



U.S. Muon Accelerator Program Area System Talks Outline for 2014 MuPAC and DOE Reviews

Mark Palmer | December 3, 2013

Area System Presentations

Area system presentations will need to cover the following topics:

1. Area System Overview including Design Challenges and Potential Showstoppers (note: Challenges and Showstoppers will be mapped to a high level summary talk)
2. Initial Baseline Selection Schedule
3. Summary of key personnel and estimated effort required to complete the IBS process
4. Summary of key Technologies required
5. Summary of Technical Challenges and required Systems R&D Program

For some systems, items 4 and 5 may be broken out into a separate technology talk.

Area System Overview

Target Length: 5 slides

Content:

- Block diagram summary of all sub-systems included in the are system
- Nominal parameter table
 - Nominal input parameters and target output parameters being used
 - Sub-system specifications
 - Lattice parameters
 - Layout information (minimal information would be length)
 - Technical criteria (eg, accelerating gradients and frequencies for RF cavities, magnet technologies and fields required, kicker strengths,...)
 - Technology status: Existing, Extrapolation, Novel Engineering Design, or Design Requiring Directed R&D
 - Summary of design variants based on applications (ie, NuMAX, NuMAX+, HF, 1.5 TeV collider, 3 TeV collider, ≥ 5 TeV collider)
- Design Challenges
- Potential System Showstoppers

Initial Baseline Selection Schedule

Target Length: 3 slides

Content:

- GANTT Chart from master program plan
- Milestones waterfall chart from master program plan
- Constraints and potential conflicts



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Personnel & Effort Required

Target Length: 2 slides

Content:

- List of key personnel, institution and associated tasks
- Estimate of integrated effort required for each task (must be consistent with master project file)

Technology Summary

Target Length: 4-6 slides

Content:

- Summary of all technologies required for Area System
- Specify which are standard and which are novel
- For novel technologies describe how they compare to standard technologies

Technical Challenges and Required R&D

Target Length: 1-6 slides (wide range depending on degree to which novel technology required)

Content:

- Summary of technologies beyond state-of-the-art.
- Summary of technologies where advanced R&D could greatly benefit performance (eg, HTS-based dipoles at ~20T could double the luminosity performance of a collider ring)
- R&D program required (if any)
 - Identify key technology deliverables
 - Identify specific issues to be tested
 - Identify (roughly) the level of effort and M&S investment that will be required for the program
 - Identify synergies with other fields and/or HEP efforts where MAP and the parallel effort can benefit from collaboration