Self Assessment Plan of the Health-e-Child project work packages

IST-FP6- Health-e-Child

Contract Number 027749

D1.1 Self Assessment Plan

Contractual Date of Delivery to the EC: 15.03.2006
Actual Date of Delivery to the EC:
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Workpackage: WP1- Project Management
Security: Restricted
Nature: Report
Version: 1.0
Total number of pages: 30
Abstract: This document analyses the activities in each work package, subdividing them by single task, evaluating the objectives of each task and the related measurement of achievable success/unsuccess. A reasoned choice of suitable indicators for self-assessment has been defined.
Keywords (optional):

Health-e-Child Consortium

This document is part of a research project partially funded by the IST Programme of the Commission of the European Communities as project number IST-FP6-027749. The partners in this project are:

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- Lynkeus SRL, Rome, Italy
- I.R.C.C.S. Giannina Gaslini, Genoa, Italy

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Changes

Version	Date	Author	Changes
0.1	1-Mar-2006	E. Morley-Fletcher	Initial
1.0	15-Mar-2006	Joerg Freund	Released
1.1	15-Mar-2006	Joerg Freund	Released, with title

Contents

1. Methodological note

The self-assessment plan of the HeC project results from a joint effort of all the consortium partners. Both the Work package Leaders (WPLs) and the Scientific Committee Chair have been involved in defining modes and characteristics for a self-assessment of the HeC project.

1.1 WPs performance indicators and self-assessment plans

As a first input, each WPL has been requested to clarify the main objectives each respective WP aims to achieve – specifying and describing the activities which are deemed necessary for achieving the designated objectives.
As an intermediate step, a description of the measurement processes/methodologies which have been adopted by the various WPLs have also been requested, in order to make it possible to self-assess the results achieved carrying on the activities associated with the above mentioned WP objectives.
Finally, and on the basis of the previous inputs, a series of correlated indicators for measuring the outcomes of the various WP activities has been defined, associating them, as much as possible, to task-level details with an approximate numerical indication of the allowed threshold limits related to each WP objective.
The format of the WP benchmarking assessment template used for these purposes as well as the various WP inputs provided for by WPLs are included in the following section of this document.
As a further result of the information gathered, some Maps have been drawn outlining the objectives and the measurement processes and grouped by Activities breakdown.
In their inputs, WPLs have included qualitative (subjective) and quantitative (objective) indicators. While qualitative scales usually range between 1 and 5, with level 5 being the most satisfying achievement of each task's goal, quantitative indicators are related to well defined measurement processes and measurement units.

The following WPs will be assessed using qualitative indicators mainly:

WP2 – User requirements specifications
WP3 – Legal, ethical, and regulatory issues
WP4 – Privacy and security
WP5 – Grid platform
WP6 – Medical vertical knowledge representation
WP7 – Data management layer and data integration mechanisms
WP8 – Medical query processing
WP12 – Decision support systems
WP13 – Biomedical knowledge discovery
WP14 – Deployment of the data management system and Grid gateway

The following WPs will be assessed using quantitative indicators:

WP1 – Project coordination / management
WP9 – Data collection
WP10 – Ground truth (annotated data) and clinical knowledge gathering
WP11 – Integrated disease modelling
WP15 – Training
WP16 – Dissemination

The set indicators, updated whenever necessary, will be monitored on a yearly basis, at least 1-2 months before the end of each reporting period, in order to make them serve as a specific tool for progress reporting within the project management activity provided for to the Consortium by the Project Coordinator, the Project Management Team Leader and the whole Project Management Team.

1.2 The Scientific Committee Project Review.

The Scientific Committee (SC) will organize a Scientific Project Review about 1-2 months before the annual Technical Review (EC review). Following the scientific review, the SC will produce a set of documents assessing the current scientific status of the project.

Among the various SC functions, as described in Contract-Annex 1, the following ones are of particular relevance:

> "…- *Assess technical progress by comparing the project results to the state-of-the-art;*
> - *Periodically organise sessions for auditing and evaluating the research performed;*
> - *Stipulate and evaluates measurable results for project activities;* …"

Taking into account these functions, the Scientific Project Review might also include suggestions for adopting different or improved self-assessment criteria. The SPR will be handed over to the Executive Board, which shall implement changes, if necessary, appropriate changes and use the new release of self-assessment criteria it in the Reports submitted to the Commission.

1.3 Yearly re-definition of the Self-Assessment plan

It is the WPLs' common belief that the Self Assessment plan must be considerd as a dynamic process, undergoing appropriate updating every year in order to validate/modify the chosen indicators, also on the basis of the SC yearly evaluation. The re-definition of the Self-Assessment indicators may therefore represent a deliverable at the end of each Reporting period.

2. Rationale of the project's work breakdown structure.

For a better understanding of the project's objectives we refer to the work breakdown structure.

A1: Project Coordination / Management
WP1 – Project coordination / management
A2: User Requirements Specifications
WP2 – User requirements specifications
A3: Ethical, Legal and Social Issues
WP3 – Legal, ethical, and regulatory issues
WP4 – Privacy and security
A4: Platform Development, Vertical Data Integration and Knowledge Representation
WP5 – Grid platform
WP6 – Medical vertical knowledge representation
WP7 – Data management layer and data integration mechanisms
WP8 – Medical query processing
A5: Data Collection, Annotation and Knowledge Gathering
WP9 – Data collection
WP10 – Ground truth (annotated data) and clinical knowledge gathering
A6: Disease Modelling, Decision Support and Knowledge Discovery based on Integrated Biomedical Information
WP11 – Integrated disease modelling
WP12 – Decision support systems
WP13 – Biomedical knowledge discovery
A7: System Integration
WP14 – Deployment of the data management system and Grid gateway
A8: Dissemination Policy and Broader Impact
WP15 – Training
WP16 – Dissemination

In this work breakdown, early documentation of project scope and context (and associated users' requirements) has been considered an essential component of the HeC Project. This will ensure common understanding between the clinicians and those responsible for research and development from the outset of the development stage, will define the bridge between the targets of technical work packages and accredited project goals, will guide the development process involving multiple partners and will assist the test phase of the delivered components.
User Requirements Specifications (Activity 2) will enforce this spirit in the HeC project, its deliverable serving as an early milestone for the project and the successful completion of this activity will add a substantial part of the cohesion between the remaining project work packages. **Ethical, Legal and Social Issues** (Activity 3) will investigate the legal, ethical

and social issues and constraints that affect the delivery and deployment of the HeC prototype(s). Given the confidential nature of medical data and the local ethical rules governing its usage it is important that appropriate security and privacy policies are enforced through (pseudo)anonymisation of patient/organ/tissue/cellular/genetic data.

Both **User Requirements Specifications** A2 and **Ethical, Legal and Social Issues** A3 involve RTD activities alone. During the first 18 months of the project it is intended that progress will have been made to facilitate a preliminary demonstration of the project prototype. This will show the viability of the Grid infrastructure, the feasibility of the ontological approach to data/knowledge integration and will show the first results from disease modelling and will lay the foundations for the decision support elements of the project.

The heart of the project concerning data collection, information and knowledge modelling and integration and clinical applications is implemented by **Platform Development, Vertical Data Integration and Knowledge Representation** (Activity 4**), Data Collection, Annotation and Knowledge Gathering** (Activity 5**), Disease Modelling, Decision Support and Knowledge Discovery based on Integrated Biomedical Information** (Activity 6).

