Código de Ética e Conduta Profissional da ACM

INTRODUÇÃO:

O compromisso para a conduta profissional é esperado de todos os membros (votantes, associados e estudantes) da ACM. Este código identifica várias questões que os profissionais podem enfrentar, e prevê pautas para lidar com as mesmas. A seção 1 apresenta considerações éticas fundamentais, enquanto que a seção 2 apresenta considerações adicionais de conduta profissional. As afirmações na seção 3 dizem respeito mais especificamente para indivíduos que possuem um papel de liderança, seja em estabelecimentos comerciais ou em organizações profissionais como por exemplo a ACM. Pautas encorajadoras de acordo com este código são dadas na seção 4.

1 - CONSIDERAÇÕES ÉTICAS FUNDAMENTAIS

Como um membro da ACM eu devo:

1.1- Contribuir para a sociedade e bem-estar do ser humano.

O maior valor da computação é o seu potencial de melhorar o bem-estar do indivíduo e da sociedade como um todo. Assim, profissionais da computação devem estar comprometidos a desenvolver, expandir e usar a sua ciência para o benefício da humanidade, minimizando as conseqüências negativas dos sistemas de computação, incluindo ameaças à saúde e segurança. Um profissional da computação que projeta e desenvolve sistemas deve estar alerta e alertar os outros para qualquer dano ao ambiente local ou global.

1.2- Evitar de prejudicar outros.

Este princípio proíbe o uso da tecnologia se esta resultar em dano a: usuários, estado, empregados, empregadores. Ações nocivas incluem destruição ou modificação intencional de arquivos e programas que conduzam a séria perda de recursos ou gasto desnecessário de recursos humanos como o tempo e esforço requeridos para eliminar "virus" de sistemas. Para minimizar a possibilidade de prejudicar outros indiretamente, os profissionais da computação devem minimizar problemas operacionais usando padrões para projetar e testar sistemas.

1.3- Ser honesto e digno de confiança.

O profissional honesto não deve fazer declarações falsas ou queixas depreciativas sobre um sistema ou projeto de sistema. Um profissional da computação deve ser honesto a respeito de suas próprias qualificações e sobre quaisquer circunstâncias que possam levar a conflitos de interesses.

1.4- Ser imparcial e realizar ações sem discriminação.

Os valores de igualdade, tolerância, respeito pelos outros, e os princípios de justiça igualitária governam este ítem. Discriminações na base de qualquer característica social como raça, sexo, religião, idade, invalidez ou origem é uma explícita violação da constituição da ACM e não será tolerada. Em uma sociedade justa, todos os indivíduos devem ter igualdade de oportunidades e de benefícios do uso de recursos computacionais, a despeito de suas características.

1.5- Honrar direitos de propriedade incluido copyrights e patentes.

Violação de copyrights, patentes, acordos de licenciamento é proibida por lei na maioria das circunstâncias. Mesmo não havendo proteção, estas violações são contrárias ao comportamento profissional.

1.6- Conceder créditos apropriados para propriedades intelectuais.

Profissionais da computação são obrigados a proteger a integridade da propriedade intelectual. Especificamente, não é permitido usar idéias de outros ou obter créditos por trabalho de outros, mesmo em casos onde o trabalho não está explicitamente protegido por qualquer meio, incluindo copyright e patente.

1.7- Acessar recursos computacionais e de comunicação somente quando autorizado.

Indivíduos e organizações têm o direito de restringir o acesso aos seus sistemas, desde que nao viole o ítem 1.4. Ninguém deve entrar ou usar sistemas, softwares ou arquivos de outros sem permissão. Sempre deve ser obtida a aprovação antes de usar recursos, incluindo canais de comunicação, arquivos, periféricos e tempo de máquina.

1.8- Respeitar a privacidade de outros.

É responsabilidade dos profissionais manter a privacidade e integridade de dados de indivíduos. Isto inclui tomar precauções para assegurar a precisão dos dados, como também protegê-los de acesso acidental a indivíduos não autorizados. Devem ser planejados procedimentos para permitir aos indivíduos rever seus registros e corrigir imprecisões. Este imperativo implica que somente a quantidade necessária de informações pessoais deve ser armazenada em um sistema, que o período de retenção e eliminação para estas informações devem ser claramente definidas e cumpridas e que informações pessoais obtidas para um propósito específico não podem ser usada para outros fins sem o consentimento do indivíduo.

1.9- Honrar a confidencialidade.

O princípio da honestidade se estende a questões de confidencialidade de informações sempre que alguém faz uma promessa explícita de honrar a confidencialidade ou, implicitamente, quando informações privadas não diretamente relacionadas às obrigações de alguém se tornam disponíveis.

2 - CONSIDERAÇÕES ADICIONAIS DE CONDUTA PROFISSIONAL

Como um profissional de computação pertencente à ACM eu devo:

2.1- Esforçar-me para concluir com a mais alta qualidade todos os processos e produtos do trabalho profissional.

