

## Integrated Data Repository Project for CTSA

ID	WBS	Task Name	Phase
1	1	<b>System Initiation</b>	
2	1.1	<b>Develop Governance Structure</b>	
3	1.1.1	Develop governance structure within the Academic Information Systems Board (AISB)	
4	1.1.2	Determine chairs of steering committee	
5	1.1.3	Constitute steering committee and conduct first meeting	
6	1.1.4	Constitute data access policy working group and conduct first meeting	
7	1.1.5	Constitute data usage and control working group and conduct first meeting	
8	1.1.6	Define roles and responsibilities	
9	1.1.7	Negotiate Memorandum of Understanding between Campus and Medical Center organizations (if necessary)	
10	1.2	<b>Obtain IRB Approval</b>	
11	1.2.1	Write Proposal	
12	1.2.2	Receive IRB approval	
13	1.3	<b>Hire Staff</b>	
14	1.3.1	Hire Project Manager	
15	1.3.2	Hire Technical Lead	
16	1.3.3	Hire Developer	
17	1.3.4	Hire Business Analyst	
18	1.3.5	Hire Quality Assurance Engineer	
19	2	<b>System Definition</b>	
20	2.1	<b>Project Documentation</b>	
21	2.1.1	Project Charter	
22	2.1.2	Project Plan	
23	2.1.3	Risk Management Plan	
24	2.1.4	Change Control Plan	
25	2.1.5	Communication Plan	
26	2.2	<b>Determine Software</b>	
27	2.2.1	Portal [SharePoint]	
28	2.2.2	Platform [i2b2]	
29	2.2.3	Database [Sybase IQ]	
30	2.2.4	Export, Transform, Load (ETL) [TalenD]	
31	2.2.5	Development Environment [Eclipse]	
32	2.2.6	Document Management [SharePoint]	
33	2.2.7	Reporting [Cognos]	
34	2.3	<b>Determine Infrastructure Tools</b>	
35	2.3.1	Requirements Documentation [GatherSpace]	
36	2.3.2	Change Control [Footprint]	
37	2.3.3	Revision Control [Subversion]	
38	2.3.4	Bug Tracking [Mantis]	
39	2.3.5	Testing [TestComplete]	
40	2.4	<b>Identify Additional Resources Required</b>	
41	2.4.1	Request resources	
42	2.5	<b>Define Project Phases</b>	
43	2.6	<b>Define Phase I Requirements</b>	
44	2.6.1	<b>Determine initial implementation scope</b>	1
45	2.6.1.1	Source Systems	1
46	2.6.1.2	Requirements	1
47	2.6.1.3	Initial customers	1
48	2.6.2	Determine and survey representative list of stakeholders	1
49	2.6.3	Develop policy based rules of engagement	1
50	2.6.4	Develop policies and procedures for data usage and control	1
51	2.6.5	Determine how Identity and Authentication will be managed.	1
52	2.6.6	Determine MPI Requirements	1
53	2.6.7	Determine chargeback policy	1
54	2.6.8	Determine data governance model - Data transferred on request or on filing	1
55	2.6.9	Determine data upload frequency	1
56	2.6.10	Determine phase interface requirements	1
57	2.6.11	Determine audit requirements for identified and de-identified data	1
58	2.6.12	Determine database security model	1
59	2.6.13	Determine re-identification procedures	1
60	2.6.14	Determine Export, Transform, Load (ETL) requirements	1
61	2.6.15	Determine documentation management [SharePoint] requirements	1
62	2.6.16	Determine Reporting Tools requirements - Ph 1	1
63	2.6.17	Determine security requirements	1
64	2.6.18	Determine audit requirements	1
65	2.6.19	Determine global desktop requirements [Sun SGD]	1
66	2.6.20	Determine ontology mapping requirements	1
67	2.7	<b>Define Phase II - IV Requirements</b>	2

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68	2.7.1	Determine cohort discovery requirements	2
