

The IFIP 10.4 Working Group on Dependable Computing and Fault Tolerance

Charter and Bylaws

Introduction

The IFIP Working Group on Dependable Computing and Fault Tolerance was established by the IFIP General Assembly in October 1980 under the IFIP Technical Committee TC-10.

Mission statement

As individuals and organizations increasingly rely on sophisticated computing systems, it is essential to ensure that these systems deliver dependable services. Dependability encompasses various critical properties, including performance, real-time response, avoidance of catastrophic failures, prevention of privacy intrusions, and the ability to evolve and maintain systems effectively.

Defined as the trustworthiness of a computing system that justifies reliance on its services, dependability integrates diverse concerns within a single conceptual framework. This includes attributes such as reliability, availability, safety, security, and privacy.

The **mission of the Working Group** is to foster progress and integrate approaches, methods, and techniques for specifying, designing, building, assessing, validating, operating, and maintaining computer-based systems that exhibit dependability attributes, considering the continuous evolution of application contexts and the rapid advancements in technology.

The Working Group commits to establishing an equitable and inclusive environment where all members feel safe, supported, and valued. We strive to attract a diverse community of individuals interested in research and technology related to dependability.

Aims and scope

Scientific Goals

The Working Group is mainly concerned with progress in:

- Understanding of faults (accidental faults, be they physical, design-induced, originating from human interaction; intentional faults, both non-malicious and cyberattacks) and their effects.
- Specification and design methods for dependability.
- Methods for error handling and for fault treatment.
- Validation (testing, verification, evaluation) and design for testability and verifiability.
- Assessing dependability through modeling and measurement.

Operational Principles

To accomplish its mission, the WG adopts the following operational principles:

- The Working Group aims to be a think tank for advancing the science and art of computer dependability. It operates by conducting regular meetings, periodic

workshops, and may produce position papers and conduct focused studies at its discretion.

- Consistent with the desire of advancing the science and art of computer dependability, the Working Group will support conferences and other initiatives in the sector. In particular, it will endeavor to maintain the IEEE/IFIP Dependable Systems and Networks annual Symposium as a top forum for disseminating ideas about dependability.
- The Working Group will mentor and promote the careers of young researchers in the field of computer dependability.

The Chair is responsible to give an annual status to the WG detailing activities and results covering these three general areas of the group's scope.

Governance

The working group is a self-governing body that debates its decisions and advances them by democratic votes.

- A Chair is elected by the group to serve for one or two 3-year terms but no more. The Chair is responsible for the vision, the long-term vitality and health of the group. The Chair oversees the operation of the working group, and with the help of the members organizes activities to realize the strategic goals of the group. The Chair may appoint Vice-Chairs to provide assistance in delivering the Chair's functions.
- A Communications and Outreach Committee has the role of maintaining the group website to document the history of the group activities and retain their outputs, and of disseminating the group results within and outside the dependability community through effective communication channels. Typically, this Committee is composed of five members, appointed by the Chair either among the members offering themselves as volunteers, or specifically selected.
- A Membership and Awards Committee has the role of proposing Working Group members for awards and distinctions (IFIP, IEEE, ACM, etc.), of scouting and analyzing nominations for new members, and of supporting the Chair in monitoring the level of activity of members. Typically, this Committee is composed of five members, appointed by the Chair either among the members offering themselves as volunteers, or specifically selected.
- Business meetings are run periodically to handle important issues within the WG, including decisions on technical and supporting activities as well as membership.

Membership

Member status

There are two classes of membership:

- Member: The group will consist of thought leaders from academia and industry in the field of dependability, who hold prominent positions in their own fields of expertise and enjoy participating and leading the activities in the group. Membership is permanent, as long as a member remains active in the group by participating in meetings, studies, position papers, or other forms of supporting activities.

- **Emeritus Member:** Emeritus members are former members who are retired but would like to continue to participate in the group, although at a much-reduced level of activity. They are expected to provide insight and mentorship, in addition to engaging in any activity at their own pace. Any time after retirement, a member may declare that he or she wishes to become an emeritus member. The group then votes to approve or disapprove. An emeritus membership is permanent and may not be revoked.

