Posttraumatic Stress Disorder Checklist 5 (PCL-5) and Mental Health Assistant Stabilization (MHAS)

Database Redesign

Increment 2 and 3

System Design Document



May 2016

Version 1.5

Department of Veterans Affairs

Revision History

| Date | Version | Description | Author |
| --- | --- | --- | --- |
| 11/29/16 | 1.5 | Technical Edit | Aaron Lindstrom PM, , C. Bernier, Tech Writer |
| 3/16/2016 | 1.5 | Added minor changes to wording for AERB requested information | Shawn Suiters PD IT PM, TM 3, Leo Manmohan Singh |
| 3/15/2016 | 1.4 | Added requested information from AERB | Shawn Suiters PD IT PM, TM 3, Leo Manmohan Singh |
| 2/18/2016 | 1.3 | Tech Writer review | Shawn Suiters PD IT PM, TM 3, C. Bernier, Tech Writer |
| 2/1/2016 | 1.2 | Edits to SDD | Shawn Suiters PD IT PM, TM 3 |
| 1/27/2016 | 1.1 | Draft updates | Leo Manmohan Singh |
| 8/9/2015 | 1 | Initial Draft | Shawn Suiters PD IT PM, TM 3 |

Artifact Rationale

The System Design Document (SDD) is a dual-use document that provides the conceptual design as well as the as-built design. This document will be updated as the product is built, to reflect the as-built product.

| Activity | New Capability (1) | Feature Enhancement (2) |
| --- | --- | --- |
| **Field Deployment (A)** | Yes | Yes |
| **Cloud/Web Deployment (B)** | Yes | Yes |
| **Mobile Application (C)** | Yes | Yes |

Table of Contents

[1. Introduction 1](#_Toc468172303)

[1.1. Scope 1](#_Toc468172304)

[1.2. User Profiles 1](#_Toc468172305)

[2. Background 2](#_Toc468172306)

[2.1. Overview of the System 2](#_Toc468172307)

[2.2. Overview of the Business Process 2](#_Toc468172308)

[2.3. Overview of the Significant Requirements 2](#_Toc468172309)

[3. Conceptual Design 3](#_Toc468172310)

[3.1. Conceptual Application Design 3](#_Toc468172311)

[3.1.1. Application Context 3](#_Toc468172312)

[3.1.2. High-Level Application Design 4](#_Toc468172313)

[3.1.3. Application Locations 4](#_Toc468172314)

[3.2. Conceptual Data Design 4](#_Toc468172315)

[3.2.1. Project Conceptual Data Model 4](#_Toc468172316)

[3.2.2. Database Information 5](#_Toc468172317)

[3.2.3. User Interface Data Mapping 5](#_Toc468172318)

[3.3. Conceptual Infrastructure Design 5](#_Toc468172319)

[3.3.1. System Criticality and High Availability 5](#_Toc468172320)

[3.3.2. Special Technology 5](#_Toc468172321)

[3.3.3. Technology Locations 6](#_Toc468172322)

[3.3.4. Conceptual Infrastructure Diagram 6](#_Toc468172323)

[4. System Architecture 7](#_Toc468172324)

[4.1. Hardware Architecture 7](#_Toc468172325)

[4.2. Software Architecture 7](#_Toc468172326)

[4.3. Network Architecture 7](#_Toc468172327)

[4.4. Service Oriented Architecture / ESS 7](#_Toc468172328)

[4.5. Enterprise Architecture 7](#_Toc468172329)

[5. Data Design 8](#_Toc468172330)

[5.1. DBMS Files 10](#_Toc468172331)

[5.2. Non-DBMS Files 11](#_Toc468172332)

[5.3. Data View 11](#_Toc468172333)

[6. Detailed Design 12](#_Toc468172334)

[6.1. Hardware Detailed Design 12](#_Toc468172335)

[6.2. Software Detailed Design 12](#_Toc468172336)

[6.2.1. Conceptual Design 12](#_Toc468172337)

[6.2.1.1. Product Perspective 12](#_Toc468172338)

[6.2.1.1.1. User Interfaces 12](#_Toc468172339)

[6.2.1.1.2. Hardware Interfaces 12](#_Toc468172340)

[6.2.1.1.3. Software Interfaces 12](#_Toc468172341)

[6.2.1.1.4. Communications Interfaces 12](#_Toc468172342)

[6.2.1.1.5. Memory Constraints 12](#_Toc468172343)

[6.2.1.1.6. Special Operations 12](#_Toc468172344)

[6.2.1.2. Product Features 12](#_Toc468172345)

[6.2.1.3. Dependencies and Constraints 13](#_Toc468172346)

[6.2.1.4. User Characteristics 13](#_Toc468172347)

[6.2.2. Specific Requirements 13](#_Toc468172348)

[6.2.2.1 Database Repository 13](#_Toc468172349)

[6.2.2.2 System Features 13](#_Toc468172350)

[6.2.2.3 Design Element Tables 13](#_Toc468172351)

[6.2.2.3.1 Routines (Entry Points) 13](#_Toc468172352)

[6.2.2.3.2 Templates 15](#_Toc468172353)

[6.2.2.3.3 Bulletins 15](#_Toc468172354)

[6.2.2.3.4 Data Entries Affected by the Design 15](#_Toc468172355)

[6.2.2.3.5 Unique Record(s) 15](#_Toc468172356)

[6.2.2.3.6 File or Global Size Changes 15](#_Toc468172357)

[6.2.2.3.7 Mail Groups 15](#_Toc468172358)

