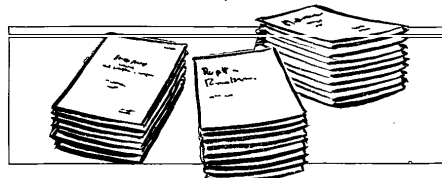
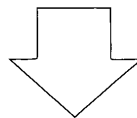


ECONOMIC DATA  
MIL INTELLIGENCE  
SCIENTIFIC REPORTS  
POLITICAL INFO.



- FASTER
- BETTER ANALYTICAL TOOLS
- MORE EFFICIENT MAINTENANCE

- WRITING
- MAINTAINING
- SCREENING
- READING
- SEARCHING



**IMPROVED INTELLIGENCE**

# Introduction

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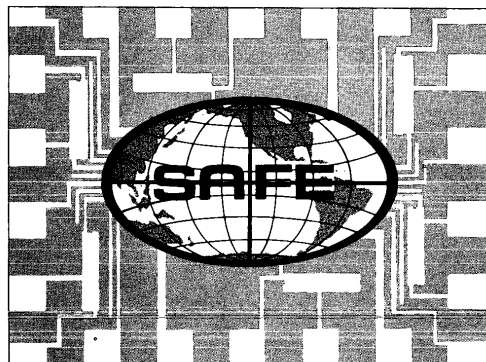
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# Intelligence Production with SAFE



- FASTER
- BETTER ANALYTICAL TOOLS
- MORE EFFICIENT MAINTENANCE

- WRITING
- MAINTAINING
- SCREENING
- READING
- SEARCHING



**IMPROVED INTELLIGENCE**

## SAFE Overview

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SAFE is an interactive, user-oriented information handling system that integrates analysts, intelligence support personnel, and managers with current computer technology. People with different tasks, academic backgrounds, and computer skills can learn to use the system productively in minimal time.

The SAFE system provides diverse functional capabilities which assist analysts in the total intelligence analysis cycle from information receipt to production of finished intelligence. SAFE's functions are designed to provide for each analyst:

- a. Faster access to all-source intelligence resources
- b. Better analytical tools
- c. More efficient maintenance and access to every type of file
- d. Relief from routine information housekeeping tasks.

In summary, SAFE will permit more time for analysis and improve the intelligence production process.

SAFE meets several unique technical challenges. It accommodates extremely large user populations whose needs are diverse. Unlike many computer-based systems whose functions are sharply focused on single, well-bounded tasks, SAFE allows users to easily suspend the use of one capability, switch to another, and either return to the original activity or move to something new. Many times, users will combine separate functions in the same operation to meet their individual needs.

Operating conditions will assure high reliability, data integrity, rapid response and data security. Additionally, SAFE is designed to evolve in response to changing modes of user operation and advancing technology.

Users will employ the specially designed SAFE User Interface to interact with the system. The User Interface will be readily adaptable

to each person's tasks, work habits and computer skills. This interface provides a variety of methods for interaction with the system including: commands, forms, menus, user-programmable function keys and other features designed to support easy access to this powerful system. Indeed, a majority of an analyst's basic tasks can be performed using only a few key commands to perform such basic functions as:

### DISSEMINATING INFORMATION

Selecting incoming cables via user-maintained interest profiles for review

### READING AND DISPOSING OF INFORMATION

Reading, annotating and indexing incoming information

### SEARCHING AND RETRIEVING INFORMATION

Searching, retrieving and displaying information

### MAINTAINING INFORMATION

Creating and maintaining analysts' personal files, large system files and data bases

### COMPOSING AND WRITING REPORTS

Composing and writing intelligence reports, including accessing other facilities for special analytical support