69	2.7.2	Determine user interface requirements	2
70	2.7.3	Determine reporting tools requirements - Ph 2	2
71	2.7.4	Determine disambiguation requirements	2
72	2.7.5	Determine two factor authentication requirements	2
73	2.7.6	Determine IRB integration requirements	2
74	2.7.7	Determine ontology mapping support	2
75	2.7.8	Determine administrative control interface requirements	3
76	2.7.9	Determine quality query system requirements	3
77	2.7.10	Determine data mining requirements	3
78	2.7.11	Determine Application Programming Interface (API) requirements	4
79	<b>2.8</b>	<b>Inventory Systems</b>	
80	2.8.1	UCare (Inpatient electronic system)	1
81	2.8.2	PICIS (OR, Pre-Op, Post-Op)	1
82	2.8.3	Velos, Quesgen, LabMatrix (CTMS)	1
83	2.8.4	Axiom (Dentistry)	2
84	2.8.5	STOR (Outpatient electronic system)	2
85	2.8.6	Worx (Pharmacy)	2
86	2.8.7	SoftMed (Medical Records)	2
87	2.8.8	Co-Path (Pathology)	2
88	2.8.9	IDX Rad (Radiology)	2
89	2.8.10	Apollo (Cardiology)	2
90	2.8.11	FileMaker Pro Emergency Dept Sys	2
91	2.8.12	Radiology Images (JPEG)	2
92	2.8.13	CNexT (Cancer Registry)	2
93	2.8.14	TSI (Billing)	2
94	2.8.15	Langley-Porter (Psychiatric Hospital)	3
95	2.8.16	Breast Care Center (Dept Sys)	3
96	2.8.17	Urology (Dept Sys)	3
97	2.8.18	Misys (Clin Lab)	3
98	2.8.19	Siemens Lifetime Clinical Record - SFGH	3
99	2.8.20	UCSF Student Health Services	3
100	2.8.21	Vista (VA)	4
101	2.8.22	Epic (Kaiser)	4
102	<b>2.9</b>	<b>Determine Use Cases</b>	<b>1</b>
103	2.9.1	Define Use Cases	
104	2.9.2	Define Use Case Requirement/Testing Tracability	
105	<b>2.10</b>	<b>Medical Center Collaboration</b>	<b>1</b>
106	2.10.1	Hold Discovery Meeting with joint staffs	
107	2.10.2	Identify Phase 1 systems	
108	2.10.3	Hold bi-weekly meetings	
109	<b>3</b>	<b>System Design</b>	
110	<b>3.1</b>	<b>Design MPI functionality</b>	<b>1</b>
113	<b>3.2</b>	<b>Design Database Schema</b>	<b>1</b>
114	3.2.1	Complete DB Functional Design Document	
115	3.2.2	Complete DB Technical Design Document	
116	<b>3.3</b>	<b>Design Database Security</b>	<b>1</b>
117	3.3.1	Complete DB Security Functional Design Doc	
118	3.3.2	Complete DB Security Technical Design Doc	
119	<b>3.4</b>	<b>Design Edit, Transform Load (ETL) Model</b>	<b>1</b>
120	3.4.1	Complete ETL Functional Design Document	
121	3.4.2	Complete (ETL) Technical Design Document	
122	<b>3.5</b>	<b>Design Portal</b>	<b>1</b>
123	3.5.1	Complete Portal Functional Design Document	
124	3.5.2	Complete (Portal) Technical Design Document	
125	<b>3.6</b>	<b>Design Request Process</b>	<b>1</b>
126	3.6.1	Develop Request Form	
127	<b>3.7</b>	<b>Design Phase 1 Reporting Tools System</b>	<b>1</b>
128	3.7.1	Complete Reporting Functional Design Document	
129	3.7.2	Complete Reporting Technical Design Document	
130	<b>3.8</b>	<b>Design Security System</b>	<b>1</b>
131	3.8.1	Complete Security Functional Design Document	
132	3.8.2	Complete Security Technical Design Document	
133	<b>3.9</b>	<b>Design Audit System</b>	<b>1</b>
134	3.9.1	Complete Audit Functional Design Document	
135	3.9.2	Complete Audit Technical Design Document	
136	<b>3.10</b>	<b>Design Global Desktop System [Sun SGD]</b>	<b>1</b>
137	3.10.1	Complete Global Desktop Functional Design Document	
138	3.10.2	Complete Global Desktop Technical Design Document	
