WestfaliaSurge

- REGISTER 16 -

Instruction Manual

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DAIRYPLAN - DPDataExchange

Data Exchange Program for Transferring Information to and from WestfaliaSurge's DAIRYPLAN DP5 System using the ADIS and/or DII Protocols

ADIS is the *Agricultural Data Interchange Syntax* given by ISO 11787. The international Data Dictionary is defined in ISO 11788.

DII is the *Dairy Information Interchange* protocol recommended by the Milking Machine Manufacturers Council of the United States of America.

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1. Using DPDataExchange

1.1 Overview

DPDataExchange is WestfaliaSurge's program for connecting DAIRYPLAN DP5 to the outside world. WestfaliaSurge has long provided data import / export capabilities using ascii files. But with DPDataExchange, data transfers are controlled using either the "ADIS" or the "DII" protocol, which eliminates much of the hassle of ordinary ascii transfers. With DPDataExchange, you can easily transfer DAIRYPLAN data to or from any program which also uses the one of these protocols.

1.1.1 The DII Protocol

First suggested by the U.S. Milking Machine Manufacturers Council of FIEI in 1989, most major American suppliers of on-farm Dairy computers have endorsed this method of data exchange. Now, several DRP centers and other agencies are testing it as well.

A "DII" file contains more than just your data: it also contains "definition" records to precisely define what form the data takes. With DII, you do not need to spend time matching your software to the sender's program, this can all be done automatically.

"DII" also has a more advanced level: it is possible for one DII file to *ask questions*, and get properly formatted answers in a second file. Again, this automates the process of sending information back to your records processing center: they can ask for exactly what they need, and DPDataExchange can automatically create the required file, *without need to design reports or any other complex procedure*.

1.1.2 The ADIS Protocol

ADIS is a logical extension of DII plus improvements based on other protocols. ADIS was formally accepted by the International Standards Organization. DPDataExchange versions 4.2 and 4.3 follow the ISO/TC23/SC19/WG2 draft dated September, 1991, approved as ISO-DIS 11 787 "ADIS" in 1993. DPDataExchange is compatible with classes A, B, C, and D.

1.1.3 Why the ADIS / DII Protocols are Necessary

In the dairy industry more and more is a need to effectively automate data exchanges. Around the world, there are hundreds of organizations which may transfer data to or from your farm. It would be prohibitively expensive for any company to write separate interface programs for all of them.

As the ADIS / DII protocols comes into use, they provide a way for equipment manufacturers to exchange data with a variety of organizations without special programming.

ADIS / DII allows equipment manufacturers to meet other parties half way. DPDataExchange does most of the work: other organizations need only implement the particular formats needed and ignore the rest.

1.1.4 Which protocol to use

For customers receiving data from other sources, DPDataExchange will automatically switch between ADIS and DII. For system developers, ADIS should be used whenever possible because of it's international endorsement.

1.1.5 Modems, diskettes, and other hardware

The ADIS and DII protocols do not specify any particular physical media. You must make arrangements with your Dairy Records Processing Center to either

a) exchange diskettes by mail: in this case you need only know the name of the file to read from the diskette.

- or -

b) exchange the files by modem: in this case you must use a communications program. Your DRPC may provide this, or at least recommend a terminal program as provided by standard Microsoft (TM) Windows.

- or -

c) exchange the files via Internet, e.g. as a E-Mail attachment or Upload/Download. Ask your DRPC how they deal with it. Be aware, if you put the text into the E-Mail itself, the data may be spoilt because of line wrapping

1.1.6 Scheduling monthly data transfers

In a fully automated "traditional" system, the following transfers would occur:

Before "Test Day":

1) The processing center provides the farm with an ADIS "request" file for breeding and other information traditionally filled out on barn sheets. This file could be mailed on a diskette, or sent by modem or Internet.

2) The dairyman processes this file with DPDataExchange. A return file is created automatically. All he needs to do is insert the diskette in drive A:, and enter "DPDataExchange *name*" from a DOS prompt or a link specified before. The processing center must specify the transfer file name.

3) The dairyman sends this return file back to the processing center in time for the center to print "barn sheets" (or whatever materials are needed for "test day").

After "Test Day"

4) The processing center provides the farm with another ADIS file giving the test results back to DAIRYPLAN. Again, the dairyman only needs to enter "DPDataExchange *name*" (again, the processing center must tell the dairyman the name of the file to load).

For "Labor Efficient Records", steps two and three would occur immediately after milking on test day. The "request" file would include milk test data in addition to breeding data.

1.2 Running DPDataExchange

1.2.1 Loading a file from disk

Use this procedure when your Dairy Records Processing Center has given you a data diskette **prepared for ADIS or DII format**. Also use this procedure if you have downloaded such a file with a modem or from the Internet.

1) If you want to start it with a filename: use the “Execute” Command in the taskbar or call from a DOS box to start

DPDataExchange *filename*

where "*filename*" is the name of the file your DRPC has given you. (The *filename* can include a disk drive name, or subdirectory name to read files directly from a diskette or hard disk subdirectory.)

2) **If you require a data conversion program:**

Enter *programname* **where *"programname"* is the complete command needed to load your data. Your DRPC or program developer must tell you this command. The command may be more than one word, or perhaps a "batch file". Your conversion program may take some time to convert your files, and then it will run DPDataExchange with the converted file.**

F for instructions on making data conversions, see section 5, page 73.

2) You will be shown data from the file. Press the button with the exclamation mark to start the processing. A dialog pops up showing the fields to be imported.

Yes: Yes, load this information into DAIRYPLAN DP5. You will be asked subesequently for each record line if you want to load the data.

No: No, do not load this information: continue displaying the next record definition.

Yes To All: Automatically accept all records: if you answer this to a block question, all blocks in the file will be loaded without further user intervention. If you answer this to load an individual animal, only animals in that block will be loaded automatically.

No To All: This block an all data lines for it will not be loaded.

Stop: Exit from the program. Note: all data imported prior to pressing ESC will still be in the file- there is no way to "undo" the import except to restore an old backup.

4) DPDataExchange will load any ADIS or DII data in the file, and do any other tasks specified in the file (for example, create a return file in answer to "requests").

1.2.2 When DPDataExchange may be run

In principle DPDataExchange can be run at any time but to avoid any side effects better you do it between milkings if you have automatic milk meters.

1.2.3 Error handling

If DPDataExchange detects a problem an error message appears showing the data block which is currently processed. Press “Stop” to abort DPDataExchange, or any other key to ignore the error and attempt to continue. With the "K" option, DPDataExchange aborts automatically without waiting for you to press a key.

DPDataExchange will also place comments about the error into the output file (DPDataExchange.ADS if none other is specified). DPDataExchange may also place a "fault" record into the output file so the sender can respond automatically if the sender has such a capability.

1.2.4 Importing animals which are not in DAIRYPLAN DP5

You are warned if a animal you are importing has not been previously entered in DAIRYPLAN DP5. As usual, you can answer Yes, No, No-To-All to refuse loading or Stop to exit the program. Yes-To-All will automatically load all animals even if they are new to DAIRYPLAN DP5. This allows an entire herd to be easily loaded using DPDataExchange.

1.2.5 Generating output files

DPDataExchange will respond to any "request" and "search" commands in an ADS file by generating a new "ADS" output file with the requested information. The output file name is DPDataExchange.ADS, unless

a) You specify an output name as the second parameter on the command line. Example:

DPDataExchange A:REQMILK A:OUTPUT

This will respond to any "request" commands by generating file OUTPUT.ADS on drive A:. Note that you must specify the floppy drive for both input and output- otherwise the hard disk is assumed.

b) Normally an ADIS file is created for output, but you can force DPDataExchange to create a DII file by using the **-U** option. See section 3.2.2, page 17.

c) The transfer file may contain an "output" record (a line starting with “ON”) directing output to some other file. It is possible for one input file to create multiple files with multiple "output" commands. See section 3.3.5, page 25.

1.2.6 DPDataExchange's use of user-defined fields

DAIRYPLAN DP5 allow extensive use of "user-defined" questions. These may be accessed by DPDataExchange to send or receive data which is not part of WestfaliaSurge's standard management program. ADIS numbers and/or DII mnemonics for transferring this data may be entered by the user, or created automatically by special control records in a DII file. Refer to section 4.3.5.2, page 26 for details.

1.2.7 Importing Vet and Breeding Data

DAIRYPLAN DP5 saves all vet history in a vet-event file, including the animal's birth, inseminations, breedings, calvings, and treatment information. Vet related information loaded through DPDataExchange will be loaded as follows:

If the new date matches a date already in the file, the new information is loaded as part of the existing vet entry. If the new date does not match, a new vet entry is created.

This makes it difficult for DPDataExchange to correct entry errors of vet data: the correct information will usually end up creating a separate entry, with the incorrect information still in the file. For example, it is possible to enter two different birth dates with DPDataExchange.

To correct these problems, it is possible to send a "deletion" record to DPDataExchange for the animal and then re-enter the whole animal, or the user may manually delete the incorrect information after DPDataExchange finishes. Note, however, that many "vet" entries have side effects which are difficult to reset on an automatic basis: developers are advised to use these capabilities with caution.

You can also specify the option “T” or set the flag control record “Trigger” to create future vet actions for each vet action loaded according to the vet action setup of your system. The future vet actions will not be created or changed if the vet action of same date already exists

Note: The vet event date MUST be included for DPDataExchange to load related vet fields.

1.2.8 Importing Milk Summary Data

DAIRYPLAN DP5 can be connected to WestfaliaSurge Metatron milk meters to automatically generate milk production records. Generally these records are more accurate than other test procedures.

Therefore, for systems with meters, DPDataExchange will prevent importing data which can be calculated better with Metatron data. These are for example lactation totals and the current daily average milk weight. The fields which cannot be imported are marked by a “refuse sign” in the import dialog.

However, if you wish to load them anyways, use the "I" option. For example, use the "I" option to transfer test records maintained before the Metatrons were installed.

Specific fields which are affected are noted in the field descriptions part of this manual.

1.2.9 Importing Projected Milk Totals

WestfaliaSurge's DAIRYPLAN DP5 software can make several 305 day milk projections. However, we recognize that DRP centers can perform more accurate projections. Therefore, DAIRYPLAN DP5 versions 4.1 and later include a mechanism for overriding the internal projections with projections made by outside sources. These can be set by importing M305P, F305P, P305P, and MEQUIV. The "I" option is not required.

1.2.10 Importing Individual Milk Weights

DPDataExchange allows transferring individual milk weight data to and from DAIRYPLAN DP5. This allows transfer of milk meter data from any manufacturer using the ADIS or DII protocols.

To import milk weights, a individual milking date field must be in the transfer file so DPDataExchange can record the data.

A milk weight received from DPDataExchange is treated exactly like a milk weight directly from a Metatron meter. This means new averages and lactation totals will be calculated as described in the DAIRYPLAN DP5 user manual, as long as:

a) The time (“IMTim”) is specified
b) The date and time are later than the last known entry.

In difference to version 4.4 it is no longer necessary to specify at least 1 Metatron milk meter in the Parlor Setup. Import is not possible without the “I” option. Totals and avmlk will be recalculated always if imported date later than the last known entry

1.2.11 Using TDCDAT and LHDAT to control enrollments

These special data fields are maintained by DAIRYPLAN DP5 software to facilitate proper enrollment in external databases. The "TDC Date" (“Tombstone Data Changed”) is changed in DAIRYPLAN DP5 each time the user enters a new animal or sire or changes the sire, dam or registration numbers.

The "LH Date" (“Left herd”) is set when the user removes an animal from the active herd.

2. Writing a Customized Conversion Program

This section is for professional computer programmers desiring to write an ADIS or DII format file conversion utility program.

> Many files do not need customized programming. Follow these instructions only as a last resort! First try the ASCTODII program. See section 5, page 73.

2.1 Development SampleFiles Installation

WestfaliaSurge has assembled a set of sample programs and files for people interested in writing ADIS file conversion programs. These are included in the "DPDataExchange Development " directory on the DP5 installation CD. Copy them into the DAIRYPLAN directory of your PC.

2.1.1 System Requirements

DPDataExchange requires WestfaliaSurge's DAIRYPLAN DP5, version 5.017 or higher. The dairyman must be familiar with the management program prior to using DPDataExchange.

If automated feeding and milking equipment is installed, it must be fully operational for one month before using DPDataExchange. Otherwise expecially the (re)calculation of average data may lead to unpredictable results.

2.1.2 Installation

> NOTE: The programs DPDataExchange and ASCTODII are included with the normal DAIRYPLAN DP5 CD. **You do not need to install more unless you require other special files.**

Copy the entire "DPDataExchange development files" into the subdirectory with a DAIRYPLAN DP5 demo program.

2.2 A Sample ADIS file

DPDataExchange is run in the subdirectory containing DAIRYPLAN DP5. Either you specify the transfer file name on the command line or you open the file after calling DPDatExchange. The ".ADS" extension is assumed by default.

EXAMPLE:

> Type "**DPDataExchange SAMPLE"** (then Enter) in a DOS Box opened on the DAIRYPLAN directory

DPDataExchange will read file SAMPLE.ADS. Press the Button with the exclamation mark "!" to start processing the file. The data to be imported will be displayed on the screen, and you will have an opportunity to decide whether it should be loaded. You are first asked if you wish to load the data block-then each individual animal. If the animal numbers are not yet included in the data set, you will be asked if you want them to be created. Second, some animal data will be requested and written to the file "SampleAnswer.ads". Refer to section 1.2, page 5 for basic instructions on running DPDataExchange.

File SAMPLE.ADS from the "DPDataExchange development " looks like this:

```
DH00000000000000080009000062400090000808000900003080009000040 60
VH000000DD:     Westfalia DP5           5.017   20010112102200
CN  This is a sample ADIS file for DAIRYPLAN DP5
CN  Load Animal Data (Animal Number, Name, Group, Type)
DN00000000900070060009000451200090003302000002108010
VN000000  7001Suzie        7F
VN000000  7002Bossie       3F
VN000000  7003Bessie       3F
VN000000  7004Leslie       7F
VN000000  7005Fredrika     9F
VN000000  7006Cutie        7F
VN000000  7007Jamie        2F
VN000000  7008Frizzy       1F
VN000000  7009Bella       10F
VN000000  7010Sheri        1F
TN
CN  Request Animal Data (Animal Number, Responder)
CN  for all Animals with a Responder between 1000 and 2000
CN  into the given Output File
ON  SampleAnswer.ads
SN00000000900009604010002000
RN00000000900070060009000 96040
TN
ZN
```

This sample file has three sections:

> The **header section** must come first in all ADIS files. This identifies the sender.

A **data section** has a definition record and value records. The 10 value records here have data for ten animals. You may place as many data sections or "data blocks" in the file as you like.

A **request section** has a request to get data back out from DAIRYPLAN DP5 to return to the sender. Again, you may have as many requests as you wish in a single file.

This is what each line is doing:

Line 1: DH... This is the "definition" for the file "header". The "event number" (or “entity number”) is 0, and then "data column codes" are given as

0000 0000 08 0 for the "Data Dictionary Type"
0090 0006 24 0 the file sender
0090 0008 08 0 the sender's program version
0090 0003 08 0 the file date
0090 0004 06 0 the file time

F refer to section 4.3.4, page 21 for more information on "definition" records and data column codes.

Line 2: VH... This is the "Value" record for the file "Header". Each data field is filled out according to the item numbers and widths specified.

Line 3: CN... This is a "Comment" and has no effect on the data transfer

Line 4: DN... This is a "Definition" of "Normal" data. The 6-digit "event number" is again zero. Then four data columns are defined:

0090 0070 06 0 the animal number
0090 0045 12 0 the name
0090 0033 02 0 the group number
0000 2108 02 0 the type of the animal (animal sex)

Lines 5-14: VN... These lines contain data for 10 animals, in the column format specified by the definition record.

Line 15: TN This is a "termination" record. This is optional, but is often used to separate logical sections of an ADIS file.

Line 16: ON... This sets the name for an ADIS output file we wish to create with a request a little later.

Line 17: SN... This sets up a "search" condition for the request coming up next. We want to search for animals with a responder number between 1000 and 2000. We specify item 00900096 with a width of 04 and precision 0. Then we set the low value as 1000, and the high value as 2000.

Line 18: RN... Now we make the request. We want to know:

0090 0070 06 0 the animal number
0090 0096 04 0 the responder number

DPDataExchange will make a file containing this information in this format in response to our request.

Line 19: ZN.. This marks the end of the file. Any follwing lines would be ignored.

2.3 A "BASIC" Language Programming Example

The following sample program, *example.bas*, is on the "DPDataExchange development diskette" to show how a BASIC program can make an ADIS file.

```
  100 REM   Open ADIS File
  110 REM
  120 OPEN "O", #1, "EXAMPLE.ADS"
  130 REM
  140 REM   Header Definition Record
  150 REM
  160 PRINT #1, "DH00000000000000080002016812400020157508O"
  170 REM
  180 REM   Header Value Record with sending date
  190 REM
  200 INPUT "Enter Test Date (CCYYMMDD) > ", D$
  210 PRINT
  220 D$ = RIGHT$ ("00000000" + D$, 8)
  230 PRINT #1, "VH000000DD      BASIC SAMPLE PROGRAM    " + D$
  240 REM
  250 REM   Data Definition Record
  260 REM
  270 PRINT #1,
"DN00000000201896060000051010410020005304200200054042000051540500"

 1000 REM
 1010 REM   Main Loop: Ask for animal number and info
 1020 REM
 1030 PRINT
 1040 INPUT "Enter Animal Number (0 to exit) > ", C
 1050 IF C <= 0  GOTO 2000
 1060 INPUT "Enter Milk Amount > ", M
 1070 M = M * 10
 1080 INPUT "Enter Percent Fat > ", F
 1090 F = F * 100
 1100 INPUT "Enter Percent Protein > ", P
 1110 P = P * 100
 1120 INPUT "Enter Somatic Cell Count (in thousands) > ", S
 1130 REM
 1140 REM  write data value record
 1150 REM
 1160 PRINT #1, "VN000000";
 1170 PRINT #1, USING "######";C;
 1180 PRINT #1, USING "####";M;F;P;
 1190 PRINT #1, USING "#####";S
 1200 GOTO 1000

 2000 REM
 2010 REM   write T and Z records and close file
 2020 REM
 2030 PRINT #1, "TN"
 2040 PRINT #1, "ZN"
 2050 CLOSE #1
 2060 SYSTEM
```

2.4 A "C" Language Programming Example

The following sample program *example.c* is on the DPDataExchange development disk to show how a "c" program can make an ADIS file.

```
#include "stdio.h"

main ()
```

```
{
   char date [10];
   long animal;
   double milk, pfat, ppro, scc;
   FILE *outf;
                                        /* open ADIS file     */
   outf = fopen ("EXAMPLE.ADS", "w");
                                        /* Header Definition  */

   fprintf (outf, "DH000000000000000800020168124000201575080\n");

   printf ("Enter Test Date (CCYYMMDD) > ");
   scanf ("%s", date);

                                        /* Header Value Record */

   fprintf (outf, "VH000000DD      BASIC SAMPLE PROGRAM    %8.8s\n",
       date);

                                        /* Data Definition */

   fprintf (outf,
"DN00000000201896060000051010410020005304200200054042000051540 50\n");

   while (1) {
                                        /* ask for animal numbr */

      printf ("\nEnter Animal Number (0 to exit) > ");
      scanf ("%ld", &cow);
      if (cow <= 0L) break;
                                        /* ask for data      */
      printf ("Enter Milk Amount > ");
      scanf ("%lf", &milk);
      printf ("Enter Percent Fat > ");
      scanf ("%lf", &pfat);
      printf ("Enter Percent Protein > ");
      scanf ("%lf", &ppro);
      printf ("Enter Somatic Cell Count (in thousands) > ");
      scanf ("%lf", &scc);
                                        /* write data record */

      fprintf (outf, "VN000000%6ld%4.0f%4.0f%4.0f%5.0f\n",
         cow, milk*10.0, pfat*100.0, ppro*100.0, scc);
      }
                                        /* write end records  */
   fprintf (outf, "TN\n");
   fprintf (outf, "ZN\n");
                                        /* close file */
   fclose (outf);
   }
```

2.5 A more complex conversion program

The "DPDataExchange development disk" contains source code for the "C" program "ADR.C". This is an example of one way to make a relatively complex ASCII to ADIS conversion program. This program converts a former data file format (“ADR Satzarten”) used in Germany by the *”LKV” (Landeskontrollverband)*.