O profissional da computação deve se esforçar para alcançar qualidade e conhecer as sérias conseqüências negativas que podem resultar de um sistema de baixa qualidade.

2.2- Adquirir e manter competência profissional.

Um profissional deve participar na determinação de padrões para níveis apropriados de competência, e se esforçar para atingir estes padrões. A aquisição de conhecimentos técnicos e competência pode ser feita de várias maneiras: através do estudo independente; participando de seminários, conferências ou cursos; e se envolver em organizações profissionais.

2.3- Conhecer e respeitar leis existentes ligadas ao trabalho profissional.

Membros da ACM devem obedecer leis locais, estaduais, nacionais e internacionais, a menos que exista uma base ética para não fazê-lo* Políticas e procedimentos de organizações onde o membro têm participação também devem ser obedecidas. Se alguém decidir violar uma lei ou regra porque esta é vista como anti-ética, ou por qualquer outra razão, ele deve aceitar na totalidade a responsabilidade e conseqüências desta ação.

2.4- Aceitar e providenciar reciclagem profissional adequada.

A qualidade do trabalho profissional, especialmente na área da computação depende da revisão e crítica profissional. Sempre que apropriado, membros devem revisar o seu trabalho assim como o trabalho de outros.

2.5- Conceder estimativa compreensiva e cuidadosa de sistemas computacionais e seus impactos, com especial ênfase nos possiveis risco.

Profissionais da computação estão em uma posição de confiança especial, e assim têm responsabilidade especial em provêr resultados objetivos e confiáveis para empregadores, clientes, usuários e público. Quando fornecendo resultados, o profissional deve também identificar qualquer conflito de interesse relevante, como colocado no ítem 1.3.

2.6- Honrar contratos e responsabilidades especificadas.

Para um profissional da computação, isso inclui assegurar que os elementos do sistema funcionam como o pretendido. Também, quando contratando para trabalho outra parte, ele tem a obrigação de manter essa parte devidamente informada sobre o andamento do trabalho. O principal ponto aqui é a obrigação de aceitar responsabilidade pessoal pelo trabalho profissional. Em algumas ocasiões outros princípios éticos podem ter maior prioridade.

2.7- Aperfeiçoar o entendimento público de computação e suas conseqüencias.

Profissionais da computação têm a responsabilidade de repartir conhecimento técnico com o público através do encorajamento ao entendimento da computação, incluindo os impactos de sistemas e suas limitações. Este imperativo implica na obrigação de contrariar qualquer visão falsa relacionada à computação.

3 - CONSIDERAÇÕES RELATIVAS À LIDERANÇA

Como um membro da ACM e um líder organizacional, eu devo:

3.1- Articular responsabilidades sociais de membros de uma unidade organizacional e encorajar aceitação plena destas responsabilidades.

Procedimentos organizacionais e atitudes orientadas no sentido de melhorar a qualidade e o bem-estar da sociedade reduzirá malefícios ao público, dessa forma servindo a interesses públicos e preenchendo responsabilidade social. Assim, líderes organizacionais devem encorajar participação total em encontrar responsabilidades sociais assim como qualidade de desempenho.

3.2- Gerenciar pessoas e recursos para planejar e construir sistemas de informação que aumente a qualidade da vida profissional.

Quando implementando um sistema computacional, as organizações devem levar em consideração o desenvolvimento pessoal e profissional, segurança física e dignidade humana de todos os empregados. Padroes ergonômicos apropriados devem ser considerados no projeto do sistema e no local de trabalho.

3.3- Ter conhecimento e dar suporte apropriado e uso autorizado de uma organização computacional e recursos de comunicação.

Como sistema de computação podem se tornar tanto instrumentos nocivos como de benefícios em uma organização, a liderança tem a responsabilidade de definir claramente os usos apropriados e inapropriados de recursos computacionais.

3.4- Garantir que usuários e outros que passam a ser afetados por um sistema tenham suas necessidades claramente articuladas durante a tributação e planejamento de requisitos, depois o sistema precisará ser validado para satisfazer os requisitos.

Usuários normais do sistema, usuários potenciais e outras pessoas cujas vidas podem sofrer o impacto de um sistema devem ter suas necessidades avaliadas e incorporadas como requerimentos. A validação de um sistema deve assegurar cumprimento desses requerimentos.

3.5- Articular e dar suporte a mecanismos de proteção à dignidade de usuários e outros afetados por um sistema computacional.

Projetar ou desenvolver sistemas que deliberadamente ou inadvertidamente degradam indivíduos ou grupos é eticamente inaceitável. Profissionais que estão em posição de tomar decisões devem verificar que sistemas são projetados e implementados para proteger a privacidade pessoal e aumentar a dignidade pessoal.

3.6- Criar oportunidades para membros da organização aprender os princípios e limitações de sistemas de computadores.

