

SCHEDULE A
atCODAP Job Analysis Software System
Program Category & Identification

The atCODAP Job Analysis System is a redesigned and functionally enhanced microcomputer version of selected portions of the mainframe Comprehensive Occupational Data Analysis Programs (CODAP) system as publicly documented as of late 1986. This microcomputer software product is called "**atCODAP**" which means "anchored to CODAP - but not limited by it." The atCODAP system provides the functionality for operational occupational analysis as used in classification and training requirements studies. Descriptions of the programs are shown within Categories as defined below. Category 6 below (the atSurvey System) has been withdrawn from the market as it was based on Sensible Systems, Inc's 1982 Computer Aided Inventory Delivery System (CAIDS) which no longer state-of-the-art technology. Program descriptions are shown for files in Categories 1, 2, 3, 6, and 7. Only the names of files in Categories 4 & 5 are listed. Categories 1 & 2 are the primary atCODAP system. Categories 3, 4, and 5 are "support" files. Category 6 is the atSURVEY Data Collection System which has been withdrawn and represented a capability not traditionally considered part of a "CODAP" software system. Category 7 software are FREEWARE programs and specifications put into the public domain in order to expedite the development of more valid task-base job inventories.

The atCODAP Job Analysis System is composed of five categories of software.

- 1) **Category 1 SOFTWARE** is that set of atCODAP programs which represent the core capacity to **replicate operational occupational analysis functionality** on mainframe CODAP systems (IBM 7040, CDC CODAP, FIELDATA (Sperry/Unisys) CODAP, ASCII CODAP, or CODAP II). These programs are covered by the performance warranty.
- 2) **Category 2 SOFTWARE** is that set of atCODAP programs which **extend productive occupational analysis** beyond previous mainframe limits and hence expand the definition of "CODAP" systems. These programs are covered by the performance warranty.
- 3) **Category 3 SOFTWARE** is that set of atCODAP programs which **provide logistical support** for the operation of Category 1 and 2 software, primarily print, audit, index, check, fix, split, convert and import/export files. This area is further subdivided within the text below. In mainframe CODAP systems these functions are accomplished using site-specific utilities or one-shot, special purpose programs developed by the local programming staff. These programs are provided on an "as is" basis.
- 4) **Category 4 SOFTWARE** is that set of atCODAP programs which **experimentally field research tools and implement atCODAP's new operational concept of maximizing automated system interactions for routine uses**. Category 4 SOFTWARE is designed to replace the operational concept used by mainframe CODAP in which an occupational analyst specifies end-products and dedicated CODAP computer technicians determine programs involved, processing flow and data file requirements to prepare fixed-format control card files using program-level control card specification manuals. Category 4 SOFTWARE minimizes personnel time required for the operational usage of CODAP by managing project tracking and providing experimental analyst-interfaces. Category 4 SOFTWARE is provided on an "as is" basis.
- 5) **Category 5 SOFTWARE** is that set of files provided with atCODAP (mostly in source code form) which **provide on-line documentation, examples, prototype setups, and minor utility support**. Except for on-line documentation, this software is provided on an "as-is" basis like Categories 3 and 4.

Before The atSURVEY Data Collection System was withdrawn, it included the following:

- 1) **Category 6 SOFTWARE** was a new capability that **experimentally implemented atCODAP's new operational concept of automated surveys**. These programs are NOT covered by the performance warranty.
- 2) The atSURVEY Data Collection System - was ALSO licensed as a separate, stand alone product. In that mode, atSURVEY had a separate pricing structure which includes additional "per project" and "per disk" license fees. No additional "per project" or "per disk" license were charged when an atCODAP license was in effect.
- 3) These programs also had a very different set of limitations on copying and distribution. Except for the "atFINAL" program, all programs in this set used to allow unlimited, world-wide useage of the atSURVEY programs for the LICENSEE's projects.
- 4) Sensible hopes to cross-license or interface with one or more automated survey systems in the future.

The IOBSUR Inventory Development (FREEWARE) Package adds a seventh software category.

- 1) **Category 7 JOBSUR** is a new capability that **offers a public domain standard for defining the content of Task-based Job Surveys**. These programs are declared to be FREEWARE and are provided on an "as-is" without warranty of suitability for specific applications.

Software is not list in processing order, but in alphabetical order within (sub)section(s).

Category 1

Category 1 SOFTWARE is that set of atCODAP programs which represent the core capacity to **replicate operational occupational analysis functionality** on mainframe CODAP systems (IBM 7040, CDC CODAP, FIELDATA (Sperry/Unisys) CODAP, ASCII CODAP, or CODAP II). [ASCII CODAP Names shown in brackets]

ATI -

Automated Training Indicators [FACGEN+PRTFAC]. This program reports the recommended training location (classroom/field) and amount of emphasis in terms of eighteen possible categories. This program is based on a model which uses percent members performing (also known as probability of requirement on the job), supervisory panel's recommended training emphasis and subject matter expert's (SME's) assessment of task learning difficulty. This version of the model has been succesfully validated in use with the Internal Revenue Service to relate a careful job analysis to specific selection test items and objectives in the training program. (See NEWFAC for data location requirements)

ATIINFO -

Automated Training Indicators Information [PRTFAC]. This program prints the meanings for each of the eighteen ATI training categories.

CORTAS -

Core Tasks [CORTAS]. This program accepts a set of group job descriptions and report for each target group job description those core tasks that most differentiate it from all other job descriptions in the set. The default definition of a core task is a task that is performed by at least two out of three group members (66.67% - an adjustable value.) The discrimination index is a weighted average difference in percent members performing (PMP) for this group minus the corresponding PMP on this task for each of the other groups. The program also reports tasks which are notable either because they are performed by most groups OTHER THAN the target group or tasks which seem to be performed ONLY by this group (though at a lower level of performance.) Summary statistics are shown to compare each target group to the most similar other groups.

DIAGRAM -

Diagram [DIAGRM]. This program prints a multi-page pictorial representation (Tree Chart, Dendogram) of the hierarchical clustering process accomplished in the GROUP program. This product along with strategic VARPRts are used to perform the job-typing process which identifies the empirical structure of work. DIAGRAM is used to report the results of both task clustering and case clustering and only the header page indicates which set of items was clustered in a given report. Unlike mainframe CODAPs, the starter groups are read in from any source of group name sets including the traditional selection logic (STARTERS) or newer (JOBTYP/MODTYP-like programs) methods such as EVENGROW or EVENSIZe.

EVENGROW -

EvenGrow [JOBTYP, MODTYP]. This program will accept a cluster solution (from GROUP) and identify all groups with a user-defined starting size. These groups will be tracked through the cluster solution and allowed to grow in size (merging, if required) until cutoff criteria are met (minimum acceptable overlap between value.) The surviving set of cluster stages represent a broad, multi-level description of the workspace, either in terms of groups (cases) or modules (tasks).

EVENSIZe -

EvenSize [JOBTYP, MODTYP]. This program will accept a cluster solution (from GROUP) and identify all groups with a user-defined starting size. The selected set of cluster stages represent a broad, single-level description of the workspace, either in terms of groups (cases) or modules (tasks).

GRADESUM -

Grade Summary [PRTFAC]. This program will accept job descriptions representing selected paygrade level groups and report their percent members performing data in a side-by-side format. Data below an option cutoff point may be blanked out to enhance visual pattern effects.

GROUP -

Group [GROUP]. This program performs the hierarchical clustering within atCODAP. GROUP will accept a similarity matrix from either OVERLAP (for case similarity based on common time spent) or from TASKOVER (for task similarity based on time-weighted task co-performance). Both the "OVERLAP" matrix files are conceptually n-item by n-item (square), symmetric matrices. GROUP performs the hierarchical clustering one stage at a time. To simplify later naming conventions, GROUP numbers stages beginning with the number of items minus one. Hence if there are ten items being clustered, the first group formed is a stage nine. More specifically, GROUP iteratively searches the current OVERLAP matrix for the highest overlap value (also known as the Best or Between value) in an off-diagonal location. The two items identified are mathematical combined and stored in the location of the first item. The homogeneity of the newly formed group is called the "within" value and is stored in the diagonal for later reporting. The data associated with the second item are deleted (removing one row and one column.) This process continues until only one row and column remain (Stage 1).

