SLHC-PP WP2: Coordination for the SLHC accelerator implementation, agenda for the kick-off meeting

1. **Introduction to WP2 (20', G. de Rijk)**
2. **Work plan: Detailed work distribution between the partners**
   * **Task participation and responsibilities per institute and unit**
   * **List of members for each institute and their function (for the first year)**
3. **Management plan (detailed planning)**
4. **First discussion for each task**
5. **AOB**

SLHC-PP WP2: Coordination for the SLHC accelerator implementation, Part I Rationale and aims

In the framework of the FP7-CNI program

(construction of new research infrastructures)

The Preparatory Phase

To bring the project to a status of maturity for approval:

Coordination, Support and Technical work are supported for this objective

Work package list

WP #	Work Package Title	Type	Depts	Person-months
WP1	SLHC-PP project management	MGT	LHC, PH	49
WP2	Coordination for the SLHC accelerator implementation	COORD	AT	52
WP3	Coordination for the S-ATLAS experiment implementation	COORD	PH	102
WP4	Coordination for the CMS2 experiment implementation	COORD	PH	90
WP5	Radiation protection and safety issues for accelerator and experiments	SUPP	SC, PH	116
WP6	Development of Nb-Ti quadrupole magnet prototype	RTD	AT	193
WP7	Development of critical components for the injectors	RTD	AB	181
WP8	Tracking detector power distribution	RTD	PH	183
			TOTAL	966

See also: Lucie Linssen's presentations for this kick-off event

Coordination for the SLHC accelerator implementation

- The project definition and set-up phase should be seen as happening before the 'real' project starts. It is not part of the project itself.
- For large projects, the definition and setting up of a project can be seen a project of it's own
- SLHC-PP is such a "project definition and setting-up" project
- The LHC was, and the SLHC will be:

  "a project large and complex enough that a project manager cannot understand them simply by using his brain and the standard project management tools alone"
- For the LHC several tools were introduced to help the PM cope with its size and complexity (EVM, PPT, MTF, etc.)
- For the SLHC implementation we will need to improve on them due to ever increasing complexity (scope definition, collaborations, spread over time, interference with 'normal' operation, etc).
- For SLHC the communication and information dissemination has to be organized (workshops, meetings, information repositories)

SLHC-PP WP2: Intoduction (what we put into the proposal)

The SLHC accelerator upgrade program is to be executed in collaboration between CERN and a set of institutes. While for preceding accelerator projects, like the building of the LHC, the collaborations were between CERN and one institute at a time for each issue, this time a more complete partnership is required. The new SLHC collaboration will be between a large number of partners as illustrated in Section B 1.3.6. The collaboration forming process has already started for specific sub-projects, e.g. for injectors, collimation and high-field magnets. For this purpose, the framework of the collaboration has to be formalized. This comprises the collaboration agreements and the establishment of the project management infrastructure and tools.

An accelerator project of this size needs modern management and coordination tools. The experience from the project management of the LHC machine construction and the LHC experimental collaboration management can be used to construct collaboration structures and project follow up tools, which will allow a globally distributed project to function and come to results.

To define the SLHC accelerator project, extensive networking will be needed. The collaborators have to communicate inside regular meeting circuits, working groups, committees and topical workshops while they are geographically distributed over several continents. Physical meetings and workshops have to be organized and electronically supported; remote meetings at regular time intervals have to be set-up. The last implies dissemination via the web of the meeting-related documentation in a structured way. The data storage and dissemination are very important in such a global project and have to be taken care of from the very beginning.

Multi-cultural collaborations, which produce hardware and software objects, will have to agree upon the standards to follow and the definition of quality related entities. Therefore a quality assurance plan has to be made for the SLHC accelerator project. The plan has to define quality standards on different levels, e.g. construction and test standards, document standards, computing standards and approval trees for deliverables.

