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Software Measurement News

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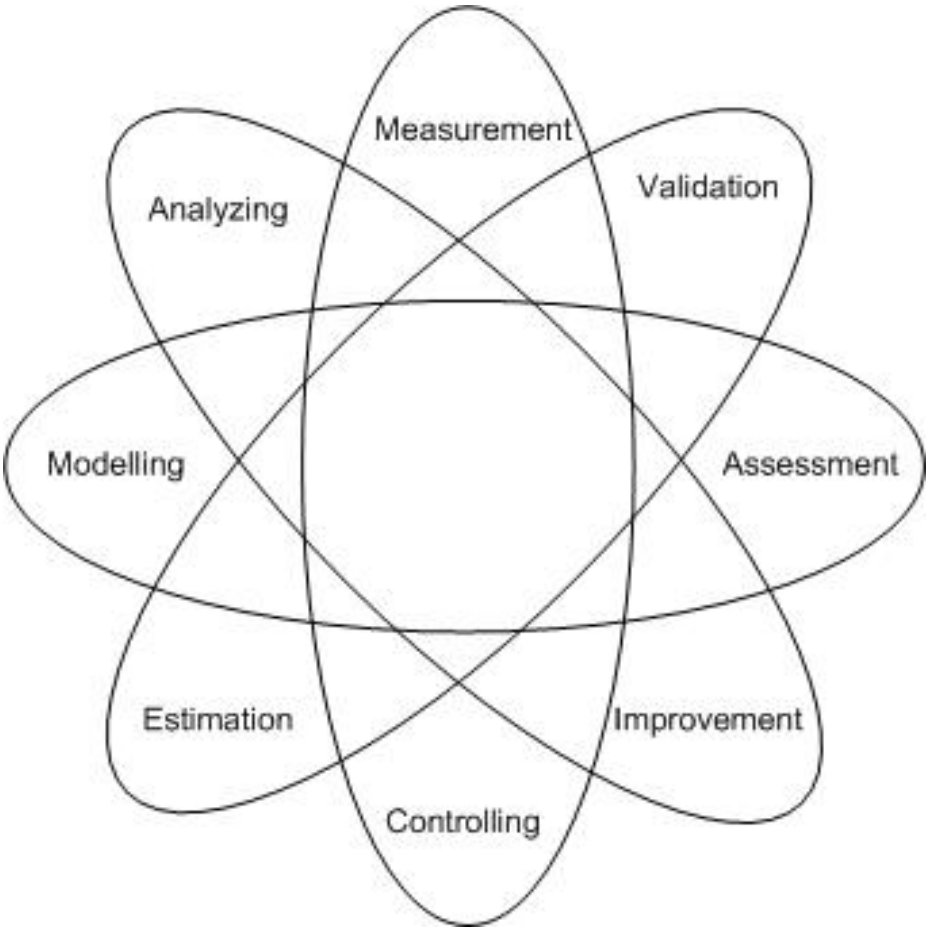

Editors:

Alain Abran, Günter Büren, Reiner Dumke, Christof Ebert, Cornelius Wille

Université du Québec
École de technologie supérieure

The *SOFTWARE MEASUREMENT NEWS* can be ordered directly from the Editorial Office (address can be found below).

Editors:

Alain Abran
Professor and Director of the Research Lab. in Software Engineering Management
École de Technologie Supérieure - ETS
1100 Notre-Dame Quest,
Montréal, Quebec, H3C 1K3, Canada
***Tel.:** +1-514-396-8632, **Fax:** +1-514-396-8684*
aabran@ele.etsmtl.ca

Günter Büren
Vice Chair of the DASMA
Büren & Partner Software-Design GbR
Thurn-und-Taxis-Str. 12, D-90411 Nürnberg, Germany
***Tel.:** +49-911-5195511, **Fax:** +49-911-5195555*
gb@bup-nbg.de
http://www.dasma.org

Reiner Dumke
Professor on Software Engineering
University of Magdeburg, FIN/IVS
Postfach 4120, D-39016 Magdeburg, Germany
***Tel.:** +49-391-67-18664, **Fax:** +49-391-67-12810*
dumke@ivs.cs.uni-magdeburg.de

Christof Ebert
Dr.-Ing. in Computer Science
Vector Consulting GmbH
Ingersheimer Str. 24, D-70499 Stuttgart, Germany
***Tel.:** +49-711-80670-175*
christof.ebert@vector-consulting.de

Cornelius Wille
Professor on Software Engineering
University of Applied Sciences Bingen
Berlinstr. 109, D-55411 Bingen am Rhein, Germany
***Tel.:** +49-6721-409-257, **Fax:** +49-6721-409-158*
wille@fh-b1ingen.de

Editorial Office: Otto-von-Guericke-University of Magdeburg, FIN/IVS, Postfach 4120, 39016 Magdeburg, Germany

Technical Editor: Dagmar Dörge

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DASMA Metrik Kongress
13.-15. November 2013,
Fraunhofer IESE, Kaiserslautern

MetriKon 2013, Kaiserslautern — **14. November 2013**

	Spur A	Spur B	Mini-Tutorials
08:30	Registrierung		
08:45	Begrüßung durch Gastgeber und DASMA-Vorstand		
09:00	**Hauptvortrag** Moderation: Günter Büren		
	Empirisches Software Engineering: Historie, Status & Ausblick ***Prof. Dr. Dieter Rombach, TU Kaiserslautern & Fhg IESE***		
10:00	Pause – Registrierung – Gedankenaustausch – Ausstellung		
10:30	Sitzung A1 **GQM+Strategies** Moderation: Stavros Pechlivanidis		Tutorial T1
	The Effects of GQM+Strategies On Organizational Alignment *Jürgen Münch et al.*		**Messung der Funktionalen Größe, des Testumfangs und der Fehler anhand von Sequenzdiagrammen nach ISO/IEC 19761 COSMIC** *Thomas Fehlmann*
	Document Analysis as Extension of the GQM+Strategies® Approach To Support Evaluation *Constanza Lampasona et al.*		
11:30	Pause – Registrierung – Gedankenaustausch – Ausstellung		
12:00	Sitzung A2 **Change Management** Moderation:	Sitzung B2 **Bewertungsmodelle und Werkzeuge** Moderation:	Tutorial T2
	Estimating the Costs of Change Requests based on Impact Analysis *Harry M. Sneed*	**Reifegrad angebotener Cloud-APIs – neue Anwendungsbereiche für die messtechnische Bestimmung funktionaler und nicht-funktionaler Eigenschaften** *Andreas Schmietendorf*	**Scope Management** *Manfred Seufert*
	Towards a Method for Specifying and Estimating Functional Change in Real-Time Embedded Systems *Hassan Soubra, Christof Ebert*	**Media Maturity Model für öffentliche Schulen – M3PS** *Philipp Diebold, Silke Steinbach, Michael Ochs*	
13:00	Mittagspause – Gedankenaustausch – Ausstellung		
14:15	Sitzung A3 **Funktionale Größenmessung** Moderation:	Sitzung B3 **Beherrschung kritischer Einflussfaktoren** Moderation:	Tutorial T2
	Measuring Software Tests with COSMIC *Thomas Fehlmann, Eberhard Kranich*	**Factors Influencing Perceived Project Success in Large R&D Projects: An Exploratory Study** *Golriz Chehrazi et al.*	**Software Messung - Praxistipps und Industrieerfahrungen** *Christof Ebert*
	Measuring Mobile Application Size Using COSMIC Function Points *André Nitze*	**Current Tool support for Metrics in Enterprise Architecture Management** *Matheus Hauder, Sascha Roth, Christopher Schulz, Florian Matthes*	
	Die COSMIC-FP-Methode Für das Cloud Computing *Cornelius Wille et al.*	**The Origin of Cultural Barriers in Distributed Software Development** *Jenny Stein, Andrea Herrmann*	
15:45	Pause – Gedankenaustausch – Ausstellung		
16:15	Sitzung A4 **20 Jahre DASMA**, *Jubiläumsvortrag von Manfred Bundschuh* Moderation: Günter Büren		
	DASMA Zukunftspreis **Thema**, *Preisträger 2013*		
19:00	**Abendprogramm**		

