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## High-Resolution and Low Resource Time To Digital Converters for the KM3NeT Neutrino Telescope

Precise measurements on time intervals (TIs) are frequently needed in many physics applications such as particle detection. Time to Digital Converters (TDCs) perform conversion of TIs into a digital word. In the case of KM3NeT, thirty-one TDCs are used to discretize the photomultiplier output. Both the event width and the instant when it happens, require an accuracy of 1 ns. An oversampling technique has been used to achieve this resolution. The proposed TDC readout is based on a Field-Programmable Gate Array (FPGA) Xilinx Kintex-7 with low resource occupancy and controlled by embedded Lattice Micro LM32 processor. On the present article the TDC system is presented in detail.

**Primary author:** Mr CALVO, David (IFIC)

**Presenter:** Mr CALVO, David (IFIC)

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