DOCUMENT STORAGE SYSTEMS, INC.

DSIO – DDCS

(Discreet Data Control & Storage)

Development/Technical Guide

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Not Independently Released			

Contents

Purpose

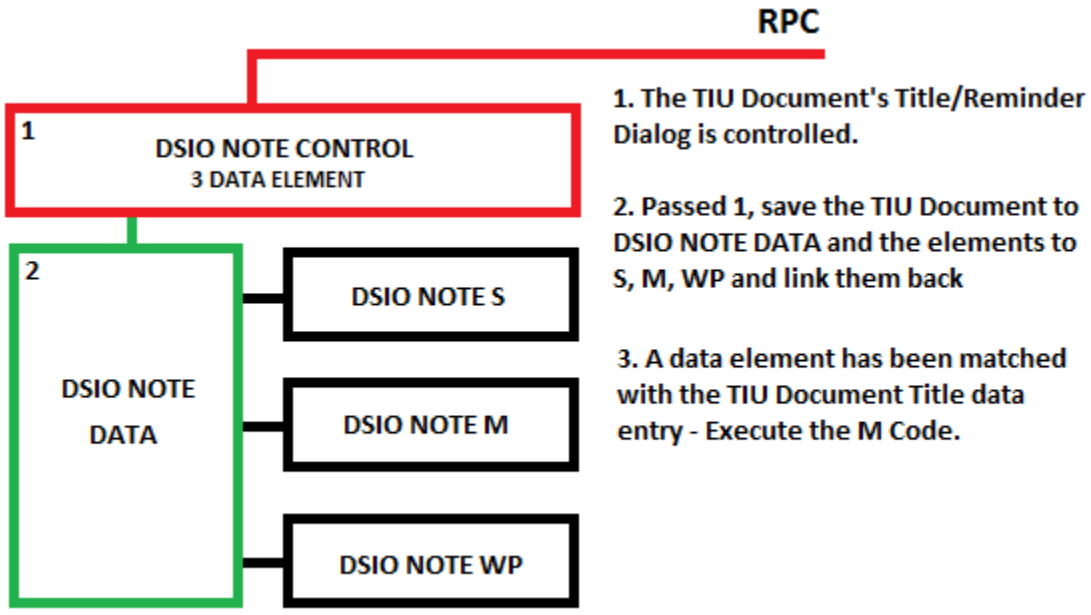
The Discreet Data Control and Storage process is used by oCNTs, CPRS Reminder Dialogs, and DSIO TIU related RPCs to use the listed applications to extend VistA. A TIU note records a lot of information about a patient at a particular point in time but from the VistA side that user input is but a block of text stored in TIU. Health Factors went beyond the note but they either exist or don't exist with and their mere existence is their expressed value, thus, to have a note recording that a patient is pregnant one would have to identify a health factor that if it exists means that a patient is pregnant and with it a follow up action can be taken. Now, with DDCS a reminder dialog or TIU Document Title as an OCNT or as a DSIO TIU related RPC can record the value of a field identified as pregnancy can be stored and if needed could execute custom M code to perform an action which could be used to update the field in the WV PATIENT file, for example, CURRENTLY PREGNANT.

