



Kick-off Meetings, PM Office, etc

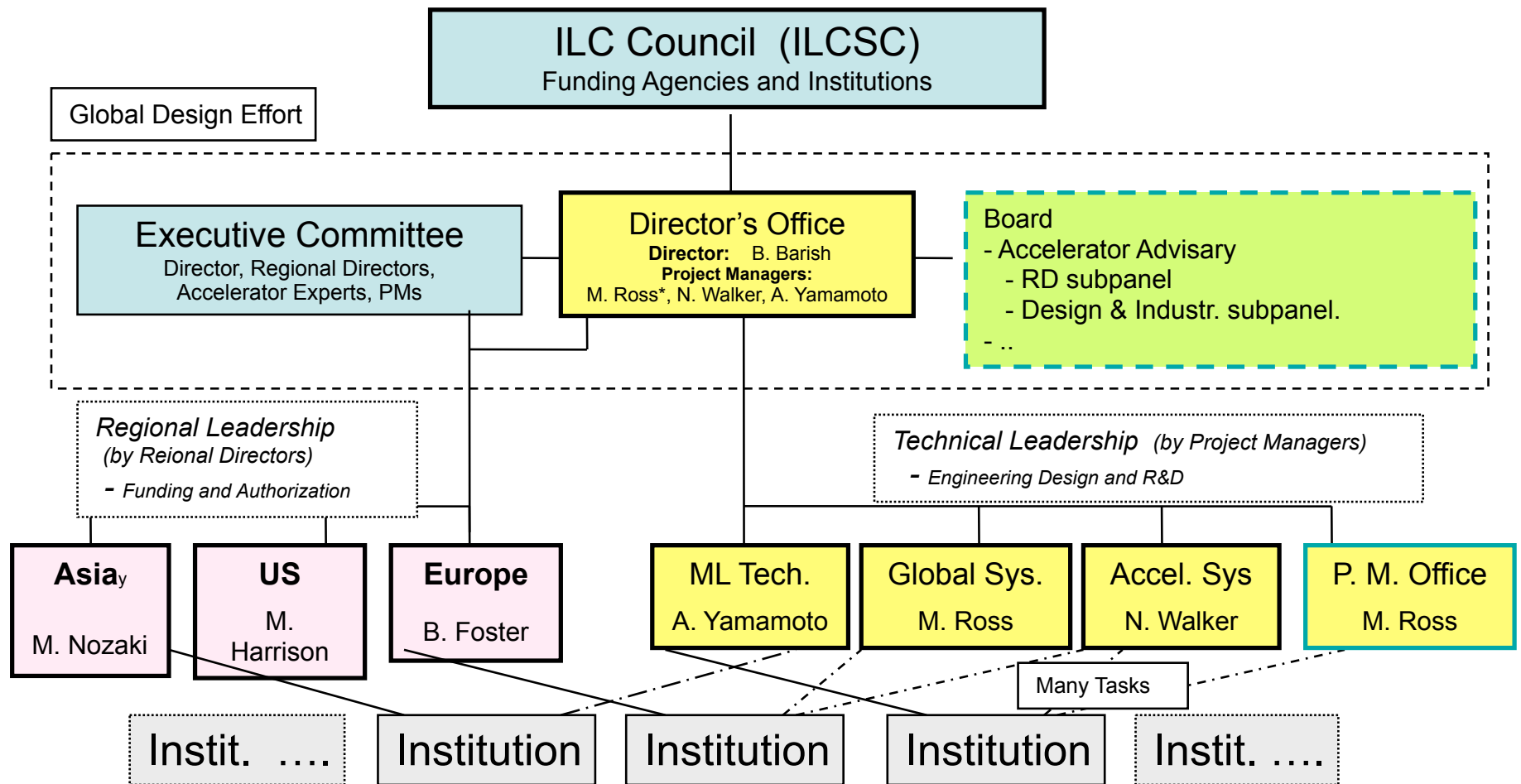
Nick Walker (with Carwardine mods)
For the EDR Project Management Troika

