# Pre-Standardization Activities on Industrial AI
## Industry Connections Activity Initiation Document (ICAID)
Version: 2.0, 1 February 2022
<mark>IC20-001-02 Approved by the CAG 14 March 2022</mark>

## Instructions

- Instructions on how to fill out this form are shown in red. It is recommended to leave the instructions in the final document and simply add the requested information where indicated.
- Shaded Text indicates a placeholder that should be replaced with information specific to this ICAID, and the shading removed.
- Completed forms, in Word format, or any questions should be sent to the IEEE Standards Association (IEEE SA) Industry Connections Committee (ICCom) Administrator at the following address: industryconnections@ieee.org.
- The version number above, along with the date, may be used by the submitter to distinguish successive updates of this document. A separate, unique Industry Connections (IC) Activity Number will be assigned when the document is submitted to the ICCom Administrator.

## 1. Contact
Provide the name and contact information of the primary contact person for this IC activity. Affiliation is any entity that provides the person financial or other substantive support, for which the person may feel an obligation. If necessary, a second/alternate contact person's information may also be provided.

**Name:** Shrikant Bhat
**Email Address:** shrikant.bhat@in.abb.com
**Employer:** ABB
**Affiliation:** ABB Future Labs

IEEE collects personal data on this form, which is made publicly available, to allow communication by materially interested parties and with Activity Oversight Committee and Activity officers who are responsible for IEEE work items.

## 2. Participation and Voting Model
Specify whether this activity will be entity-based (participants are entities, which may have multiple representatives, one-entity-one-vote), or individual-based (participants represent themselves, one-person-one-vote).

Entity-Based.

## 3. Purpose

### 3.1 Motivation and Goal
Briefly explain the context and motivation for starting this IC activity, and the overall purpose or goal to be accomplished.

Industrial AI differs from consumer AI applications in terms of data quality and privacy aspects; information content, and impact of AI on various stakeholders. In order to clearly identify requirement towards standardization, a use case driven approach needs to be developed to clearly establish

expectations from all stakeholders. Since there are already established standards governing industrial automation, it is important to identify possible overlaps with Industrial AI requirements and identify potential gaps that need to be bridged by new standards. A focused industrial AI based approach will help in accelerating this work.

### 3.2 Related Work
Provide a brief comparison of this activity to existing, related efforts or standards of which you are aware (industry associations, consortia, standardization activities, etc.).

- Ongoing work in ISO/IEC: JTC1/SC42. The focus is on AI terminology, big data, trustworthiness, governance implications and use case analysis. Generic AI aspects covered. No specific emphasis on Industrial AI.
- Relevant Ongoing activities within IEEE: IEEE P7000-P7003; P7005-P7010; P7013, P7014; IEEE P3652.1; IEEE P2755.2; IEEE P2807; IEEE P2671; IEEE P2672; IEEE P2755.1

### 3.3 Previously Published Material
Provide a list of any known previously published material intended for inclusion in the proposed deliverables of this activity.

- ISO 25.040.01
- IEEE industrial automation standards (https://ieeexplore.ieee.org/document/5334411

### 3.4 Potential Markets Served
Indicate the main beneficiaries of this work, and what the potential impact might be.

This will serve the global market focusing on the following domains: autonomous operations, manufacturing, power generation, building automation, supply chain and logistics

### 3.5 How will the activity benefit the IEEE, society, or humanity?
Describe how this activity will benefit the IEEE, society, or humanity.

AI, being a very subjective concept, most of the offerings are vendor specific.  Scaling up these solutions, integration with other functionalities as well as service and maintenance of such solutions poses a challenge to all customers. This is where standardization is the most important step to enable benchmarking AI solutions and ensure interoperability

## 4.  Estimated Timeframe
Indicate approximately how long you expect this activity to operate to achieve its proposed results (e.g., time to completion of all deliverables).

**Expected Completion Date:** 03/2024

IC activities are chartered for two years at a time.  Activities are eligible for extension upon request and review by ICCom and the responsible committee of the IEEE SA Board of Governors.  Should an extension be required, please notify the ICCom Administrator prior to the two-year mark.

## 5.  Proposed Deliverables

Outline the anticipated deliverables and output from this IC activity, such as documents (e.g., white papers, reports), proposals for standards, conferences and workshops, databases, computer code, etc., and indicate the expected timeframe for each.

Following are proposed deliverables:
1. Template for use case collection with a specific focus on capturing requirements towards standardization (May 2020).
2. Representative Industrial AI use cases covering domains such as condition monitoring, predictive maintenance, logistics and supply chain, and manufacturing productivity (Oct 2020)
3. Gap analysis w.r.t. existing standards (as well as ongoing standardization activities) and identification of opportunities towards standardization (June 2022)
4. Proposal of standards based on gap analysis (Dec 2022); In areas where the scope of standards is well defined to address specific use case requirements, parallel standards proposal will be submitted ahead of time.
5. Workshops, conferences, etc., for discussions, deliberations as appropriate (Oct 2022-Feb 2023).

