Audiometric Exam Module Technical Manual

Patch ACKQ*3.0*12
November 2005

Deartment of Veterans Affairs

V*ist***A** Health Systems Design & Development

Preface

Purpose

The Audiometric Exam Module (ACKQ*3.0*3) was developed for Audiology and Speech Pathology Service (ASPS) to simplify and enhance the entry, display and use of information obtained during the Audiometric exam of a patient. This module is comprised of two distinct application functionalities: the Audiogram Edit function and the Audiogram Display function. Both of these applications have been enhanced in patch ACKQ*3.0*12.

The Audiogram Edit function is a Windows based software application that allows clinicians to enter, edit or view a patient's audiogram exam information from the Computerized Patient Record System (CPRS) Tools menu or from the end user's desktop. Using this function, a new audiogram record can be entered, or an existing one can be edited.

Completed and signed records are stored in a local QUASAR global ("^ACK(509850.9,"). The records are also transmitted from this application to the Denver Distribution Center (DDC) through the **V*ist*A** MailMan system for inclusion with orders for hearing aids and repairs when ordered through the **V*ist*A** Remote Order Entry System (ROES) package.

The Audiogram Display function is a Windows based software application that allows clinicians to view a patient's audiogram(s) from the CPRS Tools menu or from the desktop. It can also be called from the Audiogram Edit application, if both applications exist in the same directory and folder. This function presents the clinical information in a standard format recognized within the hearing industry.

Scope of Manual

This manual provides technical information associated with maintenance of the Audiometric Exam module of the QUASAR package. It describes the modular components that comprise the user interface and underlying technical structure of the application.

Audience

The information in this manual is intended to aid Information Resource Management (IRM) in the installation and maintenance of this software.

Benefits

The Audiometric Exam Module was designed to provide Audiologists and staff with an easy way to enter, store and utilize exam data. Once the data is entered and saved, they can immediately view the audiometric display. They can also copy or print the display(s). They can select displays from their CPRS Tools menu or from their desktop for easy retrieval and comparison. Completed, signed data entries are also transmitted to the Denver Distribution Center (DDC) for storage and use in ordering hearing aids and repair. Patch ACKQ*3.0*12 has added the ability to go from one record to another without entering the user verify code for each record.

Related Manuals

Audiometric Module ACKQ*3.0*12 Installation Guide

Audiometric Module ACKQ*3.0*3 Security Manual

Audiometric Module ACKQ*3.0*12 User Manual

Audiometric Module ACKQ*3.0*12 Release Notes

Table Of Contents

Preface ..... **i**

Purpose i
Scope of Manual i
Audience i
Benefits ii
Related Manuals ii

Table Of Contents ..... **iii**

Introduction **1**

Orientation 1
Obtaining online technical information 1

Implementation and Maintenance **3**

Required Site-specific Data 3
Installation Process 3

Overview of the Process Logic **5**

Enter Edit Audiogram Data 6
Transmission of Audiometric data 7
Audiogram Display 8

Files **9**

Audiometric Exam Data : ^ACK(509850.9 9
Files Referenced in ^ACK(509850.9 23
Routines 24
Delphi Routines 25

Exported Options **27**

ACKQROES3 - Audiogram Display 27
ACKQROES3E - Audiogram Edit 28

Archiving and Purging **29**

^ACK(509850.9, ... 29

API's **31**

Called routines, entry points, and API's 31
START^ACKQAG01 ..... *31*
TITLE^ACKQAG01(USER) *31*
GETDATA^ACKQAG02 ..... *31*
START^ACKQAG02 ..... *31*
START^ACKQAG03 ..... *31*
GETDATA^ACKQAG04 ..... *32*
START^ACKQAG04 ..... *32*
ACKEXIST^ACKQAG05 ..... *32*
DFNIN^ACKQAG05 ..... *32*
NEWMSG^ACKQAG05 ..... *32*
GETDATA^ACKQAG06(ACKQI, ACKI) *32*
LOGIC^ACKQAG06(A1,A2,A3,A4,A5,A6,A7) *32*
RPC's 33
ACKQROES *33*
ACKQAUD1 ..... *34*
ACKQAUD2 ..... *36*

External Relations **39**

Standalone Functionality 39

Recommended Desktop Minimums 40
Integration Agreements 41

Internal Relations 43

M routines: 43
Delphi routines: 43
Module Variables 43
SAC exemptions and approval dates 44

Glossary 45

Acronyms 45

Appendices 47

A: Determining Series Values To Place On Display 47
B: Calculation Of PB MAX And PI/PB 48
C: Sample Form 2364 49
D: Message Box Errors 50
A NEEDED RPC XXXXXXXX IS NOT AVAILABLE. *50*
A PROBLEM WAS ENCOUNTERED ACCESSING VISTA, RPC XXXXX. *50*
A PROBLEM WAS ENCOUNTERED COMMUNICATING WITH THE SERVER. *50*
A PROBLEM WITH THE RPC CALL - NO DATA TO GRAPH. *50*
APPLICATION CANCELED. OR UNABLE TO ACCESS RPCBROKER. *50*
CANNOT CONTINUE WITHOUT PATIENT. *50*
BROKER SERVER COULD NOT BE DETERMINED. *50*
CONNECTION TO BROKER SERVER COULD NOT BE ESTABLISHED. *50*
NO CHARTS TO SHOW! AUDIOGRAM TERMINATING. *50*
NO PATIENT TO LOOKUP *51*
PATIENT NOT SELECTED *51*
PROBLEM ENCOUNTERED IN SETTING UP MESSAGE - NO DATA SENT! *51*
PROBLEM SAVING ENTRIES FOR ACOUSTIC IMMITTANCE! *51*
PROBLEM SAVING ENTRIES FOR LEFT EAR! *51*
PROBLEM SAVING ENTRIES FOR RIGHT EAR! *51*
RECORD NOT SENT TO DDC. *51*
THE AUDIOGRAM OPTION IS NOT APPROVED FOR THIS USER. *51*
THE XXXXXXXX PROGRAM[OPTION NAME] COULD NOT BE ACCESSED. *52*
THERE WAS A PROBLEM DELETING THE RECORD. *52*
USER IDENTIFICATION COULD NOT BE ESTABLISHED. *52*
YOU ARE NOT AUTHORIZED TO USE THE AUDIOGRAM ENTER/EDIT *52*
USERS STATION NOT ADDED. STATION IN RECORD IS BLANK. *52*

Index 53

Introduction

Orientation

The caret (^), sometimes referred to as the Up-Arrow, is used as the standard delimiter for data segments.

Users that are not set up to use multiple broker environments will default to using BROKERSERVER and port 9200 in the production account. If they have access to multiple accounts, they will still have to select which one to connect to when going from the edit to the display. For this application, login should be accomplished using local **VistA** Access and Verify codes. (Many users of this application also have DDC Access and Verify codes for access to the DDC Remote Inquiry System. These DDC codes are not applicable to the Audiometric Exam module.) If the user is entering the application from the CPRS Tools menu, a patient will already be selected. If accessing the application from the desktop, a patient will need to be selected. If a new audiogram is being entered, the lookup is from the local PATIENT file (#2), otherwise the patient will be selected from the AUDIOMETRIC EXAM file entries. With patch 3.0*12 the user will be able to go to additional records without having to re-enter the application each time.

Obtaining online technical information

Websites:

VistA RPC Broker Download site: http://vista.med.va.gov/broker/download.asp

VistA document library: http://www.va.gov/vdl/

Use FileMan's DATA DICTIONARY UTILITIES option to print out the data dictionary for the file. After selecting this option, select the LIST FILE ATTRIBUTES option and the STANDARD, BRIEF or CONDENSED versions. The CONDENSED version is highly recommended as there are a large number of fields in the file.

Use the KIDS BUILD FILE PRINT option if you would like a complete listing of package components exported with this software.

KIDS Kernel Installation & Distribution

Utilities ...

Build File Print

Use the KIDS INSTALL FILE PRINT option if you'd like to print out the results of the installation process.

KIDS Kernel Installation & Distribution

Utilities ...

Install File Print

XUPRROU prints a list of any or all of the ACKQAG0* routines.

Programmer Options ...

Routine Tools ...

List Routines

All Routines? No => No

Routine: ACKQAG0*

Implementation and Maintenance

Required Site-specific Data

The **V*ist*A** system must have MailMan connectivity to the DDC (i.e., DDC.VA.GOV domain open) in order to transmit the audiometric data to the DDC.

The site's **V*ist*A** Server must be running the VA's RPC Broker listener.

The desktop system must be running a Windows operating system (WinNT, Win2K, WinXP).

The **V*ist*A** RPC Broker client must be installed and functional on the desktop system.

Installation Process

This software requires that the RPC Broker V1.1 be installed on any workstation on which the programs will be executed. If the workstation can already connect successfully via CPRS, BCMA, or PCMM, then the RPC Broker has already been installed. If the RPC Broker needs to be installed, please refer to the RPC Broker website for configuration information and to download the installation file: http://vista.med.va.gov/broker/download.asp

The CPRS application must be installed and functional on the **V*ist*A** server and desktop systems, to allow the audiogram applications to have access from the CPRS Tools menu. Optionally, the audiogram applications may be run directly from the desktop when linked to the executables in a server directory or on the local machine.

Install the KIDS build (ACKQ*3.0*12) into the local system.

The KIDS build will install:

- The M routines ACKQAG01, ACKQAG02, ACKQAG03, ACKQAG04, ACKQAG05, ACKQAG06 and ACKQAG08.
- The Remote Procedures ACKQAUD1, ACKQAUD2, ACKQROES, and ACKQROESD.

The options, ACKQROES3(view audiogram) and ACKQROES3E(edit audiogram), will be set up in file 19 and need to be assigned to a common menu option, or as a secondary menu option for the individual users. The programs will generate an error while context is being established, if not assigned.

The executables (ACKQROES3.exe and ACKQROES3E.exe) are contained in the zip file (Audiograms.zip). They can be installed in a network directory and a link placed on the desktop, or installed on the desktop system. Both of the generated executables need to be in the same directory, in order for the Enter Edit program to call the Display program directly.