GRPDIF -

Group Difference [GRPDIF]. This program will accept two job descriptions and perform a number of

comparisons between them. The most significant comparison is a report which sorts the task statements from high to low on the user's choice of percent members performing or percent time spent. Tasks shown at the top of the report (high positive values) are more indicative of the first group's job. Tasks shown at the bottom of the report (lowest negative values) are more indicative of the second group's job. This report is typically used to show specific differences between adjacent grade-level groups whereas GRADESUM above shows many side-by-side groups in inventory order (as a reference document.)

GRPJOB -

Group Job [GRPJOB]. This program will accept a group (i.e., membership list) from any source (usually NEWGRP) and compute a standard job description. A standard job description consists of two data vectors, "percent of total" and "percent of raters rating". These are the normal job description vectors which have historically been called Percent Time Spent (PTS) and Percent Members Performing (PMP). In the past these vectors could be computed only for the task list in a study. This program (GRPJOB) may be used on lists other than the task list if a time rating (or percent of total emphasis rating) has been collected (e.g., time spent using items in a tool list.) Related functions in Category 2 software includes JOBAVE which computes straight item averages rather than percentages and JOBPCT which computes only Percent Member Performing for lists rated as "do/don't do" such as knowledge usage in the Electronic Principles Inventory (EPI.) Output from all these programs are data vectors stored in files for later use. Data vectors are retrieved by knowing three pieces of information: 1) the list of items it covers (e.g., task lists, equipment list, job satisfaction list, etc.), 2) the type of data vector requested (the Factor like Percent Time Spent, Percent Members Performing, Mean/SD of an incumbent rating, Task Learning Difficulty, or Training Emphasis), and 3) the group name (from NEWGRP).

GRPMAT -

Group Matrix [GRPMAT]. Accepts two group name sets (GNS) for which group membership rosters have been computed. A matrix is displayed which shows the number of members in common between COLUMN and ROW groups. One GNS is used to establish the COLUMN headings and other GNS becomes the ROW headings.

GRPOVR -

Group Overlap [GRPMAT]. Accepts two group name sets (GNS) for which group job descriptions have been computed. A matrix is displayed which shows the overlap of percent time spent in common between COLUMN and ROW groups. One GNS is used to establish the COLUMN headings and other GNS becomes the ROW headings.

GRPREL -

Group Reliability [GRPREL]. This program accepts item-level ratings by a group of raters and computes the interrater reliability measures (R_{11} - average pairwise correlation, reliability of a single rater, and R_{kk} - stability of the resulting grand mean vector, expected test-retest correlation with an equal sample of "k" raters.) Minimal acceptable values for R_{11} are in the range 0.15 to 0.20 with larger values representing good levels of agreement. Because the R_{kk} is a Spearman-Brown Prophecy Formula expansion of the R_{11} value, it can usually be increased as desired by recruiting additional raters. If the grand mean vector is to be used in subsequent analysis, a minimum R_{kk} of 0.90 is desired although values as low as 0.80 have been used when obtaining additional raters is not possible (i.e., 100% sample has already been taken.)

It is important to understand that the interrater reliability analysis assumes that all raters are judging the same question when looking at exactly the same stimuli in making their ratings. For Task Learning Difficulty ratings, for example, every Subject Matter Expert (SME) -usually experienced supervisors, are asked to rate the expected learning difficulty of each (and every) task for a "typical employee" -- not for himself or herself. There should be agreement across knowledgeable SMEs. To

compute MEAN ratings for appropriate lists (like Job Satisfaction] use the GRPAVE/JOBAVE programs in Category 2. Note that if one were to ask job incumbents to rate task learning difficulty for themselves on the tasks they perform, several problems are introduced. First, "task learning difficulty" is collected as a relative value and by limiting a person's ratings to their own job (i.e., reduced task set), the baseline for comparison is destabilized. A very junior employee will use the entire range of a 1-to-9 rating scale, as will a very senior employee and the values will not be comparable. Second, "task learning difficulty" when applied to one's self becomes a self-assessment rather than a self-report. In self-assessments there is a tendency to downplay the difficulty of currently performed tasks and inflate the difficulty of tasks currently being mastered. A general deflation of ratings occurs in self-assessments because of the attitude, "nothing is hard for me to learn," while in SME-based studies across job areas, SMEs rate their own job areas as higher difficulty and other career fields as more "middle of the road" difficulty.

JOBFAC -

Job Factor Print [PRTFAC]. This program will print any selected job description with task-by-task annotations for any selected task factor (usually Task Learning Difficulty (TD). This is typically used only for appendices of reports where client wishes to demonstrate how a given, target job stacks up on a specified task factor.

JOBORDER -

Job Description in Inventory Order [PRTJOB]. This program will print a standard job description with the exception that all tasks (if non-zero) are shown in original inventory order (an option not available in PRTJOB). This is similar to the Category 2 program, JOBAUDIT, which is used for audit purposes and prints ALL task (even if zero) to validate data at load time into atCODAP (NEWDATA).

JOBPRT -

Job Description Print Program [PRTJOB]. This program will 1) accept a Group Name Set (GNS) file (naming selected groups - created by NEWGRP), 2) retrieve their stored numerical job descriptions (from GRPJOB), and 3) print job descriptions with full task (or other item) statements in desired sorted order. To obtain same data in easy-to-edit electronic form, use JOBEXT instead of JOBPRT.

MODIDENT -

Module Identification [INPSTD]. This program reviews the task list for internal subsections (historically called Duty Areas) and solicits a 1 to 6 character identifier to associate and print with each task in that subsection. Although the program will default to sequential letters to match mainframe CODAP, atCODAP is not limited to 26 areas and up to six character mnemonics may be used. Examples include "OrgPln" for "Organizing and Planning" instead of "A"; "DirImp" for "Directing and Implementing" instead of "B"; "Eval" or "Inspct" for "Evaluating & Inspecting" instead of "C"; "Train" for "Training" instead of "D"; "Forms" for "Preparing Forms" instead of "E", etc.

MODVAR -

Create Module Variables [MODVAR]. This program creates Module Variables (a new list in the data base) by summing specified items (tasks usually) for selected sets (modules) of items (defined by NEWMOD). The new list may be used to compute module-level job descriptions and/or serve as the basis of a hierarchical clustering.

NEWBOOK -

New Book Definition/Registration [INPSTD]. This program accepts an automated definition of the job survey (coded per the JOBSUR standard) which has been process through the MAKEPOOL program and creates (registers) the required data base specifications. The next step is to load data (NEWDATA) resulting from the administration phase of the project.

NEWDATA -

New Data Load [INPSTD]. This program accepts the data base specification from NEWBOOK and the new data base file (from several possible sources) and creates the atCODAP data base. During load, NEWDATA validates the format by ensuring the data base definition matches the length of incoming data records. Any mismatch causes the process to halt and the user must isolate the cause of the problem -- either the data base specification contains an error by having omitted a field, included an extra field or miss-specified the LENGTH of a field. Alternatively, the input data base file may contain similar errors. Both sources may be wrong and resolution of these problems can be the most person-time intensive aspect of the entire project. If data collection is accomplished using paper-and-pencil booklets mastered by atCODAP (atBOOK) and entered with atENTRY or using disk-based surveys atDISK/atSURVEY these formatting problems CANNOT occur -- they happen only when uses standard data entry methods and KEYPUNCH layouts or data files from OPTICAL SCANNERS. The next responsible step in any case is to run a series of data base audits including 1) Total_Sample group identification (NEWGRP), 2) Distribution of all background items (VARSUM), 3) compute a standard, percent-of-total job description (GRPJOB), 4) print an audit job description (JOBAUDIT), and 5) print a standard job description (JOBPRT). Beyond this point, any analysis capability of atCODAP is available.

NEWFAC -

New Task Factor Input [FACINP]. This program accepts a flat ASCII file containing the data values for items in a given list (usually mean ratings on the task list, i.e., a task factor) and adds this data vector to the specified Factor File. Although these files are typically produced automatically by the Interrater Reliability program (GRPREL), input files may also be created using a text editor to create custom factors. This is an important final step when moving task factor files between various subdirectories (typically from \TE or \TD into the \JI subdirectory) when complex interactions are to be accomplished (see VARGEN). Some programs like ATI have such rigid data location requirements, that they automatically reach back into the proper subdirectories. ATI, for example, will read the most recent task factor file (RECENT.DEC) generated by GRPREL in both the \TE and the \TD subdirectories without having to move files or use this NEWFAC method.