[6.2.2.3.8 Security Keys 15](#_Toc468172359)

[6.2.2.3.9 Options 15](#_Toc468172360)

[6.2.2.3.10 Protocols 15](#_Toc468172361)

[6.2.2.3.11 Remote Procedure Call (RPC) 16](#_Toc468172362)

[6.2.2.3.12 Constants Defined in Interface 16](#_Toc468172363)

[6.2.2.3.13 Variables Defined in Interface 16](#_Toc468172364)

[6.2.2.3.14 Types Defined in Interface 16](#_Toc468172365)

[6.2.2.3.15 GUI 16](#_Toc468172366)

[6.2.2.3.16 GUI Classes 16](#_Toc468172367)

[6.2.2.3.17 Current Form 16](#_Toc468172368)

[6.2.2.3.18 Modified Form 16](#_Toc468172369)

[6.2.2.3.19 Components on Form 16](#_Toc468172370)

[6.2.2.3.20 Methods 16](#_Toc468172371)

[6.2.2.3.21 Special References 16](#_Toc468172372)

[6.2.2.3.22 Class Events 16](#_Toc468172373)

[6.2.2.3.23 Class Methods 16](#_Toc468172374)

[6.2.2.3.24 Class Properties 16](#_Toc468172375)

[6.2.2.3.25 Uses Clause 16](#_Toc468172376)

[6.2.2.3.26 Forms 16](#_Toc468172377)

[6.2.2.3.27 Functions 17](#_Toc468172378)

[6.2.2.3.28 Dialog 17](#_Toc468172379)

[6.2.2.3.29 Help Frame 17](#_Toc468172380)

[6.2.2.3.30 HL7 Application Parameter 17](#_Toc468172381)

[6.2.2.3.31 HL7 Logical Link 17](#_Toc468172382)

[6.2.2.3.32 COTS Interface 17](#_Toc468172383)

[6.3. Network Detailed Design 17](#_Toc468172384)

[6.4. Security and Privacy 18](#_Toc468172385)

[6.4.1 Security 18](#_Toc468172386)

[6.4.2 Privacy 18](#_Toc468172387)

[6.5. Service Oriented Architecture / ESS Detailed Design 18](#_Toc468172388)

[6.5.1. Service Description for <Consumed Service Name> 18](#_Toc468172389)

[6.5.2. Service Design for <Provided Service Name> 18](#_Toc468172390)

[6.5.2.1 Introduction 18](#_Toc468172391)

[6.5.2.1.1 Purpose and Scope of Service 18](#_Toc468172392)

[6.5.2.1.2 Links to Other Documents 18](#_Toc468172393)

[6.5.2.2 Service Details 18](#_Toc468172394)

[6.5.2.2.1 Service Identification 18](#_Toc468172395)

[6.5.2.2.2 Service Versions 19](#_Toc468172396)

[6.5.2.2.3 Summary of Design and Platform Details 19](#_Toc468172397)

[6.5.2.2.3.1 SOA Pattern(s) Implemented 19](#_Toc468172398)

[6.5.2.2.3.2 COTS Platform vendor names and versions for hosting platform 19](#_Toc468172399)

[6.5.2.3 Dependencies 19](#_Toc468172400)

[6.5.2.4 Service Design Details 19](#_Toc468172401)

[6.5.2.4.1 Interface Technical Specs 19](#_Toc468172402)

[6.5.2.4.1.1 Service Invocation Type 19](#_Toc468172403)

[6.5.2.4.1.2 Service Interface Type 19](#_Toc468172404)

[6.5.2.4.1.3 Service Name 19](#_Toc468172405)

[6.5.2.4.1.4 Interface 19](#_Toc468172406)

[6.5.2.4.1.5 End Points 19](#_Toc468172407)

[6.5.2.4.1.6 Operations or Methods 19](#_Toc468172408)

[6.5.2.4.1.7 Message Schemas 19](#_Toc468172409)

[6.5.2.4.2 Information Model 19](#_Toc468172410)

[6.5.2.4.2.1 Class Diagram and Description of Entities Involved 19](#_Toc468172411)

[6.5.2.4.2.2 Mappings from ELDM to Standards Based Schemas 19](#_Toc468172412)

[6.5.2.4.3 Behavior Model (AKA Use Case Realization) 20](#_Toc468172413)

[6.5.2.4.3.1 Use Cases (Use Case Model) 20](#_Toc468172414)

[6.5.2.4.3.2 Interaction Diagrams 20](#_Toc468172415)

[6.5.2.5 Gap Analysis 20](#_Toc468172416)

[6.5.2.5.1 Variances from Enterprise Target Architecture 20](#_Toc468172417)

[6.5.2.5.2 Variances from SLDs 20](#_Toc468172418)

[6.5.2.5.3 Variances from Standards and Policies 20](#_Toc468172419)

[6.5.2.5.4 Justification for Exceptions and Mitigation 20](#_Toc468172420)

[7. External System Interface Design 21](#_Toc468172421)

[7.1. Interface Architecture 21](#_Toc468172422)

[7.2. Interface Detailed Design 21](#_Toc468172423)

[8. Human-Machine Interface 22](#_Toc468172424)

[8.1. Interface Design Rules 22](#_Toc468172425)

[8.2. Inputs 22](#_Toc468172426)

[8.3. Outputs 22](#_Toc468172427)

[8.4. Navigation Hierarchy 22](#_Toc468172428)

[9. Attachment A – Approval Signatures 23](#_Toc468172429)

[A. Additional Information 24](#_Toc468172430)

