

**BHIE Performance Enhancements
Request #20090708**



January 2010

Revision History

Date	Version	Description	Author
08/19/09	0.01	Initial draft	B. Becker
09/15/09	0.02	Enhanced some of the granularity of the requirements, updated stakeholders, and clarified purpose of document.	R. Andreev
09/21/09	0.03	Reviewed all sections of the document & updated as needed.	D. Morgan, ESM HDS Portfolio
9/29/09	0.04	Added mandate information and refined several areas.	R. Andreev
10/01/09	0.05	Added Eight for Excellence & Power for Performance references to Appendix A.	D. Morgan
10/07/09	0.06	Section 2.1: removed BN2.1. Created BN3 and added 3.1 – 3.3. Updated content based on feedback from Pat Cohen.	D. Morgan
10/09/09	0.07	Updated BRD based on requirements review with the HIE subgroup stakeholders.	D. Morgan
10/14/09	0.08	Updated BRD with final revisions as defined in HIE Subgroup Meetings.	R. Andreev
10/18/09	0.09	Final Revisions including updated Acronym List, final clerical items corrected.	ESM HDS Portfolio
10/28/09	2.0	Final updates from HIE Subgroup Co-chairs. Changed naming convention to reflect proper version of document.	Dr. Maldonado and Dr. Lee
10/29/09	2.1	Technical writing review	J. Hamm
11/3/09	2.2	Final updates based on technical writing review	R. Andreev
11/05/09	2.2	Added Business Owner & ESM Mgr sign-offs to Appendix F.	DMorgan
Post Sign Off Additions – Not Included in Project Scope and Estimate			
01/27/10	2.3	Added additional Business Needs 4 and 5 to Section	DMorgan

		2.1 and Appendix G.	

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Business Requirements Document

1. Purpose

The purpose of the Business Requirements Document (BRD) is to capture and describe the business needs of the customer/business owner. The BRD provides insight into the AS IS and TO BE business area, identifying stakeholders and profiling primary and secondary user communities. It identifies what capabilities the stakeholders and the target users need and why these needs exist, providing a focused overview of the request requirements, constraints and Information Technology (IT) options considered.

1.1. Overview

As part of the Health Information Exchange (HIE) subgroup chartered by the Interagency Clinical Informatics Board (ICIB), multiple clinical priorities were evaluated by the major stakeholders of the Bidirectional Health Information Exchange (BHIE) and the following major performance enhancement was identified: Improve the performance issues (including response time/timeouts/incomplete viewable data) associated with the viewing of Department of Veterans Affairs (VA) and Department of Defense (DoD) data transmitted over the BHIE infrastructure.

1.2. Goals, Objectives, and Scope

This is a request for BHIE enhancements to improve performance for viewing data through the BHIE framework on a consistent basis. This shall be accomplished by retrieving all requested data through the BHIE framework consistently and improving response time in VistAWeb as it currently occurs in Remote Data View (RDV) for data passed through the BHIE framework.

1.3. Success Factors

Success Factors	Measurement
VA Clinicians will be able to obtain DoD data through the BHIE infrastructure more expeditiously.	The HIE Subgroup will define a subset of power users of the BHIE framework after the changes are implemented in production. These stakeholders will verify that the changes requested have indeed provided an environment allowing consistent and timely access to accurate DoD data. BHIE usage metrics will also be monitored to ensure better performance when compared to the system prior to the changes
Timeouts will be significantly reduced when external systems are accessed	Timeouts will be reduced 50%.

1.4. Organizational Need

Clinical stakeholders of BHIE from both VA and DoD locations have requested enhancements for usability and performance for several years. These enhancements align with the Eight for Excellence strategy to continuously improve the quality and safety of health care for veterans, particularly in those health issues associated with military service. These enhancements also align with the Power of Performance goal of promoting improved business processes.

The National Defense Authorization Act (NDAA) of Fiscal Year (FY) 2008 required that the DoD and the VA develop and implement electronic health record systems or capabilities that allow for full interoperability of personal health care information by September 30, 2009. To further facilitate the accurate and timely transmission of this data, the requirements captured in this BRD strengthen the requirements of the NDAA.