Maintaining membership

The Chair is responsible for monitoring the level of activity of members, supported by the Membership and Award Committee. A member remains active in the group by participating in meetings, studies, position papers, or other forms of supporting activities. Membership lapses when a member becomes inactive for five years, unless special conditions occur (such as when the member temporarily assumes a position that precludes the level of activity expected by the group). Such circumstances are decided on a case-by-case basis and a final decision is taken by the Chair, supported by the Membership and Awards Committee.

Membership recruiting and Young/Early-stage Researchers

To maintain long-term vitality and impact of the Working Group, continued infusion of new members who represent the best dependability researchers and practitioners from around the world will be pursued. As a proactive process, members scout possible recruits and send informal email to the WG Chair with pointers (name, affiliation, home page or any short profile) to provide a pipeline of potential future members. The Committee on Membership and Awards also plays a strong role in scouting for potential members.

Moreover, the Working Group pays special attention to young/early-stage promising researchers in the field of dependability, maintaining an updated list. This list can augment the pipeline for future members.

Guests to WG events

Guests serve two purposes: they provide additional expertise and are a potential source of new members. Any member may propose someone as a guest, making a case for the invitation (e.g., expertise, geographical opportunity, organizational or educational convenience), but all invitations to attend a meeting or event are issued by the Chair. Attendance gives guests an opportunity to assess the group with an eye towards potential membership. It gives members an opportunity to get to know the guests and assess their commitment and the quality of their engagement.

Nominating New Members

A member may nominate a new member by preparing a package and submitting it to the Chair. As a general rule, the proposed new member should have actively attended at least three meetings within a five-year period, two of which in person, to enable both the proposed member and the working group to determine if there is a good fit and mutual interest. The package prepared by the nominator should include at a minimum the CV of the nominee, description of any past involvement in activities/projects sponsored by the Working Group, and a short work statement detailing the level of interest and potential activities as a member. The package should also include evidence of the nominee's standing in the community or promise as an up and coming researcher. A nominee can be presented by individual members

(of course, more than one can collaborate on the nomination) and also by the Membership and Awards Committee. The group Chair will present the case during the earliest group meeting after the nomination is received, and membership is approved by a majority of 75%. All members are eligible to vote.

Products, services and activities

Meetings and Thematic Workshops

- Traditionally, the group meets physically twice a year, one meeting being connected with the annual IEEE/IFIP DSN Symposium. However, the members may elect to increase or decrease the frequency of meetings by collective agreement at any time. The Chair may also call ad hoc meetings to handle important issues when necessary.
- Virtual meetings are also possible, in addition to, or in substitution of, physical ones, depending on specific needs that may arise from conditions happening internally or externally to the Working Group.
- Thematic Workshops are periodically organized on cutting-edge topics in dependability by members, with the involvement of top scientists both within and external to the Working Group. Based on the outcome of the Workshop, a position/vision paper may be produced under the guidance of the Workshop organizers.
- Research reports sessions are also organized during meetings, where members and guests wishing to present their most recent activities, or any other initiative they may consider relevant for the group, have the opportunity to discuss and collect feedback.

Special Interest Groups

- Working Group activities also include Special Interest Groups, which operate through meetings, dedicated workshops, panels, position papers and other dissemination channels. SIG is a dynamic instrument, with a start and an end decided on the basis of the interest shown by the proposing group of members.

Vision/Perspective Papers

- Vision or perspective papers are encouraged, when appropriate, for publication in prestigious journals or magazines, to document the state of the art and the future research roadmap.

Promotion of Awards and Prizes

- The Working Group promotes Awards and Prizes to recognize meritorious individuals and/or papers with a strong impact on the dependability community, for example the Jean Claude Laprie Award, awarded annually since 2012.

Others

- Any other initiatives that WG members deem useful can be proposed and activated.

Liaison

- The Chair is the WG10.4 point of contact for the TC 10 and the IFIP leadership and is responsible for all necessary communications with them.

- The Chair attends the TC 10 and IFIP meetings as required to represent WG10.4 interests and concerns and report on the group's accomplishments. Any requests from the IFIP leadership are acted upon and flowed to the members by the Chair in a timely manner.
- The Chair is the liaison to the International Conference on Dependable Systems & Networks (DSN). The Chair is responsible for working with the DSN Steering Committee under the role of Vice-chair, to oversee the group's sponsorship of the conference and providing funds for the awards instituted by the group.