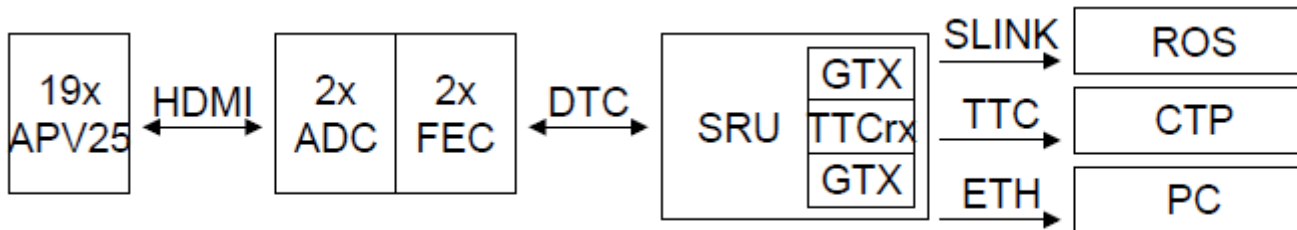
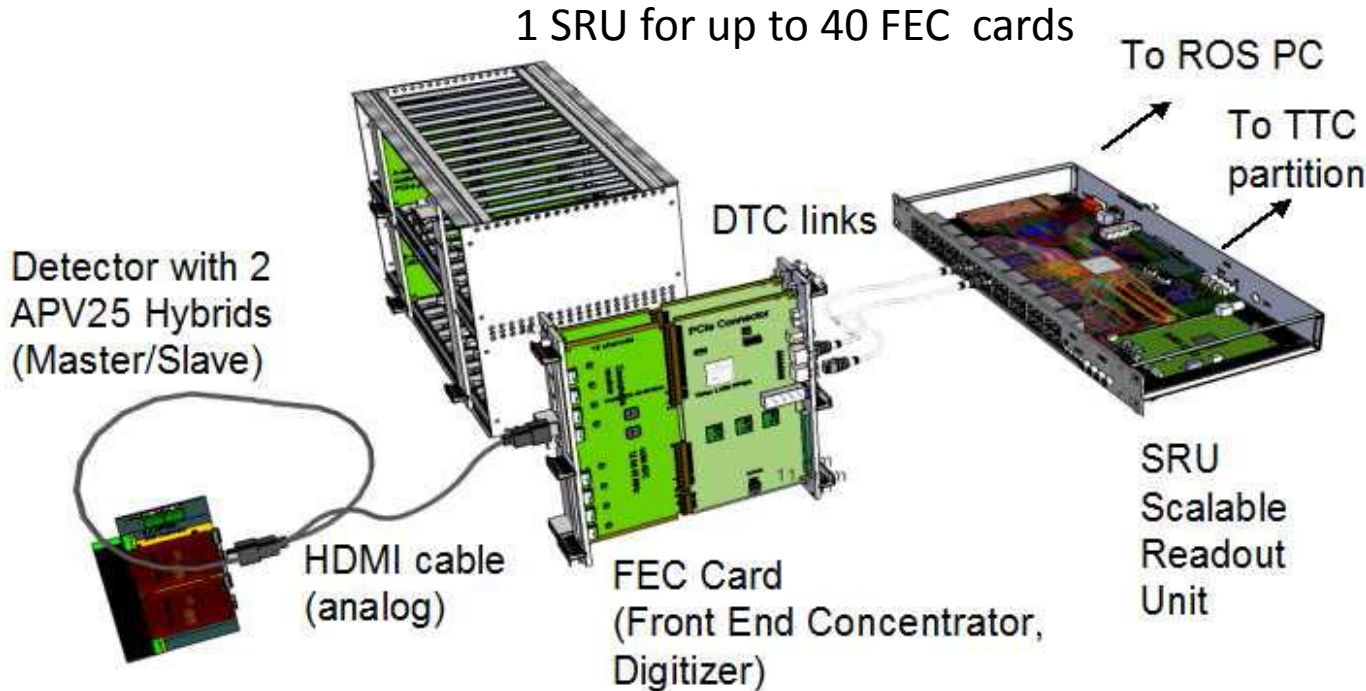

SRS Readout System for VMM2

Sorin Martoiu, IFIN-HH (RO)