Oportunidades educacionais são essenciais para facilitar a participação de todos os membros da organização. Oportunidades devem ser disponíveis para todos os membros para auxiliá-los a melhorar seus conhecimentos e habilidades em computação, incluindo cursos que familiarizam os membros com as conseqüências e limitações de tipos particulares de sistemas.

4 - CONCORDÂNCIA COM O CÓDIGO

Como um membro da ACM, eu devo:

4.1- Apoiar e promover os princípios deste código.

O futuro da computação profissional depende tanto da excelência técnica quanto ética. É importante para o indivíduo que trabalha na computação aderir a esses princípios éticos e encorajar ativamente outros a fazê-lo.

4.2- Comprometer-se a realizar ações apropriadas se o código for violado.

Ao suspeitar que há uma violação a este código, deve-se começar colhendo evidências para determinar se a suspeita pode ser provada. Se afirmativo, de que grau de severidade foi a violação? O indivíduo pode desejar consultar outros membros da ACM nessa investigação. Se for concluído que realmente houve uma violação, é justo e conveniente trazer essa questão à atenção do violador. Se o problema não puder ser resolvido de outra forma, ele deve se submeter ao acordado pelas políticas e procedimentos da ACM.

4.3- Tratar violações deste código como incoerentes com a condição de membros da ACM.

A aderência de profissionais a um código de ética é uma questão voluntária. Se um membro não aceitar ou não seguir este código, isso deve ser entendido que a vinculação à ACM deve ser terminada.

Anexo III - ACM Code of Ethics and Professional Conduct

Adopted by ACM Council 10/16/92.

• Preamble

Commitment to ethical professional conduct is expected of every member (voting members, associate members, and student members) of the Association for Computing Machinery (ACM).

This Code, consisting of 24 imperatives formulated as statements of personal responsibility, identifies the elements of such a commitment. It contains many, but not all, issues professionals are likely to face.Section 1 outlines fundamental ethical considerations, while Section 2 addresses additional, more specific considerations of professional conduct. Statements in Section 3 pertain more specifically to individuals who have a leadership role, whether in the workplace or in a volunteer capacity such as with organizations like ACM. Principles involving compliance with this Code are given in Section 4.

The Code shall be supplemented by a set of Guidelines, which provide explanation to assist members in dealing with the various issues contained in the Code. It is expected that the Guidelines will be changed more frequently than the Code.

The Code and its supplemented Guidelines are intended to serve as a basis for ethical decision making in the conduct of professional work. Secondarily, they may serve as a basis for judging the merit of a formal complaint pertaining to violation of professional ethical standards.

It should be noted that although computing is not mentioned in the imperatives of Section 1, the Code is concerned with how these fundamental imperatives apply to one's conduct as a computing professional. These imperatives are expressed in a general form to emphasize that ethical principles which apply to computer ethics are derived from more general ethical principles.

It is understood that some words and phrases in a code of ethics are subject to varying interpretations, and that any ethical principle may conflict with other ethical principles in specific situations. Questions related to ethical conflicts can best be answered by thoughtful consideration of fundamental principles, rather than reliance on detailed regulations.

84

1. GENERAL MORAL IMPERATIVES.

As an ACM member I will ....

1.1 Contribute to society and human well-being.

This principle concerning the quality of life of all people affirms an obligation to protect fundamental human rights and to respect the diversity of all cultures. An

essential aim of computing professionals is to minimize negative consequences of computing systems, including threats to health and safety. When designing or implementing systems, computing professionals must attempt to ensure that the products of their efforts will be used in socially responsible ways, will meet social needs, and will avoid harmful effects to health and welfare.

In addition to a safe social environment, human well-being includes a safe natural environment. Therefore, computing professionals who design and develop systems must be alert to, and make others aware of, any potential damage to the local or global environment.

1.2 Avoid harm to others.

"Harm" means injury or negative consequences, such as undesirable loss of information, loss of property, property damage, or unwanted environmental impacts. This principle prohibits use of computing technology in ways that result in harm to any of the following: users, the general public, employees, employers. Harmful actions include intentional destruction or modification of files and programs leading to serious loss of resources or unnecessary expenditure of human resources such as the time and effort required to purge systems of "computer viruses."

Well-intended actions, including those that accomplish assigned duties, may lead to harm unexpectedly. In such an event the responsible person or persons are obligated to undo or mitigate the negative consequences as much as possible. One way to avoid unintentional harm is to carefully consider potential impacts on all those affected by decisions made during design and implementation.

To minimize the possibility of indirectly harming others, computing professionals must minimize malfunctions by following generally accepted standards for system design and testing. Furthermore, it is often necessary to assess the social consequences of systems to project the likelihood of any serious harm to others. If system features are misrepresented to users, coworkers, or supervisors, the individual computing professional is responsible for any resulting injury.