## 5.1 Open Source Software Development
*Indicate whether this IC Activity will develop or incorporate open source software in the deliverables. All contributions of open source software for use in Industry Connections activities shall be accompanied by an approved IEEE Contributor License Agreement (CLA) appropriate for the open source license under which the Work Product will be made available. CLAs, once accepted, are irrevocable. Industry Connections Activities shall comply with the IEEE SA open source policies and procedures and use the IEEE SA open source platform for development of open source software. Information on IEEE SA Open can be found at https://saopen.ieee.org/.*

Will the activity develop or incorporate open source software (either normatively or informatively) in the deliverables? No.

## 6. Funding Requirements
Outline any contracted services or other expenses that are currently anticipated, beyond the basic support services provided to all IC activities. Indicate how those funds are expected to be obtained (e.g., through participant fees, sponsorships, government, or other grants, etc.). Activities needing substantial funding may require additional reviews and approvals beyond ICCom.

No additional funding requests are anticipated for services beyond the standard services provided for IC programs. Activity members will provide any needed support for hosted meetings, marketing activities that exceed basic IC support

## 7. Management and Procedures

## 7.1 Activity Oversight Committee
Indicate whether an IEEE Standards Committee or Standards Development Working Group has agreed to oversee this activity and its procedures.

**Has an IEEE Standards Committee or Standards Development Working Group agreed to oversee this activity?** No

If yes, indicate the IEEE committee's name and its chair's contact information.

**IEEE Committee Name:** Committee Name
**Chair's Name:** Full Name
**Chair's Email Address:** who@where

Additional IEEE committee information, if any. Please indicate if you are including a letter of support from the IEEE Committee that will oversee this activity.

IEEE collects personal data on this form, which is made publicly available, to allow communication by materially interested parties and with Activity Oversight Committee and Activity officers who are responsible for IEEE work items.

### 7.2 Activity Management
If no Activity Oversight Committee has been identified in 7.1 above, indicate how this activity will manage itself on a day-to-day basis (e.g., executive committee, officers, etc.).

The activity will be managed by the leadership of the working group as defined in the activity's policies and procedures.

### 7.3 Procedures
Indicate what documented procedures will be used to guide the operations of this activity; either (a) modified baseline *Industry Connections Activity Policies and Procedures* (entity, individual), (b) *Abridged Industry Connections Activity Policies and Procedures* (entity, individual), (c) Standards Committee policies and procedures accepted by the IEEE SA Standards Board, or (d) Working Group policies and procedures accepted by the Working Group's Standards Committee.  If option (a) is chosen, then ICCom review and approval of the P&P is required. If option (c) or (d) is chosen, then ICCom approval of the use of the P&P is required.

This activity will use the baseline Industry Connections Activity Policies and Procedures.

## 8. Participants

### 8.1 Stakeholder Communities
Indicate the stakeholder communities (the types of companies or other entities, or the different groups of individuals) that are expected to be interested in this IC activity and will be invited to participate.

- List of corporates: ABB; Accenture; Intel, Tata iQ. *Under Discussion: Shell, Reliance*
- List the startups: Flutura; Numocity; Ecolibrium; *NeeWee*
- *Legal Firms: Pavan Duggal Associates*
- *Consulting/Service Firms: PWC*
- Academic Institutions: *Under Discussion: ISB Mohali; IIIT; IIIT Sri City Chittoor*
- Also plan to approach: BASF, ExxonMobil, Rockwell Automation, Honeywell

### 8.2 Expected Number of Participants
Indicate the approximate number of entities (if entity-based) or individuals (if individual-based) expected to be actively involved in this activity.

10 entities

### 8.3 Initial Participants

Provide a few the entities or individuals that will be participating from the outset. It is recommended there be at least three initial participants for an entity-based activity, or five initial participants (each with a different affiliation) for an individual-based activity.

Use the following table for an entity-based activity:

| Entity Name | Primary Contact Name | Additional Representatives |
|---|---|---|
| ABB | Shrikant Bhat | |
| Accenture | Sanjay Sharma | |
| Ecolibrium | Harit Soni | |
| Flutura Decision Science and Analytics | Derick Jose | |
| Intel | Arvind, Raju | |
| NeeWee | Suyog Joshi | |
| Numocity | Ravikiran A | |
| Pavan Duggal Associated | Pavan Duggal | |
| PWC | Sudipta Ghosh | |
| Tata iQ | Vijaya Deepti | |

### 8.4 Activity Supporter/Partner

Indicate whether an IEEE committee (including IEEE Societies and Technical Councils), other than the Oversight Committee, has agreed to participate or support this activity. Support may include, but is not limited to, financial support, marketing support and other ways to help the Activity complete its deliverables.

**Has an IEEE Committee, other than the Oversight Committee, agreed to support this activity?**
Yes/No

If yes, indicate the IEEE committee's name and its chair's contact information.

**IEEE Committee Name:** Committee Name
**Chair's Name:** Full Name
**Chair's Email Address:** who@where

Please indicate if you are including a letter of support from the IEEE Committee.

**[DO NOT MODIFY OR DELETE:** ICAID template approved by the IESS SMDC on 13 December 2021]