For detailed installation instructions, refer to the *Audiometric Exam Module Installation Guide*

Overview of the Process Logic

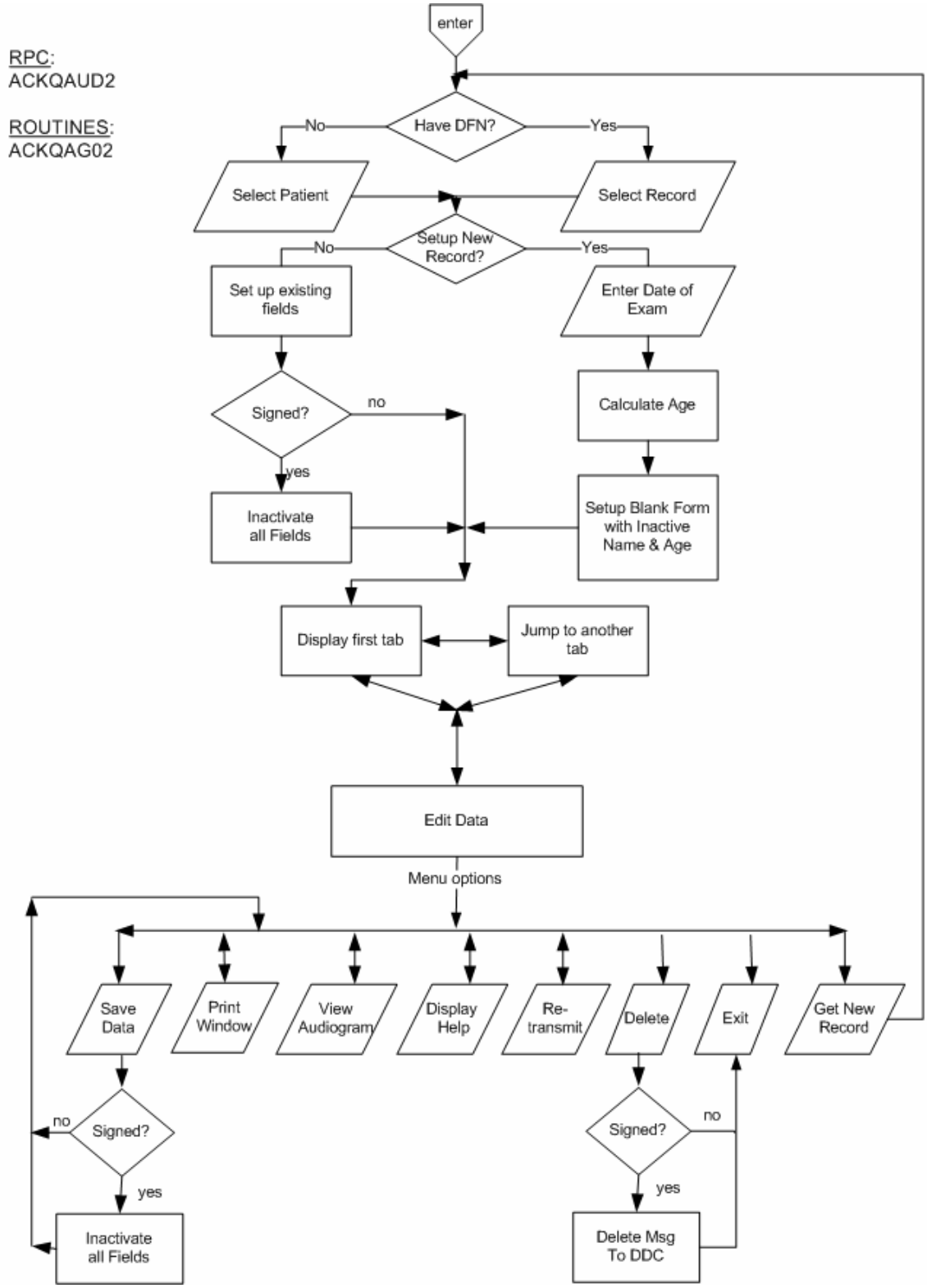
This section provides technical staff with an overview of the processing functions in each module. In the next few pages, flow chart logic is accompanied by related routines and remote procedure calls supporting that logic.

Functions performed by these processes are:

- Entry of clinical audiogram data (creation of new audiogram record or modification of existing unsigned record)
- Transmission of audiogram record to the DDC
- Display of audiogram and associated functions

From CPRS, the patient DFN may be passed to the application as DFN=%DFN. If the DFN is provided, the program will default to that DFN instead of prompting for a patient lookup.

Enter Edit Audiogram Data

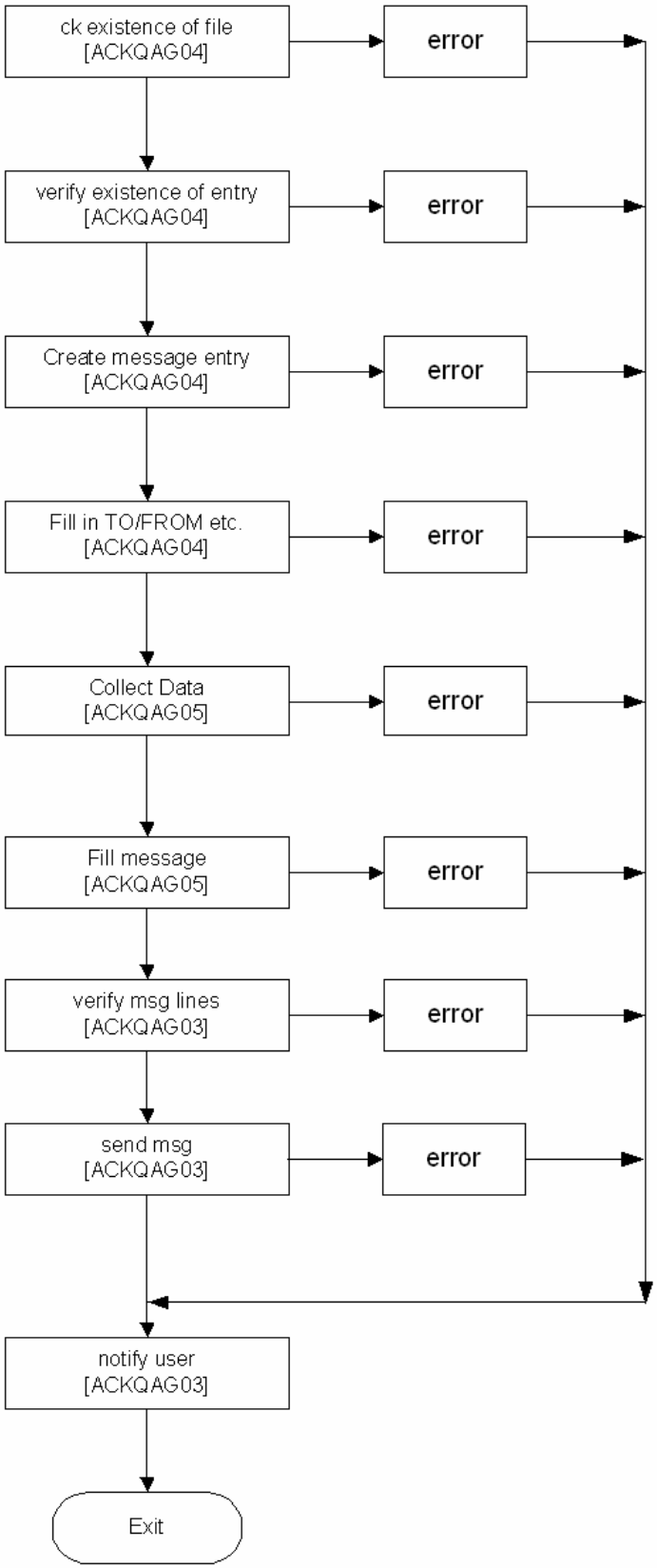


Transmission of Audiometric data

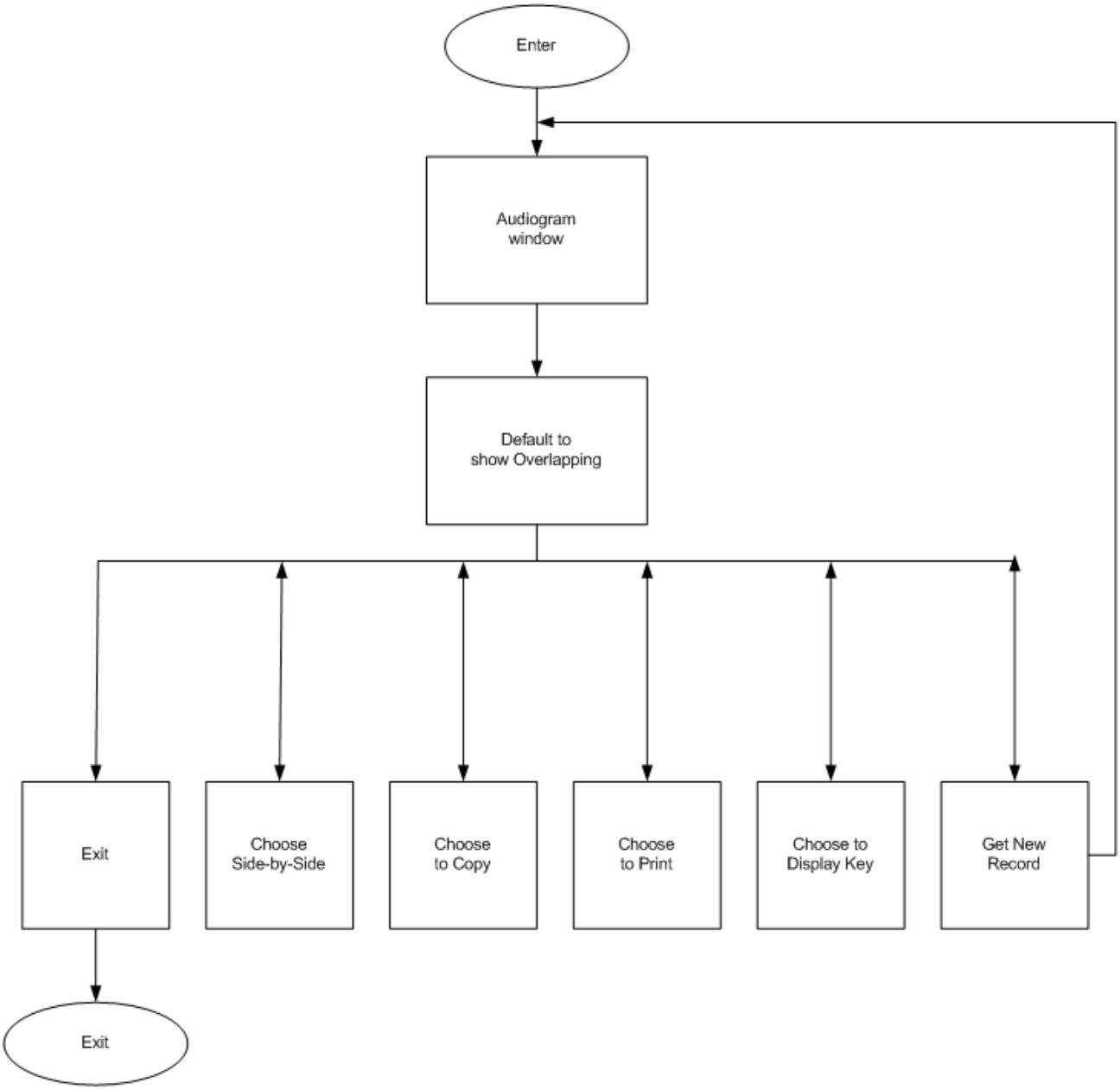
[ACKQAG03]

RPC:
ACKQROES

ROUTINES:
ACKQAG03
ACKQAG04
ACKQAG05



Audiogram Display



Files

This section lists the specific data elements and their attributes in the Audiometric Exam Data file. A number of audiology-specific acronyms and abbreviations are used in the field names. Please reference the Glossary for full definitions.

