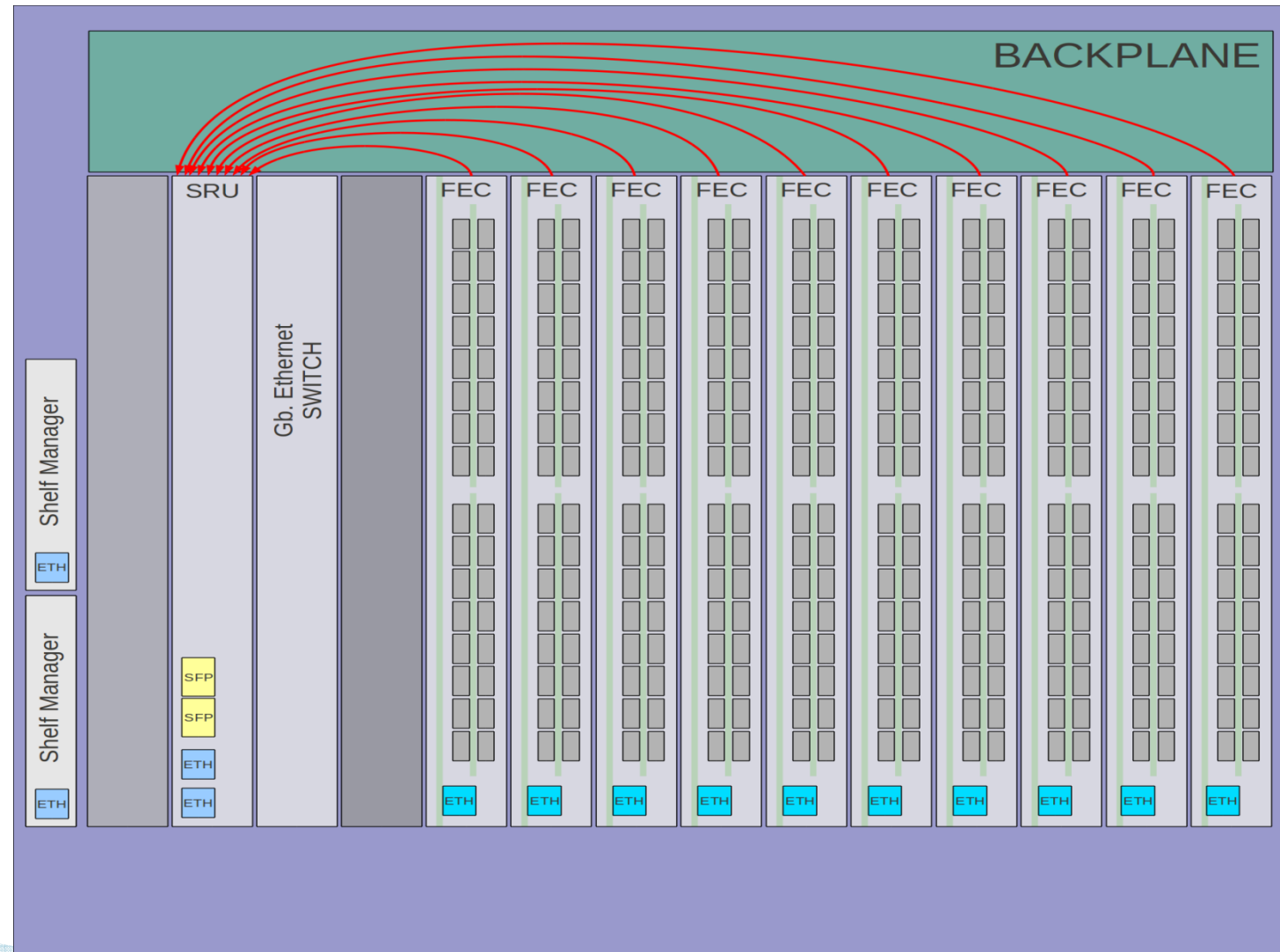# SRS Collaboration Meeting

New Hardware Design of RD 51 Systems

EICSYS GMBH
EMBEDDED INTEGRATED CONTROLLED SYSTEMS

Scalable Readout System in an ATCA shelf
## (14 slot system)

ATCA Shelf

Scalable Readout System in an ATCA shelf (14 slot system)

