EICASLAB™ DEMO
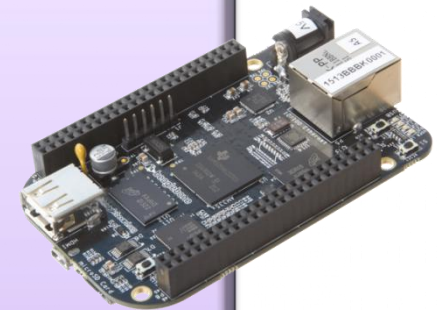
*The Professional Software Suite
for Automatic Control Design and Forecasting*
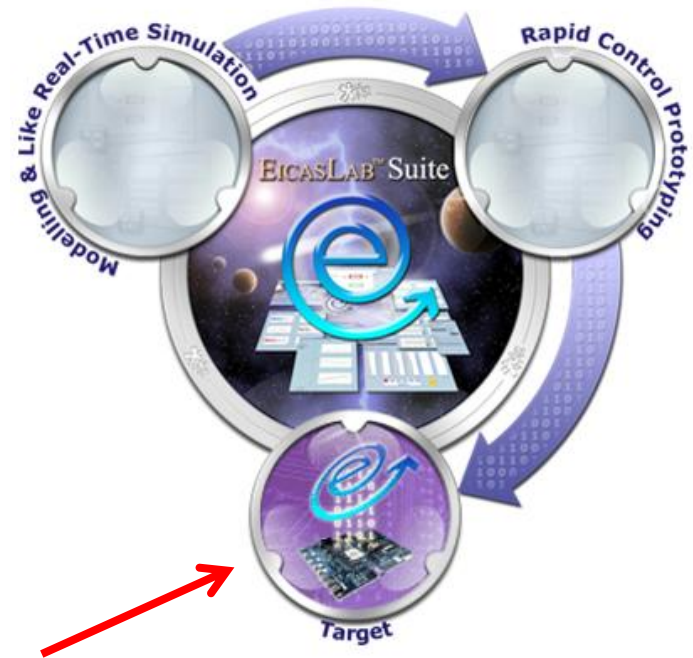
EICASLAB Demo RT-emb
Beagle Bone at work!

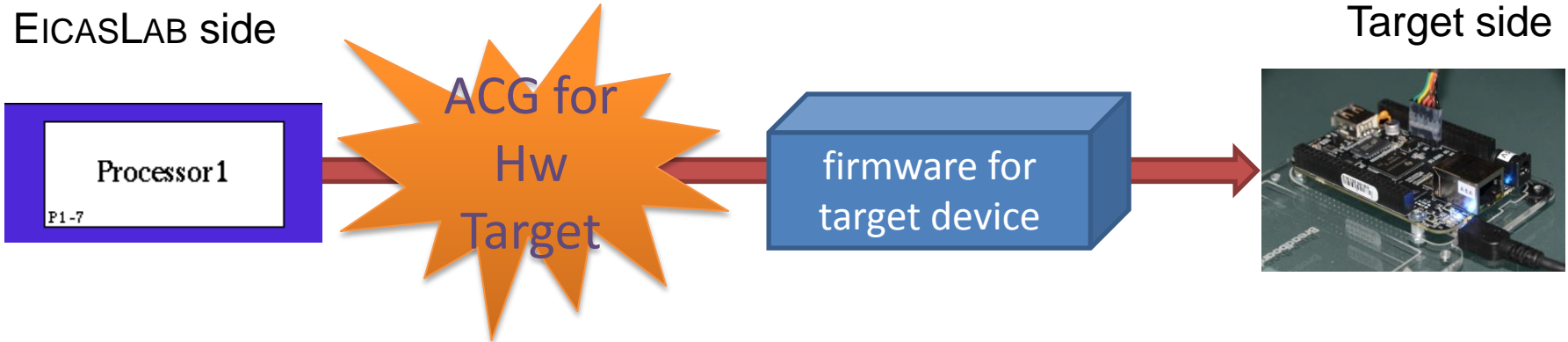### *Part 6: TARGET*
Final Validation Test

Target

The **Target operative mode** allows to export the control algorithm to the **final hardware target** that will execute it to control first the simulated plant in **Hardware-in-the-loop** and then the real plant in **Final Validation Test** sub-modes.

