

# LCG Applications Session

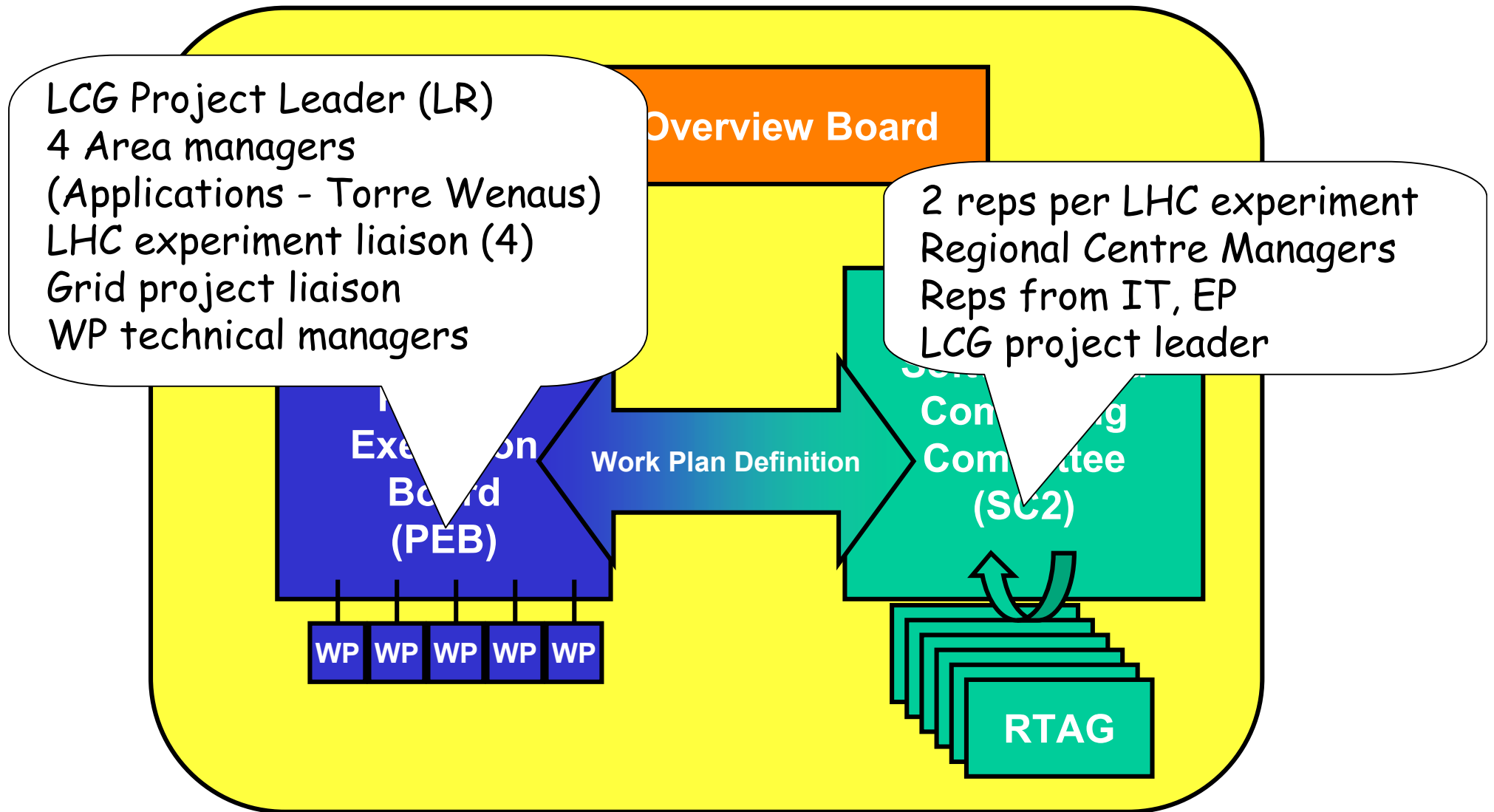
LCG Launch Workshop  
March 12, 2002

John Harvey, CERN  
LHCb Computing Coordinator

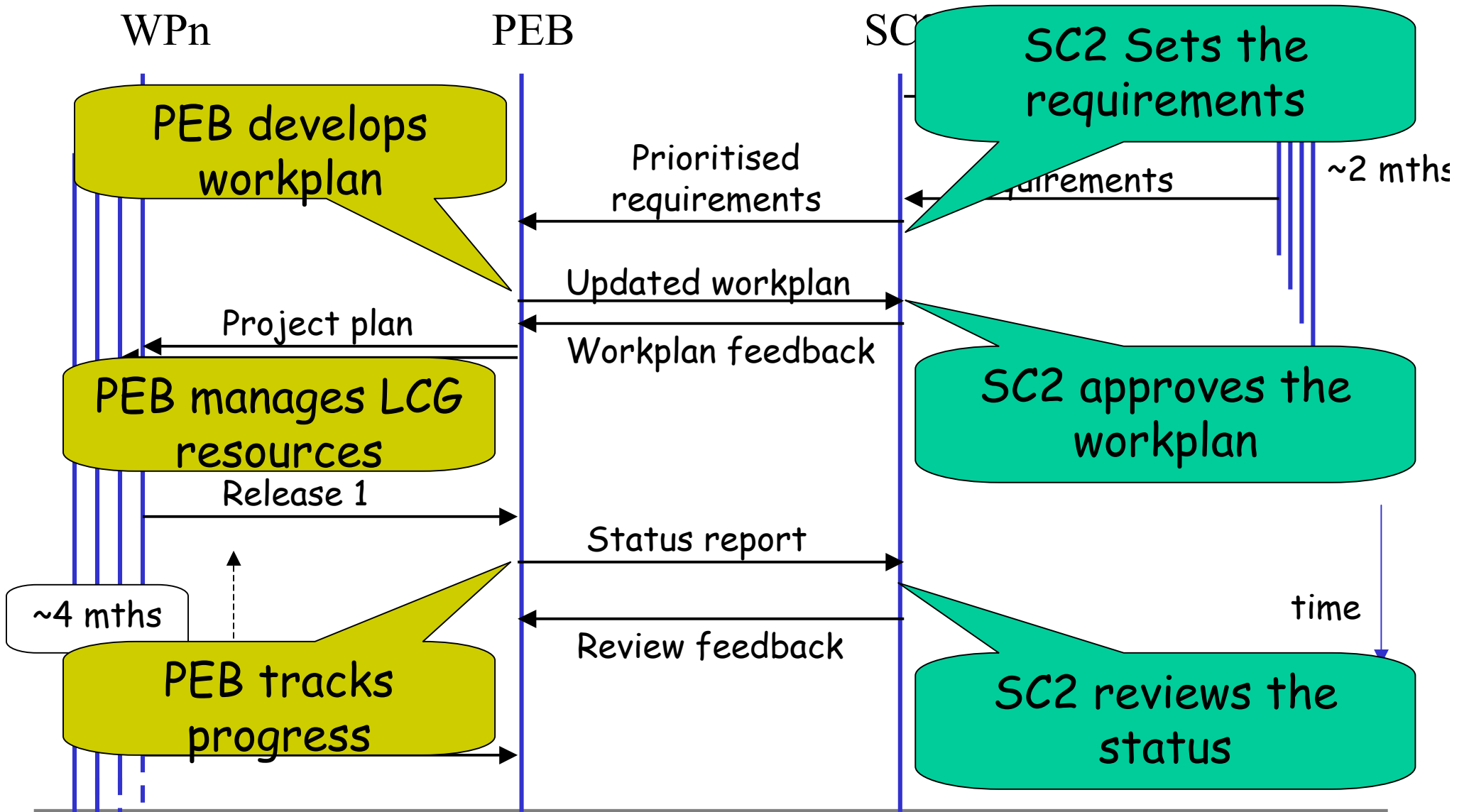
# LCG Applications Area

- 09:00 Introduction (15' )** John Harvey
- 09:15 Applications Subproject (45' )** Torre Wenaus
- 10:00 Discussion (30' )**  
issues related to project organisation and execution
- 10:30 Coffee**
- 11:00 Process for managing LCG Software (15' )** Fons Rademakers
- 11:20 Math Library Review (15' )** Fred James
- 11:40 Data Persistency (15' )** David Malon
- 12:00 Discussion (30' )**  
work programme, RTAGs, next steps