Following the requirements identified in **User Requirements Specifications** (Activity 2), these Activities will provide the three main project elements: **integrated disease modelling**, **knowledge discovery** and **decision support** systems and services for multiple paediatric hospitals and clinics across Europe.

Platform Development, Vertical Data Integration and Knowledge Representation (Activity 4**)** is directed at providing a robust Grid-based information infrastructure that provides access to a fully integrated body of information integrating data collected and annotated with ground truth data in **Data Collection, Annotation and Knowledge Gathering** (Activity 5**)**.

Disease Modelling, Decision Support and Knowledge Discovery based on Integrated Biomedical Information (Activity 6) will concentrate on the modelling aspects of the three candidate diseases under study in the HeC project: brain tumour, paediatric heart diseases and inflammatory diseases across the vertical levels identified in **Platform Development, Vertical Data Integration and Knowledge Representation** (Activity 4**)**.

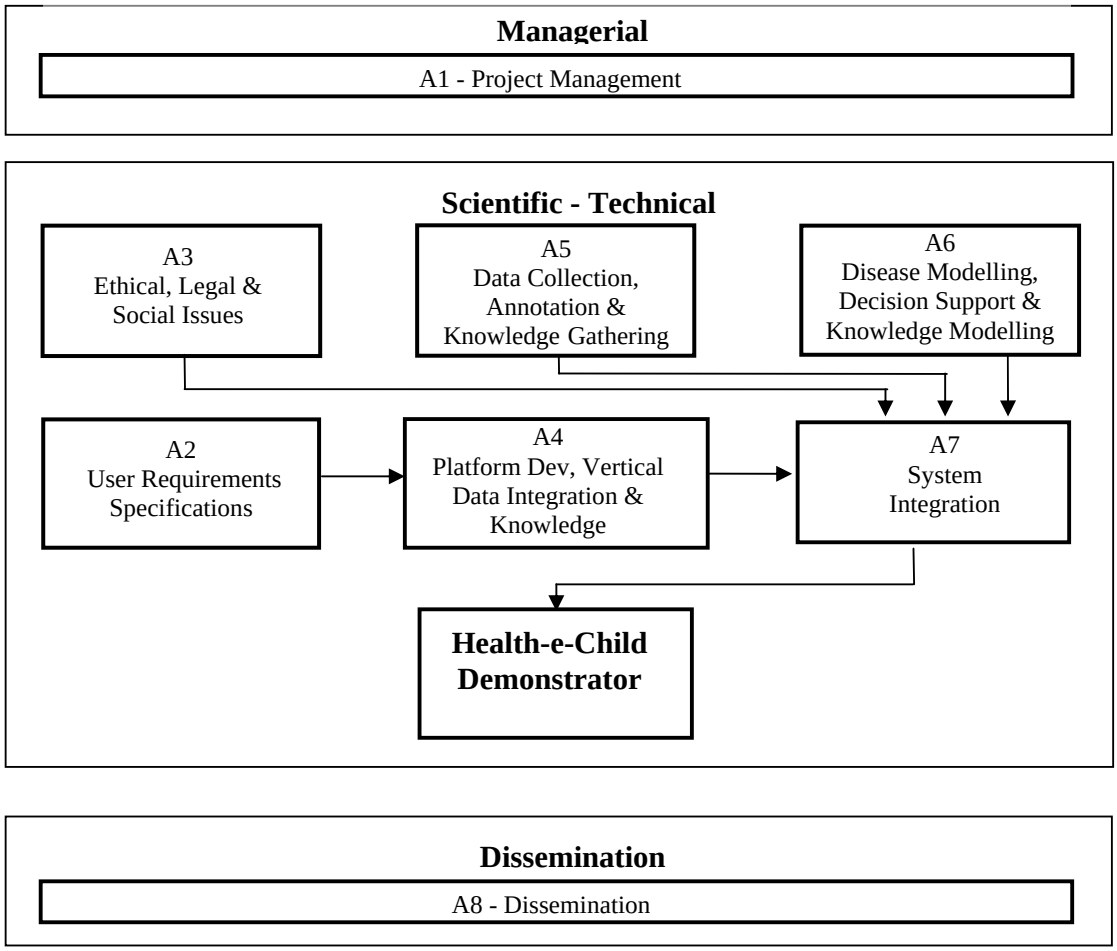
In addition *Decision support systems - WP12* within **Disease Modelling, Decision Support and Knowledge Discovery based on Integrated Biomedical Information** (Activity 6) aims to develop clinical decision support systems based on this integrated biomedical data.

It is envisaged that all manpower in **Platform Development, Vertical Data Integration and Knowledge Representation** (Activity 4**), Data Collection, Annotation and Knowledge Gathering** (Activity 5**), Disease Modelling, Decision Support and Knowledge Discovery based on Integrated Biomedical Information** (Activity 6) will be RTD based with additional management costs.

System Integration (Activity 7) is charged with the systems integration and deployment responsibility for the outputs of **Platform Development, Vertical Data Integration and Knowledge Representation** (Activity A4**), Data Collection, Annotation and Knowledge Gathering** (Activity 5**), Disease Modelling, Decision Support and Knowledge Discovery based on Integrated Biomedical Information** (Activity 6).

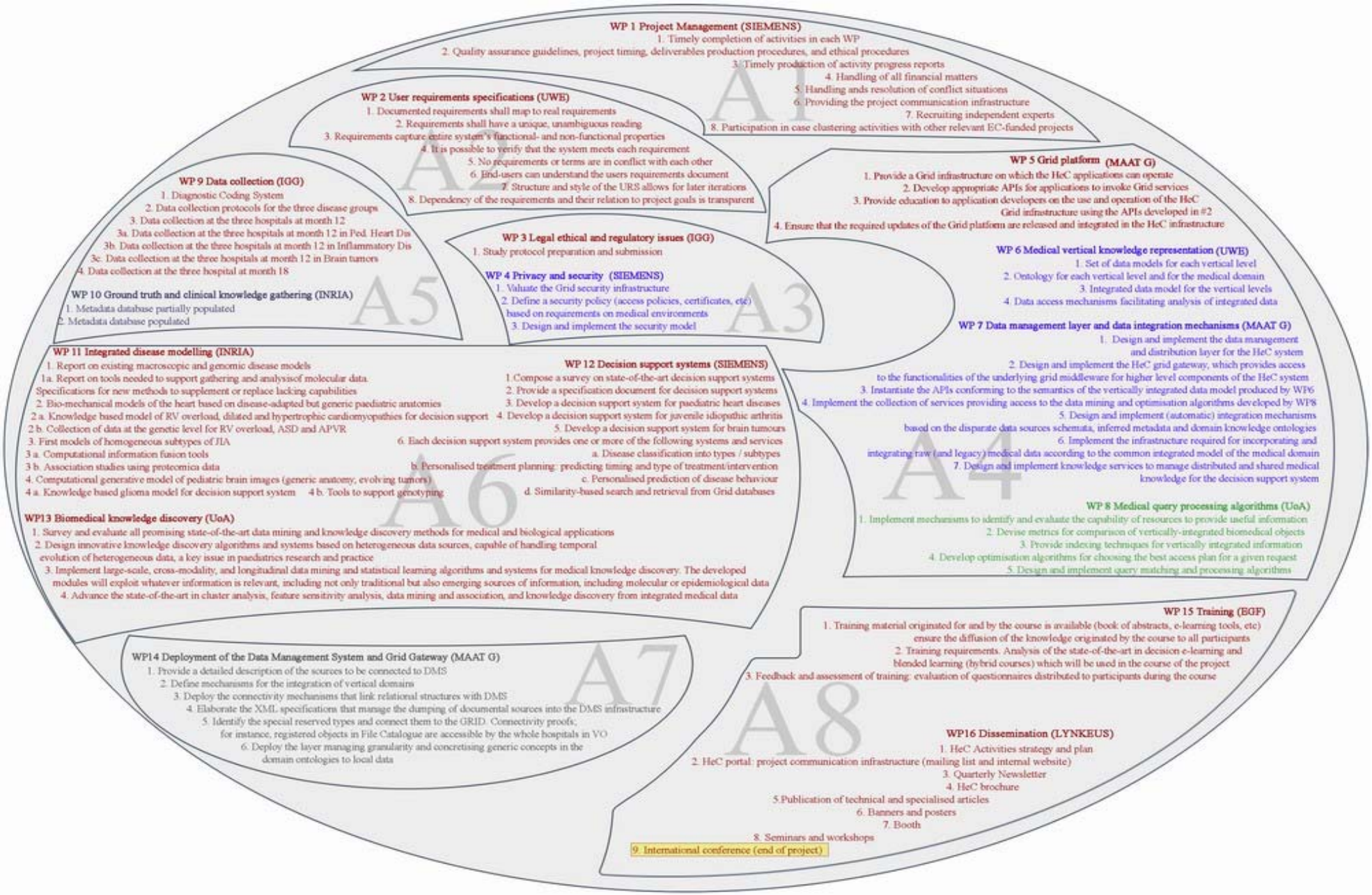
In the first 18 months this activity will only take place at a low level – sufficient for the demonstration of the 18-month prototype. This will involve demonstration activities in addition to RTD activities.
Finally **Dissemination Policy and Broader Impact** (Activity 8) will concentrate on the training aspects associated with prototype use after 18 months of HeC and will coordinate the project's dissemination actions.

