

ATM Forum Technical Committee
ATM Forum/98- 0785

TITLE: Scalable Parallel Utopia

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ABSTRACT: This contribution proposes a 128 bit wide interface structure clocked at approximately 80 MHz that will operate at 10 Gbps as a strawman for a OC192c Utopia Specification. In addition, the concept of scalable width of data transfers in order to maintain manageably low clock rates is proposed.

NOTICE: This contribution has been prepared to assist the ATM Forum. This proposal is made by the authors as a basis of discussion. This contribution should not be construed as a binding proposal on the authors or their companies. Specifically, the authors and their companies reserve the right to amend or modify the statements contained herein.

1. Introduction

The bandwidth required for multiple real-time full motion visualizations of Supercomputer output (and other applications) can be well over 10Gb/s, necessitating Utopia-like interfaces with greater than OC-192c throughputs as well as lower throughputs.

The presently adopted Utopia Specifications (Level 1 and 2) as well as proposed Utopia Level 3 are limited to operating up to 3.2Gbps data rates. Interfaces operating at OC-48c are already appearing commercially. This contribution proposes to incorporate the scalability necessary to accommodate the wide range of throughputs required while maintaining compatibility with CMOS/TTL clocking and data I/O circuitry into the emerging UTOPIA specifications.

2. Description

We propose that a 128 bit bus width be included in the Utopia 4 (OC-192c) specification in order to achieve 10 Gb/s throughput while facilitating clock rates on the order of 80 MHz .

In addition, we propose to incorporate the scalability to accommodate narrow, intermediate, and high bandwidth systems requirements in a UTOPIA interface while allowing the flexibility to reuse existing UTOPIA 1 and 2 interfaced devices. To accomplish this, the scalable concepts embodied in ATM Forum contribution 97-0537 should be incorporated into the appropriate Utopia living list document(s).

3. Motions: (presuming that 98-0697 has been acted on by the working group)

- 1) That 128 bit transfer width be incorporated into the UTOPIA 4 Living List Document.
- 2) That the text from 97-0537 be incorporated into the UTOPIA 4 Living List Document.

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