

## LCSIS, Artifact Management for Rocket Scientists and Everyone Else

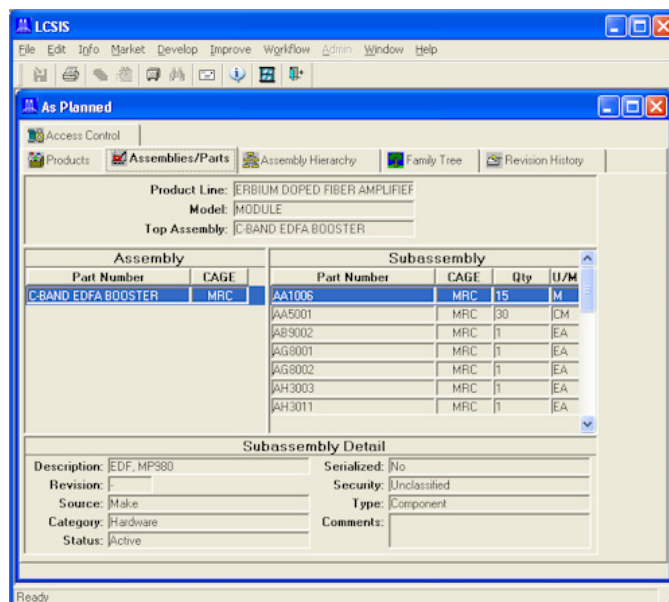
By Bob Aiello - February 2005

What could be more fun than having the job of CM Architect for a team building the Trident Submarine? No doubt that the Software Configuration and Release Management processes for such a huge effort would be well defined and highly disciplined. Throw in managing the detailed engineering requirements for all of the hardware design and construction and to be honest I would start to get a little nervous that one wrong sized bolt might result in firing a nuclear missile in the wrong direction. CM for building submarines could be difficult a task indeed. Visible Systems Corporation, located in Lexington Massachusetts has been in this space for some time and their Life Cycle Support Information System or LCSIS (pronounced "LEXUS") adds the structure and process necessary to manage engineering efforts large and small. For this review I had the chance to test drive the LCSIS product, which was not as exciting as driving a nuclear submarine, but still impressed me a great deal.

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### Product Data Management

Managing all of the artifacts required to build engineering products can be quite complicated. LCSIS provides a robust database structure that covers every imaginable function necessary to make such engineering efforts a success. Product Identification includes Bills of Materials with the necessary distinction between "As-Planned" and "As-Built", parts catalogs, parts documentation and cross referencing, product serialization and vendor/customer information. The structure of the information tracked is extremely comprehensive and intuitive. Throughout my evaluation it was clear that this product was designed by Engineers for Engineers and based upon many years of hands-on experience with Product Data Management (PDM).



With over 20 years of experience in mission critical system development including the Department of Defense, Stan Mazuroski is an expert in PDM systems. He is also the VP of Product Development at Visible Systems. Stan explained for this review, "LCSIS is at the heart of an effective CM process to provide prompt and accurate management of product data. LCSIS manages detailed bills of material, design/as-planned, as-built, and as-modified baselines and provides for the control, implementation, status accounting, storage/retrieval, and the reproduction of baseline technical data (including drawings)".

One of the most important usage models is the vaulting of documents relating to Product Design. CAD/CAM artifacts, video and audio clips can also be vaulted along with planning documents, financial reports and environmental impact statements. Readers of my column, Behaviorally Speaking, know that there is a real need for understanding the "soft skills" required to get members of an organization to change their behavior in a positive way. This is a common problem in small to midsized Software and Engineering organizations that are successful and facing significant growing pains. Organizational Change can be very challenging in the real world and LCSIS brings a solid usage model to help make this happen. Customers considering

# Product Review

purchasing this product should certainly consider the added value that LCSIS brings from a Process Improvement/ Reengineering perspective.

## Process Improvement

Throughout my evaluation of this product it was clear that customers are getting much more than a well written database. The overall product development lifecycle is managed through LCSIS including the all important management of Testing, Quality Assurance and the establishment of baselines to accurately track production releases. More importantly, the customer is getting a product developed by people who are experts in Product Management. Both Military Standards and ISO Standards are implicitly designed into the product. With LCSIS the customer is getting a strong set of working guidelines on how the entire Product Development effort must be carried out in order to be successful. Initially, the task of designing engineering products seems extremely complex and challenging. In reviewing LCSIS one gets the sense that using this tool brings along a well thought out workflow process created from years of successful experience. LCSIS has a lot value beyond a good database and workflow system!

## Architecture

Stan Mazuroski also explained that, "LCSIS was released in its commercial variant in 2003 and has as its core architecture a database that has been in the marketplace for over 20 years." LCSIS has a friendly user interface, written in PowerBuilder (version 9) and uses ADO/ODBC compliant databases (e.g. SQL Server, Oracle, SQL Anywhere or MySQL). The client interface runs on Windows and the backend database can also run Unix (e.g. Sun Solaris) or Linux (e.g. Redhat, Caldera, SuSe, Turbolinux or Mandrake).

## User Roles and Entitlements

This product has well defined user roles and entitlements to allow the administrator full control on which users can perform various required tasks. These large engineering efforts have complex requirements for many roles including Product and Project Managers, engineers, QA, testers and other members of the product development team.

## Platforms supported

LCSIS client front-end is written in PowerBuilder 9 and can ship with SQL Anywhere instead of SQL Server. When running LCSIS with a PowerBuilder client and SQL Anywhere database server, the following UNIX server platforms are supported:

- Sun Solaris Sparc 7.0, 8.0, or 9.0
- Linux kernel 2.4.18 on SMP, 2.4.2 on UP (Uni-Processor)
- glibc 2.1.x, 2.3.2-27.9
- ncurses 5.2
- Red Hat 7.3, 8.0, 9.0, or Advanced Server 2.1
- SuSE 7.2, 7.3, 8.0, or 8.1
- Caldera 3.1
- TurboLinux 8.0
- Mandrake 8.0, or 8.1

## Conclusion

The LCSIS PDM product can be of great value to engineering firms coordinating large or small projects of varying complexities. Today's world events are certainly bringing considerable growth in the defense field as well as products related to Homeland Security. Medical, Scientific and other engineering efforts obviously have similar needs and follow many of the same standards. In all of these efforts quality and security are essential. Product/Project Managers should certainly have LCSIS on their short list of products to consider when deciding how to effectively manage their projects in a cost effective and successful way.

### Cost:

LCSIS is sold as a package of 10 floating licenses with a maintenance contract included for one year at a price of \$ 25,000.US. Technical support and initial set-up consultation is included. Smaller and larger license configurations and training scenarios are available on request.

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