**COMMENTARY ON THE PROPOSED CHANGES TO THE IEEE CODE OF ETHICS**

**Prepared by the Concerned Ethics Volunteers (CEV)\* Consisting of**

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**PURPOSE**

This provides a response to the request for comments on proposed changes to the IEEE Code of Ethics, published in the INSTITUTE, on July 21, 2017. It provides specific commentary affecting portions of the Code itself, then it provides additional viewpoints and improvement suggestions of a more global view of IEEE’s Code.

**SPECIFIC COMMENTARY ON THE CODE’S PROPOSED CHANGES BY THE IEEE BOARD**

**ITEM 1: Ethical Design and Systemic Sustainability**

The proposed wording in Item 1 "**ethical design and systemic sustainability**" is intended to mean what???? This is an example where these need amplifying discussion and/or examples. These could be easily provided in an Implementation Guidelines document (addressed later below). Or, if they are defined somewhere else, where is that?

**ITEM 5: Autonomous Systems**

Another example needing clarifying is in Item 5, which says "**outcomes attributable to autonomous systems**"???? What are example outcomes this might refer to and what might be the situations to be concerned with here? Again, Implementation Guidelines (addressed later below) would be where this can be given clarity of what the intended ethical concern is/are.

**ADDITIONAL VIEWPOINTS AND IMPROVEMENT SUGGESTIONS TO THE EXISTING CODE FOR 2018**

The following items were not approved by the Board for revising the Code, nevertheless it is the view that they would enhance and improve the application of the Code by IEEE Members. They would make it more relevant in their practice through either revising Items in the Code or incorporating them in a set of Ethics Code Implementation Guidelines.

**ITEM 1: Making Decisions Consistent with the Safety, Health and Welfare of the Public....and to Promptly Disclose Factors Which Might Endanger the Public**

Since the establishment of the Member Conduct Committee in 1978, experience handling ethical support cases has shown that engineers/technologists working as employees without a written contract, are vulnerable to pressure, coercion, harassment and threats from superiors when trying to uphold ITEM 1, in situations which differs from the superior’s contrary instructions. This is especially the situation IEEE USA Members find themselves being employed under the “at-will” employment law doctrine wherein an employee may be fired for any reason, just or unjust.

However, when the IEEE entered into the BART Case in 1975 with its Amicus Curiae legal friend of the court brief, it wrote to the Court ***“by writing a landmark argument on engineers’ duty to protect the public, to make the following two important rulings:***

1. ***To rule that evidence of professional ethics is relevant, material, and admissible in this case; and***
2. ***To rule, as to any motions for judgment, or any jury instructions, that an engineer is obligated to protect the public safety, that an engineer’s contract of employment includes as a matter of law, and implied term that such engineer will protect the public safety, and that a discharge of an engineer solely for unsubstantial part because he acted to protect the public safety constitutes a breach of such implied term”.***

**RECOMMENDATION:**

It is recommended for the IEEE Attorneys to expand on this new “ engineers right to practice ethically” argument so as to provide advisory information to practicing Members so they will know their employee rights better. That information should then become part of any Implementation Guidelines. Further, guidance about the full implications of practicing as an employee under “at-will” employment, if provided, would be greatly beneficial to their well being in employment ethical conflict situations.

**ITEM 2:** **Conflict of Interest**.

The following phrase is recommended to be added to this item, to place before the Members the portion of New York State Law dealing with Directors and Officers serving on Not for Profit Corporations, and what their primary duty is in avoiding conflicts of interests:

***“when a Member takes on a position of IEEE leadership or as an Officer/Director, his/her primary obligation shall be to the best interests of the Members, over all outside interests, employers, businesses, etc.”***

**ITEM 5: Outcomes Attributable to Autonomous Systems**

There needs to be ethical and moral guidelines provided for engineers/technologists to understand as they specify/design/test Autonomous Vehicles (aka Driverless Cars) in the future. In particular will be the choices made in choosing the algorithms which will control the choices these AVs will need to make in accident situations and to take into account their likely outcomes as they may affect vehicle occupants, persons and property outside of the vehicle. Initially, most coded programs will be based upon “deterministic” algorithms, but new work is already underway whereby “self-adapting/learning” algorithms might/will be employed. What the ethical and moral rules engineers/technologists will need to follow in specifying/designing/testing these are strong candidates to be incorporated in IEEE Ethics Code Implementation Guidelines.