3. Graphical presentation of the Activities grouping the various WPs



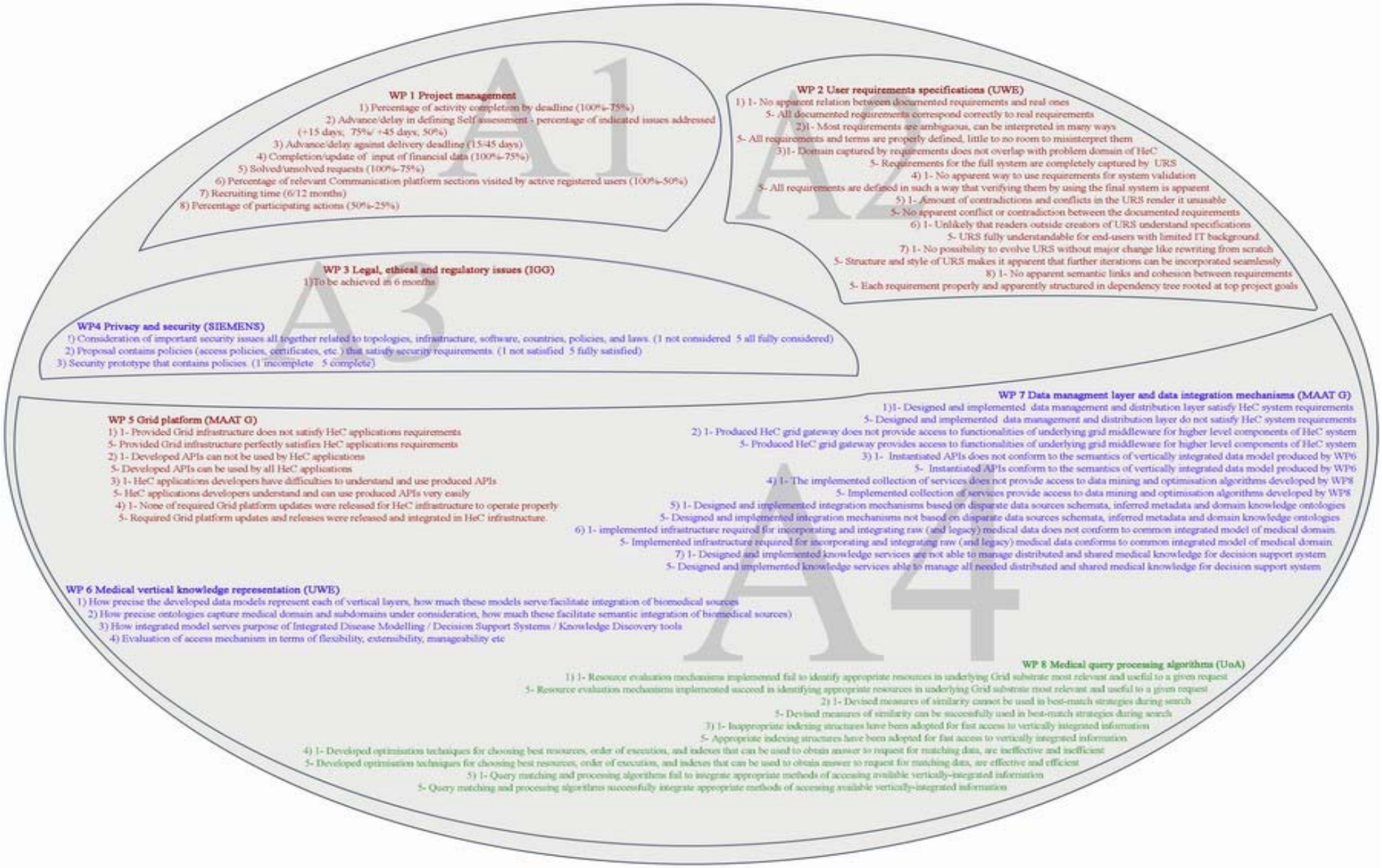
4. Self-Assessment Map of WPs Objectives grouped by Activities breakdown

