



ATF2: laser-wire layout

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- General Strategy
- Funding situation/schedule
- Staged implementation

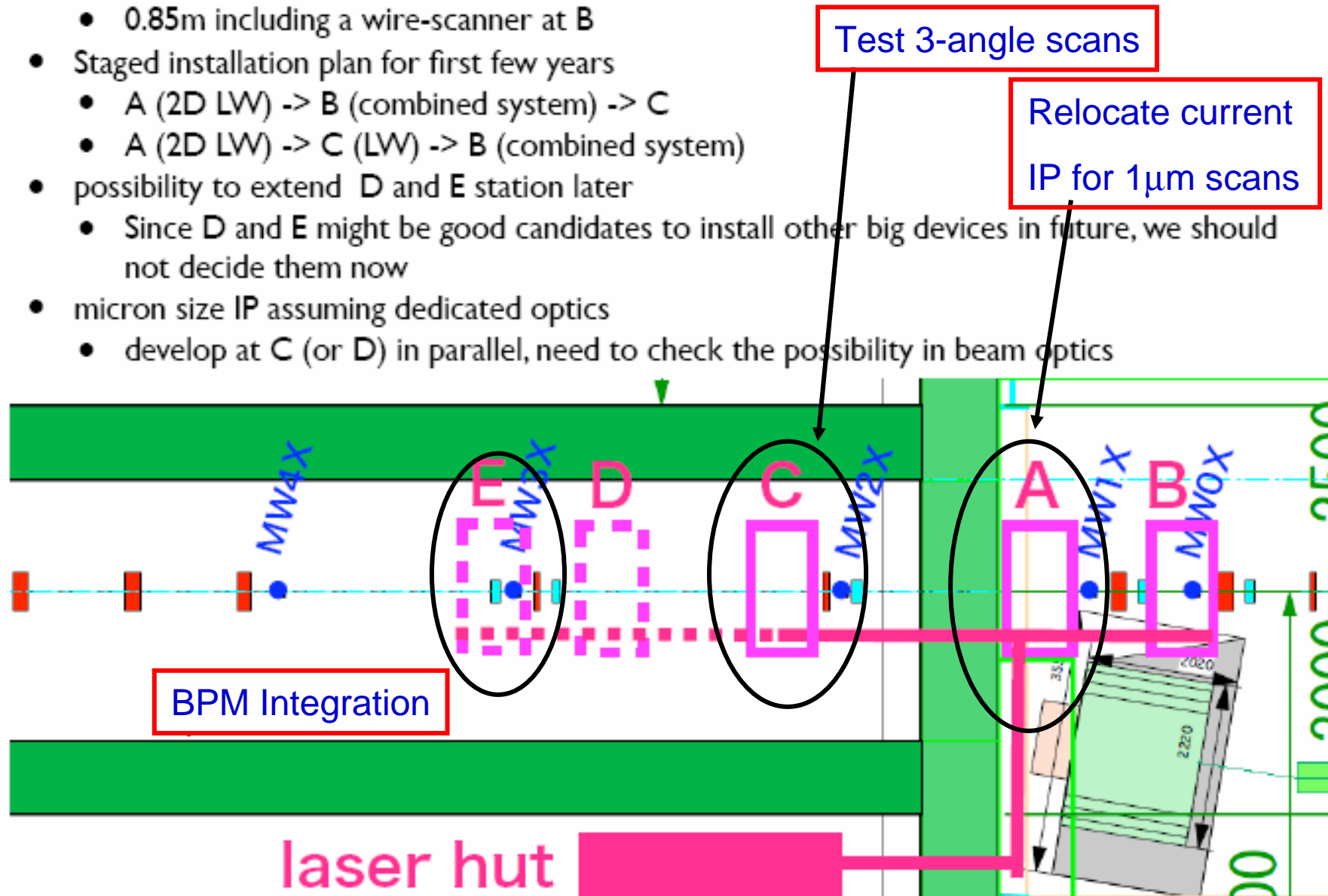
ATF2 LW Layout

A multi-stage approach is foreseen

- Start with installation of laser hut
- First stage of light transport system
- Relocate current LW IP to μm location
- Single 3-angle LW-IP system to test.
- nanoBPM integration system.
- Then add IP's as project progresses; ideally to supplement/replace solid wire scanners.

Location of laserwire-scanners

- Looking for 1m free spaces in the diagnostic section
 - 1.2m free space at A
 - 0.85m including a wire-scanner at B
- Staged installation plan for first few years
 - A (2D LW) -> B (combined system) -> C
 - A (2D LW) -> C (LW) -> B (combined system)
- possibility to extend D and E station later
 - Since D and E might be good candidates to install other big devices in future, we should not decide them now
- micron size IP assuming dedicated optics
 - develop at C (or D) in parallel, need to check the possibility in beam optics



Summary

Aim at sub-functionality (separate) tests: at ATF

- 1 μm measurements + systematics using existing vacuum vessel
- Develop a new vacuum vessel + optics for 3-angle scans
- Develop light transport system; install core system (or 'dummy') at beginning of project.
- Develop a nanoBPM integrated system for subtraction of bunch jitter.
- At PETRAIII develop 130kHz EO scanner for eventual use at ATF2.
- New proposal has been through peer review; recommendation has been sent to UK PPARC Science Committee, which meets on 29th January 2007.
- Subject to funding and detailed schedule, replace (or supplement) solid wire scanners with 3-angle schemes after first prototype has been tested and improved.
- Later stage of ATF2; perform emittance measurement at 130 kHz (or similar) using 4-IP laser-wire system. Detailed schedule and priorities can be worked out later; but some space should be outlined for future use now.