Enabling dual Gigabit Ethernet support on BoraEVB

Porcia, ITALY – January, 2016. This NEW DAVE Embedded Systems' proposed demo is based on the Xilinx Zynq SoC. The aim of the presented Application Note is to describe how to integrate a second Ethernet port on the BORA EVB.

Double ethernet could be useful in many different business areas, thanks to the flexibility of ethernet interfaces. A first application example can be the Home (or buildings) Automation, where the multimedia data must be processed and transmitted through the building's networks for lighting control, IP video door, thermoregulation and safety.

Another interesting example of double ethernet application is the heavy industry in general, where Industrial Process Control (IPC) is essential. Just think about the steel industries, the power plants and many other manufacturing processes: many motor drives within their inverters are used and all of them require control and supervision. Therefore it is easy to accept that double ethernet is a crucial aspect of those IPC systems.

The availability of a second Ethernet port on the same product provides several of advantages. At a first sight, double ethernet permits to handle data exchange between different subnets or, on the other way, to build a simple switch.

Moreover, in the last decade, the development of real-time industrial protocols like EtherCAT, AMP solutions (Asymmetric Multi Processing), together with the availability of two Ethernet interfaces on the same SoC enabled customers to have Real Time controllers, HMI-Supervision system and datalogging all on the same CPU.
This guarantees customers savings in terms of time to market, BOM (Bill Of Material) and maintenance.

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