Main Interferometer Subsystem

Installation and Commissioning Plans

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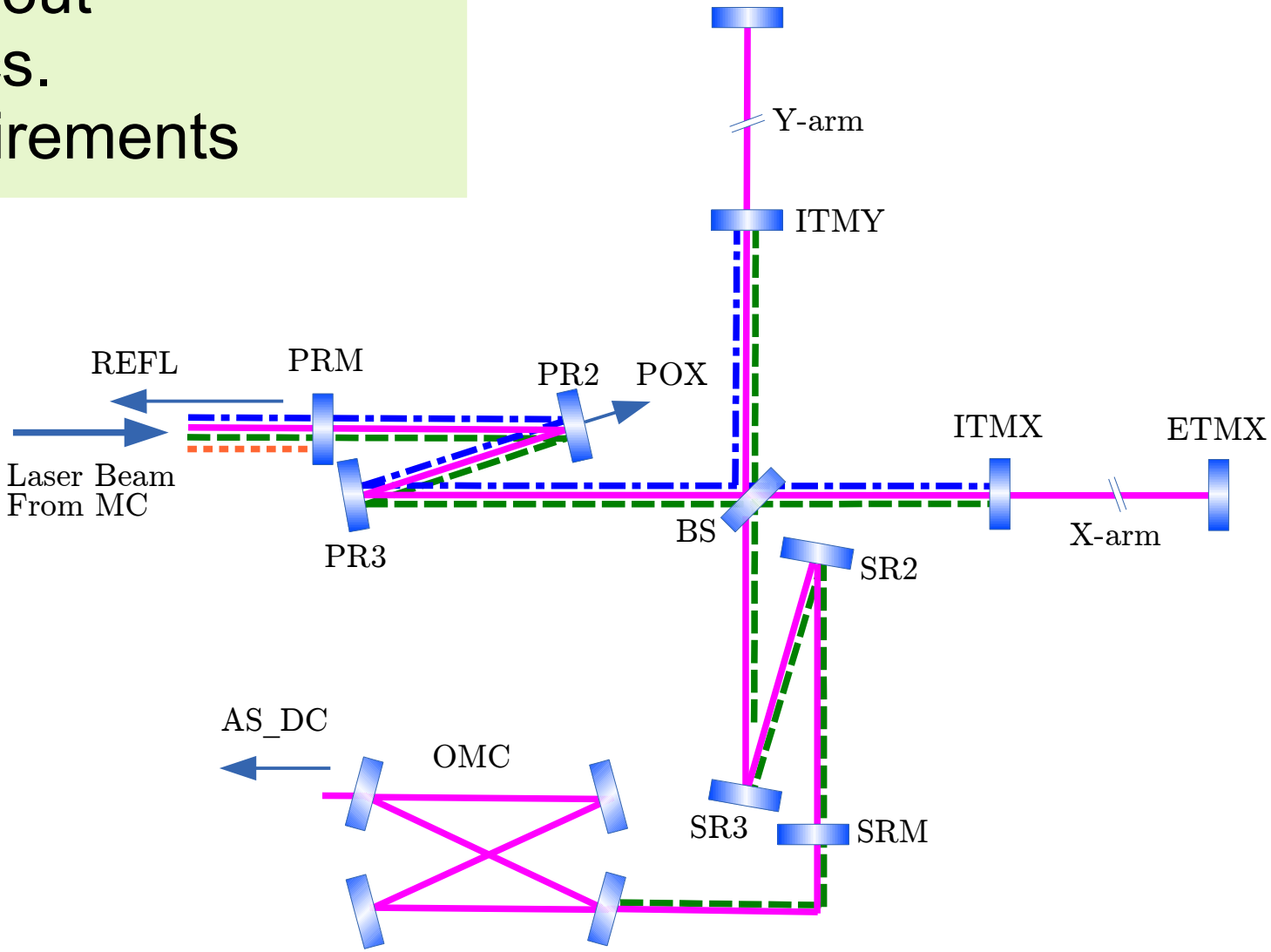
What have we done so far ?