Start Month 1 – Month 3 – Month 4 – Month 5 - Month 6



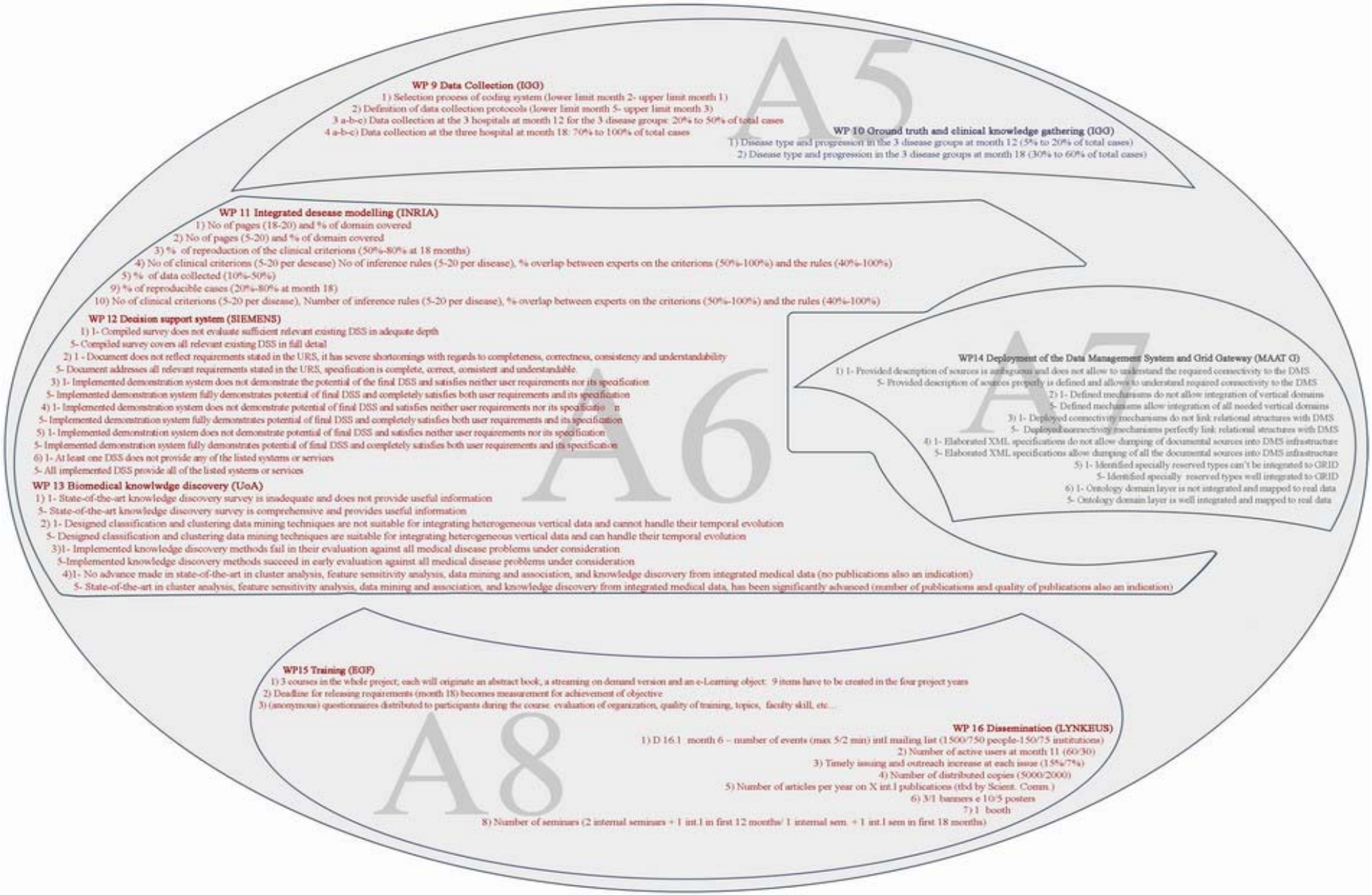
5. Self-Assessment Map of WPs 1-8 Measurement Processes and Units grouped by Activities breakdown

Start **Month 1** – **Month 3** – **Month 4** – **Month 5** - **Month 6**



6. Self-Assessment Map of WPs 9-16 Measurement Processes and Units grouped by Activities breakdown

Start **Month 1** – **Month 3** – **Month 4** – **Month 5** - **Month 6**



7. WPs Self-Assessment Plan

7.1 WP 1 Project Management

WP benchmarking for HeC Assessment report

Partner:	SIEMENS	**Date:**	30.01.06
WP Manager:	Joerg Freund	**Work Package:**	A1 / WP1 Project Management

1. Work Package Objectives [Indication and description of objectives to achieve through activities in WBS**]**

Objective No:	*WBS code*	*Objective:*	*Milestones ?:*
1.1.1	T1.1	Timely completion of activities in each single WP.	M1.1
1.1.2	T1.2 / D.1.1; D.1.5	Providing quality assurance guidelines, outlining project timing, quality procedures, deliverables production procedures, and ethical procedures.	M1.1
1.1.3	T1.3 / D.1.2; D.1.3	Timely production of activity progress reports required by EU contracts (i.e Quarterly project reports).	M1.1
1.1.4	T1.4	Effective handling of all financial matters arising during the course of the project.	M1.1
1.1.5	T1.5	Effective handling and resolution of all contractually relevant or partner conflict situations.	M1.1
1.1.6	T1.6 / D.1.4	Efficient organising, planning and reporting on all meetings envisioned in the project plan, and providing the project communication infrastructure.	M1.2
1.1.7	T1.7	Effective recruiting independent experts from institutions internal and external to the consortium members to staff the Scientific Committee and the Ethical and Legal Review Committees .	M1.1
1.1.8	T1.8	Prompt participation to meetings, contribution to common plans and actions as well as participation to events organised by the European Commission in case clustering activities with other relevant EC-funded projects are organised.	

2. Measurement [Description of measurement process/methodology associated with WP objectives**]**
(How could the results of the WBS activities be measured against the above objectives?)

Objective No	*Measurement process and units:*
1.1.1	Percentage of activity completion by deadline.
1.1.2	Advance/delay in defining Self assessment and other quality guidelines and percentage of indicated issues addressed.
1.1.3	Number days in advance/delay against delivery deadline.
1.1.4	Percentage of completion/update of input of financial data.
1.1.5	Percentage of solved/unsolved requests relevant to contract/Consortium Agreement amendments; percentage of solved/unsolved partners' conflicts.
1.1.6	Percentage of relevant Communication platform sections visited by active registered users.
1.1.7	Recruiting Time.
1.1.8	Percentage of participating actions on possible opportunities.

3. Indicators [Upper and lower limits (numbers) associated with WP objectives and measurement units**]**		
Objective No	Upper limits (result's maximum expectation)	Lower limits (below which result not acceptable)
1.1.1	100%	75%
1.1.2	+15 days; 75%	+45 days; 50%
1.1.3	+15 days;	+45 days;
1.1.4	100%	75%
1.1.5	100%	75%
1.1.6	100%	50%
1.1.7	6months	12 months
1.1.8	50%	25%

7.2 WP 2 User Requirements Specifications

WP benchmarking for HeC Assessment report			
Partner:	UWE	**Date:**	2006. 01. 26
WP Manager:	Tamás Hauer	**Work Packages:**	A2 / WP2 User Requirements Specifications

Objective No:	*Quality*	*Description*
1	Correctness	The documented requirements shall map to real requirements
2	Unambiguousness	The requirements shall have a unique, unambiguous reading
3	Completeness	The requirements capture the entire system's functional- and non-functional properties
4	Verifiability	It is possible to verify that the system meets each requirement
5	Consistency	No requirements or terms are in conflict with each other
6	Understandability	The end-users can understand the users requirements document
7	Modifiability	The structure and style of the URS allows for later iterations
8	Traceability	The dependency of the requirements and their relation to project goals is transparent.