In the work environment the computing professional has the additional obligation to report any signs of system dangers that might result in serious personal or social damage. If one's superiors do not act to curtail or mitigate such dangers, it may be necessary to "blow the whistle" to help correct the problem or reduce the risk. However, capricious or misguided reporting of violations can, itself, be harmful. Before reporting violations, all relevant aspects of the incident must be thoroughly assessed. In particular, the assessment of risk and responsibility must be credible. It is suggested that advice be sought from other computing professionals. See principle 2.5 regarding thorough evaluations.

1.3 Be honest and trustworthy.

Honesty is an essential component of trust. Without trust an organization cannot function effectively. The honest computing professional will not make deliberately

false or deceptive claims about a system or system design, but will instead provide full disclosure of all pertinent system limitations and problems.

A computer professional has a duty to be honest about his or her own qualifications, and about any circumstances that might lead to conflicts of interest.

Membership in volunteer organizations such as ACM may at times place individuals in situations where their statements or actions could be interpreted as carrying the "weight" of a larger group of professionals. An ACM member will exercise care to not misrepresent ACM or positions and policies of ACM or any ACM units.

1.4 Be fair and take action not to discriminate.

The values of equality, tolerance, respect for others, and the principles of equal justice govern this imperative. Discrimination on the basis of race, sex, religion, age, disability, national origin, or other such factors is an explicit violation of ACM policy and will not be tolerated.

Inequities between different groups of people may result from the use or misuse of information and technology. In a fair society,all individuals would have equal opportunity to participate in, or benefit from, the use of computer resources regardless of race, sex, religion, age, disability, national origin or other such similar factors. However, these ideals do not justify unauthorized use of computer resources nor do they provide an adequate basis for violation of any other ethical imperatives of this code.

1.5 Honor property rights including copyrights and patent.

Violation of copyrights, patents, trade secrets and the terms of license agreements is prohibited by law in most circumstances. Even when software is not so protected, such violations are contrary to professional behavior. Copies of software should be made only with proper authorization. Unauthorized duplication of materials must not be condoned.

1.6 Give proper credit for intellectual property.

Computing professionals are obligated to protect the integrity of intellectual property. Specifically, one must not take credit for other's ideas or work, even in cases where the work has not been explicitly protected by copyright, patent, etc.

1.7 Respect the privacy of others.

Computing and communication technology enables the collection and exchange of personal information on a scale unprecedented in the history of civilization. Thus there is increased potential for violating the privacy of individuals and groups. It is the responsibility of professionals to maintain the privacy and integrity of data describing individuals. This includes taking precautions to ensure the accuracy of data, as well as protecting it from

unauthorized access or accidental disclosure to inappropriate individuals. Furthermore, procedures must be established to allow individuals to review their records and correct inaccuracies.

This imperative implies that only the necessary amount of personal information be collected in a system, that retention and disposal periods for that information be clearly defined and enforced, and that personal information gathered for a specific purpose not be used for other purposes without consent of the individual(s). These principles apply to electronic communications, including electronic mail, and prohibit procedures that capture or monitor electronic user data, including messages,without the permission of users or bona fide authorization related to system operation and maintenance. User data observed during the normal duties of system operation and maintenance must be treated with strictest confidentiality, except in cases where it is evidence for the violation of law, organizational regulations, or this Code. In these cases, the nature or contents of that information must be disclosed only to proper authorities.

1.8 Honor confidentiality.

The principle of honesty extends to issues of confidentiality of information whenever one has made an explicit promise to honor confidentiality or, implicitly, when private information not directly related to the performance of one's duties becomes available. The ethical concern is to respect all obligations of confidentiality to employers, clients, and users unless discharged from such obligations by requirements of the law or other principles of this Code.

2. MORE SPECIFIC PROFESSIONAL RESPONSIBILITIES.

As an ACM computing professional I will ....

2.1 Strive to achieve the highest quality, effectiveness and dignity in both the process and products of professional work.

Excellence is perhaps the most important obligation of a professional. The computing professional must strive to achieve quality and to be cognizant of the serious negative consequences that may result from poor quality in a system.

2.2 Acquire and maintain professional competence.

Excellence depends on individuals who take responsibility for acquiring and maintaining professional competence. A professional must participate in setting standards for appropriate levels of competence, and strive to achieve those standards. Upgrading technical knowledge and competence can be achieved in several ways:doing independent study; attending seminars, conferences, or courses; and being involved in professional organizations.

2.3 Know and respect existing laws pertaining to professional work.

ACM members must obey existing local, state,province, national, and international laws unless there is a compelling ethical basis not to do so. Policies and procedures of the organizations in which one participates must also be obeyed. But compliance must be balanced with the recognition that sometimes existing laws and rules may be immoral or inappropriate and, therefore, must be challenged. Violation of a law or regulation may be ethical when that law or rule has inadequate moral basis or when it conflicts with another law judged to be more important. If one decides to violate a law or rule because it is viewed as unethical, or for any other reason, one must fully accept responsibility for one's actions and for the consequences.