NEWMOD -

New Module Definition [MODIDS, MODULE]. This program accepts the specifications for new module sets. Each module set requires that the target list be specified (usually the task) and that one new eight-character identifier (such as "DUTIES" or "CO-PERF") be assigned to this set. Additionally, for each module (i.e., subset of items) in the set, a module title must be provided (such as "Organizing and Planning") and the identity of all items associated with that module (such as Task 1 to Task 20) must be specified. Whereas mainframe CODAP only allowed modules for the main task list, atCODAP allows modules for any list. In this way, equipment lists can be sub-divided, summarized, and reported under broader categories such as "Hand Tools" or "Power Tools" instead of only their elements (like "Hammer", "Screwdriver", "Pliers" for "Hand Tools").

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----- Sample of an @CODAP.SYS File -----
C:
C:\ATCODAP\VER 1.0
atCODAP Software Expiration Date is (YY-MM-DD): 95-06-30

atCODAP Software & Support Materials are the Exclusive Property of

    Sensible Systems, Incorporated
    10218 Lorene Lane, San Antonio, Texas 78216-4409
    Voice & FAX Line: (210) 349-2930

Licensed to:      <User Organization>
Contract Office:  <Contract Info Mailing Address>
                  [Include Attn: <Focal Point>+Phone+Fax]
Contract/Ref Number: <Required ID on Correspondence>
Shin to:         <Address to Shin Diskettes/Updates>
                  [Include Attn: <Focal Point>+Phone+Fax]

@Standard Inventories (Automatic Directories - you may add more):

\II Job Incumbent Inventory (Full Inventory Time Spent PMP)
\TD Task Learning Difficulty (on full inventory)
\TF Training Emphasis (on full inventory)

----- End of Sample @CODAP.SYS File -----

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Figure 1: @CODAP.SYS Sample

NEWSTUDY -

New Study Setup [NEWSTUDY]. This program, strictly speaking, should be in the Category 4 classification for "nice to have" project management software. Because this feature has become part of the standard mainframe CODAP packages, NEWSTUDY is reported here. atCODAP's more extensive support for project management is in Category 4 under the program names atSTUDY/@STUDY and atCODAP/@CODAP. NEWSTUDY permits a user to log-in a new project and assign (or accept a default) study identification (StudyID - expected to be a four-digit number). Data files for a project are stored in C:\STUDY\<StudyID>. Based on the content of the C:\@CODAP.SYS file, all "standard" subdirectories of the study directory are created.

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--- Tail-end of Standard @CODAP.SYS --

@Standard Inventories (Automatic Directories - you may add more):

\II Job Incumbent Inventory (Full Inventory Time Spent PMP)
\TD Task Learning Difficulty (on full inventory)
\TF Training Emphasis (on full inventory)

=====
Required Format if you wish to augment these three:

Example:
\BP Behaviorally Anchored Ratings on a Profile of Scales
where:
  " " Must be in the First character position on the line
  "BP" = <Two-Character-ID> for the new standard directory
  " " = a mandatory space to separate name from comments
  "Behaviorally " = <any comments as desired>

Once out in the @CODAP.SYS in the root directory the next time
NEWSTUDY is run this directory will be created along with its
own subdirectories of \BOOK and \DATA.

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Figure 2: How to Add "Standard Directories"

OVERLAP -

Overlap [OVRLAP]. This program computes the percent time spent overlap between case-data profiles. The OVERLAP MATRIX created by this program is used by the GROUP program to hierarchically cluster cases into empirically defined job types. This program and GROUP are typically the most machine-intensive programs in CODAP, but they provide the ability to empirically determine the actual structure of work in target job family. The next step is GROUP.

SELPRNT -

Select Cases based on Print-Only Variables [MEMSEL]. This program creates new group definitions (membership lists) like NEWGRP. SELPRNT allows users an easy interface for selecting all cases which match an "exact value" for a specified variable. This is most useful for fields with many variations which are to be considered identical such as incumbent-supplied location or job title.

SELRANG -

Select Cases based on Ranges of Print-Only Variables [MEMSEL]. This program creates new group definitions (membership lists) like NEWGRP. SELRANG allows users an easy interface for selecting cases who have print-only (TEXT) variable values in specified alphanumeric ranges.

STARTERS -

Starter Boxes for Diagram [DIAGRM]. This program assists in selecting the Starter Boxes for the top row of the DIAGRAM. This feature was removed from DIAGRAM so an analyst could interactively adjust (play-with) DIAGRAM's parameters to produce a reasonable-sized diagram. Once a set of starter stages have been selected, they can be input to DIAGRAM for printing. An analyst is now free to edit or totally hand-pick the starter groups on DIAGRAM because of this change. The next step is DIAGRAM.

SUBSTIT -

Substitute Rating Scales [INPSTD]. This program allows the analyst to specify a substitution scale for the default rating scale points entered. This program can be run any time after NEWDATA and adds an additional, uniquely numbered data set which may be used wherever the original data set was appropriate. This is typically not done. This program can be used, however, to replace, say a 1-7 scale with numerically correct substitutions. For example, if an "absolute frequency per year" were used and the 1-7 had definable weights, each rating point could be given a value determined by its absolute, external reference. Exponential or other weighting schemes may be used. SUBSTIT may only be used for scales with 99 rating points or less.

TASKOVER -

Task Overlap [XPOSE/OVLAP]. This program computes an NTask x NTask matrix which contains the time-weighted probability of task co-performance. This output is in a standard OVERLAP Matrix format. The next step is the GROUP program to hierarchically cluster tasks into task co-performance modules.

TPATHM -

Task Clustering Path with Modules Report [CLUSMAP, FACINP, PRTFAC, MODTYP]. This program reports task statements in TPATH order along with information about potential task module definitions including standard Duty Areas, EVENSIZE modules, EVENGROW, or hand-selected/edited modules.

VARGEN -

Variable Generator [VARGEN]. This program accepts a specified task factor and a set of group identities (a Group Name Set) and computes an "Average Factor Value Per Unit Time Spent (AFVPUTS)". When used with the Task Difficulty factor, one obtains the Average Task Difficulty Per Unit Time Spent or ATDPUTS value. Historical research demonstrated that the ATDPUTS value can be combined with Number of Task Performed and the square of the Number of Tasks Performed to yield a usable "Job Difficulty Index" or JDI. The JDI research has been called into question recently and new efforts are being planned to revalidate or redevelop the JDI metric. The ATDPUTS value produced by VARGEN has also been used in its raw form in compensation studies.

VARPRT -

Variable Print Report [PRTVAR]. This program accepts the case data file as generated by NEWDATA (with any subsequent augmentations) and prints one line of data for each case on the file. This product is considered essential to performing the job typing process in conjunction with the DIAGRAM report. The VARPRT user must specify which variables are to be printed in the report, the column headings to be displayed, and the space allocated to each data column along with its print format. Coded variables may be displayed either as their numeric value or as their translated meaning from the source booklet. Cases may be displayed in input order, in cluster presentation sequence (KPath order) or in order sorted on a selected data column. The set of cases displayed is assumed to be the entire file unless a specific group identifier is provided to restrict the sample. Newly developed aids (MAKEVPRT in Category 4) will generate strawman program setups which may be refined to user needs.

VARSUM -

Variable Summary Report [VARSUM]. This program accepts the case data file as generated by NEWDATA (with any subsequent augmentations) and prints one-way distributions of selected variables for selected groups. This version of VARSUM distributes one group per report. VARSUM was designed for use in the civilian sector where all reports for a single job would be consolidated to form a job specification package. The primary use of VARSUM in the occupational standards (military) community was for identification of specific differences found in cross-comparison between selected group sets (such as grade levels, major commands, or job type descriptions). A new version of VARSUM (possibly under a different name - VARDIF?) may be developed to accommodate the occupational standards requirements once again.

Category 2

Category 2 SOFTWARE is that set of atCODAP programs which **extend productive occupational analysis** beyond previous mainframe limits and hence expand the definition of "CODAP" systems.

ATIMEANS -

Prepares ATI vectors for use in a 3-side-by report.

ATIMERGE -

Combines three ATI vectors into a single file.

ATIPRT -

Prints an ATI Report with three groups, side-by-side. Used in the Job-Linked Assessment Procedures (J-LAP).

BASELINE -

Evaluates how well sets of job groups are explained by standard Duty Areas versus Task Modules.

CORESTAT -

Accepts a group name set for which job descriptions have computed, cross-compares groups and determines the best level for percent members performing (PMP) cutoff to use for "core task" calculations.

GRPAVE -

Compute mean values for a specified group over a specified list of items.

