
ATM Forum Document Number: ATM Forum/96-1268

Title: MIMO Frame Latency Metric - Revised Definition

Abstract:

MIMO latency is extended to cover the case of discontinuous input frames.

Source:

Raj Jain, Gojko Babic
The Ohio State University

Raj Jain is now at Washington University in Saint Louis, jain@cse.wustl.edu <http://www.cse.wustl.edu/~jain/>

The presentation of this contribution at ATM Forum is sponsored by NASA.

Date: October 1996

Distribution: ATM Forum Technical Working Group Members (TM, TEST)

Notice: This contribution has been prepared to assist the ATM Forum. It is offered to the Forum as a basis for discussion and is not a binding proposal on the part of any of the contributing organizations. The statements are subject to change in form and content after further study. Specifically, the contributors reserve the right to add to, amend or modify the statements contained herein.

The MIMO latency as currently defined in the baseline document is:

$$\text{MIMO} = \text{Min}\{\text{LILO}, \text{FILO} - \text{NFOT}\}$$

Where:

- LILO = Last-bit in to last-bit out time for the frame
- FILO = First-bit in to the last-bit out time
- NFOT = Normalized frame output time = Frame size/output link rate

This definition assumes that the input to the network is contiguous.

In the last ATM Forum meeting, the issue of discontinuous input frames was brought up. To handle this case, NFOT needs to be defined as follows:

$$\text{NFOT} = \text{Normalized Frame Output Time} = \text{FILO} * \text{Input Link Rate} / \text{Output Link Rate}$$

Where,

FILI = First-bit in to last-bit in time (includes all gaps)

This modified definition works for contiguous and discontinuous inputs. In particular, note that if the input frame is contiguous, $FILI * \text{Input Link Rate}$ is equal to frame size and so the previous definition is a special case of this more general definition.

A list of all possible cases and how this modified definition handles them will be presented at the forum.