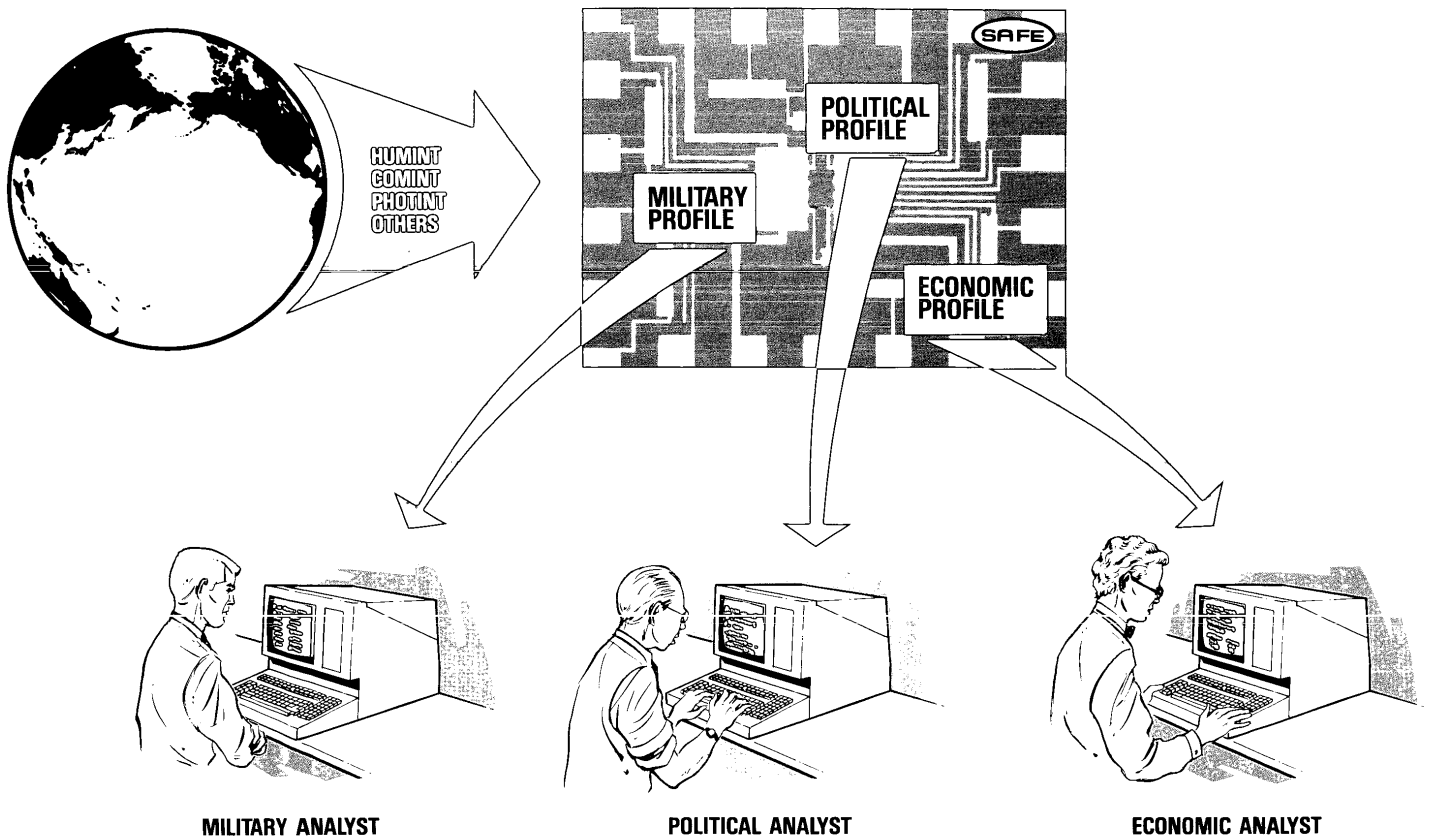
### COORDINATING, REVIEWING AND EDITING

Coordinating, editing, reviewing and publishing intelligence reports

SAFE will be used by Washington-based intelligence analyst organizations in CIA and DIA. Ultimately, SAFE will serve several thousand analysts and be operational 24 hours a day, seven days a week. The DIA SAFE system will also support Defense Intelligence analysts around the world who are members of the DoDIIS community.



# Disseminating Information



## Disseminating Information

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SAFE will manage the internal dissemination of all incoming electrical information to both CIA and DIA analysts. The system will ensure that information reflecting each analysts' interests will be delivered as required. SAFE will also provide for external communication over the DoDIIS network and facilitate the dissemination of DIA-unique hard copy information that has been stored in SAFE files.

SAFE will automatically carry out several processes to provide rapid internal distribution and ready utilization of information. Apart from checking incoming messages for completeness, SAFE will translate messages to its internal format and create subdivisions called zones (e.g., classification, subject, text) for all documents. These zones are useful when analysts want to display, search for, or print documents. SAFE also will catalogue and create bibliographic system references known as indexes for each document. Finally, SAFE will compare each new document against a user-defined interest profile and deliver it to the appropriate "electronic mail in-box" within minutes of its arrival.

SAFE will facilitate the dissemination of internally generated documents and abstracts of lengthy hardcopy documents as if they were incoming electricals. Dissemination support beyond that just described will also be provided by SAFE to meet specific needs of the DIA. This support will entail access to SAFE for DoDIIS users as well as control and dissemination of hardcopy and electrical documents for DIA customers who do not have access to the system.