An excellent paper which discusses these ethical and moral issues is:

**The Ethics of Accident-Algorithms for Self-Driving Cars: an Applied Trolley Problem?**

At this location:

[**https://link.springer.com/content/pdf/10.1007%2Fs10677-016-9745-2.pdf**](https://link.springer.com/content/pdf/10.1007%2Fs10677-016-9745-2.pdf)

**ITEM 9: To Avoid Injuring Others**

**RECOMMENDATION:**

**Add to the items the highlighted words:**

or employment by **“ethical harassment”,** false or malicious action;

**Suggestion: Clarify the intent of the words “false action”.**

**ITEM 10: Ethics Advice and Ethical Support for/of Members in Following the Code:**

Long term stability by IEEE in giving ethics advice and ethical support to its Members is needed, as they strive to practice and support other Members ethically.

**RECOMMENDATION:**

Add the following as a new follow-on sentence:

***“Ethics advice and ethical support services shall be made available to Members in furtherance of this Item.”***

To facilitate providing an Ethics Advice Service, the elements of such a service is provided in Appendix A, enclosed herein. Further, an Ethical Support procedure already exists in IEEE Governance material. A Flowchart of this is given in Appendix B and the long established Policy is given in Appendix C, both herein.

An important part of any ethics advice/ethical support service would be the restoration of an Ethics HOTLINE to both provide ethics advice and to forward on requests for ethical support found to have merit. Updating Whistleblowing Avoidance Advice would be further beneficial too.

**ETHICS CODE IMPLEMENTATION GUIDELINES ARE NEEDED**

**Implementation Guidelines to the Code of Ethics**

This would be a new addition to the Code of Ethics. This recommends developing New Material which provides **Implementation Guidelines** to Members, supplementing and amplifying the Code of Ethics. Because of its newness and broad scope, this lends itself to being addressed beginning in the 2018 time period.

The IEEE Code of Ethics have always been written too brief and at too high a level to guide practicing engineers/technologists/members to apply in their everyday work. What is needed are **IMPLEMENTATION GUIDELINES**, which take each of the Code’s 10 Items, expands on them and amplifies them into guidelines to assist in understanding how to better apply them in real life situations.

Because IEEE’s Technical Activities span a large number of specialties, these Guidelines might have greater use if they were tailored to selected specialty areas. Additionally, with IEEE spanning the world by its 10 Regions, the Guidelines could be a place to address the different regional laws, customs, practices, etc, which will affect how ethical advice and support will differ from one local to another.

There are at least 2 good models, among others, to adapt from and build upon. One is the joint ACM/IEEE Computer Society model and the other is the National Society of Professional Engineers, NSPE‘s, model. Here are links to both:

**THE ACM/IEEE CS MODEL  
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[**http://www.engr.sjsu.edu/fayad/current.courses/cmpe202-spring2016/docs/CmpE202-SE-Links-Part-One-Fall2013/05-SW-Eng-Links/ethics-ieee-cs.pdf**](http://www.engr.sjsu.edu/fayad/current.courses/cmpe202-spring2016/docs/CmpE202-SE-Links-Part-One-Fall2013/05-SW-Eng-Links/ethics-ieee-cs.pdf)

**THE NSPE MODEL  
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[**https://www.nspe.org/sites/default/files/resources/pdfs/Ethics/CodeofEthics/Code-2007-July.pdf**](https://www.nspe.org/sites/default/files/resources/pdfs/Ethics/CodeofEthics/Code-2007-July.pdf)

**The Ethics/Moral Question of Who Decides Life or Death Decisions for Autonomous Vehicles?**

Here is where the design of control algorithms in Driverless Cars may be designed to take 1 life in order to spare more than 1, without a human driver involved.  Who and how that gets decided raises moral and ethical issues the IEEE Code of Ethics will need to address. One may argue that a code designer will not/should not be empowered with that authority, rather Society, through their elected lawmakers and Federal/State Regulators, should define those kinds of loss of life/property minimization rules for control algorithms. However this gets determined, the Code will need to address this. Here, the Implementation Guidelines may provide a proper stage to address this issue.