139	<b>3.11</b>	<b>Design Cohort Discovery</b>	<b>2</b>
140	3.11.1	Complete Cohort Functional Design Document	
141	3.11.2	Complete Cohort Technical Design Document	
142	<b>3.12</b>	<b>Design Ontology Mapping</b>	<b>2</b>

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143	3.12.1	Complete Ontology Mapping Functional Design Document	
144	3.12.2	Complete Ontology Mapping Technical Design Document	
145	<b>3.13</b>	<b>Design User Interface</b>	<b>2</b>
146	3.13.1	Complete User Interface Functional Design Document	
147	3.13.2	Complete User Interface Technical Design Document	
148	<b>3.14</b>	<b>Design Administrative Control Interface</b>	<b>2</b>
149	3.14.1	Complete Admin Control Functional Design Document	
150	3.14.2	Complete Admin Control Technical Design Document	
151	<b>3.15</b>	<b>Design Phase 2 Reporting Tools System</b>	<b>2</b>
152	3.15.1	Complete Reporting Ph 2 Functional Design Document	
153	3.15.2	Complete Reporting Phase 2 Technical Design Document	
154	<b>3.16</b>	<b>Design Two Factor Authentication</b>	<b>2</b>
155	3.16.1	Complete 2 Factor Auth Functional Design Document	
156	3.16.2	Complete 2 Factor Auth Technical Design Document	
157	<b>3.17</b>	<b>Design IRB Integration</b>	<b>2</b>
158	3.17.1	Complete IRB Functional Design Document	
159	3.17.2	Complete IRB Technical Design Document	
160	<b>3.18</b>	<b>Design Quality Query System</b>	<b>3</b>
161	3.18.1	Complete Quality Query Functional Design Document	
162	3.18.2	Complete Quality Query Technical Design Document	
163	<b>3.19</b>	<b>Design Data Mining System</b>	<b>3</b>
164	3.19.1	Complete Data Mining Functional Design Document	
165	3.19.2	Complete Data Mining Technical Design Document	
166	<b>3.20</b>	<b>Design API for BioInformatics</b>	<b>4</b>
167	3.20.1	Complete API Functional Design Document	
168	3.20.2	Complete API Technical Design Document	
169	<b>3.21</b>	<b>Determine Data Backup Plan</b>	<b>1</b>
170	<b>3.22</b>	<b>Determine Disaster Recovery Plan</b>	<b>1</b>
171	<b>3.23</b>	<b>Determine Contingency Plan</b>	<b>1</b>
172	<b>3.24</b>	<b>Determine initial web site content</b>	<b>1</b>
173	<b>3.25</b>	<b>Determine Data Archiving Plan</b>	<b>1</b>
174	<b>3.26</b>	<b>Communication</b>	<b>1</b>
175	3.26.1	Determine Content	
176	3.26.2	Determine Audience	
177	<b>3.27</b>	<b>Training</b>	<b>1</b>
178	3.27.1	Determine Training requirements	
179	<b>4</b>	<b>System Development</b>	
180	<b>4.1</b>	<b>MPI</b>	<b>1</b>
181	4.1.1	Develop MPI Database	
182	4.1.2	Develop disambiguation	
183	<b>4.2</b>	<b>Database I2B2 Extensions</b>	<b>1</b>
184	4.2.1	Schema Creation Script	
185	4.2.2	Database Security	
186	<b>4.3</b>	<b>Edit, Transform Load (ETL)</b>	<b>1</b>
187	4.3.1	Develop Edit, Transform Load (ETL)	
188	4.3.2	Develop PHI extraction process	
189	<b>4.4</b>	<b>Portal</b>	<b>1</b>
190	4.4.1	Develop Portal	
191	<b>4.5</b>	<b>Documentation Management</b>	<b>1</b>
192	4.5.1	Configure Documentation Management functionality	
193	<b>4.6</b>	<b>Reporting Tools - Phase I</b>	<b>1</b>
194	4.6.1	Develop Reporting Tools - Phase I	
195	<b>4.7</b>	<b>Security</b>	<b>1</b>
196	4.7.1	Develop Security System	
197	<b>4.8</b>	<b>Audit</b>	<b>1</b>
198	4.8.1	Develop audit tools	
199	<b>4.9</b>	<b>Global Desktop Interface</b>	<b>2</b>