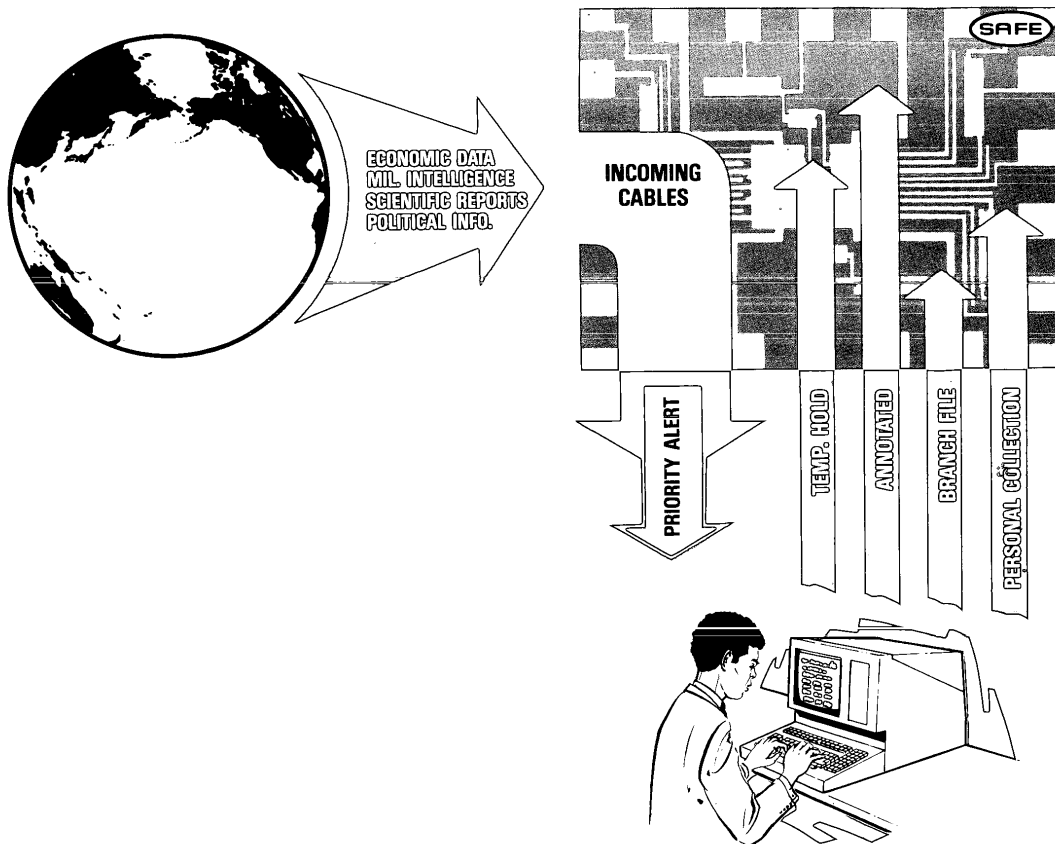
Each SAFE user will have complete control over interest profiles

reflecting their substantive interests and directing the system to disseminate specific incoming information to them; similarly, branches, task forces or any organizational units may define profiles appropriate to their interests. In this way, each analyst will be assured of receiving delivery to a personal "in-box" of all incoming information to which they have access under the rules of classification and compartmentalization.

Profiles will allow each analyst not only to specify subjects of interest but also to determine the presence or absence of certain words and their expected logical combination in intelligence documents. They will also provide the means for analysts to identify priority mail items with the knowledge that SAFE will automatically provide an alert indicator when such mail arrives. In addition, analysts may name specific terms to be highlighted when information is ultimately displayed. Finally, profiles will allow analysts to predetermine indexes that SAFE will automatically generate for subjects of recurring interest.

Analysts will be able to alter or create new interest profiles to reflect changing events or different analytical responsibilities quickly and easily. Thus, any number of new subjects, alerts or highlight terms may be added or deleted at the analysts' direction as situations warrant. When changes are made, each analyst will be assured in advance that a modified profile serves his interests precisely since SAFE will allow analysts to both validate the new structure of the profile and conduct a test to verify that dissemination will occur exactly as desired.

# Reading and Disposing of Information



## Reading and Disposing of Information

Analysts will be able to screen information in SAFE in ways that are familiar and natural. Deciding on the disposition of electronic information entails procedures analysts currently employ with hardcopy documents. These include: annotating, highlighting, indexing, filing, distributing and discarding information. Central to performing these functions, and, indeed, at the crux of the SAFE system, is the key notion of files.

Files are collections of information records that are maintained to support the activities of users. Analysts will come to view them generically as follows:

- Document-related Files — collections of all cables, messages and document abstracts and their associated index references
- Compose Files — the text of reports, memos and other material written on-line by users.
- Ancillary Files — data which support user operations, such as interest profiles, route lists, output formats, etc.
- Intelligence Data Files — DIA's structured data bases.

Some files will be created and maintained directly by users, some will be created by SAFE and maintained by users, some will be maintained by the system on behalf of users.

Mail Files (noted earlier as "electronic in-boxes") will be one of the most basic and important files for analysts. SAFE will create a Mail File specifically for each user. Analysts may choose to create other Mail Files appropriate to specific tasks. Mail Files can also be designed to serve multiple users, and thus can render support to organizational units such as branches or crisis management teams. Additionally, analysts may conveniently group messages within mail files by content, such as country or subject matter.

