

the *Availability Digest*

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Availability Organizations

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Dr. Terry Critchley
Availability Consultant

Many organizations offer availability advice and services. Those who want to specialize in high- and continuous availability should be familiar with these organizations and should take advantage of what they offer. The following is a summary of just some of the more pertinent groups.¹



RIAC

The *Reliability Information Analysis Center* (RIAC), formerly known as the Reliability Analysis Center (RAC), has served as a U.S. Department of Defence (DoD) Information Analysis Center (IAC) for more than 35 years. As such, the RIAC is a Center of Excellence and technical focal point for information, data, analysis, training, and technical assistance in the engineering fields of Reliability, Maintainability, Quality, Supportability and Interoperability (RMQSI).

Although chartered by the DoD, the RIAC undertakes a variety of other government organizational and industrial support projects each year. The team includes Wyle Laboratories, Quanterion Solutions, The University of Maryland Center for Risk and Reliability, The Penn State University Applied Research Laboratory, and The State University of New York Institute of Technology. Resources at their nationwide locations include over 2,000 employees with various technical backgrounds and expertise. The RIAC claims to provide total turnkey solutions to customers, including training, consulting services, and publications and tools for both government and commercial businesses.

You should be aware that nearly all their literature is chargeable.

<http://theriac.org/>

Uptime Institute

The Uptime Institute, an independent division of The 451 Group, provides education, publications, consulting, certifications, conferences and seminars, independent research, and thought leadership for the enterprise data-center industry and for data-center professionals. The Uptime Institute is an unbiased, third-party data center research, education, and consulting organization focused on improving data-center performance and efficiency through collaboration and innovation.

¹ Editor's note: This material was kindly provided to us by Dr. Terry Critchley. It is an excerpt from Appendix 5 of his book entitled *High Availability IT Services*, CRC Press; 2015.

The Uptime Institute serves all stakeholders of the data-center industry, including enterprise and third-party operations, manufacturers, providers, and engineers. This collaborative approach, coupled with the Uptime Institute's capability to recognize trends on a global basis and to interface directly with owners, results in solutions and innovations freed from regional constraints for the benefit of the worldwide data-center industry.

Founded in 1993, the Institute pioneered the creation and facilitation of end-user knowledge communities to improve reliability and uninterrupted availability—uptime—in data-center facilities and Information Technology organizations. In 2009, the Institute was acquired by The 451 Group, a technology industry-analyst company focusing on the business of enterprise IT innovation. This is taken from its web site:

“The 451 Group is the parent company of 451 Research, the Uptime Institute, and, from January 2013 the Yankee Group, the research, data and business advisory group. The Yankee Group is a preeminent research, data and advisory firm.”

<http://uptimeinstitute.com/>

Availability Digest

This web site is invaluable for general topics about availability and reliability plus some spine-chilling service failures under the heading *'Never Again'*. I would consider it compulsory reading for any availability 'nerd' or involved management. Joining the Digest's LinkedIn Continuous Availability Forum can be very informative.

Words from the Digest web site:

“The digest of current topics on High Availability and Continuous Availability. High Availability *recovers* from the effects of downtime. Continuous Availability *avoids* the effects of downtime. The Digest includes case studies, horror stories, best practices, availability issues, product reviews, recommended reading, and some mathematical nerd stuff.”

<http://www.availabilitydigest.com/>

IEEE Reliability Society

The Institute of Electrical and Electronics Engineers (IEEE) sponsors an organization devoted to reliability in engineering, the IEEE Reliability Society (IEEE RS). The Reliability Society promotes industry-wide acceptance of a systematic approach to design that will help to ensure reliable products. To that end, it promotes reliability not just in engineering but in maintenance and analysis as well.

The Society encourages collaborative effort and information sharing among its membership, which encompasses organizations and individuals involved in all areas of engineering, including aerospace, transportation systems, medical electronics, computers and communications.

Please note that much of the IEEE documentation, like that from RIAC, is chargeable, usually about \$31.

<http://rs.ieee.org/>

SNIA: Storage Networking Industry Association

As a not-for-profit association, the SNIA enables its 400+ members to develop robust solutions for storing and managing the massive volumes of information generated by today's businesses. For more than a decade, they have worked to bring recognition of storage issues to the IT world, making storage less complicated for the end user.

