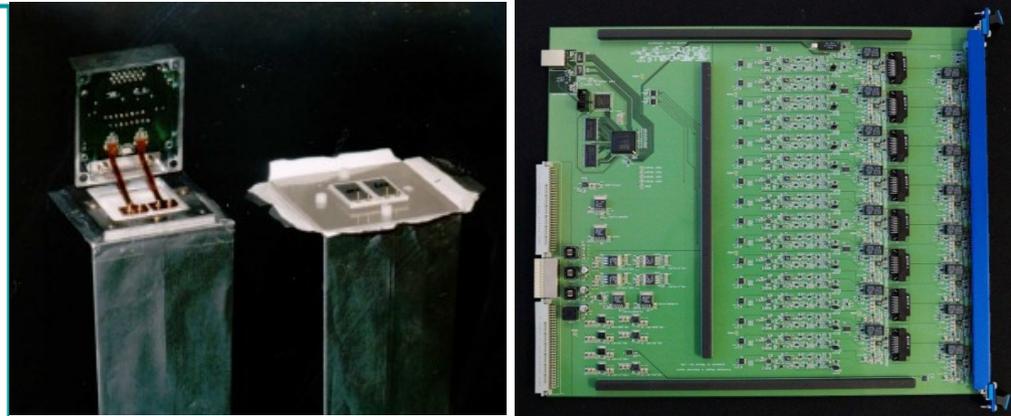
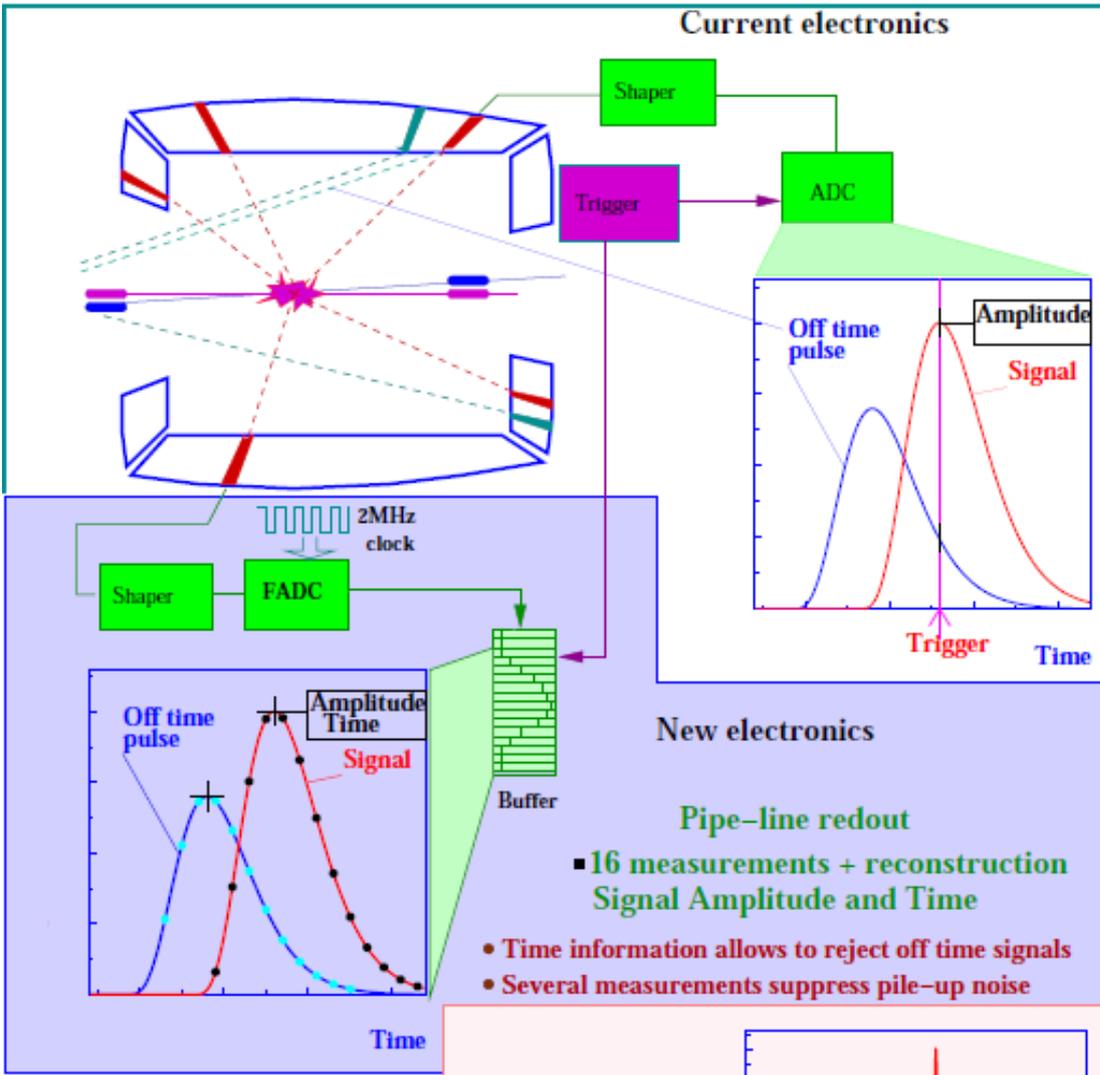


Calorimeter is based on 8736 CsI(Tl) crystals (40 tons) with the thickness of $16X_0$ (30 cm). It is located inside magnetic field of 1.5 T and covers the solid angle of 91% of 4π .



- Crystals $300 \times (50-80) \times (50-80)$ mm
 - Wrapping $200\mu\text{m}$ teflon + $50\mu\text{m}$ Al mylar
 - Readout 2 10×20 mm PIN diodes
 - 2 charge sensitive preamplifiers
 - Shaper $CR-(RC)^4$, $\tau = 1\mu\text{s}$
 - Light output 5000 p.e./MeV
 - Electronic noise $1000e \approx 200$ keV
- Electronics with pipe-line readout and waveform analysis (in the 16-ch Shaper-DSP board) has been developed. It is successfully being exploited now at Belle II.

• To decrease **notable pileup noise** by a factor of $\sqrt{(1000 \text{ ns}/30 \text{ ns})} = 5.5$ in the endcap ECL ($1152+960$ ch), CsI(Tl) crystals are planned to be changed to pure CsI crystals.

Pure CsI for endcaps

CsI(Tl)
 $\tau = 1\mu\text{s}$
PIN diodes

➔

pure CsI
 $\tau = 30\text{ns}$
Vacuum phototetrodes

Essentially better time resolution ($\sigma = 1\text{ns}$)
Essential pile-up noise suppression

$\sigma_E/E \approx 1.8\%$ ($E = 1\text{GeV}$)

$\sigma_x = 6 \text{ mm}/\sqrt{E(\text{GeV})}$