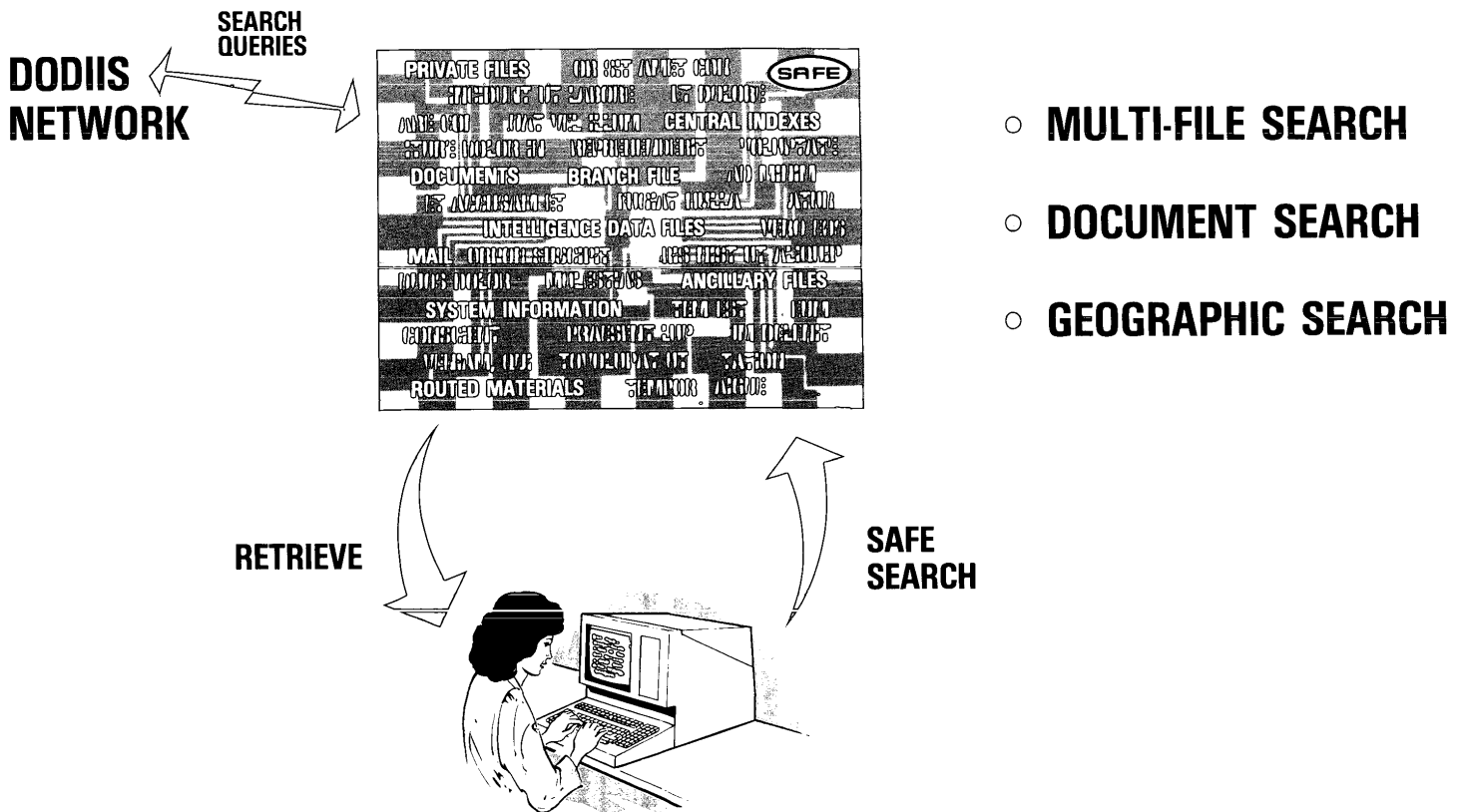
The flexibility of SAFE's interface will permit users to elect to see items of particular interest and to predetermine how reading material will be presented. For example, one analyst might choose to read all State Cables, followed by DIA IRs, etc., arranged by date, with all header information but title suppressed; another analyst might view complete cables in the order in which they arrived; a third analyst might call up cables relating to a particular country and suppress all except the titles, classification and message source.

SAFE will allow analysts to highlight terms and annotate file contents with their own observations, just as they do on paper. Annotations are equivalent to marginal notes, while highlights equate to underlining a word or group of words for later reference. Both mechanisms aid analysts' subsequent review process by recording original reactions to the information and flagging items of interest.

Utilizing basic and straightforward commands, analysts will be able to file permanently (in as many files as they wish), hold temporarily for later action, or discard items of information as they choose. They will be able to create highly individualized indexes and annotations to documents. They will be able to cross-reference these indexes by using as many bibliographic or substantive terms as necessary, and to retrieve them later by whatever criteria are appropriate to the analytical issue at hand. Index Files offer a greatly enhanced vehicle under SAFE to replace the reference files analysts now use, such as "shoebox" files, document folders, 3x5 card files or notebooks.

Analysts will be able to select for viewing all files to which they have access. That is, SAFE users can designate others to share information according to agreed access privileges, the most basic of which is termed "read only". Privacy is assured as SAFE will not allow anyone to access any file without the owner's explicit authorization.

