Appendix A – Requirements Matrix

Req. Category	Requirement	Additional Notes	Testable Y/N	Test Case Ref.	Completion Date
Patient	Browse EHR items		Y	P001	04-15-2009
Patient	Search EHR items		Y	P002	04-15-2009
Patient	Add comment item		Y	P003	04-15-2009
Patient	Appoint agent		Y	P004	04-15-2009
Patient	Revoke agent		Y	P005	04-15-2009
Patient	Appoint primary doctor		Y	P006	04-15-2009
Patient	Revoke primary doctor		Y	P007	04-15-2009
Patient	Grant consent to treatment by clinician		Y	P008	04-15-2009
Patient	Withdraw consent to treatment by clinician		Y	P009	04-15-2009
Patient	Conceal an item		Y	P010	04-15-2009
Patient	Cancel concealment of an item		Y	P011	04-15-2009
Patient	Cancel referral		Y	P012	04-15-2009
Read-only agent	Browse EHR items		Y	RO001	05-02-2009
Read-only agent	Search EHR items		Y	RO002	05-02-2009
Read-only agent	No permission for other functionalities		Y	RO003	05-02-2009
Read-and-comment agent	Browse EHR items		Y	RC001	05-02-2009

Read-and-comment agent	Search EHR items		Y	RC002	05-02-2009
Read-and-comment agent	Add comment items		Y	RC003	05-02-2009
Read-and-comment agent	No permission for other functionalities		Y	RC004	05-02-2009
Full agent	All patient's functionalities		Y	FA001	05-02-2009
Clinician	Browse EHR items		Y	C001	04-15-2009
Clinician	Cannot access items for patient without consent or referral		Y	C002	04-15-2009
Clinician	Search EHR items		Y	C003	04-15-2009
Clinician	Add comment item		Y	C004	04-15-2009
Clinician	Add quantitative observation item		Y	C005	04-15-2009
Clinician	Cannot add item for patient without consent or referral		Y	C006	04-15-2009
Clinician	Add qualitative observation item		Y	C007	04-15-2009
Clinician	Add diagnosis item		Y	C008	04-15-2009
Clinician	Add treatment item		Y	C009	04-15-2009
Clinician	Appoint agent		Y	C010	04-15-2009
Clinician	Revoke agent		Y	C011	04-15-2009
Clinician	Create referral		Y	C012	04-15-2009

Clinician	Cancel referral		Y	C013	04-15-2009
Administrator	Add user		Y	A001	04-10-2009
Other	Authentication		Y	Other001, Other002, Other003.	04-15-2009
Other	Concurrency		Y	Other004	04-15-2009
Other	Declarative access control policy		Y	Other005	04-15-2009
Other	Permanence		Y	Other006	04-15-2009

Appendix B – Test Cases

Test Case Definitions

Category: PATIENT **Release Number:** **Date:** 04-15-2009

Requirements Satisfied: YES

TC Ref.	Functional Area	Description	Pre-condition	Expected Results	Test Status (P/F)	Comments
P001	EHR items Browsing	Browse EHR items as a patient	- User is logged in as a patient	A list of items in patient's EHR will be displayed	P	
P002	EHR items Searching	Search EHR items as a patient	- User is logged in as a patient and in "Home" page.	The item(s) corresponding to the searching keywords/options will be displayed if it exists. An empty result page otherwise.	P	Searching with an empty string "" will display all the items in his/her EHR regardless the searching options
P003	Comment Adding	Add comment items as a patient	- User is logged in as a patient and is viewing an item in his/her own EHR	The comment will be attached to the item that he/she comments on	P	
P004	Agent appointing	Appointing agents as a patient	- User is logged in as a patient and in "Manage agents" page	The user that the patient selected will be appointed to be his/her agent.	P	The patient is able to browse and search for users that he/she want to

					appoint. He/she is also able to choose the level of the agent.
P005	Agent Revoking	Revoke agents as a patient	- User is logged in as a patient and in "Manage agents" page	The agent that the patient selected will be removed from agent list.	P	
P006	Doctor appointing	Appoint primary doctor as a patient	- User is logged in as a patient and in "Manage clinicians" page. - Has no primary doctor	The doctor that the patient selected will be appointed to be his/her primary doctor.	P	If the patient already has a primary doctor, he/she has to revoke the doctor before appointing a new one.
P007	Doctor revoking	Revoking primary doctor as a patient	- User is logged in as a patient and in "Manage clinicians" page. - Has a primary doctor	The doctor that the patient selected will be removed as his/her primary doctor.	P	Doctor revoking will not be available if the patient has no primary doctor.
P008	Consent to treatment	Grant consent to treatment by clinician as a patient	- User is logged in as a patient and in "Manage clinicians" page.	The patient will grant consent to treatment by the doctor he/she selected.	P	
P009	Consent to treatment withdrawal	Withdraw consent to treatment by clinician as a patient	- User is logged in as a patient and in "Manage clinicians" page.	The patient successfully withdraw his/her consent to treatment by the doctor he/she selected	P	
P010	Item	Conceal an item as a patient	- User is logged in as a	An item will be concealed	P	The patient can

