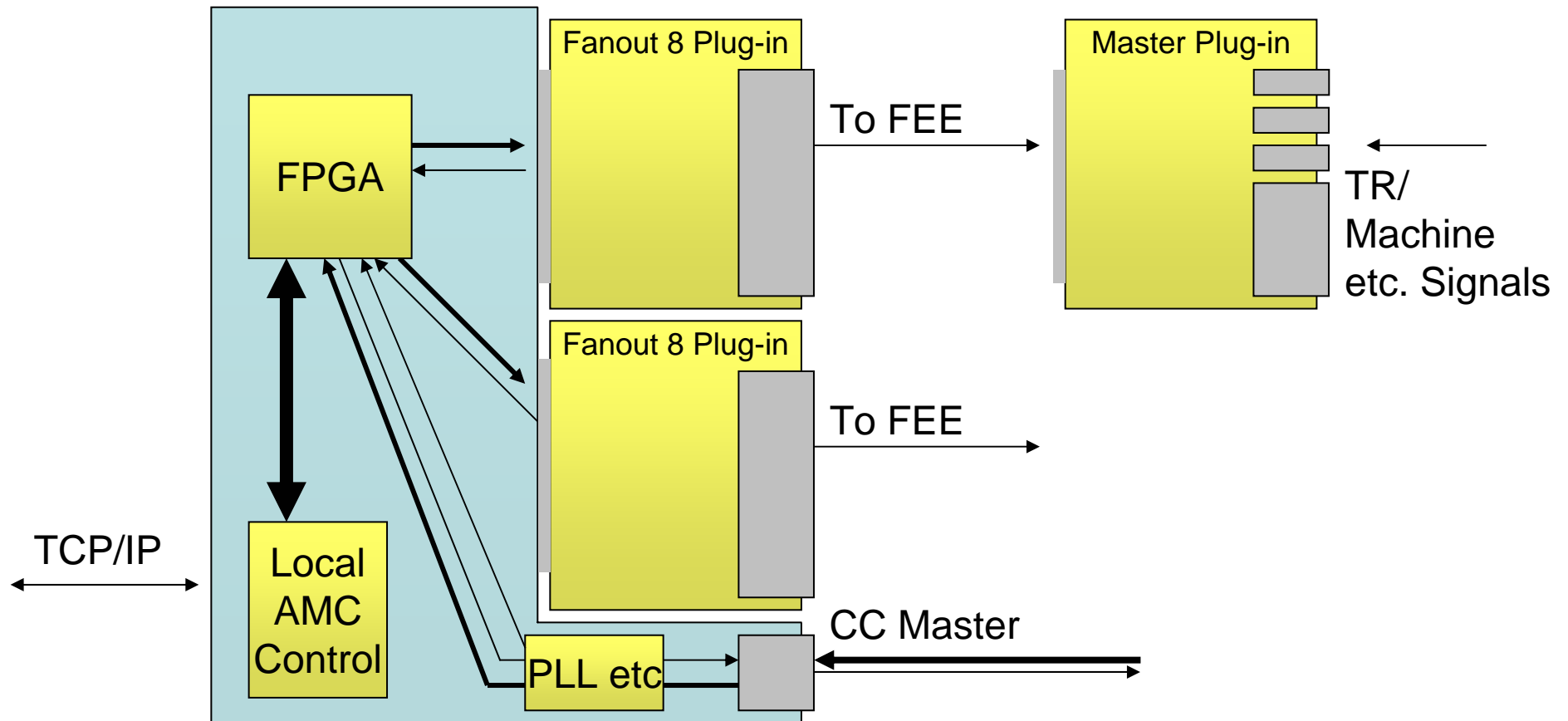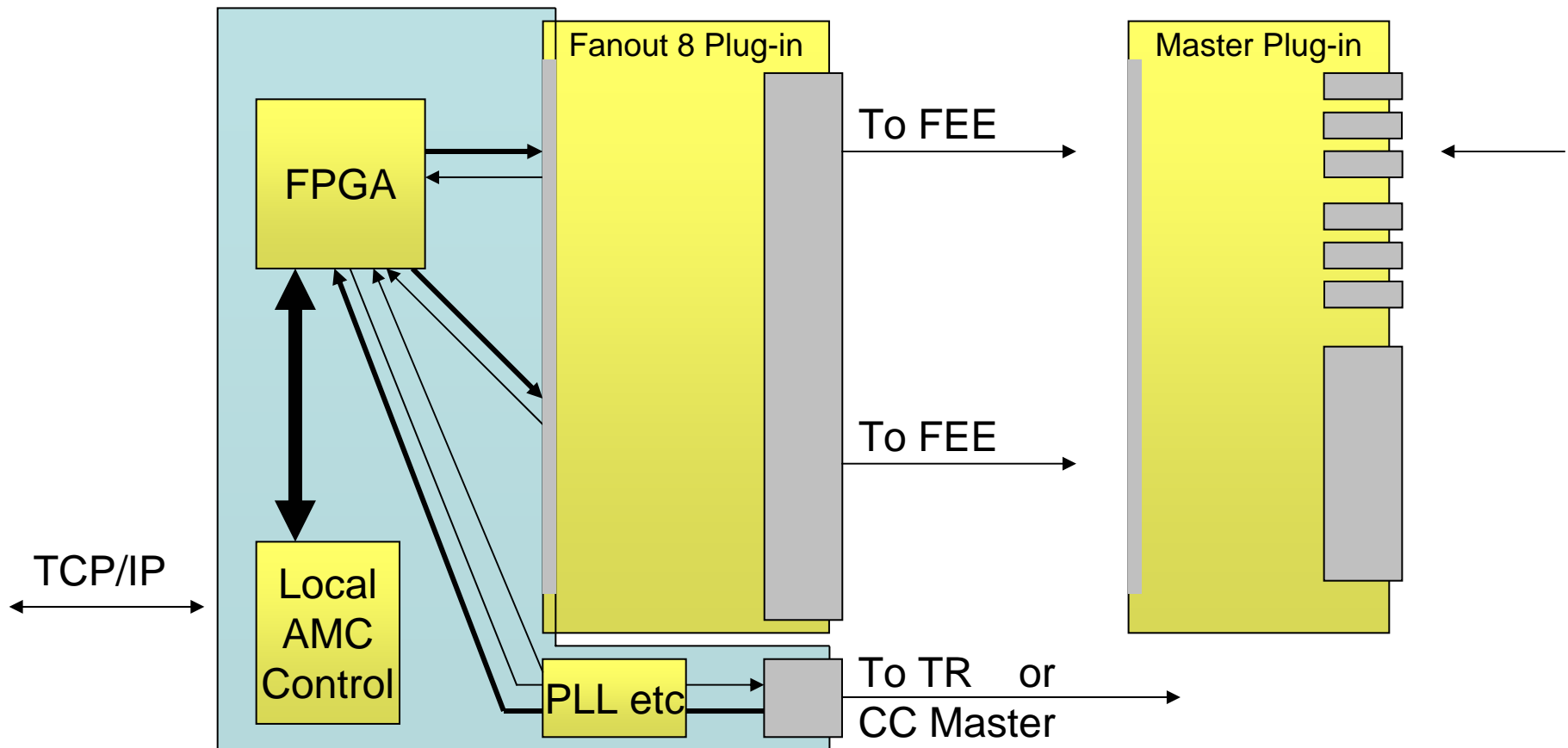# Thoughts on C&C hardware modularity

Concept

- Master and Slave will be proper AMC
- AMC boards will be fairly 'smart':
    - Micro-controller
    - Small FPGA?
    - So no need for custom backplane as all boards will have communication built-in
- MTCA Slave is a bit of a waste of all this ...
- Maybe something more modular …
    - Generic baseboard with plugins
    - Master = 1x fanout + 1x TR/beam interfaces plug-in
    - Slave = 2x fanout

Vertical Plugins (double stack conn.)

Fanout 8 Plug-in

Master Plug-in

FPGA

To FEE

TR/
Machine
etc. Signals

Fanout 8 Plug-in

To FEE

TCP/IP

Local
AMC
Control

CC Master

PLL etc

Layered plugins (single stack conn.)

Fanout 8 Plug-in

Master Plug-in

FPGA

Local AMC Control

PLL etc

TCP/IP

To FEE

To FEE

To TR   or
CC Master

More Thoughts

- Multiple plug-ins nice as all fanouts are equal (delays etc.)
- BUT a C&C baseboard with 8x fanout integrated has other advantages:
  - Basic unit of the C&C system is one board
  - Cheaper
- Maybe play the same PCB but load only the parts required …
  - Larger FPGA (more logic/IO) on Master