# Searching and Retrieving Information



## Searching and Retrieving Information

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One of SAFE's most powerful features is the ability to search and retrieve information with pinpoint accuracy. SAFE will provide easier access to information held by both specialists and generalists and assure analysts of the ability to conduct a more precise and complete review of all pertinent material.

Analysts will be able to search for information from all files to which they have access. They will be able to perform searches on material in one or multiple files, on documents in either the entire document collection or any chosen subset, or in private or centralized indexes. SAFE's search capabilities will be a main means of access to the information contained in the structured Intelligence Data Files (IDF) which will include the currently operational DIAOLS files.

All searches on SAFE, from the most straightforward mail file search through the most complicated structured data base inquiry, will employ the same query language. This query language provides great flexibility. Analysts may specify the most simple or complex search criteria using words, phrases, combinations of words and phrases, or coded data and other index terms. Importantly, they will be able to do follow-up searches to refine results of earlier searches by employing new terms or phrases against the earlier search results. For example, a search for T-80 tanks in Yugoslavia that yielded excessive results could be refined to a search for T-80 tanks in a

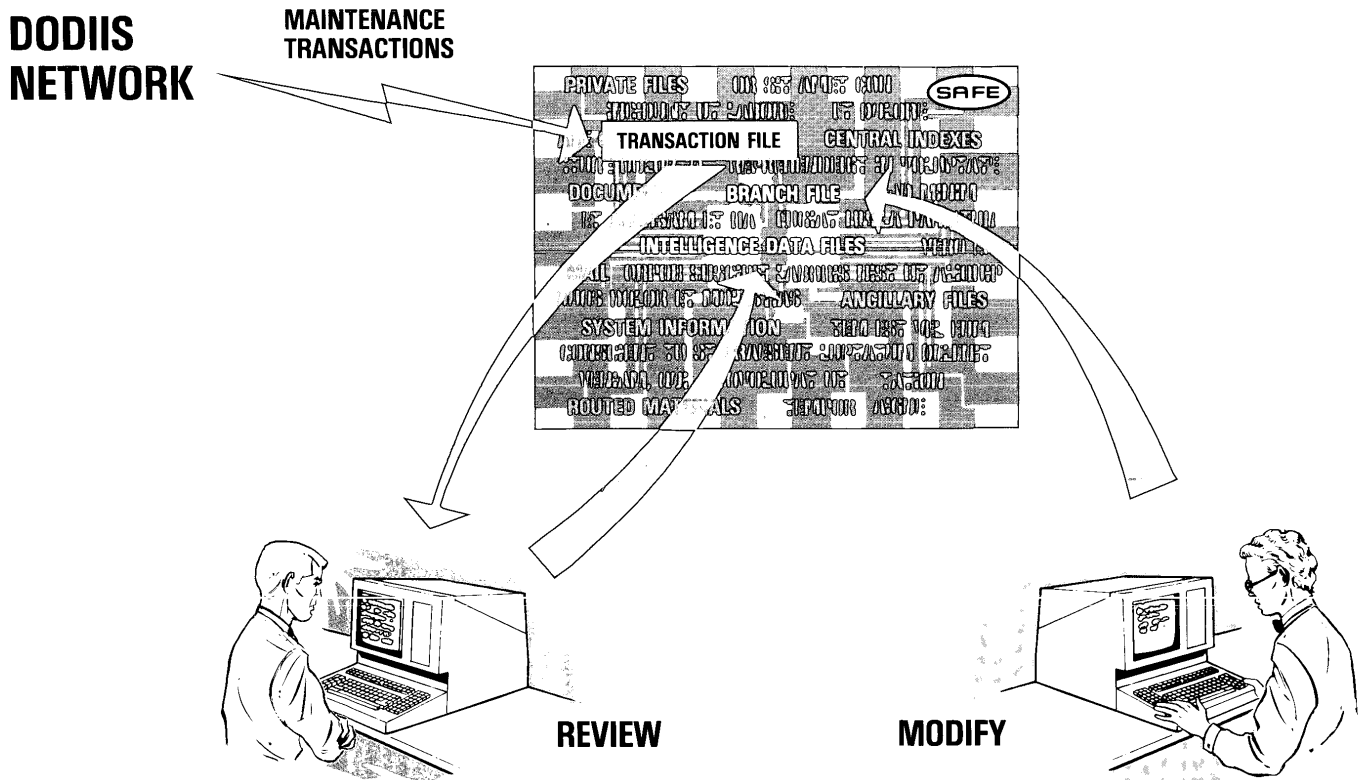
certain unit or area. Analysts will also be able to specify constraints by time, classification and source, and to use results of previous searches to add new constraints to future searches.

DIA and DoDIIS analysts will be able to search the IDFs using specially provided geographic and linked file search capabilities as well as those previously mentioned. Geographic search enables analysts to focus on specific geographic areas of concern within the data base, while linked file search provides the ability to access related data from two or more files with one search request. Analysts will be able to search for information from the entire IDF data base, multiple files, or designated file portions.