	concealment		patient and in "Manage EHR" page.	from the users that the patient selected.		search for a specific item and click on "Conceal This Item" option to conceal instead of going to "Manage EHR" page.
P011	Item concealment cancellation	Cancel concealment of an item as a patient	- User is logged in as a patient and in "Manage concealments" page.	Item concealment will be cancelled	P	
P012	Referral cancellation	Cancel referral as a patient	- User is logged in as a patient and in "Manage referral" page.	Referral will be cancelled	P	Patient will only be able to cancel his/her referral if there exists one.

Test Case Definitions

Category: READ-ONLY AGENT   **Release Number:**   **Date:** 05-02-2009

Requirements Satisfied: YES

TC Ref.	Functional Area	Description	Pre-condition	Expected Results	Test Status (P/F)	Comments
RO001	EHR items browsing	Browse patient's EHR items as a read-only agent	- User is logged in as a read-only agent - Appointed to be read-only agent for the patient.	A list of patient's EHR items will be displayed	P	
RO002	EHR items Searching	Search patient's EHR items as a read-only agent	- User is logged in as a clinician and in "Sponsored Patients" page.	The item(s) corresponding to the searching keywords/options will be displayed if it exists. An empty result page otherwise.	P	Searching with an empty string "" will display all the items in his/her EHR regardless the searching options
RO003	Access permission checking	Try to access other functionalities beyond the role of a read-only agent.	- User is logged in as a read-only agent	The read-only agent will not be able to perform any other actions beyond his/her role	P	The user will be given the role automatically according to role assignment. Other functionalities beyond his/her permission will not be available.

Test Case Definitions

Category: READ-and-COMMENT AGENT   **Release Number:**   **Date:** 05-02-2009

Requirements Satisfied: YES

TC Ref.	Functional Area	Description	Pre-condition	Expected Results	Test Status (P/F)	Comments
RC001	EHR items browsing	Browse patient's EHR items as a read-and-comment agent	- User is logged in as a read-and-comment agent - Appointed to be read-and-comment agent for the patient.	A list of patient's EHR items will be displayed	P	
RC002	EHR items Searching	Search patient's EHR items as a read-and-comment agent	- User is logged in as a read-and-comment agent - Appointed to be read-and-comment agent for the patient.	The item(s) corresponding to the searching keywords/options will be displayed if it exists. An empty result page otherwise.	P	Searching with an empty string "" will display all the items in his/her EHR regardless the searching options
RC003	Comment Adding	Add comment items as a read-and-comment agent	- User is logged in as a read-and-comment agent and is viewing an item in the patient's EHR	The comment will be attached to the item that he/she comments on	P	

RC004	Access permission checking	Try to access other functionalities beyond the role of a read-and-comment agent.	- User is logged in as a read-and-comment agent	The read-and-comment agent will not be able to perform any other actions other than browsing, searching, and comment items adding	P	When the user logged in, he/she will be given automatically according to what he/she was assigned. Other functionalities beyond his/her permission will not be available to him/her.

Test Case Definitions

Category: FULL AGENT   **Release Number:**   **Date:** 05-02-2009

Requirements Satisfied:

TC Ref.	Functional Area	Description	Pre-condition	Expected Results	Test Status (P/F)	Comments
FA001	Same functionality as a patient	Test all functionality available to full agents.	- User is logged in as a full agent and is viewing a patient's EHR	All functionality for patients will available to full agents.	P	

