

The Global Initiative for Ethical Considerations in the Design of Autonomous Systems

Industry Connections Activity Initiation Document (ICAID)

Version: 1.0, 18 February 2016

IC16-002-01 Approved by the IEEE-SASB 3 March 2016

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: John C. Havens, Executive Director of the Global Initiative

Email Address: johnchavens@gmail.com

Phone: 917-597-3323

Employer: N/A

Affiliation: Contracted by IEEE SA for this purpose

Chair: Raja Chatila (CNRS Institute for Information Systems and Technologies, France; Past President of IEEE RAS)

Vice Chair: Kay Firth-Butterfield (Lead of Lucid AI EAB (Ethics Advisory Board))

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.

Several Working Groups will be established. Voting modalities and approval thresholds within the subgroups and at the level of the Steering Committee will be specified in the P&P.

3. Purpose

3.1. Motivation and Goal

Technologies, methodologies, and systems that aim at reducing human intervention in our day-to-day lives are evolving at a rapid pace and are poised to transform the lives of individuals in multiple ways. However, there are concerns and confusion surrounding such (autonomous) technologies and their societal impacts (think Google self-driving cars, drones, and robots equated to job losses). Competing tensions fuel a dialogue that is often polarized and filled with misconceptions. Overly optimistic advocacy on the positive impacts compete with legitimate concerns on the emerging harms related to privacy, discrimination, security of critical infrastructure and other concerns.

In the public perception, long-term issues, such as the alleged “singularity” and the associated threat of loss of agency for humanity, are over... the need for regulation of autonomous machines that are already “out there” (drones, driverless cars, LAWs, etc.). Another significant debate that has been raging is the undesirable effects of automation and its impact on jobs. While there is truth in the argument that robots and automation are taking jobs away, a balanced and objective treatment on this subject has been sorely lacking.

Thus, there is an urgent need for a more defined and productive dialogue and debates around the ethical and social implications of the related technologies, both at local/regional and international/global level. These debates must be informed by technologists, ethicists, policymakers, business leaders, civil society and end-users alike to arrive at new adaptive frameworks that address the complexity of these issues yet still provide pragmatic and clear-cut steps. Emphasis should also be placed on important factors such as environmental, cultural, political and socio-economic and resource constraints to address humanitarian issues in developing economies.

IEEE, the global organization bringing together hundreds of thousands of scientists and experts worldwide, is well positioned to offer all these voices a variety of platforms, bringing together experts in fields relating to autonomous systems and their ethics, including but not limited to: Robotics, Artificial Intelligence, Control Systems, Computational Intelligence, Machine Learning, Deep Learning, Cognitive Computing, Affective Computing, and in general algorithmically based program. Experts will also span fields relating to engineering, science, economics, ethics,

politics, and health. Our Initiative is global, open and inclusive, welcoming all individuals or representatives of organizations dedicated to advancing technology for humanity by prioritizing the use of ethical considerations in autonomous systems design.

Since the issues are in very different degrees of maturity, various environments and methods are necessary, spanning from conferences and events to debate and document different opinions, to identifying key issues and related research fields, as well as – for the more mature matters – to creating consensus around recommended guides, standards and codes of conduct. This would all take place in an open, inclusive and transparent way, using IEEE’s principles for open and democratic dialog and formal consensus building platforms wherever possible.

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.).

IEEE establishes a new ecosystem, consisting initially of two environments for the purposes mentioned above:

- ✓ An open Initiative titled *“Autonomous Systems and their Societal Impact”* is currently being established by TA and interested societies. It is expected that the proposed IC will interact closely and coordinate with this initiative.
- ✓ The “Industry Connection” project for which it is applied here.

Whereas both groups target the same techno-scientific area from the ethical/societal angle, their method is distinct. Open debate bringing together all possible voices and documenting all possible opinions and trends would be the primary focus of the TA-driven initiative.

On the other hand, IEEE SA’s [Industry Connections](#) program will offer an efficient, economical environment for building consensus and producing shared results.

Rules of engagement in both groups are well defined to guarantee an unbiased and open process, and participation is open to IEEE members and beyond.

Further, the work created by this Industry Connections/Initiative will also be featured at the flagship conference of IEEE’s European Public Policy Committee (EPPC) taking place in November 2016 in Brussels. Members of EPPC will regularly join the meetings of the Initiative to track the progress and align the structure and content of their conference accordingly.

Other than IEEE

There are many organizations dealing with autonomous systems technologies, and some have an ethics committee. Beyond debates, we are not aware of major consensus building activities around ethics and autonomous systems though.