MetriKon 2013, Kaiserslautern — **15. November 2013**

	Spur A	Spur B	Mini-Tutorials
08:30	**Hauptvortrag 2** Moderation: Manfred Seufert		
	Software-Qualität sichtbar machen ***Prof. Dr. Stefan Wagner, Universität Stuttgart***		
09:30	Pause – Gedankenaustausch – Ausstellung		
10:00	Sitzung A6 **Qualitätsmodelle** Moderation:	Sitzung B6 **Projektmanagement und -controlling** Moderation: Thomas Fehlmann	Tutorial T6
	Early Validation of Software Quality Models with respect to Minimality and Completeness: An Empirical Analysis *Constanza Lampazona et al.*	**Risikopuffer-Burn-Down vs. Earned-Value** *Thomas Liedtke*	**Zeitmanagement mit KPIs und Engpass-Theorie** *Andrea Herrmann*
	Qualitätsbewertung von Failover-Szenarien in Cloud Systemen *Anja Fiegler et al.*	**Introducing Short-Run Control Charts for Monitoring the Software Development Process** *Thomas Fehlmann, Eberhard Kranich*	
	Introduction to the Software Quality Objectives (SQO) guidelines For source code *Stefan David*	**Aufwandschätzungen in Mikroprojekten – ein Erfahrungsbericht** *André Janus, Ralf Klemmer, Reiner Dumke*	
11:30	Pause – Gedankenaustausch – Ausstellung		
12:00	Sitzung A7 **Qualitätsmanagement** Moderation: Eberhard Kranich	Sitzung B7 **Neue Schätzverfahren und -programme** Moderation: Thomas Fehlmann	Tutorial T7
	Qualitätsmanagement im Requirements Engineering — die Qualität von Anforderungsspezifikationen nachweisen *Thorsten Cziharz*	**Super Fast Size and Effort Estimation** *Erkki Savioja, Pekka Forselius*	**Theorie und Anwendung einer Enterprise-Measurement-Infrastruktur** *Matthias Vianden*
	Nutzung von Inspektions- und Produktmetriken zur Fokussierung von Tests *Frank Elberzhager, Thomas Bauer*	**The IBM Liquid Challenge Program - Now Open for Function Point Counters** *Pierre Almén*	
13:00	Mittagspause – Gedankenaustausch – Ausstellung		
14:00	**Eingeladener Vortrag** Moderation: Stavros Pechlivanidis		
	Using the ISBSG Data to Improve your Organization Success *Harold van Heeringen*		
15:00	Schlussworte		

8. Workshop: BSOA/BCloud 2013

Bewertungsaspekte service- und cloudbasierter Architekturen

12. November 2013 in Basel/Schweiz (09:00 bis 17:30 Uhr)

(Vorläufige Agenda – zeitliche Terminierung folgt)

Grußnote zum Workshop:

Prof. Dr. Reiner Dumke (OvG-Universität Magdeburg – Leiter SMLab)

Wissenschaftsorientierte Keynote:

Harry Sneed (TU Dresden & Universität Regensburg

Eine wirtschaftliche Rechtfertigung für die Migration zu Service-Orientierten Geschäftsprozessen

Industrieorientierte Keynote:

Ronny Ludwig Eckardt (T-Systems MMS)

Schnittstellenorientierung über das SW-Design hinaus - Smoother System-Integration

Moderierte Diskussionsrunde:

Dr. Frank Simon (Head of Business Development - BLUECARAT AG)

Die Diskussionsrunde projiziert die bisherigen Best-Practices im Bereich service-orientierter Architekturen auf neue Trends und Hypes. Der Rahmen der diesjährig betrachteten Trends soll durch die folgenden drei Punkte aufgespannt werden:

- SOA meets Industry: Industrie 4.0 als Verheiratung von Software-Engineering und industrieller Fertigung. Wer lernt von wem? Was sind Konfliktpotentiale? Was sind Muss-Kriterien, die die IT in die industrielle Fertigung hineinträgt?
- Servicemanagement in einem Dashboard: Unzählige Service-Bereiche mit jeweils eigenen Kennzahlen erschweren eine objektive Bewertung. Individuelle Bewertungsdimensionen unterschiedlich vollständiger Betrachtungen erschweren zudem ein Benchmarking. Wo bleibt das universelle Dashboard? Wo bleibt die Management-Ampel?
- SOA 3.0: Wann machen die Unternehmen endlich ihre Hausaufgaben im Bereich der SOA, bevor sie weiteren Hypes hinterher jagen? Punktuelle Mobile Device-Management-Lösungen zeigen, wie anfällig schlechte bzw. intransparente Architekturen sind. **Doch warum ist der Begriff SOA heute so unattraktiv?**

Ausgewählte Fachvorträge:

Die folgenden Fachvorträge wurden durch das Programmkomitee auf der Grundlage eines „Call for Papers" ausgewählt.

Uta Pollmann - BLUECARAT AG:

SOA-Kontinuität: Bewährte Inhouse-Architekturen in neue B2B und M2M …

Prof. Dr. Marco Mevius, Peter Wiedmann - HTWG Konstanz:

BPM(N)Easy1.2 –Gebrauchssprachliche Modellierung …

Thomas Riedel, Xavier Oswald - Credit Suisse:

Service Workload-Modeling as a key component of Performance Management

Mohammad Alavi, Olivier Weinstoerffer, Makram Hanin – adhoc AG:

Continuous Performance Engineering: The key to High Performance Agility

Dr. Robert Neumann - OvG-Uni Magdeburg:

Serviceorientiertes Testen mit Hilfe von virtualisierten Lasttreibern aus der Cloud

Ausgewählte Posterpräsentationen:

Neben den Vorträgen und Diskussionsrunden bieten insbesondere die Pausen vielfältige Möglichkeiten zum Erfahrungsaustausch. Zur Anregung der Diskussion werden insbesondere Forschungsergebnisse junger Doktoranden und Absolventen mit Hilfe von Posterpräsentationen zur Verfügung gestellt.

Sebastian Hitwels – HS Harz:

Reife aktueller Industrieprodukte im Kontext der Orchestrierung von Serviceangeboten

Frederik Kramer – OvG-Uni Magdeburg:

In search of service integration - A case study based comparison …

André Nitze – HWR Berlin:

Cloud-basierte Architekturen mobiler Anwendungen

Weiteren Informationen und Anmeldung unter:

http://www-ivs.cs.uni-magdeburg.de/~gi-bsoa/2013 oder http://www.cecmg.de

Bei Anmeldung bis zum 31. Oktober 2013 wird eine Teilnahmegebühr von 140,– € (ceCMG-, DASMA-, GI- und ASQF-Mitglieder: 120,– €) erhoben, danach 150,– € (ceCMG-, DASMA-, GI- und ASQF-Mitglieder: 140,– €). Über den Tagungsbeitrag erhalten Sie eine Rechnung der ceCMG e.V. (Central Europe Computer Measurement Group).

Der BSOA-Workshop richtet sich an ein deutschsprachiges Publikum, dem entsprechend werden die Vorträge überwiegend in deutscher Sprache gehalten. Die korrespondierenden Artikel der Referenten werden den Teilnehmern in Form eines Tagungsbands zur Verfügung gestellt. Ergebnisse entsprechender Diskussionsrunden werden zeitnah im Internet publiziert.

Gastgeber des Workshops in 2013:

adhoc PES AG
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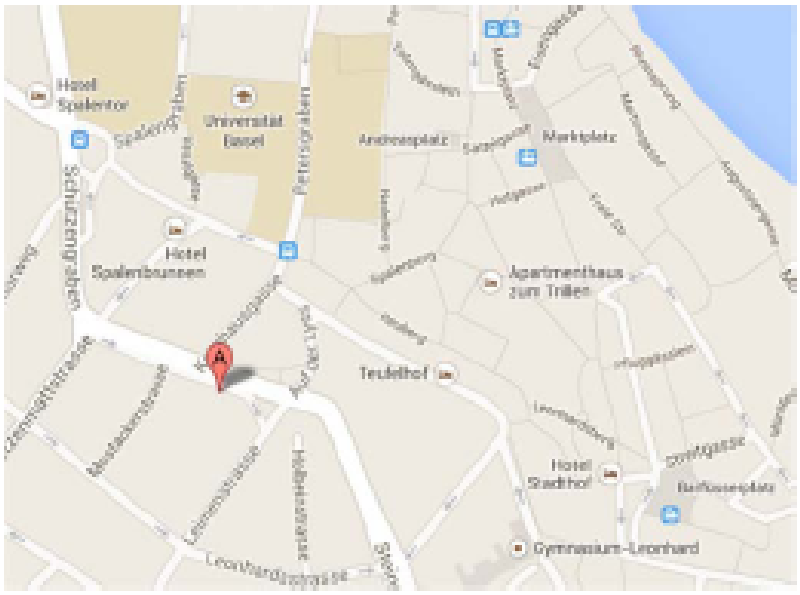
URL: http://www.adhoc-international.com



Quelle: http://maps.google.de

Sprecher der BSOA/BCloud-Initiative:

Prof. Dr.-Ing. habil. Andreas Schmietendorf
HWR Berlin - Berlin School of Economics and Law
E-Mail: Andreas.Schmietendorf@hwr-berlin.de

Sponsoren der diesjährigen Tagung:

Ohne vielfältige Unterstützung durch Sponsoren ist die Durchführung eines solchen Workshops nicht denkbar. Nur auf dieser Grundlage lassen sich die geringen Teilnahmegebühren, aber auch die kostenfreie Teilnehme von Studenten gewährleisten. In diesem Jahr konnten folgende Unternehmen dafür gewonnen werden:

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Announcements

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28.–29.11.2013

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Empirical Software Engineering International Week 2013 Kurzbericht

Dr. Jens Heidrich
Fraunhofer IESE
jens.heidrich@iese.fraunhofer.de

Überblick

Vom 7. bis zum 11. Oktober 2013 fand die „Empirical Software Engineering International Week“ (ESEIW) in Baltimore, Maryland, USA statt. Sie dient als Plattform, um Forscher und Anwender zusammenzubringen und über aktuelle Forschungsergebnisse im Bereich des empirischen Software Engineering und der Softwaremessung zu diskutieren. Dabei steht im Besonderen die praktische Anwendung empirischer Methoden und Techniken im industriellen Kontext im Vordergrund.

