



STANDARDS NEW ACTIVITY REPORT FORM (SNARF)

Date Prepared: November 5, 2019 Revised (if Applicable): _____

SNARF for: New Standard: Guide for Facilities Data Package for Semiconductor Equipment Installation and Building Information Modeling

Originating Global Technical Committee: Facilities

Originating TC Chapter: North America

Task Force (TF) in which work is to be carried out: Building Information Modeling (BIM) for Semiconductor Capital Equipment Task Force

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Refer to *Procedure Manual* § 2.2.4 for more information on properly filling out the SNARF.

1. Rationale:

a: Describe the need or problem addressed by this activity.

(Indicate the customer, what benefits they will receive, and if possible, quantify the impact on the return on investment [ROI] if the Document is implemented.)

Semiconductor manufacturers are asking equipment suppliers to provide input for Building Information Modeling (BIM) software and the industry needs a standard format that will work with multiple different software applications (there are at least three software companies that work in this space). This is the latest trend in facilities planning. Basically, it is a 3D model (shell only) of a piece of capital equipment with interconnect information (water, power, gas, exhaust, etc) defined in the model. The model needs to reflect the true dimensions of the tool and show the x, y, and z location of each interface point. It is also expected to contain information about idle, typical, and maximum usage of each interface point similar to what is currently defined in SEMI E6. This allows the user to build virtual models of their entire fab, optimize layouts, and plan all of the facilities requirements (routing and sizing of all of the equipment supplies). The benefit of BIM to the semiconductor manufacturers is large when designing new fabs or optimizing existing fabs and this effort is being driven by some of the largest semiconductor companies. With a common format that works for all semiconductor manufacturers and all BIM software, the equipment manufacturers will only have to create one BIM model per equipment configuration. It can take several hundred man hours to build such a model and this would become impractical without a common format.

b: Estimate effect on industry. Check one of the following:

1: Major effect on entire industry or on multiple important industry sectors

- identify the relevant sectors: _____

2: Major effect on an industry sector

- identify the relevant sector: Semiconductor Manufacturers (Fab Owners), Equipment Suppliers, Architecture/Engineering/Construction (AEC) service providers

3: Major effect on a few companies

- identify the relevant companies: _____

4: Slight effect or effect not determinable



c: Estimate technical difficulty of the activity. Check one of the following:

- I: No Difficulty – Proven concepts and techniques exist or quick agreement is anticipated
- II: Some Difficulty – Disagreements on known requirements exist, but developing consensus is possible
- III: Difficult – Limited expertise and resources exist and/or achieving consensus is difficult
- IV: Extremely Difficult – Expertise and resources are scarce and/or achieving consensus is very difficult

2. Scope:

a: Describe the technical areas to be covered or addressed by this Document development activity.

(For Subordinate Standards, list common concepts or criteria that the Subordinate Standard inherits from the Primary Standard, as well as differences from the Primary Standard.)

1. This Guide would be applicable to all semiconductor wafer process and support equipment.
2. This Guide would define a digital format that can be easily exported from a wide array of 3D modeling programs and imported into any of the BIM software packages.
3. This Guide would define the format of the connection data with defined location tolerances, defined features, and defined terminology.
4. This Guide will recommend the data for each connection.

b: Expected result of activity

- New Standard or Safety Guideline (including replacement of an existing Standard or Safety Guideline)
 - Line-item revision to two or more existing Standards or Safety Guidelines
 - Reapproval of a Standard or Safety Guideline
- New Subordinate Standard to an existing Standard or to a new Primary Standard to be developed concurrently with this new Subordinate Standard
 - Removal of a Standard or Safety Guideline
 - Withdrawal of a Standard or Safety Guideline
- New Preliminary Standard
 - Reinstatement of a Standard or Safety Guideline
- Major revision to an existing Standard or Safety Guideline
 - Publication of an existing Standard or Safety Guideline as an American National Standard
- Line-item revision to an existing Standard or Safety Guideline
 - New Auxiliary Information
 - Modification of existing Auxiliary Information

For a new Subordinate Standard, identify the Primary Standard here: _____

For revision of existing Standard(s) or Safety Guideline(s), identify the Standard(s) or Safety Guideline(s) that are to be revised here: _____, and identify which parts of the Standard(s) or Safety Guideline(s) that are to be revised. (Check all that apply.)