Audiometric Exam Data : ^ACK(509850.9

A complete listing of fields and attributes can be obtained by using the FileMan 'List File Attributes' option, selecting the 'Standard' or 'Brief' format. The Condensed listing follows:

Field Field Name [node;position]

.01 DATE/TIME OF VISIT (RD), [0;1]

.02 PATIENT (P2'), [0;2]

.03 EXAMINING AUDIOLOGIST (P200'), [0;3]

.04 REFERRAL SOURCE (P44'), [0;4]

.05 AGE AT VISIT (N), [0;5]

.06 *VA ELIGIBILITY STATUS (S), [0;6]

.07 TYPE OF VISIT (F), [0;7]

.08 TRANSDUCER TYPE (S), [0;8]

.09 DATE SIGNED (D), [0;9]

.1 TESTING STATION (P4'), [0;10]

.11 ICN (F), [0;11]

.12 DATE SENT TO DDC (D), [0;12]

.13 MESSAGE NUMBER (P3.9'), [0;13]

.14 CLAIM NUMBER (F), [0,14]

.15 RETRANSMISSION DATE (D),[0;15]

.16 RETRANSMISSION USER (P200),[0;16]

1.01 RIGHT FOUR FREQUENCY PTA (NJ3,0), [1;1]

1.02 LEFT FOUR FREQUENCY PTA (NJ3,0), [1;2]

1.03 RIGHT THREE FREQUENCY PTA (NJ3,0), [1;3]

1.04 LEFT THREE FREQUENCY PTA (NJ3,0), [1;4]

1.05 RIGHT TWO FREQUENCY PTA (NJ3,0), [1;5]

1.06 LEFT TWO FREQUENCY PTA (NJ6,2), [1;6]

1.07 RIGHT MCL (NJ3,0), [1;7]

1.08 RIGHT UCL (NJ3,0), [1;8]

1.09 LEFT MCL (NJ3,0), [1;9]

1.1 LEFT UCL (NJ3,0), [1;10]

1.11 R TYMPANOGRAM TYPE (S),[1;11]

1.12 L TYMPANOGRAM TYPE (S),[1;12]

10.01 INITIAL A/C THRESHOLD R 125 (NJ3,0), [10;1]

10.02 INITIAL A/C THRESHOLD R 250 (NJ3,0), [10;2]

10.03 INITIAL A/C THRESHOLD R 500 (NJ3,0), [10;3]

10.04 INITIAL A/C THRESHOLD R 750 (NJ3,0), [10;4]

10.05 INITIAL A/C THRESHOLD R 1000 (NJ3,0), [10;5]

10.06 INITIAL A/C THRESHOLD R 1500 (NJ3,0), [10;6]

10.07 INITIAL A/C THRESHOLD R 2000 (NJ3,0), [10;7]

10.08 INITIAL A/C THRESHOLD R 3000 (NJ3,0), [10;8]

10.09 INITIAL A/C THRESHOLD R 4000 (NJ3,0), [10;9]

10.1 INITIAL A/C THRESHOLD R 6000 (NJ3,0), [10;10]

10.11 INITIAL A/C THRESHOLD R 8000 (NJ3,0), [10;11]

10.12 INITIAL A/C THRESHOLD R 12000 (NJ3,0), [10;12]

11.01 *INITIAL A/C THRESH TAG R 125 (S), [11;1]

11.02 *INITIAL A/C THRESH TAG R 250 (S), [11;2]

11.03 *INITIAL A/C THRESH TAG R 500 (S), [11;3]

11.04 *INITIAL A/C THRESH TAG R 750 (S), [11;4]

11.05 *INITIAL A/C THRESH TAG R 1000 (S), [11;5]

11.06 *INITIAL A/C THRESH TAG R 1500 (S), [11;6]

11.07 *INITIAL A/C THRESH TAG R 2000 (S), [11;7]

11.08 *INITIAL A/C THRESH TAG R 3000 (S), [11;8]

11.09 *INITIAL A/C THRESH TAG R 4000 (S), [11;9]

11.1 *INITIAL A/C THRESH TAG R 6000 (S), [11;10]

11.11 *INITIAL A/C THRESH TAG R 8000 (S), [11;11]

11.12 *INITIAL A/C THRESH TAG R 12000 (S), [11;12]

15.01 RETEST A/C THRESHOLD R 125 (NJ3,0), [10;1]

15.02 RETEST A/C THRESHOLD R 250 (NJ3,0), [10;2]

15.03 RETEST A/C THRESHOLD R 500 (NJ3,0), [10;3]

15.04 RETEST A/C THRESHOLD R 750 (NJ3,0), [10;4]

15.05 RETEST A/C THRESHOLD R 1000 (NJ3,0), [10;5]

15.06 RETEST A/C THRESHOLD R 1500 (NJ3,0), [10;6]

15.07 RETEST A/C THRESHOLD R 2000 (NJ3,0), [10;7]

15.08 RETEST A/C THRESHOLD R 3000 (NJ3,0), [10;8]

15.09 RETEST A/C THRESHOLD R 4000 (NJ3,0), [10;9]
15.1 RETEST A/C THRESHOLD R 6000 (NJ3,0), [10;10]
15.11 RETEST A/C THRESHOLD R 8000 (NJ3,0), [10;11]
20.01 FINAL A/C THRESHOLD R 125 (NJ3,0), [20;1]
20.02 FINAL A/C THRESHOLD R 250 (NJ3,0), [20;2]
20.03 FINAL A/C THRESHOLD R 500 (NJ3,0), [20;3]
20.04 FINAL A/C THRESHOLD R 750 (NJ3,0), [20;4]
20.05 FINAL A/C THRESHOLD R 1000 (NJ3,0), [20;5]
20.06 FINAL A/C THRESHOLD R 1500 (NJ3,0), [20;6]
20.07 FINAL A/C THRESHOLD R 2000 (NJ3,0), [20;7]
20.08 FINAL A/C THRESHOLD R 3000 (NJ3,0), [20;8]
20.09 FINAL A/C THRESHOLD R 4000 (NJ3,0), [20;9]
20.1 FINAL A/C THRESHOLD R 6000 (NJ3,0), [20;10]
20.11 FINAL A/C THRESHOLD R 8000 (NJ3,0), [20;11]
20.12 FINAL A/C THRESHOLD R 12000 (NJ3,0), [20;12]
21.01 *REPEAT A/C THRESH TAG R 125 (S), [21;1]
21.02 *REPEAT A/C THRESH TAG R 250 (S), [21;2]
21.03 *REPEAT A/C THRESH TAG R 500 (S), [21;3]
21.04 *REPEAT A/C THRESH TAG R 750 (S), [21;4]
21.05 *REPEAT A/C THRESH TAG R 1000 (S), [21;5]
21.06 *REPEAT A/C THRESH TAG R 1500 (S), [21;6]
21.07 *REPEAT A/C THRESH TAG R 2000 (S), [21;7]
21.08 *REPEAT A/C THRESH TAG R 3000 (S), [21;8]
21.09 *REPEAT A/C THRESH TAG R 4000 (S), [21;9]
21.1 *REPEAT A/C THRESH TAG R 6000 (S), [21;10]
21.11 *REPEAT A/C THRESH TAG R 8000 (S), [21;11]
21.12 *REPEAT A/C THRESH TAG R 12000 (S), [21;12]
30.01 INITIAL A/C THRESHOLD L 125 (NJ3,0), [30;1]
30.02 INITIAL A/C THRESHOLD L 250 (NJ3,0), [30;2]
30.03 INITIAL A/C THRESHOLD L 500 (NJ3,0), [30;3]
30.04 INITIAL A/C THRESHOLD L 750 (NJ3,0), [30;4]
30.05 INITIAL A/C THRESHOLD L 1000 (NJ3,0), [30;5]
30.06 INITIAL A/C THRESHOLD L 1500 (NJ3,0), [30;6]
30.07 INITIAL A/C THRESHOLD L 2000 (NJ3,0), [30;7]
30.08 INITIAL A/C THRESHOLD L 3000 (NJ3,0), [30;8]

30.09 INITIAL A/C THRESHOLD L 4000 (NJ3,0), [30;9]
30.1 INITIAL A/C THRESHOLD L 6000 (NJ3,0), [30;10]
30.11 INITIAL A/C THRESHOLD L 8000 (NJ3,0), [30;11]
30.12 INITIAL A/C THRESHOLD L 12000 (NJ3,0), [30;12]
31.01 *INITIAL A/C THRESH TAG L 125 (S), [31;1]
31.02 *INITIAL A/C THRESH TAG L 250 (S), [31;2]
31.03 *INITIAL A/C THRESH TAG L 500 (S), [31;3]
31.04 *INITIAL A/C THRESH TAG L 750 (S), [31;4]
31.05 *INITIAL A/C THRESH TAG L 1000 (S), [31;5]
31.06 *INITIAL A/C THRESH TAG L 1500 (S), [31;6]
31.07 *INITIAL A/C THRESH TAG L 2000 (S), [31;7]
31.08 *INITIAL A/C THRESH TAG L 3000 (S), [31;8]
31.09 *INITIAL A/C THRESH TAG L 4000 (S), [31;9]
31.1 *INITIAL A/C THRESH TAG L 6000 (S), [31;10]
31.11 *INITIAL A/C THRESH TAG L 8000 (S), [31;11]
31.12 *INITIAL A/C THRESH TAG L 12000 (S), [31;12]
35.01 RETEST A/C THRESHOLD R 125 (NJ3,0), [10;1]
35.02 RETEST A/C THRESHOLD R 250 (NJ3,0), [10;2]
35.03 RETEST A/C THRESHOLD R 500 (NJ3,0), [10;3]
35.04 RETEST TEST A/C THRESHOLD R 750 (NJ3,0), [10;4]
35.05 RETEST A/C THRESHOLD R 1000 (NJ3,0), [10;5]
35.06 RETEST A/C THRESHOLD R 1500 (NJ3,0), [10;6]
35.07 RETEST A/C THRESHOLD R 2000 (NJ3,0), [10;7]
35.08 RETEST A/C THRESHOLD R 3000 (NJ3,0), [10;8]
35.09 RETEST A/C THRESHOLD R 4000 (NJ3,0), [10;9]
35.1 RETEST A/C THRESHOLD R 6000 (NJ3,0), [10;10]
35.11 RETEST A/C THRESHOLD R 8000 (NJ3,0), [10;11]
40.01 FINAL A/C THRESHOLD L 125 (NJ3,0), [40;1]
40.02 FINAL A/C THRESHOLD L 250 (NJ3,0), [40;2]
40.03 FINAL A/C THRESHOLD L 500 (NJ3,0), [40;3]
40.04 FINAL A/C THRESHOLD L 750 (NJ3,0), [40;4]
40.05 FINAL A/C THRESHOLD L 1000 (NJ3,0), [40;5]
40.06 FINAL A/C THRESHOLD L 1500 (NJ3,0), [40;6]
40.07 FINAL A/C THRESHOLD L 2000 (NJ3,0), [40;7]
40.08 FINAL A/C THRESHOLD L 3000 (NJ3,0), [40;8]