2.4 Accept and provide appropriate professional review.

Quality professional work, especially in the computing profession, depends on professional reviewing and critiquing. Whenever appropriate, individual members should seek and utilize peer review as well as provide critical review of the work of others.

2.5 Give comprehensive and thorough evaluations of computer systems and their impacts, including analysis of possible risks.

Computer professionals must strive to be perceptive, thorough, and objective when evaluating, recommending, and presenting system descriptions and alternatives. Computer professionals are in a position of special trust, and therefore have a special responsibility to provide objective, credible evaluations to employers, clients, users, and the public. When providing evaluations the professional must also identify any relevant conflicts of interest, as stated in imperative 1.3.

As noted in the discussion of principle 1.2 on avoiding harm, any signs of danger from systems must be reported to those who have opportunity and/or responsibility to resolve them. See the guidelines for imperative 1.2 for more details concerning harm,including the reporting of professional violations.

2.6 Honor contracts, agreements, and assigned responsibilities.

Honoring one's commitments is a matter of integrity and honesty.For the computer professional this includes ensuring that system elements perform as intended. Also, when one contracts for work with another party, one has an obligation to keep that party properly informed about progress toward completing that work.

A computing professional has a responsibility to request a change in any assignment that he or she feels cannot be completed as defined. Only after serious consideration and with full disclosure of risks and concerns to the employer or client, should one accept the assignment. The major underlying principle here is the obligation to accept personal accountability for professional work. On some occasions other ethical principles may take greater priority.

A judgment that a specific assignment should not be performed may not be accepted. Having clearly identified one's concerns and reasons for that judgment, but failing to procure a change in that assignment, one may yet be obligated, by contract or by law, to proceed as directed. The computing professional's ethical judgment should be the

final guide in deciding whether or not to proceed. Regardless of the decision, one must accept the responsibility for the consequences.

88

However, performing assignments "against one's own judgment" does not relieve the professional of responsibility for any negative consequences.

2.7 Improve public understanding of computing and its consequences.

Computing professionals have a responsibility to share technical knowledge with the public by encouraging understanding of computing, including the impacts of computer systems and their limitations. This imperative implies an obligation to counter any false views related to computing.

2.8 Access computing and communication resources only when authorized to do so.

Theft or destruction of tangible and electronic property is prohibited by imperative 1.2 - "Avoid harm to others." Trespassing and unauthorized use of a computer or communication system is addressed by this imperative. Trespassing includes accessing communication networks and computer systems, or accounts and/or files associated with those systems, without explicit authorization to do so. Individuals and organizations have the right to restrict access to their systems so long as they do not violate the discrimination principle (see 1.4). No one should enter or use another's computer system, software, or data files without permission. One must always have appropriate approval before using system resources, including communication ports, file space, other system peripherals, and computer time.

3. ORGANIZATIONAL LEADERSHIP IMPERATIVES.

As an ACM member and an organizational leader, I will ....

BACKGROUND NOTE:This section draws extensively from the draft IFIP Code of Ethics,especially its sections on organizational ethics and international concerns. The ethical obligations of organizations tend to be neglected in most codes of professional conduct, perhaps because these codes are written from the perspective of the individual member. This dilemma is addressed by stating these imperatives from the perspective of the organizational leader. In this context"leader" is viewed as any organizational member who has leadership or educational responsibilities. These imperatives generally may apply to organizations as well as their leaders. In this context"organizations" are corporations, government agencies,and other "employers," as well as volunteer professional organizations.

3.1 Articulate social responsibilities of members of an organizational unit and encourage full acceptance of those responsibilities.

Because organizations of all kinds have impacts on the public, they must accept responsibilities to society. Organizational procedures and attitudes oriented toward quality and the welfare of society will reduce harm to members of the public, thereby

serving public interest and fulfilling social responsibility. Therefore,organizational leaders must encourage full participation in meeting social responsibilities as well as quality performance.

89

3.2 Manage personnel and resources to design and build information systems that enhance the quality of working life.

Organizational leaders are responsible for ensuring that computer systems enhance, not degrade, the quality of working life. When implementing a computer system, organizations must consider the personal and professional development, physical safety, and human dignity of all workers. Appropriate human-computer ergonomic standards should be considered in system design and in the workplace.

3.3 Acknowledge and support proper and authorized uses of an organization's computing and communication resources.

Because computer systems can become tools to harm as well as to benefit an organization, the leadership has the responsibility to clearly define appropriate and inappropriate uses of organizational computing resources. While the number and scope of such rules should be minimal, they should be fully enforced when established.

3.4 Ensure that users and those who will be affected by a system have their needs clearly articulated during the assessment and design of requirements; later the system must be validated to meet requirements.

Current system users, potential users and other persons whose lives may be affected by a system must have their needs assessed and incorporated in the statement of requirements. System validation should ensure compliance with those requirements.

3.5 Articulate and support policies that protect the dignity of users and others affected by a computing system.

Designing or implementing systems that deliberately or inadvertently demean individuals or groups is ethically unacceptable. Computer professionals who are in decision making positions should verify that systems are designed and implemented to protect personal privacy and enhance personal dignity.

