**Tutor Meeting, Week 4, Thursday 16th March**

**Location:** ANU, E240

**Time:** 14:00 - 15:00

**Pitch:** Thursday 23 March 4-5, 5-6PM

**Attending:**

|  |  |
| --- | --- |
| Semiconductor Laser Team | Jordan Davies, Alex Stuchbery, Gerard Kennedy, Markus Dirnberger, ~~Samson Nilon~~ |
| Observers | Andrew Spooner, Cheng Cheng, Xiaohan Gu, ~~Jonghun Lee~~, Yaoren Zhang |
| ENGN4221 Staff | ~~Chris Browne~~ Nic Rumsey-Hill (for Cedric Scheerlink) |

**Agenda:**

1. **Meet and greet**
2. **Project review and update:**

Progression of the Project Pro Forma

Progression on the System Subsystem Specification (SSS)

Development of client-team relationship:

Finalised client meeting times

Co-shared work space

Document sharing

1. **Input from Chris/Nic/Observers**
2. **Next steps**

Client sign off on Project Pro Forma

System Requirements Review Preliminary 17MAY17 for redirection or verification

Continue development of the SSS

**Questions / Discussion Points:**

* Clarify content and outcomes of Project Review report
* Ask for input into and validation of draft Systems Engineering Process
* Discuss ANU policies and course expectations surrounding NDAs
* Clarify Personal Development Report guidelines

**Resources:**

* [**Observer Tutorial Team Membership list**](https://cs.anu.edu.au/pages/courses/techlauncher/current_students/campus_only_Teams_byName/)

**Meeting Summary**

* Introductions, overview of project
  + Basic overview of adaptive optics
  + Three laser types: EOS, Toptica, OPSL
    - EOS: over time, over budget, undefined specs
    - Toptica: only commercial laser
    - OPSL: Our client is designing and manufacturing
  + Mounted onto the same telescope, environment, **interface (our scope)**
* **Our Task**
  + Minimum scope: requirements, analysing conflict
  + Stretch goal 1: conceptual designs
  + Stretch goal 2: prototyping
  + Best case scenario: 3 lasers mounted at once, looking more like 2
  + Why 3 lasers?
    - to compare them and help choose the most appropriate laser type (usage, cost)
    - Moving optical components is difficult
      * Moving heaving parts
      * Hours/days of optical realignment
* **What we have done so far:**
  + Project Pro Forma (scope: in/out, context, objectives, document tree/deliverables, schedule)
  + Meeting with client tomorrow
  + Three reviews:
    - Prelim 1: Verification, redirection
    - Prelim 2:
* **What will we be doing next?** Determine/verify requirements to be checked off by client
  + The telescope dome (physical)
    - Inspection and tour, CAD models
      * Inspect thread of mounting holes, mounting plate
    - Power outlets (power capacity/quality to be determined)
  + Environmental
    - Temperature range - telescope vs laser requirements
    - Airborne particles: dusty! ??ppm
      * Laser enclosure to cleanroom standards
    - Vibration: micro-vibrations of the optical cavity
      * Most intensive operation: tracking fast moving objects, acceleration/deceleration
    - Control and software
      * Inputs/outputs of laser, control room

>>> We are providing managerial view of the project

sourcing, collating, analysing, confirming all the information we have

* General discussion:
  + 9-5 all day @ Stromlo
    - Direct access to facilities and staff
    - Talking to key engineers directly
    - Take detailed measurements of optical breadboards
  + Nic: define all details in the nitty gritty to lock them in
  + Make sure that our emails get replies
  + SERC is the big boss in terms of funding
* The Pitch
  + Mini elevator pitch: Three golden circles (30 secs)
    - Why (the project exists): verify cheaper/better laser technology
    - How (we are going about it): working at EOS/AITC with engineers
    - What: contributing the requirements and design review for AITC to produce technology
  + The 6 points (4 minutes)
    - Context for GSLs and adaptive optics
    - GSLs available, interface requirements, why there are 3
    - Problem approach: collect requirements, identify conflicts, resolve
    - First time this is being done: not different, but unique
    - Progress review
    - Next steps and resources we need to move before
  + Suggestion from Nic: functional architecture OR component / subsystem interface diagram
    - Helps to explain everything in one picture for the pitch
    - Can show it to our client, get their input, perhaps make suggestions to change things
    - We already have the subsystems, the interface requirements are still in progress
    - Priorities are less important, no commercial aspect, rather meeting all the client’s requirements for a scientific purpose
    - Concept independent point of view, avoid bias
* For Friday
  + Seek out Brady for help on how to present the many many requirements visually and efficiently
  + Functional architecture OR component / subsystem interface diagram?

**Plan for Friday**

|  |  |
| --- | --- |
| Time | Tasks/Event |
| 09:00-11:00 | Alex: James Webb EOS laser requirements  Markus: Celine - Toptica laser requirements  Implemented in an operational state   * physical dimensions * power requirements * temperature ranges * optical interface   Gerard: Brady? Editing Document Pro Forma  Samson: Brady? |
| 11:00 | Continue working |
| 11:45 - 13:00 | Possible pub lunch |
| 13:30 | Jordan arrives at 13:20ish for the meeting  Meeting with Celine, Brady, Mark, Elliot |