40.09 FINAL A/C THRESHOLD L 4000 (NJ3,0), [40;9]
40.1 FINAL A/C THRESHOLD L 6000 (NJ3,0), [40;10]
40.11 FINAL A/C THRESHOLD L 8000 (NJ3,0), [40;11]
40.12 FINAL A/C THRESHOLD L 12000 (NJ3,0), [40;12]
41.01 * REPEAT A/C THRESH TAG L 125 (S), [41;1]
41.02 * REPEAT A/C THRESH TAG L 250 (S), [41;2]
41.03 * REPEAT A/C THRESH TAG 500 (S), [41;3]
41.04 * REPEAT A/C THRESH TAG L 750 (S), [41;4]
41.05 * REPEAT A/C THRESH TAG L 1000 (S), [41;5]
41.06 * REPEAT A/C THRESHOLD TAG 1500 (S), [41;6]
41.07 * REPEAT A/C THRESH TAG L 2000 (S), [41;7]
41.08 * REPEAT A/C THRESH TAG L 3000 (S), [41;8]
41.09 * REPEAT A/C THRESH TAG L 4000 (S), [41;9]
41.1 * REPEAT A/C THRESH TAG L 6000 (S), [41;10]
41.11 * REPEAT A/C THRESH TAG L 8000 (S), [41;11]
41.12 * REPEAT A/C THRESH TAG L 12000 (S), [41;12]
50.01 * INITIAL A/C MASK LEVEL R 125 (NJ3,0), [50;1]
50.02 * INITIAL A/C MASK LEVEL R 250 (NJ3,0), [50;2]
50.03 * INITIAL A/C MASK LEVEL R 500 (NJ3,0), [50;3]
50.04 * INITIAL A/C MASK LEVEL R 750 (NJ3,0), [50;4]
50.05 * INITIAL A/C MASK LEVEL R 1000 (NJ3,0), [50;5]
50.06 * INITIAL A/C MASK LEVEL R 1500 (NJ3,0), [50;6]
50.07 * INITIAL A/C MASK LEVEL R 2000 (NJ3,0), [50;7]
50.08 * INITIAL A/C MASK LEVEL R 3000 (NJ3,0), [50;8]
50.09 * INITIAL A/C MASK LEVEL R 4000 (NJ3,0), [50;9]
50.1 * INITIAL A/C MASK LEVEL R 6000 (NJ3,0), [50;10]
50.11 * INITIAL A/C MASK LEVEL R 8000 (NJ3,0), [50;11]
50.12 * INITIAL A/C MASK LEVEL R 12000 (NJ3,0), [50;12]
51.01 FINAL A/C MASK LEVEL R 125 (NJ3,0), [51;1]
51.02 FINAL A/C MASK LEVEL R 250 (NJ3,0), [51;2]
51.03 FINAL A/C MASK LEVEL R 500 (NJ3,0), [51;3]
51.04 FINAL A/C MASK LEVEL R 750 (NJ3,0), [51;4]
51.05 FINAL A/C MASK LEVEL R 1000 (NJ3,0), [51;5]
51.06 FINAL A/C MASK LEVEL R 1500 (NJ3,0), [51;6]
51.07 FINAL A/C MASK LEVEL R 2000 (NJ3,0), [51;7]

51.08 FINAL A/C MASK LEVEL R 3000 (NJ3,0), [51;8]
51.09 FINAL A/C MASK LEVEL R 4000 (NJ3,0), [51;9]
51.1 FINAL A/C MASK LEVEL R 6000 (NJ3,0), [51;10]
51.11 FINAL A/C MASK LEVEL R 8000 (NJ3,0), [51;11]
51.12 FINAL A/C MASK LEVEL R 12000 (NJ3,0), [51;12]
60.01 * INITIAL A/C MASK LEVEL L 125 (NJ3,0), [60;1]
60.02 * INITIAL A/C MASK LEVEL L 250 (NJ3,0), [60;2]
60.03 * INITIAL A/C MASK LEVEL L 500 (NJ3,0), [60;3]
60.04 * INITIAL A/C MASK LEVEL L 750 (NJ3,0), [60;4]
60.05 * INITIAL A/C MASK LEVEL L 1000 (NJ3,0), [60;5]
60.06 * INITIAL A/C MASK LEVEL L 1500 (NJ3,0), [60;6]
60.07 * INITIAL A/C MASK LEVEL L 2000 (NJ3,0), [60;7]
60.08 * INITIAL A/C MASK LEVEL L 3000 (NJ3,0), [60;8]
60.09 * INITIAL A/C MASK LEVEL L 4000 (NJ3,0), [60;9]
60.1 * INITIAL A/C MASK LEVEL L 6000 (NJ3,0), [60;10]
60.11 * INITIAL A/C MASK LEVEL L 8000 (NJ3,0), [60;11]
60.12 * INITIAL A.C MASK LEVEL L 12000 (NJ3,0), [60;12]
61.01 FINAL A/C MASK LEVEL L 125 (NJ3,0), [61;1]
61.02 FINAL A/C MASK LEVEL L 250 (NJ3,0), [61;2]
61.03 FINAL A/C MASK LEVEL L 500 (NJ3,0), [61;3]
61.04 FINAL A/C MASK LEVEL L 750 (NJ3,0), [61;4]
61.05 FINAL A/C MASK LEVEL L 1000 (NJ3,0), [61;5]
61.06 FINAL A/C MASK LEVEL L 1500 (NJ3,0), [61;6]
61.07 FINAL A/C MASK LEVEL L 2000 (NJ3,0), [61;7]
61.08 FINAL A/C MASK LEVEL L 3000 (NJ3,0), [61;8]
61.09 FINAL A/C MASK LEVEL L 4000 (NJ3,0), [61;9]
61.1 FINAL A/C MASK LEVEL L 6000 (NJ3,0), [61;10]
61.11 FINAL A/C MASK LEVEL L 8000 (NJ3,0), [61;11]
61.12 FINAL A/C MASK LEVEL L 12000 (NJ3,0), [61;12]
70.01 INITIAL B/C THRESHOLD R 250 (NJ2,0), [70;1]
70.02 INITIAL B/C THRESHOLD R 500 (NJ2,0), [70;2]
70.03 INITIAL B/C THRESHOLD R 750 (NJ2,0), [70;3]
70.04 INITIAL B/C THRESHOLD R 1000 (NJ2,0), [70;4]
70.05 INITIAL B/C THRESHOLD R 1500 (NJ2,0), [70;5]
70.06 INITIAL B/C THRESHOLD R 2000 (NJ2,0), [70;6]

70.07 INITIAL B/C THRESHOLD R 3000 (NJ2,0), [70;7]
70.08 INITIAL B/C THRESHOLD R 4000 (NJ2,0), [70;8]
70.09 INITIAL B/C THRESHOLD R 6000 (NJ2,0), [70;9]
71.01 * INITIAL B/C THRESH TAG R 250 (S), [71;1]
71.02 * INITIAL B/C THRESH TAG R 500 (S), [71;2]
71.03 * INITIAL B/C THRESH TAG R 750 (S), [71;3]
71.04 * INITIAL B/C THRESH TAG R 1000 (S), [71;4]
71.05 * INITIAL B/C THRESH TAG R 1500 (S), [71;5]
71.06 * INITIAL B/C THRESH TAG R 2000 (S), [71;6]
71.07 * INITIAL B/C THRESH TAG R 3000 (S), [71;7]
71.08 * INITIAL B/C THRESH TAG R 4000 (S), [71;8]
71.09 * INITIAL B/C THRESH TAG R 6000 (S), [71;9]
72.01 RETEST B/C THRESHOLD R 250 (NJ2,0), [75;1]
72.02 RETEST B/C THRESHOLD R 500 (NJ2,0), [75;2]
72.03 RETEST B/C THRESHOLD R 750 (NJ2,0), [75;3]
72.04 RETEST B/C THRESHOLD R 1000 (NJ2,0), [75;4]
72.05 RETEST B/C THRESHOLD R 1500 (NJ2,0), [75;5]
72.06 RETEST B/C THRESHOLD R 2000 (NJ2,0), [75;6]
72.07 RETEST B/C THRESHOLD R 3000 (NJ2,0), [75;7]
72.08 RETEST B/C THRESHOLD R 4000 (NJ2,0), [75;8]
72.09 RETEST B/C THRESHOLD R 6000 (NJ2,0), [75;9]
75.01 FINAL B/C THRESHOLD R 250 (NJ2,0), [75;1]
75.02 FINAL B/C THRESHOLD R 500 (NJ2,0), [75;2]
75.03 FINAL B/C THRESHOLD R 750 (NJ2,0), [75;3]
75.04 FINAL B/C THRESHOLD R 1000 (NJ2,0), [75;4]
75.05 FINAL B/C THRESHOLD R 1500 (NJ2,0), [75;5]
75.06 FINAL B/C THRESHOLD R 2000 (NJ2,0), [75;6]
75.07 FINAL B/C THRESHOLD R 3000 (NJ2,0), [75;7]
75.08 FINAL B/C THRESHOLD R 4000 (NJ2,0), [75;8]
75.09 FINAL B/C THRESHOLD R 6000 (NJ2,0), [75;9]
76.01 *REPEAT B/C THRESH TAG R 250 (S), [76;1]
76.02 *REPEAT B/C THRESH TAG R 500 (S), [76;2]
76.03 *REPEAT B/C THRESH TAG R 750 (S), [76;3]
76.04 *REPEAT B/C THRESH TAG R 1000 (S), [76;4]
76.05 *REPEAT B/C THRESH TAG R 1500 (S), [76;5]