- Up to 11 FEC Boards in the shelf
- 1 SRU Board per the shelf
- Connection over **standard backplane**
  - point-to-point fast gigabit link between FEC and SRU boards
  - no external cables (**maintenance, assembly**)
- Scalable (1-board or many shelfs)
- Optical and/or Ethernet between shelfs
- High performance CPU in the crate (optional)
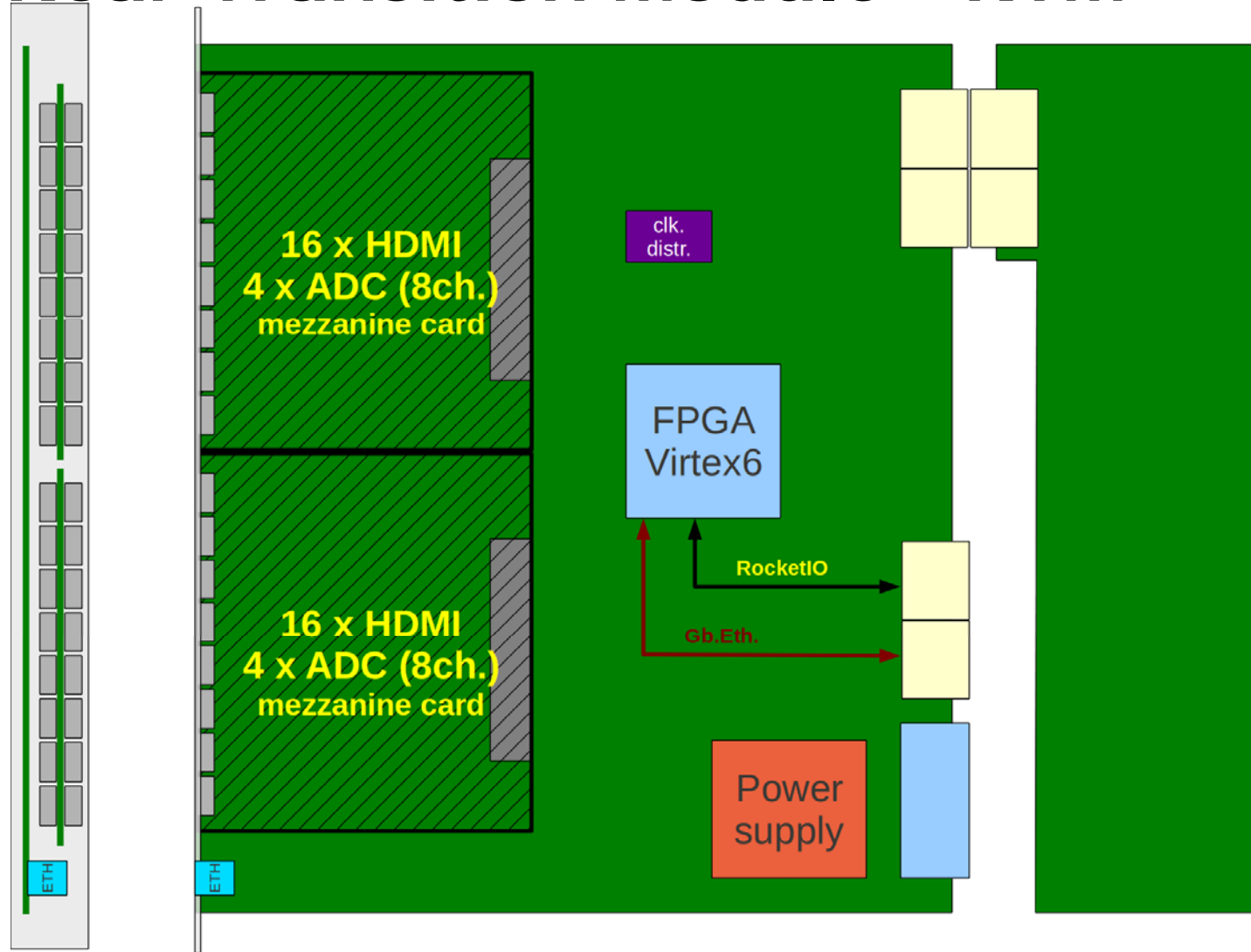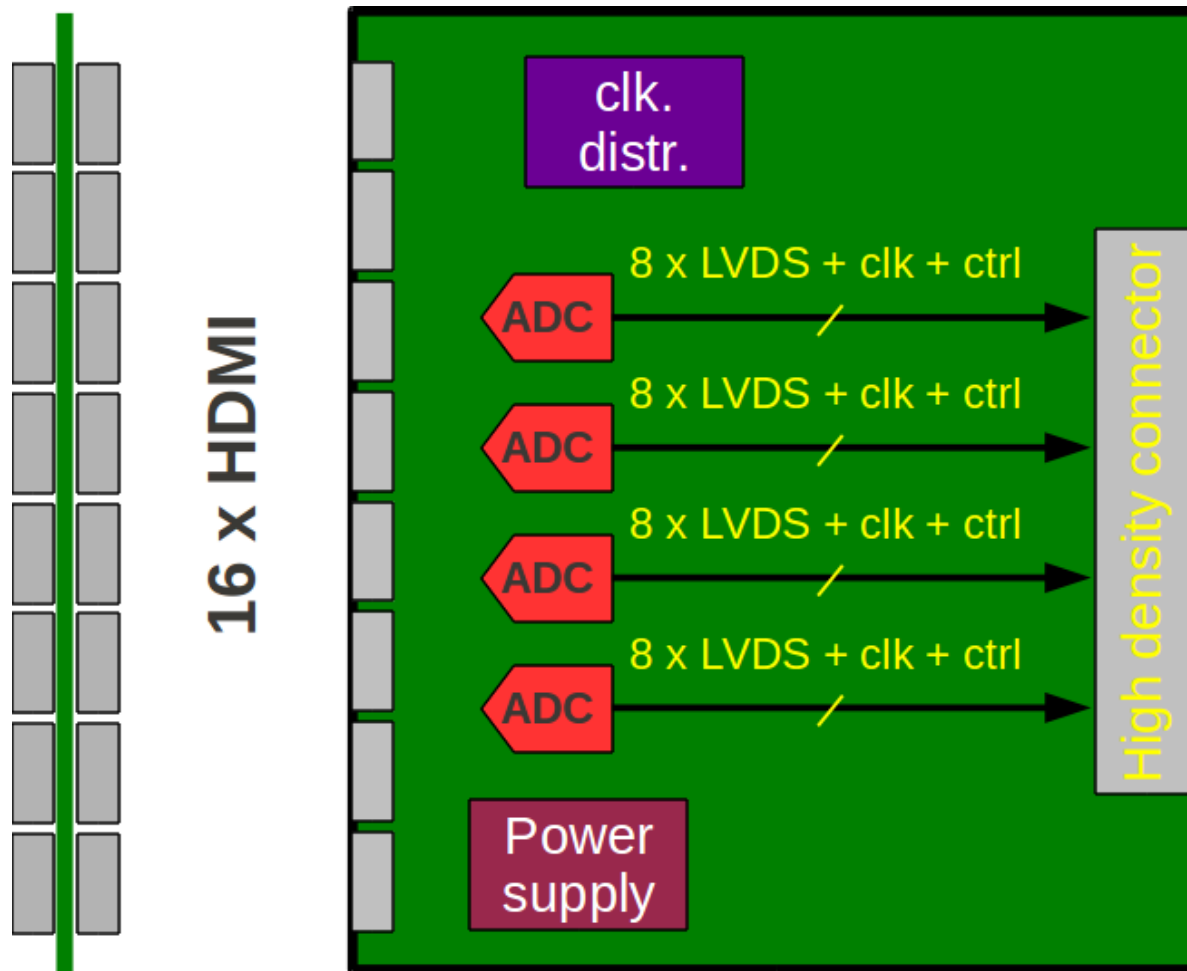- In-built remote management and diagnostic (IPMC)