- Optical Design
- Signal Extraction Scheme
- Optical Layout
- Mirror specs.
- Noise requirements



Things to be prepared before the installation begins

(for iKAGRA)

For Control

- Detailed servo design
- Analog Circuits
- (RFPD, DCPD, RFQPD, DCQPD, Demodulator, Whitening Filter, RF Distribution, CARM servo board, MC servo board)
- Realtime code

For light detection

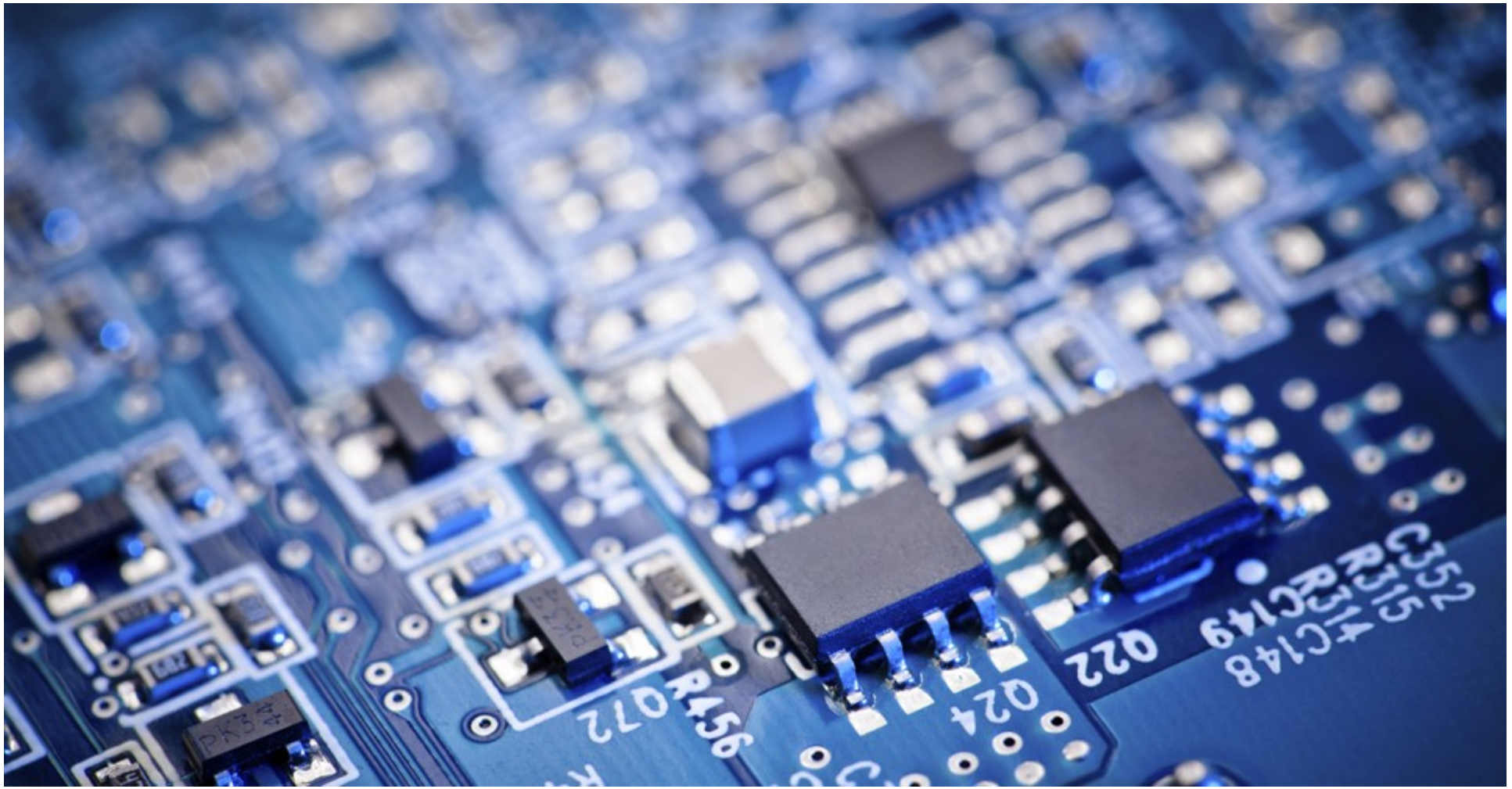
- Optical layout for detection benches
- Beam Shutters (?)
- Optical tables for detection benches (IOO)
- Miscellaneous small optics (mirrors, holders, lenses, polarizers, etc) (IOO)