27.09.2006

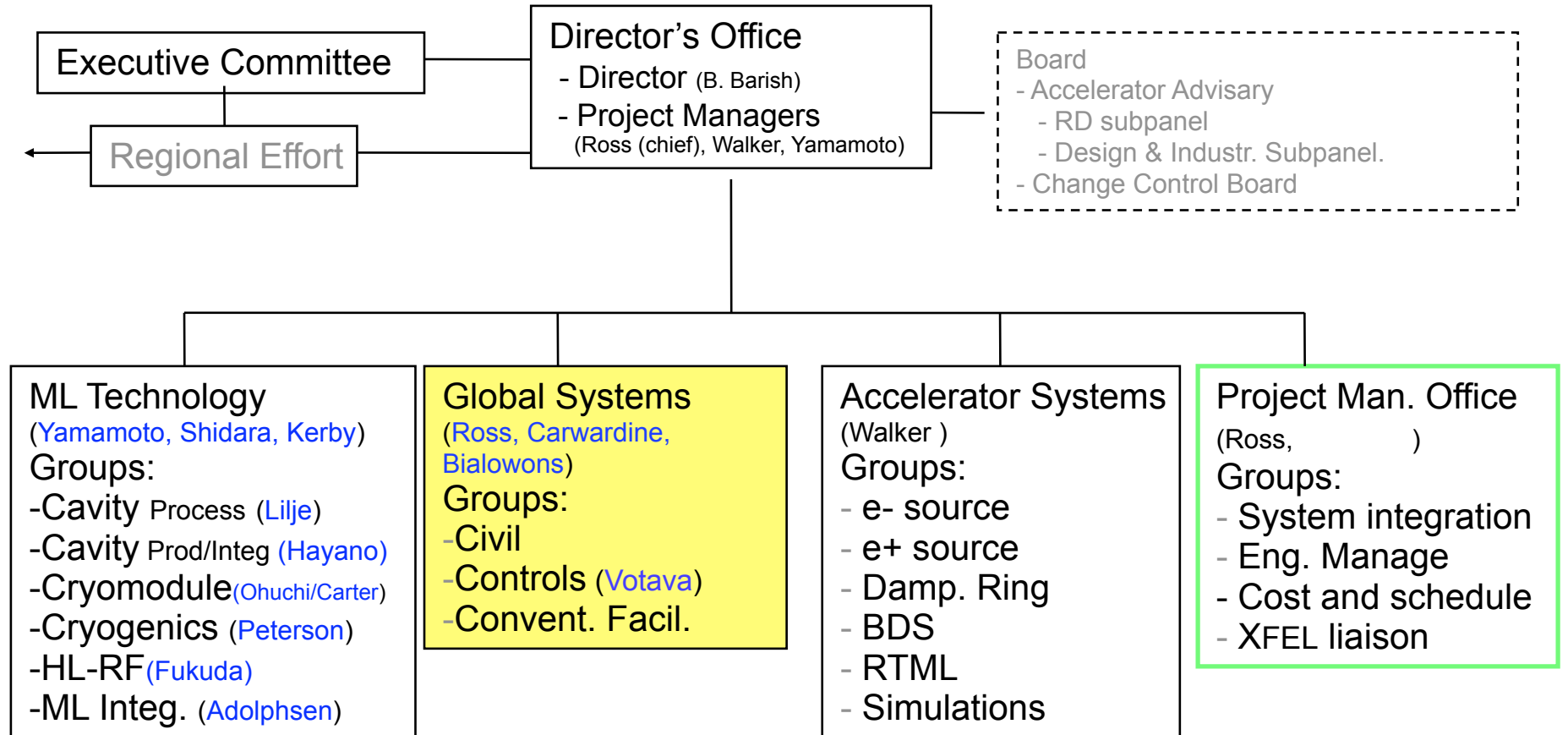
N. Walker (with Carwardine mods)

ILC Project Management

as a proposal for the organization toward EDR



Project Management Structure (baseline)





Past/Future Meetings

▼ 2007

November 2007

05 - 07 Damping Ring - KOM

Accelerator Systems

October 2007

11 - 13 BDS - KOM

Accelerator Systems

08 - 10 e+ source - KOM

Accelerator Systems

01 - 03 HLRF - KOM

ML tech

September 2007

27 - 28 Main Linac - KOM

ML tech (Accelerator Systems)