SLHC-PP WP2: Resources & Objectives

Work package number	WP2	**Start date:**		Month 1			
Work package title	Coordination for the SLHC accelerator implementation						
Activity Type	COORD						
Participant	CERN	CEA-Saclay	STFC	CIEMAT			
Person-months per participant:	38	6	4	4			

Objectives

- Project Management preparation. Set up the project monitoring structures, set up a finance management system and set up a quality assurance plan
- Put in place networking and communication. Set up collaboration communication structures and set up information storage and dissemination

SLHC-PP WP2: Task 1 description

Description of work

Task 2.1 Project Management preparation

2.1.a Set up the project monitoring structures. The collaboration agreements formally define the responsibilities of the partners, which is a necessary input for setting up these monitoring stuctures. The Earned Value Management (EVM) system, which was successfully used for the LHC, will be the basis for this. With respect to the LHC version, the system has to be extended to cope with collaboration structures (CERN). This task includes upgrading the EVM software, putting the project framework in the database and providing documentation and training to the users of the system.

2.1.b Set up a finance management system for the implementation. Up to now, for the CERN accelerators, there was no common fund for the collaboration entity. Such a common fund will be established (CERN). This includes getting support software, putting the project framework in the database and providing documentation and training to the users of the system.

2.1.c Set up a quality assurance (QA) plan for the implementation phase. Quality standards and approval trees have to be defined. The components and installations delivered by the various partners and industry have to be on a common high quality standard and according to their specification; a QA plan will be created for this (CERN).

SLHC-PP WP2: Task 2 description

Task 2.2 Networking and communication

2.2.a Set up collaboration communication structures. In preceding projects all technical, scientific and organisational issues were discussed and decided upon in CERN-based working groups and committees. These entities were able to meet on a weekly or bi-weekly basis. For the SLHC international collaboration such a structure is also needed, but distances (Europe and intercontinental) need to be overcome. In the experiments this problem has already been addressed by organising bi-monthly full weeks of meetings and workshop-type events. Video conferencing facilities are widely used. For the SLHC a system will be set up where the requisite bodies can function with monthly or bimonthly physical meetings and electronically supported remote contacts with the same communication quality as the physical meetings. It is essential that a small team keeps track of these meetings, provides minutes, follows up and takes care of documenting these on the web. Although many tools already exist, some software facilities will have to be written and conduct codes to be agreed upon (CERN, CEA-Saclay, STFC and CIEMAT).

2.2.b Set up the storage and dissemination of the technical information and knowledge. This includes making the databases, web-sites and making the scientific/technical publications concerning the upgrade of the machine available on web based systems. The SLHC database structure will cover among others: basic machine description and beam parameters, machine layout, component description and traceability. All reporting will be stored on the database. The databases will feature regulated input-output access via the internet as an extension of the existing CERN facilities (CERN).

