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CSC reports successful use of COSMIC in India

CSC, one of the world's largest IT services companies, cites '**ease of use, estimation accuracy and client appreciation**' as the major benefits of adopting the COSMIC method, which it introduced in 2006

Dr. Somasundaram Muralidharan, director of Quality and Technical Training in India, said that CSC, a long-time user of IFPUG FPA, is now using COSMIC for development, enhancement and maintenance projects for sizing Java and main-frame software.

COSMIC, along with IFPUG FPA, is mandated for use in one of the CSC business groups. Already over 30 projects use the method with many professionals able to interpret it properly and

consistently. Project managers and SMEs find COSMIC an easier sizing technique.

Over 300 professionals in CSC have been trained in the method in India and 100 senior professionals have gained certification. The policy of encouraging people to become

certified aims to ensure broad use of the method. CSC has more than 15 trainers on COSMIC at four locations in India.

Dr Muralidharan praised the COSMIC manual as providing '**clear, well-defined principles and rules which are easy to understand and implement**'. He would however like to see 'more case studies and experience summaries shared across the community'.

CSC uses the method for developing prediction models at the project level as well as at the organization level, resulting in '**the estimated effort being very close to the actual effort**'. Some CSC clients have also expressed appreciation of the method.

CSC works in many industries including financial services, healthcare, automotive, energy, manufacturing and the public sector. Globally, it has 92,000 employees, of which 16,000 are in India. 2009 revenue was \$16.0 billion. In 2010, CSC was recognized by FORTUNE magazine as one of the World's Most Admired Companies for IT Services.

IEEE Study Group on a 'Requirements Definition Language' includes COSMIC

The IEEE of the USA, probably the world's leading professional body for all aspects of computing, has set up a study group to define a Requirements Definition Language that will enable automatic measurement of functional sizes according to the IFPUG and COSMIC methods.

We are particularly pleased that the Study Group decided to include the COSMIC method within its scope without any reference to us. This is a good indication that some people 'out there' think it is important.

The Study Group operates 'virtually' over the web. Alain Abran,

Luigi Buglione and Gerhard Ungerer have joined this group.

This development complements work already underway in universities in Canada, France, Poland and Spain to automate COSMIC sizing from requirements specified in UML in commercial CASE tools.

Renault France adopts COSMIC for embedded software

Use of COSMIC to construct size/cost models for embedded software in the auto industry

At the IWSM Conference in Amsterdam last November, Sophie Stern of Renault presented a paper on her company's experience of using the COSMIC method to help control the price/performance of its many suppliers of 'Electronic Control Units' (ECU's).

Many functions of a modern car such as Multimedia, Connectivity with the outside world, Advanced Driving Assist Systems, etc are controlled by ECU's which are hardware devices containing embedded software.

ECU's account for an important and increasing cost of developing a car. Hence Renault's embedded software group worked on metrics to control the cost of the software content of an ECU.

Now this group measures the functional size of software in ECU's and uses the information to construct size/cost models. These are used by Purchasing and Cost Analysis departments to predict the cost of new requirements and to compare them with suppliers' prices.

This sounds straightforward, but to achieve the benefits now being obtained, the software group has had to work with Purchasing and Supplier staff to gain their understanding and to change processes.

For more, download Sophie Stern's paper from www.cosmicon.com

Renault is one of the world's largest car and truck manufacturers, producing over 2.3 million units with revenues of over 33 Billion Euros (2009).

COSMIC to size 'Non-Functional' Requirements of Space Systems?

'Non-functional' requirements in Space Systems can be sized using COSMIC

The European Space Agency and IEEE publish standards for real-time and embedded software in space systems which define various 'non-functional' requirements, such as for interfaces, maintainability, etc. In fact these requirements although described as 'non-functional' are in many cases implemented in software.

For example the 'interface' requirements

define what is needed to allow:

- a human user to interact with the system
- communication via particular network protocols, for example
- communication with other software that is not within the system to be designed e.g. operating system, files, database management system, or other applications software
- support for the hardware and the specific hardware

configuration by the system (i.e. logical structure, physical address, and the expected behavior).