[A.1. Identification of Technology and Standards 24](#_Toc468172431)

[A.2. Constraining Policies, Directives and Procedures 24](#_Toc468172432)

[A.3. Requirements Traceability Matrix 24](#_Toc468172433)

[A.4. Packaging and Installation 24](#_Toc468172434)

[A.5. Design Metrics 25](#_Toc468172435)

[A.6. Required Technical Documents 25](#_Toc468172436)

[A.7. Acronym List and Glossary 25](#_Toc468172437)

# Introduction

This patch redesigns the database for in the Mental Health Assistant v3 (MHA3) correcting several issues that have halted the progression and hindered the abilities of Physicians using the MHA3. The redesign addresses these issues and produces a database that will allow for future instrument creation / implementation. Furthermore, the current implementation of the database will be changed to leverage the capabilities of FileMan.

## Scope

The scope of this document is limited to the Post Traumatic Stress Disorder Checklist (PCL -5) MHAS development project. This will include Veterans Affairs contractor development modifications to the existing MHA3 database. Modifications will be made to the database that include capabilities for FileMan, Instrument scoring, National Clinical Reminders and Health Summary, addition of Systematized Nomenclature of Medicine (SNOMED) codes, correction of Windows Secure Desktop, and address requirements in the Business Requirements Document (BRD) and Requirements Specification Document (RSD). These changes will be addressed in two six (6) month increments of development.

## User Profiles

Users responsible for entering data via the instruments (questionnaires) will include Mental Health professionals, clinicians, and veterans who can access the instruments for self-reporting.

The technical background and degree of sophistication of the individual users will vary. The Mental Health Clinician needs the ability to access the instruments and administer them when asking the patient the questions in a clinical setting. The veteran that desires to self-report may have physical, visual, cognitive, and learning impairments.

# Background

## Overview of the System

The MHA3 provides a mechanism to administer and score standardized questionnaires and psychological tests. It provides a mechanism for both patients and clinicians to enter responses to these instruments and also provides automated scoring of the instrument. MHA3 runs in conjunction with CPRS (Computerized Patient Record System). A user of CPRS can branch to MHA3 as needed via the CPRS Tools menu. MHA3 instrument results may be used by Clinical Reminders as a participant in reminder logic or as a part of a Reminder Dialog. Health Summary also allows the display of MHA3 instrument results.

## Overview of the Business Process

MHA3 is already running as part of Veterans Health Information Systems and Technology Architecture (VistA); there is no change in the business process. The Mental Health V. 5.01 package is designed to provide a means of rapidly gathering, storing, and reporting clinical information for patients receiving mental health treatment and /or assistance with vocational issues. The clinical information stored in the VistA database is readily accessible to clinical staff throughout the various Mental Health Treatment Service areas and other clinics in the Medical Center. It can also be sent to enterprise storage facilities such as the Austin Information Technology Center (AITC).

For additional details reference section 3.1.2, 3.2.1 and Section 6.

## Overview of the Significant Requirements

The significant requirements for Increment two and three are combined for one release of Patch YS\*5.01\*123.The Business Requirements Document (BRD) is located at:

<http://DNS/warboard/anotebk.asp?proj=1838>

The Requirements Specification Document (RSD) for PCL-5 and stabilization of the MHA3 is located at:

Rational Dashboard/Source Control/Streams/MHLTH\_MHAS\_PCL5/ MHLTH\_MHAS\_PCL5\_Documentation

The patch YS\*5.01\*123 for increment two (2) will address the following requirements:

Section 1.1.1.5 Database

Section 1.1.1.7 Systematized Nomenclature of Medicine (SNOMED) codes

The patch YS\*5.01\*123 for increment three (3) will address the following requirements:

Section 1.1.1.6 National Clinical Reminders and Health Summary

Section 1.1.1.8 Windows Secure Desktop

# Conceptual Design

This section will describe MHA3 as currently designed. The design is not affected by the release of an updated file entry.

## Conceptual Application Design

MHA3 is a Windows client application written in Delphi. It communicates with VistA via the Remote Procedure Call Broker (RPC Broker). The existing architecture of the system will not change. This patch updates the file entries for the PCL-5 instrument. It also adds some filtering logic to protect Clinical Reminders and Health Summary from displaying inaccurate instrument scores.

### Application Context

Mental Health Assistant is a package within VistA and does not interface to external systems. There is a client user interface which is launched from CPRS. Like CPRS, the client application communicates with VistA via the RPC Broker.

Figure 1: Mental Health Assistant

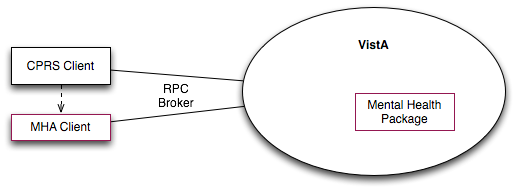


Table 1 (Grouping): Application Context Description

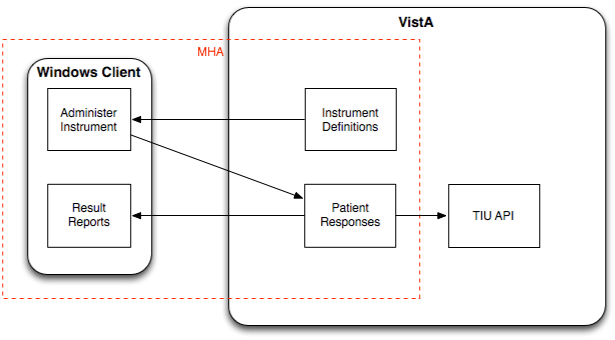
Object

| ID | Name | Description | Interface Name | Interface System |
| --- | --- | --- | --- | --- |
| CPRS Client | CPRS Client | CPRS Windows executable client application. | RPC Broker | VistA |
| MHA Client | MHA Client | Mental Health Assistant executable client application – launched from CPRS. | RPC Broker | VistA |

### High-Level Application Design

This is a simple VistA patch with no major components to be built or modified. The design of the Mental Health Assistant, as it currently exists is not being changed. The as-is design is shown in Figure 2.

