Memorandum

To: A. R. Kerr
               S. -K. Pan
               K. Crady

cc: J. Webber

From: J. Effland

Date: 30 October 1998

Subject: Status Report for Automating SIS Mixer Measurements

1. Accomplishments this period

The GPIB error handlers have been coded and tested, and interface screens have been enhanced based on user feedback, so the automated mixer measurement system is ready to be tested using a real mixer. We are updating the Orcad drawings to reflect the current hardware design in Kirk Crady's measurement rack prior to porting the measurement system to S. –K. Pan's rack.

A database along with several reports have been designed using Microsoft Access to facilitate tracking and organizing of the large number or purchases required by the SIS mixer group.

2. Additional Tasks

The following tasks will be accomplished in the next week:

1. Test the JT-1 rack measurement system using a real mixer in the dewar.
2. Complete updating the hardware documentation for this rack.
3. Start to automate S. –K. Pan's mixer measurement rack. There are some hardware differences in the dewar switch assembly that require different interfaces, and the software needs modification to work with the different hardware and to measure return loss of the IF port using noise injection.
4. Refine the reports for the Purchase Requisition database, which is generally a never-ending task.

3. SIS Mixer Data Collection using Excel

The following tasks have been completed for the SIS mixer measurements during this reporting period:

1. Graphs were created in Excel for mixer noise temperature and loss that duplicate those used in Kirk's current Quattro Pro spreadsheet.
2. Coding and testing of instrument error routines was completed. The software now alerts the operator if the instrument doesn't respond because it is either turned off or the HPIB cable is unplugged.
3. Changed the software to record bias voltage and current from both balanced mixers.
4. Tested Kirk's hardware that allows software switching between hot and cold IF loads, and wrote and tested the software to effect the switching.

5. Modified the data entry dialog box to highlight the button with the "focus", which is the button that is activated when the "Enter" key is pressed.

Final software testing awaits the measurement of a real mixer in the system.

4. Purchase Requisition Database

A database has been designed using Microsoft Access to hold Purchase Requisition information to facilitate the tracking and organizing of the large number of purchases required by the SIS mixer group. The genesis of this design was a prototype database setup by Kirk Crady. Although the design is sufficiently general to be used by other groups in the CDL, database security has not been activated (this takes about 8 hours to set up), so users can currently change any of the table, form, and report designs.

The database and screens are located in the Access file on \\Eagle\jeffland\PurchaseReqs\PRs.mdb. A data form has been designed to allow data entry and for querying of existing Purchase Reqs. Two reports have been constructed to summarize charges pending for each task number and to show all items associated with each Purchase Req. Examples of these are given below.

4.1 Data Form

Figure 1 shows the data form that's available by opening the database file using Access. This screen implements several useful functions:

1. New Purchase Requisition information can be entered.
2. The querying and display of all records associated with a PR number, PO number, Vendor or Requisitioner. In addition, all open or closed Purchase Reqs. can also be displayed.

The top left section of the form contains vendor information. Additional Purchase Req. fields are located immediately to the right of the vendor area. These fields allow either searching for particular records or to input data into new or existing records. The middle section of the form contains information about the items assigned to a particular Purchase Req. Notes about the Purchase Req. are located at the bottom of the form.

Sample reports are given in "Figure 3: Purchase Requisition Account Summary Report" and in "Figure 4: Purchase Requisition Details Report".

Figure 1: Purchase Req. Screen

4.2 Data Dictionary

The database structure is standard for this type of application. Table definitions are given below:

Table Name	Function
Purchase Requisitions	Contains information for each Purchase Req. and Purchase Order. A Purchase Order number is assigned after completion of a Purchase Req., so this table is properly called Purchase Requisitions, and a PO Number field is included.
PR Items	Includes the items associated with each Purchase Requisition. Since each item can ultimately have its own account charge number, that field is included in this table, rather than in the Purchase Requisitions table.
PR Notes	Each Purchase Req. can have a number of free-form notes associated with it. These can be used to document each time the vendor has been called about the Purchase Order.
Vendors	This table contains contact and address information about each vendor.
Vendor Notes	This table provides a means for documenting each time a vendor is contacted.