FEC blade
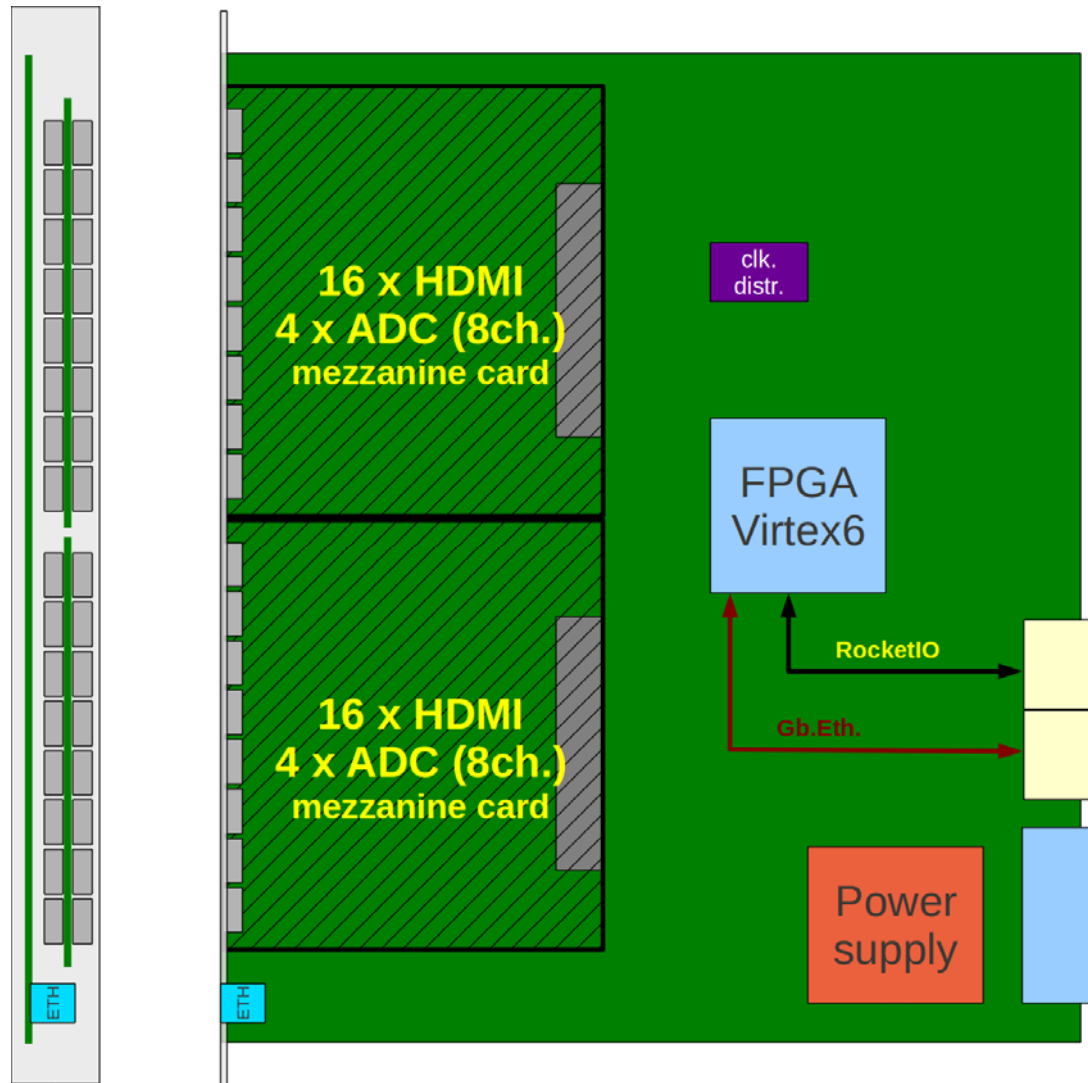
- Board size:
  - 322 x 280 mm
- 2 slots for mezzanine cards (FMC)
- Standard management
  - Booting over Eth.