**Figure 2: Application Design**



### Application Locations

The application runs as a VistA package in locations where VistA is installed.

Table 2: Application Locations

| Application Component | Description | Location at Which Component is Run | Type |
| --- | --- | --- | --- |
| VistA | VistA package – a subset of the Mental Health package. | All VistA instances. | N/A |

Table 3: Application Users

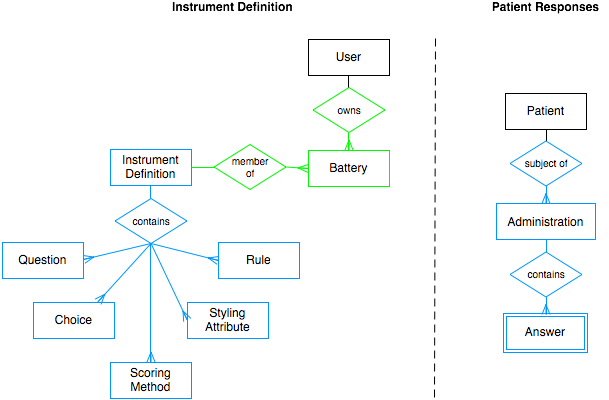
| Application Component | Location | User |
| --- | --- | --- |
| VistA | All VAMCs and Clinic with VistA access | Mental Health Clinician |

## Conceptual Data Design

### Project Conceptual Data Model

The database for Mental Health Assistant, as it currently exists, is not being changed. The database consists of a set of Fileman files. The as-is design is shown in Figure 3. There are two main sets of tables in the database. One set is used to describe the content, layout, and behavior of mental health instruments. The other set is used to store answers from or on behalf of the patient. Below is the current data model. No modifications to the data model are being changed.

Figure 3: Project Conceptual Data Model



### Database Information

Database structure is being changed from a non-Fileman friendly architecture to Fileman friendly structure. The information is explained in section 5 Database Design.

### User Interface Data Mapping

Mental Health Assistant is an application that allows the user to select and instrument, administer an instrument, and review the responses and scores from previously entered instruments. There are no user interface components in this patch.

## Conceptual Infrastructure Design

There are no changes to the VistA infrastructure in this patch. Delphi / MUMPS uses a client / server design currently utilized in the VA Delphi/ MUMPS applications.

### System Criticality and High Availability

This patch has very low impact to the operation of VistA. The disaster relief plans for VistA are not affected by this patch.

### Special Technology

N/A. No special technology is involved in the patch.

### Technology Locations

N/A. This is a simple VistA patch – there are no special technology components.

### Conceptual Infrastructure Diagram

N/A. There are no external interfaces or special environments involved.

# System Architecture

## Hardware Architecture

There are no hardware modifications with this Mental Health Assistant release; however, previous packages have been run on the standard hardware platforms used by the Department of Veterans Affairs Health Care System facilities. These systems consist of standard or upgraded Alpha AXP clusters or standard intel hardware Windows operating system and run either Cache-VMS, Cache-NT, Cache- OpenVMS, or Cache- Windows Server 2008 or higher.

## Software Architecture

There is no change in software architecture.

## Network Architecture

No communication within the system, such as local area networks (LANs) and buses are being added, removed, or modified. MHA3 uses local Network configurations to communicate between the MHA3 application and VistA. For information on Network Architecture please reference the VDL.

## Service Oriented Architecture / ESS

This patch updates the file entries and target source mapping that represent the MHA3. There are no new services provided or consumed.

## Enterprise Architecture

VA Technical Reference Model (TRM)/ Standards are used in the development, operations, and sustainment of VistA is shown in Table 5. All TRM applications are approved by the One-VA TRM VA Technology License Team.

**TRM Link** [**http://DNS/TRMHomePage.asp**](http://DNS/TRMHomePage.asp)

Table 5: TRM Tools Used

| Application | TRM Compliant | Environment | License |
| --- | --- | --- | --- |
| MUMPS  (Massachusetts General Hospital Utility Multi-Programming System) | Yes | All | ISO/IEC 11756:1999 |
| Caché | Yes | All | Commercial / v2014 |
| VA M Programming Standard | Yes | All | VA Standard Document. <http://dns/VAStandardPage.asp?tid> |
| dWinlock | Yes | All | Commercial / v3.3 |
| RAD Studio version Delphi XE6 | Yes | All | Commercial / version Delphi XE6 |

# Data Design

This patch changes the data design of a few files from what appears to be more SQL/relational design to a more Fileman/VistA friendly design. This is done by moving some of the subordinate data of “MH TESTS AND SURVEYS,” scattered in many files, into subfiles. Similar changes are being made to “MH ADMINISTRATIONS” and to “MH BATTERY” files. The most current up-to-date list of files being changed is located at:

Rational Dashboard/Source Control/Streams/MHLTH\_MHAS\_PCL5/MHLTH\_MHAS\_PCL5\_Documentation/YS\_501\_123/PCL-5 MHAS File Redesign Documents

The diagram below, “MH Files.pdf” lists the “as-is” state of data structure. And the diagram in “MH Files-Redesign.pdf” lists the “to-be” architecture.