Khalid Al-Sarayreh and Alain Abran have started to produce a series of papers on how to size these various 'non-functional' requirements standards.

For more, contact kahlid.al-sarayreh.1@ens.etsmtl.ca

COSMIC sizing for Agile methods

Who needs 'Story Points'?

Sylvie Trudel and Luigi Buglione have started to develop a Guideline for the use of the COSMIC method for sizing and estimating in software projects following 'agile' life-cycles.

In the interim, Grant Rule has published a short note on 'Sizing Agile Stories using COSMIC'. His simple approach avoids the use of non-standard 'Story Points', thus enabling proper use

of standard functional size measurements for performance measurement and estimating. Find this paper on www.cosmicon.com, under Downloads.

COSMIC makes great progress in many areas

COSMIC Progress:

- *Benchmark Data*
- *Web Services*
- *Translations*
- *Users*
- *Guidelines*
- *Tools*

In the nine months since the last issue of 'COSMIC News', we have made tremendous progress in providing all the support facilities and services needed by COSMIC method users.

Benchmarking,
We now have comprehensive benchmark data (productivity, speed, etc) obtained from COSMIC-measured new development and enhancement projects submitted to the International Software Benchmarking Standards Group.

Visit www.isbsg.org to get the report 'The Performance of Real-Time, Infrastructure & Business Applications Software Projects: an Analysis of COSMIC-measured Projects in the ISBSG Database'.

The raw data on over 350 projects is also available which you can analyse for your own purposes.

The 'COSMICON' website is now fully operational with much more information available than hitherto. DO VISIT www.cosmicon.com.

Translations.
Translations of the Measurement Manual, are now available in Arabic, Chinese, Dutch, French, Japanese and Spanish. We expect translations into German, Italian, Polish and Turkish to become available in 2010.

Method Users
On the 'COSMICON' website you will find a list of 40 major organizations from 17 countries in the private and public sectors that use the method to size software in the business application and real-time domain. N.B. half these users are software houses. (Do they know something that their customers have not yet recognised?)

Guidelines. The purpose of a Guideline is to supplement the principles and rules in the Measurement Manual with additional guidance and examples for specific domains.

In 2009 we published a 'Guideline on sizing Data Warehouse Software.' Now we have published a 'Guideline on sizing SOA Software'. Work has started on Guidelines for sizing Real-time System Software and for using COSMIC in an Agile environment. For more see www.cosmicon.com.

Note that for all these Guidelines on how to apply the method to measure software from specific domains, we do not need any new Principles or Rules. The underlying measurement method is stable and hence 'future-proof'.

Tools Simple tools for recording and reporting COSMIC measurements are now available on 'cosmicon'.

Forthcoming Books featuring COSMIC

'**Software Metrics and Software Metrology**' by Alain Abran will be published mid-year.

'**COSMIC Function Points: Theory and Advanced Practices**' by Reiner Dumke and Alain Abran, to be published Sept 25th (re-prints of key conference and research papers.)

'**Project Estimation Handbook**' A new edition to be published by the ISBSG by mid-September, contains a new chapter and case study on COSMIC sizing. See www.isbsg.org

Free Offer of MeterIT-COSMIC to students

MeterIT-COSMIC, a refined tool for capturing COSMIC size measurements is offered free-of-charge to students for the duration of their academic projects. For information, (supervisors, please) contact sales@telmaco.co.uk.

The COSMIC organization

The COSMIC organization is structured into two different bodies: the International Advisory Committee (IAC) of 22 members from 15 countries and the

Measurement Practices Committee (MPC).

The COSMICON web-site, www.cosmicon.com, is kept up to date and describes the COSMIC

organization. It also provides complete background data on functional size measurement, FSM methods, etc.

Further Information

If you have any questions or require further information on COSMIC, please contact your national representative on the COSMIC International Advisory Committee (see

www.cosmicon.com, IAC). If you would like to publish an article in this newsletter relating your experience with COSMIC, please forward a draft to the editor via cr.symons@btinternet.com