



## **In this Edition:**

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*Why COSMIC is best for Agile*

*and more...*

*and ...  
Allan Albrect,  
RIP*

*New COSMIC-related industrial & academic research*

## ***Growing international recognition for the COSMIC Method***

- The **International Standard** for the COSMIC software sizing method (ISO/IEC 19761:2011) has been updated to align with version 3.0.1 of the method published by COSMIC in 2009. It is obtainable from [www.iso.org](http://www.iso.org)
  - **The US Government Accountability Office** has published a "Cost Estimating and Assessment Guide: Best Practices for Developing and Managing Capital Program Costs". The COSMIC method is listed as one of the best practices for software sizing in its chapter on 'Software Cost Estimating'. The Guide is obtainable from <http://www.gao.gov/new.items/d093sp.pdf>
  - A Committee of **British Members of Parliament** is conducting an enquiry into Government procurement of software systems and has called for evidence. We submitted a statement recommending a) use of best practices for software sizing and project estimating (using COSMIC), b) accumulating measurements in a central repository to aid organizational learning in the public sector and c) for processes to control project scope and the price/performance of suppliers (e.g. the 'Southern Scope' process). These recommendations were supported by the **British Computer Society** in its submission to this Committee.
  - The COSMIC method is making progress in **Latin America**. Ecuador and Mexico are now represented on the COSMIC International Advisory Council. **Mexico** has published the method as a National Standard. The 'COSMIC Size Users' group on LinkedIn includes members from Argentina, Brazil, Colombia and Mexico (see more below).
  - The COSMIC SIG of the GUFPI/ISMA (**Italian Software Metrics Association**) has published its translation of the Measurement Manual ([www.cosmicon.com/portal/dl.asp](http://www.cosmicon.com/portal/dl.asp)) and is working on translating the Method Overview document and the Business Application Guideline.
- Work has also re-started on a **German** translation of the Measurement Manual.

## ***IWSM 2010 Papers available for download on 'Cosmicon'***

- All COSMIC-related papers from the International Workshop on Software Measurement, held in Stuttgart, Germany, November 2010, are now available for download on the cosmicon portal.
- Topics include:
- use of the COSMIC method in agile projects; for sizing non-functional requirements; estimating web-based application developments; evaluating the causes of variability of measurements; functional size measurement of business processes; estimating required software physical memory size and automating the size measurement of software in embedded systems; assessing the quality of functional user requirements documentation; on function point/COSMIC Convertibility; on sizing of SOA components.
  - Several COSMIC-related papers from other conferences and publications have also been loaded to the cosmicon portal. These papers demonstrate an impressively wide range of uses of the method and the interests of researchers and practitioners in discovering new uses and benefits.

## ***New books that discuss the COSMIC Method***

*New COSMIC-  
related books*

**'Software Metrics and Software Metrology'** by Alain Abran  
<http://eu.wiley.com/WileyCDA/WileyTitle/productCd-0470597208.html>

Chapters in Part 3 of this book describe key concepts for the design of a software measure that have been used in practice to design a software measurement method conformant to the

ISO criteria for a measurement method of the functional size of the software, i.e. the COSMIC method – ISO/IEC 19761.

**'COSMIC Function Points: Theory and Advanced Practices'**, edited by Reiner Dumke and Alain Abran  
<http://www.crcpress.com/product/isbn/9781439844861>

This book contains 22 chapters on the COSMIC method from various perspectives and will be of interest to practitioners, managers, students and researchers. The contributing authors come from both industry and academia.

## ***Wanted: more project data extend and refine COSMIC Benchmarks***

*Help extend and  
refine COSMIC  
benchmarks  
by submitting  
your project  
data to the  
ISBSG*

We urge COSMIC method users to submit more project data (size, effort, duration, technology, software domain, etc) to the ISBSG (International Software Benchmarking Standards Group) repository at [www.isbsg.org](http://www.isbsg.org).

Comprehensive benchmark data from over 350 COSMIC-measured projects that developed and enhanced business application, real-time and infrastructure component software are already available in a report from the ISBSG. We hope during 2011 to collect much more project data so as to be able to update, refine and extend the benchmarks.