2. Measurement: Each quality item will be evaluated by the Scientific Committee on a 1-5 scale	
Objective No	*Measurement process and units:*
1	1- There is no apparent relation between documented requirements and real ones … 5- All documented requirements correspond correctly to real requirements
2	1- Most requirements are ambiguous, can be interpreted in many ways … 5- All requirements and terms are properly defined and there is little to no room to misinterpret them
3	1- The domain captured by the requirements does not overlap with the problem domain of HeC … 5- The requirements for the full system are completely captured by the URS
4	1- There is no apparent way to use the requirements for system validation … 5- All requirements are defined in such a way that verifying them by using the final system is apparent
5	1- The amount of contradictions and conflicts in the URS render it unusable … 5- There is no apparent conflict or contradiction between the documented requirements.
6	1- It is unlikely that readers outside the creators of the URS understand the specifications. … 5- The URS is fully understandable for end-users with limited IT background.
7	1- There is no possibility to evolve the URS without a major change like rewriting from scratch. … 5- The structure and style of the URS makes it apparent that further iterations can be incorporated seamlessly.
8	1- There is no apparent semantic links and cohesion between the requirements … 5- Each requirement is properly and apparently structured in a dependency tree rooted at top project goals

3. Indicators [Upper and lower limits (numbers) associated with WP objectives and measurement units**]**		
Objective No	Upper limits (result's maximum expectation)	Lower limits (below which result not acceptable)
1	5	4
2	4	3
3	4	3
4	4	3
5	5	4
6	4	3
7	5	4
8	4	3

7.3 WP3 Legal, ethical, and regulatory issues

WP benchmarking for HeC Assessment report

Partner:	IGG	**Date:**	
WP Manager:	Prof. Alberto Martini	**Work Packages:**	A3 / WP3 Legal, ethical, and regulatory issues

1. Work Package Objectives [Description of objectives to achieve through activities in work breakdown structure WBS**]**

Objective No:	*WBS code*	*Objective:*	*Milestones?:*
1	T3.1	Study protocol preparation and submission	M3.1
2	T3.3	Effective identification and solution of ethical, legal and regulatory issues	D 3.2

2. Measurement [Description of measurement process/methodology associated with WP objectives**]**
(How could the results of the WBS activities be measured against the above objectives?)

Objective No	*Measurement process and units:*
1	Timely submission D 3.1 month 6
2	Percentage of identified ethical, legal and regulatory issues addressed/not addressed within 3 months from identification

3. Indicators [Upper and lower limits (numbers) associated with WP objectives and measurement units**]**

Objective No	Upper limits (result's maximum expectation)	Lower limits (below which result not acceptable)
1	O days delay	45 days delay
2	100%	80%

7.4 WP4 Privacy and security

WP benchmarking for HeC Assessment report

Partner:	Siemens AG	**Date:**	25.1.2006
WP Manager:	Jörg Freund	**Work Packages:**	A3 / WP4 Privacy and security

1. Work Package Objectives [Description of objectives to achieve through activities in work breakdown structure WBS**]**

Objective No:	*WBS code*	*Objective:*	*Milestones?:*
1		To evaluate the Grid security infrastructure.	
2		To define a security policy (access policies, certificates, etc) based on requirements on medical environments.	
3		To design and implement the security model.	

2. Measurement [Description of measurement process/methodology associated with WP objectives**]**
(How could the results of the WBS activities be measured against the above objectives?)

Objective No	*Measurement process and units:*
1.	Consideration of the important security issues all together related to topologies, infrastructure, software, countries, policies, and laws. (1 not considered … 5 all fully considered)
2.	Proposal contains the policies (access policies, certificates, etc.) that satisfy the security requirements. (1 not satisfied … 5 fully satisfied)
3.	Security prototype that contains the policies. (1 incomplete … 5 complete)

3. Indicators [Upper and lower limits (numbers) associated with WP objectives and measurement units**]**

Objective No	Upper limits (result's maximum expectation)	Lower limits (below which result not acceptable)
1.	5	3
2.	4	3
3.	4	3

7.5 WP5 Grid platform

WP benchmarking for HeC Assessment report			
Partner:	Maat GKnowledge	**Date:**	2006. 01. 26
WP Manager:	Jérôme Revillard	**Work Packages:**	A4 / WP5 Grid platform
Objective No:	*Description*		
1	To provide a Grid infrastructure on which the Health-e-Child applications can operate.		
2	To develop appropriate APIs for applications to invoke Grid services.		
3	To provide education to application developers on the use and operation of the Health-e-Child Grid infrastructure using the APIs developed in #2.		
4	To ensure that the required updates of the Grid platform are released and integrated in the Health-e-Child infrastructure.		
2. Measurement: Each quality item will be evaluated by the Scientific Committee on a 1-5 scale			
Objective No	*Measurement process and units:*		
1	1- The provided Grid infrastructure does not satisfy the Health-e-Child applications requirements … 5- The provided Grid infrastructure perfectly satisfies the Health-e-Child applications requirements		
2	1- The developed APIs can not be used by the Health-e-Child applications … 5- The developed APIs can be used by all the Health-e-Child applications		
3	1- Health-e-Child applications developers have difficulties to understand and use the produced APIs … 5- Health-e-Child applications developers understand and can use the produced APIs very easily		
4	1- None of the required Grid platform updates were released for the Health-e-Child infrastructure to operate properly. … 5- Required Grid platform updates and releases were released and integrated in the Health-e-Child infrastructure.		
3. Indicators [Upper and lower limits (numbers) associated with WP objectives and measurement units**]**			
Objective No	Upper limits (result's maximum expectation)	Lower limits (below which result not acceptable)	
1	5	4	
2	5	4	
3	4	3	
4	5	4	

7.6 WP6 Medical vertical knowledge representation

WP benchmarking for HeC Assessment report

Partner:	UWE	**Date:**	26.01.2006
WP Manager:	Dmitry Rogulin	**Work Packages:**	A4 / WP6 Medical vertical knowledge representation

1. Work Package Objectives [Description of objectives to achieve through activities in work breakdown structure WBS**]**

Objective No:	*WBS code*	*Objective:*	*Milestones?:*
1		Develop a set of data models for each vertical level	D6.1
2		Provide an ontology for each vertical level and for the medical domain	D6.1
3		Develop an integrated data model for the vertical levels	D6.1
4		Define data access mechanisms that facilitate the analysis of integrated data	D6.1

2. Measurement [Description of measurement process/methodology associated with WP objectives**]**
(How could the results of the WBS activities be measured against the above objectives?)

Objective No	*Measurement process and units:*
1	Evaluation how precise the developed data models represent each of vertical layers, how much these models serve/facilitate the integration of biomedical sources (Scientific/Technical Steering Committee) Scores: 1 - very bad ; 2 – bad ; 3 – satisfactory ; 4 – good ; 5 - very good
2	Evaluation how precise the ontologies capture the medical domain and the subdomains under consideration, how much these facilitate the semantic integration of the biomedical sources (Scientific/Technical Steering Committee) Scores: 1 - very bad ; 2 – bad ; 3 – satisfactory ; 4 – good ; 5 - very good
3	Evaluation how the integrated model serves the purpose of Integrated Disease Modelling / Decision Support Systems / Knowledge Discovery tools (Scientific/Technical Steering Committee) Scores: 1 - very bad ; 2 – bad ; 3 – satisfactory ; 4 – good ; 5 - very good
4	Evaluation of the access mechanisms (in terms of flexibility, extensibility, manageability etc) Scores: 1 - very bad ; 2 – bad ; 3 – satisfactory ; 4 – good ; 5 - very good

3. Indicators [Upper and lower limits (numbers) associated with WP objectives and measurement units**]**

Objective No	Upper limits (result's maximum expectation)	Lower limits (below which result not acceptable)
1	5	3
2	5	3
3	5	3
4	4	3

7.7 WP7 Data management layer and data integration mechanisms

WP benchmarking for HeC Assessment report			
Partner:	Maat GKnowledge	**Date:**	2006. 01. 26
WP Manager:	David Manset	**Work Packages:**	A4 / WP7 Data management layer and data integration mechanisms

