

AI-driven Innovation for Cities and People Industry Connections Activity Initiation Document (ICAID)

Version: 2.0, 8 September 2020

IC20-003-02 Approved by IE&SS SMDC 8 October 2020

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: Amir Banifatemi

Email Address: amir@bayspring.com

Employer: XPRIZE

Affiliation: AI Commons

AI Commons is a collectively created open platform to provide access to knowledge and tools to use AI for good and sustainable development goals. It is built by a community working together towards producing a digital knowledge hub, and supporting a network of physical hubs that will contribute to implement local solutions to real problems.

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).

Specify: "Individual-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.

AI systems (AIS)¹ are currently receiving strong interest from a range of players that would benefit from access to the necessary computing power, data, funding, and talent. The benefits that such systems can have on many domains is gradually understood and many programs abound now under a kind of "AI for Good" narrative. However, many factors need to be considered to ensure that AI technologies and systems advances are widely shared, that different actors can collaborate efficiently for this purpose and that participation and innovation in such collaborative frameworks are incentivized and globally equitable.

While there are efforts at local and global level to accelerate capacity building to use various embodiments of AI systems (education, access to platforms, lowering cost barriers, safety, governance), to truly decentralize and distribute their benefit, such systems deployed across a range of communities should be designed having in mind and with people whose perspectives reflect that diversity, and to build solutions that address actual needs.

The long term economic and societal value of solving urgent local or global problems may not always be visible to the emergent ecosystem driving progress in AIS. It is nonetheless critical to support the creation and distribution of new applications by those nearest to the most urgent problems. The decentralization of problem solving is an essential aspect in achieving the promises of these technologies.

Specific to this Industry Connections program, the primary goal is to provide cities, and the people who live in cities, a mechanism to support responsible AIS innovation through proper governance mechanisms to support diverse access to problem solving with AI. Incorporated in these governance mechanisms would be:

1. Governance frameworks and considerations for responsible AI systems innovation
2. Sandbox blueprints, architecture and prototype: Create a blueprint and a prototypical sandbox environment that can be used by municipalities and cities to

¹ For practical purposes, AI systems could be described as computational systems using algorithms and data to address complex problems and situations, including the capability of improving their performance based on evaluating previous decisions. Such systems could be regarded as "autonomous" in a given domain as long as they are capable of accomplishing their tasks despite environment changes within that domain.

enable responsible AI systems implementations. These reference cases may be applied to the multitude of stakeholders including universities, industry, and residents in the area.

3. Roadmaps to technical and ethical implementation criteria for standardization and certification as well as scalability to support City goals.

Ultimately, the output helps cities to develop better incentives, policies and implementations that benefit its residents.

The proposed effort of the AI-driven Innovations for Cities and People Initiative via this Industry Connections Program would be addressing following critical elements:

Governance

1. Survey cities and relevant stakeholders interested in Responsible AIS innovations both from a user perspective as well as capacity development opportunity (3/2021)
2. Develop city-specific governance framework and toolkit that fosters and enables faster responsiveness to AIS (6/2021)
3. Beta test framework with community (6/2021) - dependent on #1,2
4. Improve framework based on feedback (9/2021) - dependent on #3
5. Develop best practices and standardization projects (12/2021) - dependent on# 1-4.

Sandbox

6. Define what are the necessary minimal HW, SW and Cloud infrastructure for such an "AI Commons" at municipal level to succeed. (9/2020)
7. Identify and architect sandbox elements (9/2020) dependent on #1
8. Implement sandbox (6/2021) dependent on #1,2
9. Beta test sandbox with Cities & interested parties (9/2021) dependent on #3
10. Develop roadmap of sandbox elements to include in future updates with standardized solution sets (12/2021); dependent on #1,2,3 and to an extent #4.

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.).

The International Congress on AI Governance is working on general governance principles and guidelines. We are unaware of any such efforts at this time for creating a responsible AIS sandbox at a city level.

3.3 Previously Published Material

Provide a list of any known previously published material intended for inclusion in the proposed deliverables of this activity.

None

3.4 Potential Markets Served

Indicate the main beneficiaries of this work, and what the potential impact might be.

The effort is a contribution to help AI systems be used for the common good and its potential benefits more available to all, starting with municipalities which are leading the way in use and application of such systems in the public sector.

Beyond that, the initiative will be potentially beneficial to the whole ecosystem working on the advancement of AIS, as well as organizations and industry groups dedicated to capacity building and impact investing. It also intends to enable the wider ecosystem to identify and enable new participative models with economic incentives, and to support/increase the flow of funding for sustained developments and gradual ownership of problem solving closer to the source in a sustainable way.

The resulting sandbox from the ICAID activity is expected to help interested parties from around the world to benefit and contribute towards responsible AIS innovations.