Den Kern der ESEIW stellt das Jahrestreffen des „International Software Engineering Research Network“ (ISERN) dar sowie das „International Symposium on Empirical Software Engineering and Measurement“ (ESEM), über die im Folgenden noch detaillierter berichtet wird.Darüber hinaus gibt es eine stets wachsende Reihe von Veranstaltungen, die traditionell im Kontext der ESEIW stattfinden:

- Das 11. „International Doctorial Symposium on Empirical Software Engineering“ (IDoESE) unterstützt Doktoranden bei der Anwendung empirischer Methoden im Kontext ihres Forschungsvorhaben. Erfahrene Forscher aus der ISERN- und ESEM-Community diskutierten insgesamt 9 vorgestellte Dissertationsvorhaben und gaben Feedback und Anleitung im Rahmen von Arbeitsgruppen.

- Die 11. „International Advanced School of Empirical Software Engineering“ (IASESE) unterstützt die Ausbildung der nächsten Generation an Forschern im Bereich des empirischen Software Engineering. Der Fokus im Jahre 2013 lag auf dem Thema „Action Research“, dessen Ursprünge aus der empirischen Sozialforschung stammen und in den letzten Jahren zunehmend zur Durchführung empirischer Studien im Software Engineering eingesetzt wird. Die Methode wurde über eine Reihe von Übungen vertieft.

- Die 9. „International Conference on Predictive Models in Software Engineering“ (PROMISE) beschäftigt sich mit der Konstruktion und Anwendung von Vorhersagemodellen im Bereich des Software Engineering. Die 11 vorgestellten Arbeiten umfassten Vorhersagemodelle im Bereich der Softwarequalität, projekt- und organisationsübergreifende Modelle sowie zukünftige Trends im Bereich Vorhersage.

- Der 3. „International Workshop on Replication in Empirical Software Engineering Research“ (RESER) beschäftigt sich mit der Replikation empirischer Studien, um einerseits das Vertrauen in die Ergebnisse derselben zu erhöhen und andererseits den Einfluss von Kontextfaktoren systematisch untersuchen zu können. Insgesamt wurden 11 Arbeiten zu den Themenfeldern „Conway’s Law“, Replikationsmethoden sowie konkrete Replikationsstudien vorgestellt.

- Der 5. „International Workshop on Managing Technical Debt“ (MTD) beschäftigt sich mit der Beherrschung der technischen Schuld die auf Softwaresysteme geladen wird. Damit bezeichnet man zusätzliche Kosten, die dadurch entstehen, dass beispielsweise Wartungsarbeiten vernachlässigt werden und somit Änderungen schwieriger durchgeführt werden können. Insgesamt wurden 4 Arbeiten in diesem Kontext vorgestellt und im Rahmen eines Panels aktuelle Herausforderungen bei der Vermessung des „Technical Debt“ diskutiert.

International Software Engineering Research Network

Das 21. jährliche Treffen des „International Software Engineering Research Network“ (ISERN) fand vom 7. bis zum 8. Oktober im Kontext der ESEIW statt. ISERN stellt eine Community von mehr als 60 Forschungs- und Industriepartnern dar, welche die Überzeugung teilen, das Forschung im Bereich Software Engineering in einem empirischen Rahmen stattfinden muss. Die jährlichen Treffen stehen ISERN-Mitgliedern, Kandidaten und eingeladenen Beobachtern offen. Beobachter können einen Antrag auf Mitgliedschaft stellen und sich im folgenden Jahr als Kandidat präsentieren. Vom Steuerkreis akzeptierte Kandidaten werden dann zu offiziellen Mitgliedern der ISERN-Community. Die jährlichen Treffen stellen eine Plattform zur Zusammenarbeit zwischen den Partnern statt und bestehen aus eine Reihe von Arbeitssessions, in denen verschiedene Partner zusammenkommen, um gemeinsam an konkreten Fragestellungen zu Arbeiten bzw. andere interessierte Partner zur Kollaboration zu finden.

Themen im Jahre 2013 umfassten beispielsweise: die Top 10 ungelöster Probleme im Bereich empirisches Software Engineering, die empfohlene „ISERN Reading List“ mit historischen und aktuellen Kernveröffentlichungen zum Thema, sowie eine Reihe von Kollaborationsworkshops in den Bereichen Replikation empirischer Studien, Aufsetzten verteilter Umfragen im Bereich Requirements Engineering, Definition strategische Messverfahren, sowie der empirischen Spezifikation und Evaluation von Software-Qualitätscharakteristiken.

International Symposium on Empirical Software Engineering and Measurement

Das 7. ACM/IEEE „International Symposium on Empirical Software Engineering and Measurement“ (ESEM) fand vom 10. bis zum 11. Oktober im Kontext der ESEIW statt. Es stellt die größte Konferenz zum Thema empirisches Software Engineering dar und beschäftigt sich mit der empirischen Untersuchen von Stärken und Schwächen unterschiedlichster Software Engineering-Methoden und -Technologien, dem Entwurf und der Analyse empirischer Studien sowie der systematischen Nutzung von Messdaten zum Verstehen, Evaluieren und Modellbildung von Wirkzusammenhängen im Software Engineering.

- DieEröffnungskeynotedes ersten Tages mit dem Titel „High Impact Research: Blending Basic and Applied Methods“ wurde von Prof. Dr. Ben Shneiderman (Universität von Maryland, USA) gehalten und beschäftigte sich mit der notwendigen gegenseitigen Befruchtung von Grundlagenforschung und angewandter Forschung sowie der Definition eines Rahmenwerks für „High-Impact Research“, welches grundlagenorientierte und angewandte Forschungsfragen beinhaltet, multidisziplinär aufgestellt ist und sich durch die Verwendung neuer (empirischer) Forschungsmethoden ganzheitlichen Fragestellungen widmen kann, die durch klassische kontrollierte Experimente nicht oder nur teilweise adressiert werden können.

- Die Eröffnungskeynote des zweiten Tages mit dem Titel „Towards Understanding Replication of Software Engineering Experiments“ wurde von Prof. Dr. Natalia Juristo (UniversidadPolitecnica de Madrid, Spanien und Universität von Oulu, Finnland) gehalten. Sie beschäftigte sich mit der Notwendigkeit und Herausforderungen bei der Replikation kontrollierter Experimente im Software Engineering. Dabei wurden systematisch verschiedene Klassen von Replikationen eingeführt und deren praktische Umsetzbarkeit diskutiert.

- Neben den Keynotes wurden insgesamt 15 Vortragssessions angeboten, die ein breites Spektrum an Themen rund um empirisches Software Engineering abdeckten. Dazu zählte die Vorstellung empirischer Ergebnisse im Bereich der Anforderungsanalyse und des Testens, im Kontext agiler Prozesse und von Prozessverbesserungsprogrammen, sowie im Bereich der Qualitätssicherung und Qualitätsvermessung. Darüber hinaus wurden auf Methoden und Werkzeuge des empirisches Software Engineering im Allgemeinen eingegangen sowie auf die Replikation empirischer Studien und den empirischen Vergleich von Techniken und Modellen des Software Engineering. Der Abschluss wurde durch ein Panel gebildet, welches Herausforderungen und Lösungsansätze diskutierte, um empirische Vorgehensweisen stärker im Alltag des Software Engineering zu verankern.