**\*COMPOSITION AND IEEE ENTITIES REPRESENTED BY THE CONCERNED ETHICS VOLUNTEERS**

In this group are IEEE members representing positions of: IEEE Life Senior and Fellow Members, 3 PhDs, a Past IEEE President, a Past member on the Committee on Social Implications of Technology, IEEE BART Case Leader, Carl Barus Ethics Award Committee member, 2 members of the Society on Social Implications of Technology, a retired Professional Engineer, original authors of the 1978 Member Conduct Committee charter, a Past Members of the Member Conduct Committee, a Past Chair and Members of the Ethics Committee, volunteers who operated the IEEE Ethics HOTLINE and the Online Ethics Center HOTLINE, authors of the INSTITUTE Bi-Monthly Ethics Articles, a Past Chair/Member of the Ethics and Member Conduct Committee, 4 academic college teachers, 2 women, 2 members from industry.

**APPENDIX A – A New Ethics Advice Service (EAS)**

A new Ethics Advice Service (EAS) needs to be instituted and provided to members when it is sought. One basic element of this service would be an Ethics HOTLINE, accessible by way of incoming phone, internet WEB access or by email, and staffed by Member Volunteers from the Ethics Committee. To accomplish this, the phrase “***nor shall they provide advice to individuals*** needs to be deleted from IEEE By-Law I-305.5 and in the EMCC Operations Manual in Section 1, **1.3 Scope**.

The providing of Ethics Advice, as currently approved in *“Policy 7.11 Ethical Support Part A, Item 2”*should be expanded to add the following elements of an Ethics Advice Service.

These additional services should include the following:

**(1) Provide Education Articles on Ethics**

Publishing an Ethics Column in the INSTITUTE on a monthly or by-monthly basis. The EMCC should return to this practice so ethics would be kept before the membership through commentary, review of real or hypothetical cases, discussion points, etc.

**(2) Provide Interpretations of Applicable IEEE Governing Documents Pertaining to Ethics**

Periodically, the EMCC could take parts of the governing documents and offer interpretation of them. Further, the Code of Ethics ought to be supplemented with a set of Guidelines, which could amplify them, cite examples, and offer guidance to practitioners, the EMCC, and the Hearing Boards when cases come before them. And of course, if members ask for interpretations, they could be provided too.

**(3) Hold Face-to-Face Interactions with Members Asking for Support,**

At times, it would be helpful to provide face-to-face interactions with members who are facing difficult choices or potential conflicts on ethical matters.

**(4) Provide a Sounding Board Function, Electronic or Hard Copy Media Assistance,**

In addition to face-to-face interactions, the EMCC could also provide other media forms for enabling members to interact with them and obtain guidance, help, support, etc when they are faced with tough ethical choices.

**(5) Utilize a Third Party Hearing Panel of Independent Expert(s) or Peer Review**

At times, it could be very helpful to convene a panel of technical/ethical experts to provide an independent, third party set of resources to both parties in a conflict, to listen to the issues in the matter and to offer insight which could go a long way helping to diffuse or clarify

mis-understandings or to provide a sound technical basis for supporting or refuting claims.

**(6)Provide Whistleblower Avoidance Advice**

IEEE's current document spelling out ways to mitigate ethical conflict, leading to whistle blowing, could be supplemented by actions and advice from the EMCC. This could go a long way to mitigate the need for one to have to resort to whistle blowing.

**(7) Provide Mediation or Arbitration Efforts Aimed at Resolving an Ethics Conflict Matter**

If the preceding services are not successful in resolving potential conflicts heading to a formal case, then the EMCC, with the assistance of third party experts, could offer to and/or perform mediation or arbitration for the parties in conflict. The goal always would be to try to resolve the

matter so as to negate the need for a member to have to resort to filing formal charges against another member.

**(8) Provide Membership in, Soliciting and Coordinating the Assistance of the Ethics Officers Association Where Employers Have This**

In organizations, which are members of the Ethics Officers Association, the EOA could be invited to participate with the EMCC in trying to resolve, educate, mediate, counsel members so as to resolve potential/real conflicts.

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**APPENDIX B – Ethical Support Process Flowchart**

The following is the original Ethical Support flow chart process of the original Member Conduct Committee.



