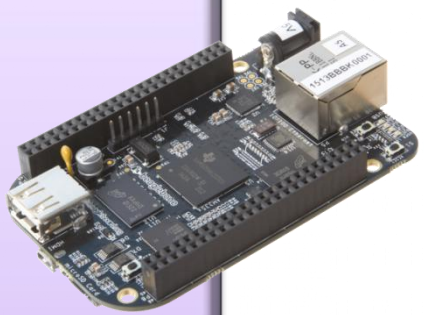
EICASLAB™ DEMO

The Professional Software Suite
for Automatic Control Design and Forecasting

EICASLAB Demo RT-emb

Beagle Bone at work!



Part 3: Rapid Control Prototyping

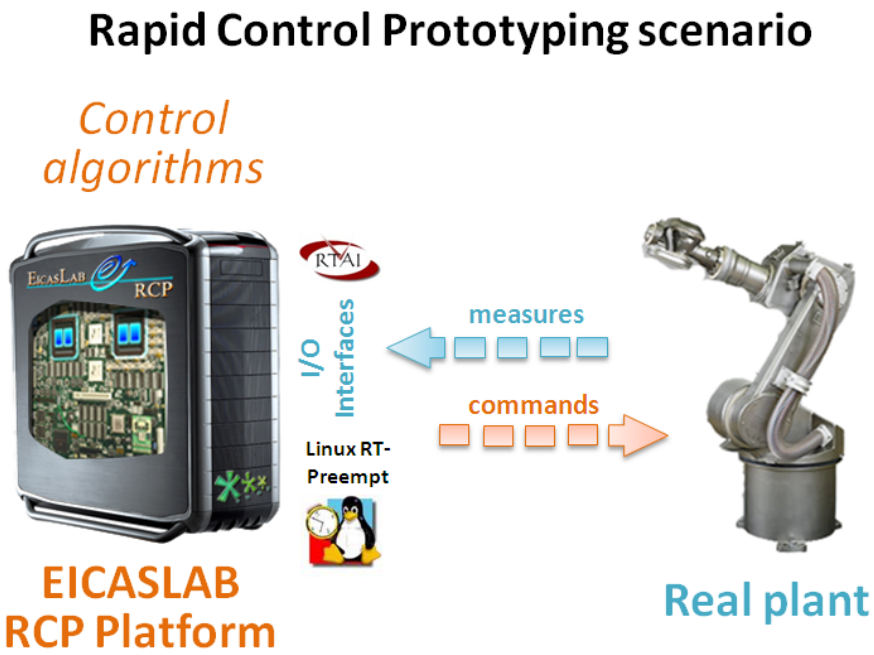
RCP On-Field

Rapid Control Prototyping

The **Rapid Control Prototyping operative mode** allows to test the control algorithm directly on the **real plant.**
It includes two operative sub-modes: **RCP On Field** and **Slow Motion**.

RCP On Field

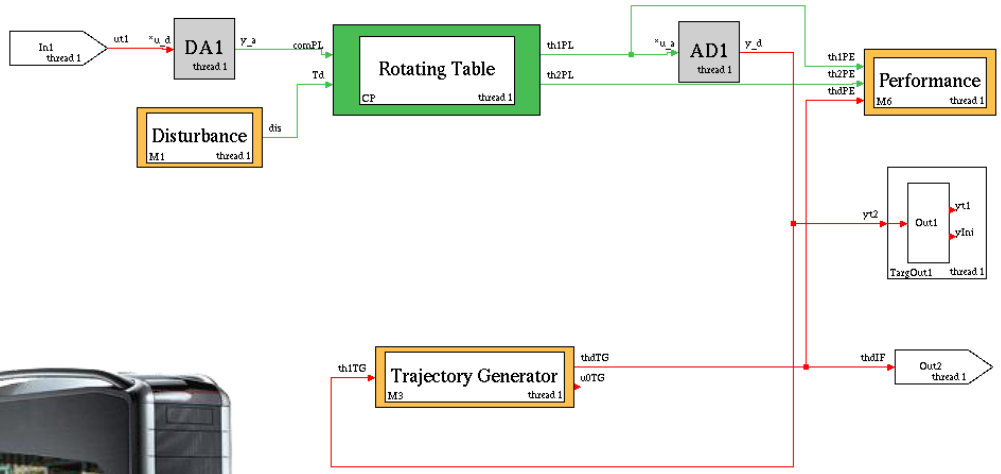
The **RCP On Field** operative sub-mode allows to perform experimental trials by piloting the real plant with the **EICASLAB RCP Platform** that executes in real-time the overall real-time software code – composed by the Basic and Application software – automatically generated by the **ACG for RCP** advanced feature.