Components

Type	Name	Purpose	
Options			
	DSIO SHOW DISCREET DATA	This option is to aid in verifying that discreet data for a note has been stored to VistA by displaying those file entries.	
Routine			
	DSIO3	This routine hosts the M code for DSIO TIU support.	
RPC			
	DSIO CREATE A NOTE	4th input parameter (DATA)	TIU Support (CORE)
	DSIO UPDATE A NOTE	3rd input parameter (DATA)	TIU Support (CORE)
	DSIO MAKE ADDENDUM	3rd input parameter (DATA)	TIU Support (CORE)
	DSIO GET RECORD TEXT	When the 2nd parameter (TYP) is null	TIU Support (CORE)
	DSIO OCNT STORE	OCNT (OCNT)	
	DSIO OCNT RESTORE	OCNT (OCNT)	
Files			
	DSIO NOTE CONTROL	This file holds the TIU Document Title or Reminder Dialog. If one of these entries exists here it is intended to record the objects elements individually. A TIU Document Title type is only compatible with an OCNT or with the DSIO TIU support RPCs. Setting the INACTIVE (.02) field to YES is like not having the entry but it allows the user to maintain the code within the DATA multiple. The DATA multiple stores M code that is executed when an element being stored matches a LABEL (.01) entry in this multiple.	
	DSIO NOTE DATA	This file links the entries from DSIO NOTE S, M, and WP to a TIU DOCUMENT. The same process is applied in the DIALOGS (2) multiple as it is in the DATA (1) multiple with the difference being that the linked entries are associated to a dialog (from the DSIO OCNT DIALOGS file) that is associated to this TIU DOCUMENT. The JOB (.02) field at the top level is used by the RPCs to identify whether or not it the data should be overwritten or filed new. If a the same job is being used when saving data discreetly then if the element already exists it will be overwritten but if the job is different then all elements are stored as is and the system does not check if the element already exists. This allows for a history of discreet data associated with a note.	

	DSIO NOTE S	This file stores single value type components such as a TEdit.
	DSIO NOTE M	This file stores multiple valued type components such as a TListBox.
	DSIO NOTE WP	This file stores word processing type components such as a TMemo.

DDCS Architecture



Saving data discreetly using this system means saving the name of individual elements or what they intend to represent along with their data associated to a TIU Document. In order to use this there must be a TIU Document created with a title that exists within the DSIO NOTE CONTROL file or you must be running a Reminder Dialog in CPRS when that Reminder Dialog has been added to the DSIO NOTE CONTROL file. Both the Reminder Dialog and the TIU Document (either by an OCNT or DSIO TIU Support RPC) use the RPC - DSIO OCNT STORE.

DSIO OCNT STORE takes the TIU Document IEN as the first parameter as saves the elements to DSIO NOTE S, M, or WP depending on the type of component and links them to DSIO NOTE DATA under the TIU Document. DSIO NOTE CONTROL allows the process to occur while matching any element that is passed in its DATA multiple and executes stored M code upon finding a match associated to a TIU Document Title.