Additional support for this effort can be found in Executive Order 13426, dated March 6, 2007, *Establishing a Commission on Care for America's Returning Wounded Warriors and a Task Force on Returning Global War on Terror Heroes*. The task force report, submitted to the President on April 19, 2007, *recommended data-exchange enhancements*. This mandate provides a means of sharing inpatient electronic health records via VA BHIE and DoD Armed Forces Health Longitudinal Technology Application (AHLTA). The goal requires federal agencies to use recognized health interoperability standards to promote the direct exchange of health information between federal and with non-federal entities in supporting quality and efficient health care.

2. Requirements

2.1. Business Needs/Owner Requirements

NOTE: The following Business Needs and Owner Requirements were identified by utilizing a prioritized list as defined by the ICIB's HIE Subgroup resulting from months of stakeholder discussions. These items were the highest prioritized and thus, every requirement has been deemed "Required" by the HIE Co-chairs. Any requirements that were "Optional" have been tabled for later analysis and possible work through another New Service Request (NSR).

NOTE 2: All the Business Needs documented are from the VA Clinician's perspective.

Business Need (BN)	OWNR Number	Owner Requirement (OWNR)	Ranking R=Required O=Optional
BN 1: Retrieve all requested data through the BHIE framework consistently.			
	1.1	Allow a "2-pass" capability for all data domains for data being viewed by VA resources. Need the ability to request list of data items (metadata) initially and then allow the user to select the desired content.	R
	1.2	Provide all data requested at once but allow data to appear on the screen as it is retrieved rather than after all data has been retrieved.	R
BN 2: Improve response time in VistAWeb as it currently occurs in Remote Data View.			
	2.1	Implement functionality that will allow users to view, when data is requested, an initial status within 6 seconds of the request (searching, network error, no data found). This will eliminate the problem of the appearance of a hanging search across the network. When data is being requested, provide an indicator to the user that data retrieval is still occurring, as it currently occurs in Remote Data View.	R
BN 3: Provide the user with a reason their request was not fulfilled.			
	3.1	Notify the user when there are no results for a request of patient data. There shall be a message displayed on the screen resulting from the process indicating "Patient Data Not Found for your Request". The system should output this message at the point when it is determined there is no match for the data request. This action shall provide an accurate reflection of the request results.	R

Business Need (BN)	OWNER Number	Owner Requirement (OWNER)	Ranking R=Required O=Optional
	3.2	Notify the user if data is available from a site, yet there is an issue causing an invalid response. The requestor shall see a message appear on the screen identifying the site and indicating "Your Request cannot be completed at this time - Site (?) Not Responding".	R
	3.3	Notify a user when the system has timed out as follows: "The system has timed out – try your request again".	R
BN 4: Prioritize DoD BHIE data requested by the VA. See Appendix G for details			
BN 5: Perform analysis to initial data retrieval in advance, See Appendix G for details			

2.2. Non-Functional Requirements

- Training and technical support will be provided to users of the new solution.
- Reference materials will be provided to users of the new solution.
- Coordination of implementation process throughout the enterprise.

2.3. External System Interface Requirements

The BHIE framework is an interface between the Veteran's Health Administration's (VHA) clinical Veterans Health Information Systems and Technology Architecture (VistA) and DoD's clinical data. The BHIE framework is a direct external interface and the DoD clinical applications are an indirect external interface to VistA.

2.4. Related Projects/NSRs

NSR 20090707 BHIE Usability Enhancements was submitted at the same time this NSR was to cover issues related to the user's experience.

3. Other Considerations

3.1. Alternatives

No known alternatives.

3.2. Assumptions

1. Even though a patient may be new to a VA facility, their DoD information is accessible from any DoD facility utilizing BHIE. As always, the VA information is accessible from any other VA Medical Center (VAMC) the patient has visited.
2. As long as the DoD information has been entered into the computerized system and the DoD site is using the BHIE framework, then all VA/DoD facilities may view a patient's data.

3.3. Dependencies

1. A collaborative, synchronized analysis effort between VA and DoD stakeholders is critical to ensuring the continued success of the BHIE infrastructure.
2. Information is available from DoD locations only where BHIE is supported. Data is available from all VAMC locations.

