SEER Solutions: Estimation News from Galorath Incorporated

Included in this issue:

Calculate Your Confidence Level Using SEER

by David DeWitt, Senior Software Consultant at Galorath Incorporated
Welcome to the final table of the World Series of Poker. You've survived five grueling days of Texas Hold-Em poker with over five thousand players - and are now face to face (heads-up) against the chip leader. You look at your two cards as the dealer lays out the community cards (the flop). Your opponent looks at you, smiles, and calmly says, "I'm All-In" – What do you do?

You're only a few weeks away from your performance review and your boss calls you into her office. She asks, "If I assign you to lead a special project, can you finish it in ten months?" You've heard about this project and know it will probably take at least a year to finish. What do you do?

Whether you're one "call" away from millions of dollars or one "Okay" away from certain failure - the answer to both is the same – you do nothing until you calculate your probability of success and then decide if it is within your risk range.

[Click here](http://www.galorath.com/DirectContent/newsletter/calc_confid.pdf) (http://www.galorath.com/DirectContent/newsletter/calc_confid.pdf) to read the complete article.

Early Software Project Estimation with Use Case Points

High confidence cost, schedule, and risk estimation of software intensive projects is directly related to the ability to confidently estimate the size of software components. With high confidence size estimates, SEER for Software has been demonstrated to provide excellent estimates for project cost and schedule along with an ability to quantify project risks. In all projects, it is important to develop early project

estimates when software components have not been defined and in fact the actual solution architecture may still have significant unresolved design issues. Size estimates in the classical Logical Source Lines of Code (LSLOC) have been demonstrated to provide effective size estimates for SEER for Software when the project is defined. However, at early project stages the size estimates either do not exist or have been defined with a wide range from least possible to maximum projected size. As a result there have been continuing efforts to define a more consistent early project size metric that would result in higher confidence cost and schedule estimates for initial project planning.

Click here (http://www.galorath.com/DirectContent/newsletter/use_case_points.pdf) to read the complete article.

DoD CIO Approves Open Source Software.. But Beware of Low Cost Assumptions
by Dan Galorath, CEO of Galorath Incorporated

The DoD CIO's office clarified its position on open source software in a DoD open source memorandum issued by David M. Wennergren, deputy CIO for the DoD on October 16, 2009.

The memo states "positive aspects of OSS [open source software]" should be considered when evaluating its DoD use including auditable code, ability to modify, less reliance on a particular vendor, and no licensing costs.

While this is good, it does not necessarily mean low costs. While the lack of licensing costs are certainly a benefit and there can be some cost savings, once the open source software is modified for DoD usage it is no longer in the public domain. That means a contractor or another developer will need to take ownership. The software will need to be reverse engineered, verified for security issues, probably more thoroughly tested under a controlled environment and other significant costs. Appropriate design documentation and other documents will need to be built in many cases, and of course test cases will need to be built. Bottom line: The development and maintenance cost of government modified open source software could be expensive - perhaps cheaper than new, but expensive none the less. And when something goes wrong the contractor will expect to be paid to debug / fix the modified open source.

A quick run through rework guidance from Galorath shows up to:

 - Up to 80% of the design of new software for modified open source
 - Up To 64% of the testing of new software for modified open source
The percentages don't include new functionality - just getting the open source into shape for mission critical applications
Could be better or worse depending on the amount of modification and the criticality of the application. This means that it could be around 54% of developing new just to be able to use the software, not counting the customization itself.

Click here (http://www.galorath.com/wp/dod-cio-approves-open-source-software-but-beware-of-low-cost-assumptions.php) to read the complete article.

Sizing FPGA Effort
by Sam Sanchez, Technical Director - Electronics at Galorath Incorporated

Field Programmable Gated Arrays are continuing to absorb more and more of the electronic board capabilities. In a few years, FPGA devices included more embedded features like processors and a lot more logic capability. As these devices have grown, so has the need to accurately capture their costs separate from the board. In order to properly cost these devices, the first thing that we must wrestle with is how to properly size the designs. In the past, we have seen folks use number of gates similar to the

way ASICs are sized, but this just isn't standardized enough within the FPGA world to allow accurate and consistent sizing across the various vendors or technologies. An alternate way to do a first order approximation of the design is with VHDL although this also has its challenges. Another way is through the use of Logic Cells or Logic Elements. Although, the definition of a LC/LE varies across different technology nodes, it lends itself to very good sizing estimates. We currently use this sizing method within SEER IC. No matter what estimation process is used, there must also be a way to give credit for past efforts. Similar to the way that software folks handle software COTs, the IC industry uses the term Intellectual Property or simply IP logic. Increased use of well designed IP in a design will reduce the amount of design effort. Testing and verification still is a significant task since these efforts tend to cover the entire design. Being able to settle on a standard sizing process will go along way in being able to properly capture FPGA costs.

Did You Know?

Did you know there is a New ModelCenter Wrapper for SEER for Hardware?

Phoenix Integration's ModelCenter is a leading visual environment for process integration to support your entire design team. With PHX ModelCenter, you can quickly create an engineering process and then perform complex design exploration techniques to find the best design. In collaboration with Phoenix, a new SEER for Hardware wrapper for ModelCenter has been created which will permit cost estimates to be dynamically obtained against design alternatives. The full parameter list of a SEER for Hardware project is now available for selection within ModelCenter, in addition to nearly all estimated values.