Figure 2 - MH Files - As-Is Data Structure

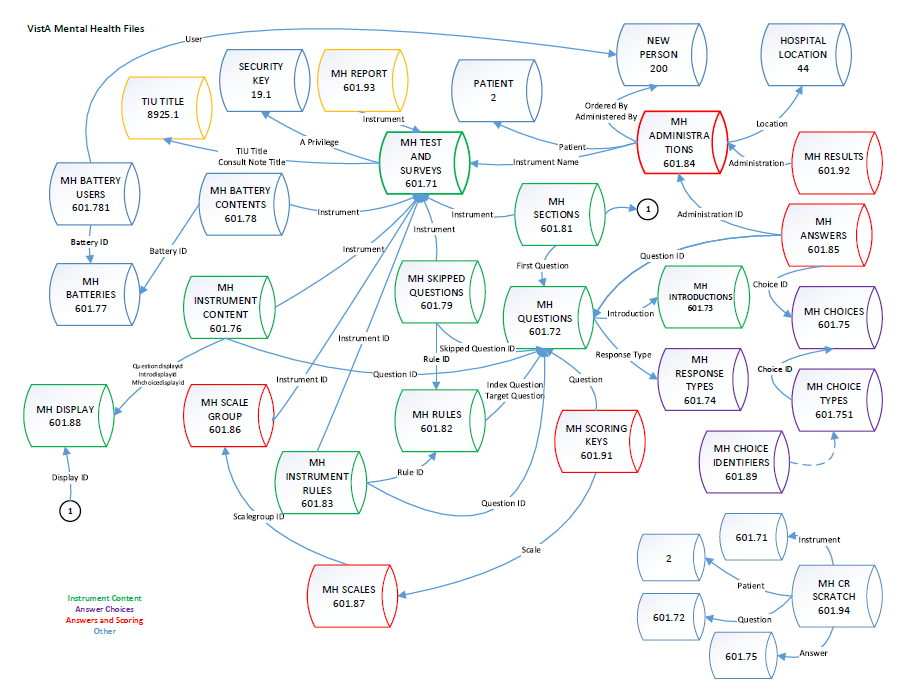
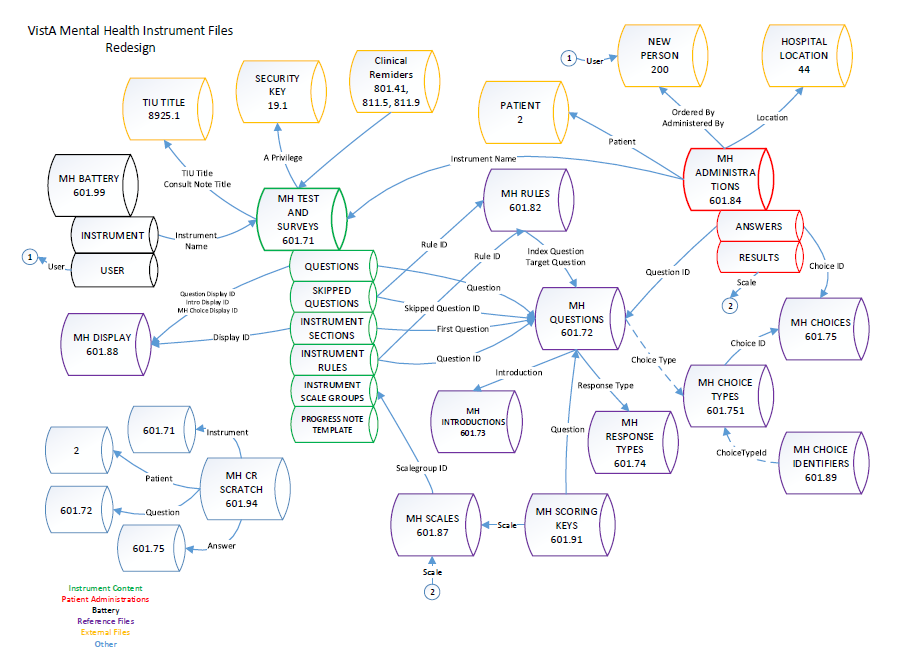


Figure 3 MH Files – To-Be Data Structure



**NOTE:** None of the existing files are physically removed from the database. These will be left in place for historical purposes as well as for validating new data in the new structure after patch install to ensure complete and accurate data conversion. After the system has been operational for a year or more, the old files may be removed in a separate patch once it is determined that there is no further need to validate any converted data at any site.

Separately the patch also introduces “SNOMED CODE” field in files listed below. This field is database only and does not have a GUI component for this patch.

## DBMS Files

This patch adds new subfiles to the MH TESTS AND SURVEYS (#601.71), the MH ADMINISTRATIONS (#601.84) and the MH BATTERY (#601.99) files.

Table 6: New Sub-files in this patch.

| File Name | Original file name changed to Sub File |
| --- | --- |
| MH ADMINISTRATIONS (#601.84) | ANSWERS |
|  | RESULTS |
| MH BATERY (#601.99) | INSTRUMENT |
|  | USER |
| MH TESTS AND SURVEYS (#601.61) | INSTRUMENT CONTENT |
|  | INSTRUMENT RULES |
|  | INSTRUMENT SCALE GROUPS |
|  | INSTRUMENT SECTIONS |
|  | REPORT TEMPLATE |
|  | SKIPPED QUESTIONS |

This patch also adds new “SNOMED CODE” fields to the MH TESTS AND SURVEYS file (#601.71) and in MH ADMINISTRATIONS (601.84) file under the subfile “Answers” and subfile “Results” as shown in Table 6b. This addition of SNOMED CODE file is completely unrelated to the design change listed above.

