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# Concluding Remarks

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# LHC Schedule

- Commissioning of LHC is underway
    - Sectors commissioned to either 450 GeV or 7 TeV
  - Ring/vacuum closed end August 2007
  - Engineering run (450 GeV) at end of 2007
  - Followed by shutdown to commission remaining sectors to 7 TeV
  - 7 TeV run in second half of 2008 (100 days)
  - `Free' Access to the tunnel until end April 2008 followed by Controlled Access during 1-month Machine Check-out
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# Status of Detectors – LHCf & Luminometer

## ■ LHCf

- Arm-1 (SciFi) ready while Arm-2 (Si) final assembly in February 2007

## ■ Collision Rate Monitors

- Fast Ionisation Chambers (BRAN)
    - Two complete in April 2007 and two by June 2007
    - Critical path through read-out electronics
  - CdTe Detectors
    - First full module delivered November 2006 and remaining three by April 2007
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# Status of Detectors - ZDCs

- ATLAS ZDC (full 8 modules)
    - Assembled and ready-to-install in July 2007
    - Main schedule uncertainty is DAQ electronics
  - CMS ZDC
    - Both detectors assembled in March 2007
  - ALICE ZDC
    - Moveable platforms assembled
    - All 4 ZHAD assembled and ready
    - One of two ZEM assembled
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# Status of Detectors -Roman Pots

- TOTEM

- All Roman Pots ready for installation early 2007
- Detectors will be available through autumn 2007

- ATLAS Roman Pots (ALFA)

- Order of final components after pre-series sign-off in February-March 2007
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## Installation in LHC Tunnel – LHCf / BRAN

- Successful pre-installation/removal of LHCf Arm-1 and BRAN in TAN at LSS1L.
    - Issues that have been identified will be improved to optimise the final installation.
    - Handling of devices following LHC operation must be optimised to minimise dose to personnel.
  - Pre-installation of LHCf Arm-2 in LSS2R in April 2007
  - Final installation dates for LHCf to be agreed together with LHC Machine
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# Installation in LHC Tunnel - ZDCs

- ATLAS ZDC

- Installation depends on LHCC approval and available LHC schedule windows.

- CMS ZDC

- Installation window requested March-June 2007

- ALICE ZDC

- LSS2R April 2007
  - LSS2L May 2007
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# Installation in LHC Tunnel – Roman Pots

## ■ TOTEM

- Install 4 Roman Pots (LSS5L) in March 2007 and 4 Roman Pots (LSS5R) in April 2007
- Detectors installed in RPs once `stable' and `clean' beams have been established.

## ■ ATLAS Roman Pots (ALFA)

- Roman Pot Unit installation in May 2007 (or during 2007/2008 shutdown).
  - Aiming for detector and electronics installation in 2008/2009 shutdown
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# General Observations

- All detectors (except ALFA) plan to be installed and commissioned to take data during the LHC engineering run at the end of 2007.
  - Very busy months ahead to accomplish this
    - Complete detector production, and the installation & commissioning in LHC tunnel.
  - Longer-term forward physics is being prepared
    - CMS/TOTEM, FP420
    - Expect continuing and extensive physics programme with detectors in the LHC tunnel
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# Issues to take into Account

- Excellent collaboration reported between various CERN Departments (AB, PH, TS), the CERN Safety Commission and the Collaborations (ATLAS, CMS, LHCf, TOTEM).
    - This remain a central element for the timely and safe completion of the installation and commissioning of all near-beam detectors in the LHC tunnel.
  - Schedules need to be closely and continuously followed-up with the planning officers of the LHC.
    - Intense level of activities planned for LHC tunnel in 2007
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## Issues to take into Account

- Test/pre-commissioning of detectors at SPS prior to LHC installation is strongly recommended.
    - Particularly combined test beam LHCf/BRAN at the SPS and of CdTe Detectors.
  - Machine-induced backgrounds must be carefully monitored and controlled particularly during the `engineering' initial LHC running periods.
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