Workshop on
Evaluation of
Dependability and Resiliency

Introduction

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55th Meeting of the IFIP WG 10.4 on Dependable Computing and Fault Tolerance
Cortina d'Ampezzo, Italy, 28-30 January 2009
workshop organised by Andrea Bondavalli, Henrique Madeira, Lorenzo Strigini

The idea behind the workshop

much of our (10.4 members') work includes or is about quantitative assessment of dependability

- with various degrees of acceptance in different application areas

- we hear demand for it from a widening set of users

cf EU "co-ordination action" on "Assessing, Measuring, and Benchmarking Resilience" (AMBER): Budapest, Chalmers, City Univ. London, Coimbra, Florence, Newcastle, ResilTech

- trying to stimulate discussion / progress / consensus building
- e.g., organised various workshops
- published a draft *research roadmap ...*

Aim here

Look at the problem of quantitative evaluation across
- techniques
- application areas

Where are we? Where is the field headed? Where *should* it be headed?

research roadmaps

have advocated advances in quantitative evaluation before
e.g.

CMSD

A Dependability Roadmap for the Information Society in Europe

August 2003

INFORMATION SOCIETIES TECHNOLOGY (IST) PROGRAMME

Information Society
Technologies

Project **Accompanying Measure System Dependability**

research roadmaps

e.g.

ReSIST: Resilience for Survivability in IST

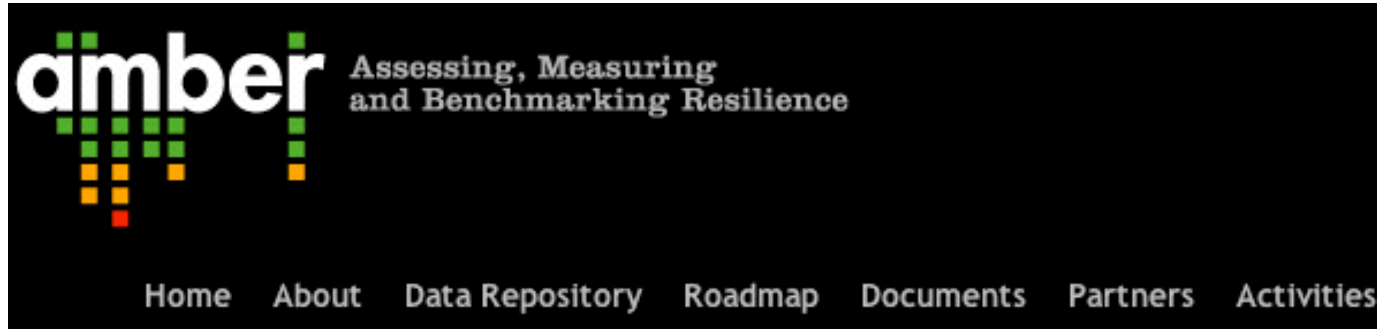A European Network of Excellence

Contract Number: 026764

Deliverable D13: From Resilience-Building to Resilience-Scaling Technologies: Directions

Report Preparation Date: September 2007

http://www.resist-noe.org/

research roadmaps

amber — Assessing, Measuring and Benchmarking Resilience

Home   About   Data Repository   Roadmap   Documents   Partners   Activities

ROADMAP

Executive Summary

Preliminary Research Roadmap

AMBER Questionnaire

The preliminary roadmap for research in resilience assessment of ICT systems is an output of the EU-funded AMBER Coordination Action.

The roadmap integrates the consortium experience in the field with the insights resulting from a long discussion of scenarios, drivers and inputs from stakeholders and experts.

This document should be understood as a call for feedback, contributing towards a final version of the research roadmap due at the conclusion of AMBER (December 2009).

http://amber.dei.uc.pt/

The importance of historical perspective ...

... can we calibrate our predictions and prescriptions by looking at how accurate, and how well followed, they were in the past

- e.g.
  "A recent NASA Systems Feasibility Study concluded that spacecraft self-repair, self-reconfiguration, and even self-reproduction are feasible technological goals by the year 2000 AD [24]"

    Journal of the British Interplanetary Society, Vol. 36, pp. 501-506, 1983

    http://www.setv.org/online_mss/seta83.html

    24. Freitas, R. A. Jr. and Gilbreath, Wm. P. (Eds.), Advanced Automation for Space Missions: Final Report, NASA CP-2255, 1982

Aim of this workshop

Look at the problem of quantitative evaluation across
  • techniques
  • application areas

Where are we? Where is the field headed? Where *should* it be headed?

Each speaker has been asked to

look back at the history of "new challenges" (and/or "new promises") in an area of *quantitative* evaluation and discuss:

  • which challenges have been successfully overcome?
  • which are still "work in progress"?
  • for which are we still pretty much where we were, despite trying hard? Why?
  • which have been simply abandoned? Why?
  • which are the new challenges?

wording

Workshop on *Evaluation* of *Dependability* and *Resiliency*

- "evaluation": we asked that speakers concentrate on quantitative methods
  - but accepted that in important application areas the culture is (inevitably?) pre-quantitative

- "dependability *and resiliency*"
  - synonyms for some of us; but some cultures use "resilient" to mean something *broader* than "dependable" or "fault-tolerant" or ...

Now to the sessions

style: as usual