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Libera Photon

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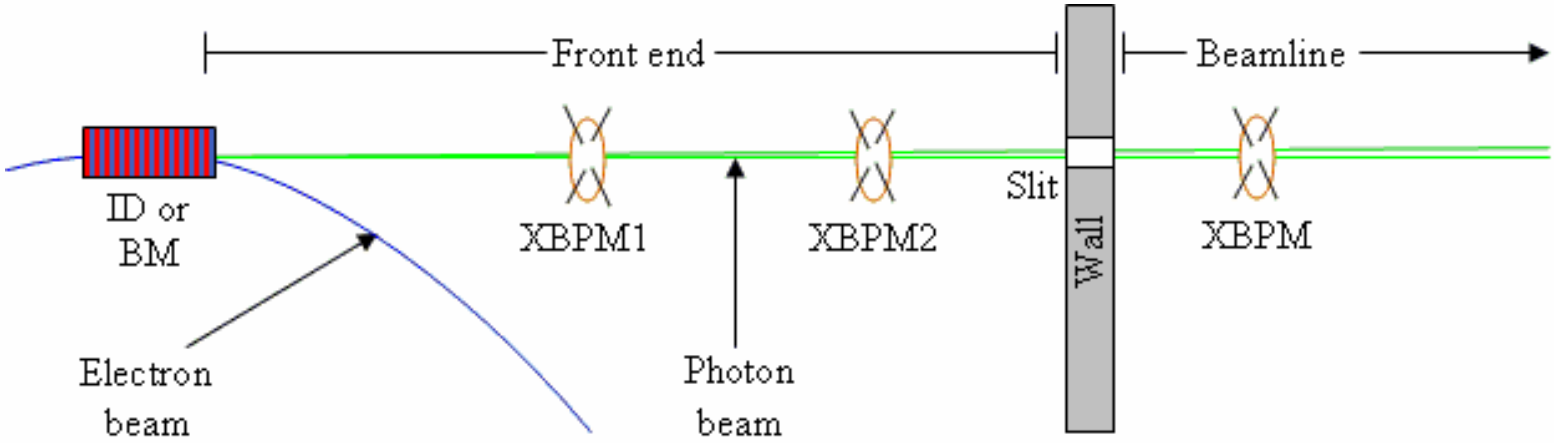
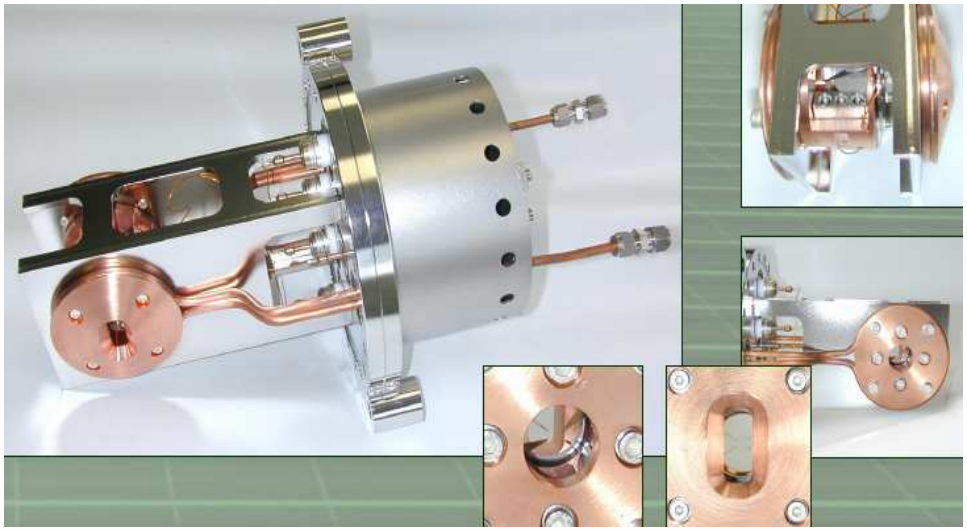
Libera Photon

XBPMs in accelerators



- **Monitoring of photon beam**
- **Integration in FOSS**

XBPM sensor (blade type)