24 - 26 e- source - KOM, Kavli Bldg. 3rd floor conf. room

Accelerator Systems

19 - 21 Cavities - KOM

ML tech

12 - 14 Cryomodules & Cryogenics - KOM

ML tech

10 - 11 CFS/AS - KOM

CFS & Global

03 - 05 CFS/EU - KOM

CFS & Global

August 2007

27 - 29 RTML - KOM

Accelerator Systems

22 - 24 CFS/US - KOM

CFS & Global

20 - 22 Controls & LLRF Kick-off Meeting

CFS & Global

← FNAL GDE meeting



Recurring Critical Themes

- Interfaces and requirements for CFS were badly specified during the RDR phase
 - **Communication was poor**
 - **Accelerator Designers (physicists) were not clear how the technical / global groups wanted their information presented**
 - **Technical / Global groups received information from Accelerator Designers in rather ad hoc fashion**
 - **NO POSSIBILITY/TIME for design iteration or cross-checking (closing the loop)**
- RDR baseline is poorly documented!
 - **The RDR is thin (by design!) and rather conceptual**
 - There is much more detailed information out there!
 - **A critical item to resolve early in the EDR phase - RDR must represent not just a costing model, but also the formal technical baseline.**
- (“Draconian”) Cost Disclosure Policy often quoted as a “hindrance”
 - **Some truth in this, but to often used as an excuse (my opinion)**
 - **Better access to RDR “Budget book” will be supplied**

NB: CFS interfaces are critical to VALUE engineering and cost control

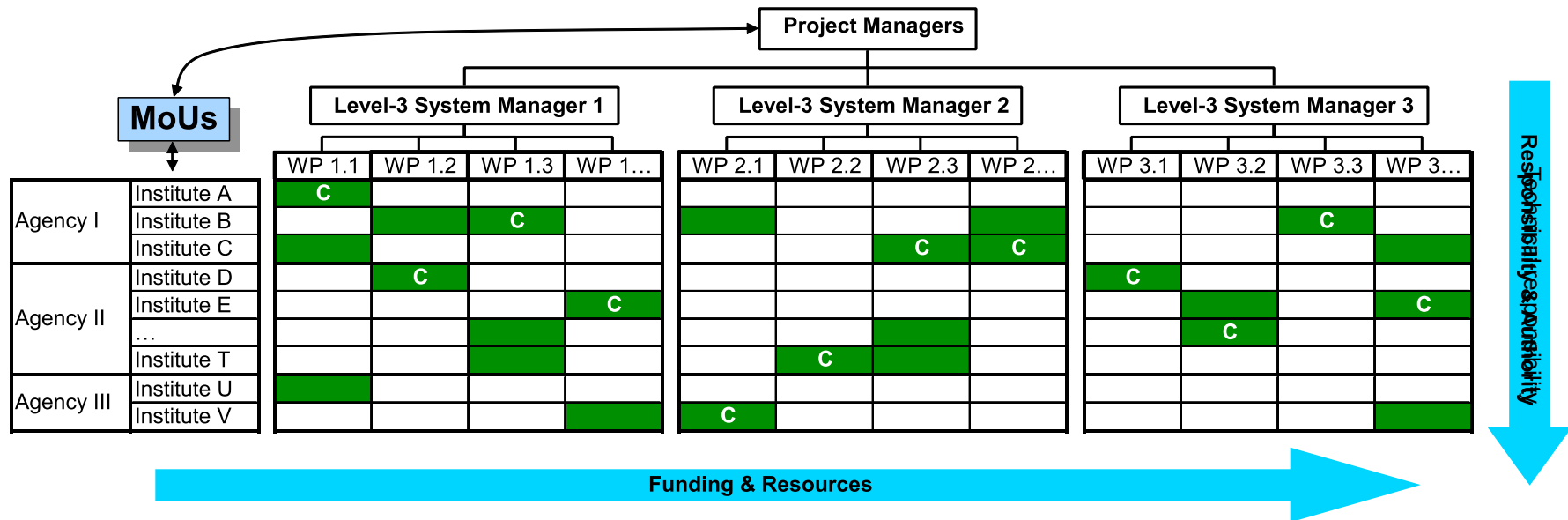


Work Package Definitions

- A Primary Goal of the KOMs
- Must be completed by FNAL GDE meeting
 - **WP descriptions must provide minimum set of required information**
 - PM to provide templates (see next slide)
 - **Proposed / know resources should be put forward**
 - WP allocation **must be** a clear, international transparent process
 - Several calls for EoI already in action for Accelerator Systems (BDS, DR, Positron Source)
 - Other L3 groups should follow suite (including MLI)
 - **WPs will be consolidated and an overall picture of resources available**
 - Resources will be short supply
 - Must attempt to make best use of available (on offer) resources
 - **Final WP structure (WBS) and resource allocation to be agreed with and signed-off by PMs.**

Technical Responsibilities :

(from RDR Chapter 7)



- Green indicates a commitment:
 - institute will deliver
- MoUs facilitate connection:
 - Project Management (authority and responsibility) and institutions (funding and resources).
- The 'C' → coordinating role in a WP
 - Each WP has one coordinator.

