The Work Unit Information System

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Secretary of the Air Force
Deputy for Scientific and Technical Information (SAF/AQT)
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The Work Unit Information System. 

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This document, prepared for video production, is an overview of what the Work Unit Information System (WUIS) is, how it is implemented, and how it can be used. Discussed is the current WUIS documentation, the various data input systems that currently exist, the current makeup of the database, and the various fields of information that are in the database. This document is in two parts. A general overview of the WUIS is presented first. The second part discusses the detailed data fields within the database for those who need that level of detail. This document may be used in conjunction with the video, or separately.

WUIS, STINFO, USAF, Management, STINFO Program, management, Videorecording

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13. ABSTRACT (Maximum 200 words)
1. INTRODUCTION

The Work Unit Information System, known as WUIS (WOO-ISS), is one of the most important management information tools available to Department of Defense administrators, engineers, scientists, managers, and contractors. It is one of three databases that make up the Defense RDT&E On-Line System, DROLS, managed by the Defense Technical Information Center, DTIC.

The purpose of the Work Unit Information System is to provide a comprehensive database that contains summary descriptions of the Department of Defense studies, research, and technology efforts. The primary goal of this system is to increase the effectiveness of the DoD RDT&E program by making this information available to all DoD scientists, engineers, managers, and administrators as well as the DoD contractor base in industry and academia.

The Work Unit System contains information concerning what research and studies are currently being performed, who is doing the work, what level of effort is being used in terms of dollars and man years, whether the research is being carried out in-house or on a contractual or grant basis, what DoD activity is sponsoring the effort, a description of how the work is being done, and what subject categories are assigned to this work. This information exists for efforts currently being carried out as well as for efforts that were completed or terminated in the past.
2. PURPOSE

This video contains an overview of what the Work Unit Information System is, how it is implemented, and how it can be used.

In addition, we will be discussing the current WUIS documentation, the various data input systems that currently exist, the current makeup of the database, and the various fields of information that are in the database.

This video is broken into two parts. A general overview of the Work Unit Information System is presented first. The second part of this video discusses the detailed data fields within the database for those who need this level of detail.
3. MAJOR COMPONENTS OF WUIS

The work unit system consists of: First, a form, the DD Form 1498, and the people within the commands and laboratories who are responsible for completing this form or operating one of the computer-based input systems that assist in managing this task;

Second, the people at DTIC who process this information and enter it into the Work Unit Information System database;

And third, the end-users who make use of this information by searching the database to identify work relevant to their interests and technical needs.
4. WHAT A WORK UNIT IS

Some confusion exists over what should or should not be reported for inclusion in this database. The source of this confusion stems from the name "Work Unit" being associated with this system.

A much better name for the system we are discussing would have been the Research & Technology Work Effort Information System.

R&D organizations perform their work at the Work Unit level, hence for these organizations it is clear that each Work Unit corresponds to an entry into the Work Unit system. However, many organizations performing studies and other technological efforts have not entered information into this system in the past because they were not primarily performing RDT&E and were not working at the Work Unit level. Independent of the funding source or level, if the work can be classified as research or technology, it should be included in this system.

Part of the past confusion also stemmed from the wording in the Department of Defense WUIS regulation concerning what should be reported. This regulation is currently being revised to make the coverage statements much clearer.

A work unit summary should be reported for each Study effort, each R&D effort, and for technological and engineering efforts regardless of the program category of funding, regardless of whether the work was performed in-house or under contract or grant, and regardless of whether the work was performed through an inter-agency transfer of funds.

In general, a work unit represents a technically distinguishable effort on the order of two professional work-years, or an individual contract or grant, with larger contracts being subdivided into several smaller work units.

The work unit reporting is normally done by the DoD agency performing the work or issuing the contract or grant. In the case of transfer of funds to a non-DoD agency which will perform the work, reporting is done by the DoD agency transferring the funds. Usually the inputting and reporting duty is performed by a designated WUIS focal point.

The information should be reported into the WUIS within 30 days after initiation of a new effort, any changes to an existing effort, upon completion of an effort, upon termination of an effort, upon award of a contract or grant, after any change of information concerning a contract.
or grant, or upon transfer of funds to a non-Department of Defense agency.

