QC and central database

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Overview

- Currently using google sheets for part tracking

- In progress: Internal DB setup by Raquel

  - Logistics & shipment information → in google doc by color coding

  - Material tracking → not so far

  - Quality Control table definitions and import from google doc

  - Export of selected fields to XML for upload to CMS central DB

- Central CMS database

  - Logistics & shipment information → table exists, have not uploaded data

  - Quality Control measurements → need to define table

- We **do not** have tolerances for partials and full geometry tolerances from Susanne can't be found/guessed in EDMS drawings

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Practicalities

- GUI for data entry in progress
    - Currently just need spreadsheet-like interface, no special hardware
    - Eventually want interface with optical station, bar code scanner, USB scale?
- Will need everyone to switch over to using local database
- I am mostly setup to be a central DB "operator" but should have at least one alternate – who?
    - Needs permission for specific dbloader machine at CERN

Central Shipping / Logistics Database

xml FIELD	Specific Definition	Example	Comment
KIND_OF_PART	list here	CuW/Kapton Baseplate HD Top	
SERIAL_NUMBER	last 5 digits of edms defined label code	xxxxx	Proposal to just match the BARCODE 320BAWF0KAxxxxx
BARCODE	EDMS label code 320 BATTT VB NNNNN	320 BA FLW VB xxxxx	Reads: baseplate full LD WCu vendor V batch B number xxxxx Anyone has an example with V and B?
....			
LOCATION	Place where the baseplate is physically now	KIT, IHEP, and maybe IIT and CIEMAT	
INSTITUTION	Institute hosting the location of the components (several locations can belong to one institution)	KIT, IHEP, and maybe IIT and CIEMAT	
MANUFACTURER	Institute operating the lamination? or the mechanical fabrication?	KIT, and maybe IIT and CIEMAT IHEP (subcontractor)	
BATCH_NUMBER			
PRODUCTION_DATE	Date and time of lamination	2024-03-12 12:03:00	

- Already agreed with change to Serial number, and the vendor part of barcode will be KA for KIT (or other production site)

- 30/10 Meeting
- Confluence docs

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Proposal for QC table (1/6)

- Made initial request for new table, not been reviewed centrally yet
- Aiming for one table that can be used for all different geometries, unless there are objections
- Needs to fit KIT and IHEP use case, full and partials

- BARCODE
  - What we put on the sticker
- KIND_OF_PART
  - Specifies material and geometry (20 options)

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Proposal for QC table (2/6)

- **WEIGHT_BARE [optional]**
  - ❏ Ideally we measure this for CuW, but IHEP can't and we didn't
  - ❏ Fill with estimated weight?
  - ❏ "(Weight bare)" in gdoc
- **WEIGHT_LAM**
  - ❏ "(Weight lam)" in gdoc
- **THICKNESS**
  - ❏ Susanne asks for average thickness
  - ❏ "TNESS" in gdoc – that's an average?

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Proposal for QC table (3/6)

- **HEIGHT0-9 [2 req, 8 optional]**
  - ❏ What we are calling "flatness" internally
  - ❏ Do we want to upload post-lamination values too?
  - ❏ "Point1-10" on gdoc sheet Flatness BP/CuW
- **FLATNESS**
  - ❏ Susanne gives flatness tolerance pre-lamination only
  - ❏ "Max - min" in gdoc sheet Flatness BP/CuW
- **FLATNESS_GRADE**
  - ❏ We've been using green / orange / red, but maybe numbers are easier?
  - ❏ Color coding on "Max - min" in gdoc sheet Flatness BP/CuW

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Proposal for QC table (4/6)

- WIDTH_EDGE0-2 [optional]
  - ❏ "Height1-3" in gdoc
  - ❏ Full width of hexagon "flat-to-flat"
  - ❏ Optional because partials may not have this defined
- WIDTH_CORNER0-2 [optional]
  - ❏ From mouse-bite edge to mouse-bite edge
  - ❏ We are not currently measuring this but Susanne does specify a tolerance
  - ❏ Easy to add in QC routine?

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Proposal for QC table (5/6)

- RADIUS0-5 [2 req, 4 optional]
  - ❏ "centralHoleEdgeDistance1-6" in gdoc
- DIST_HOLE_SLOT
  - ❏ "distance from hole to slot"
- DIAMETER_HOLE_PASSED
  - ❏ boolean, "diameter of central hole"
- LENGTH_SLOT
  - ❏ "length of slot"

- WIDTH_SLOT_PASSED
  - ❏ boolean, "width of slot"
- NOTCH_SIZE_PSASED
  - ❏ boolean, "diameter of notches"

- For use with partials
  - ❏ TAB_WIDTH0-2 [optional]
  - ❏ TAB_HEIGHT0-2 [optional]

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Proposal for QC table (6/6)

- **KAPTON_ALIGNED_PASSED**
  - ❏ We are not currently recording this but making visual inspection
  - ❏ Last email I found on this Susanne said +/- 100 um
- TEST_LOCATION
 - ❏ Value is "4302" for KIT Baseplate, could also be IHEP, etc
- TEST_DATE
  - ❏ Just date of measurement, unless we want more specificity
- TOLERANCE_GRADE
  - ❏ We've been using green / orange / red, but maybe numbers are easier?
  - ❏ "overall grade" in gdoc

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Not in proposal

- Susanne lists a tolerance on "position of notches"
  - We don't have a way to measure these physically
- Maybe we can add with optical station?
- Do we need?

