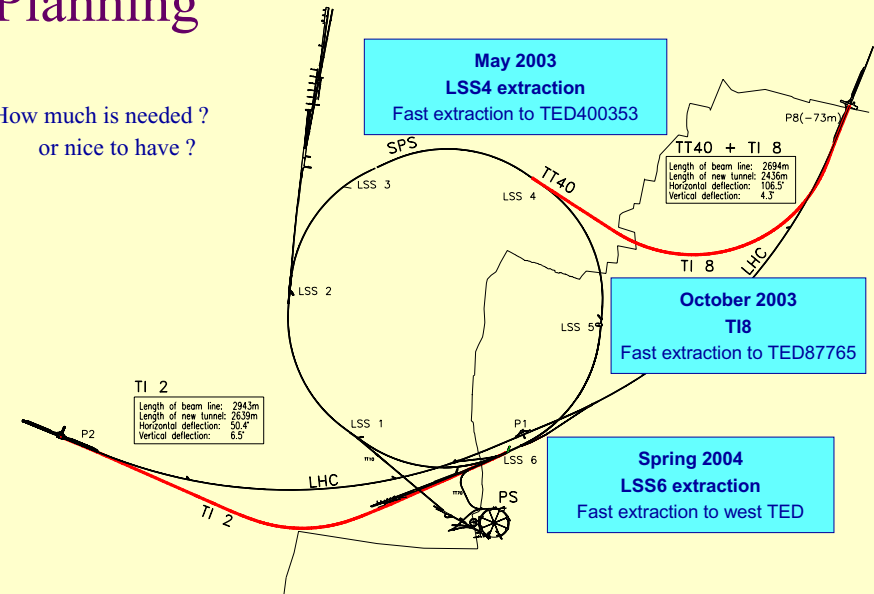


Application Software for the Transfer Lines

1. Planning
2. Extension of the existing software
3. Expected from Equipment groups
4. Existing software limitations
5. New Software for the Transfer Lines
6. Transition to SPS2001
7. Timescales

Planning

How much is needed ?
or nice to have ?



Extension of the existing software (needed)

- More lines, more HW
 - Database additions
- New monitors
 - new drive & measurement blackboxes
- High intensity
 - sanity checks to avoid mistyped trims
 - tolerance on magnitude per HW

Extension of the existing software (nice to have)

- Rapid supercycle change
 - Preload several supercycles into the HW
 - TZ and SPS software, otherwise no gain
 - needed in 2006 for LHC octant test ?
- Synoptics
 - general request
 - more important when more transfer lines

Preload several supercycles into the ROCS

One supercycle is composed of elementary cycle(s)

One function for each elementary cycle BIS+BOS

One event per function

- **Event = 21 1E <cycle type> <cycle number>**
cycle number = the ordinal number of this cycle type in the supercycle
Future : a number, unique for this cycle type in the preloaded supercycles

- Supercycles might not start anymore with
FIRST PROTON = 21 ** 01 01
Synchronisation on Start SUPERCYCLE = 20 FF FF FF

- Timing tables to be modified

Expected from Equipment Groups

- **PO**wer Converters

- ROCS and MPS-Mugef enough non volatile memory
- ROCS variable MAXFUNCTS increase
- Software EVLIST and MPS-Mugef server
- Polarity switch handling in the eq
- wish : current/bit conversion in the

- **B**eam **I**nstrumentation

- Acquisition delays handling in the or delay fixed to N milliseconds aft
- wish : provide information in term
 - high level SW not concerned by
 - it would reduce load and comple

The equipment should handle what the equipment knows

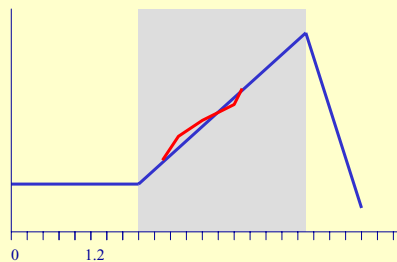
Existing software limitations

- Limited number of preloaded SC's

- HW capacity
- Timing events

- Trims on TZ or SPS Segment ID

not per Beam Process



- No Interlock handling

New Software for the Transfer Lines

- SPS2001

- Kickers and some other BT equipment in 2002
- Cycle dependent SW Interlock later

- CMW middleware

- New BI equipment

- SSIS modified

- SW interlocks for 2003

Transition to SPS2001

- Equipment access
 - SL-Equip SPS2001 device service
- Database
 - No duplication of data
 - TZ Oracle + SPS C-Tree + SPS2001 databases

TZ-SPS and SPS2001 will run simultaneously
accessing the same equipment and the same data

Timescales

- 2002
 - Run with TZ-SPS software modifications including what is expected from equipment groups
 - SL/BT and SL/BI new SW interfaces to SPS2001 and CMW
- Q2-2003: ready for SPS extraction (TT40)
- Q3-2003 : ready for TI8 commissioning
- 2004 : ready for LSS6 extraction