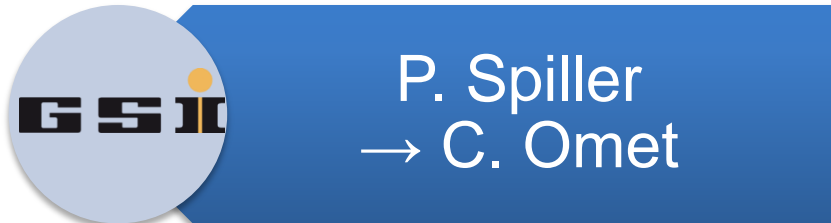
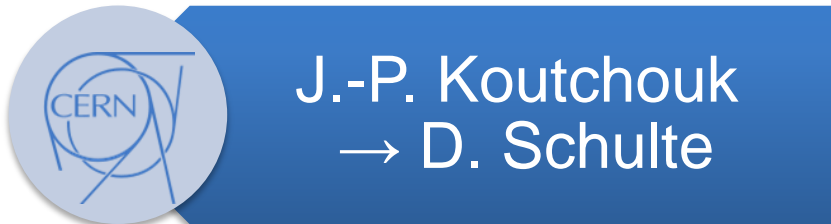


# TIARA: Status WP4

C. Omet, GSI

1. Update on WP members
2. Tasks
3. Meetings
4. Schedule
5. Status

# 1. WP Team members



- **P. Pierini, INFN**
- **C. Omet, GSI**
- **D. Schulte, CERN**
- T. Garvey, PSI
- B. Launé, CNRS/IN2P3
- L. Lilje, DESY
- O. Napoly, CEA
- D. Obradors, CIEMAT
- B. Skoczen, IFJ PAN
- S. Smith, STFC
- V. Ziemann, UPPSALA

## 2. Tasks / Deliverables

### D4.1 KIR

- **General Report on Key Accelerator Research Areas and Key R&D Issues**
- **Foreseen on M5, delivered M12 after GC validation**

### D4.2 PAR

- **R&D Projects Access Report. Procedure for Identifying, defining and launching of collaborative R&D Projects, Including common methodology for scientific/technical evaluation and costing**
- **Due M24**

### D4.3 TTR

- **Toward Tiara. Final Plan of the Collaborative R&D Program**
- **Due M33**

## 3. Meetings

### Done so far:

- 23/02/2011 Kick-off at CERN
  - 01/04/2011 WP4/D4.1 in Roma, 4+2 (ph) attended
  - 01/06/2011 Webex on D4.1, full attendance
  - 29/08/2011 Webex on D4.1, full attendance
- D4.1 finalization achieved through email
- 16/02/2012 WP4 in Milano, full attendance

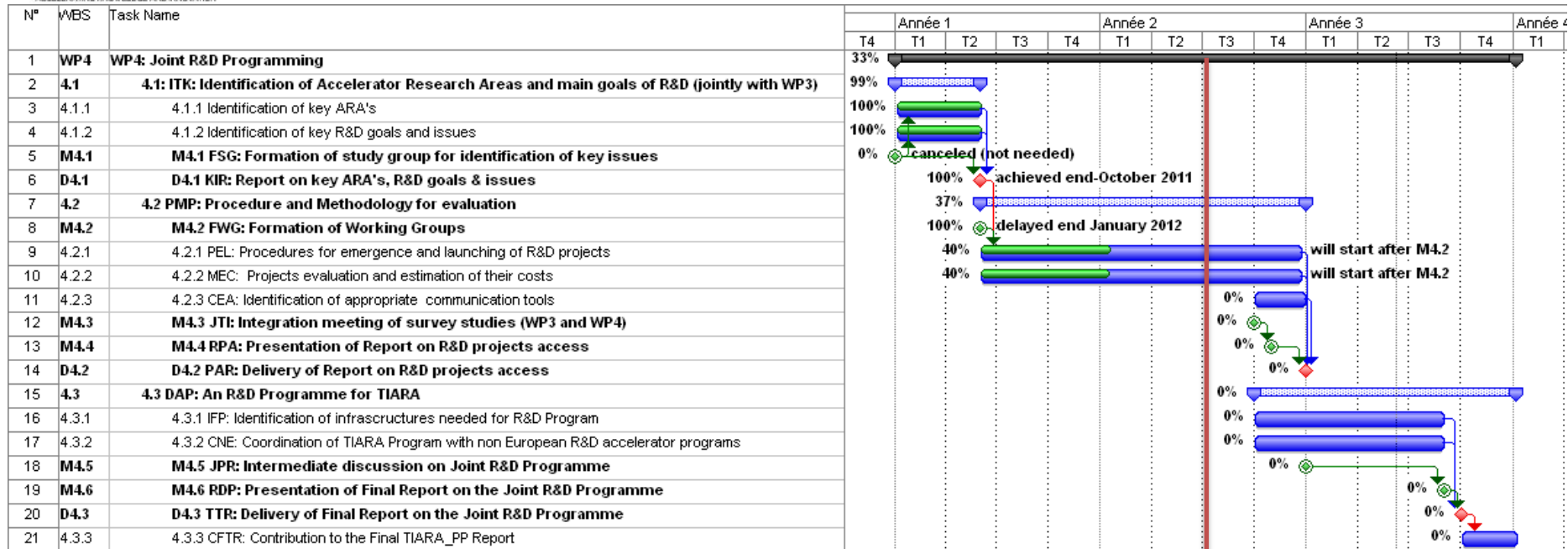
### Concurrent:

- Mid Term meeting in Madrid
  - 12/06/2012 WP3+WP4 Joint Meeting
  - 13/06/2012 WP4 Full Meeting

### Planned:

- 10/2012 WP4 at PSI

# 4. Schedule



- Due before end of 2012:
  - **09/2012 MS15**, JTI (Integration meeting WP3+WP4) → achieved on 12/06/2012
  - **10/2012 MS16**, RPA (Presentation on Report on Project Access)
    - 12/2012 Delivery of D4.2 PAR (Delivery of Report on R&D project access)
  - **12/2012 MS17**, JPR (Intermediate report R&D Programme)

# 5. Status

- Discussed at February meeting
  - MS17: JPR at M24 is a review of D4.1
    - Consolidation of KARA/KTI background work
    - Input gathered by October 2012
    - Collecting «institutional interest» by WP members (~73% complete); Final editing & release by WPLs by M24 (goal).
  - Interactions with WP3
    - WP4 needs to provide input for CMLIN 3.2.1
      - Definition of timelines for R&D infrastructure needs:
        - » **Current**, for realization phase (few years from now)
        - » **Medium**, for TDR (5 years from now)
        - » **Long**, for CDR (at least 10 years from now)
      - Collecting WP4 member assessment for delivery to WP3
    - Decided for a joint WP3+WP4 meeting here at Madrid (meanwhile held on 12/06/2012)
  - Start of WP4.2 Task



Test infrastructure and Accelerator Research Area

## DELIVERABLE

### General Report on Key Issues

By the WP4 Members:

Terence Garvey (PSI),  
Jean-Pierre Koutchouk (CERN), **WP Deputy**  
Bernard Launé (CNRS),  
Lutz Lilje (DESY),  
Olivier Napoly (CEA),  
Diego Obradors (CIEMAT),  
Paolo Pierini (INFN), **WP Leader**  
Blazej Skoczen (IFJ PAN),  
Susan Smith (STFC),  
Peter Spiller (GSI), **WP Deputy**  
Volker Ziemann (Uppsala University)

The research leading to these results has received funding from the European Commission under the FP7-INFRASTRUCTURES-2010-1/INFRA-2010-2.2.11 project TIARA (CNI-PP). Grant agreement no 261905.

This work is part of TIARA Work Package 4: Joint R&D Programming

The electronic version of this TIARA Publication is available via the TIARA web site  
<http://www.eu-tiara.eu/database/test/index.php>

### D4.1 - KIR General Report on Key Issues

#### Index

1	Introduction	3
2	Identification of critical research areas and technical issues and future WP4 work plans	3
3	The list of KARAKTI	4
3.1	Accelerator Components	6
3.1.1	Sources and Injectors	6
3.1.2	RF structures	8
3.1.3	RF systems	11
3.1.4	SC magnets	11
3.1.5	Conventional NC magnet systems	14
3.1.6	Diagnostics and instrumentation	16
3.1.7	Targetry	17
3.1.8	Radiation issues	19
3.2	Accelerator Technologies	22
3.2.1	Electronics and Software	22
3.2.2	UHV	23
	ESPRi Project List	24
	XFEL	25
	FAIR	26
	ESS	27
	LHC Upgrades (HL-LHC)	27
	Linear Colliders (ILC, CLIC)	28
	Flavour Factories (Superf)	29
	Neutrino Factories	29
	Muon Colliders	30
	High Intensity Hadron Facilities (Eurusol, ADS/MYRRHA, IFMIF)	31
	3 <sup>rd</sup> Generation radiation sources	33
	4 <sup>th</sup> Generation radiation sources, FEL, ERL	37
	5 <sup>th</sup> Generation radiation sources	39
		40
		41
		42
		43
		44
		45