To run this program, from the command line enter **ADR ADR.TXT.** This produces file ADR.ADS. File ADR.ADS differs from the ADIS standard in that it contains value records with different event numbers in mixed-up order. DPDataExchange can load such files, but if another program cannot handle this, the "/S" flag can be used to use "strict mode". In this case ADR will put in a new definition line each time the event number changes. This makes a much larger output file. Note also that the original text file contains only "registration" numbers rather than animal numbers. DPDataExchange can load such files, but the animals and their registration numbers must be first entered into DAIRYPLAN DP5.

To modify this for your own use, you must use a text editor and "C" compiler to make changes according to your particular situation. You will probably need to make the following changes:

1) You may need a different technique to distinguish the line types. (ADR assumes the first two characters of each line are a two-digit line type).

2) You will certainly need to change the various ITEM and REC structures to reflect the data you are actually using.

3) You may need to modify or add the various special data conversion functions for individual data fields (ADR uses a technique where each data element is controlled by a structure. This structure contains a function pointer to a conversion function which may be called if the conversion is more than a simple text copy).

3. DPDataExchange Technical Reference

3.1 Matching Special Fields

The ADIS and DII protocols allow great flexibility with manufacturer-specific field definitions. Occasionally, another organization may use a different name or number for a field which DPDataExchange has defined, or the field may be defined for a different width or number of decimal places. Special command records allow redefinition of fields. These special records may be in a file being loaded explicitly, or with "HDI" files technique described below.

3.1.1 Defining and creating new field names and numbers

The command record

w:define NewName OldName

will make DPDataExchange respond to the field descriptor "NewName" exactly as it is preprogrammed to respond to the "OldName" field. You may use either DD numbers or mnemonics in definitions. Also, “OldName” can be an expression including formulas. New definitions remain in effect until DPDataExchange resets or exits. There are other definition possibilities, including “event-specific” definitions. Refer to section 4.3.5.2, page 26.

For the sake of backwards compatibility it is also possible to specify

wN define NewName OldName

The command record

w:create NewNumber NewName Type Decimals Description

will make DPDataExchange create a field in the "user-defined" section of DAIRYPLAN DP5 (unless it already exists, or there is no more room). The new field remains in effect unless changed by the user. "Type" can be "Number", "Date", "Cost" or "Word". "Decimals" applies only to numbers. These entries can also be modified with the DPSetup program.

3.1.2 Changing the width

DPDataExchange will automatically adjust field widths to whatever width is specified in the definition or request records. Character data (alpha) is truncated to fit whatever width is specified. If numeric data does not fit in a requested field width, a warning appears on the screen, and the field is zero filled.

3.1.3 "HDI" files

DPDataExchange checks several fields in the header, if a file exists which name equals the field value extended with ".HDI". If such a file exists, it is automatically loaded and processed. For example you can create a HDI file for a special sender organization containing the special define statements necessary for a data transfer with this organization.

"HDI" files may contain any records used by DPDataExchange, but the usual purpose is to define special field names and options used by the sending organization.
Follwing header fields have the "HDI Automatic":

Menmonic	DAIRYPLAN Item Number	ISO Item Number
DD	0000 0001	0000 0000
ADED_ISO	0000 1015	0090 0002
ADED_Nat	0000 1016	0090 0009
ADED_Man	0000 1017	0090 0012
Sender	0000 1013	0090 0006
Receiver	0000 1018	0090 0006

3.2 DPDataExchange Options

Besides input and output file names, you may specify certain options on the command line. Options may appear in any order, preceded by a dash (-) or slash (/).

Options can be set several ways: on the command line when DPDataExchange is started, or by "control records" in the file. When setting options from within the file, the "flag control record" is the preferred method. For example, the record:

f:auto=1, errexit=1;

will set DPDataExchange int "auto" mode with automatic exit on error. In the future, some of these may be adopted by all manufacturers as "public" options. It is also possible to use a Westfalia Command Record of "w: options -AK".

3.2.1 Options Controlling User Interaction

-A f:auto=1

"Auto" mode without asking:
This will automatically import all animals from all blocks in the file, including animals not previously entered in DAIRYPLAN DP5. This must be used with care to prevent accidentally loading the wrong data. The user is still warned of possible errors, unless "E" or "K" is also used.

-K f:errexit=1

Kill program on error:
with this option, DPDataExchange will exit to DOS upon finding any error. The PC will sound a warning, and the program will terminate with a DOS errorlevel code.

-E f:errok=1

Errors accepted:
with this option, DPDataExchange will attempt to ignore all errors. The error message will be displayed briefly, then processing will continue. This is designed for unattended remote control systems.

-Q f:auto=0

Query" mode:
this overrides previously set "auto" answers to again ask for user confirmation.

3.2.2 Options Controlling File Format

-U f:dii=1

"USA" or "DII" mode:
this option forces DPDataExchange to use the DII protocol in preference to ADIS. **DPDataExchange can read either ADIS or DII files, regardless of this flag setting.** But this does have the following effects:

a) Running DPDataExchange *without* specifying a source filename extension will assume *.DII files, rather than *.ADS.
b) Output files will be created in DII format instead of ADIS.

-S f:strict=1

Strict mode:
manufacturer-specific control records and data fields are ignored. Unrecognized data fields and control records are always ignored, so it is normally possible to load data from any source without the "S" option. However, if you are having difficulty loading files which were not intended for WestfaliaSurge products, try this option.

-C f:nocheck=1

Checksums omitted:
with this option checksums are not required for DII input lines, and not generated for DII output. ADIS lines *never* use checksums.

-D f:delim=1

Delimit fields:
The ADIS and DII standards do NOT separate data fields with commas. Use the "D" option to insert commas between all fields for easier human reading. (As an alternative to the D option, use the special formatting codes in section 5.3.13, page 55; these maintain ADIS / DII file compatibility.)

-B f:blankfil=1

Blank fill unrecognized fields: Normally, for a DII-style "request" an unsupported data field is filled with zeros. With this option, an unknown field is set to spaces. ADIS-style output files use the vertical bar for this purpose.

3.2.3 Options Controlling Data Import

-I f:init=1

Initialization mode:
Normally, systems with Metatron milk meters should not import milk data which can be more accurately obtained from the automatic meters. Therefore DPDataExchange will normally prevent importing these fields. With the "I" option, DPDataExchange will import milk data on any system.

-Z f:zero=1

Zeros loaded:
Normally, blank and zero fields are ignored on data import: this prevents accidental erasure of data previously entered in DAIRYPLAN DP5. With the "Z" option, all data is loaded, even if it is zero. For example, use this option for loading feed amounts when some animals are not supposed to receive grain.

-T f:trigger=1

Triggered Vet Actions:
Normally, DPDataExchange will not adjust “future” vet actions when importing “real” vet actions. However, with this flag set, DPDataExchange reschedules all future vet actions after import of a “real” action, just like when the user enters it manually. (This has no affect on direct import of “future” vet actions using the special codes for this purpose.)
Remark: option was named "trigvet" in earlier versions (DPLINK).

3.2.4 Options Controlling Requests for Data Export

-L f:life=0

Lifetime data output:
If you want only the most recent lactation to be checked for veterinary data (ie inseminations), switch off this opion (is set per default since 5.0).
For earlier versions: Use the "L" option to check the animal's lifetime records. For example, with the "L" option, the code SRVDAT would show last year's breeding for fresh cows. Without the "L" option, this would return as zero.
Default setting is "on".

-M f:multrec=1

Multiple record output:

When processing a "request" record normally several records of one animal will be exported. If you want only the last action to be exported, switch off the multrec option. Then only one record is produced per animal, with the most recent data available. If there is a search condition in front of the request, always multiple records will be exported if available. With this option switched on, DPDataExchange may create multiple records for one animal even without a specific search record.

However, there is one side effect: all vet data in the output record reflects the "search index" used to find the valid data. This is to insure (for example) that SRVSIRE will match the SRVDAT for multiple breedings. Occasionally this can cause unexpected results if the requested data record has vet data of several types. For example, if the second breeding meets the search, and preg test dates are also requested in the same output record, the preg test shown will also be the second preg test for the cow. Of course, in all cases the data will be accurate- it is the output sequence which may be affected.

In light of this, it is best to use requests with data relating to a single event. For example, do not mix calving and insemination data in the same request record. Remember, you can make as many different requests as you want within a single file.

Default setting is "on". DPDataExchange will *always* produce multiple records when this is necessary to fulfill specific "search" requirements. See section 4.3.4, page 23.

-H f:heifer=1

Abandoned with 5.0 version (restrict via search restriction on lactation number)

-R f:arcmode=1

Archive mode:
normally DPDataExchange does not include "archived" animals in searches. With this flag set DPDataExchange will search all animals, including archive animals.

-F f:freesrch=1

Free search of daily milk data:
Abandoned with version 5.0. Use different fields for milk data synchonized to last milk date of whole herd (“dmwt” field for milk of last 24h) or milk data for individual animal (“acmlk” actual milk last 24h)

-G f:general=1

Abandoned

(General data is repeated with indexed data: Normally, when exporting vet records or other indexed fields, output lines using a non-zero index show question marks for any fields with non-indexed data: for example, the group or responder numbers. This clearly tells the receiver that the requested data is not known for the date indicated (in theory, another program might save the group or responder numbers *as entered at that time)*.
With the "G" option, non-indexed fields are always exported.)

-J f:charansi=0

Introduced with version 5.018

Since version 5.018, export and import can use special Characters with ASCII numbers > 127 in text fields. If you want pure ANSI char sets for input and output files, set new flag option "CharAnsi" to 0 or specify new option "j" on the command line.

3.3 Command Records

3.3.1 ADIS record formats

ADIS records (lines) are in the form

TSEEEEEED...

where:

R the first character must be a letter specifying the line type

S the second character must be a letter specifying the "status"

E the next six characters are usually digits forming the "event number" oder “entity number” as it is called in laetr ADIS protocols. Line types where the use of "event numbers" is mandatory are noted below (000000 may be used if event numbers are not needed for the application).

D... the remaining positions in the record depend upon the record type.

Each record is terminated with a Carriage-Return Linefeed sequence, as with other ASCII files under MSDOS.

3.3.2 DII record formats

DII records follow the form:

R:D...C

where:

R the first character must be a letter specifying the record type, *except for data records which must begin with a digit.*

: the second character is always a colon, *except for data records*.

D.. the remaining positions depend upon the type of record

C DII records always end with a checksum

Each record is terminated with a Carriage-Return Linefeed sequence, as with other ASCII files under MSDOS.

3.3.3 How DPDataExchange selects between ADIS and DII lines

DPDataExchange can read records of either format, regardless of the **-U** and other flag settings. Records with a colon in the second position, or beginning with a digit are assumed to be in the DII format. *All other records are always assumed to be in ADIS format.* ADIS and DII records may be intermixed in the same file.

3.3.4 ADIS and DII "Public" records

Record descriptions are shown in ADIS form. However, all records can be processed using either the ADIS or DII conventions as described above, unless otherwise noted.

H: Header record:
tells the receiver basic information about the sender. This is defined in the DII protocol only.

ADIS does not define a "header" record, instead special item numbers are used to transfer similar data with an "H" status. But DPDataExchange will accept this record in the ADIS format as "HHdata", where "data" is the same block of data as the DII header record.

H<status><manufacturer><version><herd><date><units><supervisor>

"manufacturer"	6 character abbreviation of sender
"version"	4 character version of sender
"herd"	8 character herd code
"date"	8 digit date for file
"units"	2 character: either "kg" or "lb"
"supervisor"	4 digit supervisor code (may be zero)

For DPDataExchange, header records are optional and may appear anywhere in the file. The information is displayed on the screen. **All options are reset to as at program startup.** Immediately after loading a header record, DPDataExchange checks if to load any "HDI" files with setup information for special header fields. Refer to section 4.1.4, page 16.

D: Definition record:
this tells DPDataExchange what data is coming. This is accomplished by listing "Data dictionary" codes and field widths. ADIS and DII use different methods of presenting these codes: DPDataExchange can read either method, or a combination. The ADIS form requires an "event number". Then follow for each field the field's DDI number, its length (two digits) and its precision (one digit):

D<event>(<DDI-no><field length><precision>)

DII format must end in semicolon.

D<event>(<DDI-no>[\]<field length>[.]<precision>[,])

"DDI-no" Either the 8 digit "data dictionary number" from ADIS, or the DII mnemonic. If the DDI-no is not *exactly* 8 characters, the backslash *must* follow. (Leading spaces are counted as leading zeroes.)

"field length" The length *must* be included for both ADIS and DII protocols. If the field length specification is not *exactly* 2 digits (ie _1 or 01 to 99), a period or comma *must* follow for DII. (A leading space is treated as a leading zero.)

"precision" The number of implied decimal places is required for ADIS, but optional for DII. It can be only one digit (0-9). If it is *not* included, a comma *must* follow.

A DDI-no or mnemonic must be specified for *each item* of data which will be sent.

"Data Dictionary" codes in ADIS and DII

The **DII** style is **xxx\L.R** That is, a mnemonic followed by a backslash, followed by the field width, and comma delimited. (The period followed by the resolution or "number of decimal places" is *not* part of the DII standard, but DPDataExchange will accept this.)

The **ADIS** style is **DDDDDDDDFFR**. That is, an 8-digit Data Dictionary number, followed by a two digit field width, followed by a single digit resolution. Commas delimiters are *not* part of the ADIS standard.

Use of braces
The DII protocol allows the use of braces to specify a block of repeated data, as in 7{DMDIM\4,DMWT\4} to get the last seven days of milk data. DPDataExchange allows this capability for both ADIS and DII file formats (though it is not ADIS standard). The exact use of braces depends upon the particular data dictionary elements.

V: Value Record:
ADIS uses the letter "V" to denote "Value" lines containing the data according to the definition line above. For ADIS these must contain the same "event number" as the definition record. The DII protocol states that data records have no prefix, but instead must begin with numeric data. However, some DII programs use "V:" before all data records. DPDataExchange will accept all three forms as data records.

ADIS:	V<status><event no>(<value>)
DII:	(<value>)
(also ok)	V:(<value>)

NOTE: Both ADIS and DII standards say that data value records must immediately follow the corresponding definition records. However, DPDataExchange will allow data value records to be anywhere after the definition. "Event numbers" are used to match the data value record with the corresponding definition. **This means different kinds of data value records can be in mixed order, so long as unique event numbers are used for each definition.**

E: End record:
This has slightly different meanings for ADIS and DII. For ADIS this marks the end of a *file*, for DII this marks the end of a *data block*. In the DII case it shows a count which is compared with the number of records actually read. Since DPDataExchange allows new headers at any time, an ADIS "End" record is ignored.

ADIS style: EN

DII style: E:<count><checksum>

"count" a 4-digit count of the number of records read in the preceding data block.

"checksum" (as required for all DII records)

C: Comment record. These records contain free text. DPDataExchange displays the last comment record containing text while operations proceed.

C <text>

S: Search record: This tells DPDataExchange which animals to list when answering a request. This also has the effect of forcing DPDataExchange to search through a specific DAIRYPLAN DP5 data table, such as the vet records, milk measurements, plotting averages, etc.. When processing a request record with a specific "search", DPDataExchange may produce multiple records for one animal if more than one table entry matches the search conditions. Refer to specific field descriptions for details (see section 4.3, page 37.) With DPDataExchange, up to four (4) search records may be used with a single request. Data must match *all* search conditions (logical *and*).

"ADIS" allows multiple search records *preceding* the related Request record. However, "DII" allows only a single search record immediately *following* the Request record. Therefore, if DPDataExchange finds a "DII" style search record immediately following a request, these search conditions are used. In all other cases searches must precede a request.

S<event>(<DDI-no><length><resolution><low val><high val>)<max records>

"DDI-no"	As described above with "D" records
"length"	"
"resolution"	"
"low val"	lower limit: must be exact length specified
"high val"	upper limit
"max rec"	maximum number of records to produce for each animal

DPDataExchange Version 5.0 or higher does not yet support the “max rec” feature

If "high val" is shown as question marks, the search finds the most recent *n* records, where *n* is "max rec". If "low val" is question marks, ADIS specifies that the first *n* records are to be produced. However, DPDataExchange shows *all* records (ignoring "max rec" for this search condition) and a warning message appears. Records are always produced in the newest-to-oldest order.

If more than one search record is used, DPDataExchange uses the smallest non-zero "max rec" specification for all searches.

DII protocol files require a comma between the DII code and the low and high values. The DII protocol does not allow for the maximum number of records. DPDataExchange will accept any record, with or without commas, and with or without a maximum number of records.

The ADIS "September 1991 Working Draft" document specifies that more than one search condition can appear on a single record (section 15.2, page 15). However, in some circumstances it is impossible to distinguish a second search condition from the "maximum records" specification.

Therefore DPDataExchange requires that multiple searches conditions must be specified with multiple search records preceding the request record.

R: Request record: This makes DPDataExchange produce an output file with data in the specified form. The format is exactly the same as for a definition record. See section 4.3.4, page 21 above. Output will be placed into file "DPDataExchange.ADS" unless otherwise specified. DPDataExchange produces one record for each animal in the file, unless a search condition is specified as described above.

R<event>(<DDI-no>[\]<field length>[.]<precision>[,])

NOTE: ADIS requires that Definition records *always* have at least one corresponding value record. If DPDataExchange cannot find any data to answer a request, a value record of question marks is produced.

F: File record:
This is defined by ADIS to reference a library file. These are ignored by DPDataExchange.

F Do not confuse this with the lower case "f" flag record. See section 4.3.5, page 25.

I: Include file:
this loads another DII file, then returns to the original file. "Include" files may be nested up to three levels. "HDI" files are automatically treated as include files when a header record is read. (This is not a standard DII record, but DPDataExchange will recognize it in either file type. For this reason both upper and lower case "I" is accepted).

I<status><path+filename>

O: **Output file name**: this directs any output into a file with this name. This record must appear before any request, error, or mirror records which are to be sent to the file. A single input file can create multiple output files by specifying different files for different requests. (This is not a standard DII record, but DPDataExchange will recognize it in either file type. For this reason both upper and lower case "O" is accepted).

O<status><path+filename>

T: **Terminate record**: This is defined in the ADIS protocol as marking the end of a logical block. It is ignored by DPDataExchange.

TN

Z: **Physical end-of-file**: This stops all further processing of the particular physical file being read. In the case of an "include" file or hardware io device, processing returns to the higher level file. This is not required by DPDataExchange.

ZN

3.3.5 Manufacturer-specific records

f: **Flag control record:**
This control record can be used to set DPDataExchange options. Any number of flags may be set with one record; a value of "1" turns the flag "on", a value of "0" is the default or "off" action. For example:

f: life=1, multi=1;

tells DPDataExchange to include lifetime history in multiple records for each animal. Refer to section 3.2, page 16 for available flags.

F Do not confuse this with the upper case ADIS "File" command. See section 4.3.4, page 24.

NOTE: as of this writing, several DII committee members have expressed interest in making this a "public" record in the future. If this occurs, some other letter will replace "f:", and some individual symbols will be replaced with upper case "public" equivalents.

p: **Pause record**:
the contents of this record are displayed on the screen, and the user is asked to press a key to continue. He may also press ESC to exit DPDataExchange.

m: **Mirror record**:
the contents of this record are sent to the output, and (for DII files) a new checksum is calculated. This can be used to automatically include comments or command records in the output file.

x: **Execute record:**
no longer supported since version 5.0.

w: Westfalia command record: this is used to send specific commands to DPDataExchange as follows:

As of this writing, it is not yet clear what method is best to send hardware commands using the DII protocol. These versions of DPDataExchange support two methods:

w:command (as shown in examples)
w:westfa command

F Note: DPDataExchange version 2.0 also allowed use of the lower case letter "z" for control records. This is no longer recommended because of potential confusion with the ADIS "Z" record. In the future other methods may be adopted in place of these.

General Command Records

w:version *X.Y*

Use this command to reduce future compatibility problems. A version number *x.y* higher than the actual DPDataExchange program version will produce an error message, thus you are assured that customers have version *x.y* or later. Also, in future versions of DPDataExchange, this command is planned to set any changed field names back to the version *x.y* equivalent names.

w:options: -AK

Set DPDataExchange options A and K. Any option can be set exactly as on the command line. Note: the "flag" control record is generally a preferred method of setting options. See section 3.2, page 16.

w:delete: 203

Delete animal number 203 from DAIRYPLAN DP5. (In current versions it is not possible to delete animals using the "D" line status. See section 4.4.5, page 30).

w:delnotch

No longer supported since version 5.0

w:unlink *filename*

Not yet implemented in version 5.0 or higher.
This command deletes *filename* from the disk. The purpose is to allow systems to automatically dispose of old files.

Definition Command Records

w:create: 00123456 mnen num 1 desc

Creates a DPDataExchange field with ADIS number 00123456, using DII code "mnem" with a description "desc" from a user defined number in DAIRYPLAN DP5, with one implied decimal place. (The field is not created if it already exists.) "num" can be replaced with "date", "cost" or "word" to access user-defined dates, costs and words respectively. "Desc" is an optional description for the item.