Table 6b: New Fields in this patch

| File -> Field Name | Field  Number | Type | Size |
| --- | --- | --- | --- |
| MH TESTS AND SURVEYS (#601.71) -> SNOMED CODE | #97 | Free Text | 80 bytes |
| ADMINISTRATIONS (601.84) -> Answers (multiple) -> SNOMED CODE | #14 (multiple) -> #3 | Free Text | 80 bytes |
| ADMINISTRATIONS (601.84) -> Results (multiple) -> SNOMED CODE | #15 (multiple) -> #6 | Free Text | 80 bytes |

These new “SNOMED CODE” fields will be used only on the database and there is no corresponding GUI component. The fields will be populated by functionality in separate future releases outside of the scope of this patch.

## Non-DBMS Files

N/A. There are no files outside of the VistA FileMan database.

## Data View

The data files changes listed in previous sections are all accessed using RPCs and the RPC interfaces are unchanged. As a result, there are no changes in this patch that alter the data view.

# Detailed Design

## Hardware Detailed Design

MHA3 is a Client-Server application delivered on a networked, Intel-processor-based computer. The computer has the VA-standard human interface devices: a keyboard and a mouse. Because MHA3 is designed to be able to be used by the visually impaired, the system also includes a set of speakers or headphones.

## Software Detailed Design

### Conceptual Design

There is no change in the GUI design of Mental Health Assistant for increments 2 and 3 depicted in this document.

#### 6.2.1.1. Product Perspective

##### 6.2.1.1.1. User Interfaces

The MHA3 GUI will comply with the general requirements for all VistA® applications as specified in the VistA Graphical User Interface Standards and Conventions document, Section 4, Look and Feel.

##### 6.2.1.1.2. Hardware Interfaces

N/A. There are no hardware components for this patch.

##### 6.2.1.1.3. Software Interfaces

MHA3 requires the following software on the VistA servers:

* FileMan v22.2
* MailMan v8.0
* Kernel v8.0

MHA3 can connect with the following software:

* CPRS (current Version)

##### 6.2.1.1.4. Communications Interfaces

There are no special communication interfaces required for this functionality.

##### 6.2.1.1.5. Memory Constraints

There are no memory constraints.

##### 6.2.1.1.6. Special Operations

There are no special operations required to implement Instruments.

#### 6.2.1.2. Product Features

The software features enabled by this patch are:

* The MHA3 instruments that were scored by Aux\_DLL will no longer scored be scored by the Aux\_DLL and will instead be scored in VistA database using new routines introduced in this patch.
* GUI design will not be changed because it is written intelligently to first look in the DLL for scoring and if DLL doesn’t do the scoring for an instrument it automatically goes to the VistA database for scoring. As a result, the removal of MHA3 instruments from Aux\_DLL will automatically cause the GUI to utilize the scoring algorithms on the VistA database.
* SNOMED codes added in this patch do not have a GUI component and will not cause any GUI changes.

#### 6.2.1.3. Dependencies and Constraints

YS\*5.01\*105 has been nationally deployed for several years. There are no additional dependencies or constraints.

#### 6.2.1.4. User Characteristics

MHA3 is used by mental health clinicians. Patients may optionally be asked to use the questionnaire portion of MHA3. This patch will make the PCL-5 instrument available to both clinicians and patients. The administration of the PCL-5 instrument is the same as the existing mental health instruments.

### Specific Requirements

#### 6.2.2.1 Database Repository

N/A. There is no change in the database repository.

#### 6.2.2.2 System Features

This patch is the second increment of the features described in the RSD and RTM found at:

<http://DNS/warboard/anotebk.asp?proj>

#### Design Element Tables

##### 6.2.2.3.1 Routines (Entry Points)

This patch does not change existing routines but adds new entry points and new logic to some of them. It also modifies existing RPCs and redirects the calls from those RPCs to new entry points. The up to date listing of routines and RPCs is at:

[http://DNS/projects/PCL5MHAS/Documents/PCL-5%20MHAS%20File%20Redesign%20Documents/MHA%20RPCs.xlsx](http://dns/projects/PCL5MHAS/Documents/PCL-5%20MHAS%20File%20Redesign%20Documents/MHA%20RPCs.xlsx)

Figure 4 MHA related RPCs and Routines



##### 6.2.2.3.2 Templates

N/A. No templates are involved.

##### 6.2.2.3.3 Bulletins

N/A. No bulletins are involved.

##### 6.2.2.3.4 Data Entries Affected by the Design

N/A. No Data Entries are affected.

##### 6.2.2.3.5 Unique Record(s)

N/A. No Unique records are involved.

##### 6.2.2.3.6 File or Global Size Changes

The change in file size with this patch is dependent on the site. Existing files are unchanged and new subfiles size at startup will approximately match the size of current data file they’re replacing.

##### 6.2.2.3.7 Mail Groups

N/A. No mail groups are involved.

##### 6.2.2.3.8 Security Keys

These security keys have been in place and will not change with this development. Sites will allocate the following security keys to appropriate site personnel:

**Name Description**

**YSCL AUTHORIZED** - The presence of this key designates an authorized Clozapine Provider.

**YSD** - Allows verification of ICD diagnoses. This is a clinical privilege. The chief of psychiatry will determine who may have this key.