(Classical) SRS in MM R&D



SRS_ATCA*

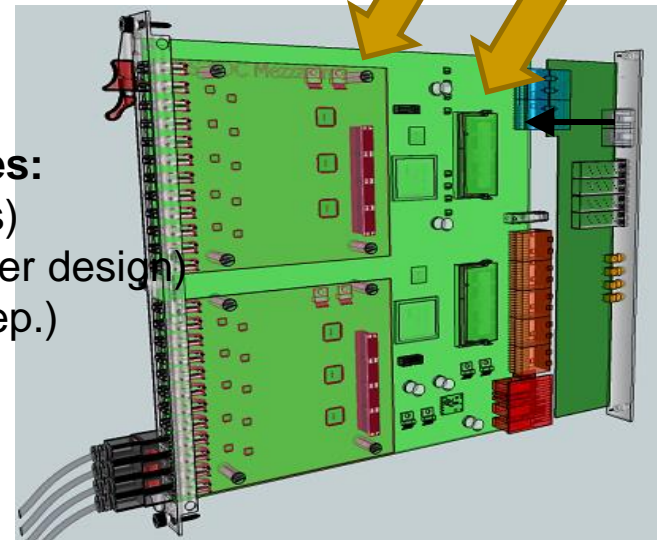
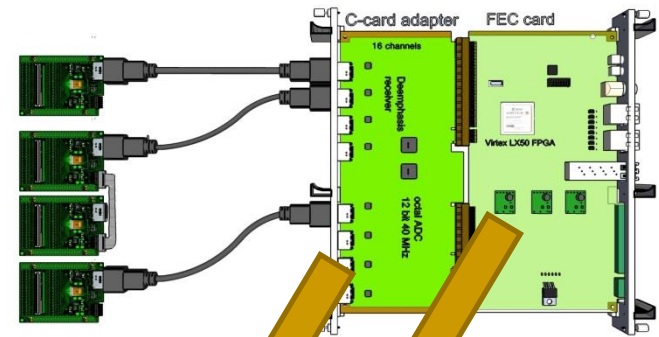


ATCA-FEC blade:

- dual FEC blade (exists)

SRS-ATCA Mezzanines:

- 12 x HDMI ADC (exists)
- 12 x HDMI Digital (under design)
- 8 x SFP Optical (in prep.)



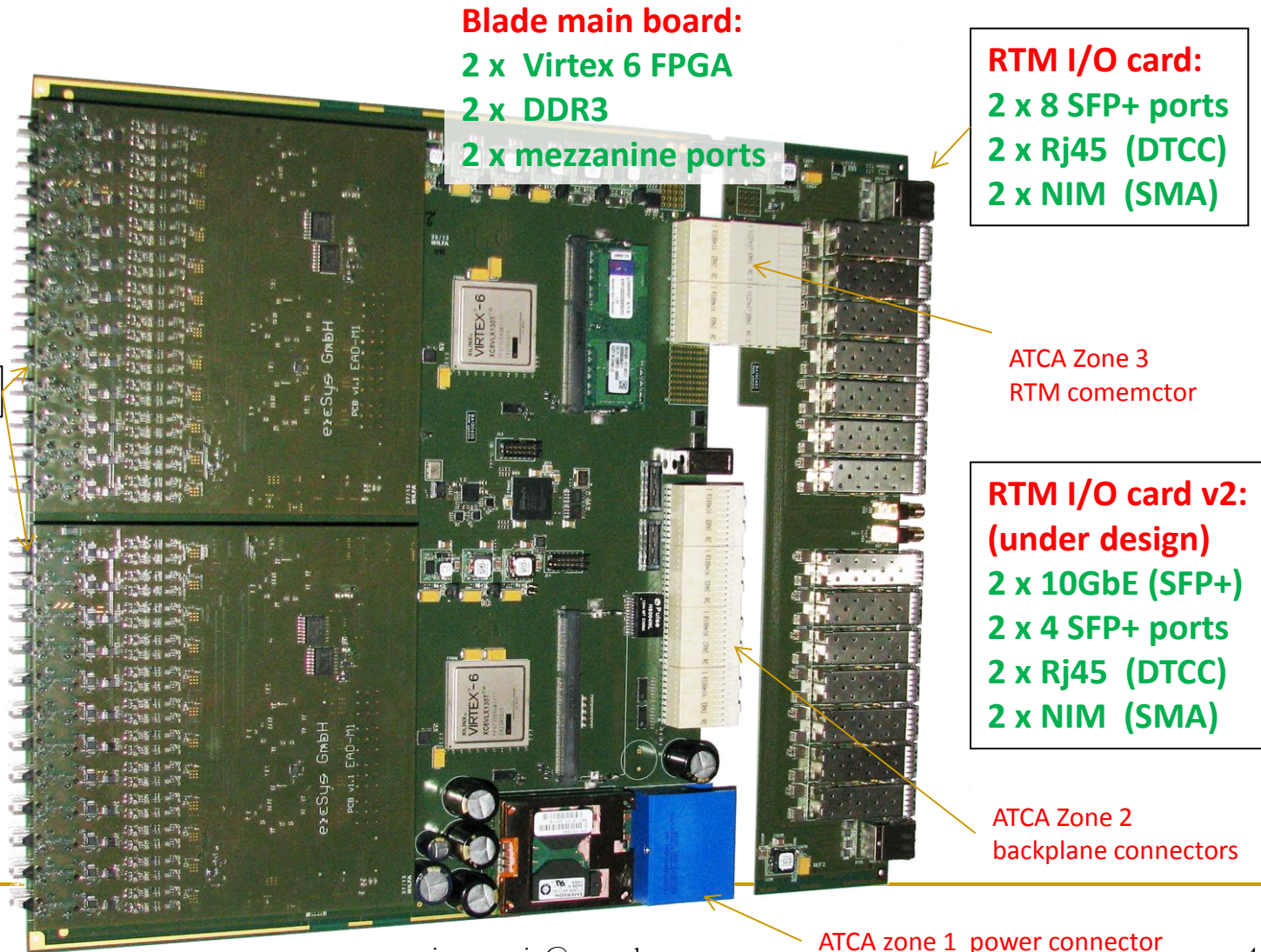
RTM:

- Ethernet
 - SFP
 - DTC (RJ45)
- (for stand-alone applications)

- 1.) higher channel integration => reduce cost/channel for large systems
- 2.) certified crate standard
- 3.) replace DTCC cables by ATCA backplane
- 4.) start with 2-slot ATCA crate that can be read out via DTCC cables to SRU

- Commercial production for NEXT, EMCaL, ATLAS NSW, IFIN-HH by EicSys GmbH

SRS ATCA card overview



Blade main board:

- 2 x Virtex 6 FPGA
- 2 x DDR3
- 2 x mezzanine ports

RTM I/O card:

- 2 x 8 SFP+ ports
- 2 x Rj45 (DTCC)
- 2 x NIM (SMA)

ATCA Zone 3
RTM comemctor

RTM I/O card v2: (under design)

- 2 x 10GbE (SFP+)
- 2 x 4 SFP+ ports
- 2 x Rj45 (DTCC)
- 2 x NIM (SMA)

ATCA Zone 2
backplane connectors

ATCA zone 1 power connector

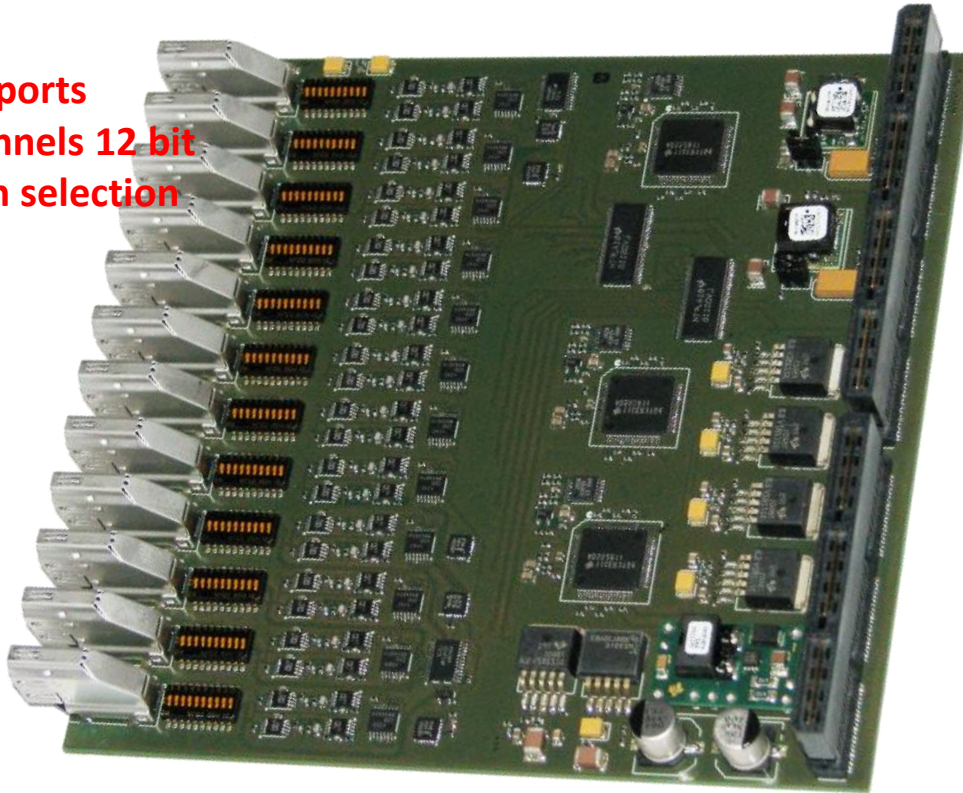
2 x Mezzanines (ADC):