As a result, the SNIA has adopted the role of industry catalyst for the development of storage solution specifications and technologies, global standards, and storage education. It has a number of Technical Communities working on storage related topics, including Data Protection and Storage Security. SNIA publishes availability articles and also has a very detailed and thorough article on RAID, which every RAID-serious person should consult. There is also a '3-Year Strategic Plan for 2012-2015', all of which can be found on its web site.

www.snia.org.

Service Availability Forum (SAF)

The Service Availability Forum (SAF or SA Forum) is a consortium that develops, publishes, educates, and promotes open specifications for carrier-grade and mission-critical systems. SA Forum specifications enable faster development and deployment of commercial off-the-shelf (COTS) ecosystems for highly available platforms.

SAF was formed in December 2001 as a successor to the HA (High Availability) Forum that pioneered the standards-based architecture for high availability systems. SAF produced a white paper entitled "Providing Open Architecture High Availability Solutions".

Member companies represent all levels of the IT spectrum:

- Hardware vendors
- Firmware vendors
- Operating system vendors
- Middleware providers
- Application providers
- Network equipment providers
- Integrators
- Academic institutions.

The list includes Oracle, HP, Ericsson, Radisys and Emerson.

On the SAF website, there is a very useful white paper, attributed to the 'HA Forum,' which will be of interest to "high availability" people. It is entitled "Providing Open Architecture High Availability Solutions." It is well worth a glance even if you don't plan to read it throughout.

www.saforum.org

What is OpenSAF Then?

OpenSAF stands for Open Service Availability Framework. OpenSAF is an open source community with projects focused on high availability middleware.

The goal of OpenSAF projects is to develop HA middleware that is consistent with the Service Availability Forum (SA Forum) specifications. OpenSAF is freely available to anyone under the LGPLv2.1 (Lesser General Public License), and anyone may contribute to the project. The OpenSAF Foundation is a not-for-profit organization established by leading communications and computing companies to facilitate the work of the OpenSAF project and to accelerate the adoption of OpenSAF in commercial products.

The Foundation was inaugurated on January 22, 2008, by leading communications and enterprise computing companies, including Emerson Network Power, Ericsson, HP, Nokia Siemens Networks, and

Sun Microsystems (now Oracle/Sun). Oracle acquired GoAhead, one of the key implementers of OpenSAF products, a year or so ago.

<http://www.opensaf.org>

Carnegie Mellon Software Engineering Institute (SEI)

The Carnegie Mellon Software Engineering Institute (SEI) works closely with defense and government organizations, industry, and academia to continually improve software-intensive systems. Its core purpose is to help organizations improve their software engineering capabilities and to develop or acquire the right software, defect-free, within budget and on time, every time. To accomplish this, the SEI:

- performs research to explore promising solutions to software engineering problems.
- identifies and codifies technological and methodological solutions.
- tests and refines the solutions through pilot programs that help industry and government solve their problems.
- widely disseminates proven solutions through training, licensing, and publication of best practices.

Since 1984, the SEI has served the USA as a federally funded research and development center based at Carnegie Mellon University.

<http://www.sei.cmu.edu/>

ROC Project - Software Resilience

The Recovery-Oriented Computing (ROC) project is a joint Berkeley/Stanford research project that is investigating novel techniques for building highly-dependable Internet services. In a significant divergence from traditional fault-tolerant approaches, ROC emphasizes *recovery* from failures rather than failure-avoidance. This philosophy is motivated by the observation that even the most robust systems still occasionally encounter failures due to human operator error, transient or permanent hardware failure, and software anomalies resulting from "Heisenbugs" or software aging.