It is very important that this information be up-to-date and that changes or corrections be submitted at least once a year for all active work units.
5. **SIZE AND MAKEUP OF WUIS DATABASE**

The Work Unit Information System database contains slightly over 210,000 records, of which about 30,000 are for currently active efforts, 130,000 are for completed efforts, and 50,000 are for terminated efforts.

Within the Air Force there are 58,000 records, of which about 8,000 are currently active efforts, 44,000 are for completed efforts and 6,000 are for terminated efforts.

The records in the database come from both Department of Defense agencies and from NASA, with the major contributors being the Navy, Air Force, Army, Defense Nuclear Agency, and NASA in that order.

Even though over a third of the reported efforts are classified, very few of the summaries themselves are classified, accounting for less than one percent of the total.

Currently, over two-thirds of the information in the database is accessible by the contracting community, with the balance being limited to Government or Department of Defense personnel because of various reasons such as the summary containing internal information, proprietary information, or program evaluation information.

Of the information in the database, approximately two thirds is for contractual and grant efforts and the other third is for in-house work.

The summaries cover the full spectrum of DoD interests from warheads and fuses to optics: if you can imagine that the DoD is supporting work in a technical area, you will probably find some information summaries on that topic in this database.

This is what the database consists of. But, what about the information that is not in the file because organizations have not reported it? This missing data adversely effects the entire Department of Defense technical community.

It is very hard to say with any authority just how complete the WUIS really is. A comparison was made in 1989 between the contracts as listed on DD Form 350, which is used in the Federal Procurement Data System, and the contracts reported in the Work Unit database. This comparison showed that over 45% of Air Force contracts did not have corresponding Work Units. This number is somewhat misleading in that the subject of some of these contracts might not be considered Research & Technology, and therefore should not have had corresponding work unit entries anyway.
6. SUPPORTING DOCUMENTATION

There are five major documents connected with the Work Unit Information System, as well as three miscellaneous publications to be aware of.

The first major document is DoD Regulation 3200.12-R-1. This key regulation discusses Department of Defense policies concerning this system, the responsibilities of the various DoD components including the Defense Logistics Agency and DTIC, and states what to report, when to report, and how to report work unit information.

The second major document is Air Force Regulation 80-12. This regulation implements DoD Regulation 3200.12-R-1 within the Air Force. A copy of this DoD Regulation is appended to AFR 80-12.

The third major document to be aware of is DD Form 1498, which is the form used to report inputs and changes to the Work Unit Information System. This form will be discussed in detail later in this video.

The fourth major document associated with the Work Unit Information System is the Research and Technology Work Unit Information System Manual, DoD 3200.12-M-1. This manual details the formats and field contents of the system inputs, as well as the processing that takes place on the data.

The fifth and last major document is the R&T Work Unit Information System User's Manual, DLAM 4185.4. This manual provides basic information about the WUIS, and the services and products it can provide. Of particular interest is that this document contains an extensive catalog of the formats that are frequently used to arrange the data retrieved from the Work Unit Information System.

In addition to these five major documents, there are three other documents to be aware of. These are:

The RAWHYDE Manual, which is the program documentation for the microcomputer-based input system available from the Defense Technical Information Center.

The Defense RDT&E Online System Dial-Up Retrieval Self-Training Manual, DLAM 4185.18. This manual contains an extensive 106-page section on the details of searching the WUIS, along with many examples.
The final document to be aware of is an informal document prepared by the Air Force Studies and Analyses Group entitled *Guidelines for Completing DD Form 1498 (Or, how to do it right the first time)*. This document, which supplements the information in the Work Unit Manual, is currently not available, but is being updated and will again be available sometime in the future.
7. WUIS INPUT SYSTEMS

DTIC accepts inputs to the WUIS on a variety of media, which are produced by a variety of sources. Some of the accepted media are 5-1/4" floppy diskettes, 9-track magnetic tape, and 7-track magnetic tape.