3.5 How will the activity benefit the IEEE?

It offers an environment to help bring IEEE's ethics and technical standards into implementable tools and techniques that can be made accessible to the world. We expect synergies for other IEEE initiatives.

The sandbox offers the IEEE an environment that can be utilized by its working groups as well as by its membership to explore and encourage evaluation and appreciation for AIS systems. Further, we expect that such an environment can be applied in cities in both developing and developed nations, providing access to knowledge and the ability to progress advancement through AIS without requiring each time reinventing the wheel and full investments associated therewith. Ultimately, we see this as a concrete mechanism to advance technology for humanity and the sandbox is an important element to this outcome.

In addition, the entire IEEE SA will benefit from this program, as it resonates strongly with ECPAIS, the Global Initiative, the P70xx series, AI Licensing standards, and other related technical IEEE standards projects. IEEE has been the driver of the term "From Principles to Practice". Putting these concepts into practice requires good governance, and while this may be easier for those in the regulated or technical fields, it is not always as evident nor clear to others. Thus, having a governance framework that also provides the ability for implementers to consider and prototype provides greater accessibility and scale to responsible innovation. Concluding, this InCxn program would function as a bridge in support of the good work that the IEEE community has achieved and complements the ECPAIS and other related work at the same time.

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: 03/2022.

IC activities are chartered for two years at a time. Activities are eligible for extension upon request and review by ICCom and the IEEE-SA Standards Board. 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.

The outputs of this group will all be Creative Commons.

Primary Outputs will include:

- City Governance Framework for AIS systems (June 2021)
- A Blueprint that would include:
 - Roadmaps with milestones for each workstream (Jan 2021)
 - Identification of Open Source implementation opportunities pertaining to commons toolsets (Sept 2020)
 - Standards inventory assessment to support technical needs (Jan 2021)
 - Governance mechanism to scale as program matures beyond incubation to outside of IEEE (Dec 2021)
 - Community development to support the development of practical and responsible AI tools.(Sept 2021)

Secondary Outputs will include

- Sandbox templates that allow for responsible innovation and experimentation (Feb 2022)
- Feedback to IEEE Working Groups re: applied standards, for example P70xx series (Feb 2022)
- Several communities are ready to apply the outcomes from this initiative to help scale a successful sandbox development (Dec 2021)
- Roadmap to future releases associated with the sandbox (Dec 2021)
- Potential standards re: Responsible AIS sandbox development and reference implementations. (Feb 2022)

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.

Will the activity develop or incorporate open source software (either normatively or informatively) in the deliverables? **Yes**

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 ICom.

This Industry Connections Initiative will be self-funded, with IEEE-SA administrative support. It will also seek support by outside contributions from other partners in the Initiative where additional funds may be needed for identified work products.

Today, there are several parties interested in donating funds as well as technology to help support the realization of the goals outlined in this ICAID.

7. Management and Procedures

7.1 Activity Oversight Committee

Indicate whether an IEEE committee of some form (e.g., a Standards committee) has agreed to oversee this activity and its procedures.

Has an IEEE committee 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.

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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).

A Chair, a Vice-Chair and one chair for each of the subgroups.

- Chair: Amir Banifatemi
- Vice-Chair: Uyi Stewart

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*, (b) Standards Committee policies and procedures accepted by the IEEE-SA Standards

Board, or (c) 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 (b) or (c) is chosen, then ICCOM approval of the use of the P&P is required.

Modified 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.

Example types of participants may be independents or individuals that work for organizations such as the ones outline below.

- Foundation Botnar
- Gates Foundation
- Rockefeller Foundation
- IEEE Global Initiative Healthcare Data
- IEEE Global Initiative on Ethics and AI/AS
- IBM
- XPRIZE
- Anima Ai
- UNESCO
- ICGAI
- ITU
- CHAI (center for Human Compatible AI at Berkeley)
- INRIA

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.

20 individuals initially.

8.3 Initial Participants

Provide a number of 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 individual-based activity:

Individual	Employer
Amir B.	The AI Commons
Alexandre Cadain	Anima AI
Uyi Stewart	Gates Foundation
Gille Fayad	Deus X Machina
Mathilde Forslund	Foundation Botner
Sean McGregor	Syntiant, Xprize
Xavier Herve	District 3
Nicholas Miahile	Future Society
Cyrus Hodes	Future Society
Yoshua Bengio	MILA
Myriam Côte	MILA
Eric Espinosa	CivicoLabs, Cities4Good
Francesca Rossi	IBM
Stuart Russell	UC Berkeley
Sasha Rubel	UNESCO
Sydney S.	District 3
Julien Cornebise	
Siddhartha Jha	Foundation Botnar
Max Cappellari	XPRIZE
Trent MaConaghy	Ocean Protocol
Maria Axente	PWC
Anna Bethke	Intel
Marc Antoine Dilhac	University of Montreal
Nishan Chelvachandran	Iron Lakes
Davar Ardalan	Ivow AI