ITEMSTAT -

Compute and print item statistics for test items associated with given tasks/modules.

JOBAVE -

Prints a job description based on an "average" vector computed using GRPAVE. Useful for lists like Job Satisfaction rated 1 to 7.

JOBEDIT -

Apply modifications to existing job descriptions to create "job prescriptions" for job restructuring.

JOBFAC -

Prints a camera-ready job description side-by-side with a selected task factor.

JOBMIS -

Prints a report showing any tasks which appear to be missing after a comprehensive restructuring.

JOBORDER -

Prints a job description in inventory order. As in standard job descriptions, only non-zero tasks are shown.

JOBPCT -

Print a job description which includes only Percent Members Performing (PMP) which may be interpreted as probability of performance. Useful for reporting list items rated yes/no (1,0) which can be summarized as percent members using tool items, percent members using knowledge, percent of members attending

courses, etc.

MAINDROP -

Creates a "shadow" dataset in which the very common ("MAINTASK") tasks are zeroed-out. The zapped tasks are set to zero. Time on remaining tasks is left unchanged, i.e., time is NOT recomputed to total 100.0%.

MAINTASK -

Identify tasks which are performed at or above two standard deviations above the mean. Identify this task set as "COMMON" or "MAIN" tasks.

PROFILE -

Accepts a group name set for which job descriptions have been computed and creates a standard OVERLAP Matrix containing percent time spent overlap. The matrix may be input to GROUP to produce a cluster solution.

PROFSEQ -

Accepts a group name set for which PROFILE and GROUP have been run and displays the group names in clustered KPath sequence to aid in DIAGRAM interpretations.

Category 3

Category 3 SOFTWARE is that set of atCODAP programs which **provide logistical support** for the operation of Category 1 and 2 software, primarily print, audit, index, check, fix, split, convert and import/export files. Software in all subsections of Category 3 is provided on an "as is" basis. This category is broken down into four major sections, some with further functional breakdowns.

The four major sections are:

3A: Support of atCODAP Mainstream Operations;

3B: Support of Export-Import and Conversion between CODAP Systems or Computers;

3C: Support of Computer Programmer Functions; and

3D: Support of Word Processor Interfaces.

Section 3A: Support of Mainstream atCODAP Operations

Section 3A focuses on features relevant to atCODAP during three major phases of a project:

- 3A1: Survey/Booklet Preparation;
- 3A2: Data Automation;
- 3A3: Data Validation; and
- 3A4: Operational Study Support.

Note: The standard data automation for "atCODAP" is to use "atBOOK" and "atENTRY" in 3A2 or "atDISK", "atSURVEY" and "atLOAD" in Category 6. The standard for data automation for older CODAPs are "Card-Image" and "Optical Scanner" processing and are addressed in Sections 3B1 and 3B2 as "conversion" support.

SubSection 3A1: Survey/Booklet Preparation (Phase I)

This section has been converted to "FREEWARE" as Category 7.

SubSection 3A2: Data Automation (Phase II)

atBOOK -

Creates a MASTER booklet for hardcopy surveys.

atDROP -

Removes unwanted case data by record number (allowing one of two or more duplicates to remain intact).

atENTER -

Provides a key-entry system driven by the same files which mastered the hardcopy booklet or automated survey diskette.

atLAYPRT -

Prints a layout or "code sheet" describing the location of data fields within "flat ASCII" file in DOS Text, Null Terminated (atCODAP, aka ASCIIZ) or Fixed Length Record formats.

atVIEW -

A program which permits a user to view the Master CASEDATA.NUL or an individual BOOK.NUL file on a survey diskette. This program allows references to data layouts which describe the contents of the data file. Program also permits data extracts to a flat ASCII Text file for use in other statistical packages such as the Statistical Package for the Social Sciences (SPSS) or Systat.

SubSection 3A3: Data Validation (Phase II)

(* = "under development as of May 96)

atAUDIT* -

Performs requested audits (for Duplicates) and distributions (for real-time sampling feedback).

atDIST* -

Distribute/Cross-tabulate the values of specified variables.

atSORT* -

Provides a routine for sorting data records based on specified subfields for use in merge operations

SubSection 3A4: Operational Study Support

CHEKFACS -

Accepts a set of factor/group names and ensures that all desired factors have been computed. Any names missing are directed to another factor/group name set (GNS) file to expedite necessary processing.

CHEKGRPS -

Accepts a set of group names and ensures that all desired groups have been defined. Any names missing are directed to another group name set (GNS) file to facilitate the necessary processing.

DROPFACS -

Accepts a group name on a factor file and eliminates that entry plus all others to the end of file. Designed to recover after an erroneous run.

DROPGRPS -

Accepts a group name on the MEMBERS file and eliminates that entry plus all others to the end of the file. Designed to reset a file after an erroneous run.

JOBAUDIT -

Prints a job description in inventory order including both zero and non-zero items. This is an audit report used to determine if data may have been shifted during data automation. This is a problem with older CODAP methods of using keypunch layouts into card-image files or with optical scan sheets. atCODAP's method of single-file definition for booklet printing, data entry, or automated surveys virtually eliminates this type of error.

LISTCLUS -

Reports the IDs and Descriptions of available cluster solutions. Typically, task clustering produces the "COPERF" solution and case clustering produces the "TIMESPNT" solution.

LISTDATA -

Displays on the screen the available LISTS (like Tasks, Tools, KSAs, etc.) and corresponding data sets collected under those lists (like "Relative Time Spent" or "Importance" for Tasks).

LISTFACS -

Reports the IDs and Descriptions of Groups and datasets found a given List Factor file. There is one List Factor file for each List. A "Task" Factor file may contain any vector computed for the "Task" list regardless of the program (e.g., GRPJOB, GRPREL, or GRPAVE).

LISTGRPS -

Reports the IDs and Descriptions of Groups on the master Membership Roster File.

LISTITEM -

Reports the Titles (both Module and Item levels) within a List.

LISTMODS -

Reports the IDs and Descriptions of Module Sets available. Common Module Set IDs include "DUTIES" for the "Duty Areas" of the job inventory and "COPERF" for the set of task co-performance modules selected by EVENGROW.

LISTVARS -

Reports the IDs and Descriptions of PRINT-ONLY/TEXT (.T) variables and NUMERIC VARIABLES (.V).

SHOWCLUS -

This program shows the available cluster solutions on the screen. See LISTCLUS.

Section 3B: Support of Export-Import and Conversion between Systems

Section 3B focuses on features relevant to the manipulation of text or data files intended to leave atCODAP or to be input to atCODAP from an external source. The external source may be a different (non-atCODAP) data preparation method:

3B1: Card-Image Files or Optical Scanner Files;

3B2: Export/Import with Other CODAP, Computer, or Statistical Packages.

SubSection 3B1: Non-atCODAP Data Preparation

(Card Image/OpSCAN) Operations

CARDPULL -

This program scans an ASCII CODAP Card Image file and pulls ("writes") all records with a specified "card number." to facilitate visual inspections.

CARD2ONE -

This program converts an ASCII CODAP Card Image file to the atCODAP standard "NUL" file which is one long record with no unnecessary characters other than an ASCII NULL (i.e., a byte of all zero bits) at the end. This is sometimes called an ASCIIZ string. An input file called DATA.LOC identifies which bytes of the card image file is to be transferred to the NUL file. In order to use this program, one must determine: 1) which characters are necessary in final data file (marked by periods); 2) which characters must be recoded from single character alphas to numeric codes (if "J" or greater - requires two digit codes in output file); 3) which characters require special recoding (marked by a "/" and requires a corresponding set of lines in DATA.COD). A sample DATA.COD is for sex which was keypunched as "M" & "F" and a "code" variable was desired. If that data was keypunched on card 16, column 20, then the following would be set up: A slash would be placed on card 16, column 20 in the DATA.LOC file (instead of a normal period). DATA.COD would contain:

16 20

M

F

CHEKCARD -

This program accepts an ASCII CODAP Card Image File, intelligently reviews the file. Next the program asks for data columns specified on the Keypunch Column Layout. Based on this information, the program generates a DATA.LOC file for use by CARD2ONE.

DISTCARD -

Prints a distribution of values found in specified card columns on a specified card ID. Input is an ASCII CODAP Card Image File.

FIXDATA -

When CHEKCARD detects discrepancies between the ASCII CODAP Card Image data file and keypunch layouts, control cards are generated for this program to adjust data locations. Not needed if atSURVEY or atENTRY from atCODAP is used to automate data.

