

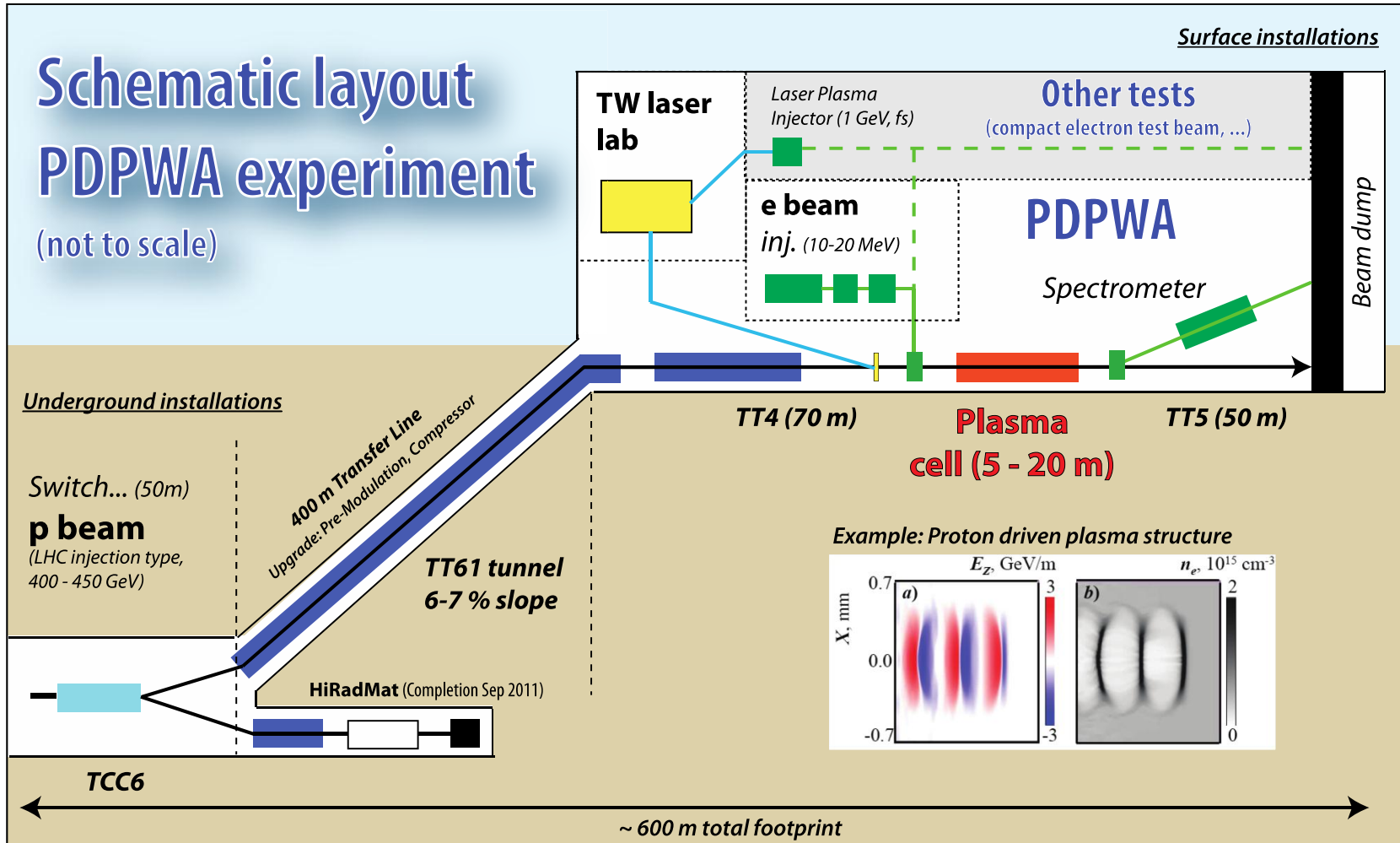
Proton-Driven Plasma Wakefield Acceleration CERN Project Structure

Edda Gschwendtner, CERN

Introduction

- Positive feedback after Lol to SPSC and CERN Research Board.
 - Deliverable: Conceptual Design Report
 - Timescale: by Autumn 2012
 - Includes detailed budget, CERN manpower and schedule plans for design, construction, installation and commissioning.
 - Setup CERN Project Structure to organize the CERN efforts for producing parts of the CDR that is under CERN responsibility.