Project Management Structure example

Area: Main Linac Technology (to be completed)

| Regional/Institutional Effort: | | | Technical Effort (ML (SCRF) Technology): | | | | | |
|--|--|--|--|---------------------|----------------------------|--------------------|------------|--------------|
| <ul style="list-style-type: none"> - Director-US: Mike Harrison - Director-EU: B. Foster - Director-AS: M. Nozaki | | | <ul style="list-style-type: none"> - Project Manager: A. Yamamoto - Associate Managers: T. Shidara, J. Kerby, <p style="text-align: right;">* Group leader, ** Co-leader</p> | | | | | |
| Regions | Institute | Institute Leaders | Cavity (Process) | Cavity (Prod./Int.) | Cryomodule | Cryogenics | HLRF | ML Integr. |
| | | | L. Lilje* | H. Hayano* | N. Ohuchi* -H. Carter** | T. Peterson* | S. Fukuda* | C. Adolphsen |
| US | Cornell Fermilab SLAC ANL J-lab | H.Padamsee R. Kephart T.Raubenhaimer | H.Padamsee | C.Adolphsen | H.Carter | T.Peterson | R. Larsen | C. Adolphsen |
| EU | DESY CERN Saclay Orsay INFN Spain | R.Brinkman J. Delahaye O. Napoly A.Variola C. Pagani | L.Lilje | C. Pagani | Parma Franco Pal. | Tavian | | |
| AS | KEK | K.Yokoya | Noguchi, Saito | Hayano | Tsuchiya/ Ohuchi | Hosoyama/ Nakai | Fukuda | |



Work Package Definitions

- KOMs are currently generating “lists” of ED phase action items
 - **These must be evolved into complete WP definitions with more substance**
- WP definitions must contain (work in progress – template to be defined)
 - **Title**
 - **Category of WP**
 - e.g. technical engineering, beam dynamics, integration *etc.*
 - categories to be defined by PMs
 - **Statement of work**
 - **Milestones**
 - **Deliverables**
 - **Projected required resources**
 - Including resource type breakdown
 - **... (to be defined)**
- In addition, WP definition should contain proposed institute participation
 - **coordinator**
 - **institutional roles plus resources proposed/available**
- L3 managers are primarily responsible for generating proposed WP definitions (WBS)



R&D Work Packages

- The KOMs are focused on planning for the ED phase
- R&D WPs – including both R&D on the RDR baseline and Alternatives should be included in the WBS
 - **So far alternatives have been covered in KOM to various degrees of detail**
 - **Cryomodule and Cavity are a “special case”**
- Alternatives for Accelerator Systems tend to be mostly at the ‘conceptual design level’
 - **e.g. layout for short bunch compressor or single-stage compressor; compton e+ source**
- For Accelerator Systems, general level of design maturity still lacking even for baseline
 - **integration and CFS interfaces**
- Note: separation of R&D from Engineering not always well defined