**YSP** - Provides access to psychological test options. The Chief of Psychology Service will determine who may have this key.

**YSQ** - Allows verification of DSM-III diagnoses. The Chiefs of Clinical Services will determine who may have this key.

**YSZ** - Allows Mental Health technicians/aides to queue tests/interviews after completion.

##### 6.2.2.3.9 Options

N/A. No options are involved.

##### 6.2.2.3.10 Protocols

N/A. No protocols are involved.

##### 6.2.2.3.11 Remote Procedure Call (RPC)

There are updates to existing RPCs internal functionality but no changes for any external users of the RPCs. For a complete list of RPCs please see section on Routines.

##### 6.2.2.3.12 Constants Defined in Interface

N/A. No interfaces are involved.

##### 6.2.2.3.13 Variables Defined in Interface

N/A. No interfaces are involved.

##### 6.2.2.3.14 Types Defined in Interface

N/A. No interfaces are involved.

##### 6.2.2.3.15 GUI

N/A. The GUI is not modified.

##### 6.2.2.3.16 GUI Classes

N/A. The GUI is not modified.

##### 6.2.2.3.17 Current Form

N/A. No forms are modified.

##### 6.2.2.3.18 Modified Form

N/A. No forms are modified.

##### 6.2.2.3.19 Components on Form

N/A. No forms are modified.

##### 6.2.2.3.20 Methods

N/A. No methods are involved.

##### 6.2.2.3.21 Special References

N/A. There are no special references.

##### 6.2.2.3.22 Class Events

N/A. There are no class events.

##### 6.2.2.3.23 Class Methods

N/A. There are no class methods.

##### 6.2.2.3.24 Class Properties

N/A. There are no class properties.

##### 6.2.2.3.25 Uses Clause

N/A. No uses clause is involved.

##### 6.2.2.3.26 Forms

N/A. No forms are modified.

##### 6.2.2.3.27 Functions

N/A. No functions are added/modified.

##### 6.2.2.3.28 Dialog

N/A. There are no changes to the DIALOG file.

##### 6.2.2.3.29 Help Frame

N/A. There are no changes to Help Frames.

##### 6.2.2.3.30 HL7 Application Parameter

N/A. HL7 is not used.

##### 6.2.2.3.31 HL7 Logical Link

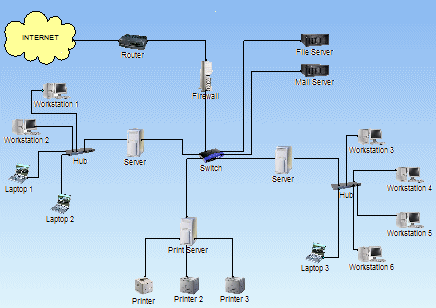
N/A. HL7 is not used.

##### 6.2.2.3.32 COTS Interface

N/A. No COTS products are involved.

## Network Detailed Design

There is no change in network functionality. MHA3 is a Client-Server application delivered on the VA network. Each VA region / facility is responsible for their network schema. Below is a simple design of a network and does not specifically point out any VA network.



## Security and Privacy

### 6.4.1 Security

MHA3 allows a staff member to select one or more Instruments to administer, put the computer into a kiosk mode, and turn the computer over to the veteran to respond to the instrument. In this mode, the only thing that can be done by the veteran is respond to the instrument. All other functions of the computer are inaccessible apart from the entry of the staff member’s credentials to unlock the kiosk mode. When the veteran has completed the self-administration of the instrument, access to the system will be prevented until a staff member supplies the appropriate credentials.

No changes will be needed to the security and privacy requirements already approved for VistA and the GUIs.

MHA3 functionality will adhere to all VA and VHA security requirements.

### 6.4.2 Privacy

MHA3 software application did not release any new security keys. The YSP security key is still required to control access to the results of “non-exempt” instruments. While anyone may administer a “non-exempt” instrument, only psychologists with the YSP security key may view the results. Holders of the YSP security key are determined by the Chief of Psychology or a senior psychologist at a facility that does not have a Chief of Psychology. The Chief of Psychology or senior psychologist also determines which tests are “exempt” (i.e., the results can be seen by anyone), and which are “non-exempt” (i.e., require the YSP key to see the results).

## Service Oriented Architecture / ESS Detailed Design

N/A. This patch does not affect the consumption or provision of any services.

### Service Description for <Consumed Service Name>

N/A.

### Service Design for <Provided Service Name>

#### 6.5.2.1 Introduction

##### 6.5.2.1.1 Purpose and Scope of Service

N/A.

##### 6.5.2.1.2 Links to Other Documents

N/A.

#### 6.5.2.2 Service Details

##### 6.5.2.2.1 Service Identification

N/A.

##### 6.5.2.2.2 Service Versions

N/A.

##### 6.5.2.2.3 Summary of Design and Platform Details

###### 6.5.2.2.3.1 SOA Pattern(s) Implemented

N/A.

###### 6.5.2.2.3.2 COTS Platform vendor names and versions for hosting platform

N/A.

#### Dependencies

N/A.

#### Service Design Details

N/A.

##### 6.5.2.4.1 Interface Technical Specs

N/A.

###### 6.5.2.4.1.1 Service Invocation Type

N/A.

###### 6.5.2.4.1.2 Service Interface Type

N/A.

###### 6.5.2.4.1.3 Service Name

N/A.

###### 6.5.2.4.1.4 Interface

N/A.