76.06 *REPEAT B/C THRESH TAG R 2000 (S), [76;6]
76.07 *REPEAT B/C THRESH TAG R 3000 (S), [76;7]
76.08 * REPEAT B/C THRESH TAG R 4000 (S), [76;8]
76.09 *REPEAT B/C THRESH TAG R 6000 (S), [76;9]
80.01 INITIAL B/C THRESHOLD L 250 (NJ2,0), [80;1]
80.02 INITIAL B/C THRESHOLD L 500 (NJ2,0), [80;2]
80.03 INITIAL B/C THRESHOLD L 750 (NJ2,0), [80;3]
80.04 INITIAL B/C THRESHOLD L 1000 (NJ2,0), [80;4]
80.05 INITIAL B/C THRESHOLD L 1500 (NJ2,0), [80;5]
80.06 INITIAL B/C THRESHOLD L 2000 (NJ2,0), [80;6]
80.07 INITIAL B/C THRESHOLD L 3000 (NJ2,0), [80;7]
80.08 INITIAL B/C THRESHOLD L 4000 (NJ2,0), [80;8]
80.09 INITIAL B/C THRESHOLD L 6000 (NJ2,0), [80;9]
81.01 *INITIAL B/C THRESH TAG L 250 (S), [81;1]
81.02 *INITIAL B/C THRESH TAG L 500 (S), [81;2]
81.03 *INITIAL B/C THRESH TAG L 750 (S), [81;3]
81.04 *INITIAL B/C THRESH TAG L 1000 (S), [81;4]
81.05 * INITIAL B/C THRESH TAG L 1500 (S), [81;5]
81.06 *INITIAL B/C THRESH TAG L 2000 (S), [81;6]
81.07 *INITIAL B/C THRESH TAG L 3000 (S), [81;7]
81.08 *INITIAL B/C THRESH TAG L 4000 (S), [81;8]
81.09 *INITIAL B/C THRESH TAG L 6000 (S), [81;9]
85.01 FINAL B/C THRESHOLD L 250 (NJ2,0), [85;1]
85.02 FINAL B/C THRESHOLD L 500 (NJ2,0), [85;2]
85.03 FINAL B/C THRESHOLD L 750 (NJ2,0), [85;3]
85.04 FINAL B/C THRESHOLD L 1000 (NJ2,0), [85;4]
85.05 FINAL B/C THRESHOLD L 1500 (NJ2,0), [85;5]
85.06 FINAL B/C THRESHOLD L 2000 (NJ2,0), [85;6]
85.07 FINAL B/C THRESHOLD L 3000 (NJ2,0), [85;7]
85.08 FINAL B/C THRESHOLD L 4000 (NJ2,0), [85;8]
85.09 FINAL B/C THRESHOLD L 6000 (NJ2,0), [85;9]
86.01 * REPEAT B/C THRESH TAG L 250 (S), [86;1]
86.02 * REPEAT B/C THRESH TAG L 500 (S), [86;2]
86.03 * REPEAT B/C THRESH TAG L 750 (S), [86;3]
86.04 * REPEAT B/C THRESH TAG L 1000 (S), [86;4]

86.05 * REPEAT B/C THRESH TAG L 1500 (S), [86;5]
86.06 * REPEAT B/C THRESH TAG L 2000 (S), [86;6]
86.07 * REPEAT B/C THRESH TAG L 3000 (S), [86;7]
86.08 * REPEAT B/C THRESH TAG L 4000 (S), [86;8]
86.09 * REPEAT B/C THRESH TAG L 6000 (S), [86;9]
90.01 * INITIAL B/C MASK LEVEL R 250 (NJ3,0), [90;1]
90.02 * INITIAL B/C MASK LEVEL R 500 (NJ3,0), [90;2]
90.03 * INITIAL B/C MASK LEVEL R 750 (NJ3,0), [90;3]
90.04 * INITIAL B/C MASK LEVEL R 1000 (NJ3,0), [90;4]
90.05 * INITIAL B/C MASK LEVEL R 1500 (NJ3,0), [90;5]
90.06 * INITIAL B/C MASK LEVEL R 2000 (NJ3,0), [90;6]
90.07 * INITIAL B/C MASK LEVEL R 3000 (NJ3,0), [90;7]
90.08 * INITIAL B/C MASK LEVEL R 4000 (NJ3,0), [90;8]
90.09 * INITIAL B/C MASK LEVEL R 6000 (NJ3,0), [90;9]
91.01 FINAL B/C MASK LEVEL R 250 (NJ3,0), [91;1]
91.02 FINAL B/C MASK LEVEL R 500 (NJ3,0), [91;2]
91.03 FINAL B/C MASK LEVEL R 750 (NJ3,0), [91;3]
91.04 FINAL B/C MASK LEVEL R 1000 (NJ3,0), [91;4]
91.05 FINAL B/C MASK LEVEL R 1500 (NJ3,0), [91;5]
91.06 FINAL B/C MASK LEVEL R 2000 (NJ3,0), [91;6]
91.07 FINAL B/C MASK LEVEL R 3000 (NJ3,0), [91;7]
91.08 FINAL B/C MASK LEVEL R 4000 (NJ3,0), [91;8]
91.09 FINAL B/C MASK LEVEL R 6000 (NJ3,0), [91;9]
100.01 * INITIAL B/C MASK LEVEL L 250 (NJ3,0), [100;1]
100.02 * INITIAL B/C MASK LEVEL L 500 (NJ3,0), [100;2]
100.03 * INITIAL B/C MASK LEVEL L 750 (NJ3,0), [100;3]
100.04 * INITIAL B/C MASK LEVEL L 1000 (NJ3,0), [100;4]
100.05 * INITIAL B/C MASK LEVEL L 1500 (NJ3,0), [100;5]
100.06 * INITIAL B/C MASK LEVEL L 2000 (NJ3,0), [100;6]
100.07 * INITIAL B/C MASK LEVEL L 3000 (NJ3,0), [100;7]
100.08 * INITIAL B/C MASK LEVEL L 4000 (NJ3,0), [100;8]
100.09 * INITIAL B/C MASK LEVEL L 6000 (NJ3,0), [100;9]
101.01 FINAL B/C MASK LEVEL L 250 (NJ3,0), [101;1]
101.02 FINAL B/C MASK LEVEL L 500 (NJ3,0), [101;2]
101.03 FINAL B/C MASK LEVEL L 750 (NJ3,0), [101;3]

101.04 FINAL B/C MASK LEVEL L 1000 (NJ3,0), [101;4]
101.05 FINAL B/C MASK LEVEL L 1500 (NJ3,0), [101;5]
101.06 FINAL B/C MASK LEVEL L 2000 (NJ3,0), [101;6]
101.07 FINAL B/C MASK LEVEL L 3000 (NJ3,0), [101;7]
101.08 FINAL B/C MASK LEVEL L 4000 (NJ3,0), [101;8]
101.09 FINAL B/C MASK LEVEL L 6000 (NJ3,0), [101;9]
110.03 MATERIAL-1 (S), [110;3]
110.04 PERCENT CORRECT R-1 (NJ3,0), [110;4]
110.05 PRESENTATION METHOD R-1 (S), [110;5]
110.06 PRESENTATION LEVEL R-1 (NJ3,0), [110;6]
110.07 MASKING LEVEL R-1 (NJ3,0), [110;7]
110.08 * WORD LIST R-2 (S), [110;8]
110.09 PERCENT CORRECT R-2 (NJ3,0), [110;9]
110.1 * PRESENTATION METHOD R-2 (S), [110;10]
110.11 PRESENTATION LEVEL R-2 (NJ3,0), [110;11]
110.12 MASKING LEVEL R-2 (NJ3,0), [110;12]
110.13 * WORD LIST R-3 (S), [110;13]
110.14 PERCENT CORRECT R-3 (NJ3,0), [110;14]
110.15 * PRESENTATION METHOD R-3 (S), [110;15]
110.16 PRESENTATION LEVEL R-3 (NJ3,0), [110;16]
110.17 MASKING LEVEL R-3 (NJ3,0), [110;17]
110.18 * WORD LIST R-4 (S), [110;18]
110.19 PERCENT CORRECT R-4 (NJ3,0), [110;19]
110.2 * PRESENTATION METHOD R-4 (S), [110;20]
110.21 PRESENTATION LEVEL R-4 (NJ3,0), [110;21]
110.22 MASKING LEVEL R-4 (NJ3,0), [110;22]
110.23 * WORD LIST R-5 (S), [110;23]
110.24 PERCENT CORRECT R-5 (NJ3,0), [110;24]
110.25 * PRESENTATION METHOD R-5 (S), [110;25]
110.26 PRESENTATION LEVEL R-5 (NJ3,0), [110;26]
110.27 MASKING LEVEL R-5 (NJ3,0), [110;27]
110.28 LIST R-1 (F),[110;28]
110.29 LIST R-2 (F),[110;29]
110.3 LIST R-3 (F),[110;30]
110.31 LIST R-4 (F),[110;31]

110.32 LIST R-5 (F),[110;32]
111.03 MATERIAL L-1 (S), [111;3]
111.04 PERCENT CORRECT L-1 (NJ3,0), [111;4]
111.05 PRESENTATION METHOD L-1 (S), [111;5]
111.06 PRESENTATION LEVEL L-1 (NJ3,0), [111;6]
111.07 MASKING LEVEL L-1 (NJ3,0), [111;7]
111.08 * WORD LIST L-2 (S), [111;8]
111.09 PERCENT CORRECT L-2 (NJ3,0), [111;9]
111.1 * PRESENTATION METHOD L-2 (S), [111;10]
111.11 PRESENTATION LEVEL L-2 (NJ3,0), [111;11]
111.12 MASKING LEVEL L-2 (NJ3,0), [111;12]
111.13 * WORD LIST L-3 (S), [111;13]
111.14 PERCENT CORRECT L-3 (NJ3,0), [111;14]
111.15 * PRESENTATION METHOD L-3 (S), [111;15]
111.16 PRESENTATION LEVEL L-3 (NJ3,0), [111;16]
111.17 MASKING LEVEL L-3 (NJ3,0), [111;17]
111.18 * WORD LIST L-4 (S), [111;18]
111.19 PERCENT CORRECT L-4 (NJ3,0), [111;19]
111.2 * PRESENTATION METHOD L-4 (S), [111;20]
111.21 PRESENTATION LEVEL L-4 (NJ3,0), [111;21]
111.22 MASKING LEVEL L-4 (NJ3,0), [111;22]
111.23 * WORD LIST L-5 (S), [111;23]
111.24 PERCENT CORRECT L-5 (NJ3,0), [111;24]
111.25 * PRESENTATION METHOD L-5 (S), [111;25]
111.26 PRESENTATION LEVEL L-5 (NJ3,0), [111;26]
111.27 MASKING LEVEL L-5 (NJ3,0), [111;27]
111.28 LIST L-1 (F),[110;28]
111.29 LIST L-2 (F),[110;29]
111.3 LIST L-3 (F),[110;30]
111.31 LIST L-4 (F),[110;31]
111.32 LIST L-5 (F),[110;32]
112.03 CI WORD LIST R-1 (S), [112;3]
112.04 CI PERCENT CORRECT R-1 (NJ6,2), [112;4]
112.08 CI WORD LIST R-2 (S), [112;8]
112.09 CI PERCENT CORRECT R-2 (NJ6,2), [112;9]