Submission of data is easy. Simply download the COSMIC Concise Data Collection Questionnaire from the ISBSG site and fill in one CDCQ per project. (This takes little time as much of the required data will be common across related projects.)

Submitted data is treated completely anonymously by the ISBSG. Your project data will be loaded to the ISBSG repository but will never be revealed in any way that can be related to your organization. Following data submission, the ISBSG will send you a report on each individual project and also, if you submit data on five or more projects, a free copy of the existing COSMIC /ISBSG benchmark report.

Users of the COSMIC method have all benefited from its free availability. This is an opportunity to 'give something back' to the COSMIC community by contributing to the improvement of benchmark data – and to get new insights on software project performance from the benchmark data.

New benchmarking initiatives will be announced shortly, so even if you can't submit data in the immediate future, but have measurements in progress right now, please let us know your intent, so that we can include you in further information mailing. Contact [lucasantillo@cosmicon.com](mailto:lucasantillo@cosmicon.com) or Harold van Heeringen at [hvh@cosmicon.com](mailto:hvh@cosmicon.com).

## ***Calls for Papers***

*Conferences of  
interest to  
COSMIC Users*

COSMIC is joining with the UK Software Metrics Association to hold an **'International Conference on Software Metrics and Estimating'** in London on October 27/28<sup>th</sup>. The Call for Papers is available from: [www.uk sma.co.uk](http://www.uk sma.co.uk),

and from: [www.cosmicon.com/porta/l/dl.asp](http://www.cosmicon.com/porta/l/dl.asp).

If you wish to submit a paper for this conference, please submit at least an abstract by May 9<sup>th</sup> – see instructions in the CFP.

The **2011 IWSM/Mensura Conference** will be held in Nara, Japan on November 3/4<sup>th</sup>. The Call for Papers is available from [www.mensura.wordpress.com](http://www.mensura.wordpress.com)

## Why COSMIC is the best method for measuring Agile 'User Stories'

	<p>A key element of agile methods is the ability to measure a size of individual 'User Stories', i.e. the statements of the work to be completed in each iteration, or 'scrum', for the purposes of estimating and prioritizing iterations.</p>	<p>But the size contribution of the files referenced in a User Story will normally far exceed the size of the EP and will re-occur in many User Stories. So the rules for including the size of the files have to be ignored at this level, though they must somehow be taken into account when measuring the project backlog and at the total software level. It soon gets complicated!</p>	<p>no upper size limit. This one size scale can be used for a User Story, the backlog, and a whole release, right up to the size of a whole piece of software. The size at any level can be obtained by simply adding together the sizes of the relevant User Stories, as needed. The scale is an objective, technology-independent, measure of functionality. So measurements of velocity (in COSMIC FP/day) can be compared across projects and calibrated at the organizational level. The size of a minor change to a User Story, affecting a single data movement will be measured as one CFP, so small enhancements and rework can be accurately measured. Applying the COSMIC method for sizing, estimating and controlling agile projects could not be simpler.</p>
<i>Feeling</i>	<p>The scale used of 'Story Points' may be OK if a single project team learns to use this approach consistently across multiple iterations and even across multiple projects. Normally a team needs to calibrate the so-called 'velocity' (Story Points per day) in the first iterations of each new project.</p>	<p>The second problem is that an EP can only have a limited size range, e.g. from 3 FP for the simplest process to 7 FP for the most complex. Compare this with the size range of Story Points which may follow a Fibonacci sequence (1, 2, 3, 5, 8, 13, 21, etc), recognising the wide range of sizes that can occur in practice. (Incidentally, the Fibonacci scale is just one of several size scales that have been suggested for Story Points, none of which are supported by any real evidence).</p>	
<i>stiff?</i>			
<i>Get</i>	<p>The limitation of this approach is obviously that the size scale is subjective and specific to each team or even each project. It is really a measure of effort, not of software size. Therefore it is difficult, if not impossible, to compare velocity across different projects, teams or organizations and use the measurements for any form of benchmarking.</p>		
<i>Agile</i>			
<i>with</i>			<p>As an aside, it is said that 'productivity' is a not a welcome word amongst agile practitioners. Why? The COSMIC method should be used for organizational learning to help improve estimating and performance. Performance measurements should never be used to reward or punish individual or project performance. If using agile methods helps improve performance over conventional project management methods as much as claimed, why not use objective measures to demonstrate the improvement?</p>
<i>COSMIC</i>	<p>So how about using <b>traditional function points</b>? There are three main problems, the first of which is that it is practically impossible to apply the IFPUG method to size a User Story without breaking the rules. A User Story typically includes only a single elementary process (EP). However, according to the standard IFPUG rules, the size of a User Story must include the sizes of the logical files (ILF and EIF) referenced by the EP.</p>	<p>The third problem is that when sizing re-work, the IFPUG method can only measure a whole User Story that must be changed. The size of a small change to a User Story, affecting only a small part of it, cannot be measured.</p> <p>Contrast this with using the <b>COSMIC</b> sizing method. The size of a User Story can be measured on a continuous ('ratio') scale from a minimum of 2 COSMIC FP upwards, with</p>	<p>For more on the use of COSMIC in agile projects, see the various papers at <a href="http://www.cosmicon.com/portal/dl.asp">www.cosmicon.com/portal/dl.asp</a>.</p>