Installation

Electronics

- Installation into racks
- Cabling

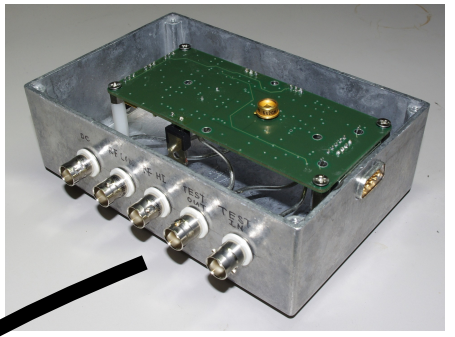
→ all by done by ourselves



Installation

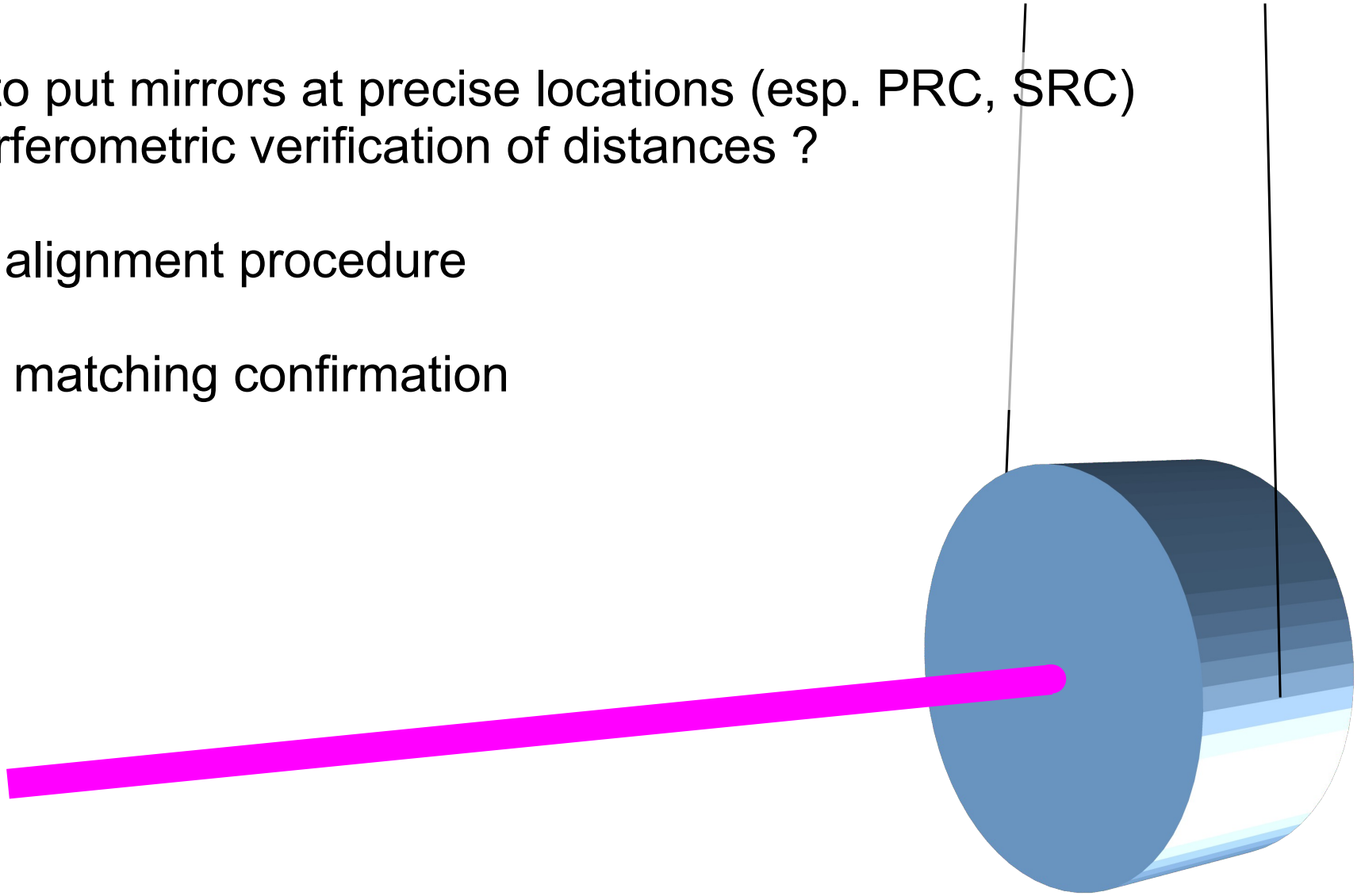
Detection Bench

- Put optical tables when the space is possible
- Roughly put PDs on the table and start wiring
- Assemble detection optics when the light comes out of the chamber



Mirrors

- How to put mirrors at precise locations (esp. PRC, SRC)
  - Interferometric verification of distances ?
- Initial alignment procedure
- Mode matching confirmation



Commissioning

Interferometer commissioning can start only after the BS installation

Michelson -> X-arm -> Y-arm -> FPMI

in 5 months !?

- 2 - 3 MIF commissioning people at the site
- At least 1 MIF expert
- At least 1 suspension expert, 1 RTS expert must be present at the site

What about bKAGRA ?

- Put important PDs into vacuum
  - Air-tight enclosures
  - Vacuum compatible beam shutters
- Output optics
  - Output Faraday
  - Output Mode Matching Telescope
  - Output Mode Cleaner
- Green Lock System