LAYOUT -

Upon a successful run of NEWBOOK, defining Phase II (Data Analysis), one can run this LAYOUT program and produce a layout (data position & description specification for each field on the file) for the atCODAP DATA.TXT file. Layout also includes recommended Card/Column numbers if one wishes to produce an ASCII CODAP Card Image File. See atPRTLAY for layouts --before-- entering atCODAP.

LOADCARD -

Load ASCII CODAP Card Image files from several floppy diskettes and combine them into a single DATA.TXT file on the hard disk. See SPLTCARD.

LOCATEX -

When coping with ASCII CODAP Card Image files, one must determine the exact location of specific data fields. By placing an "X" in the card and data column of interest in DATA.LOC, LOCATEX provides the required cross-reference data location in the final DATA.NUL file. Although one may use "LAYOUT" to obtain the same information, LOCATEX will generate a properly coded MULTIFAC run if reformatting is required for the targeted location.

MULTIFAC -

If one begins with an ASCII CODAP Card Image file, data factors (like Time and Importance) are sometimes interlaced (alternating ratings) rather than entered with all Time ratings first followed by all Importance ratings. Using LOCATEX, one can locate the area of the DATA.TXT which is affected. With the card numbers, starting locations and number of items in a list, this program (MULTIFAC) can straighten out up to three factors at a time. The process may be repeated, if more than three data vectors are involved.

ONE2ONE -

Sometimes initial data comes from an optical scanning system which produces a single long record per booklet. Although this is very close to an atCODAP DATA.NUL file, two conditions must be met. First, all non-essential characters must be removed (like BATCH number emitted by the scanner). Second, any "Carriage-Return/Line-Feed" (An ASCII 13 and ASCII 10) at the end of the record must be dropped and an ASCII "NUL" (ASCII 0) placed as the last character of the final output record. ONE2ONE may perform the same recode functions as CARD2ONE described above.

SHOWCARD -

This program is used in debugging ASCII CODAP Card Image files. This program will display all images with a given Card ID for inspect. The maximum lengths of these cards along with a distribution of ASCII

codes used is also reported. Also see DISTCARD and CARDPULL.

SPLTCARD -

This program reads a large text file which exists on a hard disk and splits the file at specified points so the pieces can be written to separate floppy disks. See LOADCARD for the capability to recombine these files onto the hard disk on another computer.

**SubSection 3B2: Export-Import with Other
CODAPs, Computers, and Stat Packages**

This includes conversions from other CODAPs such as ASCII CODAP, IBM 360, CODAP80, and Australian Univac (Kenn Goody) CODAP.

CODAP80 -

This program reformats CODAP80 (as used by USMC in 1992) control cards and input file to atCODAP standards.

CR2CRLF -

This program accepts a text file from an IBM RISC which was written with only "carriage returns [CR]" at end of line and writes a more standard MS-DOS text file with both "carriage returns [CR] (ASCII=013)" and "line-feeds [LF] (ASCII=10)".

EXPORTFD -

Accepts a group name set file and a specified target factor file the outputs a flat ASCII text file with the task factor data (means, sds, percent rating. Output formats include EXCEL, ASCII CODAP (FACDEC), and atCODAP.

EXPORTJD -

Accepts a group name set file and a specified target factor file the outputs a flat ASCII text file with the job description data (percent members performing [PMP] and percent time spent [PTS]). Output formats include EXCEL, ASCII CODAP (FACDEC), and atCODAP.

EXPORTMD -

Accepts a group name set file and outputs a flat ASCII text file with the membership data. Output formats include EXCEL, ASCII CODAP (FACDEC), and atCODAP.

EXPORTTS -

Accepts an atCODAP format file of Title Statements and reformats it into a flat ASCII text file in ASCII CODAP Task Title File format.

IBM360 -

Converts data and control card files from the IBM 360 mainframe version of CODAP (circa 1968-1978) into atCODAP formats.

IMPORTFD -

Accepts a task factor file ASCII CODAP (FACDEC) and loads the data onto an appropriate List/Factor File. (See EXPORTFD).

IMPORTJD -

Accepts a task factor file ASCII CODAP (FACDEC) and loads the data onto an appropriate List/Factor File. (See EXPORTJD).

IMPORTMD -

Accepts a case factor file ASCII CODAP (FACDEC) and loads the membership information onto the master file (MEMBERS). (See EXPORTMD).

IMPORTTS -

Accepts an ASCII CODAP Task Title File and reformats the title statements to atCODAP List File format.

OADECKS -

Accepts Data Files as produced by GRPREL (Task Factors) and JOBPRT (Incubment Data) and outputs to a TAB-DELIMITED File ready for input to Microsoft ACCESS.

SPLTDECK -

This program reads an ASCII CODAP FACDEC file with multiple task factors and separates each vector into a separate file useable by atCODAP. Same as IMPORTFD.

SPXXLIST -

Converts TASK LIST Cards set up for the Univac 1100 version of CODAP developed, maintained, and used as service bureau by Ken Goody. Ken Goody is a former Wing Commander in the RAAF and Australian exchange officer to the Air Force Human Resources Laboratory (1975-1977?). Squadron Leader Goody developed the original CURVES program (CURFAP) and did research into matching officer jobs to educational preparation and the use of task factors including interrater reliability and benchmarking learning difficulties across career fields. Also see SPXXVARS.

SPXXVARS -

Converts VARIABLE DEFINITION Cards set up for the Univac 1100 version of CODAP developed, maintained, and used as a service bureau by Ken Goody. See SPXXLIST.

TIARABI -

Reformat the Air Force's TIARA Background Information (.TBI) format into atCODAP's BOOK.TXT format.

DETIARAT -

Reformat the Air Force's TIARA Task Inventory/ASCII (.TIA) format into atCODAP's TASKS.TXT format.

Section 3C: Support of Computer Programmer Functions

Section 3C focuses on those features used by programming personnel in either setting up new procedures or in maintaining the atCODAP programming system itself. Sometimes these may be found to be useful in their own right outside of atCODAP.

CHKUP -

A program maintenance function which cross-checks actual program dates to dates on file in a Master List and reports programs in need of updates.

COPYSOME -

This program copies TEXT files from an input source to an output file. One may optionally skip a specified number of records at the start of the input file. The number of records to copy from that point on must be specified.

COPYFROM -

Given a filename, this program creates a batch file (COPYTO) which will copy the named file to a sequentially numbered backup name. Used to ensure important or sequentially named files are not lost. Note: Batch file with this command must invoke "CALL COPYTO" immediately after the "COPYFROM". Example usage: "COPYFROM myfile.w51 SAVE.MYF" The "SAVE.MYF" is a name made up to keep track of the file NAME and SEQUENCE counter. The "SAVE" part will go into the new NAME and the four-digit SEQUENCE number from the RECENT.MYF" will complete the new name. Assume that RECENT.MYF had a 0003 in it (i.e. SAVE0003.MYF) already exists. Then COPYTO.BAT = "COPY myfile.w51 SAVE0004.MYF" and RECENT.MYF is updated to contain "0004".

DIRCODEC -

A program which scans a directory file (from PICKFILE) that codes each file into one of several categories. The program allows the system administrator to copy or drop entire categories of files to target directories.

DIRCOPFT -

A program which scans a directory file (from DIRSORT/DIRFILE) and copies all files found from (F) a specified directory to (T) a target directory.

DIRCOPY -

A program which scans a directory file (from DIRSORT/DIRFILE) and copies all files found to floppy disk in Drive A: or B:. Program allocates files to floppy disks to avoid splitting files across diskette boundaries. Program is used to create atCODAP installation disks.

DIRDATE -

A program which scans a directory file (from DIRSORT/DIRFILE) and writes out all files with dates more recent than the user specified date.

DIRDROP -

A program which scans a directory file (from DIRSORT/DIRFILE) and rewrites the file with all information removed except for FILENAME.EXT.

DIRFILE -

A program which reads and reformats captured directory output ("DIR *.* > DIRLIST.TXT"). Program automatically adjusts to differing formats implemented by differing versions of MS-DOS (versions 3.21 through 6.22).

DIRLIST -

A program which reads and reformats captured directory output ("DIR *.* > DIRLIST.TXT"). Program automatically adjusts to differing formats implemented by differing versions of MS-DOS (versions 3.21 through 6.22).

DIRREAD -

A program which reads a directory file (from DIRSORT/DIRFILE) and generates a batch file with a "README" command for each file referenced in the directory file.

