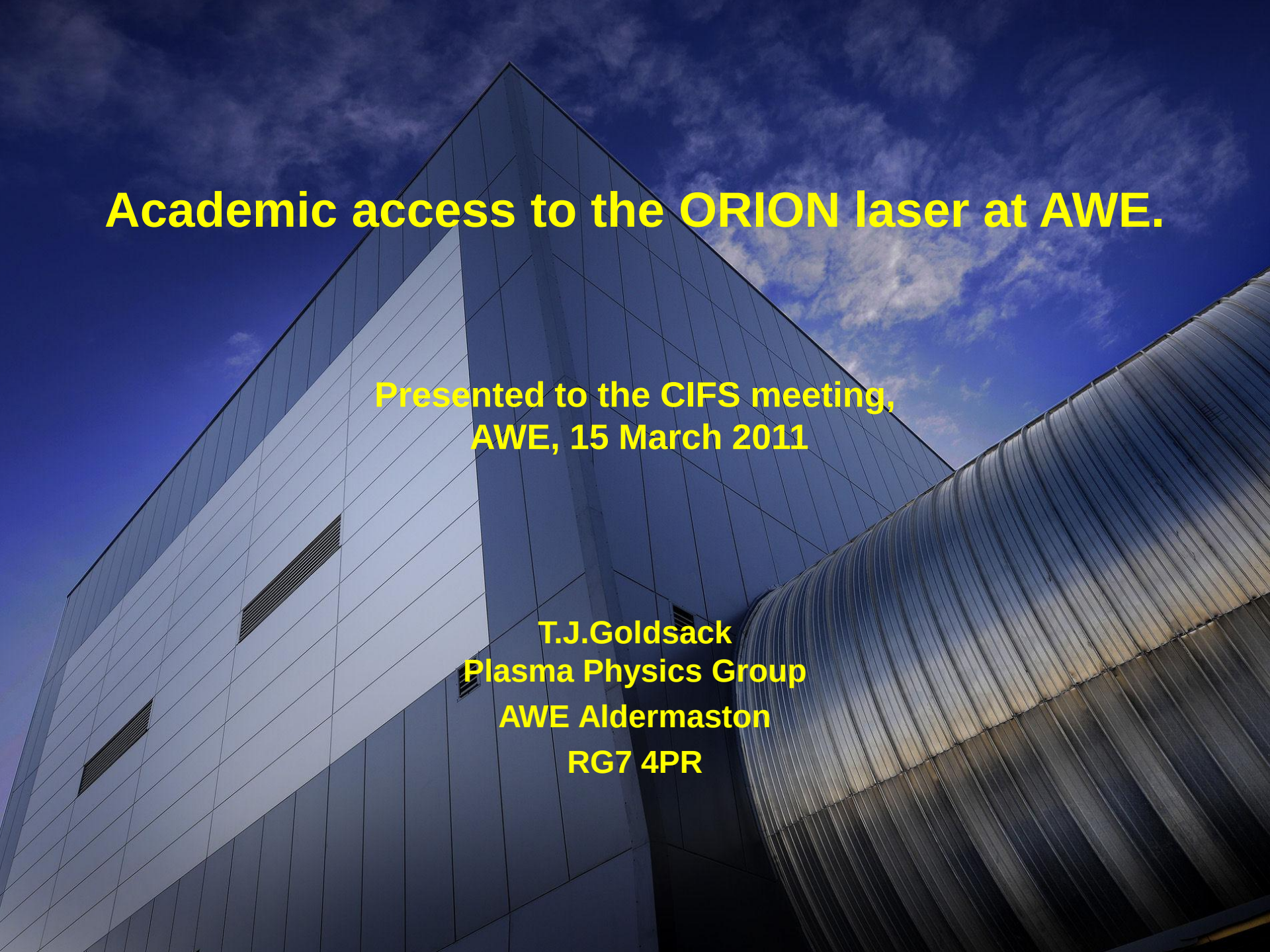

Academic access to the ORION laser at AWE.