For compatibility with earlier versions of DPDataExchange, the ADIS number may be omitted, but this is not recommended. The DII mnemonic is always required.

w:define NewCode ExistingCode

This tells DPDataExchange to treat any reference to “NewCode” exactly as “ExistingCode”. Starting with version 5.0, the “ExistingCode” can be any valid expression, either a DD number or a mnemonic, including formulas.

Note that you are not permitted to redefine codes which already exist in DAIRYPLAN, nor can you define “manufacturer-specific” codes in the range 0-9999. Also, “NewCode” must be a simple number or mnemonic, not an expression. Mnemonics must start with a letter A-Z, and may contain letters or digits.

These are typically used in “HDI” files to match field names used by an organization with the field names used in DAIRYPLAN.

Some examples:

w:define: calf clvcom

This tells DPDataExchange to treat any reference to “calf” exactly as “clvcom”.

w:define 00123456 00201895

This tells DPDataExchange to treat any reference to *123456* exactly as *201895*.

w:define 00123456 (LifeMc+LifeFc)

This tells DPDataExchange to treat any reference to *123456* as the formula (LifeMc+LifeFc). Parenthesis are not always necessary but recommended for formula usage. The example here calculates the number of living calves from the number of living male and living female calves.

w:define Event.NewCode ExistingCode

This is a variation of the define command, which defines a code to be used only for a particular event number. It is allowed to define multiple interpretations of “NewCode” for various event numbers. This is called an “Event Scope Definition”.

As an example, consider this file:

w:define myfield name
w:define 1234.myfield resp
w:define 4321.myfield avmlk
RN,cow,myfield
RN001234,cow,myfield
RN004321,cow,myfield

The first define creates a “global” definition which applies to any event number for which you do not create an event-specific definition. The first request would list the animal number and the name, the second request the animal and responder numbers, the third the animal number and average milk amount.

w:decimal: PFAT 1

no longer supported in version 5.0 and higher

w:undef: xxx

Undefine DPDataExchange field symbol "xxx" (either ADIS number or DII code). With version 5.0 or higher, until further notice the field remains undefined until DPDataExchange is restarted, even if several different ADIS files are to be processed.

w:defrec: X: f:

no longer supported in version 5.0 and higher

w:unrec: w:

no longer supported in version 5.0 and higher

I/O File Command Records

w:repeat

no longer supported in version 5.0 and higher

w:eof

This exits immediately from DPDataExchange. (Since 5.0 it does no longer return to the next higher include file level if you are nested in an Include statement)

w:exit

This exits immediately from DPDataExchange.

Process Control Interface Records

No longer supported since version 5.0.

3.4 Status Characters

The ADIS format requires the use of "Status Characters" to designate different kinds of data. The status character always occupies the second position of each record. DII format records are always considered to be of "Normal" status.

3.4.1 "H" for Header Data

ADIS "Header" lines are intended to provide basic information about the sender and intended receiver of the file. They follow the ADIS syntax in other respects: the "header" begins with a definition and is followed by a value line. Such lines are not intended to actually send something, just to "say hello" and set up some version info and maybe options.

DPDataExchange treats definition and data lines with a status "H" as "header" data:

1) The user is **not** asked whether header data should be processed. DPDataExchange always processes data in a "header" record without asking.

2) Animal data is not allowed. If present in a header record. Animal data will not be processed.

The ADIS protocol specifies that one header must be at the beginning of a file, or following an "E" record. DPDataExchange does not require headers, but they can optionally appear anywhere in the file.

The DII protocol uses a special record type "H" for this.

3.4.2 "N" for Normal Data

Most ADIS lines have this type and are not given any special treatment.

3.4.3 "S" for Synchronization Data

ADIS defines a "synchronization" line as having two possible purposes: (1) initialization of the database, or (2) comparison of databases between sender and receiver.

When DPDataExchange encounters a definition line with the "S" status, it asks the user if he would like the "initialization" flag set (see section 4.2.3, page 18). (Not yet implemented in version 5.0)
In all other respects "S" status lines are treated like normal lines.

3.4.4 "F" for Faulty Data

ADIS allows programs to return error information by "sending back" lines containing errors. These lines use the "F" status.

When DPDataExchange encounters a line with "F" status, it shows the line on the screen with the message "Line Status Fault". The line is **not** processed as normal data.

When DPDataExchange encounters any error, it will automatically produce a "Fault" line in the output file, so the sender can know that a problem occurred.

3.4.5 "D" for Deletion Data

Not yet implemented in 5.0. Please use Westfalia command record “delete” to remove entire animals

DPDataExchange is limited in the kinds of data it can delete in this way. Remember, many DAIRYPLAN DP5 data fields can be corrected simply by overwriting them with new data.

If DPDataExchange is not able to delete the record, an error message appears, and a "fault" record is written to the output file.

This status can be used to delete animals from the system as follows: specify definition and value records with "D" status, showing the animal number only. DPDataExchange will ask the user to confirm, then delete the entire animal record.

It is also possible to delete "veterinary" data (inseminations, calvings, birthdates, as well as illnesses). In this case specify definition and value records with the animal number plus the date of the action are required. Other information is ignored. Note that the entire vet action record is deleted.

Westfalia "command" records can also be used to delete entire animal records. Refer to section 4.3.5.1, page 26.

3.5 Event Numbers

ADIS allows individual records to be associated with an "event number". For example, these "event numbers" can be used by a particular organization to denote particular actions, ie number one is for calvings, number 2 is for inseminations, etc..

"Event numbers" are not used by DPDataExchange to denote any fixed meaning. But they will be handled as follows:

1) Answers to a "request" will contain the same "event number" as the request.

2) Event numbers in "Value" lines must match the "Definition".

3) With DPDataExchange, event numbers may be used to allow "Value" lines in any order, not just immediately following the definition. However, note that the ADIS protocol states they must be in the correct order-- so be advised that some other programs may not read such files correctly.

4) DII format records are treated as having an event number of zero.

3.6 Variations from the ADIS and DII standards

3.6.1 Header Records

See section 4.3.4, page 21.

ADIS: A "DH" and "VH" pair must be at the beginning of each ADIS file. They are allowed *only* at the beginning or after an "E" record. "DH" records must reset the "communication parameters".

DII: One "H:" header record must appear at the beginning of the file.

DPDataExchange:
Input files may have header records anywhere in the file, or they may be omitted (Output files always have one header record at the beginning of the file, even if several output files are created by a single request file). A header will reset all flag settings as at when DPDataExchange was first run (to original command line options).

3.6.2 Comment Records

See section 4.3.4, page 23

ADIS: Specifies that comments must have a status code, as in, "CN". Comments are permitted anywhere.

DII: The standard does not specify whether a colon (:) is required, and whether comments are permitted between request and search records. The standard clearly states that a checksum is not required.

DPDataExchange: Does not require colons or status characters, and permits comments between request and search records (loose interpretation). Produces comment records with a colon for DII format, or "Normal Status" for ADIS.

SDII: Requires colons and does not permit comments between request and search records (strict interpretation).

3.6.3 Varied field widths

See "Definition Record", section 4.3.4, page 21

ADIS: Specifies that field widths are to be specified in the data dictionary. Implementations are allowed to support non-standard widths but are NOT required to do so.

DII: Specifies correct field widths for each public data field.

DPDataExchange: Accepts any field width for both import and export of any field. If requested numeric data does not fit in the field, the field is question-mark or zero filled; alphanumeric data is truncated to fit any field width.

SDII: Warns of any non-standard field widths.

3.6.4 Date and Time Formats

See section 4.2.4, page 37

ADIS: Specifies 8-digit date formats as CCYYMMDD (ie 4 July, 1992 is 19920704).
Specifies 6-digit time formats as HHMMSS (ie 5:30 PM is 173000)

DII: Specifies 8-digit date formats as CCYYMMDD (same as ADIS)

Specifies 4-digit time formats as HHMM (ie 5:30 PM is 1730).

DPDataExchange: Will accept 6 or 8 digit date formats (6 digit is YYMMDD, ie 920704).
Will accept 4 or 6 digit time formats (either ADIS or DII). However, most DAIRYPLAN DP5 data fields do not save time in seconds.

3.6.5 Requests for unsupported fields

ADIS: Specifies that unsupported fields should be filled with vertical bars as in "|".

DII: The DII standard does not specify how programs should respond to requests for unsupported data fields.

DPDataExchange: Fills all ADIS files with vertical bars. For DII files, an unsupported field is filled with zeros by default, but with the "B" option, fields can be blank (space) filled.

3.6.6 Multiple Search Conditions

see section 4.3.4, page 23.

ADIS: Specifies that multiple search conditions may be specified on *one* record, **or** with *multiple* records.

DII: Does not allow multiple search conditions.

DPDataExchange: Requires multiple records for multiple search conditions. See explanation in section 4.3.4, page 24.

3.6.7 Brace {} Use

See "Definition Record", section 4.3.4, page 21

ADIS: Does not allow brace use for repeated blocks: must send multiple records instead.

DII: Specifies brace use, but does not specify which fields may have multiple values, and does not address nesting.

DPDataExchange: Allows braces to send/receive multiple values wherever possible. Also allows multiple records. When a request or definition specifies more values than DPDataExchange can handle, the field is treated as unknown. Nested braces are significant for individual milk weight data only.

SDII: Shows brace index number for up to 99 items at one level, or 9 items at two nested levels.

3.6.8 "Synchronization" Status Data

See section 4.4.3, page 29

ADIS: Specifies that synchronization data is for (1) initialization of the database, or (2) comparison of data bases.

DII: Does not included synchronization data.

DPDataExchange: Asks user if the "initialization" flag should be set, but otherwise treats "S" status like "N".

3.6.9 Importing Zero Data

See "Zero Option" section 4.2.3, page 18

ADIS: ADIS has special characters defined for non-initialized data. No special distinction is given to fields with zero values.

DII: No distinction is given to fields with zero values.

DPDataExchange: Zero or space filled fields are ignored unless the "Z" option is used. This prevents DPDataExchange from erasing valid data which was unknown to the sender.

3.6.10 Previous Lactation Data

ADIS: does not specify whether old data should be sent or not.

DII: does not specify whether old data should be sent or not.

DPDataExchange: For export: Vet and Breeding data is ignored from prior lactations, unless the "L" option is used. For import: any data can be loaded according to field specifications.

3.6.11 Milk Error Codes

See section 4.3.5, page 45

ADIS: Does not specify the use of milk error codes.

DII: Error code 2 is for machine estimates, code 4 is for duplicate entries.

DPDataExchange: Error code 2 is used correctly when an estimate is available. With some DAIRYPLAN DP5 setup options estimates are not available. In such cases an error code of 4 is used for any incorrect daily totals. For individual weights, a zero milk weight with error code 2 is reported.

3.6.12 Scope of Searches

see section 4.3.4, page 23.

The problem: What should happen if there are events both before and after the upper limit search date? And what about animals meeting the search limits more than once? For example: suppose there is a search for cows bred between Jan 1 and Jan 31. What should happen to the cow bred Jan 15 and Feb 6? What about the cow bred Jan 5 and Jan 27?

ADIS: The protocol document states that searches will be handled in an implementation-dependent manner. Multiple records can be issued when appropriate.

DII: The standard says a single field refers to the most recent event by default; it does not address the issue of previous events and searches. For multiple events, repeated fields may be used by specifying related items in a block with braces {}.

DPDataExchange: DPDataExchange will search all vet and milk records for any search on vet or milk data, *so long as a search record is used to indicate which table to search*. Multiple records may be produced for one animal if more than one event matches the search criterion.

With the "M" option, DPDataExchange will also produce multiple records *without* a specific search. In this case DPDataExchange analyses the data requested and guesses which data tables may be appropriate. However, requests containing data from several different DAIRYPLAN DP5 tables may produce illogical results. See section 4.2.4, page 18.

3.6.13 Data Field Order

ADIS: Fields may be in any order.

DII: A numeric field must be first.

SDII: Data records must begin with a digit (0-9).

DPDataExchange: "DII Style" data records must start with a digit, or "V:". "ADIS style" records always begin with "V<status><event number>. Either type can have fields in any order.

3.6.14 Maximum Sizes

ADIS: Minimum 256 byte record size allowance.

DII: No restrictions on sizes.

DPDataExchange: Maximum 512 characters in one record, maximum 99 fields in one definition, maximum 50 definitions in one file, maximum 4 search conditions for one request.

3.7 Error Messages

<refer to DAIRYPLAN ERROR NUMBER LIST>

4. Data Dictionary

A "Data Dictionary" lists items of data which programs recognize as valid. In principal, the sender and receiver must always agree upon the exact meaning of each piece of data.

> As of this writing, a formal ISO proposal for a data dictionary is in the early stages of development. There are also several "regional" standards. Therefore it is imperative that sending and receiving parties review all definitions for consistency. DPDataExchange can use "HDI" files to "map" internally defined numbers to external sources. Refer to page 16.

With DPDataExchange, either the ADIS "number" system or the DII "mnemonic code" system may be used, regardless of the file format.

F Refer to section 4.3.4, page 21 for the programming syntax used to construct identifiers.

4.1 Scope of various Data Dictionaries

4.1.1 ADIS Numbers

The ADIS protocol allows great flexibility in the use of various data dictionary schemes. There are two principal data dictionary systems: "DD" and "ID". The dairy industry has agreed to use the "DD" method ("ID" is used more with CAN-bus mobile equipment).

The DAIRYPLAN DP5 data dictionary uses own manufacturer specific data item numbers (four digits with four leading zeroes).

As long as matching the DP5 data, international ISO numbers (see ISO 11788-2) are also implemented (six digits, beginning with “9”).

Whenever possible, this version of DPDataExchange also implements numbers assigned by the "TAURUS standard interface version 2.0". These always consist of two leading zeroes, followed by a six digit "DD" number.

> "DD" numbers beginning with four zeroes "0000" are manufacturer-specific, and may be changed to standardized numbers over time. Furthermore, the "TAURUS Standard Interface" has not been approved by ISO as of this writing. Therefore some of these definitions may change as well. However, WestfaliaSurge will make every effort to keep item numbers from older versions "alive".

4.1.2 DII Codes

Upper case are publicly defined in the DII Protocol document- these can be expected to remain the same.

Lower case items are "manufacturer specific" and may be changed in future programs.

4.1.3 Data Indexing

For importing animal data, a non-zero animal number must be included in each record. Some items cannot be imported. The registration number may also be used. In this case please check before import if all animals have unique registration numbers. If the registration number is not unique, DPDataExchange sets data only in the first animal found with a matching registration number, regardless if the animal is culled or not.

Many items may allow for more than one entry. In such cases, DPDataExchange requires an "index" to know which of the entries you are referring to. Generally this is accomplished by setting a date, as in the "calving date" for data about past lactations.

Unfortunately, a secure indexing technique has not yet been proposed for international use. The exact details of DPDataExchange's indexing for each data category are found below, and must be followed for proper loading of data.

> Importing data with incorrect indexing may cause incorrect loading, and possible loss of other data.

4.2 Data Format

4.2.1 Alpha Format

Codes using an "A" format may contain any ASCII values 32-255. That is, any character or digit is allowed, including international and graphic characters. Two exceptions: any field completely filled with question marks is considered *undefined*, and any field completely filled with vertical bars is considered *unrecognized*.

The "width" shown is simply the length. The "precision" is meaningless for alpha fields and is not shown on the code tables. *But be advised that the ADIS standard requires you to show a precision of "0" for alpha fields*.

If DPDataExchange cannot fit alphanumeric data in a character field it is truncated to fit without warning.

4.2.2 "Numeric" Integer Format

Codes using an "I" format in the following tables are numbers without a decimal place. These may contain only digits 0-9, space, or the "?" or "|" for undefined/unrecognized fields.

The width shown is the maximum number of digits. The precision must be shown as zero for ADIS files.

NOTE: The DII protocol states that numeric fields must be zero filled, ie, PSTR\2 of "3" must be shown as "03". ADIS allows leading spaces. DPDataExchange accepts either, and produces output according to the file type.

If DPDataExchange cannot fit data in a number field, it is considered undefined, and an error message is issued.

4.2.3 "Numeric" Floating Format

Codes using an "F" format in the following tables are numbers with an assumed decimal place which is **not** actually in the data file. The number of assumed places is shown in the tables, ie, F 4.2 is a number with 4 digits total, assuming two decimal places. A data value of 1234 would be interpreted as "12.34".

For ADIS files, the precision must always be shown with each code. DPDataExchange will check this and allow the data file to change the default precision shown in the table. Note that DAIRYPLAN DP5 cannot always actually use all the decimal places shown: they are sometimes just shown for file compatibility.

Refer to additional comments under "integer" fields above.

4.2.4 "Date" Format

Both ADIS and DII specify that dates are to be in 8 digit format as **CCYYMMDD**, ie 17 November, 1992 is shown as **19921117**.

DPDataExchange will also accept a six digit format without the century. Any other width will produce an error message. The precision must be shown as "0" for ADIS files.

4.2.5 "Time" Format

ADIS specifies times as six digits showing **HHMMSS**, as in 5:32:59 PM as 173259.

ADIS specifies times as four digits showing **HHMM**, as in 1732.

DPDataExchange will accept either format. Any other length will produce an error. The precision must be shown as "0".

NOTE: DAIRYPLAN DP5 does not generally keep times to the second. In most cases the number of seconds is ignored. For output, DPDataExchange will fill the seconds with zeros.

4.3 Topical List of Codes

First column: DAIRYPLAN DP% DDI Numbers. Only last 4 digits written (fill with leading zeroes).

Second Column for ISO and/or Taurus DDI Number: ISO numbers (ISO 11788-2) have digit “9” in the 3rd place.

Data created by an RFA report or by ADIS requests is very similar except for the outer appearance of the data format. Therefore, for a detailed information about the data dictionary items you should also look into the online help file about report codes. The items are identified there by their mnemonics. A list of available report codes of your current DAIRYPLAN version can always be created by defining a report with columns DD_Number, DD_Mnemonic, DD_Desc.

4.3.1 Basic Setup Information

These items are generally used for ADIS "header" records. But they may be used at any time as "normal" data

DAIRYPLANDDI Number	ISO and/or Taurus DDI Number	DII Code	Description	Format	DAIRYPLAN DP5 Notes
0001	00000000	ddtype	Data Dictionary Type	A 8	As per the ADIS protocol description, this field is required to distinguish between different kinds of data dictionaries. DPDataExchange always exports "DD". This is ignored for data import.
1013	900006 00201681	sender	Sender of the file	A 24	For import: DPDataExchange displays the data on the screen. Until Further Notice: “1996” In Germany for example “ADR20011” For export: DPDataExchange fills in appropriate data.
1014	900008 00201684	version	Version number of sender's software	A 8	
1015	900002	ADED_ISO	Version number of the ISO Data Dictionary	A 8	
1015	900009	ADED_Nat	Version number of the National Data Dictionary	A 8	
1016	900002	ADED_Man	Version number of the Maufacturer Specific Data Dictionary	A 8	
1017	900003 00201575	filedate	Date file created	D 8	
1012	900004 00201576	filetime	Time file created	T 6	
1101		herdcode	Herd code of expected receiver	A 15	
1001		units	Unit of measure (Kg or Lb)	A 2	
1102		supervis	Supervisor Code of milk data	A 4	DPDataExchange exports "0000" in all cases.
1002		options	DAIRYPLAN DP5 purchase options	A 8	DPDataExchange exports a string "abcdefghik" where a-k are 1 or 0 "a" = data exchange "b" = feed "c" = milk "d" = special (Selection) "e" = large herd option “f” = DPMobil “g”= Extra1 (DPHit in Ger) “h” = Extra2 “i” = is Demo

					"k"= 2nd Software key or Demo date not yet expired

4.3.2 General Animal Information

These items can be imported or exported with only the animal number as the index.

