STAR-LAUNCH AND NETWORK DISCOVERY

Session: SpaceWire Networks and Protocols

Long Paper

Stuart Mills, Chris McClements

STAR-Dundee, c/o School of Computing, University of Dundee, Dundee, Scotland, UK

Steve Parkes

University of Dundee, School of Computing, Dundee, Scotland, UK

E-mail: stuart@star-dundee.com, chris@star-dundee.com, sparkes@computing.dundee.ac.uk

ABSTRACT

STAR-Launch is a new software tool which can be used to launch applications and modules to interact with STAR-Dundee SpaceWire devices. It provides the ability to discover devices on a SpaceWire network and display these graphically. The software then allows applications and modules to be launched to perform operations on the discovered devices by clicking on the graphical representation of the device. Example operations that can be performed on a device include configuring a router on the network and sending packets to a node on the network.

In addition to describing in more detail the features provided by the software, this paper describes available methods which can be used to discover the devices on a SpaceWire network, the method which is used in the software, and why this method was selected. Benefits and limitations of the network discovery mechanism and the software itself are discussed.

The software makes use of some of the features described in the draft SpaceWire PnP Protocol Definition. The services in the draft PnP definition that are implemented in STAR-Launch are described in the paper, as are the developers' comments on the experience of implementing these services. Recommendations on modifications that could be made to the draft definition are also provided.