Im Jahre 2013 wurden insgesamt 24 von 86 Full Papers akzeptiert (28% Akzeptanzquote), 16 von 30 Short Papers (41%) sowie 10 von 20 industriellen Erfahrungsberichten (50%).

Quellen und weitere Informationen

1. ESEIW-Webseite 2013: http://umbc.edu/eseiw2013

2. Konferenzband des ACM / IEEE International Symposiumon Empirical Software Engineeringand Measurement ESEM 2013, IEEE Computer Society Order Number E5056, ISBN 978-0-7685-5056-5, 2013

3. ESEM-Konferenz-Webseiten: http://www.esem-conferences.org

4. ISERN-Webseite: http://isern.iese.de

The IWSM 2013 conference went very well, with papers submitted from 23 countries. The set-up at the University was excellent at the university conference center. The whole organization was excellent.

Keynote

How often do we report results when there are none?

Magne Jørgensen

The statistical power of a study is a measure of how likely it is to find a statistically significant effect, for a given effect size, if there is any. Based on calculation of the typical statistical power and effect sizes in empirical software engineering studies I calculate the expected proportion of reported statistically significant results. I compare this proportion with the actual proportion of significant findings reported in software engineering journal. An excess of reported statistically significant findings in software engineering journal indicates that there are substantial problems with the validity of the empirical research within our domain. I analyze and discuss possible reasons for the validity problems and suggest changes in research practices and paper reviewing guidelines that would lead to a domain where one can have much more confidence in the correctness of the reported results.

Size Measurement I

Fast Functional Size Measurement with Synchronous Languages: An approach based on LUSTRE and on the COSMIC ISO 19761 standard

Hassan Soubra

Functional size measurement is considered a complicated, tedious and time-consuming task when performed manually. Automating FSM is one solution to help in applying it and using it. Another solution is designing simple and easy-to-apply FSM procedures. The Synchronous Languages (SL) are built on solid mathematical foundations and used for correctly designing safetycritical reactive realtime systems. They are known for their strong semantic soundness, allowing the design of explicit safely-constructed formal models where the interpretation of a model is unique and reader-ndependent. These properties are very useful in the context of FSM because they help create simple FSM procedures and hence speed up the measurement process.

Towards the Development of a Defect Detection Tool for COSMIC Functional Size Measurement

Gokcen Yilmaz, Seckin Tunalilar, and Onur Demirors

Reliability of functional size measurement is very crucial since software management activities such as cost and budget estimations, process benchmarking and project control depend on software size measurements. In order to improve the reliability of functional size measurements, they should be controlled and reviewed at the end of the measurement process. However, manual inspection for

detecting defects and errors of measurements is time and effort consuming and there is always a possibility of missing a defect. To overcome such problems we developed a tool, for detecting defects of COSMIC functional size measurements automatically. In this study we presented the process of developing the tool, R-COVER, and the results of the case studies conducted for analyzing the efficiency of the tool in terms of correctness and accuracy.

PROMISE and ISBSG Software Engineering Data Repositories: A Survey
Laila Cheikhi and Alain Abran
The two ongoing repositories of software projects in the software engineering community are the ISBSG (International Software Benchmarking Standards Group) Repository and PROMISE (PRedictOr Models In Software Engineering). These repositories lack structured documentation and a researcher interested in using the datasets has to conduct his own investigation to identify the datasets that are suitable for his purposes. This paper provides additional information on these datasets by identifying the topics addressed, highlighting the availability of the data file and of the description of attributes related to the datasets, and indicating their usefulness for benchmarking studies.

Size Measurement II

Approximate COSMIC Functional Size—Guideline for Approximate COSMIC Functional Size Measurement
Frank Vogelezang, Charles Symons, Arlan Lesterhuis, Roberto Meli, and Maya Daneva
The COSMIC method provides a standardized way of measuring the functional size of software from the functional domains commonly referred to as 'business application' or 'Management Information Systems' (MIS) and 'real-time' software, and hybrids of these. In practice it is often sufficient to measure a functional size approximately. Typical situations where such a need arises are early in the life of a project, before the functional user requirements ('FUR') have been specified down to the level of detail where the precise size measurement is possible or when a measurement is needed, but there is insufficient time or no need to measure the required size using the standard method. The guideline describes the current state of the art with regard to approximate COSMIC functional size measurement. All proposed COSMIC approximation methods rely on determining some average of the size(s) and/or number(s) of functional processes. The fact that the size of a single functional process has no upper finite limit is probably the reason why multiple COSMIC approximation methods have been developed for different types of software. Therefore the guideline describes a number of approximation methods with their pros and cons, their recommended area of application and their validity, rather than document a single COSMIC approximation method.

COSMIC Functional Size Measurement of Cloud Systems
Andreas Schmietendorf, Anja Fiegler,Cornelius Wille, Reiner R. Dumke, and Robert Neumann
The continuously increasing market demands for cloud platform and services leads to estimate the effort of development in an explicit manner. The COSMIC function point method should be a good basic of size measurement in order to qualify the different estimations of Cloud system management. This paper discuss size measurement for Cloud systems in a special case and outlines any general aspects of COSMIC FP measurements of Cloud system development.

Designing a Measurement Method for the Portability Non-functional Requirement
Feras Abu Talib, Dennis Giannacopoulos, and Alain Abran
This paper proposes a measurement method to measure the non-functional portability software requirement. The proposed method complies with the COSMIC ISO 19761 measurement method standard. The details of the design steps are presented and explained. This paper also includes an analysis and possible utilizations of the method results into the various estimation models. Applying the proposed method can be beneficial to estimate the development time and/or the quality assurance efforts to develop/certify portable software on the various environments supported.

Measurement of Business Rules Specified as Reusable Components: Exploratory Study of Its Impact on the Functional Size of Software Projects
Sylvie Trudel and Alain Abran
When reusable software elements are defined in the requirements phase, this raises a number of issues for the measurement of their functional size, when a reusable element implements a business rule or a business subprocess, for example. A case study is presented with project functional size measurement data to illustrate the impact of reuse on the resulting size and to determine criteria of reuse effectiveness and efficiency.

Improving the User Story Agile Technique Using the INVEST Criteria
Luigi Buglione and Alain Abran
Although the Agile Software Development (ADS) approach has been around for the last 15 years, it is only recently that attention has moved towards Agile Software Management (ASM) for tackling some of the management related weaknesses, such as estimating on the basis of User Story points. This paper presents an application of the INVEST criteria (Independent – Negotiable – Valuable – Estimable – Small – Testable) for improving the measurement technique of User Stories, introducing sizing units and a technique to negotiate requirements. It includes a discussion on an approach to balancing the six criteria used to evaluate a set of User Stories in a Sprint.

Run-Time Measurement of COSMIC Functional Size for Java Business Applications: Is It Worth the ost?
Ahmet Ata Akca and Ayça Tarhan
The issue of functional size measurement is crucial for software project management, and the instant measurement of functional size from source code might be beneficial for progress tracking. Since it is time-consuming and costly when functional size measurement from source code is done manually; automating the process of measurement came to the fore. In this study, runtime measurement of COSMIC functional size is aimed by the discovery of functional processes, which are triggered via user interface of a three tier Java business application. A Measurement Library has been developed to monitor the data movements occurring in the functional processes. The measurement method which requires code addition into the source code of the application for the utilization of the library is semi-automatic. In a recent study, we reported that the utilization of the library from a simple student registration system led to 92% approximate results in functional sizes measured automatically and calculated manually. Subsequently in this study, three case studies have been carried out to compare the costs of semiautomatic and manual measurements to verify if the method is worth the cost. The results have shown that the method can decrease costs up to %280 compared to the manual measurement process when it is integrated early in the coding phase. This study explains our semiautomatic functional size measurement method, details the implementation of the case studies, and overviews the results.

Infrastructure and Process I

Towards a Maintainable Federalist Enterprise Measurement Infrastructure
Matthias Vianden, Horst Lichter, and Andreas Steffens
Large scale measurement systems are hard to build and to maintain. In this paper we propose an architecture blueprint for a federalist Enterprise Measurement Infrastructure (EMI) which helps to address these typical weaknesses of centralistic measurement systems. The EMI is based on the ideas of Service Oriented Measurements. We combined these with modern ideas from the area of Enterprise Application Integration and extended the ISO 15939 data flow to allow a more flexible and elegant solution. The current prototypes of EMI implementations and field studies prove the benefits of the architecture blueprint over existing solutions. We strongly belief that the EMI can help to build better, extendible, and maintainable measurement systems which are integrated and aligned with modern business needs.