DAIRYPLANDDI Number	ISO and/or Taurus DDI Number	DII Code	Description	Format	DAIRYPLAN DP5 Notes
2001	900070 00201896	COW	Herd-Specific SAnimal Number	I 6	Animal number. This or 2002 must be present for import of all animal data. If the value number is not in DAIRYPLAN DP5, a new record will be created.
2002	900080 00200065	Reg1 (old: REGIS)	Registration Number	A 15	"Registration Number", see DPSingle "Identification". Can be used to index data import of animal data, but will NOT create new records if an unknown number is used.
2101	900056	reg2	Alternate Registration Number	A 15	"Second Registration", see DPSingle "Identification".
2003	900045	NAME	Barn name of animal	A 8	See DPSingle "Identification", see DPSingle "Identification".
2023	900096 00201812	resp	Electronic ID number	I 4	"Responder number", See DPSingle "Identification".
2299		respiso	ISO responder	A 15	"Alternate Responder" string (was "implant" in older versions)
2304	00280044	DIM	True days in milk	I 4	EXPORT ONLY: calculated from last calving date (and dry date for dry animals)
2012		bd	Breed: Letter code	A 3	"Breed", see DPSingle "Genetics"
2108	900046	typ	Animal Type (Sex of animal)	A 2	See DPSingle "Genetics"
2112		bloodlin	Blood or Family line	A 3	" Family Line", see DPSingle "Genetics"
2113		breedr	Breeder	A 15	See DPSingle "Genetics"
2102		aaa	Animal Analysis Score	A 7	"Animal Analysis", see DPSingle "Genetics"
2103		class	Classification Score	A 7	See DPSingle "Genetics"
2010		SIRE	Animal Sire's Registration	A 15	Father of the animal, see DPSingle "Genetics"
2011		DAM	Animal Dam's Registration	A 15	Mother of the animal, see DPSingle "Genetics"
2011	900083	DAMReg1	Animal Dam's Registration	A 15	Mother of the animal, retrieved dynamically, see DPSingle Genetics
2109		damsid	Animal Dam's DAIRYPLAN DP5 animal number	I 6	Barn number of the mother, see DPSingle "Genetics"
2121	900036 00200278	Body (old: BDWT)	Body Weight	I 4	See DPSingle"Process Control"

2123	00200273	bdwtdate	Date for Body Weight	D 8	
2021	900033 00200064	Gp	Permanent String (DP's "Group")	I 2	see DPSingle “Identification”
2022		PSTR	Secondary String (DP's "permanent string")	I 2	Second group number, see DPSingle “Identification” (was 2111 “secstr” in older versions)
2007	900035	LACTNO	Lactation Number	I 2	“Current Lactation Number” in DPSingle “Lactations”
2008		ai	Artificial Insemination Count	I 2	in DPSingle “Lactations”
2104		plansir1	Planned Sire Choice 1	A 15	In DPSingle “Genetics”
2105		plansir2	Planned Sire Choice 2	A 15	In DPSingle “Genetics”
2106		plansirp	Planned sire for problems	A 15	In DPSingle “Genetics”
2013	900034	purdat	Purchase Date	D 8	In DPSingle “Identification”
2014		purcst	Purchase Price	F 8.2	In DPSingle “Genetics”
2004		TDCDAT	"Tombstone Data" change date	D 8	“Life Data Change Date” in DPSingle “Identification”
2005	900038	LHDAT	Left-herd date	D 8	in DPSingle “Identification”
2110	900081	lhreas	Left-herd reason	I 2	See DPSingle “Identification” A specific code scheme is *not* required in DAIRYPLAN DP5. Use a code scheme appropriate for the Data Records Processing Center.
2107		stat	Status Word	A 5	See DPSingle “Identification" animal status: allowed values: none, calf, bcalf, heifr, fresh, early, abort, ready, open, insem, preg, preg2, dry, lead, other, tbcull , cull. Is translated for each languages
2202	900092	st	Status Code	I2	Numerical encoding, language independent! 0=None, 1 = Calf, 2 = BCalf, 3=Heifr, 4=Fresh, 5=Early, 6=Abort, 7=Ready, 8=Open, 9=Bred (=Inseminated), 10=Preg, 11=Preg2, 12=Dry, 13=Lead, 14=User, 15=DNB (DoNotBred/ToBeCulled), 16=Cull
2115		staten	Status Word in English	A 5	English Names of animal states, independant of language in setup None, Calf, BCalf, Heifr, Fresh, Early, Abort, Ready, Open, Bred, Preg, Preg2, Dry, Lead, User, DNB, Cull

4.3.3 Vet and Insemination Data

All vet and breeding data is stored in a table in DAIRYPLAN DP5. It is possible to have multiple entries for all events, which creates special problems for DPDataExchange.

For **data import**, the DATE must be included as an index in any block containing vet-related data. Information can be loaded in any order, and may pertain to the entire lifetime of the animal.

If the "general" codes are used (00003101-00003109), either the "name" or the "official code" is also required.

When the "name" is used, it must exactly match a vet action name already entered into the DP setup (in other words, already appearing on list “Vet Action To Enter” in DPVet). When an "official code number" is used, it must fall within a "default" range of values set up for a vet action. If the number is in the range of more than one vet action, the action with the narrowest range will be used.

For example, suppose DPDataExchange receives the following:

```
DN000000COW\4,vetdate\8,vetoffc\4
VN000000 10019931028 412
```

(that is, cow 100, vet official code 412, on October 28, 1993)

Now suppose DAIRYPLAN DP5 was set up with the following vet actions:

vet action name	default number	number range
Illness	400	499
Mastitis	410	419

(that is, code numbers 400-499 are all illnesses, and codes 410-419 are types of Mastitis)

DPDataExchange would recognize 412 as *Mastitis* because the range is smaller. Now, suppose another illness number 437 is *Berstromis Desease*, but is not specifically entered into DAIRYPLAN DP5. DPDataExchange would use the general Illness vet action because no other vet action is defined for 437.

In the case where both the "name" and "official code number" appear in the same record, the "name" will take priority if it exactly matches a known name. If not, it is handled as an "official code" alone.

If DPDataExchange cannot match either the "name" or the "official code", an error message is issued.

Multiple values for any item can be send with multiple records for one animal, or in repeated blocks using braces {}, so long as the date appears within the brace.

> Reminder, braces {} are NOT part of the ADIS standard. Multiple records are preferred. Refer to section 3.6.7, Page 32.

New information is added to existing records by either: (a) changing an existing entry with the same date; or (b) adding a new entry.

Triggered Vet Actions: DAIRYPLAN DP5 maintains schedules of future planned actions, which can be automatically scheduled when certain other actions are entered by the user. For example, when the user enters an “insemination”, DAIRYPLAN DP5 may automatically schedule a “Pregnancy Check” 45 days later. (All such automated scheduling can be set up by each user.)

DPDataExchange can also automatically make such schedules. Use the **-T** option to make DPDataExchange automatically adjust the scheduled vet actions according to the new imported data. For example, with the **-T** option, importing an “insemination” on July 1 will automatically schedule a “pregnancy check” for August 15.

Alternatively, without the **-T** option, the import file can set a “future” pregnancy check action at any time using the “future” vet codes defined below.

In versions 4.4 and lower, for **data export**, normally only the most recent event in the current lactation was considered. To get multiple records, specify a "search condition" using any veterinary data item. Braces {} may also be used to get several values in one record. When requesting multiple values, be sure the request does not contain data from different events, i.e., do not include both calving and insemination data on the same record.
Option "L" searches the entire lifetime- without "L" just the current lactation is searched.

In version 5.0 and higher, automatically multiple records for whole lifetime are exported without specifying the “-L” and “-M” option.

Deleting Vet Actions is also possible in older versions. Refer to section 3.4.5, page 30.

DAIRYPLANDDI Number	ISO and/or Taurus DDI Number	DII Code	Description	Format	DAIRYPLAN DP5 Notes
3111	900053 00201695	BIRDAT	Birth Date	D 8	See DPVet
3116		birtime	Birth Time	T 6	
3117		biroffc	Birth Official Code Number	I 4	
3112		birtech	Birth Technician	A 3	
3113		bircost	Birth cost	F 8.2	
3114	900052	bircom	Birth Comment	A 15	Often used to describe the way of the birth
3115		birdiag	Birth Diagnosis Flag	I 1	
3118	900022	bircom2	Birth Comment 2	A 15	Often used to describe where calf stays after birth
3121	900028 00200042	CLVDAT	Calving Date	D 8	The calving date can also be used as an index for data import of past lactations.
3126		clvtime	Calving Time	T 6	
3127		clvoffc	Calving Official Code Number	I 4	
3122		clvtech	Calving Technician	A 3	
3123		clvcost	Calving Cost	F 8.2	
3124		clvcom	Calving Comment	A 15	Often used to describe the way of the birth
3125		clvdiag	Calving Diagnosis Flag	I 1	
3128		clvcom2	Calving Comment2	A 15	Often used to describe where calf stays after birth
3131	900055 00201743	HTODAT	Heat Observation Date	D 8	
3132		htotech	Heat Observation Technician	A 3	
3133		htocost	Heat Observation Cost	F 8.2	
3134		htocom	Heat Observation Comment	A 15	
3135		htodiag	Heat Observation Diagnosis Flag	I 1	
3136		htotime	Heat Observation Time	T 6	
3137		htooffc	Heat Observation Official Code Number	I 4	
3138		htocom2	Heat Observation Comment 2	A 15	
3141	900030 00200050	SRVDAT	Service (Insemination) Date	D 8	
3144	900076 00200672	srvcom or srvsire	Service (Insemination) Sire	A 15	This is saved in DAIRYPLAN DP5 in “comment 1" about the

					insemination.
3142	900095	srvtech	Service Technician	A 5	
3143		srvcost	Service Cost	F 6.2	This includes semen cost and cost of labor
3145		srvdiag	Service Result	I 1	"1"=service caused pregnancy "0"=service failed
3146		srvtime	Service Time	T 6	
3147		srvoffc	Service Official Code Number	I 4	
3148		srvcom2	Service Comment 2	A 15	
3151	900059	PRGDAT	Pregnancy Diagnosis Date	D 8	Date cow was checked, *not* date of insemination
3152	900091	prgtech	Pregnancy Diagnosis Technician	A 3	
3153		prgcost	Pregnancy Diagnosis Cost	F 8.2	
3154		prgcom	Pregnancy Check Comment	A 15	
3155	900085	prgdiag	Pregnancy Check Diagnosis	I 1	"1"=Pregnant "0"=not pregnant
3156		prgtime	Pregnancy Check Time	T 6	
3157		prgoffc	Pregnancy Check Official Code Number	I 4	
3158		Prgcom2	Pregnancy Check Comment 2	A 15	
3161	900044 00200513	DRYDAT	Dry Treatment Date	D 8	
3162		drytech	Dry technician	A 3	
3163		drycost	Dry Cost	F 8.2	
3164		drycom	Dry Comment	A 15	
3165		drydiag	Dry Diagnosis	I 1	
3166		drytime	Dry Time	T 6	
3167		dryoffc	Dry Official Code Number	I 4	
3168		drycom2	Dry Check Comment 2	A 15	
3171		abtdat	Abortion Date	D 8	
3172		abttech	Abortion Technician	A 3	
3173		abtcost	Abortion Cost	F 8.2	
3174		abtcom	Abortion Comment	A 15	
3175		abtdiag	Abortion Diagnosis	I 1	
3176		abttime	Abortion Time	T 6	
3177		abtoffc	Abortion Official Code Number	I 4	
3178		abtcom2	Abortion Comment 2	A 15	
3129		CLVDATP	Projected Calving Date	D 8	These are entered as "Future" vet actions in DP- not normally used.
3139		HTODATP	Projected Heat Date	D 8	
3149		SRVDATP	Projected / Planned Service (Insemination) date	D 8	
3159		PRGDATP	Projected / Planned Pregnancy Check Date	D 8	
3169		DRYDATP	Projected / Planned Dry Treatment Date	D 8	
2305	900049	ExpHeat	Expected heat Date	D 8	
2312	900021	RCDry	Recommened Date to turn dry	D 8	

3341	900093	SrvCount	Number of inseminations this lactation	I 2	
3101		vetdate	vet action date	D 8	These codes allow general access to
3102		vettech	vet action technician	A 3	veterinary records.
3103		vetcost	vet action cost	F 8.2	
3104		vetcom	vet action comment 1	A 15	For export, they will show all vet actions entered.
3105		vetdiag	vet diagnosis	I 1	Note that the "official
3106		vettime	vet action time	T 6	code number" is taken from each individual
3107		vetoffc	vet action official code number	I 4	animal's records, NOT the "default" in setup.
3108		vetcom2	vet action comment 2	A 15	
3109		vetname	vet action name	A 15	For data import, the date is required as always, but also the name OR official code is required, as described above.
3201		vetdatef	future vet action date	D 8	The general-purpose future vet action codes
3206		vettimef	future vet action time	T 6	work similarly to the
3207		vetoffcf	future vet action official code	I 4	real codes described above, except using
3209		vetnamef	future vet action name	A 15	"future" vet actions.

4.3.4 Sire Information

These fields are provided for development purposes only: it is likely that new fields will be established in the future for sending complete sire records in data blocks containing only sire information.

For this version, two sets of codes are defined: one for service sires, and the other for the animal's genetic sire. In both cases, the data is retrieved from DAIRYPLAN DP5's "sire" file by looking up the appropriate animal according to the animal's records. The "Sire access mode" entered in DAIRYPLAN DP5 determines what method is used to look up the data (name, ai code, registration, etc).

All items are "Export Only" in this version.

DAIRYPLANDDI Number	ISO and/or Taurus DDI Number	DII Code	Description	Format	DAIRYPLAN DP5 Notes
9101		ssaicode	Service Sire AI Code	A 15	These codes all refer to information entered
9102		ssreg1	Service Sire Registration Number One	A 15	in DAIRYPLAN DP5's "Sire" functions for the animal entered as the cow's
9103		ssreg2	Service Sire Registration Number Two	A 15	"planned service sires" in DPSingle “Genetics”.
9104		ssname	Service Sire Name	A 8	This will be the sire most recently bred to the
9105		ssbd	Service Sire Breed Code	A 1	cow, unless an earlier breeding is known to have caused the pregnancy. Use the code "SRVSIRE" to see the data used as an index for codes.

9201		asaicode	Animal Sire AI Code	A 15	These codes all refer to information entered in
9202		asreg1	Animal Sire Registration Number One	A 15	DAIRYPLAN DP5's "Sire" functions for the animal entered as the cow's "sire"
9203		asreg2	Animal Sire Registration Number Two	A 15	in DPSingle “Genetics”.
9204		asname	Animal Sire Name	A 8	Use the code "SIRE" to see the data used as an
9205		asbd	Animal Sire breed code	A 1	index for these codes.

4.3.5 Individual Milk Weights

Individual milk weight data refers to a single milking: normally from Metatron milk meters. It is possible to manually enter milk weights from the parlor or from the computer, but in both cases a flag is set to assist in recording "official" test data.

Multiple records may be used to send or receive historical data, so long as both the date and time of milking appear on each record.

Data Import: A date figure must be given: IMDIM, imdat, or DMDIM may be used. A new table entry is made if the date, time, or weight is different than an old entry. If IMTIM is used, it must appear before IMWT. IMTIM is required for automatic recalculation of lactation totals.

Multiple records are recommended, but braces {} may be used.

Data export: To create multiple records, use a "search" record specifying any of these codes as the search condition.

Reminder, braces {} are NOT part of the ADIS standard. Multiple records are preferred. Refer to section 3.6.7, Page 32.

DAIRYPLANDDI Number	ISO and/or Taurus DDI Number	DII Code	Description	Format	DAIRYPLAN DP5 Notes
4104	900042 00200488	IMWt	Individual Milk Weight	F 4.1	From DSingle "Milk Measurements" table
4102		IMFlg	Individual Milk Error Flag	I 1	Calculated from DAIRYPLAN DP5’s error codes according to DII standard: 0=no error 1=manual identification 2=calculated estimate 3=entered by user 4=equipment error 5=incorrect number of milkings (for daily totals)
4101	900054 00201729	IMDat	Date for individual milking	D 8	This (or the DIM) is required for data import of past data.
4103		IMDim	Days in milk at time of individual milking	I 4	Calculated from the date of milking in the "measurements" table. This may also be used to synchronize data import of milk weights.

4105		MTim	Last Time required to milk	T 4	Clock time (not duration)
4106	900078 00202513	IMTim	Time of individual Milking	T 4	Clock time
4113	900079	IMDuration (old: IMDur)	Duration of individual milking	F 4.1	Number of minutes required to milk the cow
4109		IMCode	Error Code of the Milking	I 2	
4120		MsCondA	Average Conductivity of all quarters	I 4	
4121		MsCond1	Conductivity Quarter 1	I 4	
4122		MsCond2	Conductivity Quarter 2	I 4	
4123		MsCond3	Conductivity Quarter 3	I 4	
4124		MsCond4	Conductivity Quarter 4	I 4	
4351		ATim (old: avimdur)	Average milk duration	F 3.1	DPSingle “Last Milking”
4301		amlks1	Average milk session one	F 4.1	These values are calculated from the "milk
4302		amlks2	Average milk session two	F 4.1	measurements" table,
4303		amlks3	Average milk session three	F 4.1	according to the milking times entered in setup.
4304		amlks4	Average milk session four	F 4.1	Export Only!

Find more Items in the general list of DDI codes

4.3.6 Other Individual Measurements

There are Activity measurements, Feed remainders and Body Weight measurements. Feed data is described in a following chapter.

To prevent disorder of the DAIRYPLAN system with its technical equipment the values are export only.

Please note: especially for Activity values it is hard to draw conclusions from the raw data entries in the table. It is much better to use the statistically processed values derived from the raw data. For a detailed description please look into help file of DAIRYPLAN DP5 with description of the report codes

DAIRYPLANDDI Number	**ISO and/or Taurus DDI Number**	**DII Code**	**Description**	**Format**	**DAIRYPLAN DP5 Notes**
4501		MsPedHr (old: pedohour)	Pedometer "steps per hour"	F 5.1	These values come directly from the "Activity Measurements " table in
4502		MsPedVl (old: pedoact)	Pedometer counter reading	I 5	DPSingle “Measurements”. Until further notice they are export only.
4503		MsPedDat	Date of Pedometer recording	D 8	
4504		MsPedTim	Time of Pedometer recording	T 6	
4541		Pedo	Activity 24 Hour Equivalent	F 5.1	These are deviated values, export only. Further
4543		PedoAvg	Activity Average Value	F 5.1	statistical values see DDI numbers 4544 – 4550 in

4550		PedoAlrm	Activity Alarm	I 4	general list of DDI Items.
2125	900039	MsBdyDat	Body Weight Measurement Date		These values come directly from the "Body Weight Measurements " table in
2126	900050	MsBdyTim	Body Weight Measurement Time		DPSingle “Measurements”. Until further notice they are export only.
2127	900040	MsBody	Measurement: Body Weight		

4.3.7 Daily Milk Totals

Daily milk totals refer to the sum of individual milk weights for one 24 hour period. A "day" begins and ends according to the following logic:

> DAIRYPLAN DP5 looks at the last milk weight recorded of the animal (for synchronized milk amount as with DMWT it looks at the very last milk weight of *any* animal in the database). It determines which *milk session* she was milked in, according to the times entered in the DAIRYPLAN DP5 “main” milk schedule. If the milking is not within a milking time, it the next following milking time is taken into account.
>
> The 24 hour period then extends to the *end time* for the milk session determined above. DMWT and related codes report milk amounts recorded up to 24 hours before this time.

With this definition of "24 hour milk", it is theoretically possible to have an extra or missing milk weight if the milking times are irregular. If there is an error in the number of milkings for a animal, an error flag of "5" is reported with code DMFlg. Otherwise, the "flag" represents the highest numbered flag for any individual milking included in the sum. (Remember, it is always possible to get the individual milking data with other codes).

For synchronized milk amount DMWT the first (or only) number reported for each animal is by default the same calendar date for every animal in the herd. Use other codes like ACMLK to retrieve it animal specific. The "F" option which made DMWT work like the new field ACMLK is no longer available since version 5.0.

When multiple records or braces {} are used for multiple values, the data blocks are always synchronized so that adjacent blocks are one day apart, even if no data is available for some days.

Systems without Metatron milk meters always return zero.

All Items are EXPORT ONLY

Multiple records may be issued if any of these items are used in a "search" record.

> *Reminder: braces {} are NOT part of the ADIS standard. Multiple records are preferred. Refer to section 3.6.7, Page 32.*

DAIRYPLANDDI Number	ISO and/or Taurus DDI Number	DII Code	Description	Format	DAIRYPLAN DP5 Notes
4201		DMWT	Daily Milk Weight	F 5.1	EXPORT ONLY: Calculated from individual milk weights in the "measurements" table according to synchronized start date of whol eherd
4202		DMFLG	Daily Milk Weight Error	I 1	EXPORT ONLY: Same error

			Flag		codes as for "individual" milk weights, or "5" to indicate an incorrect number of milkings.
4203		DMDIM	Daily Milk Days in Milk	I 4	Days from calving to synchronized start date (see above). For import, this may be used to set the date for individual milkings.
4223		AcMlk	Last Actual 24 Hour Milk Total	F 5.1	EXPORT ONLY: Calculated from individual milk weights in the "measurements" table. Is the 24h value according to the cows' actual last milking date

4.3.8 "Averages" and "Test Day" Milk Amounts

DAIRYPLAN DP5 makes extensive use of a field called "average daily milk" for feed calculations and other things. This field exists one for each animal and can be accessed with code “Avmlk”. DAIRYPLAN DP5 also periodically saves this figure in a table for plotting lactation curves, the so called “Measured Averages”.