DIRSORT -

(Batch procedure) Accepts any standard MS-DOS "DIR" command mask (like *.* or *.TXT) and produces a file with the names of all acceptable files within the current directory. Note that format varies by version of MS-DOS used. The DIRLIST program is used to convert the DOS file to a standard format "directory file".

LISTFILE -

This program accepts a list of text files and combines them into a single file. Default option is to list the index file first and then for each entry - perform a page eject, roster a file sequence number & file name, then roster each of its line with its own line number. Options include "/S" to suppress page ejects (use three blank lines); "/N" to neutralize page overflows; or "/M" to concatenate files without indices, file identifications or line numbers.

LOADNULL -

Load several atCODAP DATA.NUL files from floppies and combines them into a single DATA.NUL on the hard disk. See SPLTNUL.

MYSITE -

This program accepts keystrokes and reports the associated: 1) key SCAN code; 2) the ASCII code value; and 3) the display character for that ASCII code. While the key SCAN code does not vary, combinations of [SHIFT], [ALT], and [CONTROL] with other keys can be used to report the differing display characters and ASCII codes. Used in program development and to resolve installation problems with non-standard IBM PC clones.

PFEDIT -

A program which accepts a directory file (from DIRSORT/DIRFILE) along with two change or edit fields (field 1 = find string like "xxx"; field 2 = replace string like "yyyy"). The program scans every line of each file listed and performs the requested replacement as required. A log of replacements performed is printed. Used in performing maintenance on sets of text files -- like the MENU system (*.MDF files).

PFLOC -

A program which accepts a directory file (from DIRSORT/DIRFILE) along with a locate field (locate field = find string like "xxx"). The program scans every line of each file listed and attempts to locate the target string as requested. A log of hits of the locate string is printed. Used in performing maintenance on sets of text files -- like the MENU system (*.MDF files).

PICKFILE -

A program which accepts a directory file (from DIRSORT/DIRFILE). The program shows the contents of each file in order and allows the user to "keep" (K) or "drop" (D) files from the output PICKLIST.LST file.

SECTOR -

This program will display the contents of any file, one sector (128 bytes) at a time. Contents are displayed both as ASCII display characters (on the right side of the screen) and as hexadecimal values on the left side of the screen. File contents may be altered.

SHOWASCI -

This program development aid will display all 255 ASCII values and their display codes on the screen.

SHOWIT -

This program will display all text files referenced in a standard directory list file (See DIRSORT/DIRLIST).

SHOWX -

This program will display all text files referenced in an XDIR2 index file.

SINCE -

A program which scans a directory file (from DIRSORT/DIRFILE) and writes out all files with dates more recent than the user specified date.

SPLTNUL -

This program reads a large DATA.NUL file which exists on a hard disk and splits the file at specified points so the pieces can be written to separate floppy disks. See LOADNULL for the capability to recombine these files onto the hard disk on another computer.

XDIR -

This program accepts an MS-DOS "DIR" command mask (like "*.*" or "*.TXT") and scans the entire DRIVE for matching files. Unless the mask includes a directory reference (like "\source*.pas", XDIR begins at the root directory of the current DRIVE. Regardless of the mask specification, the output file of matching filenames is written to the root directory of the current drive as "\XDIRLIST.BAT". In addition to summary information, each matching file is reported by two lines. The first line "ECHO " contains the filename suitable for being changed into any other desired DOS command. The second line "REM " contains size and date information for reference.

XDIRPRT -

This program is called by the XDIR2 batch procedure to reformat the multi-line XDIR file at the root directory (\XDIRLIST.BAT) into a single line per entry with extracted filename moved to the left margin for sorting purposes.

XDIR2 -

(Batch Procedure) AFTER an XDIR has been performed to capture a list of files meeting a given MS-DOS mask, this procedure will accept an eight-character keyword to save the results of the XDIR process. Two files are created: <keyword>.NAM (sorted by filename) and <keyword>.DTE (sorted by date).

XDIR3 -

(Batch Procedure) AFTER an XDIR2 has been performed to capture, standardize, and name an XDIR request, XDIR3 will generate delete (DEL) commands for every item in the file list.

Section 3D: Support of Printer & Word Processor Interfaces/Macros

Section 3D focuses on features relevant to the use of word processors, especially Word Perfect 5.1 - the word processor currently used to produce and maintain both survey text and atCODAP system documentation. As documentation is migrated to the InterNet, it is expected that future releases will include comparable macros for Microsoft Word 6.0. With the Word 6.0 macro virus issues currently flying about, our move to Word 6.0 has been postponed until further notice.

BREAKOUT/@EDITINS.TXT -

Allows user to accept a Word Perfect copy of an inventory and "tag" fields to be extracted into the BOOK.TXT or various LIST Files. @EDITINS.TXT provides instructions.

DEMAC -

Reformat Macintosh Microsoft Word documents implementing a rating booklet with rating scales displayed. Macintosh files are read onto IBM using the Central Point Option Board attached to a 3.5 inch disk drive along with proprietary software.

DENUMDOC -

Remove item numbers from a word processing document version of a task list.

FIXPRN -

Reset attached printer to "power-up" defaults then set font to Elite, 12 characters per inch, portrait mode, lines per page, etc.

MAKEWP51 -

To produce accurate documentation, one takes "snap-shots" of key computer screens using screen capture programs like PRN2FILE. Unfortunately, menu programs and TurboVision programs use many special characters which do not load properly into WordPerfect (where our documentation is produced). This program, along with a Screen-capture file and WP2HDR.W51 (a WordPerfect 5.1 header file), creates a WordPerfect file with all special characters properly translated.

PRT -

Prints the contents of a text file. Prints file in compressed (16.667 pitch) with left margin and automatic page overflows. Each page heading includes file name, page number, date & time.

Category 4

Category 4 SOFTWARE is that set of atCODAP programs which **experimentally fields research and support tools and implement atCODAP's new operational concept of maximizing automated system interactions for routine uses.** Category 4 SOFTWARE is designed to replace the operational concept used by mainframe CODAP in which an occupational analyst specifies end-products and dedicated CODAP computer technicians determine programs involved, processing flow and data file requirements to prepare fixed-format control card files using program-level control card specification manuals. Category 4 SOFTWARE minimizes personnel time required for the operational usage of CODAP by managing project tracking and providing experimental analyst-interfaces. Category 4 SOFTWARE is provided on an "as is" basis. All text for menu files is provided as *.MDF files under Category 5. (A Windows-95 user-interface product by Sensible Systems is projected for summer 1996.)

@GO COM	17372	01-28-95	9:03a	READSET COM	19283	01-28-95	9:05a
@STUDY COM	32759	01-28-95	9:03a	REBOOTX COM	11442	01-27-95	10:35p
@STUDYX COM	27165	09-01-95	7:49a	SCALE COM	10325	10-04-95	7:06p
ANCHOR COM	12569	01-28-95	9:03a	SCANDIRS COM	13422	02-06-95	7:00a
ATLOC COM	11634	01-28-95	9:03a	SNEAK COM	24500	01-28-95	9:06a
AUTOMENU COM	17214	10-10-90	1:47a	SYSTEM COM	20592	06-29-95	8:16p
COPYBAT COM	18920	01-28-95	7:19a	TM COM	16934	02-22-95	7:28a
COPYCHG COM	19194	01-28-95	7:19a	UNDRLN COM	132	11-09-87	10:58a
CURSOR COM	1452	07-28-88	11:39a	VPGEN COM	34353	04-11-94	7:23p
DELGEN COM	11984	01-27-95	10:26p	VPGEN1 COM	13086	01-27-95	8:06a
DELSTUDY COM	26904	01-27-95	10:27p	VPGEN6 COM	34926	01-27-95	8:06a
EDITNAME COM	13111	01-28-95	9:04a	VPGEN6 COM	11275	01-27-95	8:06a
EJECT COM	11456	01-27-95	10:29p	VPMOD6 COM	32398	01-27-95	8:07a
FINDNAME COM	13152	01-28-95	9:04a				
FIXCURS COM	29	11-02-87	9:24a	@CODAP6 EXE	76528	11-04-95	1:22a
GENOBJ COM	14679	01-27-95	10:29p	SAVESTEP EXE	11760	01-27-95	8:17a
GENRAND COM	20208	10-04-95	10:11p				
GENTITLE COM	12268	01-27-95	10:29p				
GENVERB COM	14669	01-27-95	10:29p				
GOSTUDY COM	24744	01-28-95	9:04a				
HPTODAY COM	18320	01-28-95	9:04a				
LAYVPR COM	48987	09-26-94	2:39a				
LISTNEWS COM							
LOG COM	19060	01-28-95	9:05a				
LOGLOAD COM	11618	01-27-95	10:34p				
LOGTIME COM	18708	01-27-95	10:34p				
MAKEFILE COM	20675	01-28-95	9:05a				
MAKEGRPS COM	21737	01-27-95	7:54a				
MAKEHEAD COM	12648	01-28-95	9:05a				
MAKEMODS COM	27965	01-27-95	7:55a				
MAKENAME COM	19468	01-27-95	7:55a				
MAKEPOOL COM	16206	09-28-95	12:10p				
MAKESTGS COM	24241	01-27-95	7:55a				
MAKEXXX COM	11537	01-27-95	10:34p				
MENUFILE COM	24727	01-27-95	10:34p				
MENUIDS COM	11396	11-03-95	4:52a				
MENUMAP COM	26138	01-27-95	10:34p				
NEWSET COM	20501	01-27-95	7:57a				