EXECUTING M CODE WITH DISCREET DATA COLLECTION

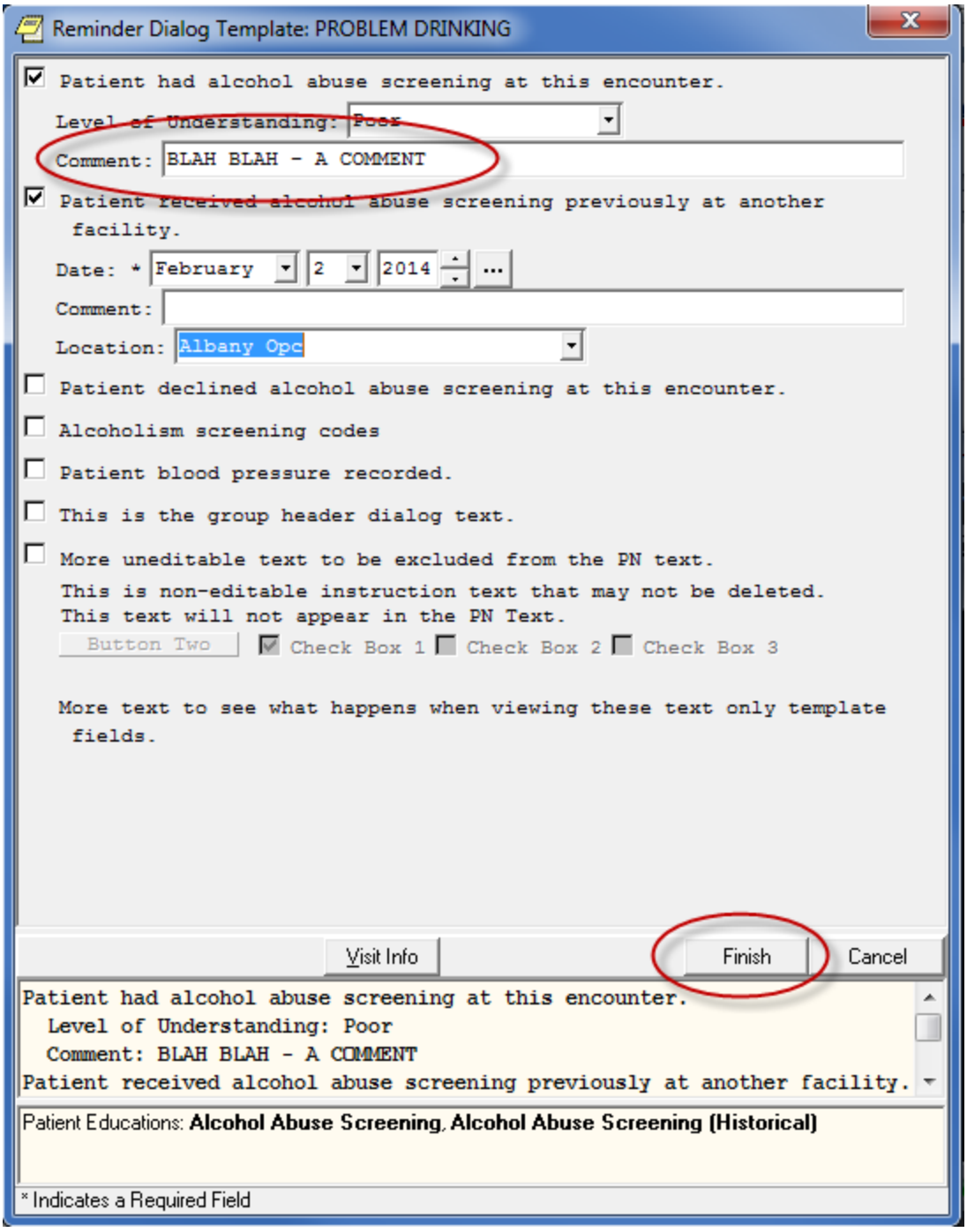
Again, DDCS is centered on TIU Documents and their Titles so there are two steps to controlling a Reminder Dialog. First, that Reminder Dialog must be in the DSIO NOTE CONTROL file – this allows discreet data to be collected for the Reminder Dialog. Second, to execute additional M code on any collected data element the TIU Document Title being used must also be in the DSIO NOTE CONTROL file and that entry must have a data multiple completed with the M code to execute for that data element.