Understanding the Scope of the EDR

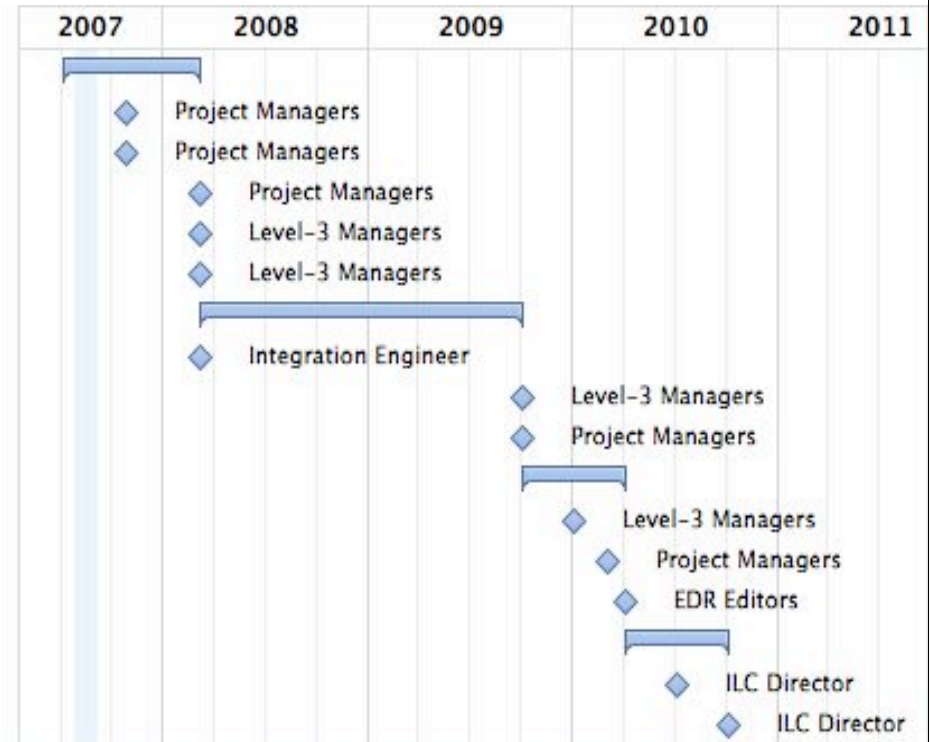
- The high-level goals of the ED phase are being developed in the ED phase Project Management Plan
- *Exactly* what we can achieve by mid-2010 still needs to be determined
 - **WP definition**
 - **Associated schedule with milestones**
 - **Priorities and critical path (cost-driven)**
- What we can achieve will clearly be resource limited!
 - **Several WPs may remain unallocated in the first round**
 - **Importance of identifying the critical path**
 - **Some negotiations inevitable**
- EDR will be a snapshot of the status of the technology in 2010
 - **Ideally, we would present a baseline design we believe we can begin construction of within two to three years.**
 - *Where down-selects have not been possible, EDR must describe how/when down-selects would be made.*
 - **(Promising R&D programs on alternatives will continue beyond EDR publication)**



Top-Level EDR Project Schedule

Task

- **1) Planning Phase**
 - 1.1) Release project guidance, tools, organizational info
 - 1.2) Release Engineering Project Management Plan
 - 1.3) Change Control template released
 - 1.4) Release accelerator areas WBS dictionaries
 - 1.5) Release preliminary list of accelerator area work packages
- **2) Execution Phase**
 - 2.1) WBS Level 1-3 Responsibilities & Interfaces reconciled
 - 2.2) Key technical issues answered for Engineering Design
 - 2.3) Completion of integrated value engineering exercise
- **3) Report Preparation Phase**
 - 3.1) First draft of EDR content provided by Level-3 managers
 - 3.2) Complete internal review of draft EDR
 - 3.3) Draft EDR released for external review
- **4) Review & Approval Phase**
 - 4.1) International Independent EDR Review
 - 4.2) Final EDR released



- Need to understand exactly what Planning Phase and Execution Phase mean for L3 groups.
 - i.e. filling in the details and group-specific milestones



Final Comments (Observations)

- Time is running short
 - **WP (WBS) definitions must now be formalised**
 - **Formal allocation of WPs (MoU) will be a delicate process**
 - institution level – not WBS level
- FNAL GDE meeting is critical milestone
 - **We want all WP definitions together by end of meeting**
 - **Complete ED phase WBS**
- PM management aware it has much work still to do to support L3 managers
 - **WP templates, EDMS, Process, Communication...**
 - **ILC-EDMS/Config. Management implementation**
 - **Reporting process, meetings etc.**
- Communication issues are still critical
 - **We strive to maintain a true global project**
 - **PM knows it (we) must do better**



Important items

- We must visibly open the door to international participation. RDR effort was far too US centric.
- Calls for Expressions of Interest should be sent out.
- ‘Plug compatibility’ vs ‘unified’ design
 - **Allowing parallel developments of plug compatible designs encourages innovation and participation.**
 - **Make down-select decision at appropriate time. EDR must describe plan for getting to ILC design.**
- Cost containment and value engineering will be an important theme of ED phase.
- Need to develop treaty points and requirements.
- Work Package descriptions are needed before Fermilab meeting - template available in a few days