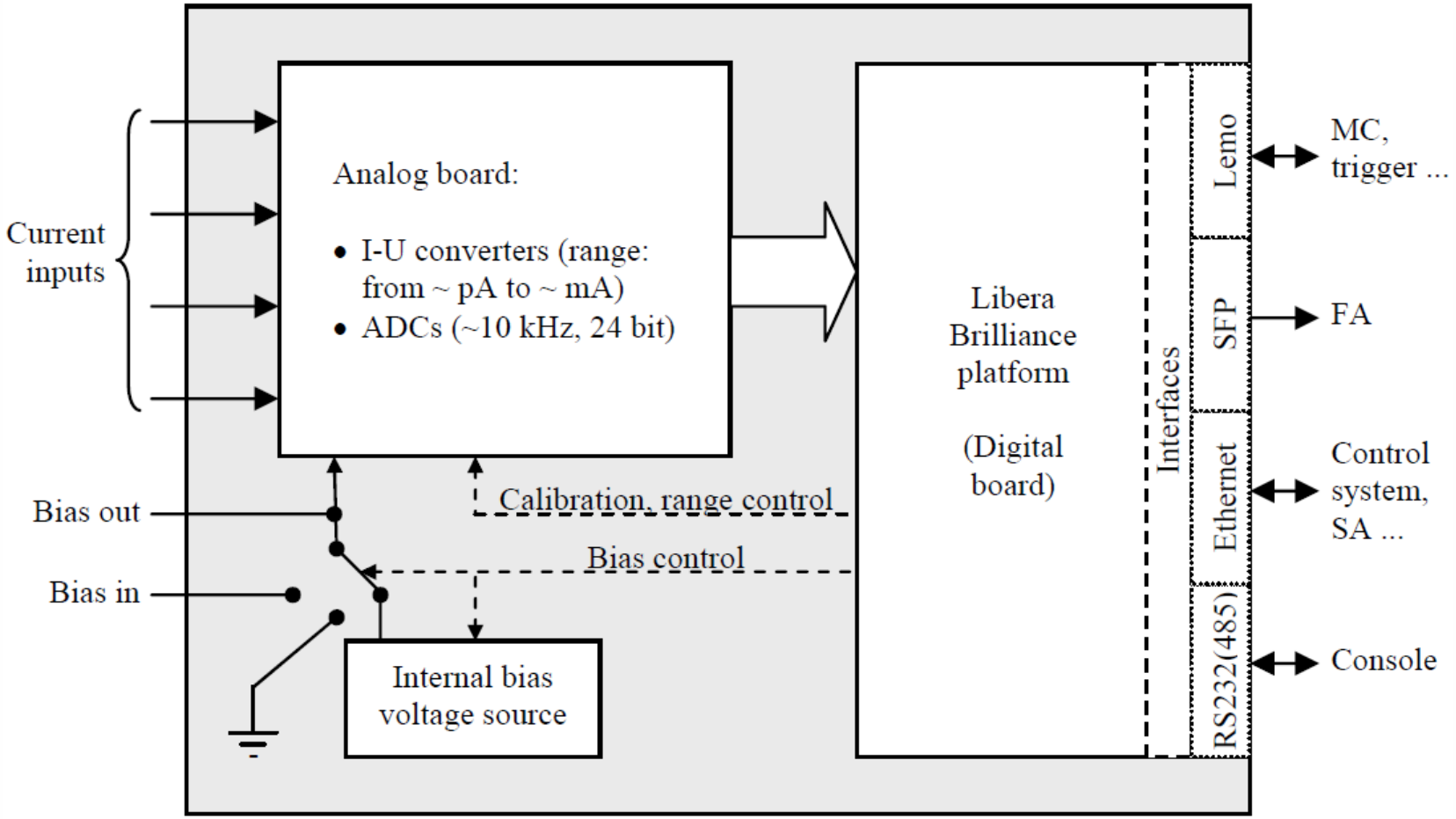
Source: www.fmb-berlin.de

- **Current output (from pA to mA)**
- **Bias voltage supply**

Requirements

- 4 current inputs
- Bias voltage supply
- Same interfaces like Libera Brilliance:
  - Connection to control system
  - Timing (synchronization)
  - Integration in FOSS