Did you know there is a Tool for Importing WBSs and For Creating O&S Scenarios In SEER for Hardware?

A tool has been created for importing data from design repositories in the form of work breakdown structures, of any length. This tool not only handles the import, it also reads the descriptions of each imported element and attempts to automatically assign relevant knowledge base settings. Assignments are stored in a user-accessible "dictionary" which learns over time and also permits the user to add additional characterizations.

Another significant feature of this tool are automated assignment of operations and support (O&S) scenarios. An O&S scenario, along with a set of custom events, labor rates and other information, may be stored for use with multiple hardware elements. Operations and support scenarios can rely upon globally defined information. For example, replacement of certain items may occur at a globally defined instance such as "home port" or "teardown". Labor rates also may be globally defined. Once specified, all this information parameterizes a SEER for Hardware project.

Did you know that inflation was added to the SEER-IT 1.1.10 maintenance release? Similar to SEER for Hardware, Electronics & Systems (SEER-H), SEER-IT uses tables of yearly inflation rates for both labor and material costs. Open the Then Year Cost by Fiscal Year report to view your project in then year dollars.

Did you know that you can rename a project after it has been saved in the SEER Enterprise Database? In SEER-DB, a database administrator can simply edit the project name in the project_definition table.

Did you know that you can add your company logo to a set of SEER Publish Reports? If you have Crystal Reports, you can customize several of the Publish Reports templates. If you do not have Crystal Reports, let us know and we can swap the SEER logo with your company logo.

Discover our Developer's Blog

Want to get the latest information on what is going on with SEER products? Looking for tips and tricks? The blog includes helpful information on recent updates, product announcements, installation issues as well as ideas and insight on how to best use the SEER estimating models. We have been seeding our developers' blog with all sorts of useful information. Recent posts include:

• Using Windows 7?
• Calibrating COTS Estimates
• How can a function point count be related to historical data?

Check it out at: http://www.galorath.com/index.php/services/support/

Keep your topic suggestions coming!

Dan on Estimating Blog

Visit Dan Galorath on Estimating (http://www.galorath.com/wp/), our other must-read blog with something for everyone.

See one of his entries below:

Estimate Review Checklists

I was asked today for a SEER-SEM 10 Step estimate review checklist. Of course there are checklists in my book:

- 105 – 107; Step Seven: Estimate Validation and Review
- 108 – 109; Estimate Review Activities
- 117 – 128; Estimate Process Questionnaire
- 432 – 434; SEER-SEM Estimation Process Step 7: Review, Verify and Validate Estimate
- And a blog that includes some of the checklists

    There are also a number of other useful checklists:
- Bob Park, while with the SEI, developed this checklist. It remains useful even today.
- Galorath has an estimate assessment document based on a prerelease of the 10 Step book.
- Galorath has an additional document available to SEER users upon request.

Subscribe to both blogs and receive the latest posts directly via email.

Receive the blogs via an RSS feed. When you subscribe to the feed, it is added to your Common Feed List. Updated information from the feed is automatically downloaded to your computer and can be viewed in Internet Explorer and other programs.

Preview from the Development Lab

CostIQ Beta

We are nearing the beta release of CostIQ, a revolutionary new way of creating SEER projects based on the requirements for a new system, rather than on detailed technical information. CostIQ can also be used to efficiently exploit the many SEER estimates you've already created. Its benefits include:

• Faster Project Workups in All SEER Models

- Access To Expert Knowledge
- More Uniformity In Estimating Practice
- Better-Specified Projects
- Complete Projects From Very Basic Requirements

Contact your Galorath representative for a chance to participate in this beta release.

In the News
Read about Galorath in the news. See our most recent Press Releases (http://www.galorath.com/index.php/news/).

Upcoming SEER Workshops

SEER for Software (SEER-SEM) – Core Workshop
  Nov.16-18, 2009 (El Segundo CA)

To register for a SEER public workshop, click here (http://www.galorath.com/index.php/services/register-workshop/).

Private SEER Workshops: The majority of SEER training takes place at private workshops arranged at customer locations. If you would like to bring SEER training to your organization's location, please contact us (info@galorath.com?subject=SEER Private Workshop Information) for details.

Consult our Archived SEER Webinars

Have you missed a SEER Webinar, our no-cost, web-based briefings hosted by one of our SEER experts? We've added several recent Webinars to our online archives. To access them, you'll need to register for our Corporate Library (http://www.galorath.com/index.php/library/). Here are just a few of the new Webinars you can view:

SEER IC Pro Intro
This webinar provides a top level view of SEER IC PRO, its general architecture and integration into SEER H. It also delineates the various types of technology process flows (ASIC/FPGA) that are included in the model in order to demonstrate the estimation scope. There is also mention of some common uses of the model to estimate FPGA prototypes and conduct hardware versus software tradeoffs.

To view, visit: http://www.galorath.com/flash_presentations/seer_ic_intro/

What Would You Like to Estimate Today? SEER Estimate by Comparison
With SEER Estimate by Comparison, good estimates based on intuition are only a few comparisons away. By stepping through a series of intuitive comparisons to better-known items, SEER Estimate by Comparison provides a credible basis for accurately determining either quantitative or qualitative values for both SEER and non-SEER parameters.

In a portfolio analysis exercise, we will demonstrate how multiple software projects' sizes and value can be simultaneously estimated.

To view, visit: http://www.galorath.com/flash_presentations/est_compare/

Please forward this newsletter to your colleagues!