The table relationships between are defined in Figure 2. Key fields are the Vendors Name and Req Number fields in the table Purchase Requisitions. The Vendors table is keyed to the Vendors Name field, and both the PR Items and PR Notes tables are keyed to the Req Number field.

Database integrity is maintained automatically by Access after the proper table relationships are defined. For example, if a record in the Purchase Requisitions table is deleted, then all associated records in the subordinate tables are also deleted. Conversely, a new record cannot be entered into one of the subordinate tables unless a corresponding record exists in the parent table Purchase Requisitions.
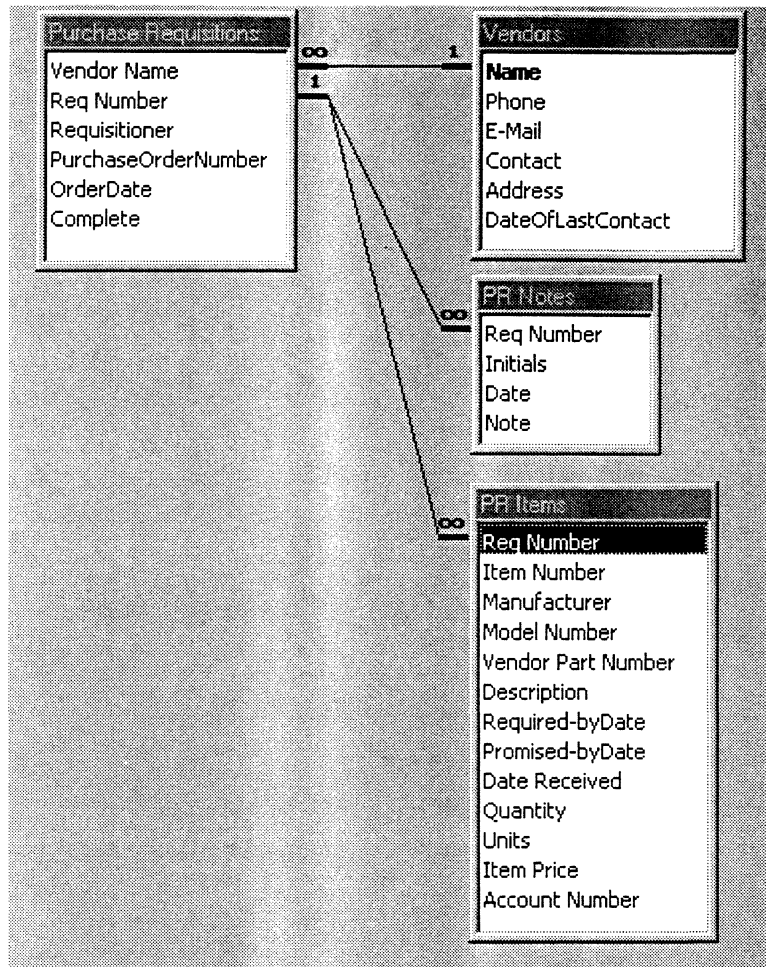
The data dictionary follows the relationship diagram.

Figure 2: Table Relationships

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Data Dictionary for Database: H:\PurchaseReqs\PRs.mdb
 Printed:  30Oct1998 02:29 pm


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Table:  Purchase Requisitions
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Vendor Name        Text (50)    Name of company
Req Number         Long (4)     Purchase requisition number
Requisitioner      Text (50)    Name of employee requesting material
PurchaseOrderNumber Text (50)    Purchase order number
OrderDate          Date (8)     Date that purchase req was written
Complete           Boolean (1) Have all items been received?


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Table:  PR Notes
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Req Number         Long (4)     Links this table to PO table
Initials           Text (5)     Initials of person entering this note
Date               Date (8)     Date that note was entered
Note               Memo (0)


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Table:  PR Items
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Req Number         Long (4)     Field keyed to purchase req table
Item Number        Integer (2) Item number for PR
Manufacturer       Text (20)    Manufacturer's name
Model Number       Text (20)    Manufacturer's model number
Vendor Part Number Text (20)    Vendor's Part Number
Description        Text (100)   Description of Item
Required-byDate    Date (8)     Date item required
Promised-byDate    Date (8)     Date item promised
Date Received      Date (8)     Date item was received
Quantity           Single (4)   Number of items
Units              Text (20)    Units used to measure quantity
Item Price         Currency (8) Price for each item
Account Number     Text (50)    Account number to use for this item (if blank, use PR account
number)


