SEMAT

She who sees Horus and She who sees Seth

Welcome Newsletter

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Dear Reader,

SEMAT starts 2015 with all the pomp and circumstance it deserves. The year of 2014 has been very successful and fertile. This issue includes the SEMAT Chairman's brief summary of the past year and an account of major SEMAT events.

Mira Kajko-Mattsson (editor)

A Letter from the SEMAT Chairman

2014 will be remembered as the year of the end of the beginning of SEMAT. After five years since the initial Call for Action to re-found software engineering, OMG published Essence 1.0 as the standard kernel and language for software engineering methods in November 2014.

During 2014, SEMAT members developed guides and templates to ease the adoption of Essence in industries, developed courses to teach Essence in many universities, held many international and regional conferences to increase the mindshare for Essence as well as the General Theory of Software Engineering, embarked on developing tools to aid Essence users, and published articles and books explaining how to benefit from Essence. They also organized the SEMAT community into a non-profit corporation, started the certification of SEMAT-authorized training institutions, and are re-building the SEMAT website as a platform for knowledge sharing, collaboration and commerce.

While continuing on with these efforts in 2015, we will build ready-to-use practices powered by Essence, an open library and marketplace of those practices, the guides for composing those practices into project-specific methods, and case studies on corporate uses of Essence, which are all essential for spreading the use of Essence among 20 million software practitioners around the world.

SEMAT is now in a new phase to implement the grand vision that initiated the community. We need more volunteers this year than ever who can contribute to accelerating the momentum toward the SEMAT's new path-breaking approach to software engineering and to creating its success cases in industry and academia. Wish that this New Year be the best ever for all the SEMAT friends!

June Sung Park

More and More Companies are Using Essence

SEMAT has now reached its first major milestone. It has accomplished a standard kernel called Essence. This has generated great interest in applying the standard in the industry. Below, we briefly report on the recently conducted case studies and events.

Google Switzerland Explored Essence

A two-day workshop was hosted at Google Switzerland on October 22, 2014. The workshops attendees were senior software engineering manager for YouTube, Martin Landers, and his team consisting of five engineers (http://semat.org/?p=1396).

They all exercised to evaluate projects by playing progress poker. Their experience on the Essence Kernel was very positive. They felt that "playing progress poker", reviewing health indicators and defining checkpoints provided full visibility into the state and health of the projects, triggered some constructive conversations and helped crystalize some risks that the team would not otherwise be aware of.

Essence in Insurance Business

One of the worlds largest reinsurers, *Munich Re*, has applied the Essence kernel with great results (http://bit.ly/1GaJcu8). For years, the company has attempted to define the "health-ness" of projects in a uniform and concise manner. This seemed to be mission impossible due to the strong diversity of its projects. However, *Munich Re* used the Essence Kernel to define three standard project lifecycles:

❑ *Exploratory* - a very light-weight lifecycle for projects filled with uncertainty and risk.

❑ *Standard* – a scalable standard supporting teams of teams, a large number of requirements and a substantial number of increasing enhancements.

❑ *Small Enhancements* – a standard characterized by a small number of changes made to the system.

In addition to the lifecycles, the Kernel was also used as a platform to describe many of their practices.

Essence Facilitated Moving Software Development from Being a Craft to Being an Engineering Discipline – Still Being Agile Of Course

An Asian telecommunications equipment vendor successfully achieved rapid and sustainable agile transformation. Key to the success was the Essence standard, which was instrumental in moving software development from being a craft to being an engineering discipline. By using Essence, the company achieved the following:

❑ Scaled Agile to 1200 people within nine-months
❑ Decreased the delivery cycle time from 3 months to 1 month

❑ Increased automation by introducing continuous integration and delivery
❑ Reduced cross-product integration lead-time.

Where can I read about SEMAT/Essence?

Publications of 2014

The year of 2014 abounded in numerous publications ranging from books, journal articles and conference articles.

Books on Essence

The very first book from SEMAT "The Essence of Software Engineering – Applying the SEMAT Kernel" (http://amzn.to/1xtHugh) is now translated to Chinese and Spanish. Translations to Japanese, Portuguese are now on their way.

A new book "15 Fundamentals for Higher Performance in Software Development" has been written by one of the SEMAT members, Paul McMahon (http://amzn.to/1yokKlZ). The book highlights fifteen (15) fundamentals common to all successful improvement efforts where sustainable high value performance improvements are achieved. It shows how Essence can help counter the patterns that may be holding you and your organization back from the sustainable high performance you seek.

