



## STANDARDS NEW ACTIVITY REPORT FORM (SNARF)

Date Prepared: 03/30/2021 Revised (if Applicable): \_\_\_\_\_

SNARF for: New Standard: Guide for Gas Sensors' Critical Parameters

Originating Global Technical Committee: MEMS/NEMS

Originating TC Chapter: North America

Task Force (TF) in which work is to be carried out: MEMS and Miniaturized Gas Sensing TF

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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.)

As with any emerging technology, MEMS gas and environmental sensor makers today do not conform to specific or well understood standards, whether it is with regards to parameter definitions, testing methods, reliability requirements, packaging, pin configurations, communication interfaces, etc., to name a few. Our WG believes that gas sensing technology and the relevant markets are at the right point in their evolution for introducing a set of well-defined technical and performance standards for gas sensors. We envision that not only will this encourage market leaders to focus on innovation, but also contribute to increased adoption in application areas where customization from the ground-up can often be a barrier to commercial success. For example, it is currently very difficult for customers today to compare different MEMS devices, or to use multiple devices within a single platform to sense different environmental gases.

The goal of the standards group is to deliver a document that provides guidelines for performance, interface, and testing related parameters to be reported on a typical gas sensor datasheet.

#### 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: Gas sensing

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



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## 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.)

The proposed document will cover the following sub-topics:

- The guide would be applicable to all gas sensors, irrespective of the gas they are meant to sense.
- The guide will define the minimum set of parameters, along with their definitions, that all gas sensor vendors are recommended to adhere to.
- Where possible, this document will provide guidelines for how a parameter is to be tested and measured.
- This guide will recommend the range of values (min, max) for each identified parameter, along with a 'typical' value where appropriate.
- The document will propose a standard format for gas sensor digital data output.

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### b: Expected result of activity

New Standard or Safety Guideline (including replacement of an existing 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

New Preliminary Standard

Major revision to an existing Standard or Safety Guideline

Line-item revision to 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

Removal of a Standard or Safety Guideline

Withdrawal of a Standard or Safety Guideline

Reinstatement of a Standard or Safety Guideline

Publication of an existing Standard or Safety Guideline as an American National Standard

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
- Practice
- Test Method
- Miscellaneous (describe:)
- Guide
- Specification
- Terminology

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**3. Projected Timetable for Completion:**

**a: General Milestones**

- a. Activity Start: 03/01/2021
- b. 1<sup>st</sup> Draft by: 04/01/2021
- c. (Optional) Informational Ballot by: \_\_\_\_\_
- d. Letter Ballot by: 05/18/2021
- e. TC Chapter Approval By: 08/01/2021

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**4. Liaisons:**

**a: List SEMI 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.)*

Gases & Facilities

**b: List any planned Type I Liaisons with external nonprofit organizations (e.g., SDO) that should receive Draft Documents from Standards staff for feedback during this activity and be notified when the Letter Ballot is issued (see Procedure Manual § 7).**

**c: Intercommittee Ballots (check one):**

- will be issued – identify the recipient global technical committee(s): Gases & Facilities
- will not be issued

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**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.

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**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.

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## 7. Comments, Special Circumstances:

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## 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:* 03/11/2021 and 03/25/2021 ) 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)

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## 9. Approval Dates:

TC Chapter or GCS: GCS on 03/30/2021  
Recorded in TC Chapter Minutes: \_\_\_\_\_

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