



Visio/phone meeting
CoBo-MUTANT coupling
5th May 2009, 15:00-16:00 (French-time)

Minutes

Present : W. Mittig, A. Bickley, N. Usher, F. Druillole, B. Raine, G. Wittwer, F. Saillant, T. Murakami, RIKEN, J. Pibernat, JL Pedroza

1) Introduction

Due to changes in specification since the beginning of the project, in particular the number of channels (from 10 000 to 30 000 or more.), with the increasing complexity of electronics, the large number of connections, An alternative to using NIM crates with connections on the front panel is sought. Discussions to define a backplane with a parallel bus were conducted. But using a parallel bus does not give advantages for CoBo-MUTANT control. Since GET is a generalist system, a standard, scalable and widely used on the electronics market is searched.

2) Suggestion

Gilles Wittwer suggests MicroTCA (MTCA) as a solution to control CoBo and solve 2 problems of data transfer (Mutant-Cobo and CoBo to switch). Officially published in July 2006, the specifications of the eagerly awaited architecture MicroTCA (Micro Telecom Computing Architecture) are, already, a very strong interest from users of computers or servers based on industry open standards. Moreover, market research findings are to display high growth rates for MicroTCA, with sales expected to exceed one billion dollars in 2011. And in areas that go well beyond telecommunications. MTCA works with a MCH controller (Board recognition and GbE/10GbE switch). The use of MTCA does not solve the problem of synchronization between sub-systems, in particular we have to add connections for the master clock distribution and we have to add connections from CoBo to ASAD.

3) Topologies

- “Classic solution” : NIM crates hosting CoBo and MUTANT. (Solution 0)
- 9 or 12 AMC slots (9 or 12 CoBo) crate concentrates an important number of cables. This solution maintains the length of the cables between AsAd and CoBo (52 signals or differential pairs for 1 AsAd-CoBo connection) as it was in NIM. (solution 1)
- Other possibility: Custom CoBo coupled with AsAd with GBE transmission to External Ethernet Switch and CoBo connection to MUTANT-NIM (less cables but length limit transferred to CoBo-MUTANT link). (Solution 2)

4) Resources

One crate MTCA with full options costs about 5 K€, a MCH 1.5 K€ (we can compare these prices with VME)

Solution 0: NIM, we already had discussions on this topic.

Solution 1: MTCA, needs to spend 3 months FTE for the comprehension of the system.

Solution 2: Custom CoBo: needs also extra work for questions of power supply, cooling and mechanics

5) Conclusion

A vote is proposed to fix the topology for CoBo-MUTANT coupling and Data transfer through GBE. Deadline 12 May 2009.

Vote : <http://www.doodle.com/xgcdetu3dtbswcnf>