Perceptive Reach:

Integrated Reach Database System

(IRDS)

Interface Design Specification



Department of Veterans Affairs

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Version 0.0

Revision History

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| 04/25/2012 | 0.0 | First Draft | Paul Bradley |
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# Introduction

VA is seeking to expand suicide prevention to include upstream approaches, designed to reduce initiation or escalation of a risk factor. Upstream suicide interventions target individuals or groups who exhibit biological, psychological, or social risk factors that are more prominent among high-risk groups than among the larger population. Understanding the unique needs of our nation’s Veterans and the military culture as it relates to stigma and mental health is important for early intervention. The goal of the Integrated Reach Database System (IRDS) innovation is to promote the general health of the Veteran population and effectively intervene in issues before they escalate in crisis.

The IRDS solution innovates the current process of risk data collection, analysis, and use in effective intervention strategy. The solution will harness the power of large and diverse data stores to aggregate, analyze and identify risk onset as well as reveal previously unidentified at-risk individuals and populations as a holistic and integrated approach.

The IRDS innovation will serve to bolster the three major components of VHA’s Strategic Plan for Suicide Prevention: surveillance, risk and protective factors, and prevention interventions. The IRDS innovation will target antecedent events specific to Veteran populations prior to the onset of risk to mitigate the development of risk.

## Scope

The IRDS Interface Design Specification document describes the relationship between IRDS and each of the external systems connected to it in terms of data items, protocols, and timing of events.

This Interface Design Specification will describe what data will be transferred between the IRDS and its input sources and output destinations such as:

* Input: Suicide Data Repository (SDR)
* Input: Veterans Benefits Administration XYZ
* Input: VISN XYZ VistA
* Output: VA Suicide Prevention Coordinators
* Output: Rutgers UHBC Outreach and Intervention Coordinators & Clinicians
* Output VA Suicide Prevention stakeholders

This document should be read in conjunction with the IRSD System Design Document.

## Assumptions

TBD

## References

The following IRDS documents may be referenced in tandem with the information recorded here:

* Project Management Plan (PMP)
* System Design Document (SDD)

## Acronyms

| Acronym | Term |
| --- | --- |
| BIRLS | Beneficiary Identification Records Locator System |
| CD | Compact Disk |
| CDC | Center for Disease Control |
| DoD | Department of Defense |
| ETL | Extract, Transform, Load |
| GB | Gigabyte |
| ICD | International Classification of Diseases |
| IM/IT | Information Management/Information Technology |
| IRDS | Integrated Reach Database System |
| IT | Information and Technology |
| NDI | National Death Index |
| OIT | Office of Information and Technology |
| OMHS | Office of Mental Health Services |
| SAS | Statistical Analysis System |
| SDCD | State Death Certificate Data |
| SDR | Suicide Data Repository |
| SFTP | Secure File Transfer Protocol |
| SMITREC | Serious Mental Illness Treatment Resource and Evaluation Center |
| SPAN | Suicide Prevention Applications Network |
| SQL | Structured Query Language |
| SSIS | SQL Server Integration Services |
| SSN | Social Security Number |
| TB | Terabyte |
| UI | User Interface |
| VA | Department of Veterans Affairs |
| VCL | Veterans Crisis Line |
| VHA | Veterans Health Administration |
| VSSC | VHA Support Service Center |

## System Identification

Identify the system and software which apply to the SDD, including: identification number(s), title(s), abbreviation(s), version number(s), and release number(s). Identify all standards (e.g., American National Standards Institute [ANSI], International Organization for Standardization [ISO], Institute of Electrical and Electronics Engineers [IEEE], etc.).

# Interface Definition & Requirements

This section details interfaces external to systems. External systems are systems that are not within the scope of the system under development, regardless of whether the other systems are managed by the vendor or its client.

Provide sufficient detail about the interface requirements for the development team to format, transmit, and/or receive data across the interface.

Include the following information (as appropriate):

* Data format requirements; if data must be reformatted before it is transmitted or after incoming data is received. Describe the tools and/or methods for the reformat process.
* Specifications for hand-shaking protocols between systems; content and format of hand-shake messages, timing for exchanging these messages, and errors handling.
* Format(s) for reports exchanged between the systems.
* Graphical representation of the connectivity between systems, showing the direction of data flow.
* Query and response descriptions.
* Describe the individual data elements that the interfacing entity(s) will provide, store, send, access, and receive, such as:
* Names/identifiers
  + Data Element Name
  + Data Format/Length
  + Data Type
  + Definition
  + Non-Technical Name
  + Non-Technical Synonyms
  + Specifications
  + Synonyms
* Range or enumeration of possible values (e.g., 0-99)
* Accuracy and precision (number of significant digits)
* Priority, timing, frequency, sequencing, and other constraints
* Security and privacy constraints
* Sources (setting/sending entities) and recipients (using/receiving entities).

Describe the data element assemblies (records, messages, files etc.) that the interfacing entity(s) will provide, store, and send, such as:

* Names/identifiers
  + Technical Name, e.g., data structure name
  + Non-technical Names, e.g. synonyms
* Data elements
* Medium/structure of data elements/assemblies
* Visual characteristics (e.g. layouts, fonts, icons etc.)
* Relationships among assemblies
* Security and privacy constraints
* Sources and recipients.