### ***New Guidelines issued and under development***

*New Guidelines*

A new Guideline on 'Assuring the Accuracy for Measurements' is now available from [www.cosmicon.com/portal/dl.asp](http://www.cosmicon.com/portal/dl.asp). Chapters cover steps to prevent errors in measurements, defect detection and auditing,

and a method for assigning a quality rating to a measurement

Work is now progressing well on Guidelines for using COSMIC for sizing real-time applications, for use in Agile projects and

for project estimating.

If you are interested to contribute example or case study material to the Guideline on sizing real-time applications, please contact Bernard Londeix (joint Editor) at [bl@cosmicon.com](mailto:bl@cosmicon.com)

### ***'COSMIC Size Users' Group on LinkedIn***

*LinkedIn to COSMIC*

Arising from problems of the Forum of the cosmicon site being swamped by spam 'members', a COSMIC Size Users group has been started on LinkedIn.

This is an open Forum where you can raise questions about the method, report progress and such-like and receive announcements about the method and its publications.

There are now over 200 Members from 29 countries. Why not join? Go to: <http://linkd.in/COSMICsizeusers>

### ***COSMIC Method Certification Examinations***

*Get certified*

In principle, provided the rules are strictly followed, any individual or organization can organize a COSMIC method certification examination. For how to do this, go to:

<http://www.cosmicon.com/runexaminationV3.asp>  
The next public session of the COSMIC 'Foundations' exam (previously known as the 'Entry Level' exam) will be held in Rome, Italy,

June 8<sup>th</sup>, during the MAIN & GUFPI-ISMA conference. Anyone interested in sitting the exam, in English or Italian, should contact: [segreteria@gufpi.org](mailto:segreteria@gufpi.org) by May 15<sup>th</sup>

### ***The COSMIC Constitution***

*Formally...*

COSMIC has for the first time published a formal Constitution covering its aims and organization. This is available for download from [www.cosmicon.com/organizationV3.asp](http://www.cosmicon.com/organizationV3.asp)

### ***Allan Albrecht***

*A genuine pioneer and a really nice guy*

Sadly, we learned that Allan Albrecht, who first conceived the idea of 'Function Points', died late last year. In the 1970's, Allan was working in IBM on how to measure software project productivity and to improve project estimating, at a time when counting Source Lines of Code was the only accepted way of sizing software. His lateral thinking gave birth to whole new approaches to tackling these problems. The COSMIC method would not be where it is today without his pioneering work.

### ***Further Information***

If you have any questions or require further information on the COSMIC method, please contact your national representative on the COSMIC International Advisory Council, via <http://www.cosmicon.com/iacV3.asp>.

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](mailto:cr.symons@btinternet.com)