ARM DatCol Data Collector Software

by Gylling Data Management, Inc.

The Solution for Your Research Data Needs

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What is ARM Data Collector Software?

ARM Data Collector (ARM DatCol) is software to use a small, handheld computer as an electronic notebook for recording trial assessments. Data is keyed into the handheld computer when an assessment is made. After returning to the office, assessment data is transmitted (uploaded) to a personal computer (PC) for permanent storage and analysis.

Data transmitted from ARM DatCol to a PC is formatted to use with ARM trial management software. ARM (formerly Agriculture Research Manager) is sold separately by Gylling Data Management, Inc. (GDM).

Why Use ARM Data Collector Software?

Using ARM DatCol software can substantially improve the quality and efficiency of data recording. With DatCol you can:

1. Enter ratings into a handheld computer while collecting those ratings in the field, greenhouse, or lab.
2. Review and print raw data and treatment means for the ratings while still at the assessment site.
3. Transmit ratings to ARM on a PC without re-typing any data, thus avoiding data transcription errors. ARM can print a complete analysis of assessments within minutes ratings are transmitted to ARM.

ARM DatCol versions are currently available for the Psion Workabout Pro, Psion Workabout MX (also 1 MB or 256 KB Workabout).

Psion Workabout Pro

The Psion Workabout Pro is a handheld Windows CE.NET computer made by Psion Teklogix. The Psion is an excellent small, lightweight data collector with an easy to read screen and separate numeric keyboard. The Workabout Pro also supports ARM rating shells, so is an excellent all-around portable data collection device.

Using ARM Data Collector Software

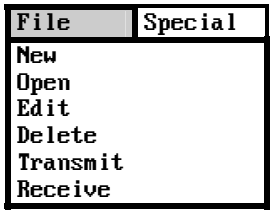
Creating a new ratings file is the first step of using DatCol to record assessments. When assessment entry is completed, print the ratings in plot number order, or optionally de-randomize and print in treatment order with means. Later, transmit the data to ARM trials on a PC.

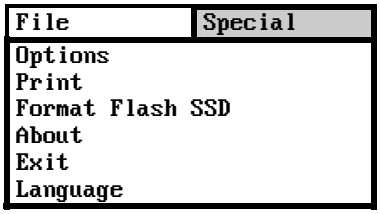
Details on each step of using DatCol and various options are described next.

ARM Data Collector Features

Following are main menu screens for DatCol on the Psion Workabout. The ARM DatCol menu on the Workabout has sub-menus under the main menu tabs File and Special. Program language can be changed between English, French, and German.

DatCol Menu Choices on Psion Workabout





New Ratings File

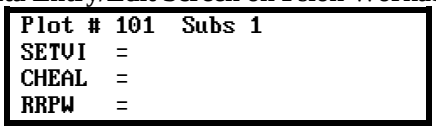
Begin assessing a trial by creating a new ratings file that is defined by:

1. A brief trial title and assessment date.
2. Number of treatments (maximum 999) and replicates (maximum 99) in trial.
3. Number of ratings to collect per plot, and a brief heading for each rating (maximum 40 different rating items per plot, such as 40 species or characteristics).
4. Number of subsamples per rating per plot (maximum 999). The number of subsamples can be different per rating by entering number of subsamples into the rating header template for each rating.
5. Starting plot number in each replicate, and whether to generate plot numbers in ascending or descending order for each replicate. DatCol uses this to automatically advance to the next plot.

Collecting Data

During data collection, DatCol automatically displays the next plot number to assess, and prompts for items to assess in the plot. Entering a plot number to review or edit will over-ride the automatic plot number. Use arrow keys to move between items within a plot. You can easily interrupt data collection and resume later. Edit ratings at any time to correct mistakes. The following is an example editing screen on the Psion Workabout.