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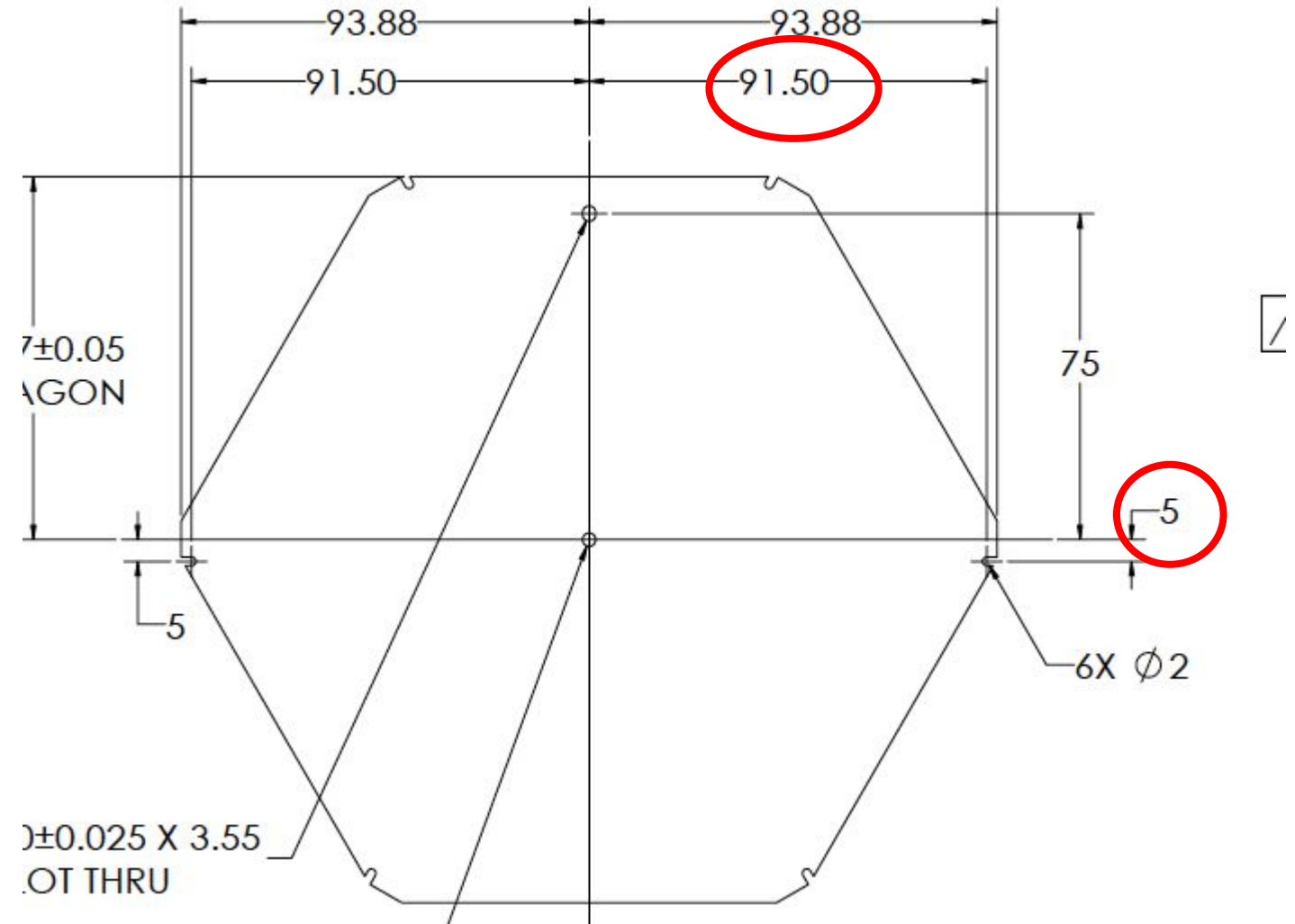
References

Local QC records (google doc)
Susanne's Baseplate Grading

Internal Wiki page < table without extra notes, copied from CMS DB pull request

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