

WBS for ILC Pre-Lab

Apr.12. 2021, Sources Group Meeting

WBS for ILC-Pre-Lab

- Create WBS (Work Breakdown Structure) for the work during Pre-Lab. (But the contents are not to be done in IDT)
- WBS: “A deliverable-oriented hierarchical decomposition of the work to be executed by the project team”
- Compatible with the Pre-Lab organization
- Include both “Area System” and “Technical System”
 - ✓ WBS for “Technical System” can be created based on the WBS for “Area System”
- Including FTE
- To be completed in ~2 months
- Person names to be filled later by the time of Pre-Lab start

Deliverables of the Prelab-Phase -> And who does it

- Accelerator design*
 - ✓ Overall integrated design -> AD&I
 - ✓ Sources, DR, RTML, ML, BDS -> Acc. areas
 - ✓ Artefacts: Lattice, beam parameters, system description, input for CFS design criteria (requirements), component counts, design for specific components, availability data,
- Technical components design*
 - ✓ Magnets, vacuum, diagnostics, LLRF, controls, dumps, collimators, survey and alignment, installation... -> Technical system groups
 - ✓ Artefacts: Component designs, technical data, prototypes, subsystem design, component unit costs, production plans, requirements
- SCRF design and prototypes*
 - ✓ Cryomodules, cavities, couplers, tuners, SC quad, BPM, HLRF (klystrons, modulators, PDS), cryogenics -> SCRF groups
 - ✓ Artefacts: Component designs, technical data, prototypes, subsystem design, component unit costs, subsystem costs, production plans, requirements
- Conventional facilities and site design*
 - ✓ Civil engineering (caverns, tunnels, surface buildings) design
 - ✓ Technical infrastructure (el. Power, water, HVAC, network, transport, safety, ...) designs
 - ✓ Site design (Campus, transport, water, power lines, housing...)
 - ✓ Artefacts: Requirements / design criteria, construction plans, costs, schedule, schematics, env. impact assessment,
- Project plan*
 - ✓ Cost estimate, cost book, project implementation plan, project schedule, construction project WBS and organisation, logistics plan, legal framework... -> project office
- Engineering plan
 - ✓ System architecture, Requirements, Risks, CAD model, Technical Documentation, QA plan...
- Outreach & PR material
 - ✓ Web site, videos, lectures, exhibitions... -> Outreach team

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* = "based on TDR, consolidated and updated"

Proposed 1st level elements of a Prelab WBS

THE ACCELERATOR (PRODUCT)

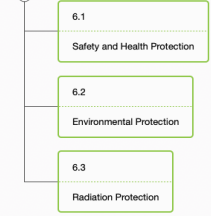
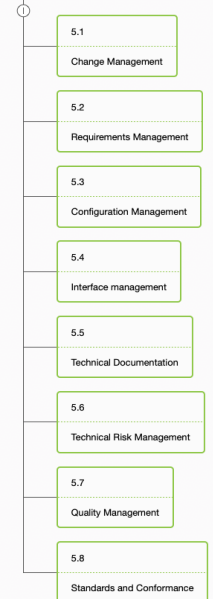
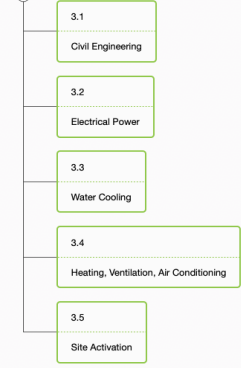
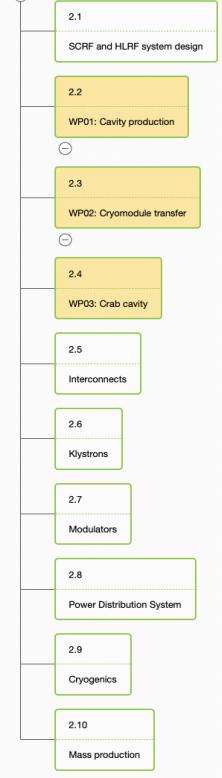
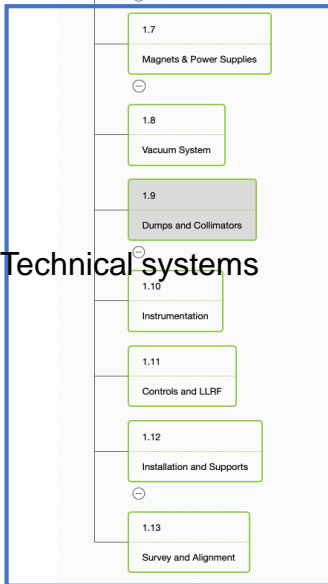
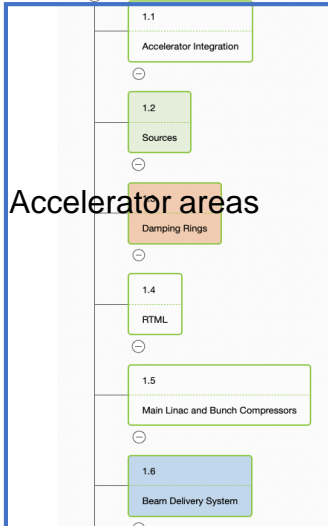
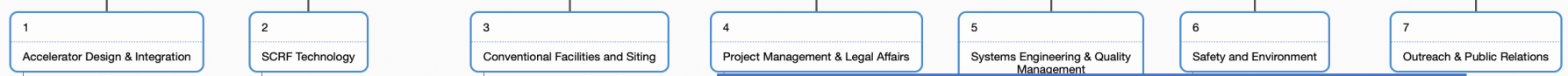
- Accelerator Design and Integration
 - ✓ Design the accelerator, its accelerator subsystems and their subsystem specific components
 - ✓ Design accelerator components (except SCRF/HLRF), including instrumentation and controls (Technical systems)
- SCRF (incl. HLRF) Technology
 - ✓ Design all SCRF and HLRF components and the cryogenic system, for the ML and other accelerator subsystems, produce prototypes, qualify vendors and hub labs, establish/qualify production sites and companies
- Conventional Facilities and Siting
 - ✓ Design all conventional facilities and the site

CROSS-SECTIONAL ACTIVITIES

- Project Management and Legal Affairs
 - ✓ Perform project management of the prelab phase (cost, schedule, ...)
 - ✓ Prepare Project Management of the Construction phase
- Systems Engineering and Quality Management
 - ✓ Support systems engineering processes of prelab phase (documentation, CAD, requirements, ...)
 - ✓ Prepare Systems Engineering processes for construction phase (all of the above, risk management, quality management, ...)
- Safety and Environment
 - ✓ Manage all safety, health, radiation and environmental protection issues
- Outreach and Public Relations

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ILC Accelerator Prelab



Cross-sectional activities

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