2 mezzanines:
max 6144 channels
APV/Beetle/VFAT

SRS_ADC_ATAC mezzanine

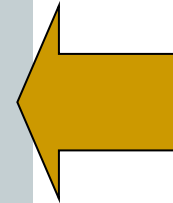
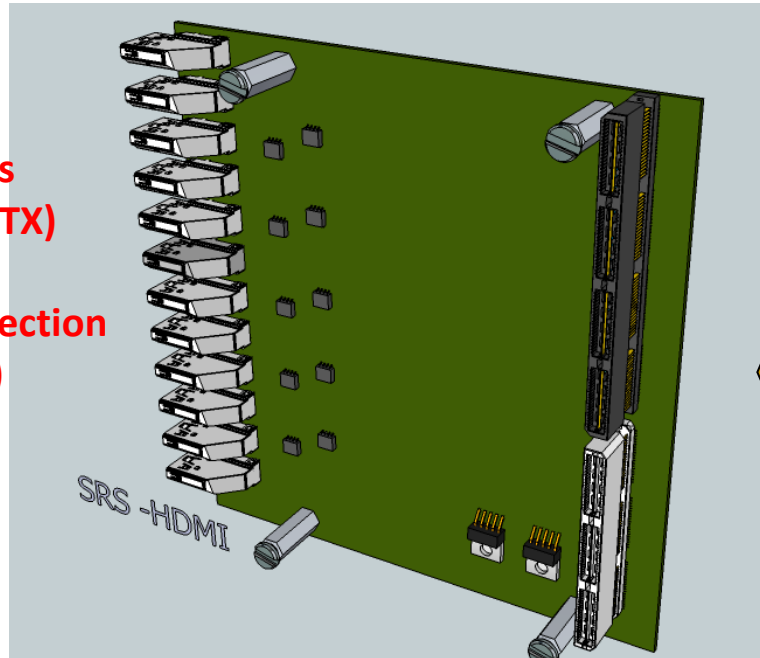
functionally equivalent to Classic ADC card

12 x HDMI ports
24 ADC channels 12 bit
Cable length selection



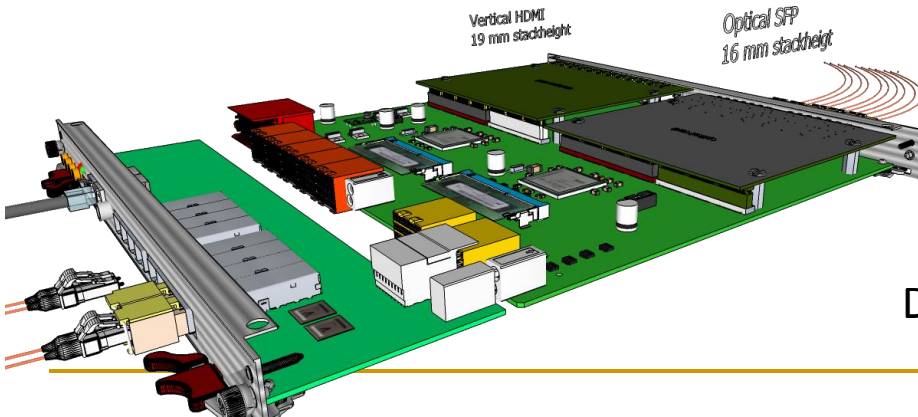
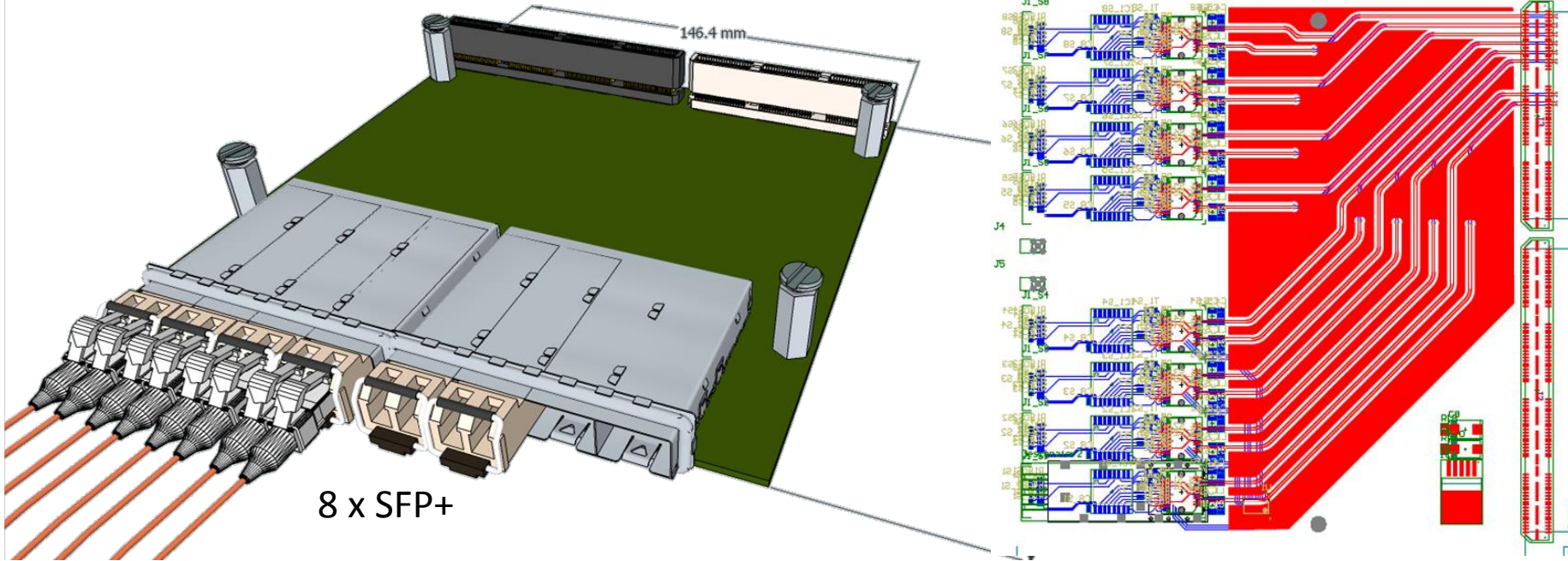
Digital Mezzanine card

