FP7- Grant Agreement no. 283393 – *RadioNet3*

Project name: Advanced Radio Astronomy in Europe

Funding scheme: Combination of CP & CSA

Start date: 01 January 2012 Duration: 48 month

Deliverable 8.8

Prototype Hardware

Due date of deliverable: 2014-05-31

Actual submission date: 2015-10-22

Deliverable Leading Partner: STICHTING ASTRONOMISCH ONDERZOEK IN NEDERLAND (ASTRON), The Netherlands

1 Document information

Document name:	UniBoard^2 – Prototype hardware
Type	Prototype – Report
WP	8 (UniBoard^2)
Authors	Arpad Szomoru (JIVE)

1.1 Dissemination Level

Dissemination Level		
PU	Public	
PP	Restricted to other programme participants (including the Commission Services)	
RE	Restricted to a group specified by the consortium (including the Commission Services)	X
CO	Confidential, only for members of the consortium (including the Commission Services)	

1.2 Content

2 Introduction

The UniBoard^2 JRA set out to create an FPGA-based, generic, scalable, high-performance computing platform for Radio Astronomy, along with a number of firmware personalities, like a correlator, beam former and a digital receiver.

During the hardware development, a single prototype board was designed and produced and delivered by Neways, the manufacturing company, in May 2015. An intensive period of testing followed, after which the revised design was sent to Neways in August 2015 in order to start up a production run of 7 boards.

The design of the board and of the various firmware applications are explained in detail in the following deliverable documents:

- D8.2: Hardware Design Document
- D8.3: Firmware Design Document: EVN Correlator and SKA Low Frequency Channeliser
- D8.4: Firmware Design Document: Digital Receiver
- D8.5: Firmware Design Document: Beam Former
- D8.6: Firmware Design Document: Pulsar Binning
- D8.7: Firmware Design Document: RFI Mitigation

3 Images

Figure 1: hardware engineer Sjouke Zwier checks the PCB during the intermediate stages of the assembly