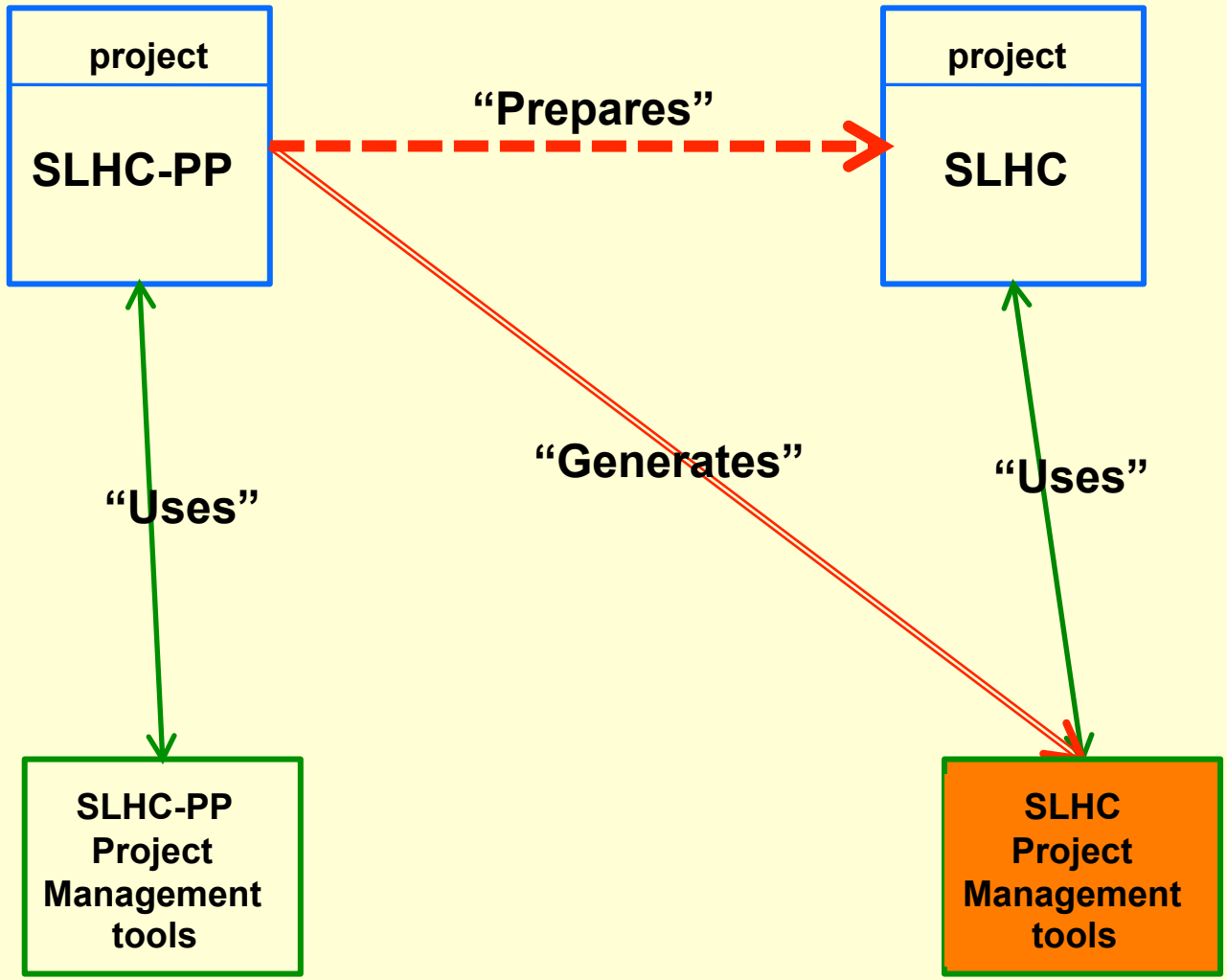
SLHC-PP WP2: Deliverables and Milestones

Deliverables task 2.1	Description	Nature	Delivery date
2.1 1	Common fund, Financial Management System (software) and user requirements and user guide document	O	M30
2.1.2	Quality Assurance plan for the implementation phase	R	M30
2.1.3	Earned Value management system (software) with user requirements and user guide document	O	M36

Deliverables task 2.2	Description	Nature	Delivery date
2.2.1	Functioning collaboration communication structure	O	M12
2.2.2	Project web site linked to the technical databases: Machine layout database, hardware baseline database, project notes and reports	O	M12

Milestones	Description	Nature	Expected date
2.1	Financial management system (initial version)	P	M18
2.2	EVM software (initial version)	P	M24