Category 5

Category 5 SOFTWARE is that set of files provided with atCODAP (mostly in source code form) which **provide on-line documentation, the menu system, examples, prototype setups, and minor utility support**. Except for on-line documentation, this software is provided on an "as-is" basis.

.	<DIR>	04-21-91	6:30a		ATCARDZ	MDF	1617	08-30-94	10:32p
..	<DIR>	04-21-91	6:30a		ATCASE	MDF	1295	08-30-94	10:32p
@HELP	BAT	512	12-03-92	3:37a	ATCASEX	MDF	1553	03-15-95	12:40p
ATHELP	BAT	512	12-03-92	3:37a	ATCASEY	MDF	1812	08-30-94	10:32p
DIRCOP	BAT	887	06-29-95	8:41p	ATCHOOSE	MDF	1101	08-30-94	10:32p
FACOUT	BAT	16	12-04-92	12:13p	ATCODAP	MDF	8644	08-30-94	10:32p
FACPRT	BAT	34	12-04-92	12:13p	ATCOMMON	MDF	1487	08-30-94	10:33p
GEN121	BAT	27	12-04-92	12:13p	ATCOMPAR	MDF	1109	08-30-94	10:33p
JOBADD	BAT	16	12-04-92	12:13p	ATCOMPAX	MDF	1721	08-30-94	10:33p
MCOPY	BAT	22	03-14-88	9:56a	ATCOMPAY	MDF	1505	08-30-94	10:33p
MDIR	BAT	21	03-14-88	9:56a	ATCONV2	MDF	1149	08-30-94	10:33p
MPATH	BAT	15	12-04-92	12:13p	ATCONVER	MDF	1532	08-30-94	10:33p
MYED	BAT	9	08-28-92	9:56a	ATDATAX	MDF	1111	08-30-94	10:33p
PLTVAL	BAT	16	12-04-92	12:13p	ATDIR	MDF	1359	08-30-94	10:33p
README	BAT	15	12-01-92	4:06p	ATENTRY	MDF	1301	08-30-94	10:33p
VARAVE	BAT	33	12-04-92	12:13p	ATFAC	MDF	1682	08-30-94	10:33p
VER1DISK	BAT	22	01-28-95	3:33p	ATFORMAT	MDF	1975	08-30-94	10:33p
WGTGEN	BAT	16	12-04-92	12:13p	ATGROUP	MDF	1100	08-30-94	10:33p
					ATGROUPX	MDF	1661	08-30-94	10:33p
					ATGROUPY	MDF	1526	08-30-94	10:33p
ATCODAP	DOC	5797	12-01-92	3:43p	ATJOB	MDF	1894	08-30-94	10:33p
CC	DOC	62957	12-01-92	9:31a	ATLOAD	MDF	4516	08-30-94	10:33p
COMMANDS	DOC	9400	11-03-95	4:33a	ATM1	MDF	9274	08-30-94	10:33p
COMPUTER	DOC	14983	12-01-92	10:36a	ATM12	MDF	10074	08-30-94	10:33p
DATALOC	DOC	4443	12-03-92	12:08p	ATM121	MDF	9760	08-30-94	10:33p
DIRINFO	DOC	8165	12-01-92	10:05a	ATM1215	MDF	9887	08-30-94	10:34p
EXAMPLE1	DOC	10331	12-04-92	9:47a	ATM122	MDF	9079	08-30-94	10:34p
EXAMPLE2	DOC	1656	12-04-92	9:52a	ATM1221	MDF	9852	08-30-94	10:34p
GLOSSARY	DOC	17016	12-01-92	10:01a	ATM1222	MDF	10308	09-24-95	5:57a
INDEX	DOC	16415	11-04-95	3:25p	ATM123	MDF	8513	08-30-94	10:34p
INDEXOLD	DOC	10975	12-25-93	1:56p	ATM13	MDF	9402	08-30-94	10:34p
INSTALL	DOC	1766	08-27-94	9:58p	ATM131	MDF	9401	08-30-94	10:34p
LOCATEX	DOC	1467	12-01-92	8:31p	ATM132	MDF	9292	08-30-94	10:35p
ROADMAP	DOC	111871	11-03-95	4:24a	ATM1321	MDF	9595	08-30-94	10:35p
WP2ASCII	DOC	5288	12-04-92	9:24a	ATM1322	MDF	9410	08-30-94	10:35p
					ATM13221	MDF	9776	08-30-94	10:35p
					ATM13224	MDF	9579	08-30-94	10:35p
ATANALYS	MDF	1389	08-30-94	10:32p	ATM133	MDF	9427	08-30-94	10:35p
ATAUDIT	MDF	1416	08-30-94	10:32p	ATM134	MDF	9384	08-30-94	10:36p
ATAUDIT2	MDF	1236	08-30-94	10:32p	ATM135	MDF	9335	08-30-94	10:36p
ATBOOK	MDF	998	08-30-94	10:32p	ATM1351	MDF	9193	08-30-94	10:36p
ATBOOKCG	MDF	1704	08-30-94	10:32p	ATM1352	MDF	9727	08-30-94	10:36p
ATBOOKGE	MDF	1831	08-30-94	10:32p	ATM1353	MDF	9442	08-30-94	10:36p
ATBOOKX	MDF	1832	08-30-94	10:32p	ATM14	MDF	9442	08-30-94	10:36p
ATCARDX	MDF	3114	08-30-94	10:32p					
ATCARDY	MDF	1278	08-30-94	10:32p					