AM-QuICk: A Measurement-Based Framework for Agile Methods Customisation
Hajer Ayed, Naji Habra, and Benoît Vanderose
Software development practitioners are increasingly interested in adopting agile methods and generally recommend customisation so that the adopted method can fit the organisational reality. Many studies from the literature report agile adoption and customisation experiences but most of them are hardly generalisable and few are metric-based. They therefore cannot provide quantitative evidence of the suitability of the customised agile method, neither assess the organisation readability to adopt it, nor help in decision-making concerning the organisation transformation strategy. In this paper, we first describe the Agile Methods Quality-Integrated Customisation framework (AM-QuICk)
that relies on measurements and aims to continuously assist agile methodologists throughout the agile adoption and customisation process, i.e., during the initial organisation adoption, the method design and throughout the working development process. Then, we present a case study using AM-QuICk within an organisation. With this study, we aim to analyse the current development process and its level of agility and identify the initial risk factors. The data were collected using preliminary interviews with the different team members and two questionnaires. The results reveal that though most respondents are enthusiastic towards agile principles, a progressive transformation strategy would be beneficial.

Worldviews, Research Methods, and their Relationship to Validity in Empirical Software Engineering Research
Kai Petersen and Cigdem Gencel
Background - Validity threats should be considered and consistently reported to judge the value of an empirical software engineering research study. The relevance of specific threats for a particular research study depends on the worldview or philosophical worldview of the researchers of the study. Problem/ Gap - In software engineering, different categorizations exist, which leads to inconsistent reporting and consideration of threats. Contribution - In this paper, we relate different worldviews to software engineering research methods, identify generic categories for validity threats, and provide a categorization of validity threats with respect to their relevance for different world views. Thereafter, we provide a checklist aiding researchers in identifying relevant threats. Method - Different threat categorizations and threats have been identified in literature, and are reflected on in relation to software engineering research. Results - Software engineering is dominated by the pragmatist worldviews, and therefore use multiple methods in research. Maxwell's categorization of validity threats has been chosen as very suitable for reporting validity threats in software engineering research. Conclusion - We recommend to follow a checklist approach, and reporting first the philosophical worldview of the researcher when doing the research, the research methods and all threats relevant, including open, reduced, and mitigated threats.

Estimation

Experiences from an Initial Study on Risk Probability Estimation Based on Expert Opinion
Rudolf Ramler and Michael Felderer
Background: Determining the factor probability in risk estimation requires detailed knowledge about the software product and the development process. Basing estimates on expert opinion may be a viable approach if no other data is available. Objective: In this paper we analyze initial results from estimating the risk probability based on expert opinion to answer the questions (1) Are expert opinions consistent? (2) Do expert opinions reflect the actual situation? (3) How can the results be improved? Approach: An industry project serves as case for our study. In this project six members provided initial risk estimates for the components of a software system. The resulting estimates are compared to each other to reveal the agreement between experts and they are compared to the actual risk probabilities derived in an ex-post analysis from the released version. Results: We found a moderate agreement between the rations of the individual experts. We found a significant accuracy when compared to the risk probabilities computed from the actual defects. We identified a number of lessons learned useful for improving the simple initial estimation approach applied in the studied project. Conclusions: Risk estimates have successfully been derived from subjective expert opinions. However, additional measures should be applied to triangulate and improve expert estimates.

The Effects of Variable Selection Methods on Linear Regression-Based Effort Estimation Models
Sousuke Amasaki and Tomoyuki Yokogawa
Stepwise regression has often been used for variable selection of effort estimation models. However it has been criticized for inappropriate selection, and another method is recommended. We thus examined the effects of Lasso, which is one of such variable selection methods. An experiment with datasets from PROMISE repository revealed that Lassobased selection stably selected better variables than stepwise in predictive performance. We thus concluded Lassobased selection is preferable to stepwise regression.

ERP Effort Estimation Based on Expert Judgments
Izak Pierre Erasmus and Maya Daneva
A new technology shift brings to the ERP domain a change in the industry and a new platform build on in-memory optimized databases, introduced and known as SAP HANA [1]. This technology shift in the ERP domain led to SAP's ERP on HANA, the solution where the ERP suite is offered on the same platform as ERP Services such as Business Analytics. The integration of ERP Services and the ERP suite opens up new opportunities to "fine tune" customer and industry specific business processes. This radical shift in innovation brings with it new challenges in terms of ERP effort estimation. No longer can we rely on a single method such as functional size measurement methods, due to the wide range of customization possibilities. This shift from a typical predefined solution scope to a highly customizable landscape poses a challenge to project estimation practitioners as the functional size estimation techniques used in the past for ERP solutions address a fixed scope deployable in multiple landscapes, and hence are no longer suitable for dynamically definable scope. Today's highly volatile and customized ERP landscape demands a new approach to estimate effort by leveraging ERP professionals' tacit knowledge and expert judgments. This paper presents the ERP Service estimation method that leverages the strengths of expert-judgment-based estimation techniques while using a more structured approach to reduce the effects of expert bias and avoid common pitfalls associated with judgment-based estimation.

Infrastructure and Process II

Towards the Development of a Framework for Education in Software Measurement
Monica Villavicencio and Alain Abran
Even though software engineering education embraces the teaching of software measurement topics, there is a lack of guidelines to address this teaching in undergraduate programs. In order to facilitate the education of these topics at the undergraduate level, a set of studies was conducted since 2010 and an educational framework is being developed based on the opinions of experts in the field. The framework provides guidelines for university teachers and instructors to facilitate the teaching and learning process of software measurement for undergraduate students or beginners in the field. The structure of this framework can be applied in other educational fields.

Using Process Enactment Data Analysis to Support Orthogonal Defect Classification for Software Process Improvement
Mehmet Söylemez and Ayça Tarhan
Defects occur in many software development projects. It is important to extract semantic information from defects to investigate their root causes and improve the process. In this study, enactment data of a software development process in which defects originated was used to support Orthogonal Defect Classification (ODC). In a sample project of a CMMI ML3 organization ODC was applied to the defects and the utilization of the process enactment data was found to be effective and efficient in providing information about the root causes of the defects and deriving improvement actions. The defect attributes were analyzed and compared before and after applying suggested improvement actions. The comparison between the initial and the improved defect trigger and origin distributions showed that there was a positive change in the software development process of the project. A Conversion Model and a Tool to Identify Function Point Logic Files Using UML Analysis Class Diagrams José Antonio Pow-Sang, Daniela Villanueva, Luis Flores, and Cristian Rusu Many Function Point (FP) technique adaptations have been proposed to estimate object-oriented software development projects. However,

most research works propose rules to identify FP according previous versions of the FP Counting Practices Manual or they do not include some important UML specifications such as the composition relationship between classes. . In this paper, we present the rules to identify logic files using analysis class diagrams that are included in the UML2FP technique that we have defined, and a software tool named Tupux that support UML2FP application. These rules were defined in accordance with the recommendations included in the FP Counting Practices Manual 4.3.1. We also present the results obtained by applying our rules to software size estimation in a case study performed with undergraduate and graduate students. These results have proved that a person can make mistakes when applying the technique which could be avoided by using a software tool.

Quality Evaluation I

Measuring Best-in-Class Software Releases

Hennie Huijgens and Rini van Solingen

In this research we aimed to identify distinguishing factors in software releases. For this purpose we analyzed the metrics of 26 software projects. These projects were releasebased deliveries from two stable, experienced development teams. During the measurement period both teams transformed from a plan-driven delivery model (waterfall) to an agile approach (Scrum). Overall, we observed that these small release-based projects differ largely from non-release-based projects. Our research indicates that a combination of release-based working, a fixed and experienced development team, and a steady heartbeat contribute to performances that can be characterized as bestpractice. The main contribution of this paper is that we found five success factors (all reducing development complexity) that result in best-of-class performance for small software releases.

An Expert-Based Framework for Evaluating iOS Application Usability

Fatih Nayebi, Jean-Marc Desharnais, and Alain Abran

Mobile applications are gaining in popularity because of the significant advantages of mobile devices, such as portability, location awareness, electronic identity, and an integrated camera. However, these devices have a number of disadvantages in terms of usability, like limited resources and small screen size. Evaluating the usability of applications developed for mobile operating systems is a very important step in addressing these disadvantages and achieving success in mobile application markets, such as Apple's App Store. Usability evaluation must be tailored to all the various mobile operating systems in use, as they each have their own particular characteristics. This paper presents a mobile application usability evaluation framework for one of the most popular mobile operating systems, iOS. A set of critera is defined and applied to evaluate the usability of eleven applications available at the App Store.