Objective No:	*Description*
1	To design and implement the data management and distribution layer for the Health-e-Child system
2	To design and implement the Health-e-Child grid gateway, which provides access to the functionalities of the underlying grid middleware for higher level components of the Health-e-Child system.
3	To instantiate the APIs conforming to the semantics of the vertically integrated data model produced by WP6
4	To implement the collection of services providing access to the data mining and optimisation algorithms developed by WP8.
5	To design and implement (automatic) integration mechanisms based on the disparate data sources schemata, inferred metadata and domain knowledge ontologies
6	To implement the infrastructure required for incorporating and integrating raw (and legacy) medical data according to the common integrated model of the medical domain.
7	To design and implement knowledge services to manage distributed and shared medical knowledge for the decision support system
2. Measurement: Each quality item will be evaluated by the Scientific Committee on a 1-5 scale	
Objective No	*Measurement process and units:*
1	1- The designed and implemented data management and distribution layer satisfy the Health-e-Child system requirements 5- The designed and implemented data management and distribution layer do not satisfy the Health-e-Child system requirements
2	1- The produced Health-e-Child grid gateway does not provide access to the functionalities of the underlying grid middleware for higher level components of the Health-e-Child system. 5- The produced Health-e-Child grid gateway provides access to the functionalities of the underlying grid middleware for higher level components of the Health-e-Child system.
3	1- The instantiated APIs does not conform to the semantics of the vertically integrated data model produced by WP6 5- The instantiated APIs is conform to the semantics of the vertically integrated data model produced by WP6
4	1- The implemented collection of services do not provide access to the data mining and optimisation algorithms developed by WP8 5- The implemented collection of services provide access to the data mining and optimisation algorithms developed by WP8
5	1- The designed and implemented integration mechanisms are based on the disparate data sources schemata, inferred metadata and domain knowledge ontologies 5- The designed and implemented integration mechanisms are not based on the disparate data sources schemata, inferred metadata and domain knowledge ontologies
6	1- The implemented infrastructure required for incorporating and integrating raw (and legacy) medical data does not conform to the common integrated model of the medical domain. 5- The implemented infrastructure required for incorporating and integrating raw (and legacy) medical data conforms to the common integrated model of the medical domain.
7	1- The designed and implemented knowledge services are not able to manage distributed and shared medical knowledge for the decision support system 5- The designed and implemented knowledge services able to manage distributed and shared all the needed medical knowledge for the decision support system

3. Indicators [Upper and lower limits (numbers) associated with WP objectives and measurement units**]**		
Objective No	Upper limits (result's maximum expectation)	Lower limits (below which result not acceptable)
1	5	4
2	5	4
3	5	4
4	5	4
5	4	3
6	4	3
7	5	4

7.8 WP8 Medical query processing

WP benchmarking for HeC Assessment report			
Partner:	UoA	**Date:**	2006. 01. 27
WP Manager:	Harry Dimitropoulos	**Work Packages:**	A4 / WP8 Medical query processing

Objective No:	*Description*
1	To implement mechanisms to identify and evaluate the capability of resources to provide useful information
2	To devise metrics for comparison of vertically-integrated biomedical objects
3	To provide indexing techniques for vertically integrated information
4	To develop optimisation algorithms for choosing the best access plan for a given request
5	To design and implement query matching and processing algorithms

2. Measurement: Each quality item will be evaluated by the Scientific Committee on a 1-5 scale

Objective No	*Measurement process and units:*
1	1- The resource evaluation mechanisms implemented fail to identify the appropriate resources in the underlying Grid substrate that are most relevant and useful to a given request … 5- The resource evaluation mechanisms implemented succeed in identifying the appropriate resources in the underlying Grid substrate that are most relevant and useful to a given request
2	1- The devised measures of similarity cannot be used in best-match strategies during search … 5- The devised measures of similarity can be successfully used in best-match strategies during search
3	1- Inappropriate indexing structures have been adopted for fast access to vertically integrated information … 5- Appropriate indexing structures have been adopted for fast access to vertically integrated information
4	1- The developed optimisation techniques for choosing best resources, order of execution, and indexes that can be used to obtain an answer to a request for matching data, are ineffective and inefficient … 5- The developed optimisation techniques for choosing best resources, order of execution, and indexes that can be used to obtain an answer to a request for matching data, are effective and efficient
5	1- The query matching and processing algorithms fail to integrate the appropriate methods of accessing the available vertically-integrated information … 5- The query matching and processing algorithms successfully integrate the appropriate methods of accessing the available vertically-integrated information

3. Indicators [Upper and lower limits (numbers) associated with WP objectives and measurement units**]**

Objective No	Upper limits (result's maximum expectation)	Lower limits (below which result not acceptable)
1	5	4
2	5	3
3	5	4
4	5	3
5	5	4

7.9 WP9 Data collection

WP benchmarking for HeC Assessment report

Partner:	IGG	**Date:**	
WP Manager:	Giacomo Pongiglione	**Work Packages:**	A5 / WP9 Data collection

1. Work Package Objectives [Description of objectives to achieve through activities in work breakdown structure WBS**]**

Objective No:	*WBS code*	*Objective:*	*Milestones?:*
1	1	Diagnostic Coding System for pediatric heart disease	M9.1
2	2	Data collection protocols for the three disease groups	M9.2
3	3	Data collection at the three hospitals at month 12	M9.3
	3a	Data collection at the three hospitals at month 12 in Ped. Heart Dis.	
	3b	Data collection at the three hospitals at month 12 in Inflammatory Dis.	
	3c	Data collection at the three hospitals at month 12 in Brain tumors.	
4	4	Data collection at the three hospital at month 18	M9.4

2. Measurement [Description of measurement process/methodology associated with WP objectives**]**
(How could the results of the WBS activities be measured against the above objectives?)

Objective No	*Measurement process and units:*
1	Selection process of the coding system
2	Definition of data collection protocols for the three disease groups
3a	Data collection at the three hospitals at month 12 in Ped. Heart Dis
3b	Data collection at the three hospitals at month 12 in Inflammatory Dis.
3c	Data collection at the three hospitals at month 12 in Brain Tumors.
4a	Data collection at the three hospital at month 18 in Ped. Heart Dis
4b	Data collection at the three hospital at month 18 in Inflammatory Dis.
4c	Data collection at the three hospital at month 18 in Brain Tumors.

3. Indicators [Upper and lower limits (numbers) associated with WP objectives and measurement units**]**

Objective No	Upper limits (result's maximum expectation)	Lower limits (below which result not acceptable)
1	Preliminary coding system by month 1	Preliminary coding system by month 2
2	Preliminary data collection protocols by m. 3	Preliminary data collection protocols by m. 5
3a	50% of the total number of cases	20% of the total number of cases
3b	50% of the total number of cases	20% of the total number of cases
3c	50% of the total number of cases	20% of the total number of cases
4a	100% of the total number of cases	70% of the total number of cases
4b	100% of the total number of cases	70% of the total number of cases
4c	100% of the total number of cases	70% of the total number of cases

7.10 WP10 Ground truth (annotated data) and clinical knowledge gathering

WP benchmarking for HeC Assessment report

Partner:	IGG	**Date:**	
WP Manager:	Giacomo Pongiglione	**Work Packages:**	A5 / WP10 Ground truth (annotated data) and clinical knowledge gathering

1. Work Package Objectives [Description of objectives to achieve through activities in work breakdown structure WBS**]**

Objective No:	*WBS code*	*Objective:*	*Milestones?:*
1	1	Metadata database partially populated	M10.1
2	2	Metadata database populated	M10.2

2. Measurement [Description of measurement process/methodology associated with WP objectives**]**
(How could the results of the WBS activities be measured against the above objectives?)

