SPACEWIRE CODEC IP CORE UPDATE

Session: SpaceWire Components

Short Paper

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ABSTRACT

The University of Dundee developed the ESA SpaceWire IP core as the first step in the development of the SpaceWire router ASIC device, now available as Atmel standard part AT7910E. The core is used widely in many ESA contracts and is available from ESA for use on ESA projects, or under license from STAR-Dundee. To date the IP core, named "SpaceWire-b" by the ESA micro-electronics section, has been licensed for use in 46 ESA projects.

The SpaceWire IP core was first released in 2003 and presented at the first SpaceWire seminar at ESTEC. Development of the IP core continued at the University of Dundee and three major revisions of the VHDL code have been released, adding extra features and fixing known issues.

The full paper will present the history of the SpaceWire IP core VHDL code, major changes and fixes, and also cover recent work on an implementation of the CODEC using the Actel development platform (Libero IDE). This will cover setting up a Libero project, setting project options, synthesis and synthesis constraints, place and route, constraints and generation of programming and prototyping files.