SAFE provides analysts with the means for retrieving information obtained from all searches, whether simple or complex. For each successful search the system will automatically create a specific file known as a Hit File. By simply displaying this file, analysts gain immediate access to the results of their searches. As discussed earlier, analysts will have complete choice of when and how the material will be displayed.

Analysts will be able to screen search results in a number of ways. They can save Hit Files for future work, delete entries in the Hit File, extract pertinent information to be put in an existing file, or create a new file to contain only selected material from the search.

# Maintaining Information



## Maintaining Information

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Maintaining data in SAFE entails straightforward procedures that allow analysts to add new information, modify or update existing information, and either delete or retain information in SAFE files. Standard file operations will allow analysts to manage all files under their maintenance control and to make such refinements in structure or content as they deem appropriate. These file operations are particularly critical for personnel whose jobs entail maintenance of the central indexes and the Intelligence Data Files (IDF).

The procedures for carrying out data maintenance are the same whether analysts are working with personal files or large structured data bases. Analysts will be able to use the SAFE command language, or a number of specially provided aids, to carry out these procedures on data that is either displayed at the workstation screen or on data that is not displayed. This latter feature enables analysts to make rapid alterations to filed material without the need to display it.

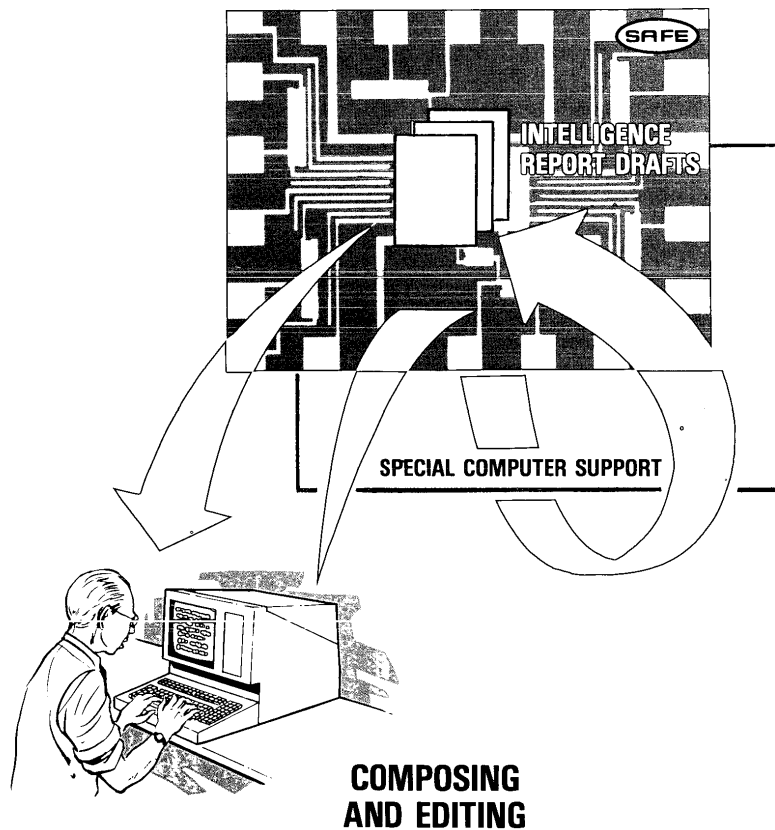
Displayed data may be modified or updated immediately at the workstation screen. Nondisplayed data, whether from one file or multiple files, may be maintained immediately or at a specified time in the future at the user's option. SAFE will also support standard data maintenance capabilities including mass and conditional changes, comprehensive data validation, and automatic data generation.

In the case of DIA analysts dealing with structured data bases, the ability to perform future maintenance will be particularly advantageous. Analysts can review and coordinate changes with DIA internal or external sources prior to their becoming permanent and execute the coordinated maintenance transactions later. For analysts dealing with IDFs, SAFE provides interactive and batch maintenance capabilities. These capabilities are available to both internal and external SAFE users on the DoDIIS communications network.



# Composing and Writing Reports

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## Composing and Writing Reports

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All of SAFE's functional capabilities are aimed at providing support to analysts engaged in the eventual production of finished intelligence. SAFE also will be available to serve as an adjunct to analysts' intuition, provide access to analytical methodologies, and facilitate the actual writing of finished intelligence.