12 x HDMI ports
48 x LVDS (RX + TX)
Up to 57,6 Gbps
Cable length selection
(pre-emph + eq)



Design started at UPV Valencia
based on database of digital classic card

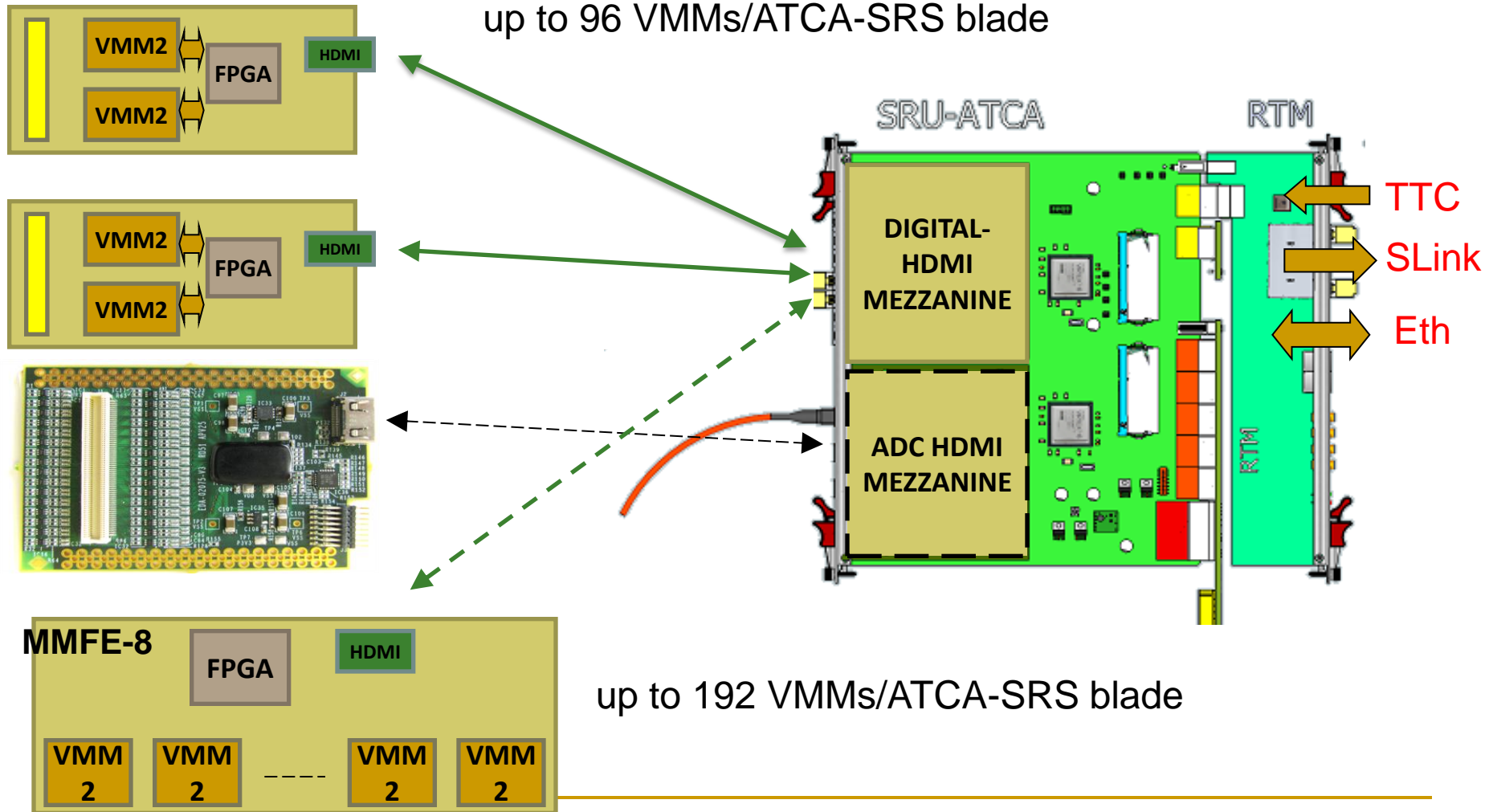