Libera Photon Layout



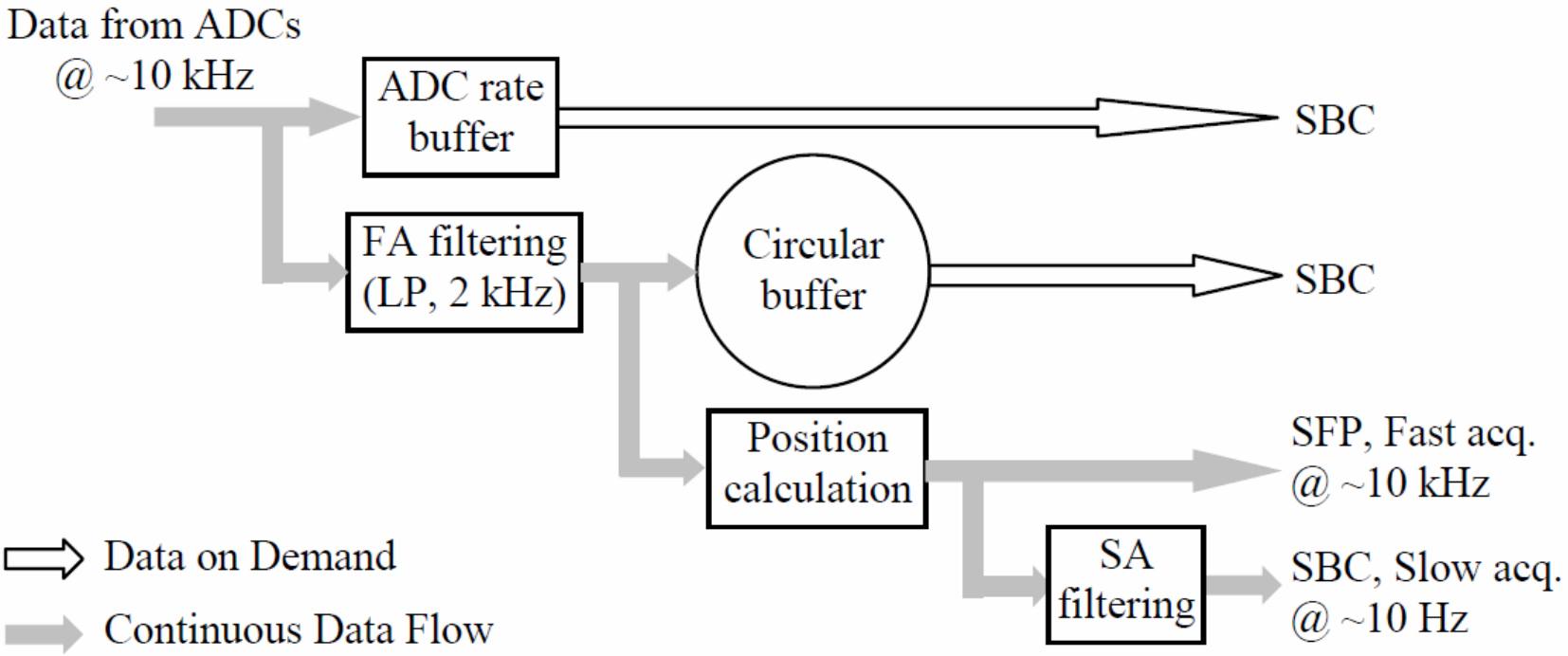
Features

- Analog signal processing (4 parallel channels):
  - 4 I-U converters with changeable range (from pA to mA)
  - 4 ADCs (~10 kHz, 24 bit)
- Bias voltage supply:
  - Internal source: +-300 V
  - External source: +- 1kV
- Range control (automatic, manual)
- Synchronization (PLL daemon + trigger, sampling clock and FA data rate are derived from MC)
- Calibration (internal calibration source)

Interfaces

- Console connection (RS232, RS485)
- Ethernet connection
- SFP slots (Gb Ethernet)
- LEMO connectors (Machine clock at TbT frequency, System clock, Trigger for acquisition and synchronization, Post mortem, Interlock)
- 4 Triax BNC connectors (current inputs – signals from sensors)
- 2 SHV connectors (bias in, bias out)

Data modes


Data from ADCs
@ ~10 kHz
ADC rate buffer
SBC
FA filtering (LP, 2 kHz)
Circular buffer
SBC
Position calculation
SFP, Fast acq.
@ ~10 kHz
SA filtering
SBC, Slow acq.
@ ~10 Hz
Data on Demand
Continuous Data Flow

Libera Photon is planed to be available in May 2009

Thank you for your attention