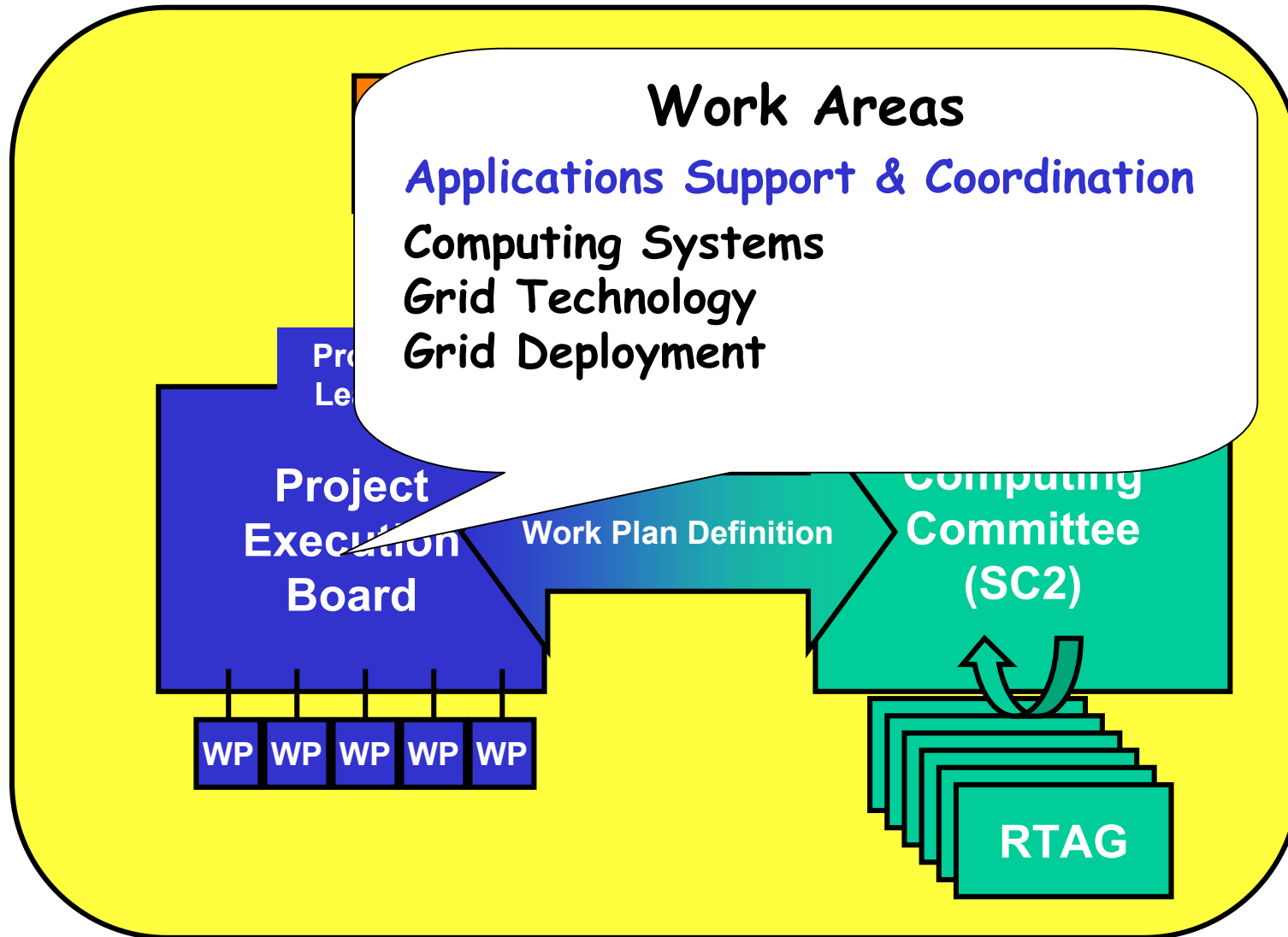
# LCG Organisation chart



# Workflow around the organisation chart



# The LHC Computing Grid Project



# Applications Activity Areas

- Application software infrastructure
  - physics software development environment, standard libraries, development tools
- Common frameworks for simulation and analysis
  - Development and integration of toolkits & components
- Support for physics applications
  - Dev, support of common software tools & frameworks
- Adaptation of Physics Applications to Grid environment
- Object persistency and data management tools
  - Event data, metadata, conditions data, analysis objects, ..

# Fulfilling LCG Project Goals

- Prepare and deploy the LHC Computing Environment
  - Applications - provide the common components, tools and infrastructure for the physics application software
  - Computing system - fabric, grid, global analysis system
  - Deployment - foster collaboration and coherence
  - **Not just another grid technology project**
- Validate the software by participating in Data Challenges using the progressively more complex Grid Prototype
  - Phase 1 - 50% model production grid in 2004
- Produce a TDR for full system to be built in Phase 2
  - Software performance impacts on size and cost of production facility
  - Analysis models impact on exploitation of production grid
- Maintain opportunities for reuse of deliverables outside LHC experimental programme

# Goals for Applications Area

- Many Software Production Teams
  - LHC experiments
  - CERN IT groups, ROOT team, ..
  - HEP software collaborations - CLHEP, EDG, Geant4 , ..
  - External Software - python, Qt, XML, ...
- Strive to work together to develop and use software in common
- Will involve identifying and packaging existing HEP software for reuse as well as developing new components
- Each unit has its own approach to design and to supporting the development
  - Sharing in the development and deployment of software will be greatly facilitated if units follow a common approach
- Recognise that there will be start-up costs associated with adapting to use new common products and development tools



# Perceptions of Common Projects

- Resource managers
  - Resources are scarce, in particular manpower
  - Common projects are a good way to become more efficient
- Experiments
  - Whilst may be very enthusiastic about long-term advantages ...
  - ...have to deliver on short term milestones
  - Devoting resources to both will be difficult
  - Already experience an outflux of effort into common projects
  - Hosting projects in experiments excellent way of integrating effort
- Technology groups
  - Great motivation to use expertise to produce useful solutions
  - Need the involvement of the experiments

# General Perceptions

- Lessons need to be learnt from past experience
- Everything non experiment-specific is a potential candidate for a common project
- Success of LCG is fundamental to success of LHC Computing

# Goals of session

- Introduce Applications Area Manager - Torre Wenaus
- Agree on project scope
- Elaborate the procedures for organising and managing execution of the project
- Start to develop high-level work plan
  - Will hear status reports from three RTAGs
  - Discuss proposals for new projects which are preliminary and meant to provoke meaningful discussion
- Define concrete next steps - set priorities
  - Small projects to demonstrate short-term success ?
  - Major projects with large pay-offs ?
- New proposals will be submitted to the SC2 and subjected to the process already described
- Expose ideas and solicit new input and feedback