An industry alliance is apparently emerging in this field, and we intend to cooperate whenever possible.

3.3. Previously Published Material

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

The Industry Connections/Initiative has created content [within a set of Google Docs listed here](#). (John C. Havens can provide access as needed upon request). This includes a draft of the roadmap, an AI Ethics Index, an invite list of potential invitees to the first face-to-face meeting in The Hague, along with other related documents.

3.4. Potential Markets Served

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

The Industry Connections/Initiative will produce roadmaps, white papers and educational material, as well as proposals for standardization projects, certifications, codes, conferences and summits, focused primarily on engineers and scientists tasked with identifying and addressing the ethical considerations related to design of autonomous systems and the issues they involve.

To best advance technology for humanity in regards to autonomous systems, the Industry Connections/Initiative also seeks to inform and influence government policy makers and those at the highest levels in corporations (e.g., C-Suite, Board Members) to facilitate a leadership-driven implementation of these ideals and assets. Finally, representatives from United Nations and other international agencies, including such bodies as the United Nations Interregional Crime and Justice Research Institute (UNICRI), based in The Hague will be invited to join the Initiative and apply the outcomes for informing their respective agendas.

4. Estimated Timeframe

Work on the Industry Connections/Initiative by the Initiative Program Advisory Group (PAG) has commenced. In-person events are scheduled for August and November of 2016, with a potential event in the U.S. in March of 2017 (Details TBD). The Initiative will also pursue the formation of an Alliance over the next several months unless it is determined that another industry alliance exists with the same scope. If this is the case, the Initiative can consider joining or at least cooperate with that alliance.

Expected Completion Date: December 2017

Currently the plans for this Industry Connection expand over a period of two years, and may evolve into an Alliance and/or a series of deliverables as described below.

5. Proposed Deliverables

The Industry Connections/Initiative has already created a coordination committee (PAG) and several subcommittees consisting of members of various IEEE societies (SSIT, RAS, SMC, CS, etc.), along with a diverse group of renowned external experts from industry, academia, NGOs, UN agencies, etc. The groups are supported by a joint staff team from IEEE SA and IEEE TA and by John Havens who has been contracted by IEEE-SA to catalyze and support this important initiative.

The PAG has already created seven subcommittees (working groups) to produce roadmap documents outlining concerns and challenges; to map the stakeholder ecosystem(s); produce educational material; and to formulate high-level recommendations related to topical issues regarding design of autonomous systems.

These roadmaps will assist the PAG in the creation of specifications or recommendations for projects or guides to be submitted to IEEE SA's standardization process. The roadmaps may also be used to create white papers, develop research agendas and identify further specific study areas, and eventually create language for a "Principles Document" eventually leading to Code(s) of Ethics.

As always, for any intermediate deliverables produced, IEEE will not be associated with their content in any way. Only the ones that choose to go through IEEE's rigorous processes will be publicly associated with IEEE. This is particularly important for proposals for standardization projects (standards or guides), white papers and "codes of conduct". The Chair of IEEE's Global Public Policy Committee (Gordon Day) is informed of latter possibility and will monitor the works of the relevant working groups(s) to decide at an appropriate point in time whether to involve the GPPC.

For development or publication of all these deliverables the group(s) will use preferably IEEE platforms (conferences, publications, MOOCS, standardization).

This Initiative will partner with the leadership of the European Conference on Artificial Intelligence ([ECAI](#)), taking place in August 2016. A two-day workshop will offer the possibility to finalize concrete proposals and to cross-pollinate with the entire European AI ecosystem. This process will allow the PAG/subcommittees to expand to include more European-based organizations focused on issues of AI, autonomous systems, ethics, and/or policy related to these issues.

In summary, potential outputs of this Initiative include:

- A comprehensive roadmap, including mapping stakeholder ecosystems*
- Informative and influential whitepapers*

- Proposals for possible standardization projects
- Content for the creation of MOOCs (educationally oriented videos, etc.)
- Certification materials and/or programs
- Proposals for summits and events*
- Codes of conduct or principles
- An Alliance (unless there emerges an existing industry alliance that this Initiative could join)

*: These items will be closely coordinate with the new TA Initiative mentioned in point 3.2 above.

6. Funding Requirements

The Industry Connections/Initiative will be self-funded, with IEEE-SA administrative support and support for the Executive Director. It will also seek support by outside contributions from other partners in the Initiative and/or future Alliance.

7. Management and Procedures

7.1. IEEE Sponsoring Committee

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

This is new territory, see proposal in 7.2 below.

Has an IEEE sponsoring committee agreed to oversee this activity?:

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

See below.