Describe the communication methods that the interfacing entity(s) will use for the interface, such as:

* Communication links, bands, frequencies, and media
* Message formatting
* Flow control (e.g. sequence numbering)
* Data transfer rate
* Routing
* Transmission services
* Safety
* Security and privacy considerations.

Describe characteristics of the protocols that the interfacing entity(s) will use for the interface, such as:

* Priority/layer of the protocol
* Packeting
* Legality checks, error control
* Recovery procedures
* Synchronization
* Status, identification, and other reporting features.

Where appropriate describe other characteristics, such as physical compatibility of the interfacing entity(s) (dimensions, tolerances, loads, voltages, plug compatibility, etc.)

## System Overview

The Perceptive Reach development and field pilot proposes to combine technology, outreach and clinical support to realize a clinically based data-driven early intervention and treatment solution aimed at suicide prevention. IRDS is a solution for analyzing multiple and integrated data sets with cutting-edge data analytic techniques and visualizations to identify at-risk individuals and populations and provide proactive and secure notifications of these results to Veteran support services. The Perceptive Reach project proposes to expand the capabilities of the Suicide Data Repository to include new interfaces to clinical data sources, integrated data analytics capabilities, a surveillance dashboard, and secure messaging.

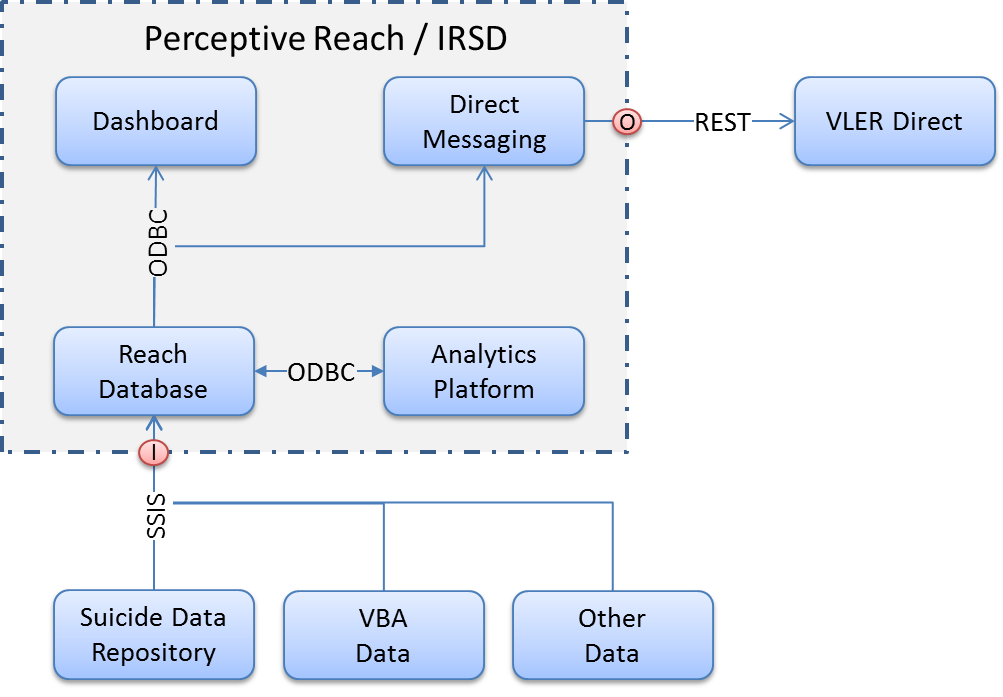


Figure

## Interface Overview

The primary ingress interfaces will us SQL Server Integration Services (SSIS) to retrieve data from the designated data sources such as the SDR. The SSIS package will be configured to pull data from the designated data source at a specified interval (daily/weekly/monthly/annually).

The primary egress interface will be the Direct Messaging interface used to notify VA Suicide Prevention Coordinators and Rutgers Outreach and Intervention coordinators and clinicians. The IRDS will leverage the VLER Direct messaging service utilizing a RESTful interface to transmit message content.



Figure

## Operations

TBD

## Data Transfer

## Communications Methods

TBD

## Performance Requirements

| Requirement | Specification |
| --- | --- |
| Availability |  |
| Capacity |  |
| Backup Capacity |  |
| Number of Users |  |
| Maximum Number of Simultaneous Users |  |
| Maximum Downtime |  |
| Network Interface(s) |  |
| Database Interface(s) |  |
| Help Desk Support |  |

## Security

TBD

# Interface Verification

TBD

# Approval Signatures

This section is used to document the initial approval of the draft Suicide Data Repository Interface Design Specification and subsequent updates and modifications of the document.

All members of the governing Suicide Data Repository Management Team are required to sign:

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Signed: Date:

*Krista Stephenson, Contracting Officer’s Representative*

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Signed: Date:

*Robert Bossarte, VA Program Manager*