**APPENDIX C – Ethical Support Procedure Policy 7.11**

**(No change to this policy is needed)**

*“7.11 Ethical Support*

***Part A - Submission of Requests for Support, Inquiries and Information.***

*1. All requests for support regarding circumstances of affected by adherence to the IEEE Code of Ethics shall be sent to the Chair, IEEE Ethics and Member Conduct Committee, IEEE, c/o Corporate Activities, 445 Hoes Lane, Piscataway, NJ 08854 by traceable mail.*

*2. Information which any individual wishes to bring to the attention of, or inquiries for which a response is sought from IEEE shall be submitted in the same manner but need not be notarized or sent by traceable mail. Information and inquiries shall be reviewed by the Ethics and Member Conduct Committee and forwarded, with or without comment or recommendation, to the Board of Directors for consideration and action as may be appropriate.*

***Part B - Form and Contents of the Request for Support. The request for support shall be in the form of an affidavit, typewritten, notarized and signed by the individual. Such request shall be notarized, or include equivalent certification of signature in areas outside of the US. The Request for Support shall include:***

*1. The name(s), position(s) or title(s) and address(es) and telephone numbers (where available) of the employer or others who are believed to have knowledge pertaining to the subject of the Request;*

*2. The issue, incident(s), or the matter of ethical principle which the person believes is involved together with the specific provisions of the IEEE Code of Ethics deemed relevant or considered to have precipitated the condition(s) of jeopardy;*

*3. Documents, statements and any other evidence to be considered as supporting the Request. The identification and location of any other documents and material relevant to the Request but not provided in the submission; 7.9 4. A full description of the circumstances, events and facts which relate to the ethical matter for which IEEE support is sought.*

***Part C - Procedure on Receipt of Request for Support. The Chair of the Ethics and Member Conduct Committee shall:***

*1. Review the Notarized Request for Support, Inquiry or matter of information to ascertain that the incident or event involved occurred no longer than two years prior to receipt thereof. Should the interval exceed two years, all material shall be returned without duplication or distribution, noting this limitation.*

*2. If the incident occurred within the two-year limitation period, then promptly acknowledge Receipt of the Request, Inquiry or information. Transmit copies of the Request, Inquiry or information to Committee members, ensuring that no other distribution or duplication of the material is made, except to provide IEEE counsel with relevant documents, etc. in connection with a request for legal advice.*

*3. Take steps to consider the Request for Support, Inquiry or information submitted, assemble information, provide for Committee evaluation and prepare a Report on Preliminary Investigation within a period of one hundred twenty (120) days from acknowledgment of receipt of the Request, Inquiry or information. In those instances where investigative difficulties preclude completion within this limitation, the IEEE President may grant extension upon request.*

*4. Ensure, during the period of its investigation, that the Ethics and Member Conduct Committee, acting on its own behalf or through ad hoc Committees appointed by the Ethics and Member Conduct Committee Chair, seek relevant information from IEEE members, employees and others as may be appropriate to the nature and contents of the Request for Support, Inquiry or information. Such information as may be obtained shall be reduced to writing and included in the file or records of the Chair of the Ethics and Member Conduct Committee of the case under review.*

*5. During the course of the investigation ensure that the contents of the Request, identity of persons involved and the scope of the inquiry shall remain undisclosed by the Ethics and Member Conduct Committee to the extent practicable, consistent with the need to secure valid information and conduct an expeditious review.*

***Part D - Responsibilities of the Ethics and Member Conduct Committee****.*

*1. If in the course of its investigation and review the Committee deems it appropriate to contact persons or entities outside the membership of IEEE or the employer concerned, the Committee shall: a) obtain from the requesting individual a letter of waiver; and b) send to the employer(s) concerned a letter disclaiming any and all purpose or intent to engage in collective bargaining on behalf of the individual with respect to such matters as salaries, wages, benefits, and working conditions, customarily dealt with by labor unions.*

*2. The Ethics and Member Conduct Committee, upon concluding its investigation, shall prepare a Report on Preliminary Investigation which shall include findings, conclusions and recommendations based on relevant information and technical and professional opinions.*

*3. If the request is deemed to be meritorious, the Committee shall submit to the Board of Directors the request and its Report on Preliminary Investigation upon conclusion of its review of the request together with any matters or information related thereto.*

*4. If the Request for Support is deemed to be without merit, the Ethics and Member Conduct Committee Chair shall notify the requesting individual by traceable mail of the action to terminate and shall include a copy of the Report on Preliminary Investigation.*

*5. If new or additional information considered material is received within ten business days following service of notice by the Chair of the Ethics and Member Conduct Committee, the Committee may reconsider and revise its findings. If the prior findings are affirmed, no further consideration shall be granted and the requesting individual so notified. Subsequent submission of a Request or Inquiry bearing on the same or substantially similar incident or issue may result in the Committee declining further consideration.”*