

NAOMI Optical Chassis PDR Requirements

wht-naomi-80

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1. Full optical performance diagrams and tolerances, adjustment ranges and their sensitivities
2. Design and functionality description of calibration unit, including f/11 simulator
3. Description of alignment procedure including optical test procedure before integration with WFS.
4. Optical coating details (at least nominal coatings, demonstrating that throughput goals are achievable with existing types of coating)
5. Detailed design (close to assembly) drawings for key or unusual components
6. Statement on intended handling of scattered light and ghosting minimisation
7. Design drawings showing size, envelope and adjustments for all other components
8. Details of all space constraints and any conflicts, including for WFS/TTS, Science Instrument, acquisition camera, calibration unit
9. Weight estimates of all mechanical, optical and electronic sub-systems
10. Cable plan, including outline for WFS (with camera), DM, FSM and all motors and drivers power and signal cables, routes to electronics racks
11. Location and size of electronic components and their power requirements (includes on-bench motors and off- or near-bench drivers)
12. Cooling method and plan for electronics racks
13. Proposed software architecture and interfaces - minimal description only.
14. Improved estimate of software effort to supply engineering level control
15. Identification of software components, libraries and other third party systems and device drivers to be employed
16. Description of interface requirements to other work packages (e.g. the software architecture, WFS crosshead and pick-off stage, WFS on-bench calibration unit)
17. Preliminary list of documentation that will be provided on delivery
18. Identification of types of electronics drivers and especially unique components, with approval for their use received from ING
19. Detailed Project Plan with updated cost estimates and profiles
20. Brief risk assessment summaries, highlighting key critical path items and items of high technical risk.

Delayed or removed requirements

The following have been removed or modified from the PDR requirements list. Each of these will instead be covered either by the first System Design Review or the CDR

1. Preliminary analysis of thermal and vibrational sensitivities, at least to level of where any problem areas can be anticipated.
2. Plan for bench location and size.
3. Preliminary plan for out-of-GHRIL re-assembly, alignment and testing.
4. Preliminary mounting, alignment, dismantling and storage plan including for safe and convenient DM removal and to provide access to GHRIL for pointing check.
5. Proposed software architecture and interfaces - description of overall system and plan.