



Analog cable prototyping

- **Discussion with Dyconex on 11/13 (present FL, JF, AN)**
 - ◆ New design : traces shifted vertically at about 0.6mm over a length of few mm at the sensor side of the cable represents, angle ~ 9 degree (jog design)
 - ◆ Dyconex reaction: no big deal
 - ◆ Will do some rounding at the intersection point where the tilted traces meet the straight section, in order to avoid too sharp edges
- **New files being prepared in the 14th floor for cable type S1-A & S1-B and S2-A & S2-B**
 - ◆ These cable pairs are the two longest ones and we will shoot for a prototype run of each 10 cables to be delivered in January
 - ◆ will be used for L0-module tests



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- ◆ Other changes in the new layout
 - ▲ extend the HV-trace of the lower cable (type A). It was too short in the present design
 - ▲ fill 2 layers of Cu in the alignment ears to make the ears more rigid
 - ▲ round the pads of the HV-traces at the end
 - ▲ draw an indication of a trace segment perpendicular to the HV-trace (T-section) close to the ear in order to do the gold plating of the HV-trace
 - The above eliminates the older design, where the HV trace was simply extended to get it connected to the plating frame located around the cable
- ◆ Time scale
 - ▲ The gerber files should be ready by end of november – work started
 - ▲ The time from turning in the gerber files to the first results at Dyconex is estimated to be 6 weeks
- ◆ The next order will contain 4x10 cable prototypes



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- ◆ Also : includes engineering samples of the proposed lamination scheme
 - ▲ 10-100mm short cable pieces with bonding pads on it
 - ▲ Dyconex will laminate two small pieces according to their experience
 - They will use a B-staged acrylic adhesive for the lamination
 - The radiation hardness of this acrylic adhesive needs to be addressed
The lamination is done in a hot-roller process
 - They believe they can control the glueing quite well and propose to glue the cables at certain points only
 - The glue run-out after rolling is less than 200-300um
 - The core material for the two cable pieces will be 2 x 75um Kapton which has been treated in a plasma oven before in order to reduce the Kapton material and increase air
 - The proposed mesh could have ~200um diameter holes ~50um deep at a pitch of ~500um