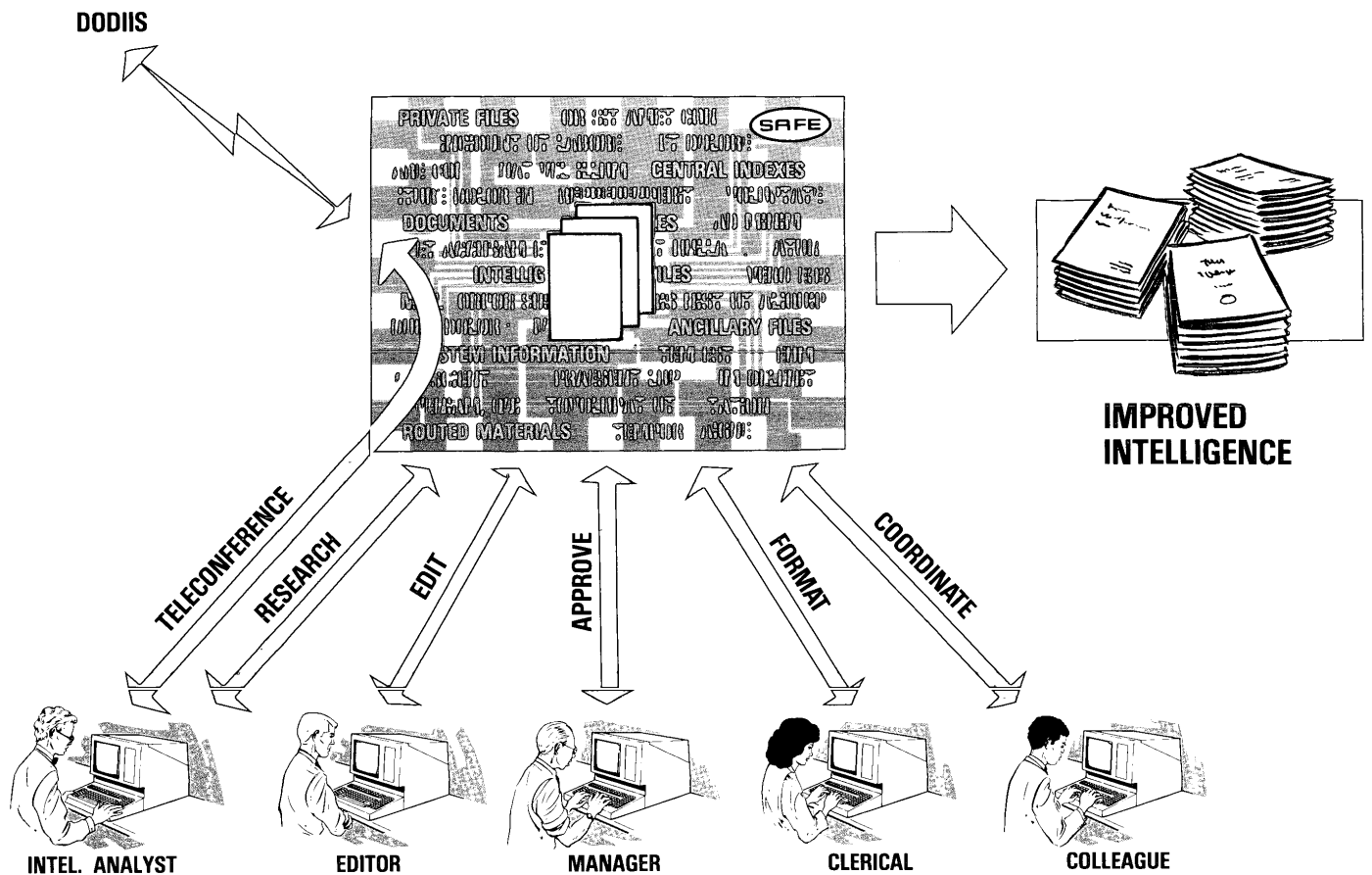
The possibilities for analysts' creative use of SAFE as an aide to intuition will be limitless. As an example, SAFE could be used by analysts to arrange incoming data in such ways that patterns might emerge or be broken, or might provide the stimulus needed for making an intuitive analytical judgement.

SAFE also will foster the use of analytical resources and techniques in concert with SAFE capabilities. Analysts will be able to query external data bases. They will be able to use programming and computational facilities either in SAFE or in other systems that provide statistical analysis, modeling and simulation techniques. Through the DoDIIS network, DIA analysts will have access to data bases maintained at AIRE, SOLIS and NMIC and be able to engage in teleconferencing with colleagues at other nodes on the

network. Additionally, to assist analysts in the production of recurring finished intelligence products, SAFE will provide a report writer capability that automatically obtains desired data from the Intelligence Data Files and produces a requested intelligence product.

Actual composition of reports will be done at the SAFE workstation with analysts having a choice of final type, formats and the full range of editing capabilities. Text will be entered using the standard typewriter keyboard at the SAFE workstation as well as a number of specially designated keys known as direct action keys. These keys allow analysts to scroll or page through text; change, insert or delete text; and to move or copy text from one section of a report to another. Analysts will be able to make notes or refer to source documents by simultaneously displaying the report and wanted notes or source materials on the workstation screen. As in the present paper environment, analysts using SAFE will be able to interrupt writing for any reason, save text and be assured that they can retrieve it at will when they are ready to resume work. Finally, analysts will be able to print chosen parts, entire drafts or final copies of their written work on printers that are located in their offices or at designated areas.

# Coordinating, Reviewing and Editing



## Coordinating, Reviewing and Editing

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SAFE will greatly assist the process of obtaining timely review and coordination from all parties interested in the analysts' intelligence products. For their convenience, analysts will be able to create "electronic buck slips" that will automatically deliver text and data to colleagues, branches or offices. The delivery sequence of these routing lists will be serial (one at a time) or parallel (simultaneous) at the analysts' choice. Each recipient will be able to make appropriate review or editorial comments for ultimate consideration by the originator.

