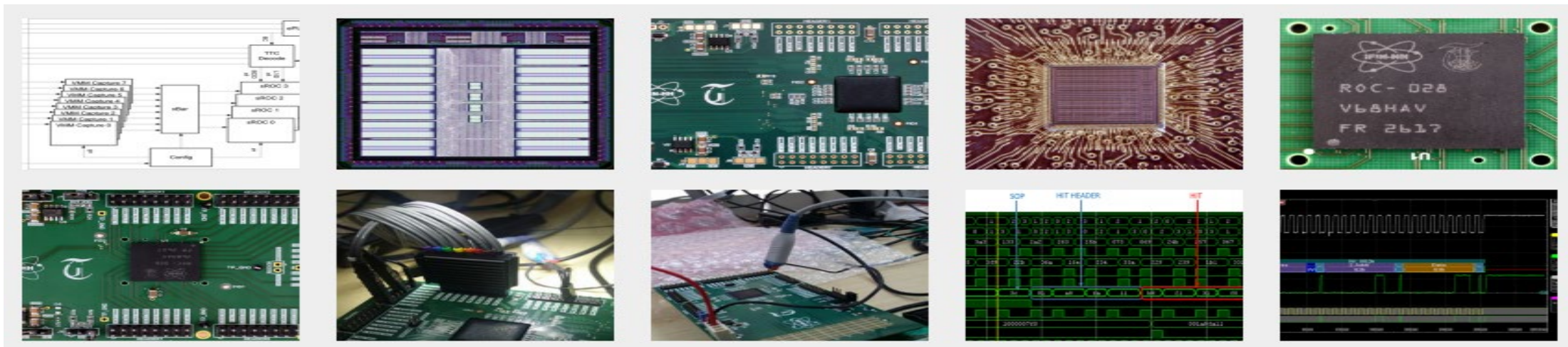# ATLAS Experiment at LHC

**Descriere:** In the context of the design of the New Small Wheel system for the ATLAS experiment on the Large Hadron Collider at CERN, Geneva, our contribution is to the trigger and data acquisition system implemented on FPGA / ASIC. More precisely, we designed and implemented the Read-Out Controller (ROC) ASIC in CMOS IBM 130nm technology, for the front-end electronics of the muon detectors. Few pictures of ROC below are self-explanatory.

**Tehnologii:** FPGA, ASIC

**Durata: 9 ani** (2020-2021) ctr. nr. 10/2020, (2016-2019) ctr. nr. 8/2016, (2014-2015) ctr. nr. 7/2012, partener P5    **Finanțator: Ro-CERN,** IFA, Bugetul de stat

**Coordonator: prof. dr. ing. Mihai IVANOVICI**



**Publicații:**

• S. Popa, **The Read-Out Controller ASIC for the ATLAS Experiment at LHC**, Springer 2022, https://link.springer.com/book/10.1007/978-3-031-18074-3

• S. Popa, S. Martoiu, M. Ivanovici, "Study of the ATLAS New Small Wheel Read-Out Controller ASIC in a Neutron Irradiation Environment", Journal of Instrumentation, vol. 15, 2020 https://doi.org/10.1088/1748-0221/15/10/P10023

• S. Popa, S. Martoiu, M. Ivanovici, "The Quality Control Test of the Digital Logic for the ATLAS New Small Wheel Read-Out Controller ASIC", Journal of Instrumentation, vol. 15, 2020 https://doi.org/10.1088/1748-0221/15/04/P04023

https://calexa.web.cern.ch/atlas_romania.htm