Right now, a new book titled "Software Engineering in the Systems Context," is soon to be published. IT is coedited by Bud Lawson and Ivar Jacobson with contributions from several experts in the field, for instance, Barry Bohem, Don O'Neill, Ian Sommerville.

Articles on Essence

Four papers are now published in CACM and ACMQueue and translated to several languages.

1. *The Essence of Software Engineering: The SEMAT Kernel.* This paper gives an overview of the Software Engineering Methods and Theory (SEMAT) initiative that resulted in the new Essence standard.

2. *Agile and SEMAT: Perfect Partners.* This paper describes how Agile is better when powered by Essence.

3. *Major-League SEMAT: Why should an executive care?:* A particularly important reason is in creating a learning organization, but there are several other examples of building a better, faster and happier organization.

4. *"A New Software Engineering":* A thought provoking paper motivating the move from software development as a craft to software development as an engineering discipline. It downloaded in four days more than 30,000 times at http://queue.acm.org/detail.cfm?id=2693160!!!!

This book explores the similarities and differences between Software and Systems Engineering. Several of its chapters discuss how the Essence kernel, originally developed for software engineering, can also be extended and applied for systems engineering. Finally, a long awaited User's Guide of Essence has been in the working within the Practice area of SEMAT for more than a year. It will be published in the first quarter of 2015.

Academic Publications

The year of 2015 prospered in many publications. Cecile Peraire wrote two papers describing cases in which students evaluated progress and health of teams regardless of practices selected by detecting problems and taking appropriate actions. Also, 4th SEMAT Workshop on a General Theory of Software Engineering generated twenty academic papers on how to propose, synthesize, clarify and test core, central and general theories in the software engineering domain (cf http://semat.org/?page_id=1063). In addition, nine papers were published in a special issue on general theories of software engineering in Science of Computer Programming.

Where can I learn more?

Education and Training

More and more training is being given around the world. It is provided in forms such as academic courses, academic thesis writing, industrial training and coaching in various forms of tutorials and workshops. Regarding the academia, Essence is now being taught in many universities around the world where it constitutes a tool for monitoring student projects. Some of the universities are KTH Royal Institute of Technology in Sweden, Carnegie Mellon University in USA, Pontifical Catholic University of Minas Gerais in Brazil, Wits University in South Africa, the Universities of MIPT and MESI in Russia. The Latin America Chapter has developed a one semester class on Essence in Colombia and right now it is planning a SEMAT course for the academia and the industry to be held in Panama in 2015.

Regarding the industrial training and coaching, IJI has developed a program for taking a company from initial awareness over four phases to complete roll out of Essence based practices and methods.

In 2014, eleven tutorials were provided by SEMAT members. In the spring term, as many as six game-based SEMAT tutorials were given on various events in Columbia, Venezuela and England. Also, two tutorials were given in India: (1) one on the International Conference on Software Engineering (ICSE 2014) in Hyderabad and (2) one held during the inauguration of India SEMAT Chapter in Kolkata. In the fall term, as many as three tutorials took place, (1) one in Brazil at the Software Engineering Symposium of Minas Gerais, (2) one on the International Conference on Software Engineering Advances in Nice and (3) one in India.

Ivar Jacobson International (IJI) has been authorized by the SEMAT executive committee to provide training and certification in SEMAT related products. This is now done in Europe, USA and China.

Where can I learn more – Tutorials

More and more tutorials are being given around the world. In 2014, eleven tutorials were provided by SEMAT members. In the spring term, as many as six game-based SEMAT tutorials were given on various events in Columbia, Venezuela and England. Also, two tutorials were given in India: (1) one on the International Conference on Software Engineering (ICSE 2014) in Hyderabad and (2) one held during the inauguration of India SEMAT Chapter in Kolkata. In the fall term, as many as three tutorials took place, (1) one in Brazil at the Software Engineering Symposium of Minas Gerais, (2) one on the International Conference on Software Engineering Advances in Nice and (3) one in India. In this issue, we report on the last two tutorials.

