

# Atlanta SPIN

Software & Systems Process Improvement Network

The Atlanta SPINnaker

February 2009

Volume 4, Issue 2



## Titanic CM Disasters

Mark Pellegrini, Research Engineer, Georgia Tech Research Institute



Mark Pellegrini

Our speaker for January was Mr. Mark Pellegrini, a Research Engineer with the Georgia Tech Research Institute's (GTRI) Electronic Systems Laboratory (ELSYS) at the Georgia Institute of Technology. Mark reviewed some of the projects that he has worked on recently at GTRI.

Mark started his presentation by referring to Configuration Management (CM) as the “Rodney Dangerfield” of software development – it gets no respect. The balance of the presentation made a strong case for why this is a very dangerous view to have. He started with a simplified view of a typical CM tool, including the concepts of check in, check out and baselining.

Mark made the case for the “worst thing that you can do” in the CM arena – the inability to reproduce a released product. This is because products are typically developed by starting with a released version and then making improvements or changes to it. Trying to reproduce a product and finding out that you have components missing can set your project

back catastrophically. The core solution is to have a very complete and stable build and release process. ALL of the components of a product that you have created must be stored in a stable and rock solid CM system.

Another problem is that some components used in your product may not be in your CM library. Mark referred to these as “rogue files.” There are two sources for those files. One source is the machine on which the product is built. That machine may have files on it that are not in your CM system and exist only on that particular machine. It may have files on it that are a part of the operating system (a new service pack) or even another product (a modified version of a .DLL) and your product is dependant on those specific versions of those files. You could build those rogue files into your release. To make matters worse, those files could have a negative effect (compatibility issues) on your client’s machine once your product is installed. Since they are not in your CM system, the only way you have a hope of finding them is if the machine on which the product was built never goes away. Has anyone ever lost a hard drive? It’s bad enough when it contains files that are properly backed up, but what if those files are not part of a backup? You may have created the catastrophic scenario.

Mark continued by recalling the story of Captain Edward Smith who took the Titanic

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### Next Meeting: February 18, 2009

#### Ten Commandments of Testing Presented by Donna Simmons

Time: 6:00 PM—8:30 PM  
 Location: La Quinta Inn & Suites,  
 6260 Peachtree-Dunwoody Road,  
 Atlanta, GA 30328

## Boardwalk — Scott Banks, Membership Director



1. **(Q) What experience do you have in the software development lifecycle or technology?** (A) I am currently a Research Engineer with Georgia Tech Research Institute's (GTRI) Electronic Systems Laboratory (ELSYS). I have a Bachelor of Electrical Engineering degree from Stevens Institute of Technology. I have spent over 20 years in system testing, integration, flight testing, quality assurance and process improvement. Prior to joining GTRI, I was instrumental in system testing and development process improvements at TransCore and Northrop Grumman. I am currently working on my Masters of Systems Engineering.
2. **(Q) What process improvement related activities have you personally been involved with?** (A) Right out of school I got involved with TQM at Grumman Aircraft Systems. At TransCore I was involved with documenting development processes and planning training and implementation in preparation for a CMM audit. I taught our internal software testing classes.

Currently I am involved with our CMM to CMMI transition and improving our current processes.

3. **(Q) How did you get involved in Atlanta SPIN?** (A) I heard about SPIN back in the 1998 timeframe when SEI was getting ready to hold the SEPG conference here in Atlanta. I've attended meetings since then and have been a board member for over three years.
4. **(Q) What benefits have you personally derived from participation in SPIN?** (A) There are two things that I always try and achieve at each SPIN gathering. One, I always try and meet someone new at each meeting. It's a great opportunity to network and practice those networking skills. Two, I'm always looking to learn some new process idea. Even if it's not directly applicable to me personally, there's always something new and interesting to take away from the presentations.
5. **(Q) What do you hope to achieve by participating on the Atlanta SPIN Board?** (A) Being on the Membership Committee I am helping investigate and implement new ideas that will make Atlanta SPIN Membership more beneficial to our members while continuing to provide and improve those activities that our members tell us they like. Our SPIN chapter is continually recognized as innovative and well organized. I'd like to keep it that way!

## Titanic CM Disasters

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on its maiden voyage across the Atlantic (and, along the way, to the bottom). The lesson is that having unquestioned confidence in anything, including our CM practices, is dangerous. Risks that you don't know about are the ones that will cause your demise. The biggest risk may be that CM systems are run by humans who are always prone to human frailties. Beyond human mistakes are the other errors that we are all familiar with. Hardware failures and software incompatibilities (those upgrades to software that the manufacturer is more than happy to install on your machine behind you back).

Mark had some mitigations and solutions for these problems. One solution is frequent checking in of working files. Another is storing a copy of the resultant binary file in the CM system as part of the baseline. Documenting the build process, including step by step instructions on what to do, where to get files, what to do with them, etc., is another critical component of the baseline. The baseline is not just the code!

Mark introduced us to an interesting new concept called the "Bus Number" of a project. It is the number of people on the project that need to be hit by a bus before your project is

in trouble. The smaller the number the more risk you have. Make sure that your project's Bus Number is as high as possible by ensuring that critical information about the project is documented. Don't risk the loss of information by failing to document things.

Finally, what can you do in practice to remove risks from your CM processes? Some key practices are to use an independent auditing process to test your build process using a new person, not on the project, to build the product. This will test out the adequacy and completeness of your build process. Also, use clean machines, loaded from an uncontaminated load of known releases of operating system, compiler software, etc. Mark recommends products similar to Ghost or the use of virtual machines to accomplish this. Checking the newly built product against the copy of the binary stored in your baseline will show you whether your build process is reproducible. Another good practice is to put all your tools in your CM tool. This includes compilers, utility programs, etc. This will assure that all the tools needed to rebuild the product are available when needed.