Some of the common input systems are tapes generated from an internal plans and programs database, from the DAWSON-1 system, from the RAWHYDE system, or, in the case of the Army, from the WINS system. Inputs sent to DTIC on any of the machine-readable media must correspond to the format detailed in the Work Unit Information System Manual.
8. DAWSON-1

The DAWSON-1 system is a locally-implemented database management and data input system. It was implemented by Elaine Dawson and Terry Boudreau of the Weapons Laboratory, and is now in use at the Weapons Laboratory, the Geophysics Laboratory, and the Astronautics Laboratory; and is being evaluated for use at other Air Force locations.

The system is implemented using the ORACLE database management system, and uses a FORTRAN program to convert the database to the required DTIC format on tape. Although implemented on a VAX computer, the software could be run on any computer capable of running ORACLE and FORTRAN.

The DAWSON-1 program is available free-of-charge to those organizations who input work unit summaries into DTIC. For further information contact Elaine Dawson WL/PRC/Dawson, Kirtland Air Force Base, NM 87117-6008, (505) 844-0328, (AV) 244-0328.
9. **RAWHYDE**

The RAWHYDE system is DTIC's microcomputer-based work unit input system. It is implemented as a dBASE III Plus set of programs, and will run on any IBM-PC compatible microcomputer having a hard disk.

Basically, the RAWHYDE system allows you to create and maintain a local database of the information required for a DD Form 1498. In addition to allowing the user to add new records, delete old records, and edit existing records, RAWHYDE allows the user to combine the records from various files into a single file, and to extract the information in the format required by DTIC.

As of January 1990, about 60 organizations had copies of this software, and a number of these have started using it on a trial basis. To help organizations get started, DTIC will download that organization's active records currently in the work unit database onto floppy diskettes in a format that can be easily input into RAWHYDE.

The RAWHYDE program is available free-of-charge to those organizations who input work unit summaries into DTIC. For further information contact DTIC, Attn: DTIC-H, Cameron Station, Alexandria, VA 22314-6145, (202) 274-6817, (AV) 284-6817.
10. WINS AND INPUT WRAP-UP

The Army Material Command has implemented its own PC-based work unit input system called WINS, which will be used as the Army-wide WUIS input system. This system, which has a lot in common with the RAWHYDE system, is in use at about 15 sites as of January 1990, and is replacing the Army's current online edit system.

One of the major differences between the WINS system and RAWHYDE is that WINS was implemented in dBASE IV. Also, this system is currently setup to handle all the Army-specific WUIS data fields.

It is important to note that all three of these systems - DAWSON-1, RAWHYDE, and WINS - are currently operational, and all have many advantages over other ways of inputting the information.
11. GENERAL DISCUSSION OF FORM

Each work unit data submission is classified as a NEW, CHANGE, COMPLETION, or TERMINATION transaction, with NEW and CHANGE making up what are known as "active" records and TERMINATION and COMPLETED known as "inactive" records. Each record is divided into a number of fields, with a NEW submission requiring most of the fields to be filled in and the other three types of submissions requiring only three key fields plus those fields which are changed.

The three key fields are the agency accession number, the date of summary, and the kind of summary. All submissions must include these three fields or they will be rejected. Omissions of the other fields will usually generate an error notification to the report originator, but not be cause for rejection of the entire record.

The WUIS data elements can be broken into (1) housekeeping and control data such as the accession number, start date, and kind of summary, (2) security and access data such as the regrading and distribution information, (3) descriptive data such as the title, subject areas, keywords, and the objective, (4) participating organizations and people data, such as the responsible organization and the performing organization, (5) funding and fund source data such as the Program Element, Fiscal Year workyears, and contract number and amount, and (6) unique fields that are used for Studies and Analysis entries, Army entries, and Navy entries.

A complete description of each of these fields is found in the R&T Work Unit Information System Manual which was discussed earlier, and will be discussed later in the second part of this tape.
12. DTIC PROCESSING

Processing of the information at DTIC is fairly straightforward. First, work units submitted to DTIC are converted to a format compatible with DTIC's mainframe computers. Next, these work-units are processed through an editing and error-checking program. Accepted records are then merged into the database.

Records containing errors are either rejected outright, or included in the database with the errors, depending on the severity of the specific errors found.

