Component database

- summary of the first brainstorming discussion -

Jelena Ninkovic

What do we want ?

- To be able to easily store and access test results from all individual test stages
- Make selection criteria based on the stored results
- To trace history of the assembly
- To have final optimal settings for every ladder easily accessible
- To be used by:

  experts doing tests and

  not experts willing to get just basic functional information

Stages

1. Pretesting of all components
2. ASICs and Passive Component assembly
3. Flex cable attachment
4. Final half ladder characterization
5. Ladder assembly and test

1. Pretesting – Half Ladder

HLadder ID (Wafer number, ChipID, FRD, BWD, Inner, Outer)

Sensor: Testing after Al2
Isolation test of DEPFET regions (4 pretests)
Drain test (number of shorts…)

→ BAD

GOOD

EOS & Balcony: Continuity and Adjacency test → Opens & Shorts

Need to have ID of all Nets and Pads

→ GOOD, BAD (maybe 2nd grade GOOD)

1. Pretesting ASICs

SW, DHP – only GOOD or BAD – so only good once will be used no ID

identification comes only once assembled

DHP two selected groups – SW control or not

Overbias test ?

DCD – SN, Pack Number, Position in the pack

Calibration of the global DAC

ADC transfer curve for each channel → Number of non working channels

Gain, Linearity and Noise

Array of optimal settings to be used

Power consumption @ optimal settings

→ GOOD, BAD (maybe 2nd grade GOOD)

1. Pretesting -Flex

Only fully functional flex will be used … so no need for this in DB

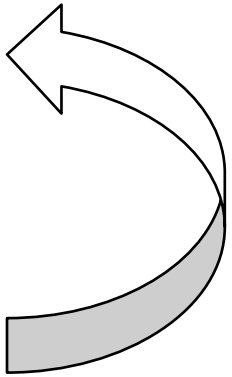
2. ASICs and Passive Component assembly

Documentation about each half ladder assembly trial

X-ray test to check for air bubbles?

Probe card test :

1. Power consumption
2. Boundary scan
3. Pedestal run



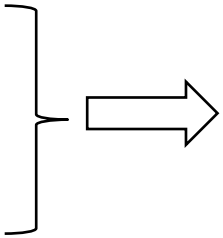
Rework for bad?

3. Flex cable attachment

Documentation on the process and comment for any issues

4. Final half ladder characterization

1. Pedestal run
2. Spectrum Cd^{90} or similar
3. Laser test



Array of the optimal settings needed for the half ladder operation

g_q

...

Should we make operational window scan using a source?

Temperature cycles

Overbias test?

5. Ladder assembly

Ladder ID – should be same as it will be used in the operational conditions

- optimal parameters for operation
- basic characteristics of the both half ladders (noise, gq etc.)

PXD assembly position – identification of the mounting position in the PXD detector

More ideas???

If you get any additional idea please contact me…..

We are still collecting wishes

How we can realize it ?

Should be Web base so that it can be easily accessible from different testing or assembly places

SVD group already has Production database – waiting for more information on it to see if we could copy it and modify

Alternative we should find someone that can do it professional way …

….. work in progress ….