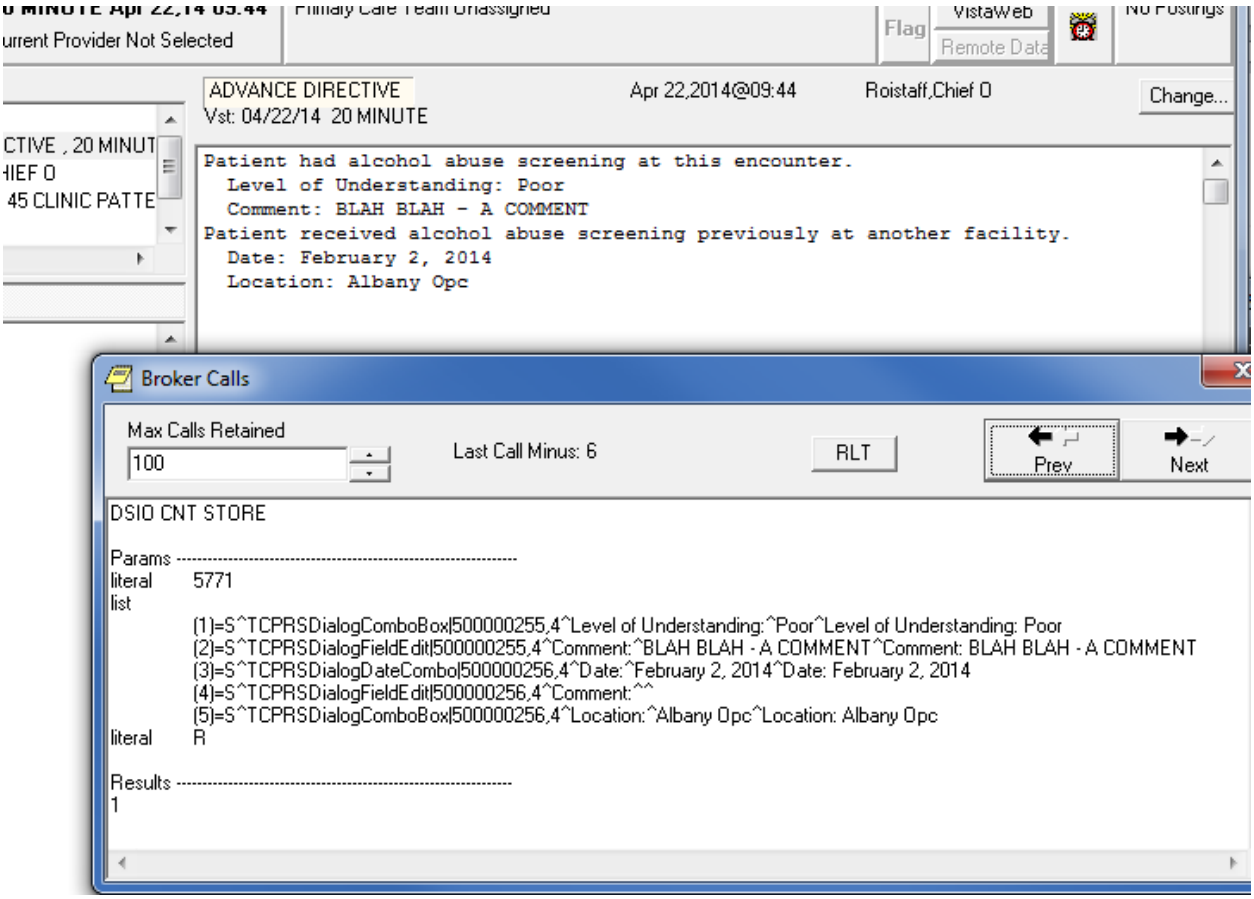
**To perform additional M code with a Reminder Dialog that code must still be assigned to the TIU Document Title.

DSIO NOTE CONTROL DATA ENTRY

```
VAH>D Q^DI

VA FileMan 22.0

Select OPTION: INQ  UIRE TO FILE ENTRIES

OUTPUT FROM WHAT FILE: DSIO NOTE CONTROL//
Select DSIO NOTE CONTROL NOTE OBJECT: OB

    Searching for a TIU DOCUMENT TITLE, (pointed-to by NOTE OBJECT)
  OB H&P INITIAL     TITLE
     Std Title: OB GYN H & P NOTE
       ...OK? Yes//   (Yes)
ANOTHER ONE:
STANDARD CAPTIONED OUTPUT? Yes//   (Yes)
Include COMPUTED fields:  (N/Y/R/B): NO//  - No record number (IEN), no Computed
 Fields

NOTE OBJECT: OB H&P INITIAL
LABEL: COMMENT
  CODE: S ^TMP($J,"TEST")="DFN: "_DFN,^TMP($J,"TEST",1)=S
```

REMINDER DIALOG EXAMPLE





VAH 7d1>ZW ^TMP
^TMP(13268,"DSIO SETNOTE",1,0)="Comment: BLAH BLAH - A COMMENT"
^TMP(13268,"TEST")="DFN: 93"
^TMP(13268,"TEST",1)="BLAH BLAH - A COMMENT"

CONCLUSION

Creating a TIU Document in CPRS using a controlled Reminder Dialog and a controlled TIU Document Title with executable M code for the field “COMMENT” – when discreet data is processed and a field is found as a controlled element within the Control file any code defined will be executed. When writing M code for these fields the M developer can assume DFN to be defined and they must know the type of data that they are using in relation to the element being processed, so their values may be S, M, or WP where both M and WP are arrays.

