INTRODUCTION TO EWICS TC 7 SAFECOMP 2023

Mario Trapp

EWICS chair

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EWICS TC 7

European Workshop on Industrial Computer Systems Reliability, Safety and Security

OUR MISSION – SINCE 1974

"To promote the economical and efficient realization of programmable industrial systems through education, information exchange, and the development of standards and guidelines".

SAFECOMP® – SINCE 1979

Our primary platform for bringing experts together, information exchange and education.

SafeComp 2023

19 – 22 September 2023
Toulouse, France
The 42nd Conference on Computer Safety, Reliability and Security

Current Structure | Contacts

- EWICS
  - Chair: Mario Trapp | Fraunhofer IKS, TUM | mario.trapp@ewics.org

- current EWICS TC 7 – subgroups

  - Safety of **Medical Devices** | Uwe Becker(Dräger) | uwe.becker@ewics.org

  - **Security** of Safety-Critical Systems | Uwe Becker(Dräger) | uwe.becker@ewics.org

  - **Autonomous Systems** | Elena Troubytsina (KTH) | elena.troubitsyna@ewics.org

  - Maintenance of **Diverse Systems** | Erwin Schoitsch (AIT) | erwin.schoitsch@ewics.org

SG SEC: Security of Safety-Critical Systems

- Objective of SG SEC is to provide guidance
    - to purchasers and operators concerning the specification of security requirements;
    - to suppliers on how to satisfy the security requirements, while maintaining project security during the project lifecycle;
    - to users on security management in a safety-critical industrial context.

- Contribution to Standardization
    - contribution to IEC 62443 (via EWICS members in national committee), especially concerning Protection Profiles

SG MeD: Safety of Medical Devices

- Objective of SG MeD is to provide guidance to
  - the development of medical programmable systems such as to ensure both functional integrity and operational safety.

- Contribution to Standardization
  SG MeD contributed to
  - International document IEC TR 60601-4-5 (2021)
  - by adapting IEC 62443-4-2 to the domain of medical devices

- Joint work of SG MeD and SG SEC
  - Safety-aware Protection Profiles (SaPP)

SG AS/SoS:
Autonomous Systems and Systems-of-Systems

- **Chair:**
  Elena Troubitsyna
  KTH – Royal Institute of Technology, Sweden
  elenatro@kth.se

- **We focus on:**
  - Analysing challenges in ensuring safety of autonomous systems and systems-of-systems
  - Discussing recent research and practical results in engineering safety-critical autonomous systems
  - Creating a research roadmap
  - Organisation community-building events

SG AS/SoS:
Autonomous Systems and Systems-of-Systems

- Past and future events:

  - Spring 2018 – Workshop on safe autonomous systems (30+ participants) in Munich organised by Mario Trapp.

  - April 2024: Dagstuhl seminar Engineering safe autonomous systems

    Organised by
    Philip Koopman (CMU), John McDermid (U.of York), Mario Trapp (TU Munich and Fraunhofer), Elena Troubitsyna (KTH) and Ignacio Alvarez (Intel)

  - Meetings (virtual and hybrid) three times a year open for everyone

SG MDS: Maintenance of Diverse Systems

- **Mission Statement:**
  - provide support in upgrading, maintenance and adaptation (modification, enhancement) of critical systems without violating the existing redundancy/ diversity properties
  - Keep long-living systems operational and safe
  - Including changes of requirements during system life time, e.g. security requirements, updated functional requirements

- **Current activities for Standardization enabled/supported:**
  - IEC SC 65E – <u>IEC 63270 ED1</u> Industrial automation equipment and systems - Predictive Maintenance (start enabled by joining, now CCDV, to be published 2024-10)
  - Automotive ISO TC22 SC32 WG08 - ISO TR 9839 – Application of predictive maintenance to hardware with ISO 26262-5 (now published)

SG MDS: Maintenance of Diverse Systems

- **Design aspects**
  - fault tolerance architectures
  - homogeneous redundancy and diversity

- **Impact of safety culture (human factors)**
  - on management of operation and maintenance

- **Impact of new technologies and standards**
  - AI, smart manufacturing, connectivity, partial autonomy
  - *Now added: Predictive Maintenance (see Standards)*

- **Redundancy and diversity metrics**

- **Experience reports**
  - e.g. from railway interlocking systems

STATUS: Editing/Completion of Final Draft ahead

The Future

The Home of Safety

A non-political, continuous, confidential, technology-focused exchange platform for safety professionals from industry and

The Voice of Safety

A strong, unified voice of the united community that is heard and recognized by policy makers, decision makers, academia, and young

The School of Safety

A community that educates young professionals, connects them with senior professionals, and helps them network across countries and

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- Expert Meetup
- Open Workshops
- Working Groups

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Annual Roadmaps

Decision-Maker Roundtables

PR campaigns

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academia, and young professionals.

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How to participate

Join a great community and
Shape the Future of Safety

It doesn't need more than a message

- No membership required
- No fees
- Open to all safety professionals
  (young, old, industry, academia, …)

Contact

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TUM School of Computation, Information, and Technology CIT
Chair of Engineering Resilient Cognitive Systems