Systems with Metatron milk meters automatically recalculate the “average daily milk” every time a milk weight is received. Non-Meter systems must use the latest “test day” yield instead.

> Beginning with version 4.4, DAIRYPLAN DP5 keeps two separate tables for milk “Measured Averages” actually recorded through on-farm hardware, and “Component Test” (= “Test Day Values” officially used by a Dairy Records Processing Center.
>
> Earlier versions of DPDataExchange used “AMWT” and related codes for either kind of value. Version 4.4 and later versions use “AMWT” for the “Test Day” values only, and use new codes “MAMWT” for the actual measured values.
>
> In 5.0 the Windows programs DPDataExchange and DPList do no longer know the code mnemonics “Amwt”, “AMDat”, “AMDim”, they were completely replaced by “TestMilk”, “TestDate” and “TestDim” , but the DD Item numbers remain. “MAMWT” and “MAMDAT” are still available but it is better to use the new codes “MPWgt” and “MPDat” (with same DD Item numbers).

DPDataExchange can use multiple records or braces {} to send/receive multiple averages from either table for making lactation plots. “TestDim” will return zero for plot points of prior lactations: however, using "TestDat" and “TestMilk”, prior lactation data is available.

“Test Day” Milk Amounts—code TestMilk, etc

Data import:
In versions prior to 5.0 the file send date was assumed as test date , unless the “TestDim” or “TestDate” figure was included in the record. Furthermore you could import data for current lactation by specifying the “TestDIM” field.
Since 5.0 it is absolutely necessary to specify “Testdate”.

For further fields in the Componet Test Table, see chapter " Component and Somatic Cell Test Results".

Import does not require the "I" option, however, with the "I" option, the new test weight will replace the current average milk weight in DAIRYPLAN DP5 used for feed calculations etc. The weight will also be added to the "Component Test" table. Any value in "TestDim" is assumed to refer to the current lactation; "TestDate" may be used to import prior lactations.

Measured averages—code "MPWgt", etc.

Data import requires the "I" option. The file send date is assumed unless the "MPDat" figure is included in the record. The weight will be added to the "Measured Averages" table.

Reminder: braces {} are NOT part of the ADIS standard. Multiple records are preferred. Refer to section 3.6.7, Page 32.

DAIRYPLANDDI Number	ISO and/or Taurus DDI Number	DII Code	Description	Format	DAIRYPLAN DP5 Notes
4221		AvMlk	Average daily milk	F 5.1	Base for several DP5 functions like feed calculation etc. Is recalculated when new milk weights arrived. See in DPSingle "Component Tests" sheet
5101		TestMilk (obsolete: AMWT)	"Test Day" Milk Weight	F 4.1	This accesses the "Component Test Table" in DAIRYPLAN DP5 for official "Test Day" milk amounts. Import does not require "I" option—however, the "I" option makes DPDataExchange also reset the "average milk in 24 hours".
5103		TestDIM (obsolete: AMDIM)	"Test Day" Days in Milk	I 4	
5106	900032	Testdate (obsolete: AMDAT)	Date for "Test Day"	D 8	
5107		MPWgt (old: MAMwt)	Plot Point Milk Weight (from measured averages)	F 4.1	These access the "Measured Averages" table for true average milk
5108		MPDat (old: MAMDat)	Measured average milk date	D 8	amounts. IMPORT REQUIRES "I" OPTION.
5120		MPBody	Measured Averages Body Weight	I 5	
5125		MPPedHr	Measured Averages: Activity per Hour	F 4.1	
5127		MPFloAv	Measured Averages Average Flow Rate	F 4.1	
5128		MPFloMx	Measured Averages Maximum Flow Rate	F 4.1	
5130		MPCondA	Measured Averages Conductivity (All Quarters)	I 4	

4.3.9 Component and Somatic Cell Test Results; Test Sample Numbers

Fat, Protein, and Somatic Cell Count test results are treated much like "Test Day" milk weights. DAIRYPLAN DP5 saves test results in the "Component Test" table.

Data import: the table entry is made immediately on data import. Data Import of historical data requires that the date be known (used as an index). This must be code "TestDat". Normally the "test day" milk amount is also loaded at the same time. Multiple records or braces {} may be used to import multiple values.
Manually entered test data by the test components entry sheet will be stored in the same table.

Data Export: all data records of the table will be shown.

Sample data like bottle and box number come up in 1 field per animal. See DPSingle sheet "Last Milking". There are somem new fields prepared stored with individual milk weights: "IMBarcode" , composed from 3 user defined fields in an individual milk weight. This data is automatically filled by DPLeonardo and cannot be imported in any other way.

Reminder, braces {} are NOT part of the ADIS standard. Multiple records are preferred. Refer to section 3.6.7, Page 32.

DAIRYPLANDDI Number	ISO and/or Taurus DDI Number	DII Code	Description	Format	DAIRYPLAN DP5 Notes
5151	900077 00200053	Fat (old: PFAT)	Percent Fat Test	F 5.2	All entries stored in the
5152	900031 00200054	Prot (old: PPRO)	Percent Protein Test	F 5.2	"Component Test Table" ,
5153	900048	Lact (old: plact)	Percent Lactose Test	F 5.2	see the DPSingle sheet "Component Test".
5156	900026	urea	Milk-Urea-Nitrogen	F 5.1	Import requires "TestDate"
5157		Score	Body Condition Score	F 5.1	
5154	900047	Scc (old: SCCACT)	Actual Somatic Cell Count (in thousands)	I 5	Both of these codes actually use the same data field within DAIRYPLAN
5155	900023	LNSCC	Linear Somatic Cell Count	F 4.1	DP5. Use one or the other, *but not both.*
5201	900025	sample	Sample Bottle Number	I 4	Only the most recent sample bottle
5202	900024	sampbox	Sample Bottle Box Number	I 4	information is saved in DAIRYPLAN DP5.
5203		sampdat	Sample Bottle entry date	D 8	The "entry date" can be used to see if the number was correctly entered.
5211		IMBarcode		A 10	10digit Barcode composed from 3 fields in individual milk weights, export only.

4.3.10 Lactation Milk Totals

Lactation data can be calculated from the milk weights stored in dividual milk weights, this is called “official” lactation data. Note: With the current version of DAIRYPLAN DP5, "Official" totals are only useful if Dairy Plan is set to store individual milk weights for an entire lactation. Use DPSIZE to increase the milk weight table size as needed.

Furthermore, lactation data is calculated each time a new milk weight arrives and stored in an extra data table to be seen in DPSingle sheet “Lactations”.

Data Import: the current lactation is assumed unless the lactation start date (“PDCalve” 6101), calving date (00200042) or lactation number (“LactNo” 00002007) is included as an index. The calving date is the best index: with an exact date prior lactation data can be imported correctly in every case. With the lactation number for an index: data will be loaded correctly if (a) the *current lactation number* is already set correctly, and (b) *all calving dates* have already been entered for the animal.
Most lactation data import requires “I” option.

Since version 5.020 the use of "lactno" as index field for import of lactation data is fully supported.

Data export: data from the current lactation is shown, unless (a) the calving date or any of these items is used as a search condition: in which case multiple records will be produced for various lactations; or (b) braces {} are used to make repeated blocks for each lactation. In both cases the "L" option is required.

> *Reminder: braces {} are NOT part of the ADIS standard. Multiple records are preferred. Refer to section 3.6.7, Page 32.*

DAIRYPLANDDI Number	ISO and/or Taurus DDI Number	DII Code	Description	Format	DAIRYPLAN DP5 Notes
6102	00201592	LACTMO	"Official" Milk Yield, lactation-to-date	I 5	EXPORT ONLY: This is calculated by DPDataExchange by adding up all qualified milk weights in the measurements table. It will be quite small unless the measurements tables are enlarged using DPSIZE. Current lactation only.
6103		IMCNTO	"Official" milking count	I 4	EXPORT ONLY: This is a count of the number of milk weights described above.
6104		IMCNTE	"Error" milking count	I 4	EXPORT ONLY: This is the number of milkings in "LACTM" but *not* in "LACTMO". This is an estimate calculated by DPDataExchange.
6101		PdCalve	Lactation start date	D 8	As stored in the lactation table. You can also use ClvDat to import a lactation
6203	900084 00201897	LACTM	Milk yield, lactation-to-date	I 5	This is DAIRYPLAN DP5's production estimate. It can be manually entered by the user, but normally is totaled from automatic milk meters. To be seen in DPSingle,

					sheet “Lactations”. Use braces {} or search with CLVDAT to access past lactations.
6251	900086	Ldim (old: lactdim)	Lactation Days-in-milk	I 4	See DPSingle, sheet “Lactations”. This is the number of days included in "total-to-date" calculations. IMPORT REQUIRES "I" OPTION.
6201	900074	LACTF	Fat Lactation-to-date	I 4	These are recalculated daily as milk weights are recorded.
6202	900072	LACTP	Protein Lactation-to-date	I 4	IMPORT REQUIRES "I" OPTION.
6303	00280052	M305	Actual 305 day milk yield	I 5	These are DAIRYPLAN DP5's best estimates of
6320		m200	Actual 200 day milk yield	I 5	actual yields based on
6310		m100	Actual 100 day milk yield	I 5	milk meter data. These fields remain zero until
6301	900075	F305	Actual 305 day fat yield	I 4	the animal reaches
6302	900073	P305	Actual 305 day protein yield	I 4	the number of DIM indicated. IMPORT REQUIRES "I" OPTION.
6400		M305P	Projected 305 day milk yield	I 5	For export: These are DAIRYPLAN DP5's
6401		F305P	Projected 305 day fat yield	I 4	projections unless "actual" figures are known.
6402		P305P	Projected 305 day protein yield	I 4	
6500		FCME (old: MEQUIV)	Projected mature equivalent fat corrected milk yield	I 8	For import: these are saved as an "external estimate", which will override
6505		ME	Projected mature equivalent milk yield	I 8	DAIRYPLAN DP5's own estimates unless the
6510		EME	External mature equivalent milk yield	I 5	"actual" figure is known.
6410		M305E	External 305 Milk Calculation	I 5	
6411		F305E	External 305 Fat Calculation	I 4	
6412		P305E	External 305 Protein Calculation	I 4	
6602		Calf1 (old: calfid)	ID number of calf	I 6	In DAIRYPLAN DP5, calf data is saved in
6603	900097	CalfReg	Registration number of calf	A 15	
6612		Calf2 (old: calfid2)	ID number of second (twin) calf	I 6	the lactation records.
6613		CalfReg2	Registration number of d´second (twin) calf	A 15	
6601	900037	calfsex	sex of calf	I 1	DAIRYPLAN DP5 keeps a count of the number of
6611		calfsex2	sex of second (twin) calf	I 1	male, female, and dead calves. This is converted

					into a code as follows: 0=none, 1=male, 2=female
6621		DC (old: calfdead)	number of dead calves	I 1	Export Only: sum of dead male and female calves
6622		DFC (old: heifdead)	Number dead heifers born	I 1	
6623		DMC (old: bulldead)	Number dead bulls born	I 1	

4.3.11 Special Milk Meter Data

These are all manufacturer-specific codes for special research applications. Refer to DAIRYPLAN DP5 manuals for details. Some codes refer to the most recent milking (only the animal number is required for an index).
Some refer to individual milk weights (animal number, milk date and time are required as an index) . For more fields, see general list of codes, items 4101 – 4124.

All may be imported or exported.

DAIRYPLANDDI Number	ISO and/or Taurus DDI Number	DII Code	Description	Format	DAIRYPLAN DP5 Notes
4107	900068	IMStall	Milking Stall (Metatron number)	I 3	This is from individual milk weights (see DPSingle
4111	900051	IMAvFlo	Average Milk Flow	F 4.1	Sheet “Measurement”)
4112	900062	IMMxFlow	Maximum Milk Flow	F 4.1	
4114		IMStartSec	Seconds until Begin of Milking	I 4	
4119	900043	IMTemp	Temperature	F 4.1	
4137		MSt	Last Milking stall number	I 3	These items are stored
4139		Temp	Temperature	F 4.1	as “Last Milking” data.
4401		hlddt	Treated: Date hold milk	D 8	key "Milk Data" table. They
4402		hldtm	Treated: Time hold milk	T 4	can also be set
4403		rstdt	Treated: Restart Date	D 8	automatically in DP by
4404		rsttm	Treated: Restart Time	T 4	other functions
4411		Ill (old: metill)	Milking Illness code	I 2	As sent to Metatron
4412	00201895	Met (old: metis)	Milking Isolation Code	I 1	
4413		Gen (old: metgen)	Milking General Code	I 4	
4421		stim	Stimulation Time	I 2	

4.3.12 Feed Data

Caution is advised when transferring feed data because of possible differences in hardware design.

Data Import: assumes DAIRYPLAN DP5 "feed one" unless (a) another feed type is specified in the record or block; or (b) braces {} are used to repeat blocks of several feed types.

Data Export: use FDTYPE as a search index to get multiple records refering to different feed types. It is also possible to use braces {} to get the feed types in a repeated block on one record.

> *Reminder: braces {} are NOT part of the ADIS standard. Multiple records are preferred. Refer to section 3.6.7, Page 32.*

DAIRYPLANDDI Number	ISO and/or Taurus DDI Number	DII Code	Description	Format	DAIRYPLAN DP5 Notes
7101	900067 00201859	FDTYPE	Feed Type Identifier	I 2	This is the feed type number (1, 2, 3, or 4). This must be used as an index for proper data import.
7102		FDNAME	Feed Type Name	A 14	EXPORT ONLY: The name of the feed in the bin number connected to the lowest numbered feed stall available to this group.
7103	00201828	Ratn (old: FDRAT)	24 hour feed ration	F 7.3	The daily feed ration may be entered directly, or calculated by DP. (see “Allocation” in DPSingle, sheet “Feed” For data import, this takes effect at the next hourly interval.
7104		CFC (old: FDCONS)	Current Feed- Consumed	F 7.3	Amount eaten today
7105		Recm (old: fdrec)	Recommended Feed Ration	F 7.3	For import, this is saved as the "Recommended feed for 24 hours” in DPSingle sheet “Feed”. These entries take effect after the user confirms them by running the "Edit feed amounts for all animals" function.
7115		CFR	Current Feed Remainder	F 7.3	
7106	900063 00201831	Rem (old: fdrem)	Feed Remainder	F 7.3	Feed Remainder from the last completed day.
7111			Feed Remainder (Prev Day)	F 7.3	
7112			Feed Remainder (2 days ago)	F 7.3	
7118	900060	RatnYest	24h Feed Allocation Yesterday		
7119	900061	CosnYest	Ate yesterday		

4.3.13 User defined fields

These can be find in DPSingle sheet “User Defined”, and may be used for any purpose, both for import and export. Items are generally accessed by entering a DII/report code in DAIRYPLAN DP5, or by using the special "w:create" command record. They can also be changed in DPSetup .”Herd managment”, “Uder defined Data”. However, these codes can be used as long as another has not been defined for the field.

*As soon as you enter an ADIS number or DII Code name to replace any of these items, the numbers and codes below will **not** function.*

DAIRYPLAN DDI Number	ISO and/or Taurus DDI Number	DII Code	Description	Format	DAIRYPLAN DP5 Notes
2901 2902 2903		udat1 udat2 udat3	User-defined dates 1-3	D 8	
2911 2912 2913		ucost1 ucost2 ucost3	User-defined costs 1-3	F 8.2	
2921 2922 2923		uword1 uword2 uword3	User-defined words 1-3	A 15	
2931 2932 ... 2939		unum1 unum2 ... unum9	User-defined numbers 1-9	I 8	

4.3.14 Formatting Fields

These are intended to aid in the readability of DII files. They are export only, however the usual screen warning message is suppressed during import. See also the "D" option, section 3.2.2, page 17.

DAIRYPLAN DDI Number	ISO and/or Taurus DDI Number	DII Code	Description	Format	DAIRYPLAN DP5 Notes
9991		s	Space	A 1	Specify any width to fill with spaces.
9992		c	Comma	A 1	Creates a left-justified column with one comma
9993		q	Quotation marks	A 1	Creates a left-justified column with a double quotation mark

4.4 Numeric List of Codes

This chart lists all ADIS numbers which DPDataExchange is programmed to recognize. For a fuller explanation of the context refer to online help file about report codes and to the sections above.

For the current data dictionary, please view a report with DPList with the columns
- DD_Number
- DD_Mnemonic
- DD_Desc

All numbers are subject to change in future versions. However, WestfaliaSurge will make every effort to keep these numbers valid as long as possible.

DDI number DII code Description Reference

DDI Num	DII Code	Description	Reference
1	DD	Data Dictionary Type	Header
97	Result	Previous Summary Result	(Formula)
98	Line	Printed Line Number	(Formula)
99	Unknown	Used for unknown Fields	(Formula)
100	Text	Export Text „xyz“	(Formula)
101	Constant	0	(Formula)
102	Formula	Formula ()	(Formula)
103	Date	Date ()	(Formula)
104	Time	Time ()	(Formula)
105	Number	Number ()	(Formula)
106	YesNo	Yes/no ()	(Formula)
111	Max	Maximum of ()	(Formula)
113	Min	Minimum of ()	(Formula)
114	MinNZ	Minimum non-zero of ()	(Formula)
115	Avg	Average of ()	(Formula)
116	AvgNZ	Average non-zero of ()	(Formula)
118	CountNZ	Count non-zero of ()	(Formula)
131	If	If ()	(Formula)
132	Map	Map Values ()	(Formula)
133	TextLength	Length of Text ()	(Formula)
134	TextIsDigits	Text is Only Digits ()	(Formula)
135	TextIsISOReg	Text is ISO Registration comp	(Formula)
136	TextHasBlanks	Text has empty spaces ()	(Formula)
901	DD_Number	Data Dict Number	(DD)
902	DD_Mnemonic	Data Dict Mnemonic	(DD)
903	DD_Desc	Data Dict Description	(DD)
904	DD_Width	Data Dict Width	(DD)
905	DD_IndexDD	Data Dict IndexDD	(DD)
906	DD_ParentDD	Data Dict ParentDD	(DD)
907	DD_Priority	Data Dict Priority	(DD)
908	DD_Precision	Data Dict Precision	(DD)
909	DD_UserArea	Data Dict User Area	(DD)
910	DD_Hidden	Data Dict Hidden Code	(DD)
931	DDS_Number	Data Sub Number	(DD)
932	DDS_Mnemonic	Data Sub Mnemonic	(DD)
933	DDS_Replace	Data Sub Original DD	(DD)
1001	Units	Units of Measure	Header
1002	Options	User Options	Header
1011	FileDate	File Date	Header
1012	FileTime	File Time	Header

1013	Sender	Sender (Program Manufacturer)	Header
1014	Version	Text: 5.016	Header
1015	ADED_ISO	ADED version - ISO standard	Header
1016	ADED_Nat	ADED version - National	Header
1017	ADED_Man	ADED version - manufacturer	Header
1018	Receiver	Sender (Program Manufacturer)	Header
1101	HerdCode	Herd Code	Setup
1102	Supervis	Supervisor Code	Setup
1103	FeedStartTime	Feed Cycle Start Time	Setup
1104	DairyName	Dairy Name	Setup
1211	LMk_Date	Last Milking: Date (any animal)	Setup
1212	LMk_Time	Last Milking: Time (any animal)	Setup
1221	LMk_UnknownRe	Last Milking: Count unknown r	Setup
1222	LMk_RepeatID	Last Milking: Count animals iden	Setup
1223	LFStartDate	Feed Cycle Start Date	Setup
1301	NumMeters	Milk Meters	Setup
1302	NumFeeders	Total feed stations	Setup
1303	NumGateScales	Number Selection/Scale Units	Setup
1304	NumParlorSide	Number parlor sides	Setup
2001	Cow	Animal Number	General
2002	Reg1	Registration number	General
2003	Name	Name	General
2004	TDCDat	Life Data Change Date	General
2005	LHDat	Left Herd Date	General
2007	LactNo	Lactation Number	General
2008	AI	Total AI's	General
2009	NI	Needed AI's	General
2010	Sire	Sire	General
2011	Dam	Dam	General
2012	Bd	Breed	General
2013	PurDt	Herd Entry / Purchase Date	General
2014	Pur$	Purchase Price	General
2015	Rais$	Cost of Raising	General
2016	Mark$	Market Value	General
2017	Vet$	Vet Cost	General
2018	TIns	Total Inseminations and Estim	General
2021	Gp	Group Number	General
2022	PStr	Permanent String Number	General
2023	Resp	Responder Number	General
2024	Pos	Stanchion Barn Position	General
2025	AiCost	Misc. Breeding Costs	General
2026	GpCow	Group/String . Animal	General
2027	Notes	Animal Notepad	General
2028	CRNum	dairyplan 5 Record Number	General
2030	Resp4	Responder Number	General
2031	RespDup	Animal with Duplicate Respond	General
2091	Reg1IsISO	Registration is ISO format	General
2101	Reg2	Second Registration	General
2102	AAA	Animal Analysis	General
2103	Class	Classification Score	General
2104	PlanSir1	Service Sire Choice 1	General
2105	PlanSir2	Service Sire Choice 2	General
2106	PlanSirP	Service Sire for problems	General
2107	Stat	Status Word	General