Data Entry/Edit Screen on Psion Workabout



Special Editing Commands in DatCol

Several function keys are available in ARM DatCol specifically for assistance with subsample data entry:

- Move cursor between plot number and subsample number to specify a particular plot and subsample number to edit.
- Copy current subsample assessments to remaining higher-numbered subsamples for current plot.
- Copy previous assessment value.

Once defined, you can edit the header (definition) of ratings to either add or delete assessments to collect. Commands are also available when editing assessments to:

- Copy one or all assessments in the current plot or subsample through all plots.
- Copy one assessment to all other assessments in a plot.

Up to 40 assessments can be entered at once. All assessment information is transmitted into appropriate assessment data header fields of ARM trials.

Printing Data

Print data once a trial has been assessed, with the following options:

- Print all data in plot number order, including subsample entries for each plot or averaged across subsamples.
- Print raw data sorted by treatment and the treatment mean for each different assessment. Use this to find "outliers", and make any necessary changes while still at the research site. A treatment randomization can be supplied in two ways:
  1. Use a randomization file stored on the data collector. This randomization would have been downloaded previously from ARM on a PC to the data collector.
  2. Type in the randomization for treatments of interest.
- Print signature line so person assessing plots can sign printout for GLP/GEP purposes.

Optionally average or sum all subsamples to a single value per plot and summarize class assessments. Printouts can also be previewed on screen. When printing or transmitting, any calculated means for treatments and plots are formatted to the same accuracy as the most accurate data point in each treatment or plot. Accuracy is added if needed until the printed mean differs from the actual mean by no more than three percent (percentage is an option that can be changed).

Printer: ARM DatCol software does not require a printer. However, we strongly encourage anyone using a data collector to transfer assessments to ARM, or print data before leaving the research site. Either method provides security from losing data due to equipment problems or mistakes.

Transmit to Personal Computer

Once completed, assessments are transmitted (uploaded) from the data collector to a personal computer (PC), either a PC in the office or a notebook PC while traveling. Options are:

- Average or sum subsamples into one value per plot and rating, such as when rating a large number of subplots.
- Optionally summarize class assessments per plot and calculate percent infestation.
- Transmit directly to ARM; with option to batch transmit all assessments on the data collector.

Hardware Features of Psion Workabout Pro

OS:	Microsoft Windows CE .NET 4.2
Screen:	3.5 in. (8.9 cm) diagonal, 1/4 VGA 240 x 320 transflective portrait mode TFT (color) or LCD (monochrome) touch screen
Keyboard:	57 keys, separate number keypad
Processor:	400 MHz Intel Xscale PXA255
Memory:	128 (color) or 64 (monochrome) MB RAM
Data stored:	recommend 256 MB or larger SD card
Water/Dust:	sealed from water and dust to IP54 (light rain) rating
Durability:	withstands multiple drops of up to 1.2m (4 ft.) drop to polished concrete
Temperature:	14° F to 122° F (-10° C to 50° C) operating
Dimensions:	8.7" x 3.5" x 1.7" (221 x 90 x 44 mm)
Weight:	16 oz. (454 g) including batteries
Power:	batteries: 3000 mAH lithium (recommended) for up to 12 hours operation, or 3 AA Alkaline; includes internal backup battery
Warranty:	1 year

Hardware Requirements for Workabout Pro

The Psion Workabout Pro is a rugged, relatively low cost, and light-weight handheld Windows CE computer. This industrial computer has an hourglass shape with a separate number keypad. The display is backlit with adjustable contrast.

A Psion data collector kit is available from GDM that includes the hardware and software needed to effectively use DatCol software and ARM rating shells for data collection, including:

◊ ARM DatCol program for Workabout Pro

◊ Psion Workabout Pro CE.NET color computer, docking station, power lead, and 2 high capacity rechargeable lithium batteries

◊ SD (secure digital) storage card for secure data storage

◊ Spread CE spreadsheet software suitable for Workabout Pro computer, for entering data into ARM rating shells

Contact GDM for pricing information by sending an email to staff@gdmdata.com.