3.6 Create opportunities for members of the organization to learn the principles and limitations of computer systems.

This complements the imperative on public understanding (2.7). Educational opportunities are essential to facilitate optimal participation of all organizational members. Opportunities must be available to all members to help them improve their knowledge and skills in computing, including courses that familiarize them with the consequences and limitations of particular types of systems.In particular, professionals must be made aware of the dangers of building systems around oversimplified models, the improbability of anticipating and designing for every

possible operating condition, and other issues related to the complexity of this profession.

90

4. COMPLIANCE WITH THE CODE.

As an ACM member I will ....

4.1 Uphold and promote the principles of this Code.

The future of the computing profession depends on both technical and ethical excellence. Not only is it important for ACM computing professionals to adhere to the principles expressed in this Code, each member should encourage and support adherence by other members.

4.2 Treat violations of this code as inconsistent with membership in the ACM.

Adherence of professionals to a code of ethics is largely a voluntary matter. However, if a member does not follow this code by engaging in gross misconduct, membership in ACM may be terminated.

This Code and the supplemental Guidelines were developed by the Task Force for the Revision of the ACM Code of Ethics and Professional Conduct: Ronald E. Anderson, Chair, Gerald Engel, Donald Gotterbarn, Grace C. Hertlein, Alex Hoffman, Bruce Jawer, Deborah G. Johnson, Doris K. Lidtke, Joyce Currie Little, Dianne Martin, Donn B. Parker, Judith A. Perrolle, and Richard S. Rosenberg. The Task Force was organized by ACM/SIGCAS and funding was provided by the ACM SIG Discretionary Fund. This Code and the supplemental Guidelines were adopted by the ACM Council on October 16, 1992.

91

Anexo IV – IEEE-CS/ACM Code of Ethics

Software Engineering Code of Ethics and Professional Practice IEEE-CS/ACM Joint Task Force on Software Engineering Ethics and Professional Practices Full Version (5.2)

Preamble

Computers have a central and growing role in commerce, industry, government, medicine, education, entertainment and society at large. Software engineers are those who contribute by direct participation or by teaching, to the analysis, specification, design, development, certification, maintenance and testing of software systems. Because of their roles in developing software systems, software engineers have

significant opportunities to do good or cause harm, to enable others to do good or cause harm, or to influence others to do good or cause harm. To ensure, as much as possible, that their efforts will be used for good, software engineers must commit themselves to making software engineering a beneficial and respected profession. In accordance with that commitment, software engineers shall adhere to the following Code of Ethics and Professional Practice.

The Code contains eight Principles related to the behavior of and decisions made by professional software engineers, including practitioners, educators, managers, supervisors and policy makers, as well as trainees and students of the profession. The Principles identify the ethically responsible relationships in which individuals, groups, and organizations participate and the primary obligations within these relationships. The Clauses of each Principle are illustrations of some of the obligations included in these relationships. These obligations are founded in the software engineer's humanity, in special care owed to people affected by the work of software engineers, and the unique elements of the practice of software engineering. The Code prescribes these as obligations of anyone claiming to be or aspiring to be a software engineer.

It is not intended that the individual parts of the Code be used in isolation to justify errors of omission or commission. The list of Principles and Clauses is not exhaustive. The Clauses should not be read as separating the acceptable from the unacceptable in professional conduct in all practical situations. The Code is not a simple ethical algorithm that generates ethical decisions. In some situations standards may be in tension with each other or with standards from other sources. These situations require the software engineer to use ethical judgment to act in a manner which is most consistent with the spirit of the Code of Ethics and Professional Practice, given the circumstances.

Ethical tensions can best be addressed by thoughtful consideration of fundamental principles, rather than blind reliance on detailed regulations. These Principles should influence software engineers to consider broadly who is affected by their work; to examine if they and their colleagues are treating other human beings with due respect; to consider how the public, if reasonably well informed, would view their decisions; to analyze how the least empowered will be affected by their decisions; and to consider whether their acts would be judged worthy of the ideal professional working as a software engineer. In all these judgments concern for

the health, safety and welfare of the public is primary; that is, the "Public Interest" is central to this Code.

The dynamic and demanding context of software engineering requires a code that is adaptable and relevant to new situations as they occur. However, even in this generality, the Code provides support for software engineers and managers of software engineers who need to take positive action in a specific case by documenting the ethical stance of the profession. The Code provides an ethical foundation to which individuals within teams and the team as a whole can appeal. The Code helps to define those actions that are ethically improper to request of a software engineer or teams of software engineers.

The Code is not simply for adjudicating the nature of questionable acts; it also has an important educational function. As this Code expresses the consensus of the profession on ethical issues, it is a means to educate both the public and aspiring professionals about the ethical obligations of all software engineers.

