

| Integrated luminosity | Milestone | Scenario 1: tracker weak mode resolved | Scenario 2: tracker mode not resolved |
|------------------------------|--|---|---|
| 0 pb-1, stage I | Provide relative alignment of chambers within structures | Hardware/PG: - 1 mm (?) (endcap and barrel) | Hardware/PG: - 1 mm (?) (endcap and barrel) |
| 0 pb-1, stage II | Provide absolute alignment (connection between muon system and tracker) | Beam Halo (relative alignment): - 300 microns (4 CSC rings) Cosmics (absolute alignment): - 400 microns (endcap) - 300 microns (central barrel: ~70% of chambers) | Beam Halo (relative alignment): - 300 microns (4 CSC rings) Cosmics (absolute alignment): - 400 microns (endcap) - 300 microns (central barrel: ~70% of chambers) |
| 2 pb-1 | Near design accuracy for Barrel Station 1 chambers (wheels -1, 0, +1) | Collisions (absolute alignment): - 700 microns (endcap ME1/1, 1/2) - 300 microns (barrel station 1, wheels -1, 0, +1) | not possible |
| 5 pb-1 | Design accuracy for Barrel Station 1 (wheel -1, 0, +1), Much improved Endcap (ME1/1 and 1/2) | Collisions (absolute alignment): - 450 microns (endcap ME1/1, 1/2) - 150 microns (barrel station 1, wheels -1, 0, +1) | not possible |
| 20 pb-1 | Design Accuracy for all Barrel and Endcap Station I | Collisions (absolute alignment): - 250 microns (endcap ME1/1, 1/2) - 500 microns (other endcap stations) - 350 microns (barrel) | not possible |
| ~50 pb-1 | Design Accuracy for the entire system | Collisions (absolute alignment): - 250 microns (endcap) - 200 microns (barrel) | not possible |

Table 2: Summary of alignment milestones (Note: barrel and endcap station 1 determines momentum resolution, so it is the most critical part)