Tutorial in India

Professor June Sung Park visited India to give an Essence tutorial for several institutions: India Chapter of SEMAT and Indian Statistical Institute (ISI) in Kolkata, and International Institute of Information Technology (IIIT-B) and Sasken Communication Technologies in Bangalore. Attendants from ISI, IIIT-B and Sasken all showed excitement to find Essence as a new way to improve software engineering. Faculty members at IIIT-B who advise the Indian government with respect to software competency standards and e-government policies saw the possibility of incorporating Essence in those government initiatives.

June Sung Park

Tutorial at ICSEA 2014 in Nice

On Oct. 12, 2014, Mira Kajko-Mattsson gave a tutorial on how one can support software development method with Essence on the International Conference Software Engineering Advances (ICSEA 2014).

During the tutorial, Mira demonstrated how the Essence Kernel and its concepts might be used in practice. The material used was collaboratively developed by the Education Area and can be acquired on request.

The tutorial was part of the ICSEA conference and no upfront registration was required. No more than twenty attendees were expected due to the fact that the tutorial was held one day before the conference started. To our big surprise, more than forty people participated in the tutorial. As can be seen on the photos, there was not much space left for playing with the cards. The atmosphere was very positive and full of expectations. Many of the participants expressed their great interest in using Essence in their companies and universities.

Area Report

User Guide Track

In order to consolidate the results of the *Education* and *Practice Areas* and make more rapid progress, the area members temporarily merged into one group pooling their efforts over the last quarter of 2014. The strategy worked! We made great progress over the last quarter of the year finishing off two key scenarios, completing a new set of abbreviations for the alpha state checklists, developing the new CARD set including alpha description cards, alpha state cards and competency cards. The group also worked through a number of issues that had led to a great set of frequently asked questions and answers to them. We strongly believe that this will help Essence novices gain a good foundation in how to apply the model. The group is now finishing up modifications to a Quick Reference Guide and is planning its final release sprint for January, 2015 with a goal of releasing the first version of the Essence User Guide in February, 2015.

Paul McMahon, Ian Spence, Cecile Peraire and Mira Kajko-Mattsson

Events

Paul E. McMahon spoke to a group of Computer Science students at Binghamton University in November, 2014. In this talk, Paul gave a number of concrete examples of how practitioners can use Essence to help their personal and team performance. You can catch highlights of Part I of Paul's talk on You tube at http://youtu.be/uDELOAAFVlA.

The SEMAT Chapters Around the World

The relay for success of the SEMAT Chapters has now started for real around the world. In the year of 2014, the chapters found their feet by becoming more and more successful and confident in their roles of SEMAT national members. Some chapters showed very high engagement and their contribution was pulsating with life, vigor and abundance in various fruitful achievements. Overall the diversity of their results proliferated ranging from organizing meetings, conferences, workshops, tutorials, writing and translating articles and books to doing research, extending SEMAT to system engineering and arranging keynote speeches.

Several chapters organized events such as conferences, workshops and symposia in their respective countries. Their main focus was to promote Essence. In all of them, the SEMAT members took active part in disseminating knowledge about Essence by either giving keynote speeches, tutorials and/or various types of presentations.

All the non-English speaking chapters were very active in translating the Essence book and various articles. The Essence book is now translated to Chinese and Spanish. Translations to Japanese, Portuguese are now on their way.

Research in validating Essence has successfully started. More and more chapters have promoted the SEMAT-related MSc theses, and right now, the research is getting extended to higher academic levels. Recently, KAIST has received research grants from the South Korean government. Some of these grants are used for developing tools supporting the use of Essence in software engineering projects.

Some of the chapters were and still are very active in promoting SEMAT to other countries. Recently, Belorussia joined. Also, a new chapter was created, the India Chapter, whose inauguration took place in June 2014.

Korea Chapter

The Korea Chapter of SEMAT held the Second Annual Conference on Essence on November 13, 2014 in Seoul, Korea. One hundred and fifteen people signed up for the conference. Five presentations were given including an introduction to Essence, a case study on the application of Essence to IT consulting, a report on the open source project to develop an Essence support tool, a plan to provide the Essence support tool as a cloud service, and a report on the Essence training programs and plans by the Korea Software Technology Association. Many major companies in Korea attended the conference including Samsung, LG, Hyundai, KB, KT and participated in the panel discussion session showing deep interest in Essence.

June Sung Park

China Chapter

The *China Chapter* has recently initiated partnership with *IQ Alliance* with the purpose of improving the quality of software and services in China. The ESSENCE Kernel was selected for promoting the IQ plans, where I-plan stands for Innovation of Software Engineering and Q-plan stands for Quality Assurance for software product and services via a series of related standards adoption and evolution. Both groups have jointly started organizing visits to top 35 software companies in China with one of the goals of disseminating knowledge about SEMAT and promoting its implementation.