A Framework for Software Usability and User Experience Measurement in Mobile Industry

Jia Tan, Kari Rönkkö, and Cigdem Gencel

The mobile industry faces challenges in designing software usability and user experience (UX) measurement instruments. The major difficulties arise due to: 1) diversity of definitions and terminology used for usability and UX aspects and attributes, which lead to inconsistencies, and 2) lack of a taxonomy for these attributes with links to well-defined measures in the literature. In this paper, we present a framework to support mobile industry to overcome these challenges. We first unified the terminology and definitions for usability and UX attributes in the literature. Then, we created taxonomy of attributes and sub-attributes. By using the wellknown Goal Question Metric (GQM) approach, we identified a comprehensive set of questions and measures for each attribute that could be used as a basis for developing measurement instruments. The framework was evaluated through a case study conducted in a usability research, development and consultancy company for mobile industry in Sweden.

A New Quality-in-Use Model for Mobile User Interfaces

Reem Alnanih, Olga Ormandjieva, and T. Radhakrishnan

This paper proposes a new quality-inuse model for measuring user interface design quality, and is intended specifically for mobile devices. The proposed model is based on the international standard ISO 9126-4 [ISO/IEC TR 9126- 4:2004] and can be adapted to various applications. The qualityin- use

factors of effectiveness, productivity, efficiency, safety, and satisfaction are redefined to reflect the ways in which mobile devices are used, and the contexts in which they are used. A new factor, task navigation, is proposed to measure the cognitive load on the user when he or she interacting with the interface across different platforms. Our objectives include theoretical and empirical validation of the proposed measurement model.

Quality Evaluation II

Noise in Bug Report Data and the Impact on Defect Prediction Results

Rudolf Ramler and Johannes Himmelbauer

The potential benefits of defect prediction have created widespread interest in research and generated a considerable number of empirical studies. Applications with realworld data revealed a central problem: Real-world data is “dirty” and often of poor quality. Noise in bug report data is a particular problem for defect prediction since it effects the correct classification of software modules. Is the module actually defective or not? In this paper we examine different causes of noise encountered when predicting defects in an industrial software system and we provide an overview of commonly reported causes in related work. Furthermore we conduct an experiment to explore the impact of class noise on the predictions performance. The experiment shows that the prediction results for the studied system remain reliable even at a noise level of 20%.

A Comparison of Different Defect Measures to Identify Defect-Prone Components

Tosin Daniel Oyetoyan, Reidar Conradi, and Daniela Soares Cruzes

(Background) Defect distribution in software systems has been shown to follow the Pareto rule of 20-80. This motivates the prioritization of components with the majority of defects for testing activities. (Research goal) Are there significant variations between defective components and architectural hotspots identified by other defect measures? (Approach) We have performed a study using postrelease data of an industrial Smart Grid application with a well-maintained defect tracking system. Using the Pareto principle, we identify and compare defectprone and hotspots components based on four defect metrics. Furthermore, we validated the quantitative results against qualitative data from the developers. (Results) Our results show that at the top 25% of the measures 1) significant variations exist between the defective components identified by the different defect metrics and that some of the components persist as defective across releases 2) the top defective components based on number of defects could only identify about 40% of critical components in this system 3) other defect metrics identify about 30% additional critical components 4) additional quality challenges of a component could be identified by considering the pairwise intersection of the defect metrics. (Discussion and Conclusion) Since a set of critical components in the system is missed by using largest-first or smallestfirst prioritization approaches, this study, therefore, makes a case for an allinclusive metrics during defect model construction such as number of defects, defect density, defect severity and defect correction effort to make us better understand what comprises defect-prone components and architectural hotspots, especially in critical applications.

Measuring and Visualizing Code Stability—A Case Study at Three Companies

Miroslaw Staron, Jörgen Hansson, Robert

Monitoring performance of software development organizations can be achieved from a number of perspectives – e.g. using such tools as Balanced Scorecards or corporate dashboards. In this paper we present results from a study on using code stability indicators as a tool for product stability and organizational performance, conducted at three different software development companies – Ericsson AB, Saab AB Electronic Defense Systems (Saab) and Volvo Group Trucks Technology (Volvo Group). The results show that visualizing the source code changes using heatmaps and linking these visualizations to defect inflow profiles provide indicators of how stable the product under development is and whether quality assurance efforts should be directed to specific parts of the product. Observing the indicator and making decisions based on its visualization leads to shorter feedback loops between development and test, thus resulting in lower development costs, shorter lead time and increased quality. The industrial case study in the paper shows that the indicator and its visualization can show whether the modifications of software products are focused on parts of the code base or are spread widely throughout the product.

Quality Evaluation III

Visibility and Performance of IT Incident Handling: A Control Theory Perspective
Jan Vlietland and Hans van Vliet
In industrial settings, multiple service teams are often involved in handling incidents, so these service teams come to depend on one another. We hypothesize that the knowledge these service teams have of the agreed upon and realized incident handling performance of themselves and other service teams will impact their performance. We tested this hypothesis at a large financial institute, using log data from the IT service management tool and a survey to measure the knowledge of service teams. We found a significant positive correlation between incident handling performance of a service team and the knowledge a service team has of its own performance. We found no correlation between the knowledge of agreed upon performance and realized performance within a service team. Finally, we found that teams have very little knowledge of agreed upon or realized performance of other service teams. The results suggest that increasing performance visibility within and across teams is one way to help improve performance.

Comparing between Maximum Likelihood Estimator and Nonlinear Regression Estimation Procedures for NHPP Software Reliability Growth Modelling
Rakesh Rana, Miroslaw Staron, Christian Berger, Jörgen Hansson, Martin Nilsson, Fredrik Rörner
Software Reliability Growth Models (SRGMs) have been used by engineers and managers for tracking and managing the reliability change of software to ensure required standard of quality is achieved before the software is released to the customer. SRGMs can be used during the project to help make testing resource allocation decisions and/ or it can be used after the testing phase to determine the latent faults prediction to assess the maturity of software artifact. A number of SRGMs have been proposed and to apply a given reliability model, defect inflow data is fitted to model equations. Two of the widely known and recommended techniques for parameter estimation are maximum likelihood and method of least squares. In this paper we compare between the two estimation procedures for their applicability in context of NHPP SRGMs. We also highlight a couple of practical considerations, reliability practitioners must be aware of when applying SRGMs.

Estimating Software Reliability with Static Project Data in Incremental Development Processes
Shinya Ikemoto, Tadashi Dohi, and Hiroyukii Okamura
Incremental development of software becomes much popular and enables to reduce the development cost effectively. On the other hand, it has not been known yet that the incremental development can really contribute to guarantee the software reliability more than the waterfall development paradigm. In this paper we estimate quantitative software reliability with both of static fault count data and static metrics data for incremental development processes. Since the measurement of software development project data is often expensive, we encounter the situation where the time series data are not always available. We develop metrics-based software reliability models based on the non-homogeneous Poisson processes for the purpose of reliability assessment in the incremental development, and compare them with an elementary approach with multiple linear regression model. Numerical examples are given with real software project data to show that our proposed methods outperform the common multiple linear regression model under the assumption on independent incremental testing phases.

Analyzing Turkish E-government Websites by Eye Tracking
Duygu Albayrak and Kürsat Çağıltay
Usability studies provide essential information about users' views and perceptions of efficiency, effectiveness and satisfaction of given online services. Nowadays, e-government web sites become popular. Therefore, there is a need for usability testing to specify the usability problems and to make the services of the e-government more usable. The purpose of this study is to investigate usability of some Turkish e-government services. The study examined usability of five Turkish e-government web sites: Ministry of National Education – Student Information System (eokul), Ministry of Justice – National Judicial Network Project (UYAP), Turkish National Police: Vehicle Search System, Social Security Institute: Service Details and General Directorate of Land Registry and Cadastre. It was

conducted with nine participants. This study is a case study with mixed design methodology, in which both quantitative and qualitative approaches were employed and combined. Quantitative data were collected through an eye-tracker, a pre-test questionnaire of participants' demographics and previous utilization of egovernment web sites and a posttest questionnaire. Qualitative data were collected through both semi-structured individual interviews and observation during test. The study results identify the usability problems encountered while using government services. The study concludes with specific recommendations for improvement of e-government services in Turkey.

Software Repository Analysis for Investigating Design-Code Compliance
Kadriye Ozbas-Caglayan and Ali H. Dogru
Compliance check between code and design is a labor-intensive job to do, since it requires the code to be reverse engineered and checked versus design manually. On the other hand, investigation of the design-code compliance would give some valuable information to software development and maintenance managers. In this study, an approach for employing software repository analysis and text mining techniques to extract and analyze compliance levels of design and code efficiently is presented.