112.28 CI NOISE PERCENT RIGHT (NJ6,2), [112;28]

112.29 CI NOISE MATERIAL RIGHT (S), [112;29]

113.03 CI WORD LIST L-1 (S), [113;3]

113.04 CI PERCENT CORRECT L-1 (NJ6,2), [113;4]

113.08 CI WORD LIST L-2 (S), [113;8]

113.09 CI PERCENT CORRECT L-2 (NJ6,2), [113;9]

113.28 CI NOISE PERCENT LEFT (NJ6,2), [113;28]

113.29 CI NOISE MATERIAL LEFT (S), [113;29]

115.01 INITIAL SRT THRESH R (NJ3,0), [115;1]

115.02 REPEAT SRT THRESH R (NJ3,0), [115;2]

115.03 INITIAL SRT MASK LEVEL R (NJ3,0), [115;3]

115.04 FINAL SRT MASK LEVEL R (NJ3,0), [115;4]

115.05 INITIAL SRT THRESH L (NJ3,0), [115;5]

115.06 REPEAT SRT THRESH L (NJ3,0), [115;6]

115.07 INITIAL SRT MASK LEVEL L (NJ3,0), [115;7]

115.08 FINAL SRT MASK LEVEL L (NJ3,0), [115;8]

115.09 PBMAX R (NJ3,0), [115;9]

115.1 PBMIN R (NJ3,0), [115;10]

115.11 PI/PB R (NJ4,2), [115;11]

115.12 PBMAX L (NJ3,0), [115;12]

PBMIN L (NJ3,0), [115;13]

PI/PB L (NJ4,2), [115;14]

FINAL SRT TAG R (S),[115;15]

FINAL SRT TAG L (S),[115;16]

120.01 MIDDLE EAR PRESSURE R (NJ3,0), [120;1]

120.02 PK IMMITTANCE 226 R (NJ4,2), [120;2]

120.03 VEQ - EQUIV EAR CANAL VOL R (NJ4,2), [120;3]

120.04 IAR THRESHOLD R 500 (NJ3,0), [120;4]

120.05 IAR THRESHOLD R 1000 (NJ3,0), [120;5]

120.06 IAR THRESHOLD R 2000 (NJ3,0), [120;6]

120.07 IAR THRESHOLD R 4000 (NJ3,0), [120;7]

120.08 CAR THRESHOLD R 500 (NJ3,0), [120;8]

120.09 CAR THRESHOLD R 1000 (NJ3,0), [120;9]

120.1 CAR THRESHOLD R 2000 (NJ3,0), [120;10]

120.11 CAR THRESHOLD R 4000 (NJ3,0), [120;11]

120.12 ACOUSTIC REFLEX DECAY R 500 (S), [120;12]
120.13 ACOUSTIC REFLEX DECAY R 1000 (S), [120;13]
120.14 AR HALF LIFE 500 R (NJ2,0), [120;14]
120.15 AR HALF LIFE 1000 R (NJ2,0), [120;15]
120.16 INTER-TEST CONSISTENCY R (S), [120;16]
120.17 IAR BBN R (F),[120;17]
120.18 CAR BBN R (F), (F),[120;18]
120.19 PK IMMITTANCE 678 R(N),[120;19]
120.2 WEBER R(F),[120;20]
120.21 PT STENGER R(F),[120;21]
120.22 RINNE R(F),[120;22]
120.23 OTHER TEST R(F),[120;23]
121.01 PK IMMITTANCE 226 L (NJ3,0), [121;1]
121.02 STATIC COMPLIANCE L (NJ4,2), [121;2]
121.03 VEQ - EQUIV EAR CANAL VOL L (NJ4,2), [121;3]
121.04 IAR THRESHOLD L 500 (NJ3,0), [121;4]
121.05 IAR THRESHOLD L 1000 (NJ3,0), [121;5]
121.06 IAR THRESHOLD L 2000 (NJ3,0), [121;6]
121.07 IAR THRESHOLD L 4000 (NJ3,0), [121;7]
121.08 CAR THRESHOLD L 500 (NJ3,0), [121;8]
121.09 CAR THRESHOLD L 1000 (NJ3,0), [121;9]
121.1 CAR THRESHOLD L 2000 (NJ3,0), [121;10]
121.11 CAR THRESHOLD L 4000 (NJ3,0), [121;11]
121.12 ACOUSTIC REFLEX DECAY L 500 (S), [121;12]
121.13 ACOUSTIC REFLEX DECAY L 1000 (S), [121;13]
121.14 AR HALF LIFE 500 L (NJ2,0), [121;14]
121.15 AR HALF LIFE 1000 L (NJ2,0), [121;15]
121.16 INTER-TEST CONSISTENCY L (S), [121;16]
121.17 IAR BBN L (F),[121;17]
121.18 CAR BBN L (F), (F),[121;18]
121.19 PK IMMITTANCE 678 L (N),[121;19]
121.2 WEBER L (F) ,[121;20]
121.21 PT STENGER L (F) ,[121;21]
121.22 RINNE L (F),[121;22]
121.23 OTHER TEST L (F),[121;23]

122 COMMENTS (W), [122;0]

791000 node is created, but is only used at the DDC

Files Referenced in ^ACK(509850.9

^DPT(PATIENT

^VA(200 NEW PERSON

^SC(HOSPITAL LOCATION

^XMB(3.9, MESSAGE

^DIC(4, INSTITUTION

Routines

This section provides technical staff with a reference list of routines included in the Audiometric Exam module.

ACKQAG01

Called by RPC: ACKQAUD1 and routines: ACKQAG02 and ACKQAG04

Purpose: Retrieves the data for the Audiogram Display from ^ACK(509850.9)

ACKQAG02

Called by RPC: ACKQAUD2

Purpose: Retrieves the data for the Audiogram Edit from ^ACK(509850.9).

ACKQAG03

Called by RPC: ACKQROES

Purpose: Retrieves and prepares audiometric exam data for transmission to the Denver Distribution Center (DDC).

ACKQAG04

Called by routine: ACKQAG03

Purpose: Retrieves and prepares audiometric exam data for transmission to the Denver Distribution Center (DDC).

ACKQAG05

Called by routine: ACKQAG03 and RPC: ACKQROESD and ACKQAUD4

Purpose: Utilities for transmitting data to the DDC.

ACKQAG06

Called by routine: ACKQAG01

Purpose: Utilities for retrieving data for the Audiogram Display.

Delphi Routines

Display Audiogram files .dpr, .pas and .dfm files:

ACKQROES3.dpr	project file
uLayer.pas	main driver program module & draw point connections
uData.pas	retrieval of data module
uMask.pas	determines & draws the masking symbols on the graph
uTable.pas	sets up and displays 2364 of data
uAudKey.pas	displays the symbol key
uLayer.dfm	Main form
uTable.dfm	2364 form
uAudKey.dfm	Legend Key form

Edit Audiogram .dpr, .pas and .dfm files:

ACKQROES3E.dpr	project file
uEnterEdit.pas	main driver program module
uEditUtils.pas	utilities for uEnterEdit
uEditUtil2.pas	additional utilities for uEnterEdit
uInactivate.pas	NotEdit utility to disable all controls
uHelp1.pas	Help1 module routine
uHelp2.pas	Help2 module routine
uHelp3.pas	Help3 module routine
uHelp4.pas	Help4 module routine
uEnterEdit.dfm	Main form
uHelp1.dfm	Help text form for main tab
uHelp2.dfm	Help text form for 2nd tab
uHelp3.dfm	Help text form for 3rd tab
uHelp4.dfm	Help text form for 4th tab

Exported Options

This section describes the two **V***ist***A** Broker options included in the Audiometric Exam module.

ACKQROES3 - Audiogram Display

NAME: ACKQROES3

MENU TEXT: Audiogram Display

TYPE: Broker (Client/Server)

PACKAGE: QUASAR

DESCRIPTION: This is the Audiogram display taken from the AUDIOMETRIC EXAM DATA file 509850.9

RPC: ACKQAUD1

RPC: DDR FIND1

RPC: DDR FINDER

RPC: DDR GET DD HELP

RPC: DDR GETS ENTRY DATA

RPC: DDR LISTER

RPC: DDR VALIDATOR

RPC: XUS GET USER INFO

RPC: XUS SIGNON SETUP

RPC: XWB ARE RPCS AVAILABLE

RPC: XWB CREATE CONTEXT

RPC: XWB GET BROKER INFO

RPC: XWB GET VARIABLE VALUE

RPC: XWB IS RPC AVAILABLE

ACKQROES3E - Audiogram Edit

NAME: ACKQROES3E

MENU TEXT: Audiogram Enter Edit

TYPE: Broker (Client/Server)

PACKAGE: QUASAR

DESCRIPTION: This is the menu item to establish the connection for the AUDIOMETRIC EXAM DATA file Enter Edit program executable.

RPC: ACKQAUD2

RPC: ACKQAUD4

RPC: ACKQROES

RPC: ACKQROESD

RPC: DDR DELETE ENTRY

RPC: DDR FILER

RPC: DDR FIND1

RPC: DDR FINDER

RPC: DDR GETS ENTRY DATA

RPC: DDR GET DD HELP

RPC: DDR LISTER

RPC: DDR VALIDATOR

RPC: XUS GET USER INFO

RPC: XUS INTRO MSG

RPC: XUS SIGNON SETUP

RPC: XWB ARE RPCS AVAILABLE

RPC: XWB CREATE CONTEXT

RPC: XWB GET BROKER INFO

RPC: XWB GET VARIABLE VALUE

RPC: XWB IS RPC AVAILABLE

Archiving and Purging

^ACK(509850.9,

Since the data stored by this module is part of the patient record, it should be retained as permanent data in accordance with **V***ist***A** patient data storage policy and regulations.

Called routines, entry points, and APIs

START^ACKQAG01

Called by RPC: ACKQAUD1.

Input the reference array to accept data, DFN of patient and entry in file(opt).

Returns, in the named array, the values for the graphical display and the 2364 - this is documented in routine.

If a particular graph is wanted in the display, pass in the entry number as third parameter.

TITLE^ACKQAG01(USER)

Input DUZ

Returns the printable title from the Title file ^DIC(3.1.

GETDATA^ACKQAG02

Provides the data for START^ACKQAG02.

START^ACKQAG02

Called from RPC: ACKQAUD2

Input the array name by reference and DFN of patient.

Gets the array of values for just the last audiogram for edit and transfer to the DDC.

START^ACKQAG03

Called by RPC: ACKQROES.

Sets up and sends the message to the DDC with the audiometric data.

The message number and date sent is placed back into the Audiometric Exam file for tracing purposes.

GETDATA^ACKQAG04

Input the entry number in file 509850.9

Provides the transmission data for ACKQAG03

START^ACKQAG04

Input the array name to accept data and the DFN of the patient.

Used by the RPC: ACKQAUD2 for the transmission of data to the DDC.

ACKEXIST^ACKQAG05

Checks for existence of file 509805.9 at the site.

DFNIN^ACKQAG05

Input the DFN of a patient.

Returns the last entry number in file 509850.9 for a patient.

NEWMSG^ACKQAG05

Returns the message number as set up in ^XMB(3.9.

GETDATA^ACKQAG06(ACKQI, ACKI)

Input the entry in the Audiometric Exam file and the current line reading for START^ACKQAG01.

Returns the threshold (dB) to be on the graph for a particular frequency (Hz) reading in a particular line of the array passed in START^ACKQAG01. (executes logic)

LOGIC^ACKQAG06(A1,A2,A3,A4,A5,A6,A7)

Input the various initial and final threshold and masking values and return the values that would be on the graph. See Appendix A.