The contributor feedback documents from this system consist of a Transaction Error/Rejection List containing a list of rejected records and the reasons the records did not pass the edit checks, a Contributor Summary List showing the content of the updated records in the database, and a WUIS Direct File Status Report which is an index of the records in the update cycle. These feedback documents are sent back to the user with a copy of DTIC Form 82, "Notification of Processing Work Unit Data Base Input."

All records collected and checked are then merged into the WUIS database, which is updated weekly.
13. WUIS SEARCHING

Searching the WUIS database can be performed by using the online search system, DROLS, in either its dial-up or dedicated modes, or through a direct request to DTIC either in writing or by phone. Requests from registered DTIC users can be sent to DTIC, Attn: DTIC-HAR, Bldg 5, Cameron Station, Alexandria, VA 22304-6145, or called in to (202) 274-6867, (AV) 284-6867.

The great majority of the searching of this system is done by using the DROLS system. And, with only about 1% of this particular database being classified, there is not much advantage to users of dedicated-line classified equipment over those using unclassified dial-up equipment.

R&D managers, administrators, engineers, and scientists can have searches made of this database for many reasons. Two of the most common are to identify ongoing and past work efforts in a particular subject area, and to identify scientists and engineers working in similar areas of interest so that they may be contacted for further information.

It is important to note that while regular searches of this database can be very useful and informative, DoD Regulation 3200.12-R-1 states specifically that this database will be searched during the planning stages of any new effort. In fact, this is one of three databases, along with the technical report and IR&D databases, that should be searched when starting any new project.

Although any of the approximately 40 fields of information can be searched, the most fundamental searches are (1) a subject search to identify all work units that have been indexed with certain search words, (2) a contract search to identify any work units associated with a known contract number, (3) an agency search to identify work units associated with a particular organization, or (4) a personal name search to identify all work units with that person listed as either the responsible individual, principal investigator, or associate investigator.

An example of a subject search would be: Find all active work units that deal with extrusion and composite materials.

An example of a contract search would be: Find all work units that relate to contract F33615-84-K-2458.

An example of an agency search would be: Find all active work units for the Flight Dynamics Laboratory at Wright Patterson Air Force Base, Ohio.
An example of a personal name search would be: Find all active work units for which Robert Webster is either responsible, is the principal investigator, or is the associate investigator.
14. SUMMARY AND CLOSE FOR PART A

In summary:

1. The Work Unit Information System contains information about ongoing and past Department of Defense in-house and contractual Studies and Research & Technology work efforts.

2. The work unit system consists of the information submitted to DTIC electronically via one of a number of input systems and the people who operate these systems, a database containing the collected information and the people who maintain this database, and a search access channel via DROLS and the DTIC user community of defense managers, administrators, scientists, and engineers who use this information.

3. There are a number of alternatives to assist the data entry function. These include DAWSON-1, RAWHYDE, and WINS. All of these have advantages over the alternative online data entry mode.

4. The WUIS system can be searched for many types of useful and important information.

In conclusion, the Work Unit Information System is one of the most important management information tools available to DoD engineers, administrators, scientists, managers, and contractors.

Whether you are an engineer generating this information, a Work Unit focal point responsible for inputting data into this system, or one of the many people searching this valuable resource; you are involved in one of DoD's most important and useful management information systems.

This ends the general description of the Work Unit Information System. Further information on each of the fields within this database immediately follows in the next part of this video.
15. DETAILED FIELD DISCUSSION - PART B

In part B of this video, the individual fields in the WUIS database and on DD Form 1498 will be discussed. This discussion is meant to supplement the detailed information found in the Work Unit Manual and the other documents discussed earlier.

There are essentially 25 fields of information contained in the WUIS, with a number of these 25 fields containing more than one number or data element.

Field 1 contains a mandatory, 8-character coded accession number. This code consists of a 2-character diagraph such as DF for the Department of the Air Force followed by a 6-digit serial number unique to the work unit. This number is assigned from a range of numbers that DTIC allocates to each organization.

Field 2 contains the date on which this summary was submitted. This date is in the 6-digit format "year-year-month-month-day-day" (YYMMDD).