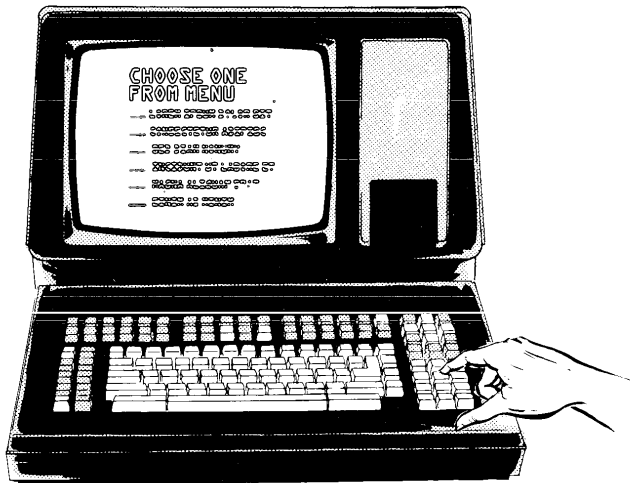
Analysts will be able to exercise the editing or word processing functions available in SAFE. As necessary, analysts, clerks or professional editors may utilize SAFE's word processing features to accomplish "cut and paste" operations, insertion or deletion of text, justification of paragraphs or any of the other available word processing functions.

Approved versions of completed reports can be printed in high quality hard copies for distribution while the electrical version will be inserted in the queue of incoming electrical data. Thus, recently published intelligence will be disseminated to users, who will then be able to exercise all of SAFE's functions on the new product.

While the emphasis of SAFE is focused on the analyst as the primary user, the capabilities of the system will be available to the complete spectrum of possible users. Managers will use the system in the coordination & approval process. Editors will have the complete array of text editing and formatting capabilities. Intelligence assistants will be able to perform searches and maintain files. Secretaries will use the system to create and distribute memorandums, organizational notices and the like. The capabilities are there for the use of any authorized person.

# User Assistance Features

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- HELP
  - COMMAND PROCEDURES
  - MULTIPLE ACTIVITIES
  - ACTIVITY LOGS
  - FUNCTION KEYS
  - STORED QUERIES
  - MENUS
  - STATUS DATA



**NOVICE**



**SKILLED**

## User Assistance Features

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SAFE provides many forms of assistance to facilitate both using the system and learning more about it. These are designed for several purposes: meeting the challenge of accommodating a user population with diverse computer system experience, serving analysts' individual work needs and habits, and providing a means for all users to expand knowledge about SAFE at their own pace. Some of the key user aids are discussed below.

Should aid be needed during a SAFE interactive session to understand how to use a system function, a user may request HELP. HELP provides explanatory information and assistance in using the system with minimal disruption. Its hierarchical structure presents a range of assistance from the most basic general information for novices to more in-depth specific information for those with greater experience. HELP is accessible by merely pressing a key, or by typing the HELP command with appropriate modifiers. The HELP function provides a menu of services for selection at the users' option.

Other assistance is available that makes working with the system much simpler. SAFE encourages analysts to use Command Procedures. These are a shorthand means of providing frequently given, complex, or special instructions to the system. Once a Command Procedure is established, the analyst knows that upon invocation of the Command Procedure SAFE will carry out the designated sequence of commands to accomplish the task. Command Procedures will perform any task a user could validly do on SAFE,

can be executed at the users' option automatically, and can be stored in files for future use and reference.

SAFE's ability to do multiple simultaneous activities on behalf of analysts further facilitates their use of the system. Analysts may arrange for an in-depth search to be done by SAFE while they are conducting another activity at the workstation. When SAFE completes the task it will alert them with a message which, because of SAFE's ability to handle multiple activities, will not interfere with ongoing work. Furthermore, analysts may configure their workstation screens to accommodate multiple activities among which they can switch back and forth as the need arises.

SAFE provides a number of additional services. Forms will be supplied by the system or may be created by analysts to control how the system will receive and display data. SAFE automatically creates a record, called a Command History, of every activity in an interactive session. This history provides a personal log of all activities, messages, and errors for analysts to retain as a learning tool, employ as a recall device to determine if certain work was initiated, or discard if there is no need for its retention. SAFE also provides a variety of status data containing useful information, including: which analysts are on the system, the number of items in particular files, the last time a file or profile was modified, and a host of other details that will make using SAFE easy and comfortable.

## Summary

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The SAFE system, with its diverse functional capabilities and automated support tools, is the first step in an evolutionary system that will provide richer and greater support to analysts over the next decades. SAFE will serve as the experience and learning base for the evaluation and addition of new technologies and methodologies as they become available. Thus, an extendible and flexible SAFE will meet changing work patterns and demands as analysts produce more timely and comprehensive finished intelligence in support of U.S. national security policy.