Target

EICASLAB provides the routines to generate the *Basic Software,* not only for the EICASLAB RCP Platform itself, but also for a family of devices or for a specific hardware architecture.

ACG means *Automatic Code Generation*

EICASLAB side

Target side

Processor1

P1-7

ACG for Hw Target

firmware for target device

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Target

The EICASLAB Target Module for Beagle Bone enables

- The code generation for the Beagle Bone target
- The upload and compiling process

www.eicaslab.com

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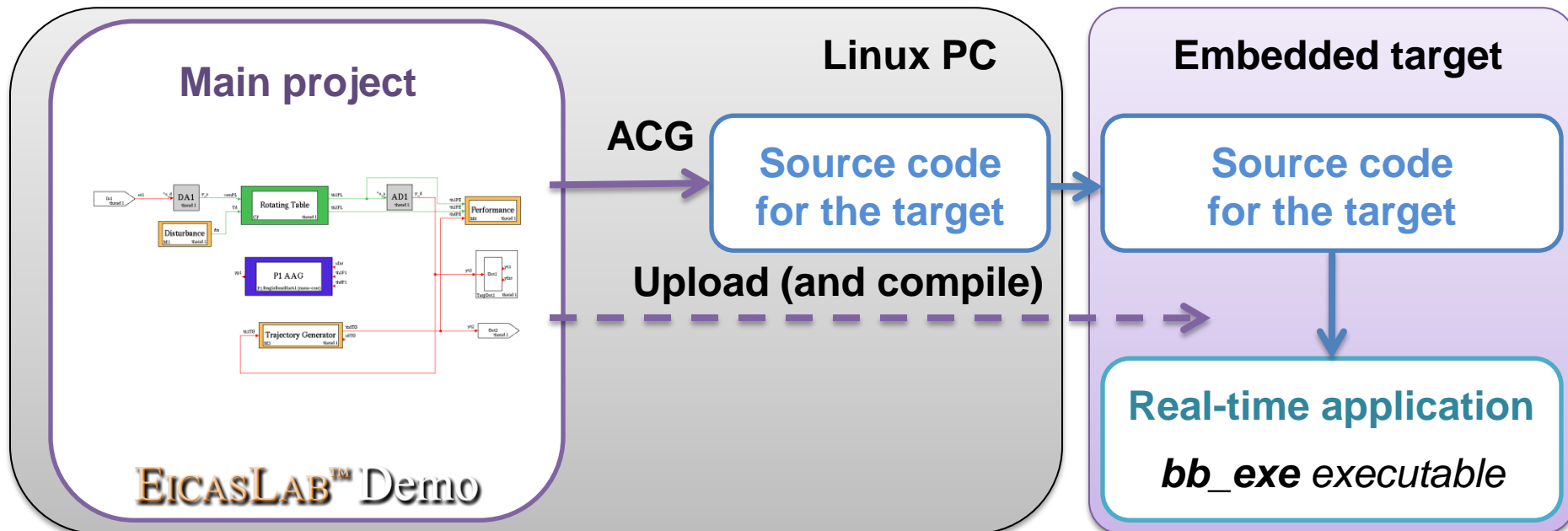
Final Validation Test

The **Final Validation Test operative sub-mode** allows to test the control algorithm **execution on the target** hardware controlling the **real plant**.