3. The ICIB must have completed work on establishing the standard note title nomenclature. Those standard note titles must be implemented in order to have sorting and filtering capability.

3.4. Constraints

Functioning hardware, operating systems, and databases configured, placed and supported by Vendors, the DoD, and the VHA.

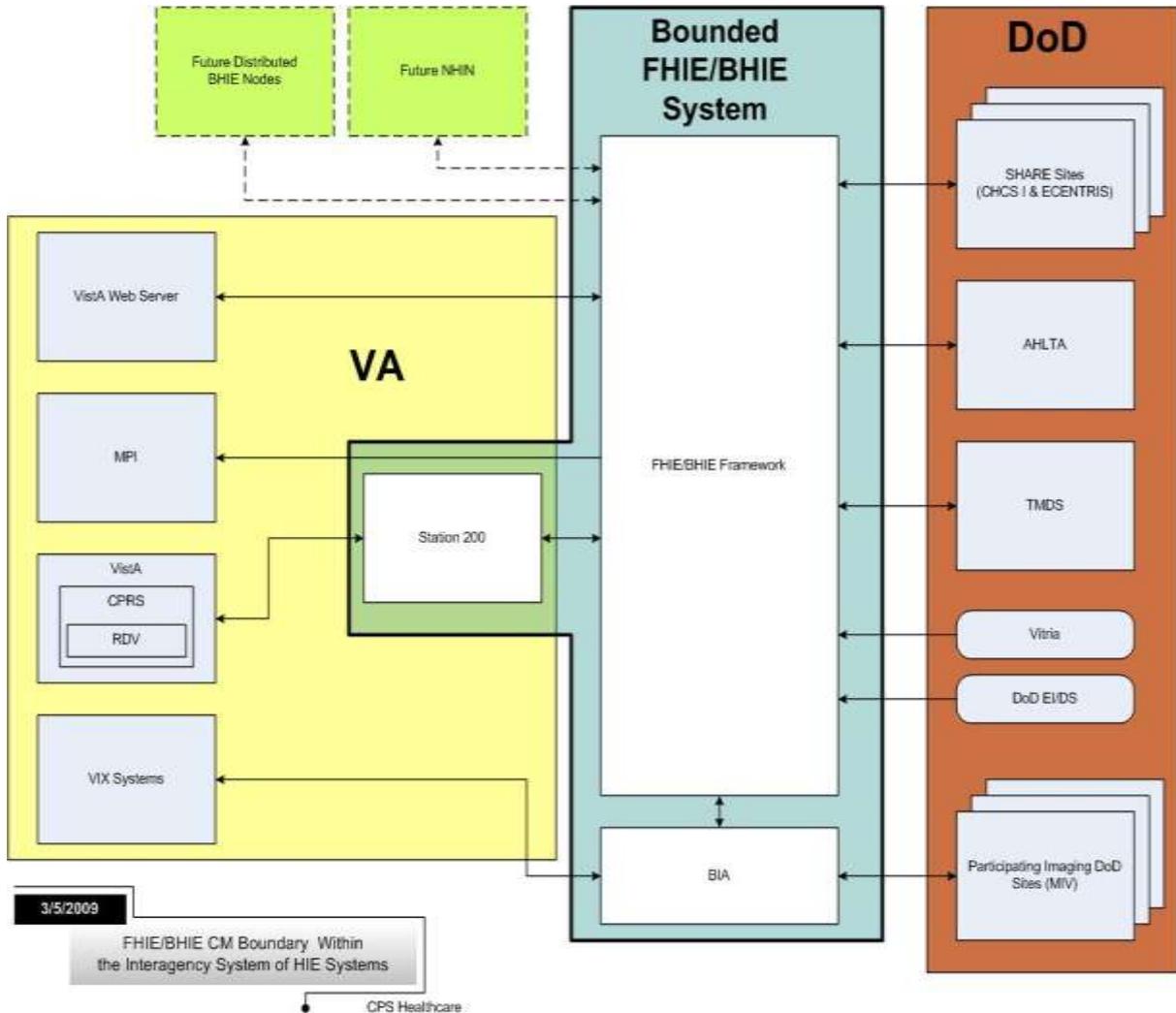
3.5. Risks

Due to the compressed time frames used to elicit and document the requirements for this NSR, there is the inherent risk that the requirements do not capture the full scope of the request.