Mark concluded with Q&A, Mark's presentation provided the SPIN audience multiple real-life scenarios and solutions to prevent CM from being the "1-Bus" weak point in almost any size organization.

## Special Offer For The Upcoming International Requirements Engineering Conference

The International *Requirements Engineering Conference* is sponsored by the IEEE and is the premier academic and industrial event in the field of Requirements Engineering. The conference provides a forum for researchers, educators, and industrial practitioners where they present and discuss recent innovations, trends, experiences, and concerns in the field of requirements engineering, which includes systems analysis, software process improvement, software product-line engineering, architectural analysis, *etc.* Many of the participants influence the development methodologies and tools that are used in their own organizations as well as client organizations. Requirements engineering is increasingly becoming a dominant activity during systems development—with increased awareness for the

need to capture requirements that reflect the stakeholders' desires and needs. For more information, including the Call for Paper & Proposals, see [www.re09.org](http://www.re09.org).

The 17<sup>th</sup> international event ([www.re09.org](http://www.re09.org)) will be held in the vibrant and conveniently located Atlanta, GA (USA) **Atlanta 31 August – 4 September 2009**. Atlanta SPIN members who have or will participate in at least three Atlanta SPIN general meetings will receive the reduced “IEEE/ACM member discount”.

Any RE'09 sponsorship gained through Atlanta SPIN will receive 15% off for 2-star (\$4k) and above. See Sponsorship link on [www.re09.org](http://www.re09.org).

## Highlights/Information

**The Winter 2009 edition of the SPIN Newsletter:**  
<http://www.sei.cmu.edu/collaborating/spins/newsletter.html>

In this edition, SPIN This features an interview with Santosh Kumar Mishra, the new coordinator of the Bangalore, India SPIN. ***The SPIN Spotlight highlights the work of the Atlanta SPIN, which has really become a model SPIN.*** Lastly, the Feature Column is authored by Entinex founder and SEI Visiting Scientist, Hillel Glazer. Hillel's article is “*A Marriage of Equals: “Balance” does not have to be a trade-off” and shows how CMMI and Agile methods can work together!*”

**SEI Webinar Session: Tuesday, February 10, 2009**  
9:30 am - 12:30 pm EST

CMMI Version 1.3 Product Suite by Mike Konrad and Rusty Young

To register or for more information on this and other SEI Webinars go to: <http://www.sei.cmu.edu/collaborating/spins/webinars.html>

## Other Conferences and Events

### SEPG™ 2009 NORTH AMERICA

PERFORMANCE AT A HIGHER LEVEL ↗ March 23-26 2009

Known as the most influential CMMI conference anywhere, SEPGSM North America 2009 has evolved to become the premier learning and networking event that brings together industry leading organizations who are putting CMMI, People CMM, TSP, PSP, Agile, Six Sigma, ITIL and ISO standards, and other performance improvement methods together to perform at a higher level. Join the global SEPG community in San Jose March 23 to 26 and learn how CMMI-based performance improvement through process and workforce capability can be one of your best weapons in a troubling economy. For more information go to: <http://www.sei.cmu.edu/sepqna/2009/>

### Business Process Innovation

**Executive Conference — March 10th, 2009**  
**Southern Polytechnic State University (SPSU)**  
**Marietta Georgia**

Jointly sponsored by The Atlanta SPIN, SPSU, The Atlanta Chapter of Project Management International (PMI), The Atlanta Chapter of International Institute of Business Analysis, and the Institute for Enterprise and Innovation. For more information go to: [http://www.businessprocessinnovation.org/Home\\_Page.html](http://www.businessprocessinnovation.org/Home_Page.html)

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### They Make Our Efforts Possible!

**Platinum SPONSORS****Gold SPONSORS****Other SPIN Contributors****And our many Contributing Members!****Process Improvement Sites:****Software Engineering Information Repository**

<http://seir.sei.cmu.edu>, has over 30,000 registered users and is a forum used to contribute and exchange information about software engineering improvement activities, including CMMI.

**The CMMI Process Improvement Yahoo! discussion group**

[http://groups.yahoo.com/group/cmmi\\_process\\_improvement/](http://groups.yahoo.com/group/cmmi_process_improvement/) is a forum used to contribute and exchange ideas about CMMI-based improvement.

**BSCW Shared Workspace** <https://bscw.sei.cmu.edu/pub/bscw.cgi/0/79783> is a forum used to contribute and exchange CMMI-related materials.

Information courtesy of SEI Customer Relations. Find out more about SEI Membership online at [www.sei.cmu.edu/membership](http://www.sei.cmu.edu/membership) [customer-relations@sei.cmu.edu](mailto:customer-relations@sei.cmu.edu)

**About Atlanta SPIN, Incorporated**

[www.atlantaspin.org](http://www.atlantaspin.org)

The Atlanta SPIN organization was chartered in 1994. This group has been a force for software process improvement in the Atlanta area since then. The organization has a growing membership list that currently numbers 850+ members. The group typically meets every third Wednesday of the month. Our meetings typically attract audiences of 40 – 50 people. These meetings provide a forum for like-minded people, interested in learning from others and sharing their own experiences. There is time allowed before and after the meeting for networking among the participants, including a review from the audience of any job openings that are available. The Board, through its work with Sponsors, ensures that food and drinks are also available at no cost to the membership. Atlanta SPIN is a 501C3 non-profit corporation. Your contributions may be tax deductible and qualify for corporate matching contributions from your company.