OCP HPC Sub Project

Minutes - 06/25/2024

OCP Local Recording :
No Recording

Meeting Transcript :
No Transcript

Attendees

Attendee	Affiliation	06/25/2024
Howard Andrews	Lotes	x
Matt Burns	Samtec	x
Kevin Cameron	Individual	x
Allan Cantle	Nallasway	x
Michael Choi	Samsung	x
Jason Chou	Foxconn	x
Al Ford	Individual	x
Geoffrey Mersham	Unify Point	x
Mitch Wright	Liqid	x
Totals		9

Meeting Objectives

Proposed Agenda for this meeting :

1) Introductions to New Attendees.
2) ASIC Emulation FPGA HPCM Module Architecture
3) Abstract submitted to OCP Global Summit
4) AOB

Meeting Discussion Notes

1) **Introductions to New Attendees.**

2) **ASIC Emulation FPGA HPCM Module Architecture**

Slides :
https://docs.google.com/presentation/d/1lXOLnfLoBpKEMcMiMg2z9_hcLGOVk4600OGeutmjskA/edit?usp=sharing

3) **Abstract submitted to OCP Global Summit**

AI Generated Meeting Summary - NOTE this is an OK summary but is confused in several areas.

Meeting summary for OCP Server - High Performance Computing (06/25/2024)

Quick recap

Allan led a discussion on the New Frontiers project, proposing a segmented approach due to its complexity and the potential of FPGA emulation. He also presented the selection and potential of the VP1902 device from Zilings and D, and detailed the configuration and layout for an IO and emulation platform. Lastly, he proposed acquiring funding for a new project involving an interconnect as a test vehicle and the development of a digital twin Asic emulation platform.

Next steps

• Allan to explore getting funding for building the proposed FPGA-based HPCM module emulation platform.

• Allan to prepare a presentation on the FPGA-based HPCM module emulation platform for the upcoming OCP Global Summit.

• Interested companies to collaborate with Allan on developing the FPGA-based HPCM module emulation platform proposal.

Summary

Addressing Unlisted Participants and Email

Allan convened the morning meeting and addressed several participants who were not initially listed. He also referred to an email he had sent out the previous week as the first topic of discussion. Other attendees included Kevin, Michael, Jason, Howard, and Geoffrey.

New Frontiers Project Proposal Strategies

Allan proposed that instead of one large proposal for the New Frontiers project, it might be more effective to split it into individual proposals for the various work streams. He noted that while progress was being made, there might not be enough commitment or capacity to tackle the full project. Allan also highlighted the potential of FPGA emulation, mentioning ongoing efforts and EU activity in this area. He suggested this could be a part of the proposal and mentioned an upcoming OCP Global Summit where he submitted an abstract for FPGA as a case study.

Discussing VP1902 Device and Emulation Potential

Allan discussed the selection of the VP1902 device from Zilings and D for their project, highlighting its features such as 18 million logic cells, 8 million of which are lookup tables, 239 megabits of block RAM, and 619 megabits of ultra-ram. He explored the potential of emulating various devices using their existing setup, including an Nvidia H100 and a wafer scale machine. Allan also noted the speed capabilities of their Fpga and Hbm Free E systems, and the possibility of emulating the Hbm Free E using the Lpd R. 4.

IO Configuration and Emulation Platform Design

Allan detailed the configuration and layout of an IO for 16 Lpt. R. 4 channels, including the required banks and the use of transceivers for HPCM's needs. He presented two package designs, one maximizing transceivers and another offering 10 memory channels and 16 LPDDR channels. Allan also provided a comprehensive layout and design for their emulation platform, including the use of connectors for various link speeds and the configuration of PCI channels. He further described the model, emphasizing the decoupling on package, power network, and interconnect design.

Allan's Project Funding and Summit Proposal

Allan proposed acquiring funding for a new project aimed at utilizing an interconnect as a test vehicle and conducting initial investigations. The plan included the addition of a Slammer adapter to emulate significant loads up to the limits of the power supplies. Allan also discussed the idea of collaborating with a company to input numbers into the module. Furthermore, Allan presented an abstract for the Ocp global summit, focusing on the development of a digital twin Asic emulation platform using the Ocp Hpcm. The platform would be a scalable digital twin for developing new processor architectures targeting domain-specific applications.

Tracking Actions

1.

Useful Links

Link to HPCM Specification - Working Document :
https://docs.google.com/document/d/1rsfMXx_ZPk489H28mmYmdVIpRx9EZQBgMjJ4wB3mx28/edit?usp=sharing

New Frontiers Draft RFP

OCP HPC SubProject RFP Response Proposal
https://docs.google.com/document/d/1fsPapI4O4573B6eQM9tnNxYyQymrIZ3dt0RNsYV4flk/edit?usp=sharing