2108	Typ	Animal Type	General
2109	DamBN	Dam Barn Number	General
2110	LHReas	Left Herd Reason	General
2112	BloodLin	Family Line	General
2113	Breedr	Breeder	General
2114	Buyer	Buyer	General
2115	StatEn	Status Word	General
2121	Body	Body Weight	General (Process Control)
2122	AvBdy	Average Body Weight	General (Process Control)
2123	BdWtDate	Weigh Date	General (Process Control)
2125	MsBdyDat	Body Weight Measurement Date	Body Measurement
2126	MsBdyTim	Body Weight Measurement Time	Body Measurement
2127	MsBody	Measurement: Body Weight	Body Measurement
2131	FVC	Feed Stall Visit Count	General (Process Control)
2132	FVCA	Feed Stall Visit Count- Avera	General (Process Control)
2133	FVT	Last Feed Stall Visit Time	General (Process Control)
2134	FVSec	Total Seconds at Feed Stall	General (Process Control)
2135	FVMin	Total Minutes at Feed Stall	General (Process Control)
2141	DVC	Drink Stall Visit Count	General (Process Control)
2142	DVCA	Drink Stall Visit Count- Aver	General (Process Control)
2144	DVSec	Total Seconds at Drink Stall	General (Process Control)
2145	DVMin	Total Minutes at Drink Stall	General (Process Control)
2147	DrSpeed	Drinking Speed	General (Process Control)
2148	DrSpeedA	Drinking Speed- Average	General (Process Control)
2149	DrSpeedD	Drink Speed Deviation Percent	General (Process Control)
2160	Growth	Growth per day	General (Process Control)
2161	LGrowth	Daily Growth over Lifetime	General (Process Control)
2162	BodyDown	Lowest Body Weight Recorded	General
2163	DownDate	Lowest Body Weight Date	General
2164	DownDim	Lowest Body Weight DIM	General
2165	BodyAvgL	Average Body Weight this Lact	General
2180	GateD	Selection Date	General (Process Control)
2181	G1	Selection Switch 1	General (Process Control)
2182	G2	Selection Switch 2	General (Process Control)
2183	G3	Selection Switch 3	General (Process Control)
2184	G4	Selection Switch 4	General (Process Control)
2190	SelCount	Count Times Selected	General (Process Control)
2191	MsSelCount	Count Times Selected	Feed
2192	SelCountAvg	Selection Count - 7 day Avg	Feed

2202	St	Status Code	General
2203	StDirect	Status Code	General
2299	RespISO	ISO Responder	General
2301	Age	Age in years	General
2302	AgeM	Age in months	General
2303	AgeD	Age in Days	General
2304	DIM	Days In Milk	General
2305	ExpHeat	Expected Heat Date	General
2306	HT	Expected days to heat	General
2308	BrDat	Breeding Date	General
2309	FiDim	Days in Milk at First Insemin	General
2311	DTDry	Days Until Dry	General
2312	RcDry	Recommended Dry Date	General
2314	DYP	Days Pregnant	General
2316	DTC	Expected Days until Calving	General
2317	Due	Expected Calving date	General
2319	CI	Calving Interval (Days)	General
2320	CIMonth	Calving Interval (Months)	General
2322	AgeClv	Age at calving	General
2325	Opn	Days Open	General
2326	OpC	Days Open (DIM for cows not i	General
2327	OpP	Days Open (DIM for cows not c	General
2329	DyD	Days Dry	General
2330	DyDLast	Days Dry Last Lactation	General
2401	DamReg1	Dam's registration number	General
2402	DamName	Dam's name	General
2403	DamBd	Dam's breed	General
2404	DamDam	Dam's dam	General
2405	DamSire	Dam's sire	General
2901	UD1	User defined Date 1	General
2902	UD2	User defined Date 2	General
2903	UD3	User defined Date 3	General
2911	UC1	User defined Cost 1	General
2912	UC2	User defined Cost 2	General
2913	UC3	User defined Cost 3	General
2921	UWord1	User Defined Word	General
2922	UWord2	User Defined Word	General
2923	UWord3	User Defined Word	General
2931	UN1	User defined Number 1	General
2932	UN2	User defined Number 2	General
2933	UN3	User defined Number 3	General
2934	UN4	User Defined Number	General
2935	UN5	User Defined Number	General
2936	UN6	User Defined Number	General
2937	UN7	User Defined Number	General
2938	UN8	User Defined Number	General
2939	UN9	User Defined Number	General
3101	VetDat	Vet Action Date	Vet Action
3102	VetTech	Vet Action Worker	Vet Action
3103	VetCost	Vet Action Cost	Vet Action
3104	VetCom	Vet Action Comment 1	Vet Action
3105	VetDiag	Vet Action Result	Vet Action
3106	VetTime	Vet Action Time of Day	Vet Action
3107	VetOffC	Vet Official Code Number	Vet Action

3108	VetCom2	Vet Comment 2	Vet Action
3109	VetName	Vet Action Name	Vet Action
3111	BirDat	BIRTH Vet Action Date	Vet Action
3112	BirTech	BIRTH Vet Action Worker	Vet Action
3113	BirCost	BIRTH Vet Action Cost	Vet Action
3114	BirCom	BIRTH Vet Action Comment 1	Vet Action
3115	BirDiag	BIRTH Vet Action Result	Vet Action
3116	BirTime	BIRTH Vet Action Time of Day	Vet Action
3117	BirOffC	BIRTH Vet Official Code Numb	Vet Action
3118	BirCom2	BIRTH Vet Comment 2	Vet Action
3121	ClvDat	CALVING Vet Action Date	Vet Action
3122	ClvTech	CALVING Vet Action Worker	Vet Action
3123	ClvCost	CALVING Vet Action Cost	Vet Action
3124	ClvCom	CALVING Vet Action Comment 1	Vet Action
3125	ClvDiag	CALVING Vet Action Result	Vet Action
3126	ClvTime	CALVING Vet Action Time of Da	Vet Action
3127	ClvOffC	CALVING Vet Official Code Num	Vet Action
3128	ClvCom2	CALVING Vet Comment 2	Vet Action
3129	ClvDatP	CALVING Future Vet Action Dat	Vet Action
3131	HtODat	HEAT Vet Action Date	Vet Action
3132	HtOTech	HEAT Vet Action Worker	Vet Action
3133	HtOCost	HEAT Vet Action Cost	Vet Action
3134	HtOCom	HEAT Vet Action Comment 1	Vet Action
3135	HtODiag	HEAT Vet Action Result	Vet Action
3136	HtOTime	HEAT Vet Action Time of Day	Vet Action
3137	HtOOffC	HEAT Vet Official Code Numb	Vet Action
3138	HtOCom2	HEAT Vet Comment 2	Vet Action
3139	HtODatP	HEAT Future Vet Action Date	Vet Action
3141	SrvDat	INSEMINATION Vet Action Date	Vet Action
3142	SrvTech	INSEMINATION Vet Action Worker	Vet Action
3143	SrvCost	INSEMINATION Vet Action Cost	Vet Action
3144	SrvCom	INSEMINATION Vet Action Comment 1	Vet Action
3145	SrvDiag	INSEMINATION Vet Action Result	Vet Action
3146	SrvTime	INSEMINATION Vet Action Time of D	Vet Action
3147	SrvOffC	INSEMINATION Vet Official Code Nu	Vet Action
3148	SrvCom2	INSEMINATION Vet Comment 2	Vet Action
3149	SrvDatP	INSEMINATION Future Vet Action Da	Vet Action
3151	PrgDat	PREG? Vet Action Date	Vet Action
3152	PrgTech	PREG? Vet Action Worker	Vet Action
3153	PrgCost	PREG? Vet Action Cost	Vet Action
3154	PrgCom	PREG? Vet Action Comment 1	Vet Action
3155	PrgDiag	PREG? Vet Action Result	Vet Action
3156	PrgTime	PREG? Vet Action Time of D	Vet Action
3157	PrgOffC	PREG? Vet Official Code Nu	Vet Action
3158	PrgCom2	PREG? Vet Comment 2	Vet Action
3159	PrgDatP	PREG? Future Vet Action Da	Vet Action
3161	DryDat	DRY Vet Action Date	Vet Action
3162	DryTech	DRY Vet Action Worker	Vet Action
3163	DryCost	DRY Vet Action Cost	Vet Action
3164	DryCom	DRY Vet Action Comment	Vet Action
3165	DryDiag	DRY Vet Action Result	Vet Action
3166	DryTime	DRY Vet Action Time of	Vet Action
3167	DryOffC	DRY Vet Official Code	Vet Action
3168	DryCom2	DRY Vet Comment 2	Vet Action

3169	DryDatP	DRY Future Vet Action	Vet Action
3171	AbtDat	ABORT Vet Action Date	Vet Action
3172	AbtTech	ABORT Vet Action Worker	Vet Action
3173	AbtCost	ABORT Vet Action Cost	Vet Action
3174	AbtCom	ABORT Vet Action Comment 1	Vet Action
3175	AbtDiag	ABORT Vet Action Result	Vet Action
3176	AbtTime	ABORT Vet Action Time of Day	Vet Action
3177	AbtOffC	ABORT Vet Official Code Numbe	Vet Action
3178	AbtCom2	ABORT Vet Comment 2	Vet Action
3201	VetDateF	Future Vet Action Date	Vet Action
3206	VetTimeF	Future Vet Action Time	Vet Action
3207	VetOffCF	Future Vet Action Code Number	Vet Action
3209	VetNameF	Future Vet Action Name	Vet Action
3300	VetFut	Is Future Action?	Vet Action
3301	VetCount	Count (this lactation)	Vet Action
3302	VetCntLf	Count (whole lifetime)	Vet Action
3303	VetDim	Days in milk for action	Vet Action
3304	VetAge	Age on vet action date	Vet Action
3311	BirCount	BIRTH Count (this lactation)	Vet Action
3312	BirCntLf	BIRTH Count (whole lifetime)	Vet Action
3313	BirDim	BIRTH Days in milk for actio	Vet Action
3314	BirAge	BIRTH Age on vet action date	Vet Action
3321	ClvCount	CALVING Count (this lactation	Vet Action
3322	ClvCntLf	CALVING Count (whole lifetime	Vet Action
3323	ClvDim	CALVING Days in milk for acti	Vet Action
3324	ClvAge	CALVING Age on vet action dat	Vet Action
3331	HtOCount	HEAT Count (this lactation)	Vet Action
3332	HtOCntLf	HEAT Count (whole lifetime)	Vet Action
3333	HtODim	HEAT Days in milk for actio	Vet Action
3334	HtOAge	HEAT Age on vet action date	Vet Action
3341	SrvCount	INSEMINATION Count (this lactatio	Vet Action
3342	SrvCntLf	INSEMINATION Count (whole lifetim	Vet Action
3343	SrvDim	INSEMINATION Days in milk for act	Vet Action
3344	SrvAge	INSEMINATION Age on vet action da	Vet Action
3351	PrgCount	PREG? Count (this lactatio	Vet Action
3352	PrgCntLf	PREG? Count (whole lifetim	Vet Action
3353	PrgDim	PREG? Days in milk for act	Vet Action
3354	PrgAge	PREG? Age on vet action da	Vet Action
3361	DryCount	DRY Count (this lactat	Vet Action
3362	DryCntLf	DRY Count (whole lifet	Vet Action
3363	DryDim	DRY Days in milk for a	Vet Action
3364	DryAge	DRY Age on vet action	Vet Action
3371	AbtCount	ABORT Count (this lactation)	Vet Action
3372	AbtCntLf	ABORT Count (whole lifetime)	Vet Action
3373	AbtDim	ABORT Days in milk for action	Vet Action
3374	AbtAge	ABORT Age on vet action date	Vet Action
4101	IMDat	Individual Milk Date	Milk Measurements
4102	IMFlg	Individual Milk "DII" Error F	Milk Measurements
4103	IMDim	Individual Milk DIM	Milk Measurements
4104	IMWt	Individual Milk Weight	Milk Measurements
4105	MTim	Last Time required to milk	Milk Measurements
4106	IMTim	Individual Milk Time	Milk Measurements
4107	IMStall	Measurement: Stall Number	Milk Measurements
4109	IMCode	Individual Milk Code	Milk Measurements

4110	IMCodeDesc	Individual Milk Code	Milk Measurements
4111	IMAvFlo	Measurement: Average Flow Rat	Milk Measurements
4112	IMMxFlo	Measurement: Maximum Flow Rat	Milk Measurements
4113	IMDuration	Individual Milk Duration	Milk Measurements
4114	IMStartSec	Seconds until start of Milk F	Milk Measurements
4115	IMIDTime	IM ID Time	Milk Measurements
4116	IMIDDate	IM ID Date	Milk Measurements
4117	IMAttachTime	IM Milker Attach Time	Milk Measurements
4118	IMAttachDate	IM Milker Attach Date	Milk Measurements
4119	IMTemp	Measurement: Temperature	Milk Measurements
4120	MsCondA	Measurement: Conductivity All	Milk Measurements
4121	MsCond1	Measurement: Conductivity 1	Milk Measurements
4122	MsCond2	Measurement: Conductivity 2	Milk Measurements
4123	MsCond3	Measurement: Conductivity 3	Milk Measurements
4124	MsCond4	Measurement: Conductivity 4	Milk Measurements
4131	AvFlo	Last Average Flow Rate	General (Last Milking)
4132	MxFlo	Last Maximum Flow Rate	General (Last Milking)
4133	LastIDTime	IM ID Time	General (Last Milking)
4134	LastAttachTim	IM Milker Attach Time	General (Last Milking)
4135	ActMilkGroup	Actual Group Milked With	General (Last Milking)
4137	MSt	Last Milking stall number	General (Last Milking)
4138	Dev	Deviation from expected milk	General (Last Milking)
4139	Temp	Temperature	General (Last Milking)
4141	ReattachCount	IM Reattach Count	General (Last Milking)
4142	ReattachSec	IM Reattach Pause (Seconds)	General (Last Milking)
4201	DMWt	Daily Milk Weight	General
4202	DMFlg	Daily Milk "DII" Error Flag	General
4203	DMDim	Daily Milk DIM	General
4204	DMWtCal	Daily Milk Weight (Calendar)	General
4205	DMCntCal	Daily Milk (Calendar) Count	General
4221	AvMlk	Average daily milk	General
4222	AvMlkC	Average Milk for last (n) day	General
4223	AcMlk	Last Actual 24 Hour Milk Tota	General
4224	MilkCh24	Milk Change: Last 24 hours -	General
4225	MilkCp24	Milk %% Change: Last 24 hours	General
4227	FCM	Fat corrected Milk	General
4228	MlkSum	Milk Yield Sum last (n) days	General
4229	AvMlkMeth	Average Milk Method (n)	General
4231	PeakMilk	Peak Milk Amount	General
4232	PeakDate	Peak Milk Date	General
4233	PeakDim	Peak Milk DIM	General
4234	PeakChg	Milk Average Change Per Day S	General
4235	PeakWPC	Weekly Percent Change Since P	General
4241	MkOnDate	Estimate Milk On Date	General
4242	YrMkDate	Instant Projected Herd Averag	General
4243	MkDim	Average Daily Milk at (n) DIM	General
4244	MilkChg	Milk Average Change Per Day	General
4245	MilkWPC	Milk Weekly Percent Change	General
4246	MkLWPC	Milk WPC since lact start	General
4251	MkDIMEx	Avg Milk on exact DIM	General
4252	MkDIMEx1	Avg Milk on exact DIM, 1st la	General
4253	MkLWPCEx	Milk Lact WPC on exact DIM	General
4301	AMlkS1	Average Milk from Session One	General
4302	AMlkS2	Average Milk from Session Two	General

4303	AMlkS3	Average Milk from Session Thr	General
4304	AMlkS4	Average Milk from Session Fou	General
4309	AvgNumMilkDay	Average number of milkings pe	General
4311	MD2	Difference of last 2 milkings	General
4312	MS2	Sum of last 2 milkings	General
4313	MS3	Sum of last 3 milkings	General
4314	IMInterval	Minutes between Milkings	General
4315	MtM	Last milk time in minutes	General
4316	MinSinMilk	Minutes since last milking	General
4317	MilkTimeOK	Reached minimum milking inter	General
4318	MBM_NoErr	Minutes between Milkings	General
4351	ATim	Average time required	General
4352	NoIDPerc	ID missing percentage	General
4401	HldDt	Date to begin using settings	General
4402	HldTm	Time to begin using settings	General
4403	RstDt	Date to stop using settings	General
4404	RstTm	Time to stop using settings	General
4411	Ill	Milking Sickness Code	General (Milk Control)
4412	Met	Milking Isolation Code	General (Milk Control)
4413	Gen	Milking General Code	General (Milk Control)
4414	GenUseDT	Use Dates for General Code	General (Milk Control)
4421	Stim	Stimulation Time	General (Milk Control)
4431	MFManTakeOff	Manual Takeoff	General (Milk Control)
4432	MFContPulse	continue pulsation	General (Milk Control)
4433	MFNoFinishSup	No Milk Finish Support	General (Milk Control)
4434	MFBlockExit	Block Exit Gate	General (Milk Control)
4435	MFRinseBetwee	Rinse Between Milkings	General (Milk Control)
4436	MFNoAutoBrush	No Automatic Brushing	General (Milk Control)
4437	MFRobotTrain	Robot Training	General (Milk Control)
4438	MFNoAutoAttac	No Auto Attach	General (Milk Control)
4439	MFNoKickoff	No Kick Off	General (Milk Control)
4451	MFAttenA	Light A	General (Milk Control)
4452	MFAttenB	Light B	General (Milk Control)
4461	CFSepMilk	Combined Flags: Isolate Milk	General (Milk Control)
4462	CFNoMilk	Combined Flags: Do Not Milk	General (Milk Control)
4463	CFNoBrush	Combined Flags: No Automatic	General (Milk Control)
4464	CFCDatOK	Combined Flags: In date range	General (Milk Control)
4465	CMilkCtrlSet	Any Milk Control Flag Set	General (Milk Control)
4501	MsPedHr	Measurement: Activity / Hour	Measurements Activity
4502	MsPedVl	Measurement: Activity Value	Measurements Activity
4503	MsPedDat	Activity Measurement Date	Measurements Activity
4504	MsPedTim	Activity Measurement Time	Measurements Activity
4521	MkpH	Milk Per Hour	General (Milking Analysis)
4523	MkpHAvg	Milk/hr Average Value	General (Milking Analysis)
4524	MkpHSd	Milk/hr Standard Deviation	General (Milking Analysis)
4525	MkpHDev	Milk/hr Deviation from Mean	General (Milking Analysis)
4526	MkpHSdD	Milk/hr Standardized Deviatio	General (Milking Analysis)
4527	MkpHShow	Milk/hr Deviation (++--)	General (Milking Analysis)
4528	MkpHHigh	Milk/hr Highest Deviation	General (Milking Analysis)
4529	MkpHLow	Milk/hr Lowest Deviation	General (Milking