Test Case Definitions

Category: CLINICIAN   **Release Number:**   **Date:** 04-15-2009

Requirements Satisfied: YES

TC Ref.	Functional Area	Description	Pre-condition	Expected Results	Test Status (P/F)	Comments
C001	Patient's EHR browsing	Browse EHR items of a patient as a clinician	- User is logged in as a clinician - Must have at least one of the following: + Primary doctor of the patient + Consent to treatment + Referral	A list of items in the patient's EHR will be displayed	P	
C002	Item access permission	Try to access a patient's EHR without any permission	- User is logged in as a clinician	The clinician will not be able to access the patient's EHR	P	
C003	Patient's EHR searching	Search EHR items of a patient as a clinician	- User is logged in as a clinician - Must have at least one of the following: + Primary doctor of the patient + Consent to treatment + Referral	The item(s) corresponding to the searching keywords/options will be displayed if it exists. An empty result page otherwise.	P	Searching with an empty string "" will display all the patients that the clinician have permission to access their EHR regardless

						the searching options
C004	Comment adding	Add comment items as a clinician	- User is logged in as a clinician and is viewing an item in a patient's EHR - Must have at least one of the following: + Primary doctor of the patient + Consent to treatment + Referral	The comment will be attached to the item that the clinician comments on	P	
C005	Item adding (Quantitative)	Add a quantitative observation item as a clinician	- User is logged in as a clinician and is viewing patient's EHR - Must have at least one of the following: + Primary doctor of the patient + Consent to treatment + Referral	A quantitative observation item will be added to the patient's EHR	P	
C006	Add item permission checking	Try to add items without permission	- User is logged in as a clinician	The clinician will not be able to add items patient's EHR	P	Tested in C002. Since the clinician cannot access patients' EHR, he/she will not be able to add anything.
C007	Item adding (Qualitative)	Add a quantitative observation item as a clinician	- User is logged in as a clinician and is viewing patient's EHR - Must have at least one of the following: + Primary doctor of the patient + Consent to treatment + Referral	A quantitative observation item will be added to the patient's EHR	P	

C008	Item adding (diagnosis)	Add a diagnosis item as a clinician	- User is logged in as a clinician and is viewing patient's EHR - Must have at least one of the following: + Primary doctor of the patient + Consent to treatment + Referral	A diagnosis item will be added to the patient's EHR	P	
C009	Item adding (treatment)	Add a treatment item as a clinician	- User is logged in as a clinician and is viewing patient's EHR - Must have at least one of the following: + Primary doctor of the patient + Consent to treatment + Referral	A treatment item will be added to the patient's EHR	P	
C010	Agent appointing	Appointing agents as a clinician	- User is logged in as a clinician and is in "Manage agents" page. - Must have at least one of the following: + Primary doctor of the patient + Consent to treatment + Referral	The user that the clinician selected will be appointed to be the patient's agent.	P	
C011	Agent Revoking	Revoke agents as a clinician	- User is logged in as a clinician and is in "Manage agents" page. - Must have at least one of the following: + Primary doctor of the patient + Consent to treatment + Referral	The agent that the clinician selected will be removed from the patient's agent list.	P	

C012	Referral creation	Create referral for a patient as a clinician	- User is logged in as a clinician and is in "Manage referrals" page. - Must have at least one of the following: + Primary doctor of the patient + Consent to treatment + Referral	Referral will be created for the patient.	P	
C013	Referral cancellation	Cancel a referral as a clinician	- User is logged in as a clinician and is in "Manage referrals" page. - Must have at least one of the following: + Primary doctor of the patient + Consent to treatment + Referral	Referral will be deleted	P	

Test Case Definitions

Category: ADMINISTRATOR   **Release Number:**   **Date:** 04-10-2009

Requirements Satisfied: YES

TC Ref.	Functional Area	Description	Pre-condition	Expected Results	Test Status (P/F)	Comments
A001	New user adding	Add a new user to the system as an administrator	User is logged in as an administrator via "Administrator Home" page.	A new user will be added into the system regarding the selected user level	P	

Test Case Definitions

Category: OTHER **Release Number:** **Date:** 04-15-2009

Requirements Satisfied: YES

TC Ref.	Functional Area	Description	Pre-condition	Expected Results	Test Status (P/F)	Comments
Other001	Authentication	Login with existing user account information	User account has been created.	User successfully log in	P	
Other002	Authentication	Try to login without fake user account information		User will not be able to log in	P	Applied to: - fake username, fake password - fake username, true password - true username, fake password
Other003	Authentication	Try to access other pages by changing the links directly without logging in		User will not be able access to any functionality	P	

Other004	Concurrency	Multiple users can use the system concurrently		All users can perform everything normally	P	If the users access the system on the same machine, the concurrency only works if they use different browsers.
Other005	Access control	Declarative access control policy		Access control policy will be changed according to the modification	P	This was done by switching bits directly on the database.
Other006	Permanence	Testing whether EHR can be modified or deleted	User is logged	None of the items will be modified or deleted	P	Applied to all access levels