Field 3 contains the date of the previous summary that this transaction is updating. This field is, of course, not used for New submissions, but is required for all Change, Completion, or Termination submissions.

Field 4 contains a single character that identifies the kind of transaction this record is. A for New, D for Change, H for Termination, or K for Completion. A New transaction establishes a work unit in the system, a Change transaction updates the information in an existing record, a Termination transaction indicates the cancellation or suspension of a work unit, and a Completion transaction indicates that the work has been completed.

The normal sequence of records entered into the system consists of a single New record, a series of Change records, and finally a Completion or Termination record.

Field 5 contains an S, C, U, or T to indicate the classification of the form itself. It must be at least equal to the highest classification of any field on the form. Work Units that are Top Secret, or deal with intelligence or communications security, should be sent directly to the National Security Agency.

Field 6 contains an S, C, U or T to indicate the overall classification of the work being reported.
Field 7 contains a Regrading Code, A thru F, which indicates the declassification date, event, or determining authority for declassification, and is only required if the 1498 itself is classified. Element 7A contains either the source document, classification guide, or official authorizing the classification. Element 7B1 contains the date on which the information in the work unit becomes unclassified, and Element 7B2 contains an event on which the work is to become declassified. Element 7C1 contains the date on which SECRET data will become CONFIDENTIAL, and similarly element 7C2 contains an event on which SECRET data will become CONFIDENTIAL. Element 7D contains an indicator, OADR, if the Originating Agency's Determination is Required for declassification.

Field 8 contains information on the distribution of the 1498 and additional security instructions. Data element 8A1 contains a 2-character distribution code for the information in the work unit record, such as CX standing for distribution to the U.S. Government and its Contractors only. Data element 8A2 contains an additional indicator of RD or FR if the data falls under the Atomic Energy Act.

Field 9 contains an "A" to indicate that this is an R&T work unit.

Field 10 contains information about the source of support for the work unit. Space for a primary Program Element, Project Number, Task Area, and Work Unit, as well as space for two supporting sets of numbers is included. Not all work is, of course funded at the Work Unit level. If, for example, the work is being funded at the project level, a zero can be entered for the corresponding Task Area and Work Unit data elements.

Field 11 contains the unclassified title of the Work Unit, and always begins with the letter U.

Field 12 contains up to three subject codes for the work unit. These codes are 4 digit numbers from Table 2-2 in the Manual. An example of a code would be 0621 for a work unit dealing with Weapons Effects.

Field 13 contains the original date on which the work began. It is entered in a 4-digit format, year-year-month-month, (YYMM).

Field 14 contains the estimated or actual completion or termination date. It is also entered in a 4-digit format, year-year-month-month, (YYMM).
Field 15 contains up to three 2-letter agency codes to indicate the source of the funding for this work. Codes for both DoD agencies and non-DoD agencies are contained in the Work Unit Manual.

Field 16 contains a 1-character code indicating how the work was performed. The codes used are A - grant, B - contract, C - in-house, D - other government agency.

Field 17 contains detailed information about the contract or grant if the performance method for this work is either. The specific data elements are 17A1 containing a 4-digit effective date, 17A2 containing a 4-digit expiration date, 17B containing the full contract or grant number, 17C containing a code for the contract instrument type, such as J for a Firm Fixed Price contract or G for a grant, 17D1 containing a code "P" if this work unit represents only part of a larger contract, 17D2 containing the amount of the contract dollars represented by this work unit, 17E containing a 3-character code for the kind of contract award such as "EXT" representing an extension, and 17F containing the total cumulative amount for the contract to date.

Field 18 contains a set of up to 3 estimates of the workyears and funds which have been expended or will be expended in the future. The data can be for the current fiscal year, one year in advance, or up to 3 years in the past. The data is entered as set of fiscal year - work years - funds, with elements 181, 182, and 183 being the 2-digit FY; 181A, 181B, and 181C being the work years estimate; and 181B, 182B, and 183B being the corresponding funding estimate.