RCP On Field

The demo does not need a real plant because the real plant is simulated by using a separate project as real-time emulator

The **system layout** of the project:

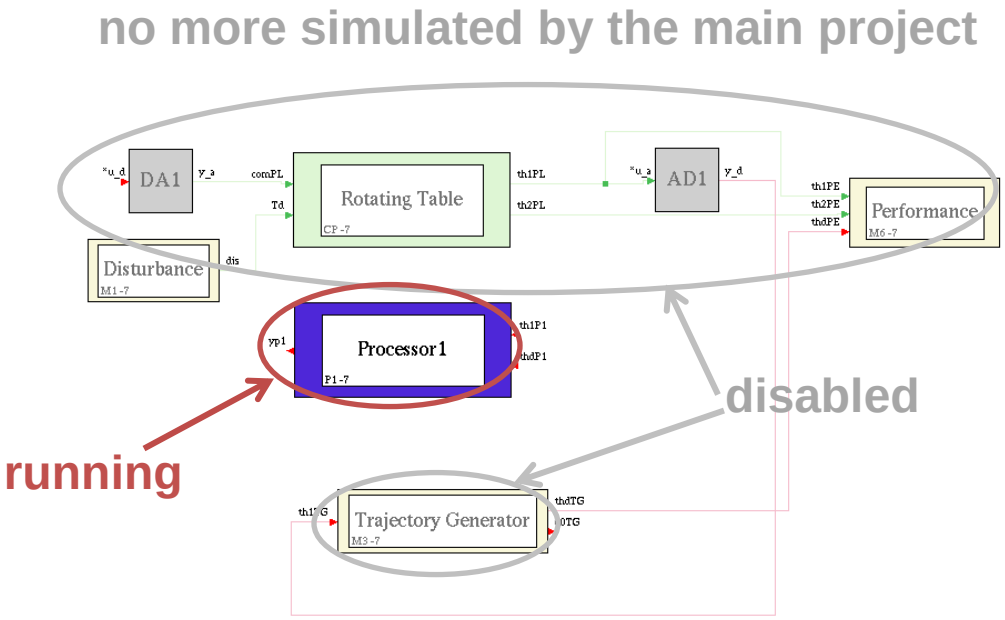


Not required

EICASLAB RCP Platform

RCP On Field

The **system layout** in this sub-mode:



The System Layout of the Rotating Table EICASLAB project in RCP shows that all blocks except the *Processor* are **disabled**.

RCP On Field

Who does what in RCP On Field operative sub-mode in RT-emb demo:

	EICASLAB RCP Platform	Embedded board target	Rotating Table emulator
HW			
SW	run control logic	unused	simulated by second project