FEC blade – extension
Rear Transition Module - RTM
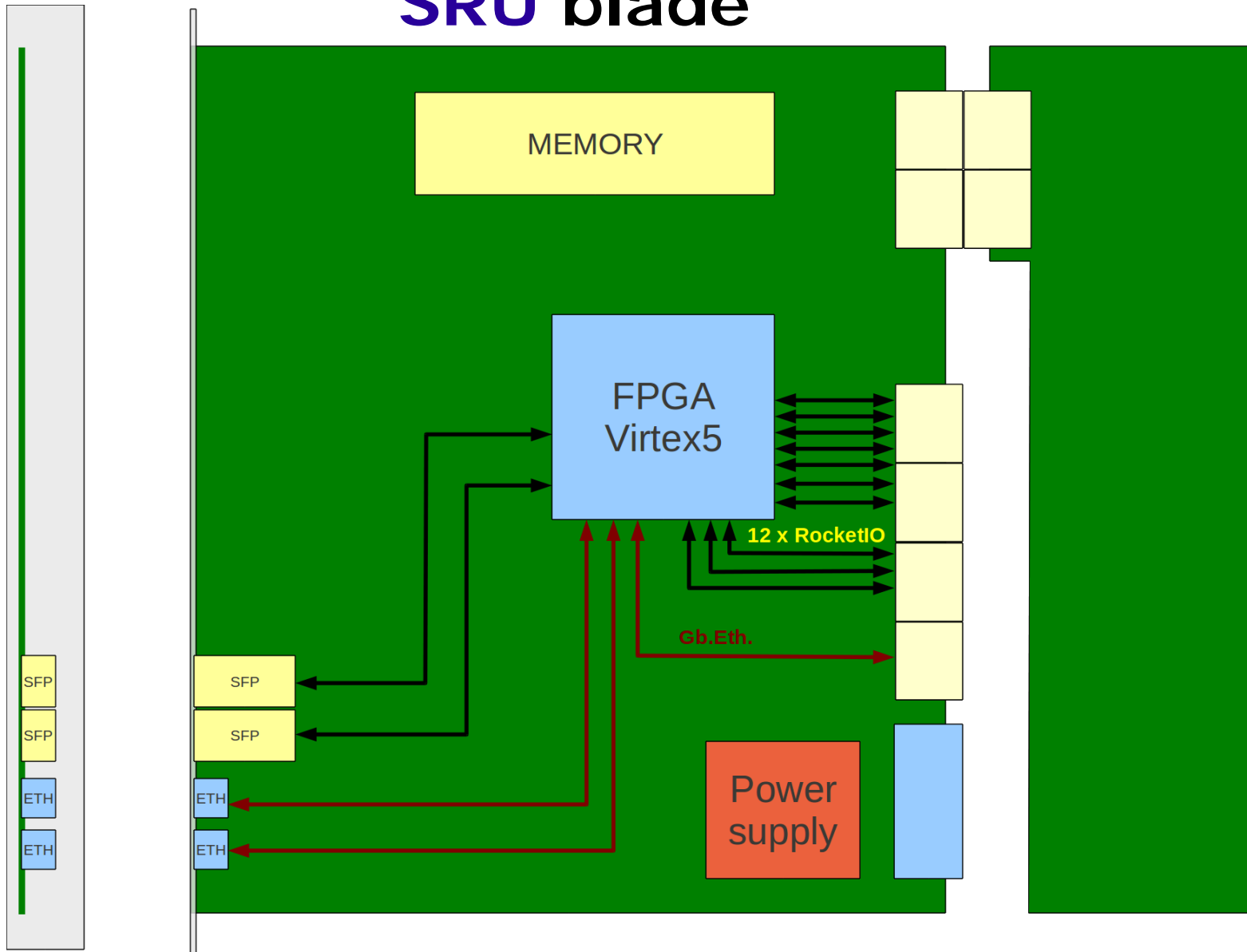
ADC board – mezzanine card