APIs

SETDATA

Reference Type

Category DDCS

Description This API saves the discreet data array and links it to a TIU Document and, if included, an OCNT Dialog. While processing, this API also uses CONTROL (which should not be used directly) to execute any additional M code for a controlled data element associated to a TIU Document Title.

Format `SETDATA^DSIO3(IEN,DATA,SOR,DIEN)`

Input Parameters

IEN: The IEN of the entry to the TIU DOCUMENT file (8925).

DATA: A list of values to be saved discreetly and associated to the identified note. Each entry in this list consists of four pieces delimited by caret – TYPE^ID^FIELD^VALUE.

Where TYPE = S, M, WP which means single, multiple, and word processing.

ID is a unique number that associates multiple entries of the list to belong to one entry for VistA.

FIELD is the name of the caption or label that identifies the VALUE which is the fourth piece of a list entry.

S^CONTROL^LABEL 1^SOME VALUE
S^CONTROL^LABEL 2^SOME OTHER VALUE
M^CONTROL^M LABEL^VALUE 1^INDEX
M^CONTROL^M LABEL^VALUE 2^INDEX
WP^CONTROL^WP LABEL^THIS TYPE IS USED MORE FOR A FIELD THAT
WP^CONTROL^WP LABEL^CONTAINS A LOT OF TEXT THAT'S MEANT TO BE READ
WP^CONTROL^WP LABEL^TOGETHER.

SOR: Source as O(THER), C(NT), D(IALOG), R(EMINDER DIALOG

DIEN: The IEN of the entry to the DSIO OCNT DIALOGS file.

SETDATA^DSIO3(IEN,DATA,SOR,DIEN) — Example

```
VAH>ZW DATA
DATA(1)="S^Edit1^Title Edit1:^Edit1 Value"
DATA(2)="M^ListBox1^ListBox Header^Value1^0"
DATA(3)="M^ListBox1^ListBox Header^Value2^1"
DATA(4)="WP^Memo1^Title for Memo1:^THIS TYPE IS USED MORE FOR A FIELD THAT"
DATA(5)="WP^Memo1^Title for Memo1:^CONTAINS A LOT OF TEXT THAT'S MEANT TO BE"
DATA(6)="WP^Memo1^Title for Memo1:^"
DATA(7)="WP^Memo1^Title for Memo1:^READ TOGETHER"

VAH>D CREATE^DSIO3(.RET,8,"MCC NOTE",,"TEST DISCREET DATA") ZW RET
RET="5768^1^1"

VAH>D SETDATA^DSIO3(5768,.DATA,"O") ZW RET

VAH>D ^XUP

Setting up programmer environment
This is a PRODUCTION account.

Terminal Type set to: C-VT100

You have 23 new messages.
Select OPTION NAME: DSIO SHOW DISCREET DATA     DSIO Show Discreet Data for a Note
Select TIU NOTE: MCC NOTE

FIELD: ListBox Header
SOURCE: OTHER
DATE: APR 21, 2014@13:33:28
CONTROL: ListBox1
REMINDER DIALOG:
PARENT:
VALUE:
 Value1
 Value2

FIELD: Title Edit1
SOURCE: OTHER
DATE: APR 21, 2014@13:33:24
CONTROL: Edit1
REMINDER DIALOG:
PARENT:
VALUE:
Edit1 Value

FIELD: Title for Memo1
SOURCE: OTHER
DATE: APR 21, 2014@13:33:28
CONTROL: Memo1
REMINDER DIALOG:
PARENT:
VALUE:
 THIS TYPE IS USED MORE FOR A FIELD THAT
 CONTAINS A LOT OF TEXT THAT'S MEANT TO BE

 READ TOGETHER
```

Remote Procedure Calls

DSIO GET NOTE ELEMENT

Reference Type

Category DDCS

Description This RPC retrieves the data of a single element that has been saved with the SETDATA API by TIU Document and Field.

Format `GETDATA^DSIO3(RET,IEN,FLD)`

Input Parameters

IEN:	The IEN of the entry to the TIU DOCUMENT file (8925).
FLD:	This is the .01 field value or Caption of the data element (not the component name).