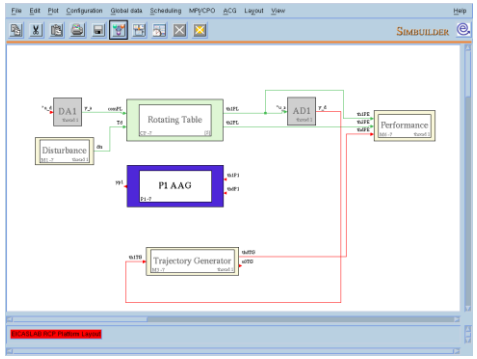
RCP On Field: projects interaction

RCP On Field

The two projects in two EICASLAB instances

Linux PC

Main project in RCP



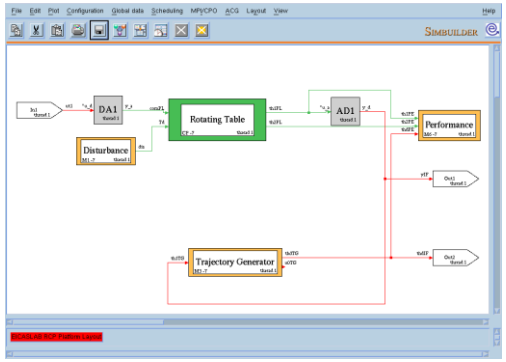
EICASLAB™ Demo #1

real-time communication on local interface

commands

measures

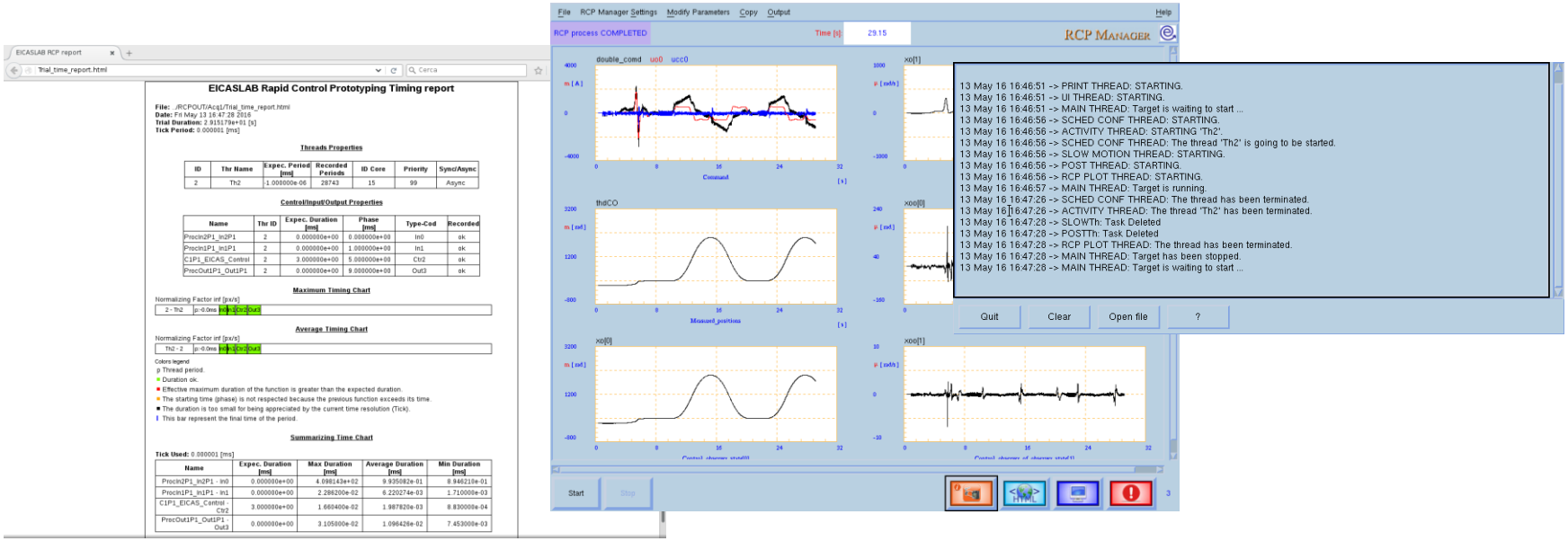
Plant emulator in RCP



EICASLAB™ Demo #2

RCP On Field

The **RCP Manager** tool is the EICASLAB tool that allows to control the overall RCP process on field, providing timing diagrams, performance reports and other functions.



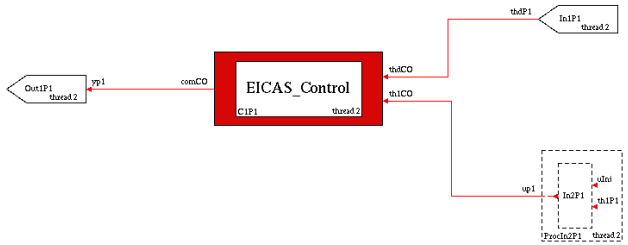
RCP On Field: trial execution

RCP On Field

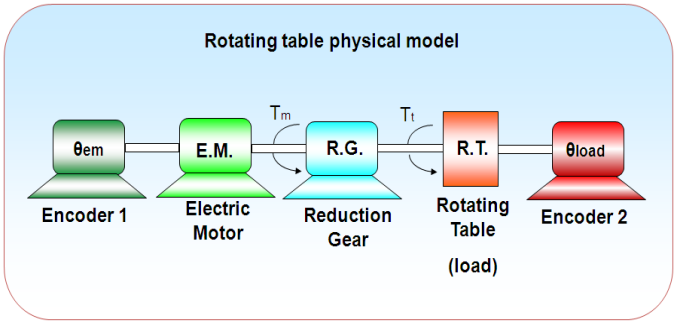
RCP Manager

Run-time parameters and data recording

EICASLAB RCP Platform



Motor command on Eth-UDP



Desired trajectory

Position Measure on Eth-UDP

Plant