

LMU - Cluster Universe
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PXD power supply





Goal until Valencia:

(1) Show that we have an clear idea how to proceed to an final Belle II PXD-PS on time

(2) Get a feeling how much we have to invest? 50k, 100k,200k?

- Requirements
- R&D programm
- Baseline
- Open issues



- 1) Floating voltages
- 2) Noise $\sim 1.3\text{mVrms}$ as Bonn supply
- 3) Voltage sense for higher currents ($>20\text{mA}$?)
- 4) Tuning of voltages (Asic's, DEPFET)
- 5) Reasonable deviation while transient
- 6) Safety:
 - 1) Overvoltage protection as close as possible to module (PP or DHH)
 - 2) Overvoltage protection on ASIC's (low power / only short transients)
 - 3) Hardware current limit for protection
 - 4) Order of switching
- 7) Slow control integration - voltage and current readback

Not well defined:

(1) Grounding scheme? (5) No numbers up to now (6.1) If placed on PP - very pressing - definition of size currently ongoing.

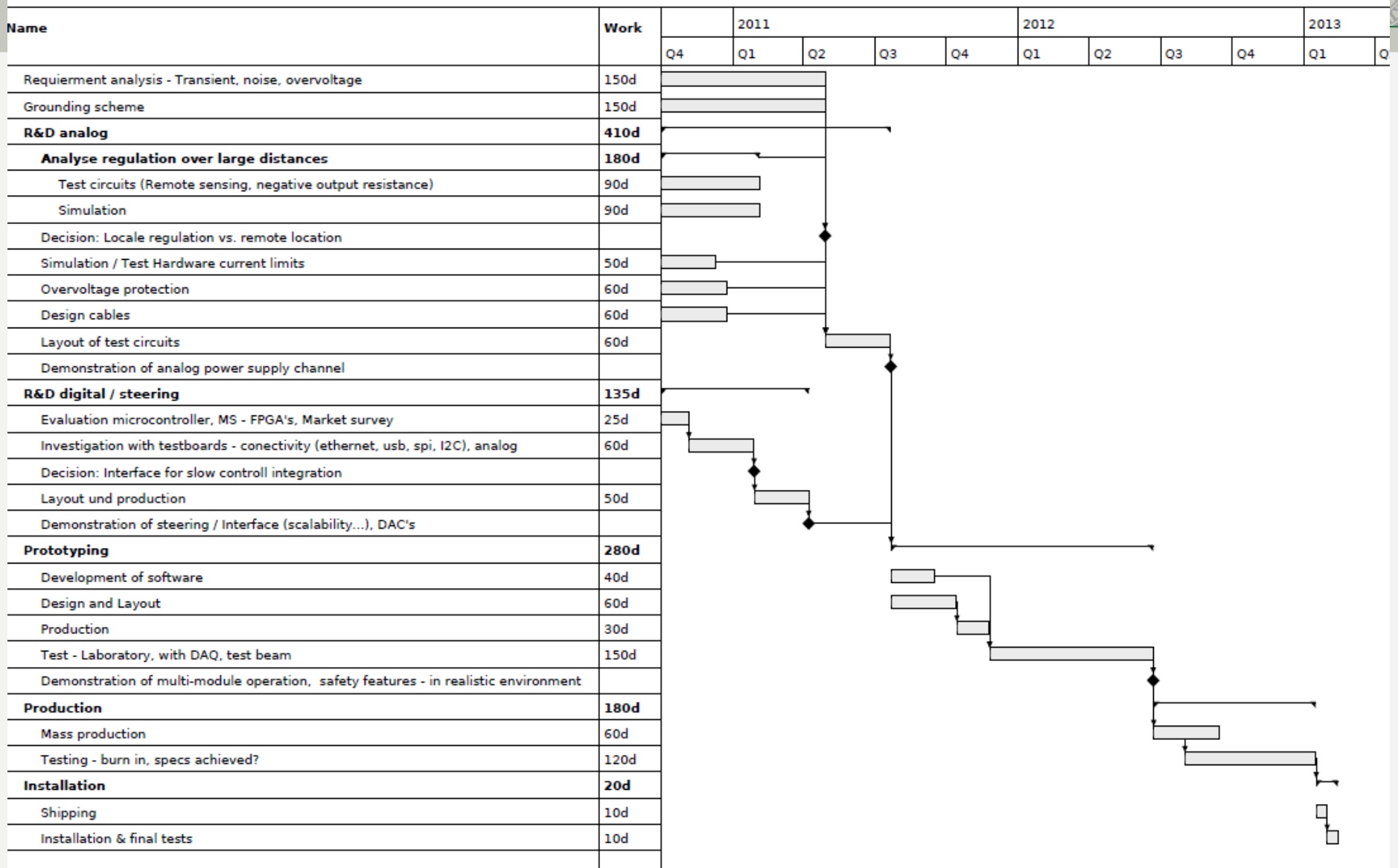


- Outside of detector
 - Still exposed to radiation? → Which extent?
 - Use of any commercial parts
 - But: 10-15-20m away
- Floating voltages
 - 3 groups (source, analog, digital)
-rest as requirements.



- 4 phases:
 - Analog R&D → Demonstration of working PS channels
 - Digital R&D → Demonstration of steering and integration into system
 - Prototyping → Demonstration of complete PS in lab and TB!
 - Massproduction

Tentative shedule





- Detector interface:
 - Space requirements for PS – rack space
 - Service space (cable!)
- Requirements on regulation - deviation while transients
- What can we achieve over 2m 15m 25m?
 - Remote sensing
 - Negative output resistance?
- Position of regulator
 - Baseline: Outside - Where exactly?
- Non-technical: Are there special regulations for electronic equipment in Japan?



- Tentative shedule is there
- We should focus on the baseline and show its (non)feasibility
- Most pressing technical questions:
 - What deviations can be accepted? Need also input from ASIC developers!
 - What can we achieve over 10-15-25m?
→ Green light - on outside position
- As our engineer start mid August we will look into
 - Remote regulation
 - Digital steering



BACKUP