Appendix A. References

- Perlin, Jonathan B. (July 2005) VHA Strategies- Eight for Excellence. Retrieved from: http://vaww.visn5.med.va.gov/resources/career_dev/8_for_excellence.pdf
- VHA Undersecretary for Health Michael J. Kussman, MD. “Power of Performance” http://vaww.northern-california.med.va.gov/director/4_VHA_Goals.html
- Executive Order 13426: <http://edocket.access.gpo.gov/2007/pdf/07-1137.pdf>
- NDAA 2008: <http://vaww.infoshare.va.gov/esm/HDS/Internal%20HDS%20Documents/VA%20DoD%20Mandates%20and%20Laws/NDAA%202008%20Public%20Law%20110-181.pdf>

Appendix B. Models



Appendix C. Stakeholders and Primary/Secondary Users

Stakeholders

Type of Stakeholder	Description	Responsibilities
Business Owner	Paul Nichol, Director Patient Care Services/Clinical Informatics	Person accountable for providing final approval of BRD with Sign Off Authority.
Endorser	Frank Maldonado, Associate Chief of Medical Service	HIE Subgroup Co-Chair, responsible for the prioritization of these requirements and signing off on the requested changes.
Requester	Rob Andreev, ESM Analyst	Enterprise Systems Management (ESM) Office Facilitator of HIE Subgroup, Technical Analysis for requirements.
Technical Subject Matter Expert (SME)	<ul style="list-style-type: none"> Pat Kern, ESM Analyst Joan Cohen, ESM Lead Program Specialist Randy Estes, ESM Analyst Sylvia Endicott-Sullivan, System Implementation Manager 	ESM Office Technical Analysis for requirements.

Primary and Secondary Users

Name	Description	Responsibilities
Primary Users	<ul style="list-style-type: none"> VA Healthcare Providers treating Soldiers, Sailors, Airmen, and Marines transitioning into VA care Providers from VAMCs and DoD military treatment facilities 	<ul style="list-style-type: none"> Receive data through the BHIE framework Responsible for diagnosis and treatment documentation. VA Health Care Providers view DoD data in the Computerized Patient Record System (CPRS) and VistAWeb. View and/or record medical information and capture history information. DoD Clinicians view VA Data via AHLTA's "VA/DoD Theater History" module.
Secondary Users	All healthcare providers and support staff	View and/or record medical information and capture history information.

Appendix D. Enterprise Requirements

HealthVet Requirements Management

To view Enterprise-level requirements, access the web site for VHA Health Information Technology, Software Engineering and Integration, Enterprise Requirements Management located at http://vhaishwebr1:81/ReqWeb/Login_Page.jsp. For information and guidance on accessing the database, contact the VHA 19 ESM RAEM Management mailgroup.

Security Requirements

All VA and VHA security requirements will be adhered to. Cross-cutting security requirements are contained in the VA Enterprise Requirements Repository (ERR).

Privacy Requirements

All VA and VHA Privacy requirements will be adhered to. Efforts that involve the collection and maintenance of individually identifiable information must be covered by a Privacy Act system of records notice.

508 Compliance Requirements

All Section 508 requirements will be adhered to. VHA recognizes that these are Enterprise cross-cutting legal requirements for all developed Electronic & Information Technology. To ensure that these requirements are met, they are addressed through the Enterprise-level requirements maintained by VHA Health Information Technology, Software Engineering and Integration, and Enterprise Requirements Management.

Executive Order Requirements

In keeping with the President's Executive Order: *Promoting Quality and Efficient Health Care in Federal Government Administered or Sponsored Health Care Programs*, the VHA Office of Health Information (OHI) must promote quality and efficient delivery of health care through the use of health information technology, transparency regarding health care quality and price, and incentives to promote the widespread adoption of health information technology and quality of care. To support this mission, to the greatest extent possible, any new IT system development or acquisition of commercial system shall:

- Use interoperability standards recognized by the Secretary of Health and Human Services, or the appropriate designated body at the time of the system update, acquisition, or implementation, in all relevant information technology systems.
- Ensure interoperability with the Nationwide Health Information Network (NHIN).
- Comply with certification standards released through the Certification Commission of Health Information Technology (CCHIT).