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Table:  Vendor Notes
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Vendor Name        Text (50)    Links this table to Vendors
Initials           Text (5)     Initials of person entering this note
Date               Date (8)     Date that note was entered
Note               Memo (0)


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Table:  Vendors
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Name               Text (50)    Company Name
Phone              Text (50)    Company Phone Number
E-Mail             Text (30)    Company E-mail
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Contact            Text (50)    Contact Name
Address            Memo (0)     Address
DateOfLastContact Date (8)     Date that last contact was made.
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Purchase Requisitions

PR Num	PO Num	Vendor	Requisitioner	Date Ordered		Total
Account Number:						
6	55310	National Instruments	K. Crady	02 Sep 98		$3,597.00
					Total	$3,597.00
Account Number:		**0000.0004.1601**				
22	54718	Gateway 2000	Webber	16 Jul 98		$5,150.00
					Total	$5,150.00
Account Number:		**1204.3030.0117**				
23	54982	CDW	Effland	15 Sep 98		$352.50
					Total	$352.50
					Grand Total	**$9,099.50**

FIGURE 3

Report Name: *PR Totals*
Query: *PR Summary*
Database: *H:\PurchaseReqs\PRs.mdb*
Report Version: *30Oct98*

Printed: *30 Oct 98*
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Purchase Requisitions

Requisition Number: 6	PO Number: 55310	Vendor: National Instruments	Order Date: 2 Sep 98
		Requisitioner: K. Crady	

Item	Manufacturer	Model	Description	Dates			Prices			
				Required	Promised	Received	Qty	Units	Item	Total
	National Instruments	AT-MIO-16DE	E-Series I/O card Shielded I/O connector block qty. 3 @ 295ea. SH				3	each	1,199.00	3,597.00
	Vendor Part #:				Account #:					

							Total	$3,597.00

Requisition Number: 22	PO Number: 54718	Vendor: Gateway 2000	Order Date: 16 Jul 98
		Requisitioner: Webber	

Item	Manufacturer	Model	Description	Dates			Prices			
				Required	Promised	Received	Qty	Units	Item	Total
1	Gateway	GP6-400	PC	30 Jul 98			2	Each	2,172.00	4,344.00
	Vendor Part #:			Account #: 0000.0004.1601						
2	Altec Lansing	GSC 100	Speakers				2	Each	$30.00	$60.00
	Vendor Part #:			Account #: 0000.0004.1601						
3	Quantum		10 GB hard Drive				2	Each	$250.00	$500.00
	Vendor Part #:			Account #: 0000.0004.1601						
4	Microsoft		Natural Keyboard				2	Each	$48.00	$96.00
	Vendor Part #:			Account #: 0000.0004.1601						
5	ATI		8 MB SDRAM Rage Pro Turbo AGP Video Card				2	Each	$75.00	$150.00
	Vendor Part #:			Account #: 0000.0004.1601						

							Total	$5,150.00

FIGURE 4A

Requisition Number: 23			PO Number: 54982	Vendor: CDW				Order Date:		15 Sep 98

Requisitioner: Effland

				Dates					Prices	
Item	Manufacturer	Model	Description	Required	Promised	Received	Qty	Units	Item	Total
1	Microsoft	203-00506	Visual Basic Professional Version 6.0 Win 32 AE	25 Sep 98	29 Sep 98		2	Each	$77.25	$154.50
	Vendor Part #:		Account #: 1204.3030.0117							
2	Microsoft	659-00143	Visual Studio Professional Version 6.0 Win 32 AE	25 Sep 98	29 Sep 98		1	Each	$198.00	$198.00
	Vendor Part #:		Account #: 1204.3030.0117							

	Total	$352.50
	Grand Total	**$9,099.50**

FIGURE 46

Report Name: PR Details
Query: PRs Items and Notes
Database: H:\PurchaseReqs\PRs.mdb
Report Version: 30Oct98

Printed: 30 Oct 98
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