Part I – Scientific Activities

Participation in the ITER project

Summary and highlights of research achievements

An xTCA (AdvancedTCA Rear Transition Module for Physics) was developed to extend remote control and communications with an ATCA carrier module. This module provides features for external Host connection trough a PCIex16, two Gigabit Ethernet ports for communication with the carrier and three generic SFP optical interfaces. In addition the module also provides special clock, trigger and generic I/O signals.

An xTCA that extends analogue and digital Input/Output capabilities was also developed featuring the increase of Analogue-to-Digital and Digital-to-Analogue conversion channels available to an acquisition and control ATCA board compliant with xTCA standard.

Part II – Scientific Output

A. Publications

Papers in international refereed scientific journals

Author(s)	Fernandes AM, Pereira RC, Sousa J, Batista AJN, Combo A, Carvalho BB, Correia CMBA, Varandas CAF
Paper title	HDL Based FPGA Interface Library for Data Acquisition and Multipurpose Real Time Algorithms
Journal name	IEEE Transactions on Nuclear Science
Volume, page	58, 1526
Year	2011

Author(s)	Correia M, Sousa J, Rodrigues AP, Combo A, Batista AJN, Gonçalves B, Varandas CAF, Correia CMBA
Paper title	xTCA-compliant PCIe hub/controller for Physiscs CODAC subsystems
Journal name	Fusion Engineering and Design
Volume, page	86, 1351
Year	2011