200	4.9.1	Develop Global Desktop Interface	
201	<b>4.10</b>	<b>Cohort Discovery</b>	<b>2</b>
202	4.10.1	Develop Cohort Discovery	
203	<b>4.11</b>	<b>Ontology Mapping</b>	<b>2</b>
204	4.11.1	Develop mapping	
205	<b>4.12</b>	<b>User Interface</b>	<b>2</b>
206	4.12.1	Develop User Interface	
207	<b>4.13</b>	<b>Administrative Control Interface</b>	<b>2</b>
208	4.13.1	Develop Administrative Control Interface	
209	<b>4.14</b>	<b>Reporting Tools Phase II</b>	<b>2</b>
210	4.14.1	Reporting Tools - Phase II	
211	<b>4.15</b>	<b>Two Factor Authentication</b>	<b>2</b>
212	4.15.1	Build Interface	
213	<b>4.16</b>	<b>IRB Integration with the IRB</b>	<b>2</b>
214	4.16.1	Build Interface	
215	<b>4.17</b>	<b>Quality Query System</b>	<b>3</b>
216	4.17.1	Develop Quality Query System	

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ID	WBS	Task Name	Phase
217	<b>4.18</b>	<b>Data Mining</b>	<b>3</b>
218	4.18.1	Develop Data Mining	
219	<b>4.19</b>	<b>API</b>	<b>4</b>
220	4.19.1	Develop API	
221	<b>4.20</b>	<b>Marketing and Business Plans</b>	<b>1</b>
222	4.20.1	Develop communication documents	
223	4.20.2	Develop Services and Recharge mechanisms	
224	<b>4.20.3</b>	<b>Web Site</b>	<b>1</b>
225	4.20.3.1	Develop Initial Web Site Content	
226	<b>4.21</b>	<b>Training</b>	<b>1</b>
227	4.21.1	Develop Training Material	
228	<b>4.22</b>	<b>Unit Testing</b>	<b>1</b>
229	4.22.1	Test Secure Global Desktop	
230	4.22.2	Test Documentation Management functionality	
231	<b>4.23</b>	<b>Service Level Agreements</b>	<b>1</b>
232	4.23.1	ISP	
233	4.23.2	Operational Support	
234	4.23.3	Medical Center	
235	<b>4.24</b>	<b>Miscellaneous Plans</b>	<b>1</b>
236	4.24.1	Write Data Backup Plan	
237	4.24.2	Write Disaster Recovery Plan	
238	4.24.3	Write Contingency Plan	
239	4.24.4	Write Archiving Plan	
240	<b>5</b>	<b>System Test</b>	
241	<b>5.1</b>	<b>IDR (Iterative for Phases)</b>	
242	5.1.1	Create regression test system	
243	5.1.2	Develop specific test use cases	
244	5.1.3	Create test Edit, Transform Load (ETL) process	
245	5.1.4	Verify test system and Edit, Transform Load (ETL) process	
246	5.1.5	Perform integrated system testing	
247	5.1.6	User Acceptance Testing	
248	<b>5.2</b>	<b>Ontology Mapping</b>	
249	5.2.1	Create test system	
250	5.2.2	Develop specific test use cases	
251	5.2.3	Create test Edit, Transform Load (ETL) process	
252	5.2.4	Verify test system and Edit, Transform Load (ETL) process	
253	5.2.5	Perform integrated system testing	
254	5.2.6	User Acceptance Testing	
255	<b>5.3</b>	<b>System Sign Off</b>	
256	5.3.1	System owner sign off	
257	<b>6</b>	<b>System Implementation</b>	
258	<b>6.1</b>	<b>Support</b>	
259	6.1.1	Update support documentation	
260	6.1.2	Train Support personnel	
261	6.2	Create production system	
262	6.3	Verify Production System	
263	<b>6.4</b>	<b>Communication</b>	
264	6.4.1	Disseminate Communication Information	
265	<b>6.5</b>	<b>Training</b>	
266	6.5.1	Train Users on Application and Security requirements	
267	<b>6.6</b>	<b>Deployment</b>	
268	6.6.1	Deploy production system	
269	<b>7</b>	<b>System Warranty</b>	
270	7.1	Monitor System	
271	<b>8</b>	<b>Usability Verification</b>	
272	8.1	Review Usability with Pls	
273	<b>9</b>	<b>Post Implementation Tasks</b>	