A couple of decisions are now becoming critical to designers of CDF Upgrade Electronics which must interface with the clock and the TSI. We would like to talk about these connections at the next CDF Infrastructure meeting. Anyone with concerns, or questions should plan on being there (May 22) or communicate through e-mail.

Master Clock

- we need to define a connector, cable, pinout and line drivers and receivers

    - due to some history, I would like to propose we use the Fujitsu SCSI II style of connector - specifically, board mount connector FCN-235D020-G/E. This is the same connector we plan on using for driving Trigger Sums and we have had experience with similar connectors in the original SVX readout system and found them to be robust.

    - a proposal has been made to look at the possibility of using National's LVDS differentail line drivers and receivers. These devices are preferred because they run off +5V or +3.3 V supplies which are standard in new crates. (DS90C032 and DS90C031)

    Testing of these devices would be required, since they are new and have not been widely used. (Note that some concern has been expressed about rise-time and long distance performance.) ECL drivers and receivers are also a valid possibility and are in fact being used on the present D0 clock.

    - The following cable pinout (assumes 20 pin connector) is being used on the prototype TRACER module, and could be used for front-end calorimetry systems. Other systems like SVX would require different signal definitions.

Pin	**Signal**	**Pin**	**Signal**
1	MC_CLK	11	MC_CLK~
2	-	12	-
3	MC_BC	13	MC_BC~
4	-	14	-
5	MC_B0	15	MC_B0~
6	-	16	-
7	MC_ABORT	17	MC_ABORT~
8	-	18	-
9	-	19	-
10	-	20	-

CDF_CLK	;132ns clock 50% duty cycle
CDF_B0	;Beam zero crossing
CDF_BC	;Beam crossing

CDF_ABORT ;Abort gap

Trigger System Interface - DONE, BUSY, ERROR cable

Some discussion on how to implement the copper link containing information back to the TSI has also been brought up by SVX designers. Again, I would propose we look at the TRACER document for a possible solution. Note that a spare signal exists on the cable which could be used by the SVX system.

The driver/receiver can be the same type as we decide to use for the trigger system - currently we are using DS26C30 and DS26C31 which are pin for pin compatible with the LVDS chips.

3.4 Implementation of Cabling for DONE, ERROR and BUSY

This section will describe the prototype cabling solution for returning the signals DONE, ERROR and BUSY from the TRACER to the TSI.

Eight Conductor Modular Data Link cables/connectors will be used, with the following pinout:

Pin	Signal
1	DONE
2	DONE~
3	ERROR
4	ERROR~
5	BUSY
6	BUSY~
7	NC
8	NC

Board Mount Connectors:

AMP Shielded Data Link Connectors, 8 Conductor, Side Entry PCB Ground
Part # 1-520459-3 (Catalog 82101)

Cable - Plug Assemblies for Round Cable (order 1 part each per cable end)

Sub- assembly	Part # 1-520424-3
Top Shield	Part # 520464-1
Bottom Shield	Part # 520465-1
Ferrule	Part # 520437-1
Boot	Part # 520853-1

Hand Tools required for Cable assembly

Connector Hand Tool Frame	Part # 58194-1
Die Sets for Connectors	Part # 58195-3
Ferrule Hand Tool Frame	Part # 69710-1
Die Sets for Ferrules	Part # 1-58166-2

Cable

Plenum-Paired Cables/overall Bedfoil Shield Part # 89504
4 Pair, 24 Gage Stranded
(Beldon Wire and Cable Catalog)