The interoperability and certification standards are constantly evolving; for questions relative to these standards, contact Tim Cromwell, Acting Director, HealthePeople, Office of the Chief Health Information Officer.

Identity Management Requirements

All Enterprise Identity Management requirements will be adhered to. VHA recognizes that these are Enterprise requirements for all developed Electronic & Information Technology. These requirements are applicable to any application that adds, edits, or performs lookups on persons (patients, practitioners, employees, IT Users) to systems within the VHA. To ensure that these requirements are met, they are addressed through the Enterprise-level requirements maintained by VHA Health Information Technology, Software Engineering and Integration, and Enterprise Requirements Management.

Appendix E. Acronyms and Abbreviations

Term	Definition
AHLTA	Armed Forces Health Longitudinal Technology Application
BHIE	Bidirectional Health Information Exchange
BN	Business Need
BRD	Business Requirements Document
CCHIT	Certification Commission of Health Information Technology
CHCS	Composite Health Care System
CPRS	Computerized Patient Record System
DoD	Department of Defense
ERR	Enterprise Requirements Repository
ESM	Enterprise Systems Management
FHIE	Federal Health Information Exchange
FY	Fiscal Year
HDS	Health Data Systems
HIE	Health Information Exchange
ICIB	Interagency Clinical Informatics Board
IT	Information Technology
MPI	Master Patient Index
NDAA	National Defense Authorization Act
NHIN	Nationwide Health Information Network
NSR	New Service Request
O	Optional
OHI	Office of Health Information
OWNR	Owner Requirement
R	Required
RDV	Remote Data View
SME	Subject Matter Expert
TMDS	Theater Medical Data Store
VA	Department of Veterans Affairs
VHA	Veterans Health Administration
VistA	Veterans Health Information Systems and Technology Architecture
VIX	VistA Imaging Exchange

Appendix F. Approval Signatures

The requirements defined in this document are the high level business requirements necessary to meet the intent of this new service request.

Signed: Tana Defa

Date: 10/27/09

<<Business Owner Name and Title>>

10-27-09--Tana Defa. Tana provided concurrence on behalf of Dr. Nichol today 10/27/09.

I recommend proceeding forward with this one. Dr. Nichol endorsed both NSR related to BHIE usability enhancements.

Signed: Susan Lloyd

Date: 11/05/09

Enterprise System Manager

Appendix G. Post Sign-Off Additions

The following additional requirements were identified subsequent to the approval of this document. These requirements were not included in the project scope estimates when this request was considered for approval.

Business Need (BN)	OWNR Number	Owner Requirement (OWNR)	Ranking R=Required O=Optional
BN 4: DoD data requested by the VA via BHIE to be Pre-Staged			
	4.1	DoD data requested by the VA via BHIE shall be initiated for retrieval upon first instance of opening the patient's record within CPRS	R
	4.2	Data shall be prioritized by data types based on high volume and heavy traffic flows.	
	4.3	When appropriate, data request shall result in metadata being sent	R
	4.4	Performance impact shall be evaluated for the Pre-Staging of the data.	R
BN 5: Perform analysis to determine feasibility of initial data retrieval for appointments in advance.			
	5.1	Analysis shall be done in determining the feasibility of initiating data retrieval in advance for patients that have known appointments for both outpatient and admissions.	R
	5.2	Performance impact shall be evaluated for the retrieval of known appointments for outpatient and admissions .	R

Additional Explanation HERE:

ESM Met with the key stakeholders of the ICIB to obtain approval for the pre-staging of data retrieved from DOD by the VA. This requirement shall result in providing data to the clinicians in a more efficient and timely manner.

Signed: Dr. Nichol

Date: 02/09/10

<<Business Owner Name and Title>>

Approval received during 02/09/10 bi-monthly meeting with Dr. Nichol and Tana Defa.

Signed: Doug Rosendale

Date: 02/04/10

Enterprise System Manager