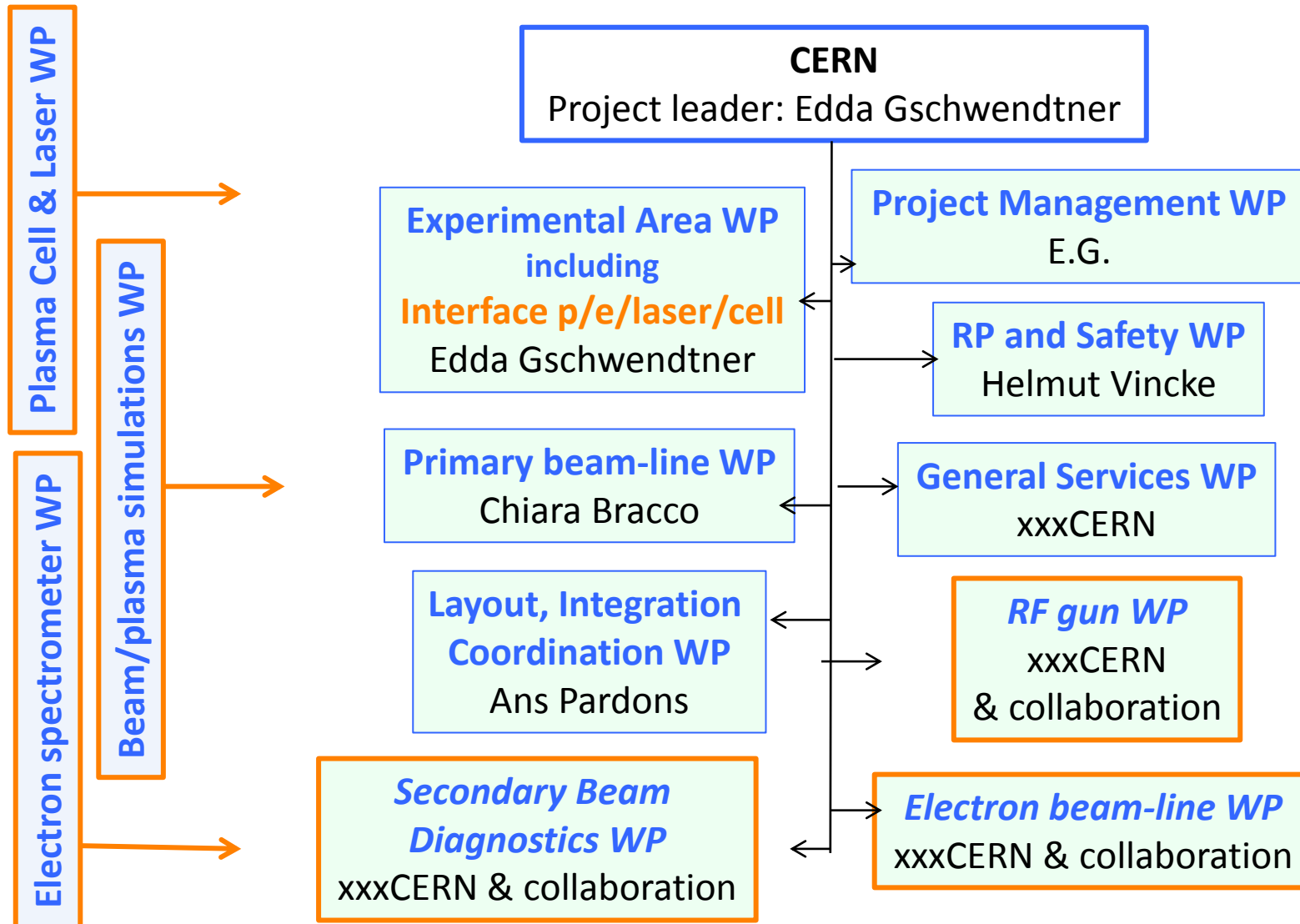
Schematic PDPWA Layout



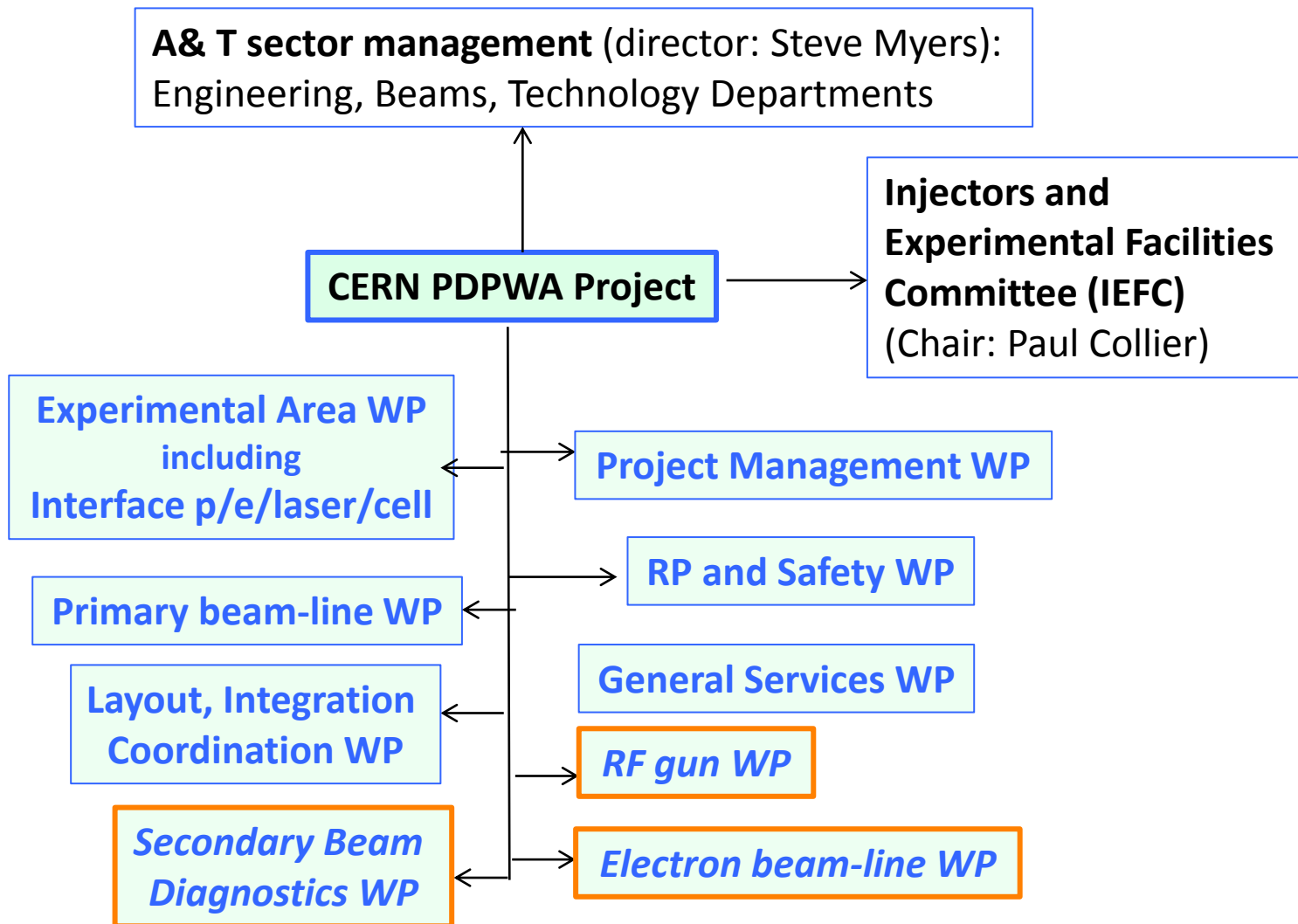
Introduction

- CERN Project Structure:
 - cross departments and groups
 - ‘Project Leader’
 - Work packages (WP)
 - Responsible: ‘Work package leaders’ (CERN person)
 - Inside work packages there are sub-work packages
 - Responsibles: from institutes, CERN, etc..
 - ‘Deliverables’ for each WP

Proposed PDPWA CERN Project Structure



CERN Project Reporting Line



WP1: Project Management WP

E.G.

- Specification and engineering documents (EDMS)
- Project cost and schedule
- Resource planning and scheduling with groups and departments
- Quality control, documentation and final acceptance
- Safety file and safety officer

WP2) Primary Beam-line WP

Chiara Bracco

- Collection of geometrical, beam parameters, optical requirements and constraints
- Design of beam-line geometry and optics
- Specification of main, correction and switch magnet parameters, beam instrumentation
- Technical coordination of studies, construction, installation and commissioning of all systems
- Design of interface of different beam-lines (merging magnets, fast shutter, etc...)

- Conceptual design of secondary beam-lines
 - Specification of secondary beam instrumentation
 - Specifications of shielding, dumps (with RP)
 - Specification of interaction region p/e/laser/cell
- **Interface to all WPs**

Experimental Area

- Layout and Integration studies
- Specification of infrastructure needs
- Layout of shielding
- Layout of beam dump(s)
- Specification of handling devices
- Coordination of installation

WP5) General Services WP

XXX

- Cooling Ventilation
- Powering
- Electrical infrastructures
- Handling
- Transport
- Access
- Civil Engineering modifications

WP6) RP and Safety WP

Helmut Vincke

- Prompt dose rate study in accessible areas
 - Muons downstream the facility, design of dump and shielding
- Activation studies of equipment, air, ground water, ...
- Evaluation and installation of RP monitoring
- Radioactive waste study and preferred material checks

- Interface and close collaboration to CERN RF and laser groups and Institutes
 - Specification and design of RF structure, photocathode, high-frequency source, control system, diagnostics

WP8) Electron Beam-Line WP

XXX

- Collection of geometrical, beam parameters, optical requirements and constraints
- Design of beam-line geometry and optics
- Specification of magnets, beam instrumentation