Presented to the CIFS meeting,
AWE, 15 March 2011

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Plasma Physics Group
AWE Aldermaston
RG7 4PR

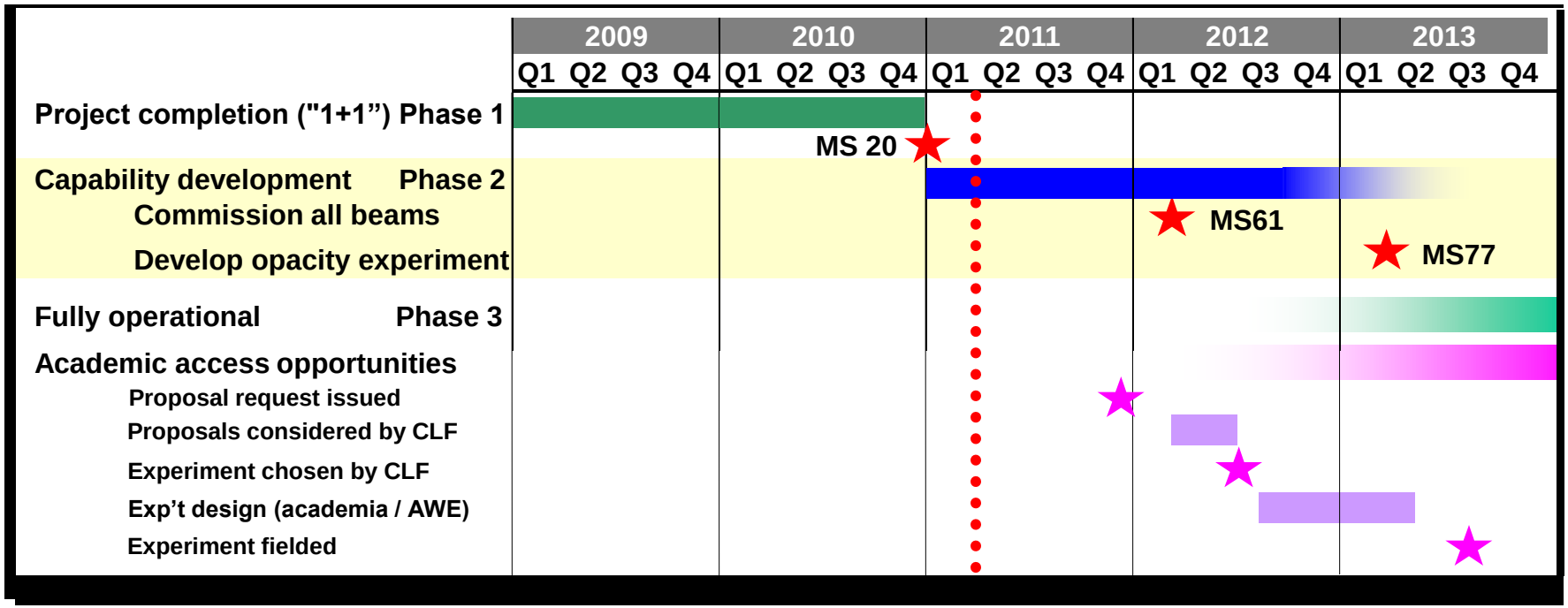
“Project completion” was achieved in Dec 2010. We are now commissioning the rest of the system – March 2012.

- End of project performance “1 + 1” :
  - One long-pulse beam: 500J @ 1 ω; 50 J @ 3 ω
  - One short-pulse beam:
    - 300 J uncompressed
    - 100 TW compressed
  - All items working at “sub–system level”, including target diagnostics

  } Timed to ± 50 ps

- Performance required for scientific programme “10 + 2”:
  - Long pulse: 500 J @ 3 ω in all 10 beams
  - Short pulse: 1 PW compressed in both CPA arms

Full academic access (15%) to ORION starts after Milestone 77 (April 2013) but there may be opportunities for friendly collaborators before then.



Academic access protocols will be published later, but principles have been agreed.

- Process has been tested on HELEN
- No facility charges – for collaborative experiments*
  - Limited diagnostic and target fabrication support will be available, but subject to prior negotiation
- RAL to act as portal
  - Apply through RAL
  - AWE presence on selection board to ensure:
    - Relevance to AWE
    - Consistent with laser and diagnostic capabilities including any proposed upgrades / modifications
- T&S NOT funded by AWE.
  - Applicants are expected to be self-funding in this regard through Research Councils' travel grants etc.

**** Non-collaborative experiments may be possible, but UK Treasury rules mean that facility time will be chargeable to the user.***

Likely time-scales

- Invitation for ORION use proposals issued to academia – probably late 2011
- Some ORION time may become available to academic users during CY 2012, but full academic access not available until mid-2013.
- Up to 15% ORION time available for collaborative experiments
  - Best chance of success if in areas of interest / relevance to AWE, including, but not limited to:
    - Material properties
    - Diagnostic or technique development
    - Short-pulse physics studies
- Early collaborative experiments should be consistent with an emerging system
  - Laser and diagnostic requirements similar to those in existence at that time
  - No significant facility or equipment modifications needed
- Post-acceptance by RAL portal, experiments will undergo close scrutiny by AWE Readiness Review panel to ensure readiness to proceed and compatibility with ORION systems
  - Don’t want to damage system
  - Need to ensure safety