Field 19 contains information about the organization responsible for the work. Data element 19A is the full organization name down to office symbol, and 19B is the full mailing address for this organization. 19C is the responsible individual's name entered as LAST F M, and 19D is the full phone number for this individual. Two elements not on the paper form are 19E and 19T. 19E is used by the Navy for the responsible individual's title, and 19T is the 6-digit code for the organization taken from DTIC's Source Header List.

Field 20 parallels field 19 and contains information about the organization performing the work. Data element 20A is the full organization name down to office symbol, and 20B is the full mailing address for this organization. 20C is the principal investigator's name entered as LAST F M, and 20D is the full phone number for this person. 20F and 20G are the names of two other associate investigators. Two elements not on the paper form are 20H and 20T. 20H is used by the Navy for the principal investigator's title, and 20T is the 6-digit code for the performing organization taken from DTIC's Source Header List.
Field 21 contains a number of miscellaneous data elements that are used for a variety of information. For example, data elements 21A through 21D are used to report Studies and Analysis entries. Data element 21E is a one letter code that indicates a rough assessment of the potential for civilian application of the work, with H - high, L - limited, and M - none.

Field 22 contains up to 20 keywords which describe the work and will help searchers retrieve the information later. Each keyword must be preceded by a classification code. In addition to project-specific words, you will find DTIC's Indexing Terminology manual useful in assigning these keywords.

Fields 23, 24, and 25 contain narrative information. Each field must be preceded by the classification code for the information and the total length of all three paragraphs must be less than 5000 characters.

Field 23 contains a narrative describing the work in terms of its goals and anticipated results.

Field 24 contains a narrative outlining the approach which is planned for this work. If appropriate, this information can be included with the technical objective above.

Field 25 contains a narrative statement of the progress achieved during the previous reporting period. In addition to a basic progress statement, this field should reference an AD number if a report was issued as part of this work unit, as well as the reason an effort was terminated if this was the case.

These are the basic data fields that are contained in the WUIS. In addition to these basic set of information fields just discussed, there are a number of special fields that are available for use by anyone, but for the most part are either unique to the Army, Navy, or to the DoD Studies and Analysis Program.

Some of the specific Studies and Analysis data elements are:

21A contains a category code,
21B contains a relationship code,
21C contains a models or sensitive materials code,
21D contains a foreign area studies code,
26 contains an evaluation statement
21F - Procurement Code
21G - PB-21 Indicator
21H1 - Program Manager Office Symbol
21H2 - Program Manager Name
Some of the specific Navy data elements are:

10C1 contains a Navy Product Area Number Code,
10C2/10C3 contains a Navy Product Area Title,
19E contains the Navy Responsible Individual's Title,
19F contains the Navy Responsible Individual's Organization Symbol,
20H contains the Navy Principal Investigator's Title,
30 contains the Navy Primary Sub-Element Number,
32 contains the Navy Principal Investigator's Organization Symbol.

Some of the specific Army data elements are:

0 contains a 2-character code indicating the Army category of the summary, (AS - Army Study, NR - R&D - non-Army, and CA - Contracting Advisory & Assistance Services)
10A2A contains an Army Primary Project (Agency & Program),
10A2B contains an Army Primary Project Serial Number,
10A5A contains an Army Monitoring Division Code,
10A6 contains an Army Installation Code,
10D1 contains an Army Prior Program Element,
10D2A contains an Army Prior Project (Agency & Program),
10D2B contains an Army Prior Project Serial Number,
10D3 contains an Army Prior Task Number,
10D4 contains an Army Prior Work Unit Number,
31 contains up to three Army Responsible Organization Installation Digraphs,
40 contains an Army Performing Organization Identification Code,
41 contains an Army Performing Organization Location Code,
42 contains an Army Performing Organization Type Code,
43 contains an Army Cumulative Partial Contract or Grant Code,
44 contains an Army Foreign Intelligence Consideration Code,
45 contains a set of Army Mission Objective Codes,
46 contains an Army Narrative Mission Objective,
47 contains an Army Responsible Organization Location Code,
48 contains an Army Responsible Organization Identification Code.

These are the individual data elements composing the current WUIS. For more detailed information, you should consult the WUIS Manual or one of other WUIS-related documents discussed in Part A of this Video.
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