ACKQROES

TAG: START

ROUTINE: ACKQAG03

RETURN VALUE TYPE: SINGLE VALUE

AVAILABILITY: PUBLIC

WORD WRAP ON: FALSE

VERSION: 3

DESCRIPTION:

This is the RPC used to setup and send to the DDC, the signed audiometric data file entry. It is triggered by the saving of a signed entry in 509850.9

INPUT PARAMETER: DFN

PARAMETER TYPE: LITERAL

REQUIRED: YES

SEQUENCE NUMBER: 1

DESCRIPTION: This is the pointer to the patient file.

INPUT PARAMETER: IEN

PARAMETER TYPE: LITERAL

REQUIRED: NO

SEQUENCE NUMBER: 2

DESCRIPTION: This is the entry in 509850.9 that the user is working on.

INPUT PARAMETER: STANUM

This is the Sta # of the sending clinic

INPUT PARAMETER: USRNAM

PARAMETER TYPE: LITERAL

MAXIMUM DATA LENGTH: 32

REQUIRED: NO

SEQUENCE NUMBER: 4

DESCRIPTION: This is the name of the submitting user

INPUT PARAMETER: USRSER

PARAMETER TYPE: LITERAL

MAXIMUM DATA LENGTH: 32

REQUIRED: NO

SEQUENCE NUMBER: 5

DESCRIPTION: This is the name of the submitting user's service

RETURN PARAMETER DESCRIPTION:

It returns a literal containing the local confirmation msg number,

the msg number sent to the DDC, the error number, & the error msg.

ACKQAUD1

TAG: START

ROUTINE: ACKQAG01

RETURN VALUE TYPE: ARRAY

AVAILABILITY: PUBLIC

WORD WRAP ON: FALSE

DESCRIPTION:

This RPC gets the audiogram data for entries in the Audiometric Exam Data file 509850.9 and returns it to the calling program in the array

ACKQARR()

INPUT PARAMETER: DFN

PARAMETER TYPE: LITERAL

REQUIRED: YES

SEQUENCE NUMBER: 1

DESCRIPTION: The internal number in the Patient file (2)

INPUT PARAMETER: IEN

PARAMETER TYPE: LITERAL

REQUIRED: NO

SEQUENCE NUMBER: 2

DESCRIPTION: internal number in the Audiometric Exam Data file (509850.9)

RETURN PARAMETER DESCRIPTION:

ACKQARR(0) = these pieces:

1=# audiograms[0-2]

2=name of patient

3=first audiogram date seen

4=first tester name

5=age of patient at first test

6=title of tester for first audiogram

7=SSN of patient

8=second audiogram date(or error message if an error exists)

9=tester name for second audiogram

10=age of patient at second audiogram

11=title of tester for second audiogram

ACKQARR(ctr) pieces for each all X values

1=X Value(Hz) being tested

2=ACKQI - internal record number in 509850.9

3=ear[L,R]

4=air Y(dB) val

5=airMask[0-6]

6=airMaskLevel

7=bone Y(dB) value

8=boneMask[0-6]

9=boneMaskLevel

10=IAR

11=CAR

Will return to Delphi app as subscripted array

RETURN() subscripted values

1-12(1st audiogram R ear)

13-24(1st audiogram L ear)

25 is speech recog 1st audiogram

26 is the 120/121 nodes for 1st audiogram

ACKQAUD2

TAG: START

ROUTINE: ACKQAG02

RETURN VALUE TYPE: ARRAY

AVAILABILITY: PUBLIC

DESCRIPTION:

Input the IEN of the 509850.9 file entry as the second parameter. Input the DFN as the third parameter, array by reference as first returns a subscripted array of data values for this audiogram. Used in the edit program

INPUT PARAMETER: DFN

PARAMETER TYPE: LITERAL

REQUIRED: YES

SEQUENCE NUMBER: 1

DESCRIPTION: DFN of patient - entry in DPT(

RETURN PARAMETER DESCRIPTION: Subscripted array of values for various Hz.

This is not used for the Audiogram Display, just the edit program

input: ref to array and DFN

returns: array of values, RMPFERR if an error was found.

Will return to the application as subscripted array,

Subscripts: 1(general), 2-13(R ear), 14-25(L ear), 26(general)

(1)=audiogram local ien^name of patient^last date seen^tester1^error msg

(#)=pcs in rest of counter nodes.

1=Xvalue

2=ear[L,R]^

3=

4=iairY^

5=iairMask[0-6]^

6=iairMaskL^

7=iboneY^

8=iboneMask[0-1]^

9=iboneMaskL^

10=IAR^

11=CAR^

12=rairY^

13=rairMask[0-6]^

14=rairMaskL^

15=rboneY^

16=rboneMask[0-1]^

17=rboneMaskL^

18=AR DECAY^

19=HALF LF

External Relations

Standalone Functionality

The Audiogram Module can be run as a standalone product on a **V***ist***A** system with the included Audiometric Exam Data file (#209850.9). This file also refers to the PATIENT (#2) file, the NEW PERSON (#200) file, the INSTITUTION (#4) file, the HOSPITAL LOCATION (#44) file, and the title of the examining clinician from the TITLE (3.1) file. The facility is not required to have inpatient activity or use CPRS to use this module.

Through this application, audiometric exam records are delivered electronically to the DDC, allowing integration of this clinical data into orders placed through the Remote Order Entry System (ROES). By including audiometric data in ROES custom hearing aid orders, manufacturers of these hearing aids are provided with more complete information for the manufacture, modification, and repair of these highly customized devices.

Recommended Desktop Minimums

SPECIFICATION	RECOMMENDED MINIMUM
Processor	200 MHz
Memory	64 MB
Hard Drive	4GB
Video	AGP 2x w/4MB
CD-ROM	8x
Monitor	17" VGA, .28 pixel resolution
LAN Interface	10/100 Mbps Ethernet
Keyboard	101 -key
Mouse	Microsoft Compatible
Operating System	Microsoft Windows 9x, 2000 or XP (MS Windows XP or Windows 2000 Pro strongly recommended)
Browser	IE 5

A system meeting the above specifications can be expected to provide the functionality necessary for this application. The VA Assistant Secretary for Information and Technology has established a set of minimum configurations for any new procurement of desktop systems across the enterprise (VA Directive 6401) For most of the specifications listed above, the VA minimum baseline exceeds the recommended minimum for this application, but the above specifications are provided to allow for use of equipment incurrent inventory, if necessary. In assessing procurement and/or other resource acquisition actions to meet this application's requirements, each facility is advised to give consideration to the specifications mandated by the above-mentioned Directive. Conformance with these established and/or emerging VA standards is encouraged. A dynamic update of the VA desktop standards is maintained at http://vaww.vairm.vaco.va.gov/vadesktop/.

Integration Agreements

No integration agreements are used in the Audiometric Module.

Internal Relations

M routines:

i ACKQAG01 Called by Option: ACKQAUD1

ii ACKQAG02 Called by Option: ACKQAUD2

iii ACKQAG03 Called by Option: ACKQROES

iv ACKQAG04 Called by routine: ACKQAG03

v ACKQAG05 Called by routine: ACKQAG03

vi ACKQAG06 Called by routine: ACKQAG01

Delphi routines:

Display Audiogram files: ACKQROES3.EXE

Display EnterEditAudiogram files: ACKQROES3E.EXE

Module Variables

The following QUASAR name spaced variables are used in the Audiometric Exam module.

ACKI	array subscript value
ACKQ	number of graphs
ACKQ1IEN	first record internal number
ACKQ2IEN	second record internal number
ACKQA1	air initial threshold
ACKQA1L	air initial masking level
ACKQA1T	air initial tag value
ACKQA2	air repeat threshold
ACKQA2L	air repeat masking level
ACKQA2T	air repeat tag value
ACKQARR	array name, passed by reference
ACKQB1	bone initial threshold
ACKQB1L	bone initial masking level
ACKQB1T	bone initial tag value
ACKQB2	bone repeat threshold
ACKQB2L	bone repeat masking level
ACKQB2T	bone repeat tag value

ACKQDAT	FileMan date
ACKQER	error message
ACKQER1	error message
ACKQERR	error message
ACKQFA	file exist flag
ACKQFMD	FileMan date loop holder
ACKQHSSN	hold SSN value
ACKQIEN	record internal number
ACKQN	subscript/counter
ACKQSTNU	station number
ACKQT	flag & dummy text holder
ACKQUSNM	User name
ACKQUSSR	User service

SAC exemptions and approval dates

This application requires no exemptions from the **V*ist*A** Standards and Conventions for package development.

Glossary

Acronyms

AC	Air Conduction
AR	Acoustic Reflex
ARD	Acoustic Reflex Decay
ASPS	Audiology & Speech Pathology Service
BC	Bone Conduction
C&P	Compensation and Pension
CAR	Contralateral Acoustic Reflex
CNC	Consonant Nucleus Consonant
CNM	Could Not Mask
DNT	Could Not Test
dB	Decibel
DDC	Denver Distribution Center
DNT	Did Not Test
EM	Effective Masking
HL	Hearing Level
Hz	Hertz
IAR	Ipsilateral Acoustic Reflex
MCL	Most Comfortable Loudness
ML	Masking Level
NR	No Response
NU	Northwestern University
pc	Piece
PIPB	Performance Intensity-Phonetically Balanced
Pr-L	Probe Left
Pr-R	Probe Right
PSAS	Prosthetics & Sensory Aids Service
PTA	Pure Tone Average
SAT	Speech Awareness Threshold
SRT	Speech Reception Threshold
UCL	Uncomfortable Loudness

Appendices

Some of the information in Appendices A, B, and C requires knowledge of clinical audiology terms and practices, but may also be of benefit to IRM technical staff.

A: Determining Series Values To Place On Display

Some of the key rules applied in preparing series values for display in the *Audiogram Display* application are as follows:

The initial, repeat and final thresholds and the final masking level are obtained. The following rules are checked in order until a point is obtained:

1. If the initial value is ‘CNT’ or ‘DNT’ there will be no point on the graph.
   Each of the following values will contain the masking level (if one exists).
2. If the final reading has a value (including ‘+’) it will be used.
3. If the retest value is “” then the initial value is used.
4. If the initial value is “” then the retest value is used.
5. If initial contains ‘+’ and retest does not, then retest is used.
6. If the initial does not contain ‘+’ and the retest does, then initial is used.
7. If initial is less than retest, then initial is used.
8. Whatever is in retest is used.

If the selected point indicates a 'No Response' (+), there will be a gap in the series.

B: Calculation Of PB MAX And PI/PB

Calculation of PB MAX and PI/PB values in the *Audiometric Exam Enter/Edit* application is based on specific industry-standard formulae established for these measurements. Basic descriptions of some of these formulae are as follows:

PB MAX is the maximum percentage from the word recognition testing.