Objective No	*Measurement process and units:*
1a	Disease type and progression in Pediatric Heart Disease at month 12
1b	Disease type and progression in Inflammatory Disease at month 12
1c	Disease type and progression in Brain Tumors at month 12
2a	Disease type and progression in Pediatric Heart Disease at month 18
2b	Disease type and progression in Inflammatory Disease at month 18
2c	Disease type and progression in Brain Tumors at month 18

3. Indicators [Upper and lower limits (numbers) associated with WP objectives and measurement units**]**

Objective No	Upper limits (result's maximum expectation)	Lower limits (below which result not acceptable)
1a	20% of total number of cases	5% of total number of cases
1b	20% of total number of cases	5% of total number of cases
1c	20% of total number of cases	5% of total number of cases
2a	60% of total number of cases	30% of total number of cases
2b	60% of total number of cases	30% of total number of cases
2c	60% of total number of cases	30% of total number of cases

7.11 WP11 Integrated disease modeling

WP benchmarking for HeC Assessment report

Partner:	INRIA	**Date:**	25-01-2006
WP Manager:	X. Pennec	**Work Packages:**	A6 / WP11 Integrated disease modeling

1. Work Package Objectives [Description of objectives to achieve through activities in work breakdown structure WBS**]**

Objective No:	*WBS code*	*Objective:*	*Milestones?:*
11.1.1	T11.1/D11.1	Report on existing macroscopic and genomic disease models	M11.1
11.1.2	T11.1D11.1	Report on tools needed to support gathering and analysis of molecuar data. Specifications for new methods to supplement or replace lacking capabilities.	M11.1
11.2.1	T11.2/D11.2	Bio-mechanical models of the heart based on disease-adapted but generic pediatric anatomies.	M11.2
11.2.2	T11.2/D11.2	Knowledge based model of RV overload, dilated and hypertrophic cardiomyopathies for decision support	M11.2
11.2.3	T11.2	Collection of data at the genetic level for RV overload, ASD and APVR.	
11.3.1	D11.3	First models of homogeneous subtypes of JIA	M11.2
11.3.2	T11.3	Computational information fusion tools.	
11.3.3	T11.3	Association studies using proteomica data	
11.4.1	D11.4	Computational generative model of pediatric brain images (generic anatomy, evolving tumors)	M11.2
11.4.2	D11.4	Knowledge based glioma model for decision support system	M11.2
11.4.3	T11.4	Tools to support genotyping.	

2. Measurement [Description of measurement process/methodology associated with WP objectives**]**
(How could the results of the WBS activities be measured against the above objectives?)

Objective No	*Measurement process and units [min-max]*
11.1.1	Number of pages [3p. on the disease, 2p on macro models, 2p on molecular level times 3 disease = 18p min. Maximum 50 pages] and %of the domain covered (subjective)
11.1.2	Number of pages [5-20] and %of the domain covered (subjective)
11.2.1	Percentage of reproduction (subjective evaluation) of the clinical criterions (cf 11.2.2) [50%-80% at 18 months]
11.2.2	Number of clinical criterions [5-20 per disease], Number of inference rules [5-20 per disease], percentage overlap between experts on the criterions [50%-100%] and the rules [40%-100%]
11.2.3	Perecentage of data collected (w.r.t Nb patient collected in each disease) [10%-50%]
11.4.1	Percentage of reproducible cases (subjective evaluation) [20%-80% at month 18]
11.4.2	Number of clinical criterions [5-20 per disease], Number of inference rules [5-20 per disease], percentage overlap between experts on the criterions [50%-100%] and the rules [40%-100%]

3. Indicators [Upper and lower limits (numbers) associated with WP objectives and measurement units**]**		
Objective No	Upper limits (result's maximum expectation)	Lower limits (below which result not acceptable)

7.12 WP12 Decision support system

WP benchmarking for HeC Assessment report			
Partner:	Siemens	**Date:**	2006. 01. 26
WP Manager:	Martin Huber	**Work Packages:**	A6 / WP12 Decision support system

Objective No:	*Description*
1	To compose a survey on state-of-the-art decision support systems
2	To provide a specification document for decision support systems
3	To develop a decision support system for paediatric heart diseases
4	To develop a decision support system for juvenile idiopathic arthritis
5	To develop a decision support system for brain tumours
6	Each decision support system provides one or more of the following systems and services • Disease classification into types / subtypes • Personalised treatment planning: predicting timing and type of treatment/intervention • Personalised prediction of disease behaviour • Similarity-based search and retrieval from Grid databases

2. Measurement: Each quality item will be evaluated by the Scientific Committee on a 1-5 scale

Objective No	*Measurement process and units:*
1	1- The compiled survey does not evaluate sufficient relevant existing DSS in adequate depth … 5- The compiled survey covers all relevant existing DSS in full detail
2	1- The document does not reflect the requirements stated in the URS, it has severe shortcomings with regards to completeness, correctness, consistency and understandability. … 5- The document addresses all relevant requirements stated in the URS, the specification is complete, correct, consistent and understandable.
3	1- The implemented demonstration system does not demonstrate the potential of the final DSS and satisfies neither the user requirements nor its specification … 5- The implemented demonstration system fully demonstrates the potential of the final DSS and completely satisfies both the user requirements and its specification
4	1- The implemented demonstration system does not demonstrate the potential of the final DSS and satisfies neither the user requirements nor its specification … 5- The implemented demonstration system fully demonstrates the potential of the final DSS and completely satisfies both the user requirements and its specification
5	1- The implemented demonstration system does not demonstrate the potential of the final DSS and satisfies neither the user requirements nor its specification … 5- The implemented demonstration system fully demonstrates the potential of the final DSS and completely satisfies both the user requirements and its specification
6	1- At least one DSS does not provide any of the listed systems or services … 5- All implemented DSS provide all of the listed systems or services

3. Indicators [Upper and lower limits (numbers) associated with WP objectives and measurement units**]**

Objective No	Upper limits (result's maximum expectation)	Lower limits (below which result not acceptable)
1	4	3
2	5	4
3	5	4
4	4	3
5	5	4
6	4	3

7.13 WP13 Biomedical knowledge discovery

WP benchmarking for HeC Assessment report			
Partner:	UoA	**Date:**	2006. 01. 27
WP Manager:	Harry Dimitropoulos	**Work Packages:**	A6/ WP13 Biomedical knowledge discovery

Objective No:	*Description*
1	To survey and evaluate all promising state-of-the-art data mining and knowledge discovery methods for medical and biological applications
2	To design innovative knowledge discovery algorithms and systems based on heterogeneous data sources, capable of handling temporal evolution of heterogeneous data, a key issue in paediatrics research and practice
3	To implement large-scale, cross-modality, and longitudinal data mining and statistical learning algorithms and systems for medical knowledge discovery. The developed modules will exploit whatever information is relevant, including not only traditional but also emerging sources of information, including molecular or epidemiological data
4	To advance the state-of-the-art in cluster analysis, feature sensitivity analysis, data mining and association, and knowledge discovery from integrated medical data