ATM141	MDF	9706	08-30-94	10:36p					
ATM142	MDF	9423	08-30-94	10:37p					
ATM15	MDF	8580	08-30-94	10:37p					
ATM16	MDF	9744	08-30-94	10:37p					
ATM6422	MDF	1253	08-30-94	10:37p					
ATMANAGE	MDF	2196	08-30-94	10:37p					
ATMASTER	MDF	979	08-30-94	10:37p					
ATMERGEX	MDF	912	08-30-94	10:37p					
ATMOD	MDF	1276	08-30-94	10:37p					
ATMODEF	MDF	1498	08-30-94	10:37p					
ATOPSCAN	MDF	1163	08-30-94	10:37p					
ATPRINT	MDF	1311	08-30-94	10:37p					
ATPRT	MDF	1701	08-30-94	10:37p					
ATPRTS	MDF	2009	08-30-94	10:37p					
ATSELECT	MDF	2268	08-30-94	10:37p					
ATSETUP	MDF	1052	08-30-94	10:37p					
ATSPEC	MDF	1292	08-30-94	10:37p					
ATSPECW	MDF	1545	08-30-94	10:37p					
ATSPECX	MDF	1596	08-30-94	10:37p					
ATSPECY	MDF	1492	08-30-94	10:37p					
ATSPECZ	MDF	1519	08-30-94	10:37p					
ATSPORT	MDF	1255	08-30-94	10:37p					
ATSTART	MDF	1578	08-30-94	10:37p					
ATTASK	MDF	1409	08-30-94	10:37p					
ATTASKX	MDF	1477	08-30-94	10:37p					
ATTASKY	MDF	1705	08-30-94	10:37p					
ATVALID	MDF	275	08-30-94	10:37p					
ATVPGEN	MDF	1929	08-30-94	10:38p					
BOOK	STD	117	08-27-92	1:38p					
@CODAP	SYS	939	04-12-94	6:18p					
@EDITINS	TXT	5288	12-04-92	9:24a					
BOOK1	TXT	4052	07-01-92	12:13p					
BOOK2	TXT	441	07-06-92	10:58a					
DATALOC	TXT	1312	08-27-92	10:17a					
DIRLIST	TXT	16415	11-04-95	3:25p					
DIRSAMPS	TXT	2963	08-25-94	12:49a					
DOCSIZE	TXT	105	12-04-92	12:30p					
DROPEXTS	TXT	83	08-31-94	7:29a					
FORMAT	TXT	394	08-20-89	12:46a					
HEAD1	TXT	99	03-24-92	5:30a					
HEAD2	TXT	149	07-06-92	10:59a					
ISA	TXT	81	01-30-94	3:41a					
LEARN	TXT	235	07-01-92	12:15p					
LIST1	TXT	619	12-04-92	9:38a					
LIST2	TXT	2253	12-04-92	9:45a					
LIST3	TXT	2181	12-04-92	9:39a					
MENUFILE	TXT	150933	11-03-95	4:54a					
MENUIDS	TXT	1881	11-03-95	4:55a					
MENUNAME	TXT	2886	11-03-95	4:54a					
MYED	TXT	740	03-23-91	11:57a					
NEWNNOTE	TXT	1358	03-05-93	8:45p					
NOYES	TXT	10	05-17-95	9:07p					
OBJ1	TXT	122	06-14-94	7:27a					
POOL	TXT	18642	02-09-94	9:15p					
TASKDIFF	TXT	184	03-25-91	4:38a					
TASKS	TXT	5093	07-01-92	12:16p					
TE5	TXT	52	08-27-92	8:42a					
THINGS	TXT	460	04-15-94	4:13a					
TIME5	TXT	64	08-27-92	8:41a					
TIME7	TXT	134	03-24-91	7:26a					
TIME9	TXT	190	03-24-91	7:19a					
TIME9L	TXT	190	03-24-91	8:57p					
TIME9V	TXT	172	03-24-91	9:12p					
TREPIC	TXT	88	04-06-91	5:57a					
TRNEMP	TXT	127	03-24-91	9:38p					
USEIT	TXT	26	03-24-91	7:21a					
USEMAT	TXT	1314	08-27-92	10:20a					
VERBS1	TXT	120	06-14-94	7:19a					
WORKSTRU	TXT	2148	06-14-94	5:05a					
YESNO	TXT	10	03-24-91	7:22a					

Category 6

Category 6 SOFTWARE was an experimental capability to **implement atCODAP's new concept of operational automated surveys**. With the advent of newer products on the open market, this product has been withdrawn from the atCODAP system. Negotiations are under way to cross-license newer products which already have a seamless integration into the atCODAP system.

Category 6 software (atSURVEY system) was also licensed as a separate, stand alone product, had a different pricing structure, and had very different limitations on copying and distribution. Except for the "atFINAL" programs, all programs in this set used to allow unlimited, world-wide useage of this atSURVEY subsystem for the LICENSEE's projects. No additional "per disk" license was charged when an atCODAP license was in effect.

atDISK.BAT -

Creates a MASTER Disk for automated surveys.

atFINAL -

Consolidates and converts all text files associated with the definition of the job inventory into a set of interconnected, rapid-access files for maximum display efficiency.

atLOAD -

Load an automated survey diskette's data into the CASEDATA master file.

atPRESUR -

An atSurvey preprocessor to change a two-to-five minute load process into a 10-second wait for job incumbents.

atSURVEY -

The survey engine which actually runs and presents job inventory items to the raters.

SURVEY -

The batch file [".BAT"] with session-level instructions for before and after the survey. Invokes the "atSURVEY" program from a sub-directory.

Category 7

The IOBSUR Inventory Development (FREEWARE) Package adds a seventh software category.

Category 7 JOBSUR is a new capability that **offers a public domain standard for defining the content of Task-based Job Surveys**. These programs are declared to be FREEWARE and are provided on an "as-is" without warranty of suitability for specific applications.

CHEKBOTH -

This program accepts and critically compares data layouts from both Phase I (Inventory Development and Survey Administration) and its reformatted version for Phase II (Data Analysis). Discrepancies and recommendations for additional processing are noted.

CHEKLENG -

The program reads a BOOK.TXT file and reports any lines which exceed maximum length for a given section.

CHEKLIST -

This program reads any text file in proper List format (Module & Items) and reports any lines which exceed maximum length limits.

CHEKPOOL -

This program reads a POOL.TXT file and checks for standards violations.

GENBOOK -

Query the survey author for the next question, list, instruction block and format the output in standard JOBSUR syntax in an BOOK.TXT and HEADER.TXT file.

GENLIST -

Query the survey author for the next item or subheading in the list. Create a properly formatted "LIST.TXT" file for use with a BOOK.TXT file.

GRABLIST -

Given the survey specification (BOOK.TXT), this program identifies all list files (like TASKS.TXT or EQUIP.TXT) referenced within the survey. This list is written to an external file which is used to set up CHEKLIST and COPY commands.

HARDCOPY -

Print an audit hardcopy of a text file. Output listing contains line numbers and shows an 80-character scale line for determining data/text location. Lines longer than 80 characters are split into multiple 80-character lines (not truncated). Program will accept a list of filenames and roster each in sequence. Normal ASCII Text files will accept an additional page heading while Turbo Pascal files (*.PAS) will show PROCEDURE/FUNCTION names at top of page and include additional tables showing external references and internal references for page numbers for each procedure. (Requires PRINTER.VPI in the root directory to support other than an Epson printer.)

HEADLIST -

Displays one screen-full of text on the screen with file name and scale lines shown. Ideal for [SHIFT]+[PRINT-SCREEN] to document file formats. If program is invoked followed by filename and line number, display will start at the specified line number within the file. Upon exit, program reports the appropriate line number to request to see the End-of-File (EOF) displayed.

JOBSUR -

Public domain definition for specifying the content of a task-based job inventory whether presented in hardcopy or as an automated survey.

LISTQUES -

Reformats text in "LIST" format into "Background Item" format. This process only makes sense during inventory development if one decides to use background items instead of a list.

MAKEPOOL -

Collects all external file references in the main BOOK.TXT (HEADER.TXT, TASKS.TXT, EQUIP.TXT, etc) and pools them into a single data file called POOL.TXT.

NOSINGLE -

When preparing "list" files for use in an inventory, any text editor may be used. This is encouraged so that the maximum number of individuals in geographically disperse locations may contribute to a given inventory development project. If these lists are single-spaced, they may be sorted together (using MS-DOS SORT) to form a consolidated file. This file will tend to draw potential duplicates together to facilitate acceptance of a final file. Once a final, single-spaced file is produced, this NOSINGLE program will produce a double-spaced file as required by atCODAP.

RELENGTH -

Enforces maximum line lengths (60 characters) in "list" files like Task & Duty statements (TASKS.TXT). Program "wraps" text up onto previous lines if space is available.

The newer (1999) "HTML-based" Programs include the following:

Assuming you create your "task list" in Microsoft Word 97 to meet the following specifications:

- 1) All statement text must be typed in a TABLE format with the statement in Column 1.
- 2) You MAY (but are not required to) use additional columns for tracking info.
- 3) Every ROW must be used with exactly one statement per ROW -- note that task or duty statements may be several lines long within its table cell.
- 4) "DUTY TITLES" MUST have a FONT COLOR of RED to be detected.
- 5) You save your file "as HTML" with the name "TASKS.HTM"

HTM2FLAT -

Converts your TASKS.HTM file into one or more files. You always get one FLAT-ASCII file for the task & duty titles (or equipment or knowledge depending on your Word 97 document's contents.) Any other columns in your document are converted to "text factor" deck files which can be integrated back into atCODAP reports later in the processing if desired.

FLAT2SSI -

Converts your FLAT-ASCII title file into the SSI format, ready for use in the atCODAP system. The atCODAP system has a limit of 999 duties each denoted by up to 6 characters.

SSI2DUTY -

Converts a title file in SSI format into traditional CODAP card-image format with all line-length limits respected. Duties are labeled from "A" through "Z" and assume the traditional maximum of a single column ending with "Z". Note SSI2RISC below.

SSI2RISC -

Converts a title file in SSI format into the recently expanded CODAP standard designed for the RISC-based systems. This system allows TWO characters for duties which may be numbers and/or letters. This program will label ALL DUTIES with their TWO NUMERIC Digit code running from 01 to 99.

----- End of Schedule A -----