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BIRD ID#:   {TBD}
ISSUE TITLE: Crosstalk clarification w.r.t. AMI
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DATE SUBMITTED: February 23,2011
DATE REVISED:
DATE ACCEPTED BY IBIS OPEN FORUM:

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STATEMENT OF THE ISSUE:

The description of how crosstalk is to be handled with respect to AMI models
is unclear in the 5.0 version of the IBIS spec.

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STATEMENT OF THE RESOLVED SPECIFICATIONS:

Replace the following text in Section 3.1.2.1:

| 3.1.2.1 impulse_matrix
| ======================
|
| 'impulse_matrix' is the channel impulse response matrix. The impulse values
| are in volts and are uniformly spaced in time. The sample spacing is given
| by the parameter ‘sample_interval’.
|
| The impulse_matrix is stored in a single dimensional array of floating point
| numbers which is formed by concatenating the columns of the impulse response
| matrix, starting with the first column and ending with the last column. The
| matrix elements can be retrieved/identified using
|
| impulse_matrix[idx] = element (row, col)
| idx = col * number_of_rows + row
| row - row index , ranges from 0 to row_size-1
| col - column index, ranges from 0 to aggressors
|
| The first column of the impulse_matrix is the impulse response for the
| primary channel. The rest are the impulse responses from aggressor drivers
| to the victim receiver.
|
| The AMI_Init function may return a modified impulse response by modifying
| the first column of impulse_matrix. If the impulse response is modified,
| the new impulse response is expected to represent the filtered response.
| The number of items in the matrix should remain unchanged.
|
| The aggressor columns of the matrix should not be modified.

With the following text:

| 3.1.2.1 impulse_matrix
| ======================
|
| 'impulse_matrix' is the channel impulse response matrix. The impulse values
| are in volts and are uniformly spaced in time. The sample spacing is given
| by the parameter ‘sample_interval’.

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|
| The impulse_matrix is stored in a single dimensional array of floating point
| numbers which is formed by concatenating the columns of the impulse response
| matrix, starting with the first column and ending with the last column.  The
| matrix elements can be retrieved/identified using
|
|   impulse_matrix[idx] = element (row, col)
|   idx = col * number_of_rows + row
|   row - row index , ranges from 0 to row_size-1
|   col - column index, ranges from 0 to aggressors
|
| The first column of the impulse_matrix is the impulse response for the
| primary channel.  The rest are the impulse responses from aggressor drivers
| to the victim receiver.
|
|* To include any filtering performed by the transmitters' AMI_Init functions
|* according to the Reference Flows described in this section of this
|* specification, the primary channel's impulse response is passed to the
|* primary channel's transmitter AMI_Init function and the aggressor impulse
|* responses are passed to the corresponding aggressor transmiters' AMI_Init
|* functions.  This implies that the AMI_Init function of each aggressor
|* transmitter must be presented with the impulse response for its own through
|* channel plus the aggressor impulse responses that will be written into the
|* impulse_matrix for the primary channel, so that any subsequent filtering
|* performed by the AMI_Init function of each aggressor transmitter can also
|* be applied to the aggressor impulse responses.
|
|* The AMI_Init function of the primary channel's transmitter may return a
|* modified impulse response, if appropriate according to the Reference Flows
|* described in this section of this specification, by modifying the first
|* column of the impulse_matrix.  If the impulse response is modified, the
|* new impulse response is expected to represent the filtered response.  The
|* number of items in the impulse_matrix should remain unchanged.
|
|* The AMI_Init function of the primary channel's receiver may further modify
|* the impulse_matrix, including the aggressor impulse responses contained
|* in the impulse matrix, if appropriate according to the Reference Flows
|* described in this section of this specification.  If the impulse_matrix is
|* modified, the new impulse_matrix is expected to represent the filtered
|* response of the primary and aggressor channels.  The number of items in
|* the impulse_matrix should remain unchanged.
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ANALYSIS PATH/DATA THAT LED TO SPECIFICATION:

Discussion within the IBIS-ATM committee provided many important inputs to this BIRD. It was desireable to clarify that the impulse_matrix columns populated by the aggressor channels should include any impulse response modification that is to be made by the respective aggressor transmitters. Another subtle point is that only the first column of the impulse_matrix can be modified by the AMI_Init function of the primary transmitter, but it is purposely left open for the primary receiver to modify all columns of the impulse_matrix if it has the functionality to do so.

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ANY OTHER BACKGROUND INFORMATION:

The folowing documents are provided as supporting material for this BIRD:

- "CrossTalk_IRmatrix.pdf", provided by Arpad Muranyi of Mentor Graphics
- "CrossTalk_Sparams.pdf", provided by Walter Katz of SISoft

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