Serial, fast links

32 analog channels

16 HDMI connectors

4 Low Power 8-Channel, 12-Bit, 50MSPS ADC with Serialized LVDS Interface

EICSYS GMBH
EMBEDDED INTEGRATED CONTROLLED SYSTEMS

SRU blade

MEMORY

FPGA
Virtex5

12 x RocketIO

Gb.Eth.

SFP

SFP

SFP

SFP

ETH

ETH

ETH

ETH

Power
supply

EICSYS GMBH
*EMBEDDED INTEGRATED CONTROLLED SYSTEMS*

SRU blade

- Connection over **standard backplane**

- Gigabit Ethernet and SFP cages on front

- Gigabit Ethernet on the standard backplane

- point-to-point fast gigabit link to each FEC in the shelf

- In-built remote management and diagnostic (IPMC)

Scalable Readout System in an ATCA shelf
(5 slot system)

EICSYS GMBH
EMBEDDED INTEGRATED CONTROLLED SYSTEMS
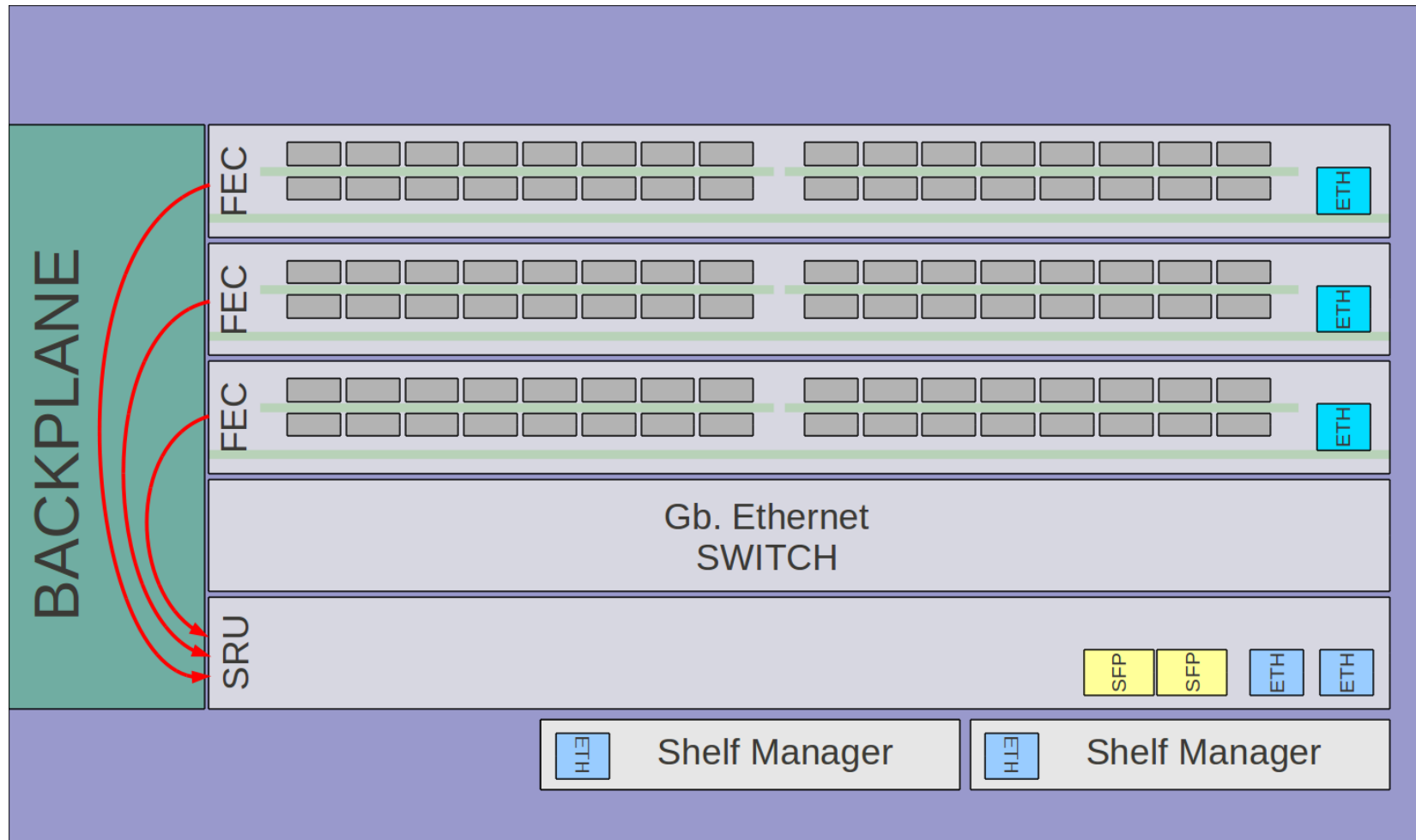
Summary

Modular, scalable system

Links realized over standard backplane

Large board size (many connectors on front possible)

Large system in one shelf

Option for smaller systems based on the same blades

Remote management and diagnostic

Huge cooling capacity

EICSYS GMBH
EMBEDDED INTEGRATED CONTROLLED SYSTEMS

EICSYS GmbH
Sylvesterallee 2
22525 Hamburg
040-53339984
eicsys@gmx.de

EICSYS GMBH
EMBEDDED INTEGRATED CONTROLLED SYSTEMS