Domain	Projects	ESPRi Project List												
		XFEL	FAIR	ESS	LHC Upgrades (HL-LHC)	Linear Colliders (ILC, CLIC)	Flavour Factories (Superf)	Neutrino Factories	Muon Colliders	High Intensity Hadron Facilities (Eurusol, ADS/MYRRHA, IFMIF)	3 <sup>rd</sup> Generation radiation sources	4 <sup>th</sup> Generation radiation sources, FEL, ERL	5 <sup>th</sup> Generation radiation sources	
Accelerator Components	<b>KARA</b>													
	Sources and Injectors	x	x	x	x	x	x	x	x	x	x	x	x	
	RF Structures	x	x	x	x	x	x	x	x	x			x	
	RF Systems	x		x		x	x			x			x	
	SC Magnets		x		x	x	x	x						
	Conventional NC Magnet Systems		x			x						x	x	x
	Diagnostic and Instrumentation	x	x	x	x	x	x	x	x	x	x	x	x	x
	Targetry			x	x	x	x			x	x			
Accelerator Technologies	Radiation Issues		x	x	x	x			x	x				
	Electronics and Software	x	x	x	x	x	x	x	x	x	x	x	x	x
	UHV	x	x	x	x	x	x	x	x	x	x	x	x	x
	RF Sources	x	x	x	x	x	x	x	x	x	x	x	x	x
	Cryogenics	x	x	x	x	x				x	x			
	Alignment and Stabilization	x	x	x	x	x	x	x	x	x	x	x	x	x
Accelerator Concepts	Accelerator Design		x	x			x	x	x	x				x
	Beam Dynamics		x	x	x			x	x	x				x
	FEL Processes	x											x	x
	Beam Cooling		x								x			
	New Techniques for High Gradient Acceleration						x							x
Medical and Industrial Accelerators														

# Task WP4.2

Will define:

- A common methodology and procedure for initiating, costing and implementing collaborative R&D projects in a sustainable way.
- A methodology and procedure for scientific and technical evaluation of projects and for their costing to enable the emergence and the launching of collaborative R&D activities.
- In addition, appropriate communication tools for effective knowledge exchange (in connection with WP5) and for assistance in legal questions (through WP2) will be identified and implemented.



# Subtasks in WP4.2

- 4.2 PMP

Procedure for initiating and methodology for costing and implementing collaborative R&D Projects

- 4.2.1 PEL: Procedure for enabling the Emergence and the Launching of collaborative R&D projects in a sustainable way.
- 4.2.2 MEC: Common Methodology for project's scientific and technical Evaluation and for their Costing.
- 4.2.3 CEA: Identification and implementation of appropriate Communication tools for effective knowledge Exchange (with WP5) and Assistance in legal questions (with WP2) – will be started after the two subtasks above.

# Start of D4.2 Activities

- As decided in February
  - "Methodology for initiating, costing and implementing R&D projects"
    - PEL: Started with survey of current «collaborative» procedures at national and international level
    - MEC: No common methodology for evaluation and costing exists in our community yet, but start with survey of existing
  - Fulfilled MS14: FWG (Formation of Working Groups)
    - PEL: *Pierini*, Garvey, Obradors, Bocian, Kallberg, Schulte
    - MEC: *Omet*, Pierini, Napoly, Laune, Smith, Lilje
    - Prepared contributions for Madrid WP4 meeting discussion
  - Recommendations for TIARA in MS16: RPA 10/2012
  - Deliverable 4.2 R&D Project Access Report: 12/2012

# What has been discussed in Madrid

- D4.1 consolidation towards Joint R&D Programme
  - Add KARA/KTI's actually not in the list
  - WP members add path / way to complete the KTI's
- Progress towards D4.2
  - Discussion of PEL/MEC tasks and decisions
  - Drafts of both have been prepared
  - Details will be sorted out by additional WebEx meetings
- Match with infrastructure WP3
  - Identification of the needed timescale for the solution to the critical R&D items
    - Tagging urgent, mid-priority, long-term issues (CMLIN)