2. Measurement: Each quality item will be evaluated by the Scientific Committee on a 1-5 scale

Objective No	*Measurement process and units:*
1	1- The state-of-the-art knowledge discovery survey is inadequate and does not provide useful information … 5- The state-of-the-art knowledge discovery survey is comprehensive and provides useful information
2	1- The designed classification and clustering data mining techniques are not suitable for integrating heterogeneous vertical data and cannot handle their temporal evolution … 5- The designed classification and clustering data mining techniques are suitable for integrating heterogeneous vertical data and can handle their temporal evolution
3	1- The implemented knowledge discovery methods fail in their evaluation against all of the medical disease problems under consideration … 5- The implemented knowledge discovery methods succeed in their early evaluation against all of the medical disease problems under consideration
4	1- No advance made in the state-of-the-art in cluster analysis, feature sensitivity analysis, data mining and association, and knowledge discovery from integrated medical data (no publications is also an indication of this) … 5- The state-of-the-art in cluster analysis, feature sensitivity analysis, data mining and association, and knowledge discovery from integrated medical data, has been significantly advanced (number of publications and quality of publications is also an indication of this)

3. Indicators [Upper and lower limits (numbers) associated with WP objectives and measurement units**]**

Objective No	Upper limits (result's maximum expectation)	Lower limits (below which result not acceptable)
1	5	4
2	5	3
3	5	3
4	5	3

7.14 WP14 Deployment of the data mangement system and Grid gateway

WP benchmarking for HeC Assessment report			
Partner:	Maat GKnowledge	**Date:**	2006. 01. 26
WP Manager:	Claudio Cosin	**Work Packages:**	A7/ WP14 Deployment of the data mangement system and Grid gateway

Objective No:	*Description*
1	To provide a detailed description of the sources to be connected to DMS
2	To define mechanisms for the integration of vertical domains
3	To deploy the connectivity mechanisms that link relational structures with DMS
4	To elaborate the XML specifications that manage the dumping of documental sources into de DMS infrastructure
5	To identify the special reserved types and to connect them to the GRID. Connectivity proofs; for instance, registered objects in File Catalogue are accessible by the whole hospitals in VO.
6	To deploy the layer managing granularity and concretising generic concepts in the domain ontologies to local data

2. Measurement: Each quality item will be evaluated by the Scientific Committee on a 1-5 scale

Objective No	*Measurement process and units:*
1	1- The provided description of the sources are ambiguous and does not allow to understand the required connectivity to the DMS 5- The provided description of the sources are properly defined and allows to understand the required connectivity to the DMS
2	1- The defined mechanisms do not allow the integration of vertical domains 5- The defined mechanisms allow the integration of all the needed vertical domains
3	1- The deployed connectivity mechanisms do not link relational structures with DMS 5- The deployed connectivity mechanisms perfectly link relational structures with DMS
4	1- The elaborated XML specifications do not allow the dumping of documental sources into de DMS infrastructure 5- The elaborated XML specifications allow the dumping of all the documental sources into de DMS infrastructure
5	1- The identified special reserved types can't be integrated to the GRID. 5- The identified special reserved types are well integrated to the GRID.
6	1- The ontology domain layer is not integrated and mapped to the real data 5- The ontology domain layer is well integrated and mapped to the real data

3. Indicators [Upper and lower limits (numbers) associated with WP objectives and measurement units**]**

Objective No	Upper limits (result's maximum expectation)	Lower limits (below which result not acceptable)
1	5	4
2	5	4
3	4	3
4	5	4
5	5	4
6	4	3

7.15 WP 15 Training

WP benchmarking for HeC Assessment report

Partner:	13: EGF	**Date:**	30 January 2006
WP Manager:	Michele Bianco	**Work Packages:**	A8 / WP 15 Training

1. Work Package Objectives: To ensure that the project makes state-of the art training available to the project participants and the larger community and to create an important mean of dissemination for the project achievements.

Objective No:	*WBS code*	*Objective:*	*Milestones?:*
1	M15.1.	Training material originated for and by the course is available (book of abstracts, e-learning tools, etc) (Month 18); the main objective of this task is to ensure the diffusion of the knowledge originated by the course to all participants.	Yes
2	T15.1. D15.1	Training requirements. The work will start with the analysis of the state-of-the-art in decision e-learning and blended learning (hybrid courses) which will be used in the course of the project. The deliverable D15.1 has to be released within month 18.	No
3	T15.4.	Feedback and assessment of training: evaluation of questionnaires distributed to participants during the course. This will ensure a high quality of training and the needed participant satisfaction.	No

2. Measurement [Description of measurement process/methodology associated with WP objectives**]**
(How could the results of the WBS activities be measured against the above objectives?)

Objective No	*Measurement process and units:*
1	Three courses have to be organized in the framework of this project. Each course will originate an abstract book, a streaming on demand version and an e-Learning object: 9 items have to be created in the four project years.
2	The deadline for releasing the requirements (month 18) becomes a measurement for the achievement of this objective.
3	All course participants are asked to fill-in a questionnaire in order to evaluate their level of satisfaction. The questionnaire is anonymous and is distributed at the beginning of the course. The course is evaluated under several aspects: organization, quality of training, program ant topics, faculty skill, etc…

3. Indicators [Upper and lower limits (numbers) associated with WP objectives and measurement units**]**

Objective No	Upper limits (result's maximum expectation)	Lower limits (below which result not acceptable)
1	All 9 learning objects are created	6 or less learning objects are created
2	D15.1 released within month 18th	D15.1 released after month 18th
3	80 % of positive evaluation (or above)	Not more than 60% of positive evaluation

7.16 WP16 Dissemination

WP benchmarking for HeC Assessment report

Partner:	Lynkeus	**Date:**	
WP Manager:	Edwin Morley-Fletcher	**Work Package:**	A8 / WP16 Dissemination

1. Work Package Objectives [Description of objectives to achieve through activities in work breakdown structure WBS**]**

Objective No:	*WBS code*	*Objective:*	*Milestones:*
1	T 16.1	HeC Activities strategy and plan	
2	T 16.2	HeC portal: set up and activation of project communication infrastructure (mailing list and internal website)	M 1.2
3	T 16.3	Quarterly Newsletter	
4	T 16.4	HeC brochure	
5	T 16.5	Publication of technical and specialised articles	
6	T 16.6	Banners and posters	
7	T 16.7	Booth	
8	T 16.8	Seminars and workshops	
9	T 16.9	International conference (end of project)	M 16.4

2. Measurement [Description of measurement process/methodology associated with WP objectives**]**
(How could the results of the WBS activities be measured against the above objectives?)

Objective No	*Measurement process and units:*
1	D 16.1 month 6 – number of events/conferences identified + intl mailing list of 1500 persons/ 150 institutions
2	Number of active users at month 11
3	Timely issuing and outreach increase
4	Number of distributed copies
5	Number of articles per year on X int.l publications
6	
7	
8	number of seminars

3. Indicators [Upper and lower limits (numbers) associated with WP objectives and measurement units**]**

Objective No	Upper limits (result's maximum expectation)	Lower limits (below which result not acceptable)
1	5 events - 1500 persons/ 150 institutions	2 events – 750 persons/75 institutes
2	60 active users	30 active users
3	15% increase at each issue	7% increase at each issue
4	5000	2000
5	Tbd by Scient. Comm	
6	3 banners and 10 posters	1 banner and 5 posters
7	1 booth	
8	2 internal seminar + 1 int.l (first 12 months)	1 internal seminar + 1 int.l (first 18 months)