SMA I

Using COSMIC method with system analysis artifacts based on objectoriented approach and UML notation
Piotr Carewicz and Jarek Swierczek
The main idea of our presentation is to present how COSMIC model can be integrated with system analysis artifacts made with object-oriented approach with UML notation. We would like to show to FSM specialists what are the basis of o-o system analysis and why it is so important to look on COSMIC model as very close integrated addition to o-o system analysis model. We would like to discuss following concepts: - functional process as use case on system analysis level - data group as logical model class on system analysis level - data movement / data manipulation as action / rule in activies of use case on system analysis level. We would like to discuss also nonfunctional requirements as elements of system analysis model in context of FSM.

Introduction of the Basis of Measurements
Eric van der Vliet, Jacob Brunekreef, Paul Siemons, and Rene Stavorius
In line with the AACE Recommended Practice for a Basis of Estimate (BoE) for Software Services this document is the Recommended Practice for the creation of a Basis of Measurements (BoM). The BoM has been defined by the NESMA (www.nesma.nl) working group with years of experience in setting up metrics program in more than 10 large Dutch and international organizations. This document is the result of the consolidation of this experience and a first step to support organizations in setting up a metrics program. Next steps will be a template for a BoM and underlying guidelines. For the BoM to become a international Recommended Practices feedback from international organizations and the academic world is very important. Based on this feedback the BoM will be further developed and provided to the international measurement community.

Software Estimation – The next level
Ton Dekkers
The Total Cost Management (TCM) Framework of the Authority for the Advancement of Cost Engineering (AACE) International is an Integrated Approach to Portfolio, Program and Project Management. It provided a structured, annotated process map that explains each practice area of the cost engineering field in the context of its relationship to the other practice areas including allied professions. In other words; it is a process for applying the skills and knowledge of cost engineering. A key feature of the TCM Framework is that it highlights and differentiates the main cost management application areas: project control and strategic asset management. In this paper the focus is on project control.

Measurement Experiences and Future Prospects from Industry (MEFPI)

ASSIST: An Integrated Measurement Tool
Burak Keser, Taylan Iyidogan, and Baris Ozkan
Integrated software measurement tool support is a key factor in developing and implementing successful measurement programs. Commercial measurement tools have limited scope for integrated measurement. Besides, measurement needs of the organizations are different and they typically require in-house measurement tool development. In this paper we introduce an integrated management tool that has been developed by a CMMI level 3 organization and that adopts GQIM approach in order to support measurement practices across the organization. The motivation of the paper is to give an insight and guidance to other software companies and researchers that seek for effective measurement integration solutions.

A Pilot Study: Opportunities for Improving Software Quality via Application of CMMI Measurement and Analysis
Esra Sahin, İlgi Keskin Kaynak, and M. Ülkü Sencan
This paper presents a study to analyze software defect detection effectiveness at different systems development test phases of the products developed in REHİS (Radar, Electronic Warfare, and Intelligence Systems) Division of ASELSAN Inc., a CMMI v1.3 Level 3 Organization, and recommends a practical guidance to process improvement efforts at CMMI Level 3 organizations for systems development. In this study “Defect Escape Ratio” measure that had already been defined at ASELSAN REHİS Division for software development process effectiveness is used to identify software items for further analysis. “Defect Detection Effectiveness” measure is introduced to improve the effectiveness analysis of the systems development verification and validation activities. A pilot study is performed for the analysis and gathered results are evaluated for guidance in the further process improvement efforts.

Measuring and Monitoring Software Maintenance Services: An Industrial Experience
Kaan Kurtel
The objective of this paper is to present a software maintenance measurement planning, performance and evaluation process based on our successful practice during the implementation of a measurement process in a leading custom software development company in Turkey. Specifically, this study focuses on the software maintenance measurement practices using the existing ISO/IEC standards, such as ISO/IEC 9126, ISO/ IEC 14598 and ISO/IEC 15939, and involves the development of software that combines the theoretical aspects of these standards with the realities of software maintenance process while developing a software application. This research addresses the issues of measuring software maintenance service quality and generating a common standard for similar systems by introducing the concept of “improved maintenance monitoring.”

Assessing Organizational Learning in IT Organizations: An Experience Report from Industry
Güven Özen, N. Alpay Karagöz, Oumout Chouseinoglou, and Semih Bilgen
With the increase in demand for higher-quality and more capable IT services, IT organizations in order to obtain competitive advantage require extensive knowledge that needs to be shared and reused among different entities within the organization. The existing IT Service Management (ITSM) mechanisms mention the importance of organizational learning (OL) and knowledge management (KM) for IT organizations. However, they do not explicitly address how OL capabilities of an IT organization can be assessed. This paper, by using an OL assessment model developed for software organizations, namely AiOLoS, shows that with the proper adjustment, the application of the model to IT organizations is feasible. We report the results of applying the model in four functional teams in an IT organization from private sector.

SMA II

How to improve project effort prediction from Functional Size measurement data

Cigdem Gencel and Charles Symons

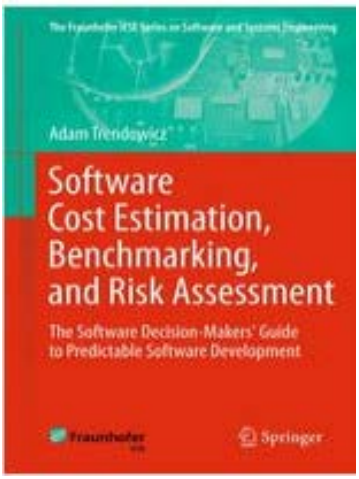
Measurements of software functional size (FS) only have any value if they correlate in a reasonable and understandable way with the effort to develop or enhance the measured software. FS measurements can then be used as a component of measurements of project productivity, as a normalization factor for measurements of software product quality, to help estimate effort for new projects. System analysis convention with UML notation as basis for COSMIC automation in CASE Tool Michal Gadomski and Jarek Swierczek In large-scale project usage of FSM method must be closely integrated with analysis process. Often, in such projects all system analysis artifacts are held in CASE tool as UML model. This model is used to build software, to manage requirements and to manage changes. So it is very important, to effective us of FSM method, to have a tool to automatic calculations of Function Point. Our presentation will cover following aspects: - system analysis UML based convention for COSMIC automation - use case activity diagram as main source of information for COSMIC automation - COSMIC automation algorithm for new requirements and update of requirements - example of implementation of COSMIC automation in Enterprise Architect CASE Tool.

Adam Trendowicz;

Software Cost Estimation, Benchmarking, and Risk Assessment - The Software Decision-Makers

Springer-Verlag, 2013, ISBN: 978-3-642-30763-8

From the Web: "Software effort estimation is a key element of software project planning and management. Yet, in industrial practice, the important role of effort estimation is often underestimated and/or misunderstood. The first part of this book introduces software effort estimation and motivates the CoBRA method within the landscape of multiplier effort estimation methods offered by the software engineering community. In particular: Chapter 1 sketches typical challenges of software development projects and explains the essential role of effort estimation in managing successful software projects. Chapter 2 addresses the question of “what is a good estimate?,” which is essential for estimation. The chapter uncovers the simplistic view on the goodness of estimation held by the research community and provides practice oriented criteria for good estimates. Chapter 3 introduces the hybrid estimation method called CoBRA, which represents an alternative to estimation methods based strictly either on expert judgment or analysis of quantitative project data. The chapter summarizes the most important benefits of the CoBRA method."



Richard Seidl und Harry Sneed:

Softwareevolution

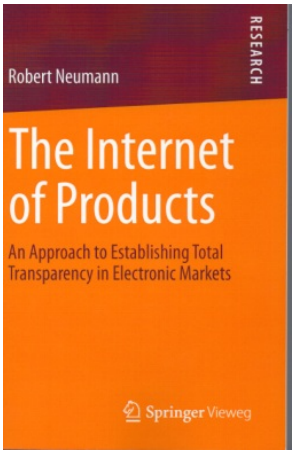
dpunkt-Verlag, 2013

Web-Beschreibung: "Softwareevolution bedeutet Wartung plus Weiterentwicklung eines bestehenden Systems. In den bestehenden Systemen steckt die akkumulierte Erfahrung eines Unternehmens und die Arbeit mehrerer Personen über viele Jahre. Das Buch unterstreicht den immensen Wert bestehender Softwaresysteme und die Notwendigkeit, sie zu bewahren. Sie müssen ständig ausgebaut und regelmäßig renoviert werden. Das alles verlangt nach anderen Techniken und Methoden als bei der Entwicklung eines neuen Systems. Die Autoren behandeln in diesem Grundlagenwerk Themen wie Wartungs- und Wiederaufbereitungsprozesse, Wiederverwendung, Softwareanalysemethoden, Reverse Engineering, Nachdokumentation und Wirtschaftlichkeitsaspekte der Softwaresystemerhaltung."