Principles

Principle 1: Public

Software engineers shall act consistently with the public interest. In particular, software engineers shall, as appropriate:

1.01. Accept full responsibility for their own work.

1.02. Moderate the interests of the software engineer, the employer, the client and the users with the public good.

1.03. Approve software only if they have a well-founded belief that it is safe, meets specifications, passes appropriate tests, and does not diminish quality of life, diminish privacy or harm the environment. The ultimate effect of the work should be to the public good.

1.04. Disclose to appropriate persons or authorities any actual or potential danger to the user, the public, or the environment, that they reasonably believe to be associated with software or related documents.

1.05. Cooperate in efforts to address matters of grave public concern caused by software, its installation, maintenance, support or documentation.

1.06. Be fair and avoid deception in all statements, particularly public ones, concerning software or related documents, methods and tools.

1.07. Consider issues of physical disabilities, allocation of resources, economic disadvantage and other factors that can diminish access to the benefits of software.

1.08. Be encouraged to volunteer professional skills to good causes and contribute to public education concerning the discipline.

Principle 2: Client and Enployer

Software engineers shall act in a manner that is in the best interests of their client and employer, consistent with the public interest. In particular, software engineers shall, as appropriate:

2.01. Provide service in their areas of competence, being honest and forthright about any limitations of their experience and education.

2.02. Not knowingly use software that is obtained or retained either illegally or unethically.

2.03. Use the property of a client or employer only in ways properly authorized, and with the client's or employer's knowledge and consent.

2.04. Ensure that any document upon which they rely has been approved, when required, by someone authorized to approve it.

2.05. Keep private any confidential information gained in their professional work, where such confidentiality is consistent with the public interest and consistent with the law.

2.06. Identify, document, collect evidence and report to the client or the employer promptly if, in their opinion, a project is likely to fail, to prove too expensive, to violate intellectual property law, or otherwise to be problematic.

2.07. Identify, document, and report significant issues of social concern, of which they are aware, in software or related documents, to the employer or the client.

2.08. Accept no outside work detrimental to the work they perform for their primary employer.

2.09. Promote no interest adverse to their employer or client, unless a higher ethical concern is being compromised; in that case, inform the employer or another appropriate authority of the ethical concern.

Principle 3: Product

Software engineers shall ensure that their products and related modifications meet the highest professional standards possible. In particular, software engineers shall, as appropriate:

3.01. Strive for high quality, acceptable cost and a reasonable schedule, ensuring significant tradeoffs are clear to and accepted by the employer and the client, and are available for consideration by the user and the public.

3.02. Ensure proper and achievable goals and objectives for any project on which they work or propose.

3.03. Identify, define and address ethical, economic, cultural, legal and environmental issues related to work projects.

3.04. Ensure that they are qualified for any project on which they work or propose to work by an appropriate combination of education and training, and experience.

3.05. Ensure an appropriate method is used for any project on which they work or propose to work.

3.06. Work to follow professional standards, when available, that are most appropriate for the task at hand, departing from these only when ethically or technically justified.

3.07. Strive to fully understand the specifications for software on which they work.

3.08. Ensure that specifications for software on which they work have been well documented, satisfy the users' requirements and have the appropriate approvals.

3.09. Ensure realistic quantitative estimates of cost, scheduling, personnel, quality and outcomes on any project on which they work or propose to work and provide an uncertainty assessment of these estimates.

3.10. Ensure adequate testing, debugging, and review of software and related documents on which they work.

3.11. Ensure adequate documentation, including significant problems discovered and solutions adopted, for any project on which they work.

3.12. Work to develop software and related documents that respect the privacy of those who will be affected by that software.

3.13. Be careful to use only accurate data derived by ethical and lawful means, and use it only in ways properly authorized.

3.14. Maintain the integrity of data, being sensitive to outdated or flawed occurrences.

3.15 Treat all forms of software maintenance with the same professionalism as new development.

Principle 4: Judgment

Software engineers shall maintain integrity and independence in their professional judgment. In particular, software engineers shall, as appropriate:

4.01. Temper all technical judgments by the need to support and maintain human values.

4.02 Only endorse documents either prepared under their supervision or within their areas of competence and with which they are in agreement.

4.03. Maintain professional objectivity with respect to any software or related documents they are asked to evaluate.

4.04. Not engage in deceptive financial practices such as bribery, double billing, or other improper financial practices.

4.05. Disclose to all concerned parties those conflicts of interest that cannot reasonably be avoided or escaped.

4.06. Refuse to participate, as members or advisors, in a private, governmental or professional body concerned with software related issues, in which they, their employers or their clients have undisclosed potential conflicts of interest.

Principle 5: Management

Software engineering managers and leaders shall subscribe to and promote an ethical approach to the management of software development and maintenance . In particular, those managing or leading software engineers shall, as appropriate:

5.01 Ensure good management for any project on which they work, including effective procedures for promotion of quality and reduction of risk.