Optical ATCA Mezzanine card



advanced design at IFIN-HH
8 x SFP+
Up to 25 Gbps (RX/TX)

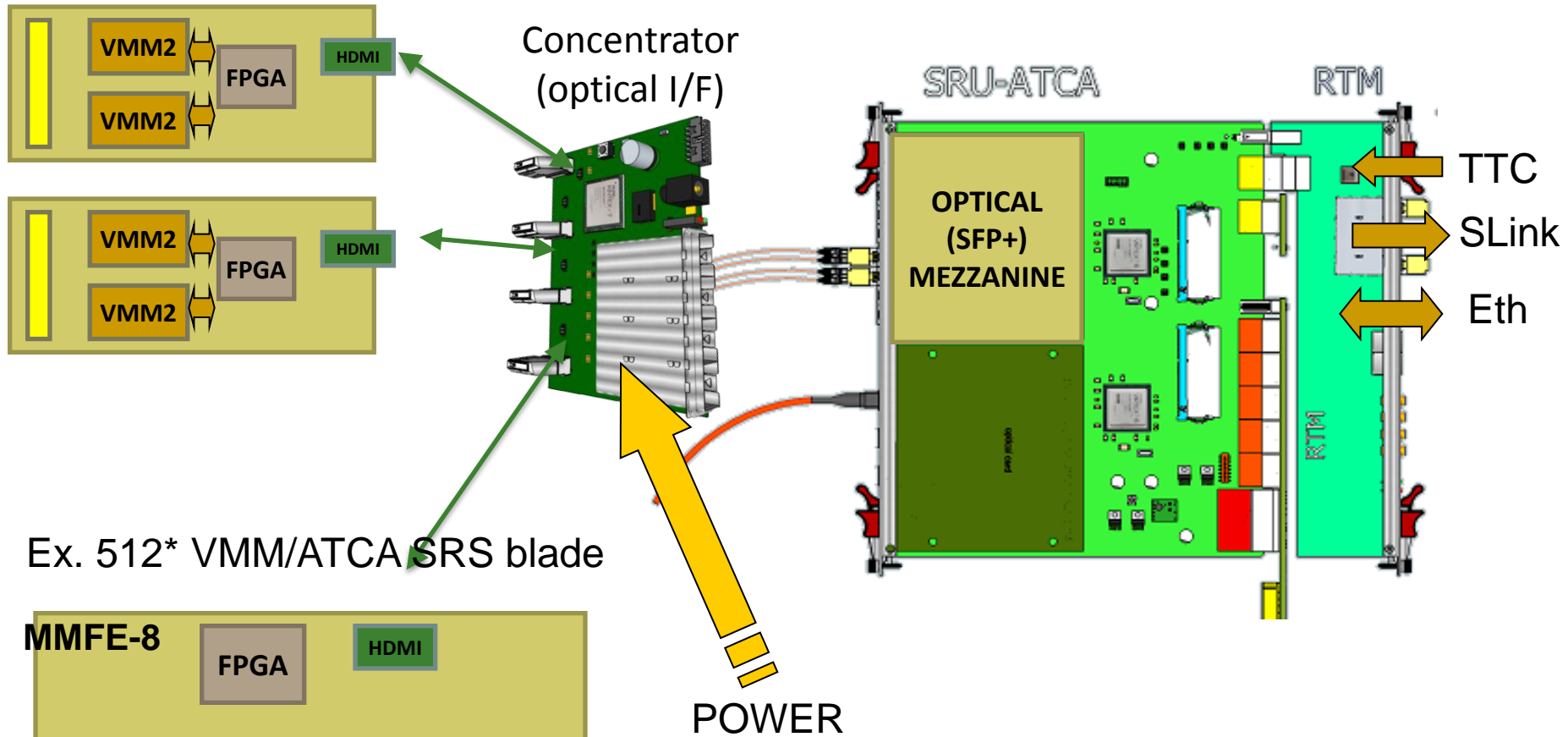
Digital, ADC or optical card can be mixed