7.2. Activity Management

If no IEEE sponsoring 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 Steering Committee comprised of 3-4 leading IEEE volunteers, 3-4 other members of current Planning Advisory Group (PAG) and 1-2 new entrants will ensure the governance and direction of the work of this IC.

An Executive Director (initially sponsored by IEEE SA) will drive forward, support and evangelize the activity. The Executive Director shall be voting member of the Steering Committee.

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) Sponsor policies and procedures accepted by the IEEE-SA Standards Board, or (c) Working Group policies and procedures accepted by the Working Group's Sponsor. 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.

a) Modified baseline *Industry Connections Activity Policies and Procedures*

8. Participants

8.1. Stakeholder Communities

Stakeholder Communities already include the following:

- IEEE Society members from the Computational Intelligence Society, the IEEE Robotics and Automation Society (RAS), the IEEE Society on Social Implications of Technology (SSIT), the IEEE RAS Special Interest Group on Humanitarian Technology, the Systems, Man and Cybernetics Society, the RFID Technical Council and the Computer Society. The onboarding of Societies is continuing.
- External experts from industry and key organizations in the field are already actively participating, including leading some of subcommittees. The onboarding of other key actors from industry and other organizations is continuing.
- The Initiative welcomes the opportunity to collaborate with other national, regional and international organizations and industry associations, including but not limited to, ISO, IEC, ANSI, ITIC, NCITS, EIA/TIA, ITU-T, ETSI, OECD ITAC, ISOC, OASIS SSTC, UNESCO, UNICRI, and WSIS to synthesize, evangelize and implement the goals of the Initiative.
- Finally, we are actively seeking collaboration with organizations like AAI (individual members are already participating in the works of the subcommittees) or other groups focused on Artificial Intelligence or autonomous systems, or on how to imbue ethical practices into their creation. Examples of these include:
 - [The Future of Life Institute](#).
 - [The Foundation for Responsible Robotics](#).
 - [The 3TU Centre for Ethics and Technology](#).
 - [The Institute for Ethics and Emerging Technologies](#).

8.2. Expected Number of Participants

There are already approximately 65 individuals in the PAG and the related subcommittees. It is expected this number may at least double as the Global Initiative becomes operational and starts deploying its activities.

8.3. Initial Participants

Provide a list 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:

This list is only representative and by no means exhaustive. As mentioned above, the Initiative has already around 65 active members.

Individual	Contact Information	Employer	Affiliation
Raja Chatila (Chair)	raja.chatila@isir.upmc.fr	CNRS Institute for Information Systems and Technologies, France	Former President, IEEE RAS
Greg Adamson	g.adamson@ieee.org	ANZ, Australia	President, IEEE SSIT
Steve Diamond	s.diamond@computer.org	General Manager, Industry Standards Office, EMC	Former President Computer Society
Raj Madhavan	madhavan.ieeeras@gmail.com	AMMACHI Labs. Amrita University, India	Chair, RAS-SIGHT, Member, IEEE TAB FDC
Richard Mallah	richard@futureoflife.org	Cambridge Semantics	Future of Life Institute (Advisor)
Kay Firth-Butterfield (Vice-Chair)	kay.firth-butterfield@lucid.ai	Lucid AI	Lucid AI EAB (Ethics Advisory Board) Lead
Jeroen van den Hoven	M.J.vandenHoven@tudelft.nl	3TU Centre of Ethics and Technology, Holland	Delft University of Technology
Francesca Rossi [Solicited]	frossi@math.unipd.it	Research scientist at the IBM T.J. Watson Research Center, Univ. of Padova, Italy	Past President of IACP and of IJCAI. AAI and ECCAI fellow.
Yu Yuan	y.yuan@ieee.org	CATE Global, China	Chair of IEEE Digital Senses Initiative
Virginia Dignum	m.v.dignum@tudelft.nl	Delft University of Technology, Holland	ECAI Organizer
William Hoffman	william.hoffman@weforum.org	World Economic Forum	WEF Lead, Personal Data
John C. Havens	johnchavens@gmail.com	N/A	IEEE SA (contractor)
Irakli Beridze	beridze@unicri.it	UNICRI, The Hague, Holland	Senior Strategy and Policy Advisor
Michelle Denedy	midenned@cisco.com	Cisco	Chief Privacy Officer
Eva Schulz-Kamm	eva.schulz-kamm@nxp.com	NXP Semiconductors, Germany	Head of Political Affairs
Malo Bourgon	malo@intelligence.org	MIRI	Machine Intelligence Research Institute
AJung Moon	ajungmoon@gmail.com	Co-Founder, ORI	Open Roboethics Initiative