- Modification of an existing part of Standard(s) or Safety Guideline(s) including Appendices, Complementary Files, and Supplementary Materials**
- Addition of one or more Appendices or Complementary Files to an existing Standard or Safety Guideline**
- Addition of one or more Related Information sections or Various Materials to an existing Standard or Safety Guideline**
- Revision or addition of one or more Subordinate Standards to an existing Primary Standard**



For Standards, identify the Standard Subtype below:

Classification

Guide

Practice

Specification

Test Method

Terminology

Miscellaneous (describe:)

3. Projected Timetable for Completion:

a: General Milestones

a. Activity Start: November 4, 2019

b. 1st Draft by: January 6, 2020

c. (Optional) Informational Ballot by: _____

d. Letter Ballot by: February 11, 2020

e. TC Chapter Approval By: March 31, 2020

4. Liaisons with other Global Technical Committees/TC Chapters/Subcommittees/TFs:

a: List Global Technical Committees, TC Chapters, Subcommittees, or Task Forces in your or other Regions/Locales that should be kept informed regarding the progress of this activity.

(Refer to SEMI Standards organization charts and global technical committee charters as needed.)

[GTC Information & Control](#)

b: Intercommittee Ballots (check one):

will be issued – identify the recipient global technical committee(s): I&C

will not be issued

5. Safety Considerations:

The resulting Document is expected (Check one):

to be a Safety Guideline

NOT to be a Safety Guideline

NOTE FOR 'to be a Safety Guideline': When all safety-related information is removed from the Document, the Document is NOT technically sound and complete – Refer to § 15.1 of the *Regulations* for special procedures to be followed.

NOTE FOR 'NOT to be a Safety Guideline': When all safety-related information is removed from the Document, the Document is still technically sound and complete.

6. Intellectual Property Considerations:

a: For a new Standard or Safety Guideline and for any part to be modified or added in a Revision of published Standards and Safety Guidelines (Check one):

the use of patented technology is NOT required.

patented technology is intended to be included in the proposed Standard(s) or Safety Guideline(s).

(If the second box is checked, check one):

Letter of Intent received

Letter of Intent not received



b: For Revision, Reapproval, Reinstatement, or Withdrawal of existing Standard(s) and Safety Guideline(s) (Check one):

- there is no known material patented technology necessary to use or implement the Standard(s) and Safety Guideline(s)
- there is previously known material patented technology necessary to use or implement the Standard(s) and Safety Guideline(s)

c: The body of the Document and any Appendices, Complementary Files, Related Information sections, or Various Materials that may or may not be a part of the Document by reference (Check one):

- will incorporate Copyrighted Item
- the incorporation of Copyrighted Item will NOT be required

NOTE FOR 'the use of patented technology or the incorporation of Copyrighted Item(s) is NOT required': If in the course of developing the Document, it is determined that the use of patented technology or Copyrighted Item(s) is necessary for the Document, the provisions of *Regulations* § 16 must be followed.

NOTE FOR 'will incorporate Copyrighted Item': A copyright release letter must be obtained from the copyright owner prior to publication.

7. Comments, Special Circumstances:

This SNARF is refurbished from SNARF 5155 that expired West 2018.

8. TC Member Review (Check one):

- took place between (*put dates here:* MM/DD/YYYY and MM/DD/YYYY) before approval at the TC Chapter Meeting, or
- took place between (*put dates here:* 11/20/2019 and 12/03/2019) before approval by the GCS, or
- is not required for this SNARF.

NOTE FOR 'TC Member Review': A TC Member Review is required by the *Regulations* for a period of at least two weeks before approval of a new, or a major revision of an existing, Standard or Safety Guideline. (See *Regulations* ¶ 8.2.1)

9. Approval Dates:

TC Chapter or GCS: _____

Recorded in TC Chapter Minutes: _____

If you do not have email capability, you may fax this form to the nearest SEMI office:

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 China: 86.21.6027.8511
 Europe: 49.30.8187.8879
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 Korea: 82.2.551.3406
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