			Analysis)
4530	MkpHAlrm	Milk Per Hour Alarm	General (Milking Analysis)
4541	Pedo	Activity 24 Hour Equivalent	General (Activity Analysis)
4543	PedoAvg	Activity Average Value	General (Activity Analysis)
4544	PedoSd	Activity Standard Deviation	General (Activity Analysis)
4545	PedoDev	Activity Deviation from Mean	General (Activity Analysis)
4546	PedoSdD	Activity Standardized Deviati	General (Activity Analysis)
4547	PedoShow	Activity Deviation (++--)	General (Activity Analysis)
4548	PedoHigh	Activity Highest Deviation	General (Activity Analysis)
4549	PedoLow	Activity Lowest Deviation	General (Activity Analysis)
4550	PedoAlrm	Activity Alarm	General (Activity Analysis)
4563	FloAvAvg	Avg Flow Average Value	General (Milk Flow Analysis)
4564	FloAvSd	Avg Flow Standard Deviation	General (Milk Flow Analysis)
4565	FloAvDev	Avg Flow Deviation from Mean	General (Milk Flow Analysis)
4566	FloAvSdD	Avg Flow Standardized Deviati	General (Milk Flow Analysis)
4567	FloAvSho	Avg Flow Deviation (++--)	General (Milk Flow Analysis)
4568	FloAvHigh	Average Flow Highest Deviatio	General (Milk Flow Analysis)
4569	FloAvLow	Average Flow Lowest Deviation	General (Milk Flow Analysis)
4570	FloAvAlrm	Average Flow Alarm	General (Milk Flow Analysis)
4583	FloMxAvg	Max Flow Average Value	General (Milk Flow Analysis)
4584	FloMxSd	Max Flow Standard Deviation	General (Milk Flow Analysis)
4585	FloMxDev	Max Flow Deviation from Mean	General (Milk Flow Analysis)
4586	FloMxSdD	Max Flow Standardized Deviati	General (Milk Flow Analysis)
4587	FloMxSho	Max Flow Deviation (++--)	General (Milk Flow Analysis)
4588	FloMxHigh	Maximum Flow Highest Deviatio	General (Milk Flow Analysis)
4589	FloMxLow	Maximum Flow Lowest Deviation	General (Milk Flow Analysis)
4590	FloMxAlrm	Maximum Flow Alarm	General (Milk Flow Analysis)
4601	Cond	Conductivity: Value	General (Conductivity Analysis)
4603	CondAvg	Conductivity: Average Value	General (Conductivity Analysis)
4604	CondSd	Conductivity: Standard Deviat	General (Conductivity Analysis)
4605	CondDev	Conductivity: Deviation from	General (Conductivity Analysis)
4606	CondSdD	Conductivity: Standardized De	General (Conductivity Analysis)
4607	CondShow	Conductivity Deviation (++--)	General (Conductivity Analysis)

4608	CondHigh	Conductivity: Highest Deviati	General (Conductivity Analysis)
4609	CondLow	Conductivity: Lowest Deviatio	General (Conductivity Analysis)
4610	CondAlrm	Conductivity Alarm	General (Conductivity Analysis)
4623	BodyAvg	Average Body Weight (actual m	General (Weight Analysis)
4624	BodySd	Body Weight Standard Deviatio	General (Weight Analysis)
4625	BodyDev	Body Weight Deviation from Me	General (Weight Analysis)
4626	BodySdD	Body Weight Standardized Devi	General (Weight Analysis)
4627	BodyShow	Body Weight Deviation (++--)	General (Weight Analysis)
4628	BodyHigh	Body Weight: Highest Deviatio	General (Weight Analysis)
4629	BodyLow	Body Weight: Lowest Deviation	General (Weight Analysis)
4630	BodyAlrm	Body Weight Alarm	General (Weight Analysis)
4661	CondAvgQ1	Conductivity: Average Value	General (Conductivity Analysis)
4662	CondAvgQ2	Conductivity: Average Value	General (Conductivity Analysis)
4663	CondAvgQ3	Conductivity: Average Value	General (Conductivity Analysis)
4664	CondAvgQ4	Conductivity: Average Value	General (Conductivity Analysis)
4671	CondSdDQ1	Conductivity: Standardized De	General (Conductivity Analysis)
4672	CondSdDQ2	Conductivity: Standardized De	General (Conductivity Analysis)
4673	CondSdDQ3	Conductivity: Standardized De	General (Conductivity Analysis)
4674	CondSdDQ4	Conductivity: Standardized De	General (Conductivity Analysis)
4681	CondAvgQLow	Cond: Lowest Quarter Average	General (Conductivity Analysis)
4682	CondAvgQLowNu	Cond: Quarter Number with low	General (Conductivity Analysis)
4683	CondQHigh	Cond: Highest Quarter last re	General (Conductivity Analysis)
4684	CondQHighNum	Cond: Quarter Number, highest	General (Conductivity Analysis)
4685	CondQDev	Cond: Quarter deviation perce	General (Conductivity Analysis)
4686	CondQHigh24	Cond: Highest Quarter last 24	General (Conductivity Analysis)
4687	CondQHighNum2	Cond: Quarter Number, highest	General (Conductivity Analysis)
4688	CondQDev24	Cond: Quarter deviation perce	General (Conductivity Analysis)
4691	AlarmCnt	Illness Alarm Count	General (Illness Analysis)
4692	AlarmPts	Illness Alarm Points	General (Illness Analysis)
4693	MCSDD	Milk plus Conductivity SDD	General (Conductivity Analysis)
4694	CondDiff	Difference between cond peak-	General (Conductivity Analysis)
4701	CwRobDate	Leonardo Milking Date	Leonardo Experimental Data
4702	CwRobTime	Leonardo Milking Time	Leonardo Experimental Data
4703	CwRobCoord	Leonardo Udder Coordinate	Leonardo Experimental

			Data
4711	CwRobTemp1	Leonardo Quarter Temperature	Leonardo Experimental Data
4712	CwRobTemp2	Leonardo Quarter Temperature	Leonardo Experimental Data
4713	CwRobTemp3	Leonardo Quarter Temperature	Leonardo Experimental Data
4714	CwRobTemp4	Leonardo Quarter Temperature	Leonardo Experimental Data
4721	CwRobFlow1	Leonardo Milk Flow Missing on Quarter	Leonardo Experimental Data
4722	CwRobFlow2	Leonardo Milk Flow Missing on Quarter	Leonardo Experimental Data
4723	CwRobFlow3	Leonardo Milk Flow Missing on Quarter	Leonardo Experimental Data
4724	CwRobFlow4	Leonardo Milk Flow Missing on Quarter	Leonardo Experimental Data
4751	CwRobCondDur	Leonardo Duration Conductivity Measuring	Leonardo Experimental Data
4752	CwRobTeatMiss	Leonardo Teat Missing	Leonardo Experimental Data
4753	CwMisattach	Leonardo Could not Attach last Milking	Leonardo Experimental Data
4754	CwRobFlowMiss	Leonardo any Milk Flow Missing	Leonardo Experimental Data
4755	CwRobCond1	Leonardo Quarter Conductivity	Leonardo Experimental Data
4756	CwRobCond2	Leonardo Quarter Conductivity	Leonardo Experimental Data
4757	CwRobCond3	Leonardo Quarter Conductivity	Leonardo Experimental Data
4758	CwRobCond4	Leonardo Quarter Conductivity	Leonardo Experimental Data
4759	CwRobCondAvg	Leonardo Average Quarter Conductivity	Leonardo Experimental Data
4760	CwRobCondOK	Leonardo Conductivity Measuring OK	Leonardo Experimental Data
4761	CwRobMReach	Leonardo Reached expected Milk Weight	Leonardo Experimental Data
4762	CwRobFlush	Leonardo Flush after Milking	Leonardo Experimental Data
4763	CwRobATries	Leonardo Attach Tries	Leonardo Experimental Data
4764	CwRobMDur1	Leonardo Milk Duration Quarter	Leonardo Experimental Data
4765	CwRobMDur2	Leonardo Milk Duration Quarter	Leonardo Experimental Data
4766	CwRobMDur3	Leonardo Milk Duration Quarter	Leonardo Experimental Data
4767	CwRobMDur4	Leonardo Milk Duration Quarter	Leonardo Experimental Data
4768	CwRobATime	Leonardo Attach Time	Leonardo Experimental Data
4769	CwRobBlExit	Leonardo Do not Exit	Leonardo Experimental Data
4770	CwRobBHeight	Leonardo Brush Height	Leonardo Experimental Data
4771	CwRobBTime	Leonardo Brush Time	Leonardo Experimental Data
4772	CwRobFamil	Leonardo Familiarize	Leonardo Experimental Data
4773	CwRobMaxDur	Leonardo Maximum Milk Duration	Leonardo Experimental Data
4774	CwRobMedDur	Leonardo Medium Milk	Leonardo Experimental Data

4775	CwRobNoAtt	Leonardo Do not attach automatically	Leonardo Experimental Data
4776	CwRobNoBru	Leonardo Do not Brush automatically	Leonardo Experimental Data
4777	CwRobNoMilk	Leonardo Do not Milk	Leonardo Experimental Data
4778	CwRobRejM1	Leonardo Separate Milk (1)	Leonardo Experimental Data
4779	CwRobRejM2	Leonardo Separate Milk (2)	Leonardo Experimental Data
4780	CwRobQuMis1	Leonardo Missing Quarter	Leonardo Experimental Data
4781	CwRobQuMis2	Leonardo Missing Quarter	Leonardo Experimental Data
4782	CwRobQuMis3	Leonardo Missing Quarter	Leonardo Experimental Data
4783	CwRobQuMis4	Leonardo Missing Quarter	Leonardo Experimental Data
4791	IMClusterSet	Time to set Cluster	Milk Measurements
4792	IMFlowMiss1	No Milk Flow from Quarter 1	Milk Measurements
4793	IMFlowMiss2	No Milk Flow from Quarter 2	Milk Measurements
4794	IMFlowMiss3	No Milk Flow from Quarter 3	Milk Measurements
4795	IMFlowMiss4	No Milk Flow from Quarter 4	Milk Measurements
4796	IMCountSets	Count Cluster Set Tries	Milk Measurements
4801	IMMFlowChk	Count Milk Flow Checks (Leona	Milk Measurements
5101	TestMilk	Milk Amount in Component Tabl	Test Components
5103	TestDim	Average Milk DIM	Test Components
5106	TestDate	Component Test Date	Test Components
5107	MPWgt	Plot Point Milk Weight	Measured Averages
5108	MPDat	Milk Plot Point Date	Measured Averages
5120	MPBody	Plot Point: Body Weight	Measured Averages
5125	MPPedHr	Plot Point: Activity per Hour	Measured Averages
5127	MPFloAv	Plot Point: Average Flow Rate	Measured Averages
5128	MPFloMx	Plot Point: Maximum Flow Rate	Measured Averages
5130	MPCondA	Plot Point: Conductivity (All	Measured Averages
5151	Fat	Fat Percent	Test Components
5152	Prot	Protein Percent	Test Components
5153	Lact	Lactose Percent	Test Components
5154	SCC	Somatic Cell Count	Test Components
5155	LnSCC	Somatic Cell Count	Test Components
5156	Urea	Urea (from Test Table)	Test Components
5157	Score	Body Condition Score (from Te	Test Components
5158	Urea10	Urea * Factor 10	Test Components
5201	Sample	Sample Bottle Number	General
5202	SampBox	Sample Box Number	General
5203	SampDat	Sample Bottle Date	General
5211	IMBarCode	Milk Sample Bar Code	Milk Measurements
6101	PDCalve	Lact Start (Calving) Date	Lactation Totals
6102	LactMO	Official Lactation Total Milk	Lactation Totals
6103	IMCntO	Official Milk Count	Lactation Totals
6104	IMCntE	Official Milk Error Count	Lactation Totals
6121	MkAv$	Money Value of Ave Milk	General
6122	PTFeed$	Projected Total Feed Value	General
6123	M305$	Projected 305 FC Milk Value	General
6124	Sum$Brd	Sum of Breeding Costs	General
6131	Sum$Vet	Sum of Vet Costs	General
6132	Sum$Fed	Sum of Feed Costs	General

6138	Sum$MC	Sum of Misc Costs	General
6139	Sum$Cst	Sum of All Costs	General
6141	Sum$Mlk	Sum of Milk Value	General
6142	Sum$Clf	Sum of Calf Value	General
6148	Sum$MI	Sum of Misc Incomes	General
6149	Sum$Inc	Sum of All Incomes	General
6150	Sum$	Sum of Income - Expense	General
6161	FeedT$	Lact Total Feed Cost	General
6162	TMilk$	Lact Total Milk Value	General
6171	FTot1	Lact Total Feed One	General
6172	FTot2	Lact Total Feed Two	General
6173	FTot3	Lact Total Feed Three	General
6174	FTot4	Lactation Total Feed 4	General
6175	FTot5	Lactation Total Feed 5	General
6176	FTot6	Lactation Total Feed 6	General
6177	FTot7	Lactation Total Feed 7	General
6178	FTot8	Lactation Total Feed 8	General
6179	FTot9	Lactation Total Feed 9	General
6201	LactF	Lact Total Fat	Lactation Totals
6202	LactP	Lact Total Protein	Lactation Totals
6203	LactM	Lact Total Milk	Lactation Totals
6210	RTMlk	Lact Roughage Total Milk	Lactation Totals
6211	MC	Lact: number male calves	Lactation Totals
6212	FC	Lact: number female calves	Lactation Totals
6216	CalfV	Lact Calf Value	Lactation Totals
6231	FatAvg	Average Fat Test this Lactati	Lactation Totals
6232	ProtAvg	Average Protein Test this Lac	Lactation Totals
6233	SccAvg	Average SCC Test this Lactati	Lactation Totals
6241	FatAvgA	Average Fat Amount this Lacta	Lactation Totals
6242	ProtAvgA	Average Protein Amount this L	Lactation Totals
6251	LDim	Lact Days in Milk	Lactation Totals
6301	F305	Lact Actual 305 Day Fat	Lactation Totals
6302	P305	Lact Actual 305 Day Protein	Lactation Totals
6303	M305	Lact Actual 305 Day Milk	Lactation Totals
6310	M100	Lact 100 Day Milk Total	Lactation Totals
6320	M200	Lact 200 Day Milk Total	Lactation Totals
6325	M365	Lact Actual 365 Day Milk	Lactation Totals
6400	M305P	Projected 305 Day Milk	Lactation Totals
6401	F305P	Projected 305 Day Fat	Lactation Totals
6402	P305P	Projected 305 Day Protein	Lactation Totals
6403	P305C	Projected 305 Fat Corrected	Lactation Totals
6410	M305E	External 305 milk calc	Lactation Totals
6411	F305E	External 305 fat calc	Lactation Totals
6412	P305E	External 305 protein calc	Lactation Totals
6421	AnMilk	Annual Milk Production	Lactation Totals
6425	LMErr	Lact Milk Percent Error Estim	Lactation Totals
6426	M305100	Projected 305 milk, from 100	Lactation Totals
6427	MP305100	Projection Error, 100 to 305	Lactation Totals
6431	RHA	Rolling Herd Average	
6432	RHA_Milk	Rolling Herd Average- Milk Co	
6433	RHA_Days	Rolling Herd Average- Days Co	
6441	ExpToMilk	Expected to Milk on Date	
6500	FCME	Projected 305 FC Mature Equiv	
6505	ME	Projected 305 Mature Equiv	

6510	EME	External Mature Eq calc	
6521	LifeMilk	Lifetime Total Milk	General
6522	LifeFat	Lifetime Total Fat	General
6523	LifeProt	Lifetime Total Protein	General
6531	LifeMC	Lifetime Total Male Calves	General
6532	LifeFC	Lifetime Total Female Calves	General
6533	LifeDC	Lifetime Total Dead Calves	General
6601	CalfSex	Calf Sex	
6602	Calf1	Lact First Calf ID	Lactation Totals
6603	CalfReg	Calf Registration	Lactation Totals
6611	CalfSex2	Calf Sex	Lactation Totals
6612	Calf2	Lact Second Calf ID	Lactation Totals
6613	CalfReg2	Calf Registration (2nd)	Lactation Totals
6621	DC	Lact: number dead calves	Lactation Totals
6622	DFC	Lact: number dead female calv	Lactation Totals
6623	DMC	Lact: number dead male calves	Lactation Totals
7101	FdType	Feed Type Number	Feed
7102	FdName	Name for Feed	Feed
7103	Ratn	Feed Ration	Feed
7104	CFC	Current Feed- Consumed	Feed
7105	Recm	Recommended Feed Ration	Feed
7106	Rem	Feed Remainder (yesterday)	Feed
7107	CFRInt	Current Feed- Reached Int. Mi	Feed
7108	CFU	Current Feed- Unavailable	Feed
7109	CFA	Current Feed- Available	Feed
7111	PRem	Feed Remainder (Prev Day)	Feed
7112	P2Rm	Feed Remainder (2 days ago)	Feed
7115	CFR	Current Feed Remainder	Feed
7116	FdConsAv	Feed Consumed- 7 Day Avg	Feed
7118	RatnYest	Feed Ration Yesterday	Feed
7119	ConsYest	Feed Consumed Yesterday	Feed
7130	RemP	Feed Remainder Percentage	Feed
7131	RemPShow	Feed Remainder Percentage (++	Feed
7132	RemPNow	Feed Remainder Percentage Now	Feed
7133	PTFeed	Projected Feed Consumption	Feed
7134	NextFedInt	Next Feed Interval Calc Time	Feed
7143	Ratn1	Feed Ration	Feed
7144	CFC1	Current Feed- Consumed	Feed
7145	Recm1	Recommended Feed Ration	Feed
7146	Rem1	Feed Remainder (yesterday)	Feed
7148	CFU1	Current Feed- Unavailable	Feed
7149	CFA1	Current Feed- Available	Feed
7151	PRem1	Feed Remainder (Prev Day)	Feed
7152	P2Rm1	Feed Remainder (2 days ago)	Feed
7155	CFR1	Current Feed Remainder	Feed
7163	Ratn2	Feed Ration	Feed
7164	CFC2	Current Feed- Consumed	Feed
7165	Recm2	Recommended Feed Ration	Feed
7166	Rem2	Feed Remainder (yesterday)	Feed
7168	CFU2	Current Feed- Unavailable	Feed
7169	CFA2	Current Feed- Available	Feed
7171	PRem2	Feed Remainder (Prev Day)	Feed
7172	P2Rm2	Feed Remainder (2 days ago)	Feed
7175	CFR2	Current Feed Remainder	Feed

7183	Ratn3	Feed Ration	Feed
7184	CFC3	Current Feed- Consumed	Feed
7185	Recm3	Recommended Feed Ration	Feed
7186	Rem3	Feed Remainder (yesterday)	Feed
7188	CFU3	Current Feed- Unavailable	Feed
7189	CFA3	Current Feed- Available	Feed
7191	PRem3	Feed Remainder (Prev Day)	Feed
7192	P2Rm3	Feed Remainder (2 days ago)	Feed
7195	CFR3	Current Feed Remainder	Feed
7201	MsFedDat	Feed Measurement Date	Feed
7202	MsFedTim	Feed Measurement Time	Feed
7203	MsVisCt	Measurement: Visit Count	Feed
7204	MsVisDu	Measurement: Visit Duration	Feed
7205	MsRemP	Measurement: total remainder	Feed
7206	MsFedCons	Measurement: Feed (n) consume	Feed
7341	MPF1	Plot Point Feed One	Feed
7342	MPF2	Plot Point Feed Two	Feed
7343	MPF3	Plot Point Feed Three	Feed
7344	MPF4	Plot Point: Feed 4	Feed
7345	MPF5	Plot Point: Feed 5	Feed
7346	MPF6	Plot Point: Feed 6	Feed
7347	MPF7	Plot Point: Feed 7	Feed
7348	MPF8	Plot Point: Feed 8	Feed
7349	MPF9	Plot Point: Feed 9	Feed
8001	GroupNum	Group Number	Group Data
8002	GroupName	Name for group	Group Data
8003	GroupMkPDay	Number Milkings per Day	Group Data
8004	GroupMinMkInt	Minimum Milk Interval	Group Data
8005	GroupLastMilk	Total Milk Last Milking	Group Data
8006	GroupLastCoun	Number of Animals Milked	Group Data
8007	GroupTotalMil	Total Milk Since Start Date	Group Data
8008	GroupTotalDat	Start Date for Total	Group Data
8009	GroupCount	Number Animals in Group	Group Data
8010	GroupInsem	Number Animals Inseminated	Group Data
8011	GroupPreg	Number Animals Pregnant	Group Data
8012	GroupFirstTim	Time First Animal Milked	Group Data
8013	GroupLastTime	Time Last Animal Milked	Group Data
8014	GroupHours	Duration of Milking (Hours)	Group Data
8021	GroupAiTot	Group Total AI's	Group Data
8022	GroupAiIndex	Group Insemination Index	Group Data
8023	GroupNonRetCt	Group non-return count (preg	Group Data
8024	GroupNonRetRa	Group non-return rate (preg f	Group Data
8025	GroupHadInsem	Number Animals had an inseminati	Group Data
8101	FedTpNum	Feed Type Number	Feed Setup
8102	FedTpName	Name for Feed	Feed Setup
8103	FedTpBin	Amount in Bin	Feed Setup
8104	FedTpCost	Feed Cost / Kg	Feed Setup
8105	FedTpDrink	Feed Type	Feed Setup
8106	FedTpMaxDay	Maximum Feed Per Day	Feed Setup
8107	FedTpMaxInt	Maximum per interval	Feed Setup
8108	FedTpMinInt	Minimum per interval	Feed Setup
8109	FedTpRoll	Feed rollover to next day	Feed Setup
8110	FedTpIntTot	Intervals per day	Feed Setup
8111	FedTpIntReg	Regular intervals per day	Feed Setup

