

Status of magnet activity work packages and perspectives for the remaining part of 2005

- Main dipoles and attached spool-pieces
- Main quadrupoles and lattice correctors
- Insertion magnets (MQM, MQY, MQTL, MQW, D1→D4)
- Triplet quadrupoles and triplet corrector packages

Color coding:

-Black → Done (in 2005 or previously)

-Blue → Planned to be done in 2005

-Red → To be done with high priority in 2005

Main dipoles and spools (SF & JBJ)

• MB

- **Aperture tolerances** → done
- **FQ specification** → done and sent to the FQWG
- **Sorting strategy** → done
- **Slot assignment** → on-going:
 - Sector 78 and 81 almost finalized (4 slots still empty)
 - Slot assignment of sectors 45 / 34 should start around end of June / September

• Spool

- **Alignment specification** → done/updated/to be followed up
 - Relaxation of the **alignment tolerances at WP08** (triggered by the change of fiducialisation procedure) → done for the MCS but tracking still to be done for the MCDOs
- **FQ specification** → done/updated
 - Tolerances on the **hysteresis width** at injection and AP requirements on **transfer function accuracy** → done.
 - Update for the **low harmonics of the MCDO** → done

Main quads and lattice correctors (AL & JBJ)

• MQ

- **Aperture specification** → updated for arc SSS (from Q13 to Q13), **being completed for “golden SSS” (at Q11/Q12/Q13).**
- **FQ specification** → done and sent to the FQWG
- **Sorting strategy** → done
 - Based on b2 ($\pi/2$ paring).
 - Special care for SSS with wrong collar permeability (anticipation work done very early in the production: SSS mounted with a given corrector to go to a given slot)
- **Slot assignment** → **on-going**
 - Pre-assignment of sector 78 and 81 based on the TF function at warm → done
 - Slot assignment (one by one) of sector 81 → 50% done.
 - **Sector 78/81/45 and 34 → to be done/finalized in 2005.**

• Lattice correctors

- **Alignment tolerances** → done/**to be followed up**
 - **Alignment problem of the MS's under investigations** (perhaps a wrong problem)
- **FQ specification** → done/updated/**to be followed up**
 - Tolerances on the **hysteresis width** at injection and AP requirements on **transfer function accuracy** → done.
 - Dedicated studies for out-of spec. multipoles (e.g. b1 in MO's, b10 in MQT)
 - **FQ specification tables to be sent to the FQWG**

Insertion magnets (MG & JBJ) 1/2

• Cold D1/D2/D3/D4

- **Aperture specification** → done/to be followed up
 - D4 will need special care when it will come to MEB (possible aperture bottom neck)
- **FQ specification/ tracking studies** → done.
 - In particular identification of dangerous multipoles in D4 (b3) → DA loss of 0.5σ
- **Slot assignment** → on-going
 - 4 D1's; 6 out of 8 D2's already assigned; the 2 remaining D2's already pre-assigned.
 - D3/D4 to be evaluated/assigned in 2005

• Warm D1/D3/D4

- **Aperture specification** → done
- **Preliminary analysis (measured FQ compared to cold D1)** → done (not critical).

• MQW

- **Aperture specification** → done
- **Tracking study (based on measured FQ)** → done (not critical).
- **Sorting strategy** → defined (based on aperture and minimization and b2 spread).
- **Slot assignment** → should start in 2005 (with sectors 78 and 34)

Insertion magnets (MG & JBJ) 2/2

• MQM/MQY/MQTL

- **Aperture tolerances** → to be followed up one by one at MEB approval rate
 - MADX aperture module ready to evaluate $n1(s)$ along a magnet with its shape ($dx(s), dz(s)$) given as input.
 - Identification of the “critical” and “non-critical” special SSS’s being completed.
- **FQ specification/tracking studies** → done/to be completed
 - MQM → done (not critical) and sent to the FQWG; **impact of the b6 hysteresis to be analyzed**
 - MQY → tracking done (critical), **specifications to be issued with identification of most dangerous multipoles (for sorting) and most critical slots (IR4/IR6?)**
 - MQTL → tracking study done, **specification to be issued (mainly for b10)**
- **Slot assignment** → **not yet started but** several contacts already taken with AT/MEL for anticipation before cryostating.

• Orbit correctors MCBY

- **FQ analysis** → done/to be done
 - FQ specification → done (in particular impact of large b3)
 - Tolerances on the **hysteresis width** and AP requirements on **transfer function accuracy** → to be done.

Inner triplets (FS & JBJ)

• MQX

- **Aperture tolerances** → done but **not yet compared to the production** (waiting for data)
- **FQ specification/tracking study** → done/to be completed
 - Tracking studies for various optics in collision but **clarification still needed for MQXB's**
 - **Tracking study to be done at injection (including pre-squeezed optics in IR1/5)**
- **Sorting strategy** (if needed) → **criteria not yet defined** (perf., apertures, FQ?)
- **Slot assignment** → **not started, first triplet to be assigned in August 2005 on the left side of IR8**

• Corrector packages

- **Requirements on corrector strength** → done but **followed-up needed after clarification of the MQXB data (mainly b4)**
- **Alignment tolerances** → done in the past, **refreshing them would be a good idea.**
- **FQ tolerances** → done/to be completed
 - FQ specification → a priori not critical
 - Tolerances on the **hysteresis width** and AP requirements on **transfer function accuracy** → to be done.