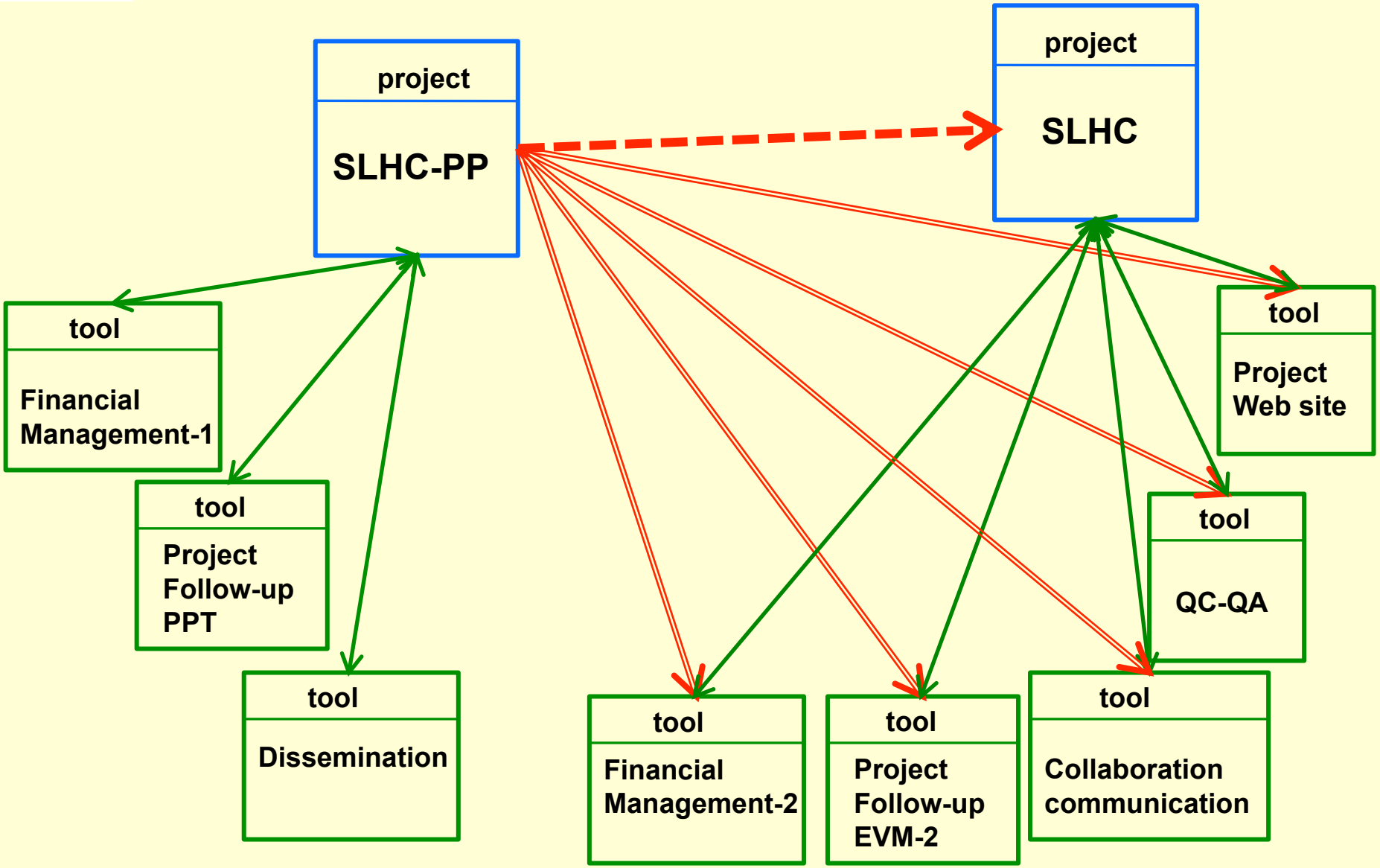
Summary in one picture



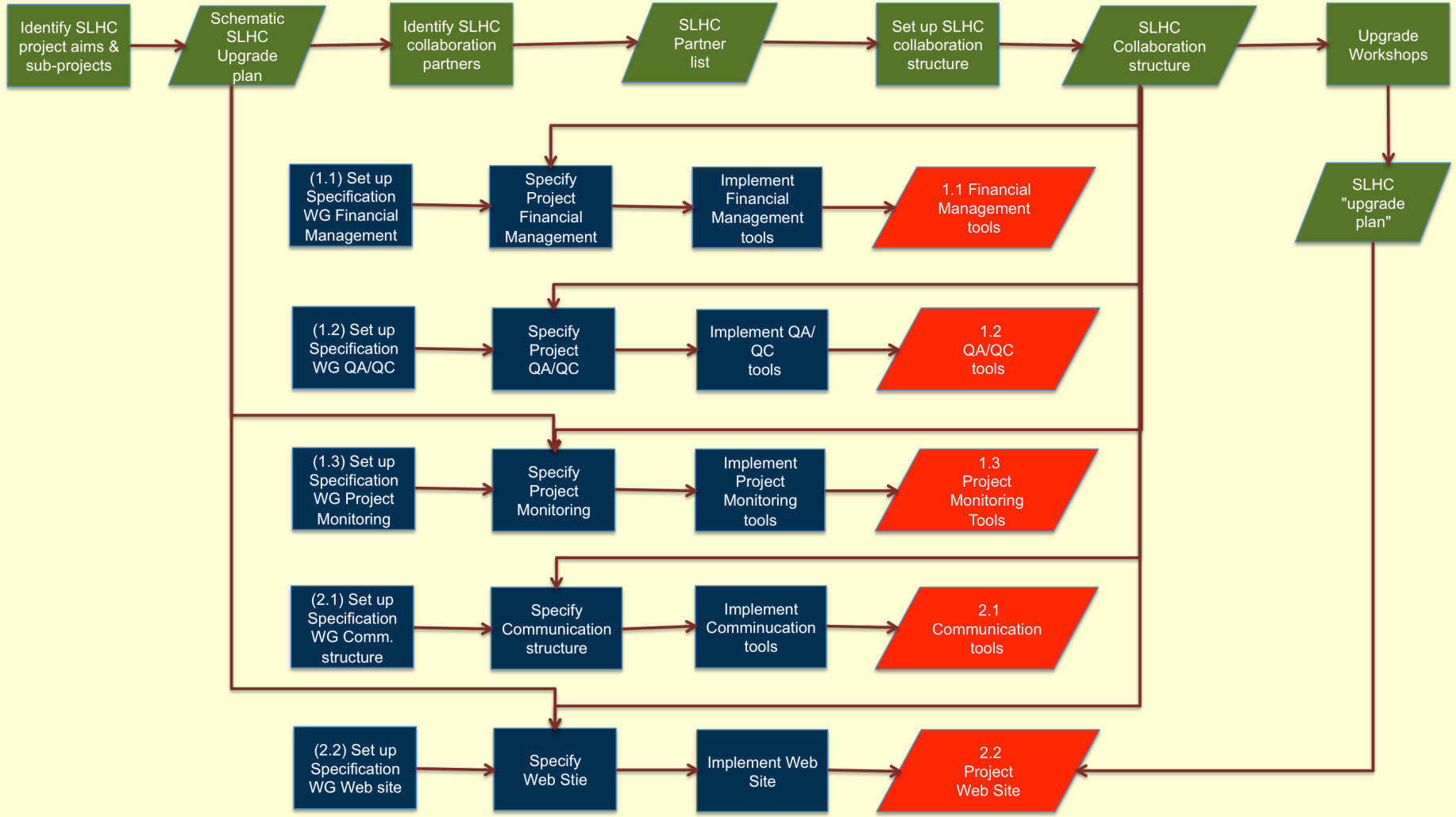
SLHC-PP WP2: Coordination for the SLHC accelerator implementation, Part II Proposal for a workplan

- To start: rough workplan proposal
- To be discussed / modified / improved
- Input needed from all participants

Picture in a bit more detail



Work flow


Identify SLHC project aims & sub-projects
Schematic SLHC Upgrade plan
Identify SLHC collaboration partners
SLHC Partner list
Set up SLHC collaboration structure
SLHC Collaboration structure
Upgrade Workshops
SLHC "upgrade plan"
(1.1) Set up Specification WG Financial Management
Specify Project Financial Management
Implement Financial Management tools
1.1 Financial Management tools
(1.2) Set up Specification WG QA/QC
Specify Project QA/QC
Implement QA/ QC tools
1.2 QA/QC tools
(1.3) Set up Specification WG Project Monitoring
Specify Project Monitoring
Implement Project Monitoring tools
1.3 Project Monitoring Tools
(2.1) Set up Specification WG Comm. structure
Specify Communication structure
Implement Comminucation tools
2.1 Communication tools
(2.2) Set up Specification WG Web site
Specify Web Stie
Implement Web Site
2.2 Project Web Site

Management Plan (Detailed Planning)

		year 1												year 2												year 3															
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36				
		2008									2009												2010												2011							
task	**WP**	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M				
2.0	Set up SLHC collaboration																																								
2.1 a	Set up the project monitoring structures																								M						D										
2.1 b	Set up a financial management system																		M												D										
2.1 c	set up a Quality Assurance plan																																				D				
2.2 a	Set up collaboration communication structures												D																												
2.2 b	Set up the storage and dissemination of information												D																												
2.2 b2	Upgrade workshops						?						?												?												?				

To be done today:

- **Fill in the management plan with activity “begin and end”**
- **Set ‘internal milestones’**

SLHC-PP WP2: Coordination for the SLHC accelerator implementation, Part III Short term action: start

- We will have to agree on a work distribution between the partners (today)
- We will have to make a detailed planning (management plan) (today)
- We will have to start the specification work (first 2 months)
- We should agree upon a first Upgrade workshop date.