Integration of VMM into SRS (ATCA)

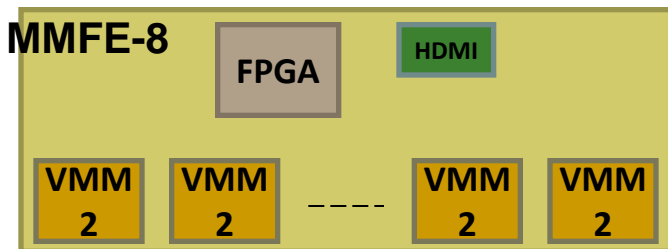


Integration of VMM into SRS (ATCA)

Ex. 256* VMM/ATCA SRS blade

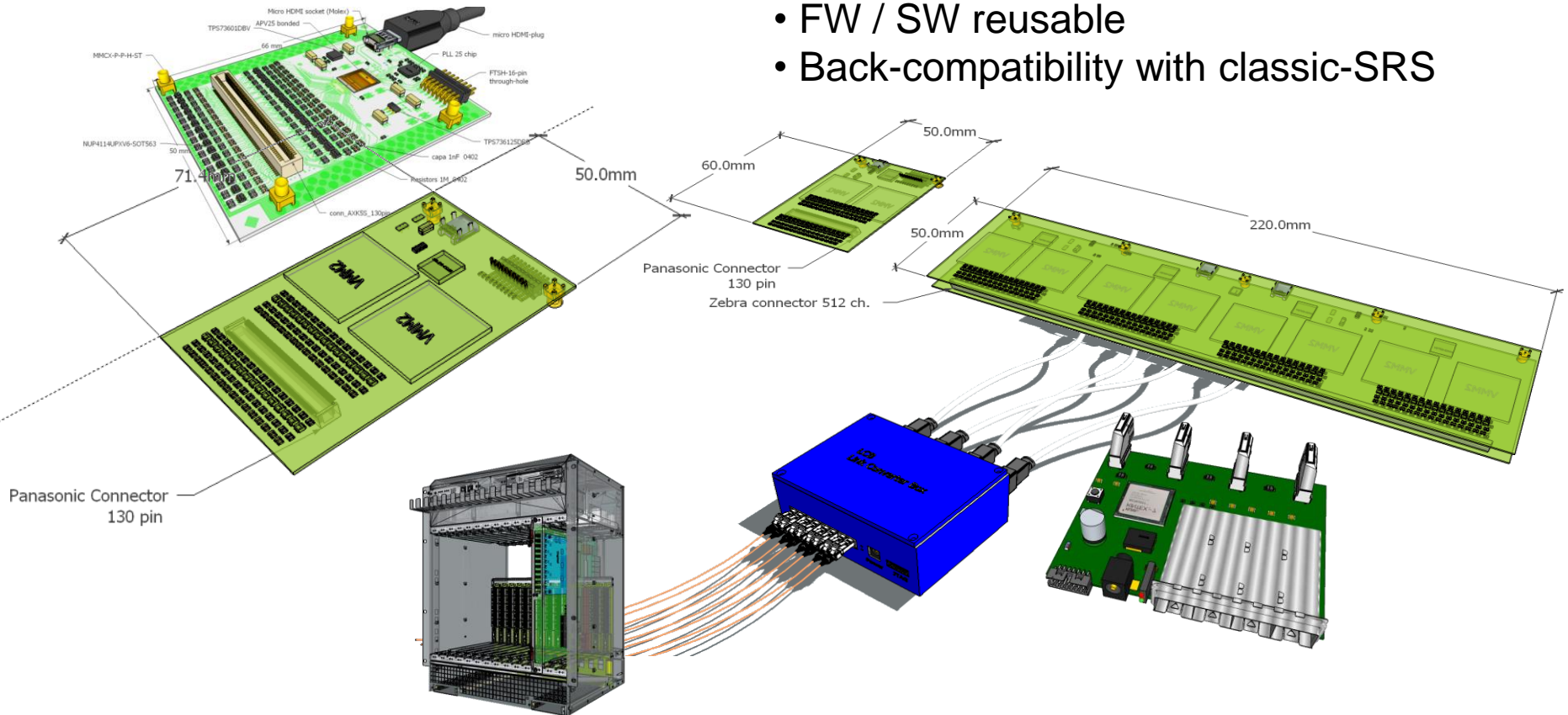


Ex. 512* VMM/ATCA SRS blade