###### 6.5.2.4.1.5 End Points

N/A.

###### 6.5.2.4.1.6 Operations or Methods

N/A.

###### 6.5.2.4.1.7 Message Schemas

N/A.

##### 6.5.2.4.2 Information Model

N/A.

###### 6.5.2.4.2.1 Class Diagram and Description of Entities Involved

N/A.

###### 6.5.2.4.2.2 Mappings from ELDM to Standards Based Schemas

N/A.

##### 6.5.2.4.3 Behavior Model (AKA Use Case Realization)

N/A.

###### 6.5.2.4.3.1 Use Cases (Use Case Model)

N/A.

###### 6.5.2.4.3.2 Interaction Diagrams

N/A.

#### 6.5.2.5 Gap Analysis

N/A.

##### 6.5.2.5.1 Variances from Enterprise Target Architecture

N/A.

##### 6.5.2.5.2 Variances from SLDs

N/A.

##### 6.5.2.5.3 Variances from Standards and Policies

N/A.

##### 6.5.2.5.4 Justification for Exceptions and Mitigation

N/A.

# External System Interface Design

N/A. There are no external interfaces as part of this patch.

## Interface Architecture

N/A.

## Interface Detailed Design

N/A.

# Human-Machine Interface

N/A. The user interface is not changed by this patch.

## Interface Design Rules

N/A.

## Inputs

N/A.

## Outputs

N/A.

## Navigation Hierarchy

N/A.

# Attachment A – Approval Signatures

This section is used to document the approval of the System Design Document. The review should be conducted face to face where signatures can be obtained ‘live’ during the review. If unable to conduct a face-to-face meeting then it should be held via LiveMeeting and concurrence captured during the meeting. The Scribe should add /es/name by each position cited. Example provided below.

The Business Sponsor and Project Manager are required to sign.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Signed: Date:

Kathleen Lysell, Psy.D. National Mental Health Director for Informatics

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Signed: Date:

Shawn Suiters, OIT PD, PM, Tm 3, Project Manager

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Signed: Date:

James Goldsmith, HP PM, PCL-5 MHAS

1. Additional Information
   1. Identification of Technology and Standards

The system which applies to the SDD is Mental Health Assistant v3. Software used is Massachusetts General Hospital Utility Multi-Programming System (MUMPS) which is TRM compliant. American National Standards Institute [ANSI], International Organization for Standardization [ISO], Institute of Electrical and Electronics Engineers [IEEE] will be complied with during the software coding of PCL-5 MHAS.

* 1. Constraining Policies, Directives and Procedures

None identified at this time.

* 1. Requirements Traceability Matrix

The RTM is located at: <http://DNS/warboard/anotebk.asp?proj>

* 1. Packaging and Installation

This patch is distributed via a Packman message and may be installed with users on the system although it is recommended that it be installed during non-peak hours to minimize potential disruption to users. This patch should take less than one hour to install.

This patch will update the MHA3 Database:

1. Choose the PackMan message containing this patch.
2. Choose the INSTALL/CHECK MESSAGE PackMan option.
3. From the Kernel Installation and Distribution System Menu, select the Installation Menu. From this menu, you may elect to use the following options. When prompted for the INSTALL NAME enter YS\*5.01\*123.
   1. Backup a Transport Global - This option will create a backup message of any routines exported with this patch. It will not backup any other changes such as DDs or templates.
   2. Compare Transport Global to Current System - This option will allow you to view all changes that will be made when this patch is installed. It compares all components of this patch (routines, DDs, templates, etc.).
   3. Verify Checksums in Transport Global - This option will allow you to ensure the integrity of the routines that are in the transport global.
4. From the Installation Menu, select the Install Package(s) option and choose the patch to install.
5. When prompted ‘Want KIDS to Rebuild Menu Trees Upon Completion of Install? NO//’ enter NO.
6. When prompted ‘Want KIDS to INHIBIT LOGONs during the install? NO//’ enter NO.
7. When prompted 'Want to DISABLE Scheduled Options, Menu Options, and Protocols? NO//’ enter NO.
8. If prompted ‘Delay Install (Minutes): (0 – 60): 0//’ respond 0.
   1. Design Metrics

Compliance with Veterans Affairs Standards and Conventions (SAC) and other VA design conventions will be maintained.

* 1. Required Technical Documents

The following documents must be submitted for review to support proper approval:

* Conformance Validation Statement (CVS) - Section 508- 508 is not applicable to this patch.
* YS\*5.01\*123 Patch Description
* YS\*5.01\*123 Version Description Document (VDD)
  1. Acronym List and Glossary

| Term | Meaning |
| --- | --- |
| CPRS | Computerized Patient Record System |
| DSM-5 | Diagnostic and Statistical Manual of Mental Disorders – 5th Edition |
| MHA | Mental Health Assistant |
| MUMPS | Massachusetts General Hospital Utility Multi-Programming System |
| PCL-5 | Posttraumatic Stress Disorder Checklist-5 |
| PSPO | Patient Safety Program Office |
| PTSD | Posttraumatic Stress Disorder |
| RPC Broker | Remote Procedure Call Broker |
| RSD | Requirements Specification Document |
| RTM | Requirements Traceability Matrix |
| SAC | Standards And Conventions |
| SDD | System design Document |
| SSO | Single Sign-On |
| SQA | Software Quality Assurance |
| TRM | Technical Reference Model |
| VA | Veterans Administration |
| VDD | Version Description Document |
| VistA | Veterans Health Information Systems and Technology Architecture |