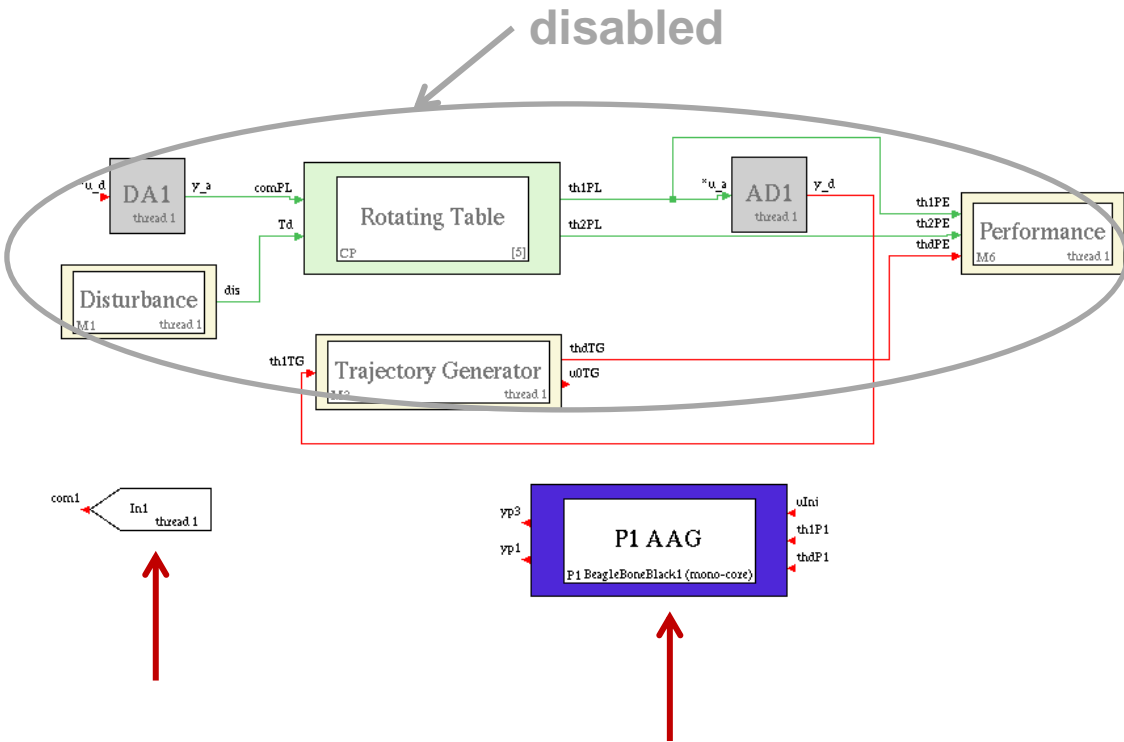**Final Validation Test scenario**

Real plant

Target

High level and mission commands, parameters

EICASLAB RCP Platform

I/O Interfaces

Data monitoring & recording

Linux RT
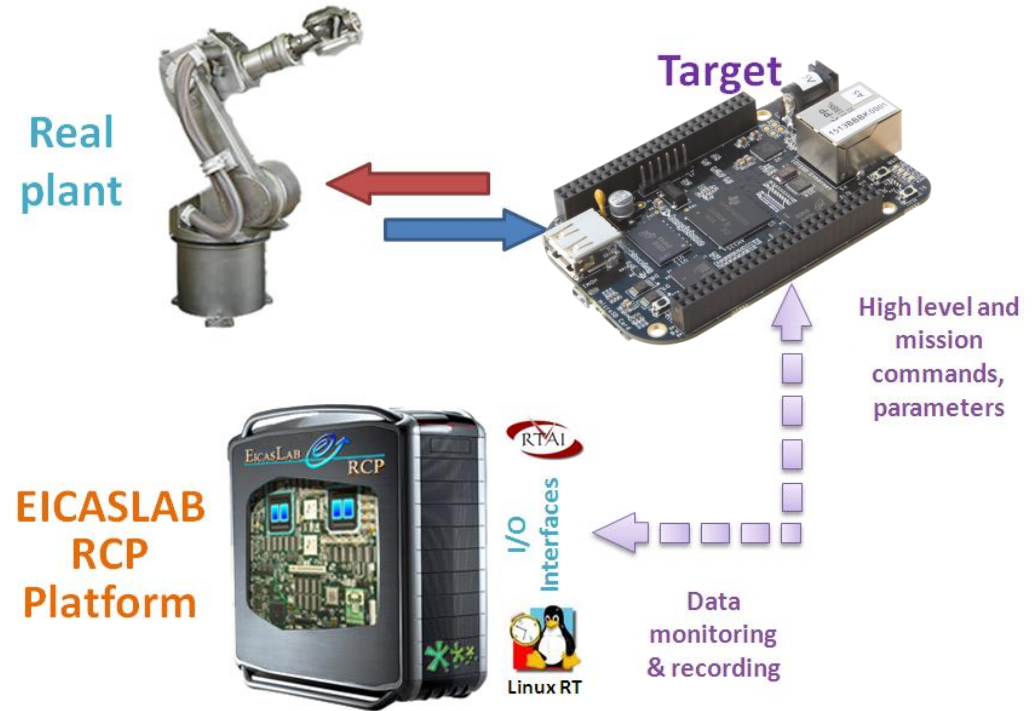
The EICASLAB RCP platform can be suitably connected to the target to run as host PC that works as monitoring system.

