AI-driven Innovation for Cities and People
Industry Connections Activity Initiation Document (ICAID)
Version: 3.0, 3 February 2022

<mark>IC20-003-03 Approved by the CAG 14 March 2022</mark>

Instructions

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).

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 are 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 the 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 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 enable responsible AI systems implementations. These reference cases may be applied to a 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.

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[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.

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 that are leading the way in the 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, society, or humanity?
Describe how this activity will benefit the IEEE, society, or humanity.

It offers an environment to help bring IEEEs 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 and the playbook offer the IEEE an environment and a tool 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 IC18-004 Ethics Certification Program for Autonomous and Intelligent Systems (ECPAIS), IC16-002 The IEEE Global Initiative on Ethics of Autonomous and Intelligent Systems, the IEEE 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 IC 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: 03/2024

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.

The outputs of this group will all be Creative Commons.

Primary Outputs will include:
- City Governance Framework for AIS systems (June 2022)
- A Blueprint that would include:
  - Roadmaps with milestones for each workstream (Jun 2022)
  - Identification of Open Source implementation opportunities pertaining to commons toolsets (Sept 2023)
  - Standards inventory assessment to support technical needs (Jan 2024)
  - Governance mechanism to scale as the program matures beyond incubation to the outside of IEEE (Dec 2023)
  - Community development to support the development of practical and responsible AI tools. (Sept 2023)

Secondary Outputs will include
- Sandbox templates that allow for responsible innovation and experimentation (Feb 2023)
- Feedback to IEEE Working Groups re: applied standards, for example, P70xx series (Feb 2023)
- Help communities apply the outcomes from this initiative to help scale a successful sandbox development (Dec 2023)
- Roadmap to future releases associated with the sandbox (Dec 2023)
- Potential standards re: Responsible AIS sandbox development and reference implementations. (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? **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 ICCom.

This Industry Connections Initiative will continue to 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 still potential parties interested in donating funds as well as technology to help support the realization of the goals outlined in this ICAID, but the first playbook publication will be a good trigger for that extra support to help with city pilots.

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.).

A Chair, a Vice-Chair and one chair for each of the subgroups.
- Chair**:** Amir Banifatemi
- Vice-Chair: Nishan Chelvachandran

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.

Specify the policies and procedures document to be used. Attach a copy of chosen policies and procedures.

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
- McGovern Foundation
- Rockefeller Foundation
- IEEE Global Initiative Healthcare Data
- IEEE Global Initiative on Ethics and AI/AS
- IBM
- XPRIZE
- MILA (Montreal)
- 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 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 individual-based activity:

Individual Name	Employer	Affiliation
Amir B.	The AI Commons	
Alexandre Cadain	Anima AI	
Uyi Stewart	Data.org	
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	
Cedric Washholz	UNESCO	
Sasha Rubel	AWS	
Sydney S.	District 3	
Siddhartha Jha	Foundation Botnar	
Max Cappellari	AWS	
Trent MaConaghy	Ocean Protocol	
Maria Axente	PWC	
Anna Bethke	Facebook	
Marc Antoine Dilhac	University of Montreal	
Nishan Chelvachandran	Iron Lakes	
Davar Ardalan	Ivow AI	

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?
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.