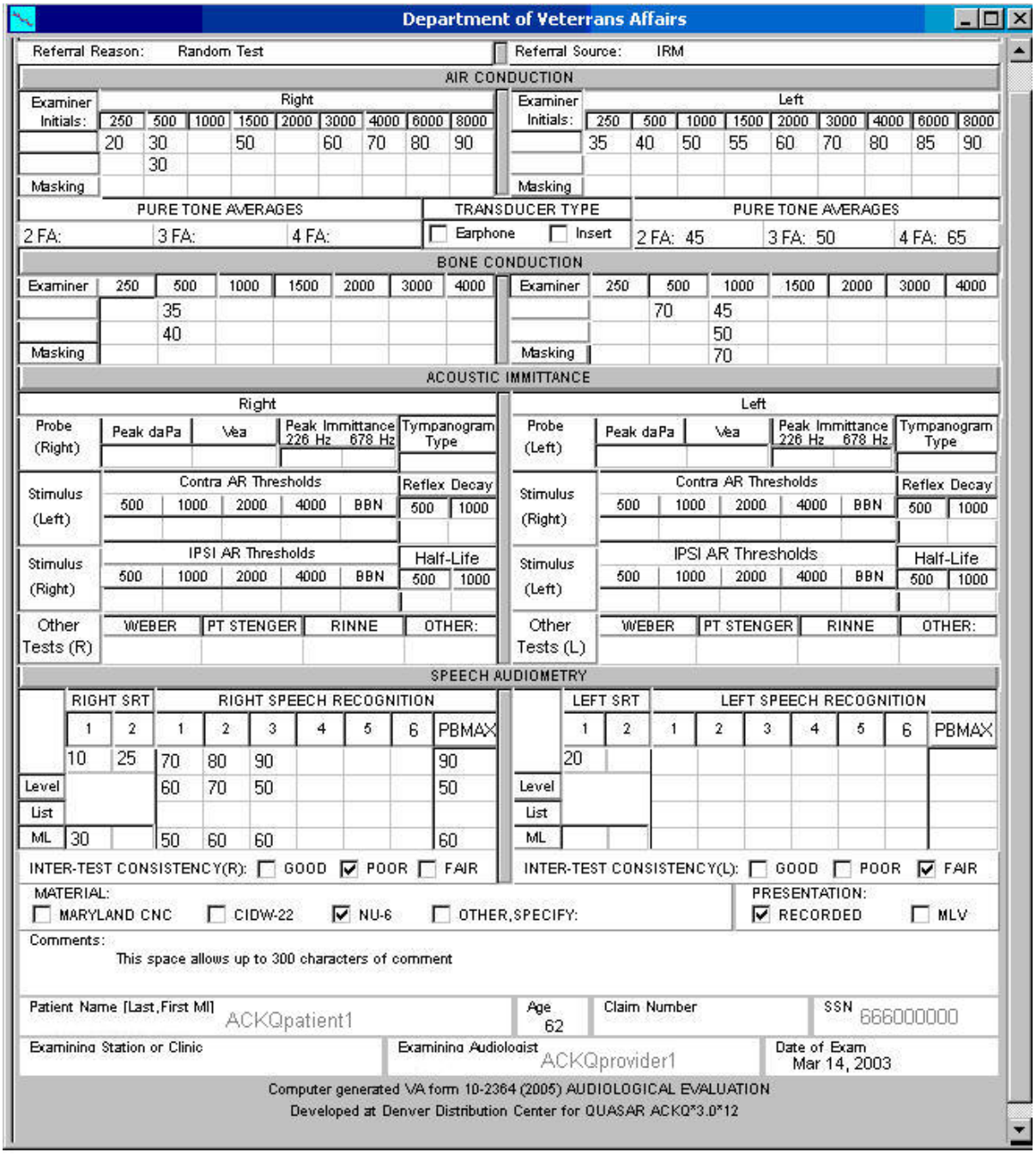
PB MIN is the minimum percentage from the word recognition testing.

PI/PB is an indices of possible retrocochlear pathology. It is calculated from the formula:

(PB MAX - PB MIN)/(PB MAX).

The PI/PB index will assess multiple scores and levels in one ear. The calculation will occur only when a second score obtained at a higher presentation level, is poorer than a prior score at a lower presentation level.

C: Sample Form 2364



Department of Veterans Affairs

Referral Reason: Random Test | Referral Source: IRM

AIR CONDUCTION

Examiner Initials:	Right 250	500	1000	1500	2000	3000	4000	6000	8000
	20	30		50		60	70	80	90
		30							
Masking									

Examiner Initials:	Left 250	500	1000	1500	2000	3000	4000	6000	8000
	35	40	50	55	60	70	80	85	90
Masking									

PURE TONE AVERAGES		
2 FA:	3 FA:	4 FA:

TRANSDUCER TYPE: ☐ Earphone ☐ Insert

PURE TONE AVERAGES		
2 FA: 45	3 FA: 50	4 FA: 65

BONE CONDUCTION

Examiner	250	500	1000	1500	2000	3000	4000
		35					
		40					
Masking							

Examiner	250	500	1000	1500	2000	3000	4000
		70	45				
			50				
Masking			70				

ACOUSTIC IMMITTANCE

Right					
Probe (Right)	Peak daPa	Vea	Peak Immittance 226 Hz	678 Hz	Tympanogram Type

Stimulus (Left)	Contra AR Thresholds 500	1000	2000	4000	BBN	Reflex Decay 500	1000

Stimulus (Right)	IPSI AR Thresholds 500	1000	2000	4000	BBN	Half-Life 500	1000

Other Tests (R)	WEBER	PT STENGER	RINNE	OTHER:

Left					
Probe (Left)	Peak daPa	Vea	Peak Immittance 226 Hz	678 Hz	Tympanogram Type

Stimulus (Right)	Contra AR Thresholds 500	1000	2000	4000	BBN	Reflex Decay 500	1000

Stimulus (Left)	IPSI AR Thresholds 500	1000	2000	4000	BBN	Half-Life 500	1000

Other Tests (L)	WEBER	PT STENGER	RINNE	OTHER:

SPEECH AUDIOMETRY

	RIGHT SRT 1	2	RIGHT SPEECH RECOGNITION 1	2	3	4	5	6	PBMAX
	10	25	70	80	90				90
Level			60	70	50				50
List									
ML	30		50	60	60				60

	LEFT SRT 1	2	LEFT SPEECH RECOGNITION 1	2	3	4	5	6	PBMAX
	20								
Level									
List									
ML									

INTER-TEST CONSISTENCY(R): ☐ GOOD ☑ POOR ☐ FAIR

INTER-TEST CONSISTENCY(L): ☐ GOOD ☐ POOR ☑ FAIR

MATERIAL: ☐ MARYLAND CNC ☐ CIDW-22 ☑ NU-6 ☐ OTHER,SPECIFY:

PRESENTATION: ☑ RECORDED ☐ MLV

Comments: This space allows up to 300 characters of comment

Patient Name [Last,First MI]	Age	Claim Number	SSN
ACKQpatient1	62		666000000

Examining Station or Clinic	Examining Audiologist	Date of Exam
	ACKQprovider1	Mar 14, 2003

Computer generated VA form 10-2364 (2005) AUDIOLOGICAL EVALUATION
Developed at Denver Distribution Center for QUASAR ACKQ*3.0*12

D: Message Box Errors

A needed RPC XXXXXXXX is not available. Contact your IRM. The 'XWB IS RPC AVAILABLE' remote procedure call returned FALSE for RPC XXXXXXXXX. IRM will need to install this RPC in order for the action to be workable.
A problem was encountered accessing V*ist*A, RPC XXXXX. Contact your IRM Service. The Broker call to remote procedure XXXXX failed.
A problem was encountered communicating with the server. The RPCBroker call to the server was tried for a remote procedure, but it failed.
A problem with the RPC call - no data to graph. The expected data for the selected entry was not returned by the remote procedure call.
Application Canceled. Or unable to access RPCBroker. Broker.Connected returned False.
Cannot continue without Patient. Patient identification number DFN is undefined or nil.
Broker Server could not be determined. The program did not pick up the name of either the broker server or the port.
Connection to Broker Server could not be established. The Server and port selected could not be activated.
No Charts to Show! Audiogram Terminating. Called the View Audiogram option for a patient that didn't have any data in file 509850.9

No Patient to lookup An attempt was made to continue without a patient selected. (DFN undefined or nil)
Patient not selected An attempt was made to continue without a patient selected.
Problem encountered in setting up message - no data sent! XMZ < 1 was returned from the MailMan setup call.
Problem saving entries for Acoustic Immittance! A change on the Acoustic Immittance tab was not saved because the database would not accept it. Exiting and coming back to the page will cause the faulty entry to be missing.
Problem saving entries for Left Ear! A change to the Left Ear was not saved because the database would not accept it. Exiting and coming back to the page will cause the faulty entry to be missing.
Problem saving entries for Right Ear! A change to the Right Ear was not saved because the database would not accept it.
Record NOT sent to DDC. The setup of the transfer message failed after entering a DATE SIGNED. Another attempt could be made by having IRM remove the entry in the DATE SIGNED field in 509850.9. Then use the GUI to again sign the audiogram edit.
The Audiogram Option is not approved for this user. Someone is attempting to access options ACKQROES3 or ACKQROES3E without it being on their menu tree.

The XXXXXXXX program[option name] could not be accessed. Terminating application. The CreateContext for the application failed- not in user's menu tree.
There was a problem deleting the record. The delete button was pressed, but the DIK call returned an error.
User identification could not be established. The DUZ was not defined, or the XUS GET USER INFO rpc returned an error.
You are not authorized to use the Audiogram Enter/Edit program[ACKQROES3E]. Terminating application… Someone is attempting to access options ACKQROES3 or ACKQROES3E without it being on their menu tree.
Users station not added. Station in record is blank. The program picked up an invalid pointer to the Institution file.

Index

ACKQAG01, 26, 33
ACKQAG02, 33
ACKQAG03, 26, 33
ACKQAG04, 34
ACKQAG05, 34
ACKQAG06, 34
ACKQAUD1, 26, 36
ACKQAUD2, 26, 38
ACKQROES, 26, 35
ACKQROES3, 27, 29
ACKQROES3E, 27, 30
Audiogram Display, i
Audiogram Edit, i
Broker, 3, 30
BROKER, 29
BUILD FILE PRINT, 1
CKQAG03, 26
connectivity, 3
CPRS, i, ii, 1, 3
DATA DICTIONARY UTILITIES, 1
Desktop Minimums, 42
display, i, 26
Display, 10, 27, 29, 45
domain, 3
edit, 3, 33
Edit, i, 26, 27, 30
Errors, 52
executables, 3
formula, 50
INSTALL FILE PRINT, 2
Integration Agreements, 43
KIDS, 1, 3
MailMan, 3
Minimum, 42
Monitor, 42
Operating System, 42
options, 3
PB MAX, 50
PB MIN, 50
PI/PB, 50
Process Logic, 5
project, 27
routines, 2, 45
Sample, 51
SERIES VALUES, 49
Tools, i, 3