****
****

BIRD ID#: ???
ISSUE TITLE: Add Samples per Bit for IBIS-AMI
REQUESTOR: Arpad Muranyi, Mentor Graphics
DATE SUBMITTED: September 28, 2011
DATE REVISED:
DATE ACCEPTED BY IBIS OPEN FORUM:

****
****

STATEMENT OF THE ISSUE:

The IBIS 5.0 specification does not contain a Samples_per_Bit parameter for AMI models. As a result, AMI models are written based on different choices of sampling rates. Unfortunately, most of these models do not mention in their documentation how many samples per bit the user should select in their EDA tool when they simulate. Further, most of these models only work properly with one or a very few samples per bit values. Consequently, simulation results are often incorrect, or in more severe cases the EDA platform might crash as well.

****

STATEMENT OF THE RESOLVED SPECIFICATIONS:

In the Reserved Parameters section, add a new Reserved_Parameter, as follows:

```
|               Samples_per_Bit:
|
|               Samples_per_Bit is a required parameter of Usage Info and
|               Type Integer.  It tells the EDA platform what sampling
|               rate should be used for the waveform that is passed into
|               the AMI_GetWave funtion.  Examples for Samples_per_Bit
|               declarations are:
|
|               (Samples_per_Bit(Usage Info)(Type Integer)(Value 16))
|
|               (Samples_per_Bit(Usage Info)(Type Integer)(List 16 8 32 64))
|
|               (Samples_per_Bit(Usage Info)(Type Integer)(Range 16 4 128))
|
```

****

ANALYSIS PATH/DATA THAT LED TO SPECIFICATION:

This topic was discussed at length in IBIS-ATM teleconferences as well as on the IBIS-ATM email reflector. Suggestions were made to make only a general statement in the specification that all models should work at any reasonable sampling rates. However, a simple statement like that may be easily overlooked by the authors of AMI models and models might still be released without proper documentation of their sampling rates. Due to the serious problems incorrect sampling rates can cause, a more reliable protection against feeding the models with incorrectly sampled waveforms is needed. The required reserved parameter Samples_per_Bit provides a mechanizm by which the IBIS parser can issue errors to the model makers in case the Samples_per_Bit parameter has been ommitted from the .ami

parameter file for some reason.

****

ANY OTHER BACKGROUND INFORMATION:

****