There are numerous articles on software reliability, most of them suggesting methods of development to achieve fault detection, avoidance, in-flight correction and the like, whilst acknowledging that with the best development disciplines, errors will occur. Software reliability is by no means 'business as usual' as hardware RAS seems to be for most vendors.

http://roc.cs.berkeley.edu/roc_overview.html

Business Continuity Today

Business Continuity Today is an online educational publication and resource portal that is sponsored by Vision Solutions, Inc. The aim of Business Continuity Today is to help information technology professionals and other executives better understand the issues, strategies, and technologies surrounding the resiliency and recovery of IT systems—an indispensable building block of business continuity planning (BCP).

www.businesscontinuitytoday.com

Disaster Recovery Institute (DRI)

DRI International (originally called the Disaster Recovery Institute International) was founded in 1988 as a non-profit organization with a mission to make the world prepared. As the global education and certification body in business continuity and disaster-recovery planning, DRI International sets the standard for professionalism. There are more than 10,000 active certified professionals worldwide. A DRI credential ensures employers that candidates understand the tenets of business continuity. It is the only certification that requires maintaining a current degree of knowledge through continuing education. DRI International organizes major industry events throughout the world. It offers corporate training programs and partnerships with colleges and universities.

DRI certifies individual professionals from more than 100 countries and conducts training in more than 50 of those nations. DRI advises numerous governments and organizations in creating national and international standards for preparedness as well as working with private sector leaders and professional associations to promote readiness.

There is a readable DRI mini-manual called '*Professional Practices for Business Continuity Practitioners*' at <https://www.drii.org/docs/professionprac.pdf>.

www.drii.org

Business Continuity Institute (BCI)

The Business Continuity Institute (BCI) is a leading institute for business continuity. It was established in 1994. The BCI has established itself as the leading membership and certifying organization for Business Continuity (BC) professionals worldwide. Its purpose is to promote the art and science of Business Continuity. The BCI has over 4,000 members in more than 85 countries. It offers, among other things, education in BC-related topics. In terms of resources, it offers a 'Knowledge Bank' at:

<http://www.thebci.org/index.php/resources/knowledgebank>

which covers, in .pdf format, the following subjects in outline:

- Business Continuity (20 files)
- IT Disaster Recovery and Resilience (2 Files)
- Regulations, Standards & Guidelines (14 Files)
- Risk Management and Insurance (8 Files)
- Supply Chain Continuity (6 Files)
- Threats and Horizon Scanning (5 Files)

www.thebci.com.

Information Availability Institute

The Information Availability Institute provides research and education that helps business professionals of all disciplines to understand and apply information availability technologies. It is sponsored by Vision Solutions.

<http://www.visionsolutions.com/IAI/systemoptimization.html>

IWGCR

The International Working Group on Cloud Computing Resiliency (IWGCR) has with a mission to monitor and analyze Cloud Computing resiliency. The working group is composed of IT executives, academic researchers and industry representatives. A list of who does what in each area of activity can be found on the web site below.

www.iwgcr.org

TMMi Foundation

The TMMi (Test Maturity Model Integrated) Foundation is dedicated to improving test processes and practice. It is a non-profit organization; and the focus of the Foundation's activities is the development of a common, robust model of test process assessment and improvement in IT organizations. The process model is applied very often to software quality and has 5 levels (5 is the highest) of accreditation of maturity of an organization's testing process:

1. *Initial* 2. *Managed* 3. *Defined* 4. *Measured* 5. *Optimization*

www.tmmi.org

Center for Software Reliability (CSR)

The Center for Software Reliability at City University London is an independent research center in the School of Mathematics, Computer Science, and Engineering, founded in 1983. As CSR's name suggests, its early research concerned the reliability of software - particularly the problems of measurement, assurance and prediction of reliability using probabilistic modeling - but this quickly expanded into a much wider systems viewpoint, taking account of different threats to dependability.

CSR now addresses the *dependability* of systems, taking into account, for example, safety and security as well as reliability. The current approach is now aimed at wider systems made up of software, hardware, people and organizations.

CSR collaborates widely with academic and industrial organizations in Europe and the United States.

<http://www.city.ac.uk/centre-for-software-reliability>

CloudTweaks

Established in 2009, CloudTweaks.com claims to be one of the fastest-growing cloud computing resources on the web and to have a growing niche community comprising technology professionals, representatives of government agencies, financial institutions, technology firms and Fortune 500 organizations.

CloudTweaks.com connects brands to an audience comprising business owners and managers of growing businesses, entrepreneurs and early adopters. The site also has some very amusing cartoons centered around cloud technology.

www.cloudtweaks.com