Figure 2: chief designer Gijs Schoonderbeek checking the finer details

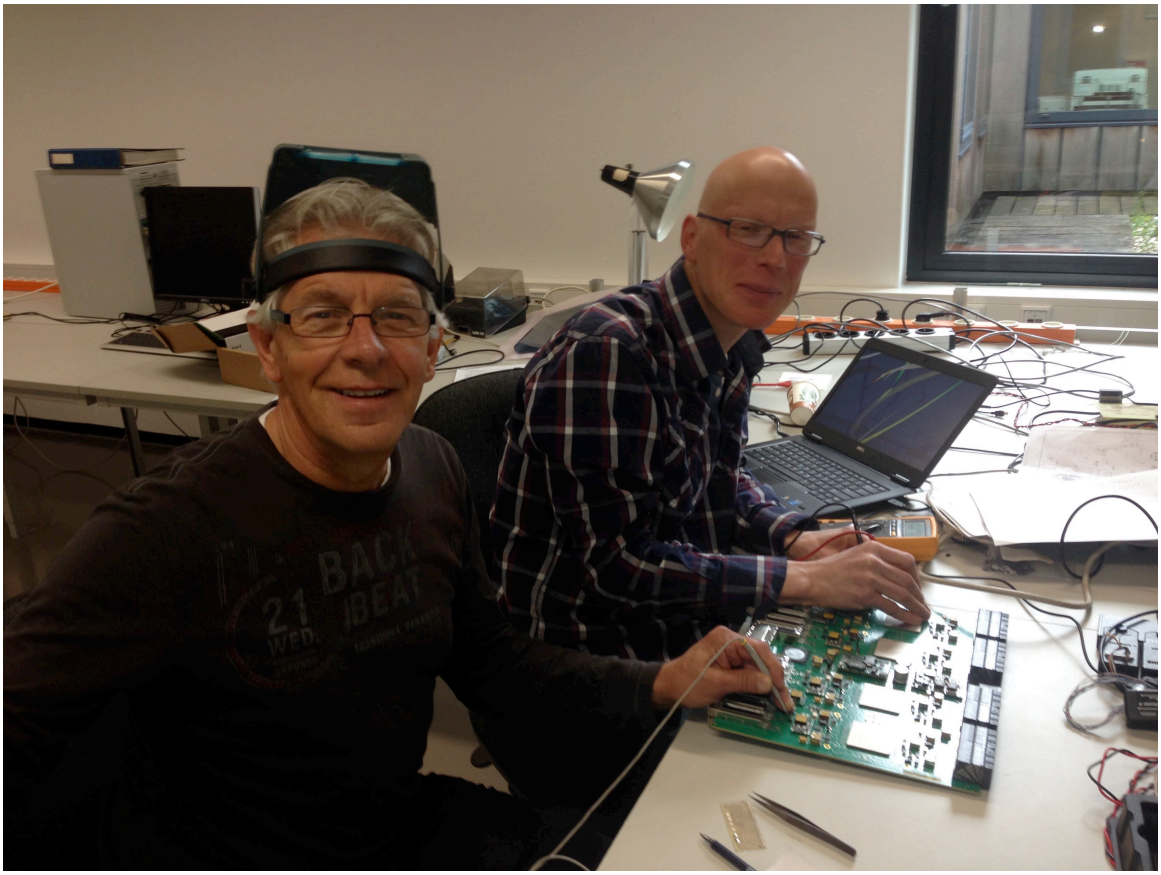

Figure 3: first tests at the lab in Dwingeloo

