IDS-NF IDR Status: Accelerator

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Outline of Document Content

- Brief description of accelerator complex
- Progress since ISS
- Design for each subsystem
    - Proton driver
    - Target
    - Front end
    - Early acceleration: Linac/RLA
    - Final acceleration: FFAG
    - Decay ring
- R&D plans and tasks to get to IDR
- Appendices for alternatives

Status of Document/Design

- Major achievement: lattices for each subsystem
- Target known to need an updated design
- Need infrastructure for target region
- Front end in good state
- Some inconsistencies in Linac/RLA
- Have FFAG design, beam dynamics work needed
- Decay ring needs injection/extraction
- Decay ring needs more diagnostics work

Plan for RDR

Year 1 1 2 3 4 5 6 7 8 9 10 11 12 Year 2 1 2 3 4 5 6 7 8 9 10 11 12

Accelerator complex
Full lattice-walkthrough complete
Proton driver
Target
  Revised shielding and solenoid system
  Target station infrastructure defined
Muon front-end
  Define particle-loss handling mechanism
  Engineering of components
Linac and RLAs
  Define physical layout of linac and RLAs
  Engineering of components
  Initial cost and performance comparison with FFAG scheme
  Particle tracking through system complete
FFAG
  Longitudinal beam ellipses defined
  Transfer lines to/from FFAG defined
  Engineering of FFAG magnets complete
  Tracking through FFAG complete
  Chromaticity-correction scheme defined
  Error tolerancs defined
Storage ring
  Sectupole configuration defined
  Injection scheme defined
  Concept for ring diagnostics defined
Tracking through full accelerator complex