5.02. Ensure that software engineers are informed of standards before being held to them.

5.03. Ensure that software engineers know the employer's policies and procedures for protecting passwords, files and information that is confidential to the employer or confidential to others.

5.04. Assign work only after taking into account appropriate contributions of education and experience tempered with a desire to further that education and experience.

5.05. Ensure realistic quantitative estimates of cost, scheduling, personnel, quality and outcomes on any project on which they work or propose to work, and provide an uncertainty assessment of these estimates.

5.06. Attract potential software engineers only by full and accurate description of the conditions of employment.

5.07. Offer fair and just remuneration.

5.08. Not unjustly prevent someone from taking a position for which that person is suitably qualified.

5.09. Ensure that there is a fair agreement concerning ownership of any software, processes, research, writing, or other intellectual property to which a software engineer has contributed.

5.10. Provide for due process in hearing charges of violation of an employer's policy or of this Code.

5.11. Not ask a software engineer to do anything inconsistent with this Code. 5.12. Not punish anyone for expressing ethical concerns about a project.

Principle 6: Profession

Software engineers shall advance the integrity and reputation of the profession consistent with the public interest. In particular, software engineers shall, as appropriate:

6.01. Help develop an organizational environment favorable to acting ethically. 6.02. Promote public knowledge of software engineering.

6.03. Extend software engineering knowledge by appropriate participation in professional organizations, meetings and publications.

6.04. Support, as members of a profession, other software engineers striving to follow this Code.

6.05. Not promote their own interest at the expense of the profession, client or employer.

6.06. Obey all laws governing their work, unless, in exceptional circumstances, such compliance is inconsistent with the public interest.

6.07. Be accurate in stating the characteristics of software on which they work, avoiding not only false claims but also claims that might reasonably be supposed to be speculative, vacuous, deceptive, misleading, or doubtful.

6.08. Take responsibility for detecting, correcting, and reporting errors in software and associated documents on which they work.

6.09. Ensure that clients, employers, and supervisors know of the software engineer's commitment to this Code of ethics, and the subsequent ramifications of such commitment.

6.10. Avoid associations with businesses and organizations which are in conflict with this code.

6.11. Recognize that violations of this Code are inconsistent with being a professional software engineer.

6.12. Express concerns to the people involved when significant violations of this Code are detected unless this is impossible, counter-productive, or dangerous.

6.13. Report significant violations of this Code to appropriate authorities when it is clear that consultation with people involved in these significant violations is impossible, counter- productive or dangerous.

Principle 7: Colleagues

Software engineers shall be fair to and supportive of their colleagues. In particular, software engineers shall, as appropriate:

7.01. Encourage colleagues to adhere to this Code.
7.02. Assist colleagues in professional development.
7.03. Credit fully the work of others and refrain from taking undue credit.
7.04. Review the work of others in an objective, candid, and properly-documented way. 7.05. Give a fair hearing to the opinions, concerns, or complaints of a colleague.

7.06. Assist colleagues in being fully aware of current standard work practices including policies and procedures for protecting passwords, files and other confidential information, and security measures in general.

7.07. Not unfairly intervene in the career of any colleague; however, concern for the employer, the client or public interest may compel software engineers, in good faith, to question the competence of a colleague.

7.08. In situations outside of their own areas of competence, call upon the opinions of other professionals who have competence in that area.

Principle 8: Self

Software engineers shall participate in lifelong learning regarding the practice of their profession and shall promote an ethical approach to the practice of the profession. In particular, software engineers shall continually endeavor to:

8.01. Further their knowledge of developments in the analysis, specification, design, development, maintenance and testing of software and related documents, together with the management of the development process.

8.02. Improve their ability to create safe, reliable, and useful quality software at reasonable cost and within a reasonable time.

8.03. Improve their ability to produce accurate, informative, and well-written documentation.

8.04. Improve their understanding of the software and related documents on which they work and of the environment in which they will be used.

8.05. Improve their knowledge of relevant standards and the law governing the software and related documents on which they work.

8.06 Improve their knowledge of this Code, its interpretation, and its application to their work.

8.07 Not give unfair treatment to anyone because of any irrelevant prejudices.
8.08. Not influence others to undertake any action that involves a breach of this Code.

8.09. Recognize that personal violations of this Code are inconsistent with being a professional software engineer.

This Code was developed by the IEEE-CS/ACM joint task force on Software Engineering Ethics and Professional Practices (SEEPP):

Executive Committee: Donald Gotterbarn (Chair), Keith Miller and Simon Rogerson;

Members: Steve Barber, Peter Barnes, Ilene Burnstein, Michael Davis, Amr El-Kadi, N. Ben Fairweather, Milton Fulghum, N. Jayaram, Tom Jewett, Mark Kanko, Ernie Kallman, Duncan Langford, Joyce Currie Little, Ed Mechler, Manuel J. Norman, Douglas Phillips, Peter Ron Prinzivalli, Patrick Sullivan, John Weckert, Vivian Weil, S. Weisband and Laurie Honour Werth.