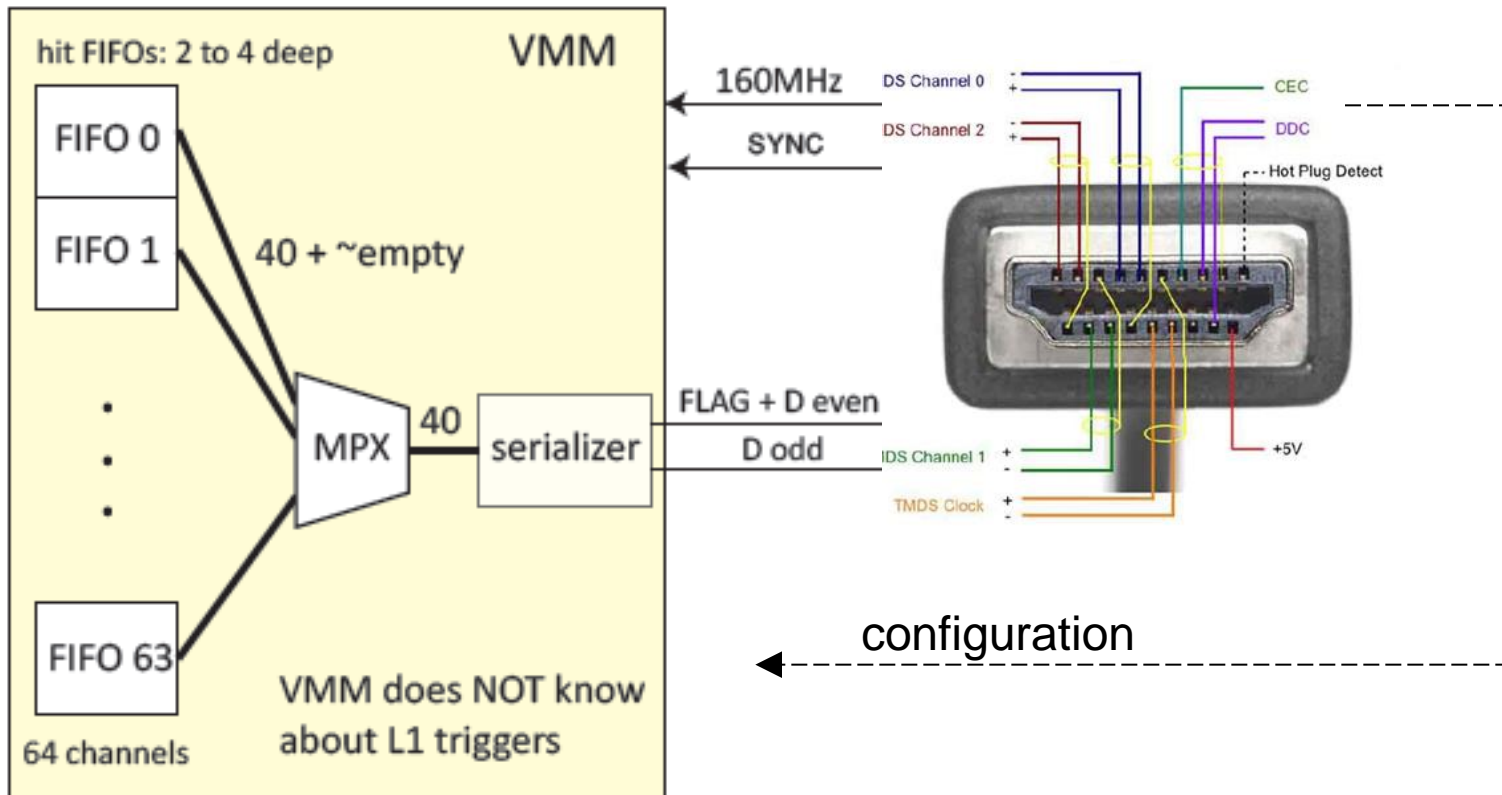
NSW | | RD51

- ATCA-SRS system is now available
- new components already under design
- FW / SW reusable
- Back-compatibility with classic-SRS



Thank you

VMM2HDMI



VMM2HDMI