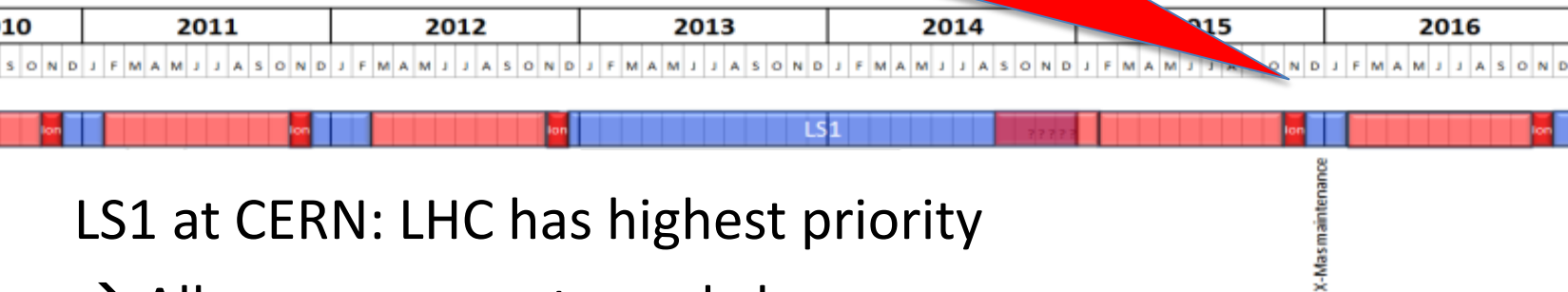
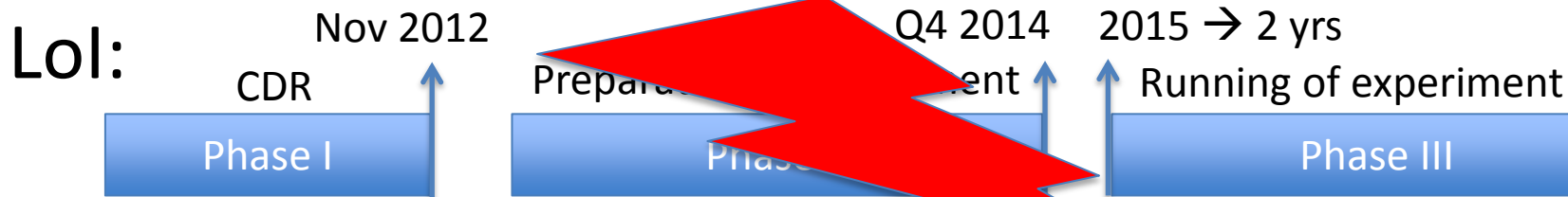
- Close collaboration with RF Gun WP

- Interface and close collaboration with institutes
 - Electron spectrometer
 - Electro-optical sampling system
 - CTR

External Resources are Welcome!

- Clear need for expertise NOW for RP calculations and documentation
 - Need this to progress with dump line and EA design
- Clear need for expertise for specification of interaction regions p/e/laser/cell (beam parameters,...)
- Other documentation related to safety issues could be defined for collaborators
 - Safety folders, materials databases, radioactive waste study...

Planning



LS1 at CERN: LHC has highest priority

→ All groups are extremely busy

→ CDR dead-line to be re-defined

→ Installation during 2013 not really realistic:

→ Cleaning and dismantling in TT61 could be done

→ Finding manpower

→ Full installation of beam-line should be done during non-LHC operation periods

Outlook 2012 (and 2013)

- CERN project structure is being setup
 - Clarification of WP leaders
 - Clarification of WP contents
 - Organizing activities of team of researchers coming to CERN
- **Scope and deadline for CDR to agree (now)**
 - Decide on alternatives between West Area and CNGS site or put both alternatives into the CDR?
- **Main project deadlines to agree (now)**
- **Table of parameters to agree (now)**
- Iteration with technical groups at CERN on **schedule and costing**
- Address **key WP items** needed for CDR
- **Write-up** of CDR

Questions which need rapid answers

- What are **p+ (and e-)** beam parameters at plasma cell?
- What are **characteristics of laser beam**
 - In order to design merging system
- What **footprint** is needed for PDPWA **experimental hall**?
 - Essential to be able to design beam-line and facility
- Is **continuous access** to laser/e- linac/plasma cell essential?
- What are **RP constraints on spent beam**?
 - Need to know **shielding requirements** to design **dump line**
- Will **CNGS** be **available** for conversion after 2012?
 - Either for using **TT41** beam-line for PDPWA facility **directly**, or **TT41 magnets, convertors etc. for TT61**
 - High-level strategic question, needs answer from CERN management
- What are main **project deadlines**?
- What is **scope of '2012' CDR**?