Neumann, R.:

The Internet of Products
An Approach to Establishing Total Transparency in Electronic Markets

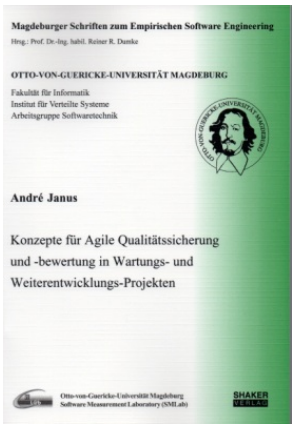
Springer Vieweg, 2013 (263 Seiten), ISBN: 978-3-658-00904-5



Janus, A.:

Konzepte für Agile Qualitätssicherung und -bewertung in Wartungs- und Weiterentwicklungs-Projekten

Shaker Verlag, 2013 (177 Seiten), ISBN: 978-3-8440-1578-2



Schmietendorf, A.; Patzer, K.:

BSOA 2012
7. Workshop Bewertungsaspekte serviceorientierter Architekturen
15. November 2012, Dresden

Shaker Verlag, Aachen, 2012 (136 Seiten), ISBN 978-3-8440-1411-2

Seit nunmehr 7 Jahren beschäftigt sich die BSOA-Initiative mit der Bewertung von serviceorientierten Architekturansätzen. Zunächst beschäftigten sich die Teilnehmer im Rahmen der ersten Workshops mit der messtechnischen Erfassung der mit einer SOA einhergehenden Ausprägungen und Merkmale bzw. den involvierten Stakeholdern. Sehr schnell wurde deutlich, dass sich eine SOA weniger auf technologische Sachverhalte bezieht als vielmehr auf die veränderte Sichtweise zur Gestaltung unternehmensweit genutzter IT-Systeme. Erwartete Vorteile einer SOA bezogen sich insbesondere auf die Zielstellungen des Informationsmanagements. In diesem Zusammenhang wurden Mehrwertpotentiale durch eine verbesserte Geschäftsprozessorientierung der IT, reduzierte Daten- und Funktionsredundanzen, verringerte Komplexitäten bei Anwendungen und Schnittstellen, verringerte Kundenbindungen oder auch die Flexibilität mit der eine benötigte IT-Lösung bereitgestellt werden kann, ausgemacht.

Aus der Vielzahl an eingereichten Beiträgen konnte durch das Programmkomitee eine anspruchsvolle Agenda zusammengestellt werden.

Büren, G.; Dumke, R.R.; Ebert, C, Münch, J.:

MetriKon 2012 - Praxis der Softwaremessung
Tagungsband des DASMA Software Metrik Kongresses
8.-9. November 2012, Stuttgart

Shaker Verlag, Aachen, 2012 (250 Seiten), ISBN 978-3-8440-1432-7

The book includes the proceedings of the MetriKon 2012 held in Stuttgart in November 2012, which constitute a collection of theoretical studies in the field of software measurement and case reports on the application of software metrics in companies and universities.

Abran et al.:

IWSM-MENSURA 2012
2012 Conference of the 22nd International Workshop
on Software Measurement and the 2012 Seventh International Conference
on Software Process and Product Measurement
(IWSM-MENSURA 2012)
17-19 October 2012, GUFPI-ISMA, Assisi, Italy

CPS Publishing Service (online), 2012

This proceedings includes the full papers and the short papers of the 2012 Conference of the 22nd International Workshop on Software Measurement (IWSM) and the 2012 Seventh International Conference on Software Process and Product Measurement (MENSURA).

IWSM MENSURA 2012

2012 Joint Conference of the 22nd International Workshop on Software Measurement and the 2012 Seventh International Conference on Software Process and Product Measurement

(IWSM-MENSURA 2012)

17-19 October 2012 – GUFPI-ISMA, Assisi, Italy

Software Measurement Involved Conferences

August 2013:

SERA 2013:
11th ACIS Conference on Software Engineering
August 16-18, 2012, Prague, Czech Republic
see: **http://acis.cps.cmich.edu/SERA2013/index.html**

AGILE 2013:
International Conference on Agile
August 5 - 9, 2013, Nashville, USA
see: **http://agile2013.agilealliance.org/**

ICGSE 2013:
8th International Conference on Global Software Engineering
August 26-29, 2013, Bari, Italy
see: **http://collab.di.uniba.it/icgse2013/**

QEST 2013:
International Conference on Quality Engineered Software and Testing
August 27 - 30, 2013, Buenos Aires, Argentina
see: **http://www.qest.org/qest2013/**

September 2013:

ASQT 2013:
Arbeitskonferenz Softwarequalität und Test
September 6.-7., 2012, Klagenfurt, Austria
see: **http://www.asqt.org/**

Euromicro SEAA 2013:
39th Software Engineering & Advanced Application Conference
September 4 - 6, 2013, Santander, Spain
see: **http://www.teisa.unican.es/dsd-seaa-2013/**

IFPUG ISMA 2013:
IFPUG ISMA 8 + ISBSG IT Confidence Conference 2013
September 29 - Ocotober 6, 2013, Rio de Janeiro, Brazil
see: **http://www.ifpug.org/**

October 2013:

ESEM 2013:

International Symposium on Empirical Software Engineering & Measurement
October 10 - 11, 2013, Baltimore, USA
see: **http://umbc.edu/eseiw2013/esem/cfp.shtml**

UKSMA 2013:

Annual UKSMA Conference - Managing your Software (through Measurement)
October , 2013, London, UK
see: **http://www.uksma.co.uk/**

IWSM-MENSURA 2013:

Common International Conference on Software Measurement
October 23-25, 2013, Ankara, Turkey
see: **http://iwsm2013.wordpress.com/**

November 2013:

BSOA 2013:

8. Workshop Bewertungsaspekte service-orientierte Architekturen
November , 2013,
see: **http://www-ivs.cs.uni-magdeburg.de/~gi-bsoa/**

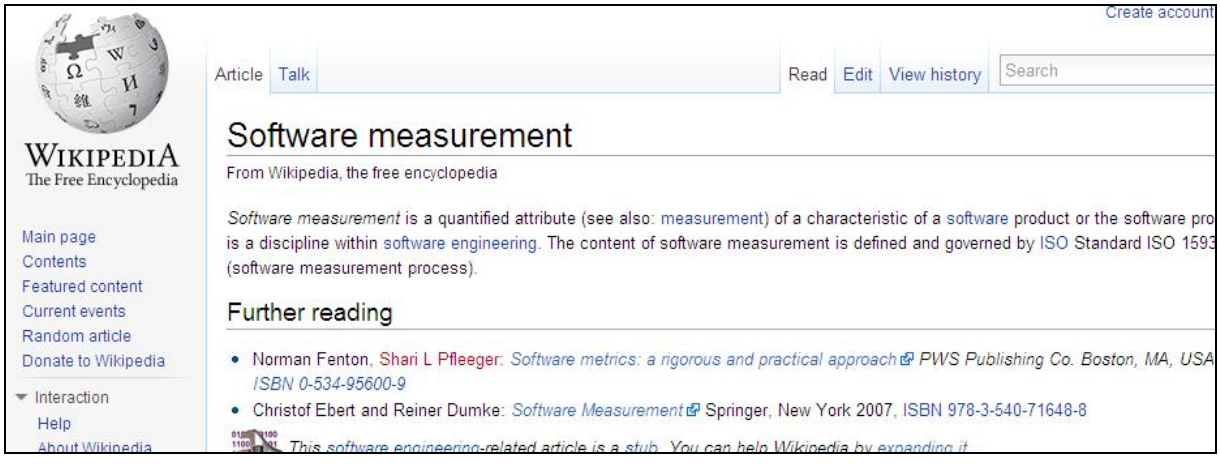
MetriKon 2013:

International Conference on Software Measurement
November 13 - 15, 2013, Kaiserslautern, Germany
see: **http://www.metrikon.de/**

see also: Conferences Link of **Luigi Buglione (**http://www.semq.eu/leng/eveprospi.htm**)**

Hinweis: unsere neue GI-Webseite ist direkt zu erreichen unter **http://fg-metriken.gi.de/**

Außerdem ist unsere Thematik im Wikipedia noch zu wenig präsentiert. Während wir eine erste Charakterisierung zum Software Measurement haben (s. u.) fehlt zur Software-Messung und -Bewertung noch jegliche Beschreibung im Wikipedia.



Hier sollte unsere Community noch stärker wirksam werden.

October 4-6

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CONTENTS

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