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Final Validation Test

The **system layout** in this mode:

disabled

The system layout shows that the *Plant Area* is disabled again, because during the FVT trials the **real plant** is simulated using a separate project.

The control algorithm is executed by external **hardware target**, as in HIL trials.
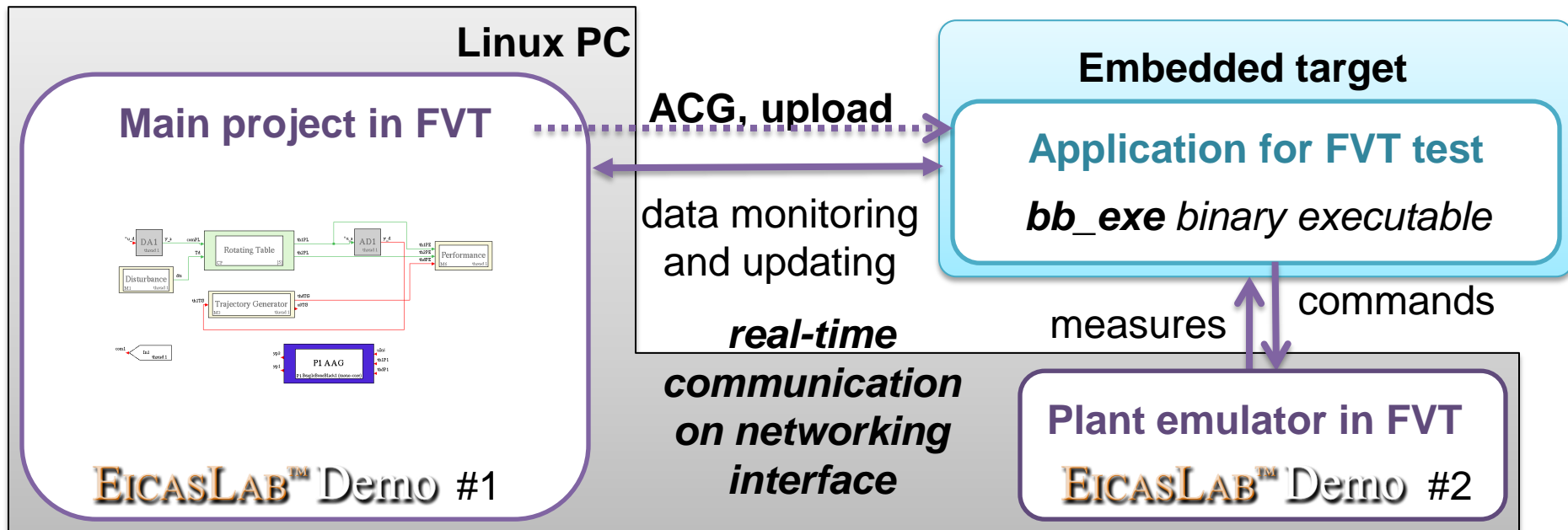
Final Validation Test

Who does what in Final Validation Test operative sub-mode in RT-emb demo:

|			
HW	**EICASLAB RCP Platform**	**Embedded board target**	**Rotating Table emulator**
SW	**monitoring supervisor**	**runs control logic**	**simulated by second project**

Final Validation Test

When the demo is in HIL operative sub-mode the "**ACG for FVT**" advanced feature generates the AS + BS for performing the Final Validation Test.