Two such visits were already paid in December of 2014. The executives of IQ Alliance and SEMAT China Chapter visited *VMware China* and *Shenhua IT Group*, an IT sub-group of the biggest coal and oil energy company in China. They mainly focused on discussing the implementation of the IQ-plans in 2015. Another two/three visits are already planned to take place in February/March in 2015. Therefore, we expect to make good progress in promoting Essence promotion in the Chinese software industry in China in 2015.

Chen Zhong

South African Chapter

South Africa is in the midst of summer and hence it is time for the summer holidays. On 21 December, we experienced the summer solstice and enjoyed the longest day of the year. So, we are now in what we call the "silly season" when many business operations slow down or even close from mid-December to mid-January and citizens flock to the coast in their hundreds of thousands.

The members of the South African Chapter are definitely worth it. During 2014, they have made big progress in achieving the following:

- A workshop titled: "Using SEMAT Essence for Project Health Check and Action Planning" where delegates were introduced to SEMAT and got to apply Essence in the context of a software development case study.
- Collaboration with some international initiatives in the Practice, Education and Community areas.
- Featuring SEMAT and Essence at a few events during the Fak'ugesi Digital Festival in Johannesburg, including the Agile Africa Conference.
- Including SEMAT and Essence in the syllabi of various courses at Wits University.
- Presenting an annual overview of SEMAT to a group of students studying towards the "Master of Information Technology" at the University of Pretoria.
- SEMAT "made an appearance" at this year's FedCSIS conference in Poland when Barry Myburgh presented the paper "Situational Software Engineering: Complex Adaptive Responses of Software Development Teams".

The South African SEMAT remains active through collaboration with some international activities in the Practice, Education and Community areas. It will review its plans and position in the New Year. We end with warm African greetings to all for 2015!

Barry Myburgh

Russia Chapter

The Russia Chapter was very productive in 2014 and filled with many various events. Some of them are:

- A translation of the article J.S.Park, I.Jacobson, B. Mayburg, P.Johnson "*SEMAT: Yesterday, Today and Tomorrow*" was published in Software Engineering Journal, #11, 2014.

- Eight SRC Members prepared ESSENCE Glossary (version 1.0)

- B.Pozin published an article titled "SEMAT — Software Engineering Method and Theory. About what, what for and who needs it".

A few Russian Universities went on training students in SEMAT. Among them, the Universities of MIPT and MESI were the leaders in the field. The first Russian MSc thesis on ESSENCE was defended by E. Gorbunova.

There were also a few seminars held about SEMAT in Moscow, for instance, at Russian INCOSE Chapter at MESI. There, Boris Pozin presented an article "Proposal for application and evolution of ESSENCE Kernel for Software of Mission critical Systems Life Cycle processes".

SRC started preparations for Fourth Conference on "Actual Problems of System and Software Engineering". The conference will be held at MIEM High School of Economics in Moscow in May 2015. A SEMAT Workshop is planned to be held by the conference.

Boris Pozin

Japan Chapter

In Japan Chapter, some members are now translating SEMAT articles and books including "The Essence of Software Engineering" into Japanese. Moreover on Nov 28, we had a seminar on a case study of utilizing SEMAT Kernel alpha and checklists for monitoring and evaluating project status.

Hironori Washizaki

Latin American Chapter

 2014 was a wonderful year for SEMAT in Latin America. The Latin American Software Engineering Symposium embraced SEMAT, the Spanish translation of the Essence book was released, and the first full-semester SEMAT course was held in the National University of Colombia. Several other activities were reported in the 2014 newsletters. However, the work on SEMAT is still moving and some other challenges are in progress for the Latin American Chapter. We are planning a SEMAT course for the Academy and the Industry to be held in Panama, and we are working on new translations of the SEMAT material. The second edition of the SEMAT course will be held again in Fall 2015 and some SEMAT-related M.Sc. thesis will be defended in the new year.

We are more than proud of the work made in 2014, but the challenges we will meet in 2015 give us more energy to spread the SEMAT message in our region.

Happy New Year to all our subscribers! We hope 2015 will be at least so productive than 2014. We are working on it!

Carlos Mario Zapata Jaramillo