Output ARRAY

Success	Value
Failure	null

GETDATA^DSIO3(RET,IEN,FLD) — Example

```
VAH>ZW DATA
DATA(0)="S^Edit1^Title Edit1:^Edit1 Value"
DATA(1)="S^Edit2^Edit2 Title:^Value of Edit2"
DATA(2)="M^ListBox1^ListBox Header^Value1^0"
DATA(3)="M^ListBox1^ListBox Header^Value2^1"
DATA(4)="WP^Memo1^Title for Memo1:^THIS TYPE IS USED MORE FOR A FIELD THAT"
DATA(5)="WP^Memo1^Title for Memo1:^CONTAINS A LOT OF TEXT THAT'S MEANT TO BE"
DATA(6)="WP^Memo1^Title for Memo1:^"
DATA(7)="WP^Memo1^Title for Memo1:^READ TOGETHER"

D CREATE^DSIO3(.RET,8,"MCC NOTE",,.DATA,"TEST DISCREET DATA") ZW RET
RET="5778^1^1"

VAH>D ^XUP

Setting up programmer environment
This is a PRODUCTION account.

Terminal Type set to: C-VT100

You have 23 new messages.
Select OPTION NAME: DSIO SHOW DISCREET DATA       DSIO Show Discreet Data for a
Note
DSIO Show Discreet Data for a Note
Select TIU NOTE: `5778  MCC NOTE

FIELD: Edit2 Title
SOURCE: OTHER
DATE: APR 22, 2014@12:32:30
CONTROL: Edit2
REMINDER DIALOG:
PARENT:
VALUE:
Value of Edit2


FIELD: ListBox Header
SOURCE: OTHER
DATE: APR 22, 2014@12:32:30
CONTROL: ListBox1
REMINDER DIALOG:
PARENT:
VALUE:
 Value1
 Value2


FIELD: Title Edit1
SOURCE: OTHER
DATE: APR 22, 2014@12:32:30
CONTROL: Edit1
REMINDER DIALOG:
PARENT:
VALUE:
Edit1 Value


FIELD: Title for Memo1
SOURCE: OTHER
DATE: APR 22, 2014@12:32:30
CONTROL: Memo1
```

```
REMINDER DIALOG:
PARENT:
VALUE:
 THIS TYPE IS USED MORE FOR A FIELD THAT
 CONTAINS A LOT OF TEXT THAT'S MEANT TO BE

 READ TOGETHER


VAH>K RET D GETDATA^DSIO3(.RET,5778,"TITLE FOR MEMO1") ZW RET
RET(0)="THIS TYPE IS USED MORE FOR A FIELD THAT"
RET(1)="CONTAINS A LOT OF TEXT THAT'S MEANT TO BE"
RET(2)=""
RET(3)="READ TOGETHER"

VAH>K RET D GETDATA^DSIO3(.RET,5778,"TITLE EDIT1") ZW RET
RET(0)="Edit1 Value"

VAH>K RET D GETDATA^DSIO3(.RET,5778,"LISTBOX HEADER") ZW RET
RET(0)="0^Value1"
RET(1)="1^Value2"
```

DSIO IS IT CONTROLLED?

Reference Type		
Category	DDCS	
Description	This RPC is used by CPRS to determine if discreet data processing needs to occur either for the current Reminder Dialog.	
Format	`TRACK^DSIO3(RET,IENSTR)`	
Input Parameters	IENSTR:	IEN;Global where IEN is either a Reminder Dialog TIU or TIU Document Title and Global is either PXRMD(801.41, for Reminder Dialog or TIU(8925.1, for TIU Document Title.
Output	SINGLE VALUE	
	Success	1 for True/Yes, 2 for False/No
	Failure	0

TRACK^DSIO3(RET,IENSTR) — Example

```
DSIO IS IT CONTROLLED?

Params ------------------------------------------------------------------
literal     500000260;PXRMD(801.41,

Results -----------------------------------------------------------------
0


VAH>D TRACK^DSIO3(.RET,"90;TIU(8925.1,") ZW RET
RET=1
```