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Final Validation Test

The **TARGET Manager** manages the overall Final Validation Test trial.
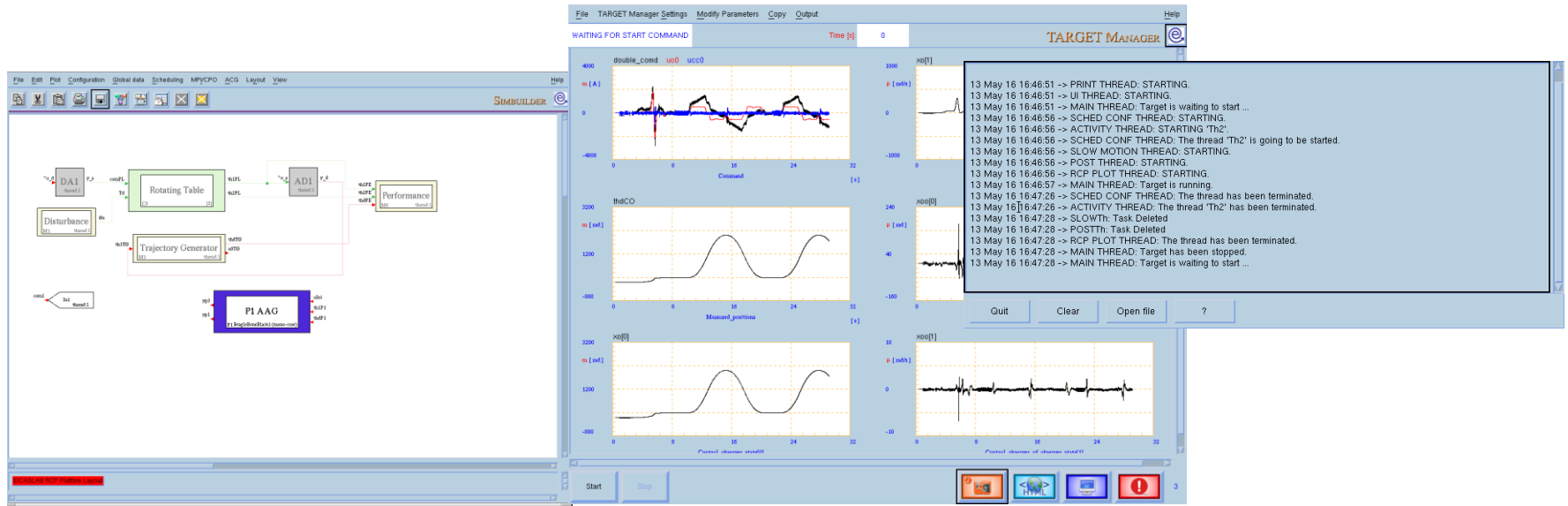
Final Validation Test

TARGET Manager

Run-time parameters plot and data recording
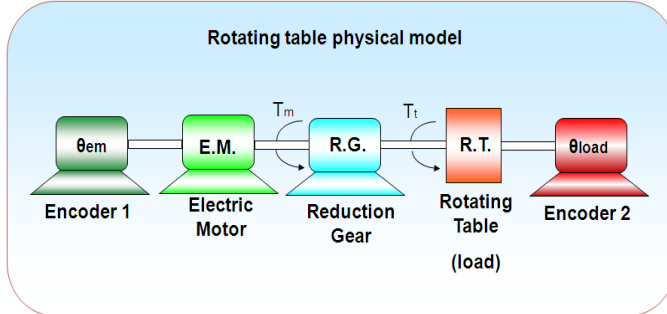
EICASLAB RCP Platform

Monitoring data on Eth-UDP

Run-time parameters on Eth-UDP

Embedded target

Motor command on Eth-UDP

Real plant

Rotating table physical model

θ_{em} E.M. T_m R.G. T_t R.T. θ_{load}

Encoder 1 Electric Motor Reduction Gear Rotating Table (load) Encoder 2

Trajectory measure on Eth-UDP

EICASLAB™ Demo RT-emb

The demo installer is downloadable from EICASLAB website (www.eicaslab.com)

For more info,
please contact:
  support@eicaslab.com

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