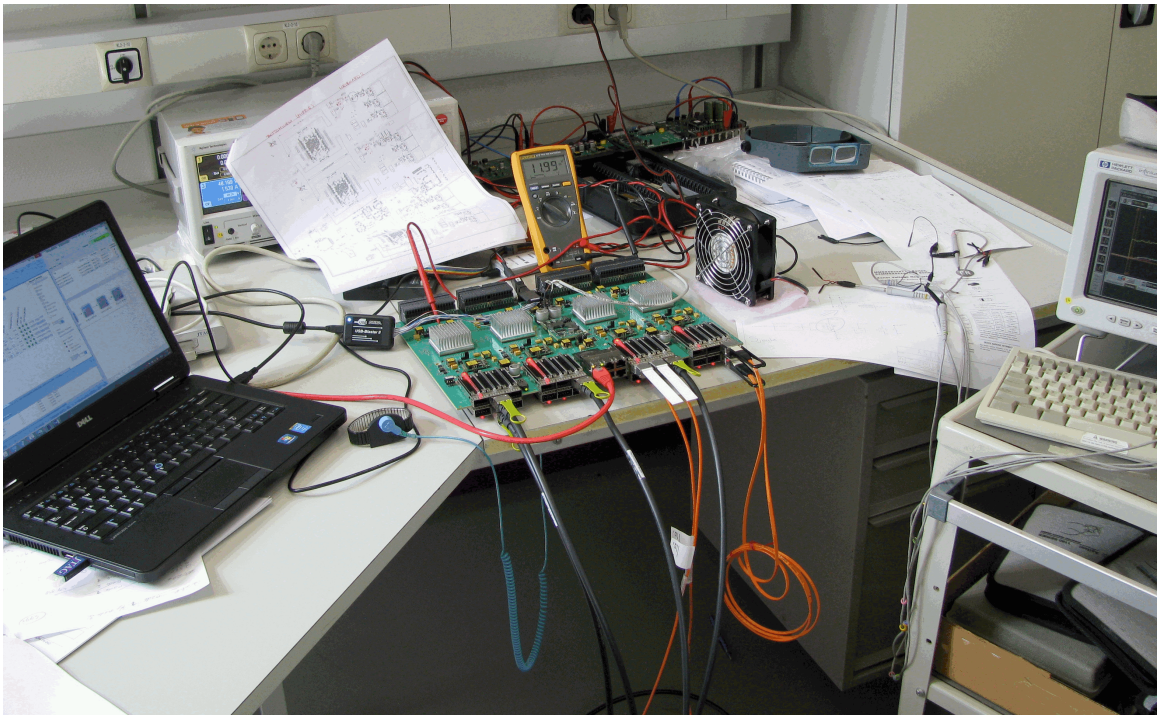

Figure 4: first (LED) light

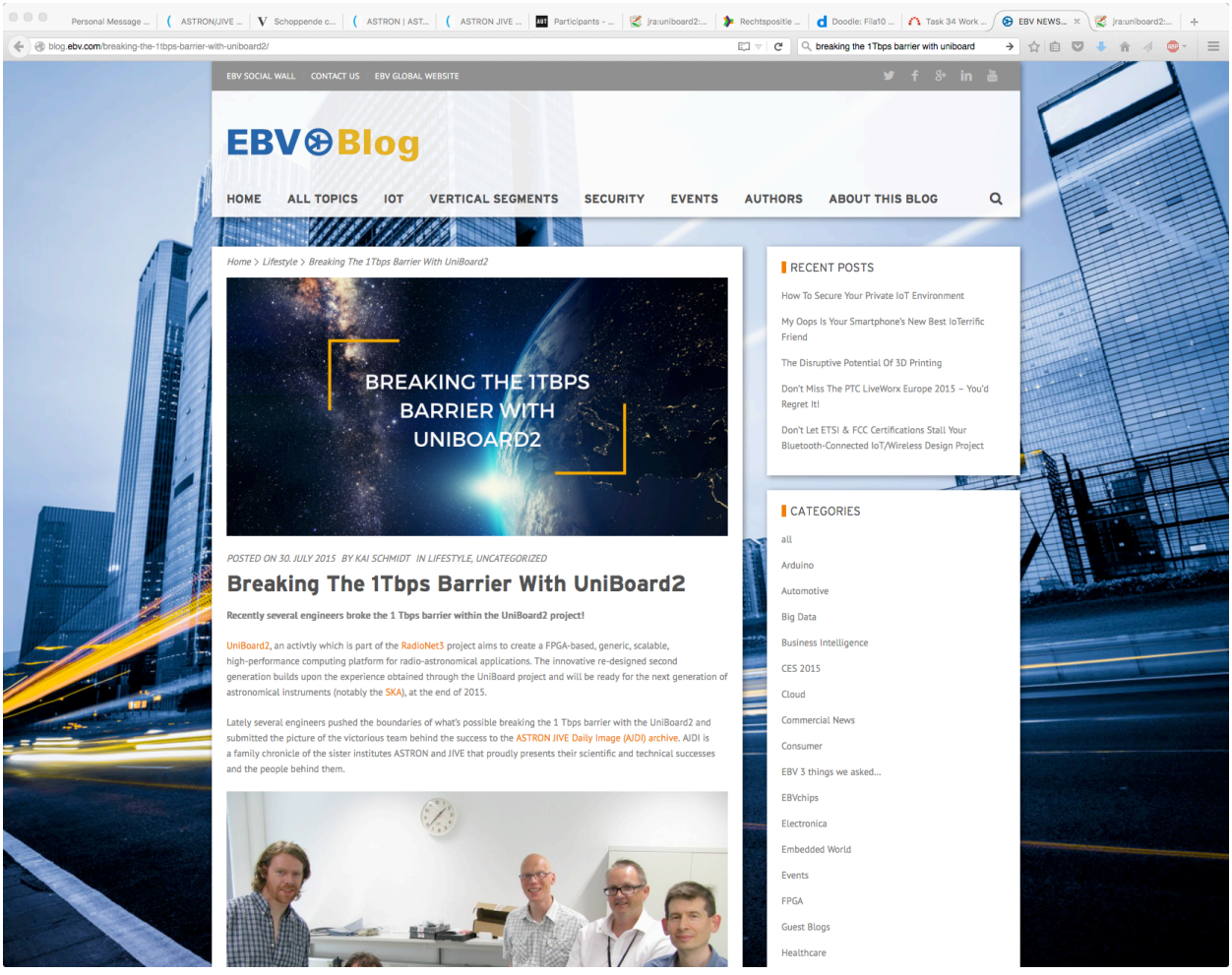

Figure 5: making headlines

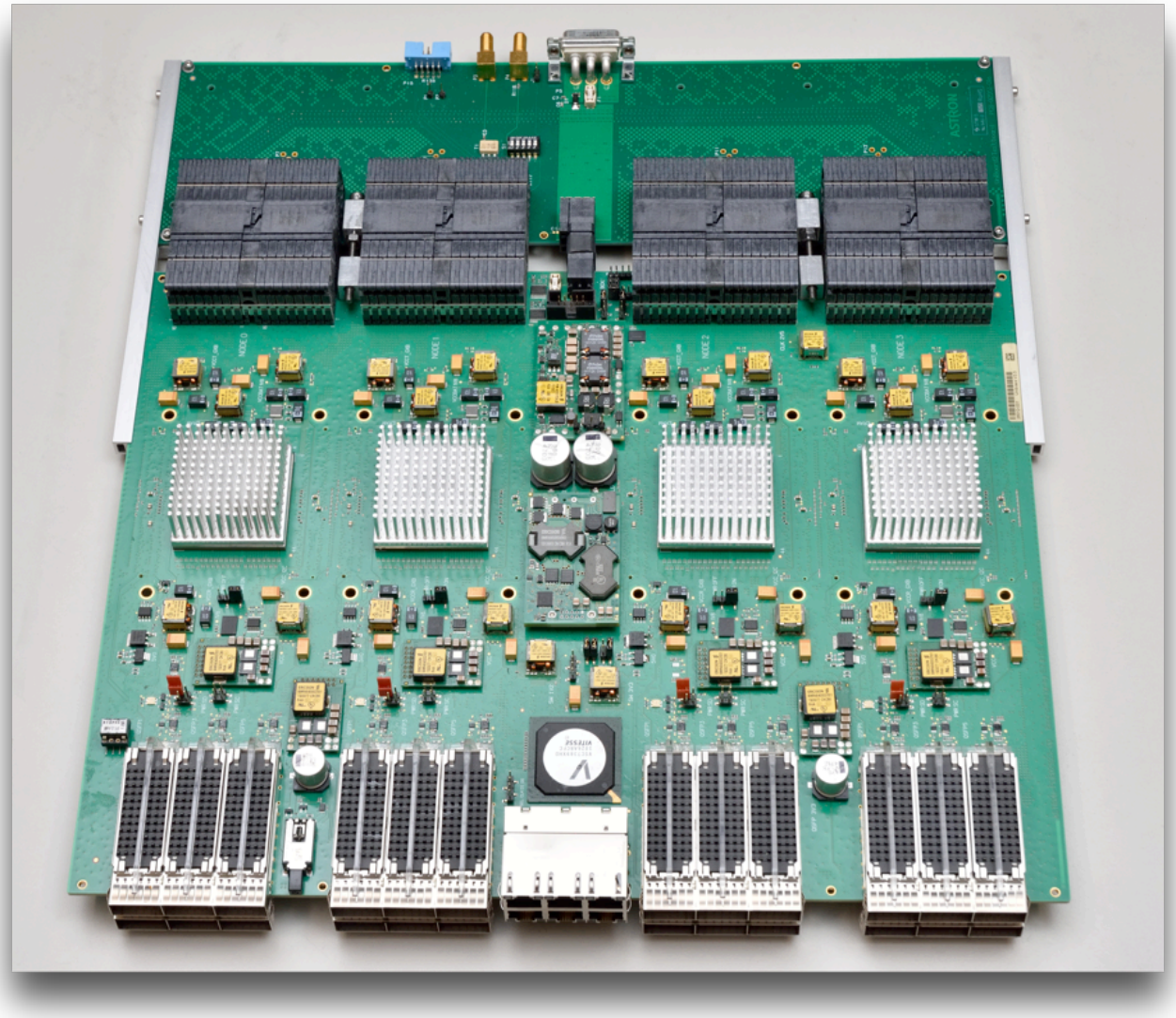

Figure 6: prototype UniBoard^2 with cooling blocks mounted on the four FPGAs and an extension test board connected to the backplane connectors

Copyright