OpenFPGA BoF
Cray User Group
May 9, 2006
Lugano, Switzerland

The OpenFPGA BoF was attended by a broad spectrum of individuals (approximately 40) directly or indirectly interested in development of applications using FPGA technology. A brief overview of OpenFPGA was provided, referring to the website (www.openfpga.org) for updated information.

The discussion started with a challenge statement - "FPGA technology is ready for production computing environments". Reaction to the statement directed discussion in the following directions.

First conclusion – there was a large disconnect between the prevailing perception that FPGA application development requires VHDL experience and the reality that higher level tools are available for this purpose. Representatives from Mitrionics and Celoxica shared that their tools are available commercially, as well as mention of academic solutions for this purpose.

Second conclusion – while technically FPGAs may be ready for production use, the invisibility of compelling success stories is limiting the transition. It was the conclusion of the BoF attendees were that these success stories need to be shared much more aggressively. Unfortunately, the definition of success in the case of FPGAs eluded definition.

Third conclusion – the development environments have too limited availability. This perception was partly changed by the tool providers who have tools that don't require FPGAs to develop. The conclusion was that demonstration environments, where success stories can be developed or confirmed using actual FPGA hardware, are really needed.

Fourth conclusion – that double precision was critical for FPGAs to be successful. This conclusion followed a brief discussion regarding the acceptable level of change that developers would accept to move to FPGA-based solutions. While some application code developers/scientists would invest efforts to make the change, most would not accept changes, particularly those changes which make their code less portable.

Jan Silverman provided a review of the Cray process resulting in the convergence of the FPGA strategy for the XT3. This was in response to the question of Cray's position after announcing the end of line for the XD1 design. He shared that after talking with customers, they found that FPGAs were still of significant interest, so they decided to move to the DRC solution which would enable Cray to concentrate on the XT3 while keeping FPGAs an option.