**Minutes – 230718**

**Present: SB, IT, JT, SW, TJ, AG, HH, YY**

**Apologies: PS**

**Strip modules**

SW: Building modules, 1 needed power board, 2 needs gluing then wirebonding.

Issues with power boards – too noisy.

LS module from test beam -> noise peak across modules. => noisy power boards.

Request to measure modules with and without powerboards.

No impact on next stave? There are no power boards in UK to produce new modules. Timon is sitting on them.

Jens wanted one side of electrical stave for itk week. (Liverpool, Sheffield and Glasgow building modules).

Announcement from TUMM that SM had heard that the throughput in global foundries is getting worse. => shedding staff on UBM line. So no indication of when chip gets released from manufacture. Still awaiting start date for ABC\*chips.

US will be ordering hybrid panels. US limited to 3.5 k per order for non-US parts.

* Procurement meeting cancelled -> no one knows what is happening. Andrew Blue is production management.

AG to place order this week. AB said to hold off until EDMS reviewed. AG to go for quotation.

SW: International module meeting tomorrow finalise tooling. EDMS of tooling drawings by end of the week. Q: are the drawings industry standard.

SW: Sven has done half of the drawings. In the workshop now. Bits for assembling hybrids. Worked on module frame (LS) and module jig. => do drawings this week.

AG: working on multiplexer for crate. To be done before AG goes on holiday (12th August).

There is a requirement for module review that modules go through QC. Need crate set up for April. Also need Warwick freezer.

Q: what do we need in terms of infrastructure for module assembly?

In production we would need a glue robot. Not needed yet. Site qualification ~ July next year.

Q: how to weigh glue, without ruining precision of hybrid assembly.

**Strip Mechanics**

Dave has been all week. He left Hamish a list of jobs. Unclear if it was done. TJ to follow up.

Brewing saga on cold curing. US/UK disagree on how to do it.

**Pixel modules**

Can we get everything we need for the DAQ for multi-module testing. Q: how much heat pumped out? Extractors on windows? Connect remotely ? put RCE in DAQ crate

Get Felix 1 in 2 years (end of next shutdown).

*Higher priority (Ring-0)*

*Send the tested flat hybrids to Glasgow for consistent bending (Ilya/Jon)*

*Liverpool to send the schematics, pinout of the module test board to Kirk (Ilya)*

*Confirm the checklist for the hybrid QC requests from Kirk’s slide (Ilya)*

*Liverpool send a “cheat-sheet" of USBpix for single chip testing (Paul)*

*Lower priority*

*Liverpool to ship at least one unmodified/tested quad module transport/testboard to Oxford (this is probably less urgent as it is not much relevant for Ring-0)*

*Liverpool will receive a single chip setup (see the pic) from Oxford and test it and compare to their results*

* *IT IS RECEIVED (YYG TO CONFIRM VIA EMAIL)*
* *(*[*https://indico.cern.ch/event/743658/contributions/3072104/attachments/1685583/2710327/Vigani\_FEI4testing\_2018\_07\_12.pdf*](https://www.evernote.com/OutboundRedirect.action?dest=https%3A%2F%2Findico.cern.ch%2Fevent%2F743658%2Fcontributions%2F3072104%2Fattachments%2F1685583%2F2710327%2FVigani_FEI4testing_2018_07_12.pdf)*)*

*Liverpool to ship one “characterised-with-good-performance” single FEI4 chip module to Kirk at Oxford*

*Expect this delivery addressed to me from Oxford, notes from Luigi: "We are powering the chip directly. There is a 8-way molex connector on the SCC and some pins are connected to the analogue and digital power. From there a cable goes straight to the power supply."*

QA OF FLEXES FOR OXFORD.

Common hybrid meeting: start discussion on what goes on : next meeting dedicated to requirements -> every Friday. IT to prepare input.

Status of glue/stamp method?

* Need to summarise in power point document.
* Present at tomorrows meeting.
* Need to know specifications of flatness of hybrids
* thin glue does not like “warped” hybrids.

IT: Q: how many boxes to deliver to oxford and Glasgow? IT to ring Kirk.

IT to order aluminium. To make 1 module, then 2 and then 4. Ask workshop to drill holes.

**Pixel Mechanics**

Test box for ring 0: not much progress. Need to understand

3D print 3 module section of ilya’s module. => TJ

Need to start place orders in preparation for Uta’s student.

IT: Pastries for next week.