**BUFFER ISSUE RESOLUTION DOCUMENT (BIRD)**

**BIRD NUMBER:** 191

**ISSUE TITLE:** Adding Buffer Location to Si\_location and Timing\_location

**REQUESTOR:**  Bob Ross, Teraspeed Labs

**DATE SUBMITTED:** June 28, 2017

**DATE REVISED:**

**DATE ACCEPTED:**

**DEFINITION OF THE ISSUE:**

The Interconnect Modeling BIRD189 defines three separate interfaces as Buffer and Pad (for die pad) and Pin. The [Component] subparameters for Si\_location and Timing\_location only provide Die and Pin options. A Buffer option is needed along with the rule that without the Interconnect Modeling keywords, Die and Buffer are at the same location.

**SOLUTION REQUIREMENTS:**

The IBIS specification must meet these requirements:

Table 1: Solution Requirements

|  |  |
| --- | --- |
| Requirement | Notes |
| 1. Add a selection for Si\_location and Timing\_location when three locations are available
 | The Interconnect Modeling BIRD189.x divides the existing “Die” location (which can mean buffer) into Buffer and Pad (which can mean die pad) |
| 1. Add an interpretation that supports an IBIS file without the Interconnect Modeling connections in BIRD189.x.
 | In existing Version 6.1 IBIS files with all of the existing packaging options, Die is used to mean the buffer interface. |

**SUMMARY OF PROPOSED CHANGES:**

For review purposes, the proposed changes are summarized as follows:

Table 2: IBIS Keywords, Subparameters, AMI Reserved\_Parameters, and AMI functions Affected

|  |  |  |
| --- | --- | --- |
| Specification Item | New/Modified/Other | Notes |
| Under [Component], Si\_location and Timing\_location add Buffer as an additional selection  | New argument | Allow Die and Buffer to be different locations that are available in BIRD189.x |

**PROPOSED CHANGES:**

*On page 20 under the [Component] keyword, replace:*

*Keyword:* [Component]

*Required:*        Yes

*Description:* Marks the beginning of the IBIS description of the integrated circuit named after the keyword.

*Sub-Params:*   Si\_location, Timing\_location

*Usage Rules:*   If the .ibs file contains data for more than one component, each section must begin with a new [Component] keyword.  The length of the component name must not exceed 40 characters, and blank characters are allowed.

NOTE: Blank characters are not recommended due to usability issues.

Si\_location and Timing\_location are optional and specify where the Signal Integrity and Timing measurements are made for the component.  Allowed values for either subparameter are “Die” or “Pin”.  The default location is at the “Pin”.

*Example:*

[Component]     7403398 MC452

|

Si\_location     Pin    | Optional subparameters to give measurement

Timing\_location Die    | location positions

With (proposed change in red):

*Keyword:* [Component]

*Required:*        Yes

*Description:* Marks the beginning of the IBIS description of the integrated circuit named after the keyword.

*Sub-Params:*   Si\_location, Timing\_location

*Usage Rules:*   If the .ibs file contains data for more than one component, each section must begin with a new [Component] keyword.  The length of the component name must not exceed 40 characters, and blank characters are allowed.

NOTE: Blank characters are not recommended due to usability issues.

Si\_location and Timing\_location are optional and specify where the Signal Integrity and Timing measurements are made for the component.  Allowed values for either subparameter are “Buffer”, “Die” or “Pin” to support three possible locations available when connections are made using the [Interconnect Model Set Selector] keyword below. (With this keyword, “Die” maps into Pad or die pad locations.)  The default location is at the “Pin”.   For pins whose connections to the buffer do NOT use the [Interconnect Model Set Selector] keyword, “Buffer” and “Die” describe the same location at the buffer interface.

*Example:*

[Component]     7403398 MC452

|

Si\_location     Pin    | Optional subparameters to give measurement

Timing\_location Die    | location positions

**BACKGROUND INFORMATION/HISTORY:**

BIRD191 is needed to overcome a technical omission in BIRD189.x. BIRD191 should appear in the same release as BIRD189.x. This could be regarded as a quick, but necessary fix.

Working on BIRD161.x is suggested as an option. However, it contains much material that would not be quickly vetted for approval and adoption in the next release. Moreover, some content has been handled in other BIRDs and other content presupposes some structures that are still in discussion and debate.

Because they are closely connected, this BIRD’s technical change could have been included in BIRD189.x.