8112	FedTpYesterda	Total feed dispensed yesterda	Feed Setup
8121	FedTpToday	Total feed dispensed so far	Feed Setup
8122	FedTpDays	Expected days until bin empty	Feed Setup
8201	FedStNum	Stall Number	Feed Setup
8202	FedStChip	Transceiver Chip Version	Feed Setup
8203	FedStType	Feed Stall Type Number	Feed Setup
8204	FedStLastTime	Last Feed Stall Visit Time	Feed Setup
8221	FedStMot01	Feed Type at this Motor	Feed Setup
8222	FedStMot02	Feed Type at this Motor	Feed Setup
8223	FedStMot03	Feed Type at this Motor	Feed Setup
8224	FedStMot04	Feed Type at this Motor	Feed Setup
8225	FedStMot05	Feed Type at this Motor	Feed Setup
8226	FedStMot06	Feed Type at this Motor	Feed Setup
8230	FedStTotal	Total dispensed feed today	Feed Setup
8231	FedStType01	Total dispensed feed today	Feed Setup
8232	FedStType02	Total dispensed feed today	Feed Setup
8233	FedStType03	Total dispensed feed today	Feed Setup
8234	FedStType04	Total dispensed feed today	Feed Setup
8235	FedStType05	Total dispensed feed today	Feed Setup
8236	FedStType06	Total dispensed feed today	Feed Setup
8237	FedStType07	Total dispensed feed today	Feed Setup
8238	FedStType08	Total dispensed feed today	Feed Setup
8239	FedStType09	Total dispensed feed today	Feed Setup
8240	FedStType10	Total dispensed feed today	Feed Setup
8241	FedStType11	Total dispensed feed today	Feed Setup
8242	FedStType12	Total dispensed feed today	Feed Setup
8243	FedStType13	Total dispensed feed today	Feed Setup
8244	FedStType14	Total dispensed feed today	Feed Setup
8245	FedStType15	Total dispensed feed today	Feed Setup
8246	FedStType16	Total dispensed feed today	Feed Setup
8261	FedStDesc	Feed Stall description	Feed Setup
8301	MeterNum	Stall Number	Meter Setup
8302	MeterType	Metatron Type	Meter Setup
8303	MeterChip	Chip Version	Meter Setup
8304	MeterChkSum	Chip Setup Checksum	Meter Setup
8305	MeterNeuronID	Neuron ID	Meter Setup
8311	MeterCtNoId	Count No ID	Meter Setup
8312	MeterCtManId	Count Manual ID	Meter Setup
8313	MeterCtAutoId	Count Auto ID	Meter Setup
8314	MeterCtAll	Count all milk weights	Meter Setup
8315	MeterIDPerc	ID Percentage last milking	Meter Setup
8321	MeterTotAll	Total- all milk last milking	Meter Setup
8322	MeterTotPred	Total- predicted milk	Meter Setup
8323	MeterTotAct	Total- actual milk for known	Meter Setup
8324	MeterTotDur	Duration Total	Meter Setup
8325	MeterRolMEr	Rolling Avg- milk error perce	Meter Setup
8326	MeterRolId	Rolling Avg- ID Percentage	Meter Setup
8327	MeterCondFact	Conductivity Correction Facto	Meter Setup
8331	MeterAvgMilk	Avg Milk each milking	Meter Setup
8332	MeterAvgDur	Avg Duration each milking	Meter Setup
8333	MeterDevPerc	Avg Deviation from expected m	Meter Setup
8401	GateNum	Selection/Scale Number >	Selection Setup
8403	GateChip	Chip Version	Selection Setup
8411	GateNumDoors	Number of Doors Connected	Selection Setup

8501	ParSideNum	Parlour Side Setup	Parlor Side Setup
8502	ParSideMets	Metatrons on this Side	Parlor Side Setup
8503	ParSideID	ID Mode for this side	Parlor Side Setup
8504	ParSideIDChip	Transceiver Chip Version	Parlor Side Setup
8505	ParSideVacTot	Total Vacuum On Minutes	Parlor Side Setup
8506	ParSideVacDat	Vacuum Hours Start Date	Parlor Side Setup
8507	ParSideVacOn	Vacuum On/Off Times	Parlor Side Setup
8508	ParSideVacOff	Vacuum Off Time %d	Parlor Side Setup
8509	ParSideVacHou	Vacuum hours since start	Parlor Side Setup
8510	ParSideStartT	Milking Start Time (Vacuum On	Parlor Side Setup
8601	VetsDesc	Vet Action Name	Vet Setup
8602	VetsCost	Cost of Action	Vet Setup
8603	VetsMetIs	Milking Isolation Code	Vet Setup
8604	VetsMetCode	Milking Sickness Code	Vet Setup
8605	VetsCode	Default official code number	Vet Setup
9101	SAICode	Sire AI Code Number	Sire
9102	SReg	Sire Registration Number	Sire
9103	SReg2	Sire Second Registration	Sire
9104	SName	Sire Name	Sire
9105	Sb	Sire Breed Code	Sire
9106	SNote1	Sire Note 1	Sire
9107	SNote2	Sire Note 2	Sire
9108	SVendor	Sire Vendor	Sire
9109	SDam	Sire's Dam	Sire
9110	SSire	Sire's Sire	Sire
9111	SType	Sire Type Score	Sire
9112	STank	Sire Tank/Canister	Sire
9113	SCost	Sire Straw/Ampule Cost	Sire
9114	SInv	Sire Straws on hand	Sire
9115	SSuc	Sire Successes (number)	Sire
9116	SFai	Sire Failures (number)	Sire
9117	SReo	Sire Semen Reorder Level	Sire
9118	Pd$$	PD$$: MONEY Value	
9119	Pdm	PDM: Milk Amount	
9120	Pdf	PDF: Fat Amount	
9121	Pdpf	PD%F: Fat Percent	
9122	Pdp	PDP: Protein amount	
9123	Pdpp	PD%P: Protein percent	
9124	Pdpr	PD%R: Production Repeatabili	
9125	Pdt	PDT: Type Score	
9126	Pdtr	PDT%R: Type Repeatability	
9127	Pcve	Calving Ease	
9128	Tpi	TPI: Total Performance Inde	
9151	SNeed	Sire reorder - have	Sire
9152	SSucP	Sire percent success	Sire
9153	SFaiP	Sire percent failure	Sire
9154	StVal	Sire total straw value	Sire
9201	ASAiCode	Sire AI Code Number	Sire
9202	ASReg1	Sire Registration Number	Sire
9203	ASReg2	Sire Second Registration	Sire
9204	ASName	Sire Name	Sire
9205	ASBd	Sire Breed Code	Sire
9991	s	Text:	Text
9992	c	Text: ,	Text

9993 q Text: " Text

5. ANNEX A: Using ASCTODII

5.1 Data Conversion Programs

If your data is **not** in ADIS or DII format, you must run a *data conversion program* to make your file compatible with the international standards.

> Contact your Dairy Records Processing Center, and ask them if an ADIS or DII format file is available, or if they can help you with the conversion. Since ADIS has been approved by the International Standards Organization, most centers should be willing to work with you on this.

You have two possible methods to use:

1) Many ASCII text files can be converted using the **ASCTODII** (DOS) program. With this method, you just answer some questions concerning the contents of your file, and the conversion can be carried out automatically. Once ASCTODII has been properly set up, you may use it in a "batch file" to convert similar files in the future.

2) If your file is too complex for ASCTODII, you may have to actually write a customized computer program to convert your files. See section 2, page 9.

5.2 Kinds of Files ASCTODII Can Convert

"ASCTODII" will convert many "ascii" or "text" files into the "DII" format, which is one of the file types DPDataExchange can read automatically. **In this case loading your data becomes a two step process. First you *convert* the file, then you *load* it.** Once you (or a professional programmer) have made a proper setup for the type of data you wish to load, you can create a "batch" file to accomplish both steps with a single command.

ASCTODII can convert text files with the following characteristics:

1) The text file must be in "data column" format, where each column has the same meaning in every line. (If your file has various "line types", see section 2.4.3, page 77.)

2) Each "data column" must be *either* (a) the exact same size, or (b) separated with a comma, semicolon, or tab character.

3) Data for one animal is on just one line.

4) The animal number or registration number appears in every line.

If your file does not meet these requirements, you must write a "customized" conversion program. Refer to section 2, page 9.

5.3 Running ASCTODII

The ASCTODII program is included with the normal DAIRYPLAN DP5 CD installation. You do not need to install the "development disk" to follow these instructions.

1) Open a DOS box or start it with the Task Bar's Execute Command.

2) Type ASCTODII *filename* **(then Enter).**

A file extension *.TXT is assumed unless otherwise specified. Wildcards (ie "A:*.PRN") may be used.

You may optionally specify a "setup" file and an "output" file as well. Refer to section 2.4.1, page 76.

3) The first 20 lines of the file will be displayed on the screen, along with an overlapping "window" with some questions:

Send Organization: Enter a six letter abbreviation for the organization which created the data file.

Send Date: Enter the test date for this information (the program automatically assumes the file creation date).

Metric Units Enter yes if the information is in kg, no for lb. This also may affect the way calendar dates are entered as described below.

Date Format Choose one of the following date formats:

0 = same as "2" with "Metric" set to "Yes", otherwise as "1"
1 = MM-DD-YY or MMDDYY or MMDDCCYY (USA)
2 = DD-MM-YY or DDMMYY or MMDDCCYY (Europe)
3 = YY-MM-DD or YYMMDD or CCYYMMDD (ADIS)

Last line before data: Enter the first few words of text in the file just BEFORE the data you wish to actually load. Leave blank to start loading at the beginning of the file.

First line after data: Enter the first few words of text in the file just AFTER the last line of data you wish to actually load. Leave blank to load through the end of the file.

NOTE: if the "start line" appears again after the "end line", ASCTODII will begin converting the data again.

Data line identification If each line of data begins with a special word or number, enter it here. For example, if your data file contains several different line/record types, you may use this to separate one particular line. Then run ASCTODII again to get data from another line type, etc..

Comma Delimited: Enter "Yes" if the file uses commas ","**to separate data columns of varying sizes. Enter "No" if the file does not.**

*Note: with "comma delimited fields", every data column **must** be separated by commas, semicolons, or tab characters. Optionally, single or double quotation marks may enclose character data.*

*If you **do not** use "comma delimited fields", each data column **must** be the exact same width.*

*In all cases, commas, semicolons, tabs, and single or double quotation marks **cannot** be used as data*.

4) After you have answered all questions, you are asked to confirm that the information is correct. Press **Y** to continue.

5) Next, the data columns will be highlighted one at a time: you must supply the DII field specification for each column.

   a) First, use the left and right arrows to precisely define the column boundary. Press Enter when the column area is correctly highlighted.

   b) Then a window appears asking you to select the field name from a list. Use the up and down arrow keys to find the correct field name for this column. If you do not wish to transfer the information in this column, select "Do Not Transfer". If you cannot find the correct field name, or if you require special options, choose "user defined", and refer to section 2.4.2, page 77.

6) Now ASCTODII performs the file conversion. Each column is converted into a DII field of the proper format.

7) Finally, ASCTODII asks you if you would like to make a "batch file" to more easily load this data using DPDataExchange.

   If you press "N", ASCTODII returns to DOS, leaving instructions on the screen as to how you should run DPDataExchange to finish loading the data. Refer to section 1.2, page 5.

   If you press "Y", ASCTODII will create a "batch file" for you to make this process easier for you next time around. In this case you will be asked for:

   Batch File Name Enter here the name of the command you would like to enter each time you wish to load this data.

   Input Specification Normally this is just the name of the text file you are converting. But you may enter something else, such as a "wildcard" like A:*.PRN**. In this case, your batch file will make ASCTODII bring up a directory of files from your floppy disk each time.**

Automate ASCTODII When you enter "Yes", the "Auto" option is used to make the data conversion run without asking you any questions. (You can always run ASCTODII again yourself if you need to change something).

Automate DPDataExchange Enter "Yes" to also run DPDataExchange with the "Auto" option. This will load all of your animal data without asking you any questions. This is **not** recommended unless you are very confident that you have all setup questions exactly right.

8) ASCTODII is now finished, and exits.

To actually finish loading this information into DAIRYPLAN DP5, you must now run the DPDataExchange program. You can do this either by running DPDataExchange yourself. Refer to section 1.2, page 5. Or by entering the name of the "batch" file you made in step 6, after changing its call of (old) DPLink.exe to DPDataExchange.exe

5.4 Special options using ASCTODII

5.4.1 Command Line Options

The general command form is ASCTODII textfile setupfile outputfile options

Available options are:

-A This option may be used to automatically skip the setup questions. The conversion is performed immediately using a previously defined setup file. After conversion the program exits.

-D This option makes ASCTODII ask for the "Send/Test Date" even in automatic mode. This allows date-sensitive material to be transferred automatically with just one question to be answered.

-B "Batch mode" bypasses the procedure to make a new batch file.

-K This option will force ASCTODII to exit on errors.

5.4.2 Specifying the width and precision

If you select "user defined" as the field name for a column, you are asked to specify the code yourself. Any DII or ADIS code may be entered. It may be the same as a standard item, or your own. Be advised, however, that DPDataExchange will not recognize other codes without special preparation. Refer to section 3.1, page 15, for information on how to create your own special fields in DAIRYPLAN DP5 and DPDataExchange.

After the code, you may optionally enter the *output* column width by using a backslash.

To specify the precision, use a period followed by the number of implied decimal places. **The same precision must be used for the input and output files, unless a decimal place appears in the text file**.

For example, if you specify:

PFAT\3.1

This will interpret all of the following as "3.5 percent fat":

035 35 3.5 3.48

(The default precision for "PFAT" is 2 decimal positions. If you simply enter "PFAT", the first two examples would be interpreted as "0.35". The last two would be interpreted correctly).

Regarding Decimal Places:

For the DII output file, decimal positions are never shown in the data columns: they are part of the definition for the column. You can set the number of decimal positions yourself, or let ASCTODII set this according to the ADIS / DII standards.

For the text file, if a period appears in the column, this is used *regardless of the number of decimal places you specify*. If a period does **not** appear in the text file, *the same number of decimal places is assumed for the text file as for the DII output file*. If this is not correct, you must change it by specifying a different precision using a "user defined" field name.

5.4.3 Converting Files with several different line types

It is fairly common to find data files with different "line types" containing different kinds of information. For example, consider the following simple text file:

```
L1 Joe Dairy    3124589
L2 0028  1H123412 02-08-88
L3 0028  07-12-90 01 12981 0421 0531
L3 0028  08-11-91 02 11312 0451 0621
L2 0037  1H142321 05-11-87
```

```
L3 0037  04-08-89 01 14213 0513 0312
L3 0037  05-10-90 02 15321 0541 0431
L3 0037  06-11-91 03 14312 0432 0531
```

In this example, the file contains three line types "L1", "L2", and "L3". These lines contain farm data, general animal data, and animal lactation data respectively. ASCTODII can convert just one "line type" at a time, therefore a customized "batch file" is required. To convert such a file:

1) Run **ASCTODII filename SETL1**
(you are specifying a special "setup" file SETL1).

2) Answer all questions so as to load data from line type "L1", using the "Data line identification" as "L1" to separate these lines from the others.

3) Do not have ASCTODII create a batch file, because you must create your own special batch file.

4) Repeat steps 1-3 for each line type, specifying a different "setup" file for each line type (you may use any valid filename).

5) Finally, construct a "batch" file such as the following. This will perform the conversion for each line type separately, and run DPDataExchange to load the data.

```
ASCTODII filename SETL1 OUTL1 /A
if errorlevel 1 goto end
DPDataExchange OUTL1.DII
ASCTODII filename SETL2 OUTL2 /A
if errorlevel 1 goto end
DPDataExchange OUTL2.DII
ASCTODII filename SETL3 OUTL3 /A
if errorlevel 1 goto end
DPDataExchange OUTL3.DII
:end
del OUTL1.DII
del OUTL2.DII
del OUTL3.DII
```

Remark: As DPDataExchange is not a DOS program, you cannot check error levels with it

For more complex data files, it may be advisable to write a "customized conversion program" using a programming language such as "Basic" or "C". Refer to section 2, page 9.

5.4.4 "DST" File Organization

ASCTODII creates a setup file with your answers to the questions. This will be used next time you convert a file with the same name. The setup file is named *.DST unless you specify otherwise on the command line. This setup file is itself an ASCII file, and you may change it with a word processor if necessary. ASCTODII responds to DST file records as follows:

H: Contains "header" data for the DII file to be produced.

D: Contains a shortened form of the definition record: usually without field widths unless you have specified them with a user-defined option.

t:s: Shows the "last line before data" text.

t:e: Shows the "first line after data" text

t:p: Shows the "data line identification" text

t:w: Shows the column widths in the ASCII file (not the new DII file)

t:c:1 Tells ASCTODII to use comma-delimited format.

t:d:*n* Tells ASCTODII which date format to use

All other letters in the first column will be copied into the new DII file. This allows you to specify user-defined fields and/or perform other special functions with DPDataExchange.

6. ANNEX B: Release Notes

6.1 Release Notes Updating 4.4 DOS-DPLINK to 5.020 DPDataExchange

1. **Import of milk data, option –I and existence of Metatron in the DP system**
   Milk Data Import requires option –I though no Metatron specified in DPSetup
   Import Indiv Milking possible even without Metatrons specified (corrected chapter 1.2.10)
   new behavior avmlk recalculation see 1.2.10

2. Import of lactation data not possible with lactation number as index reimplemented in 5.020 (not yet implemented in versions before, import required lactation start date or calving date). Indexing behavior together with other index fields may have changed slightly, PLEASE CHECK CAREFULLY.

3. **Line status "Delete"** not yet implemented!!!!!!!! (you can delete complete animals with a Westfalia delete record, but not with a delete line. Deletion of single vet actions also not possible)

4. Multrec, lifetime Mode in export of data: now default on.

5. Importing M305P, F305P, P305P, and MEQUIV – not yet implemented

6. Command line option –U does no longer make ".DII" be the defaults file extension for files loaded or created

7. in the "ON" line you must specify full file extension. If no file extension is given, ADISEngine does no longer automatically add the extension ".ads" (or ".dii" in case option –U has been specified to enforce DII output)

8. no longer supported: decimal command record, general command record

9. Activity + Body Wt Raw data import with –I but does not mind time (.e. only 1 value per day is written)

10. In old times you could import testmilk for actual lactation with index field "testDIM". This is no longer possible with ADISEngine

11. By default OEM character sets are used in input and output (with special character with ASCII Number > 127). If you want to use plain ANSI character sets set option "charAnsi = 0" or specify option "j" on the command line.

12. Command line option "trigvet" renamed to "trigger" (recalculate triggered vet actions during import of vet actions)

13. Report codes for "AMwt", "AMDat", "AMDim completely replaced by "TestMilk", "TestDate" and "TestDim" , but the DD Item numbers remain. "MAMWT" and "MAMDAT" are still available but it is better to use the new codes "MPWgt" and "MPDat"

14. Since version 5.020 the use of "lactno" as index field for import of lactation data is fully supported

6.2 Release Notes Updating 5.0 to 5.1 (DAIRYPLAN C21)

Version 5.093 are test versions before final release of DP5.1 or DAIRYPLAN C21 which is the official product name.

1. Version 5.093 and following can export bull data of multiple inseminations within a lactation

2. Responder and ISO-Responder now are only 1 field. Therefore you now can use DD numbers 2023 (DP), 900096 (ISO) and 201812 (Taurus) for both. Ensure your field length specification is long enough (up to 15 characters). ISO-responder field with DD number 2099 still available.

6.3 Release Notes within DAIRYPLAN C21 Versions

1. Event scope definition of new fields – see 3.3.5 Manufacturer Specific records, define command

2. new option RefMNum suppresses Import of data items with a data item number smaller than 100000, RefMEv suppresses import of whole events (entities) which have a non zero event number smaller than 100000.

3. Since Version 5.105: bug fixed deletion of animals which already left herd (still only the Westfalia command record "delete" works, not the line status delete as defined in ADIS)

4. Since version 5.105: Event Scope Definition: define a code to be used only for a particular event number. It is allowed to define multiple interpretations of “NewCode” for various event numbers. See chapter 3.3.5

5. Bug fixed deletion of inactive animals (deletion with the Westfalia delete record)

6. Changed behavior: Import of fields filled with spaces or zeros does not overwrite existing values! (thus same behavior in DPLINK and ADISEngine / DPDataExchange) If you want these values to be overwritten please set the "zero" option to 1 in a Westfalia command record

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