

Critical Link Uses GrammaTech to Ensure High Reliability of DSP Software

With a diverse code base and numerous service offerings, engineering services company Critical Link needs tools that are flexible. For the automated static analysis component of their company-wide quality control processes, they chose GrammaTech CodeSonar®.



Industry: Electronics Product Development

Headquarters: Syracuse, NY

Website: www.criticallink.com

Challenge: Apply static analysis to software company-wide.

Solution: GrammaTech CodeSonar.

Benefits:

- Deep analysis with useful results.
- Developer enthusiasm.

At the heart of Critical Link's offerings lies the company's MityDSP digital signal processor platform, along with two camera models based on the MityDSP. These are deployed today in a wide range of applications, including DNA sequencing, unattended surveillance, and vibration measurement. Customers select the level of engineering support that best suits their needs: anything from "last mile" configurable digital processing platforms to full-service bespoke development.

Critical Link's flexible approach means that its software engineering activities are many and varied. At any given time there are dozens of projects undergoing work. Some are small, others are huge. Some software is designed to be embedded into Critical Link hardware, some to be part of PC applications. In addition, some code has external origins: Critical Link regularly undertakes projects that involve working with clients' code, whether troubleshooting, integrating, or updating.

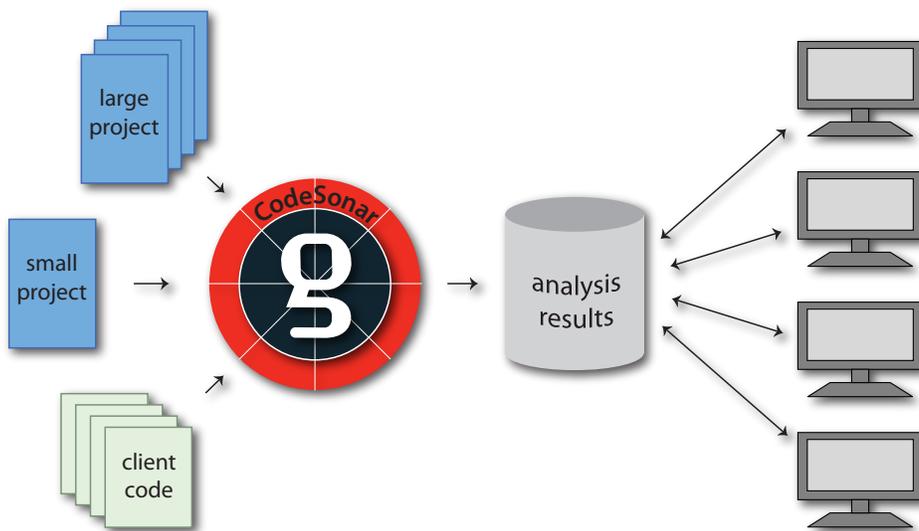
"Critical Link has been looking to increase our software quality while adding to overall efficiency," explains Vice President Tom Catalino. Increasing software quality consistently across such a wide range of projects

is a significant commitment that brings its own challenges. Tools must be powerful enough to support Critical Link's standards, yet versatile enough to handle all the variations in software size and type. When Critical Link decided to add static analysis muscle to their development cycle, they chose GrammaTech CodeSonar.

As Critical Link staff became more familiar with CodeSonar and its potential, they requested additional analysis options. GrammaTech delivered an enhancement to provide those options. Catalino explains: "We wanted to treat certain constructs with extreme caution. GrammaTech gave us an extra degree of control so we could instruct the CodeSonar analysis to do just that. GrammaTech's technical-support engineers are very knowledgeable and responsive."

CodeSonar also won the developer approval that every software project manager knows is critical to the success of any initiative. "At first, I was skeptical" acknowledges senior embedded programmer Dave Stehlik, "but once I looked at the results, I realized that this was a truly deep analysis and was able to catch issues that I could miss. In looking at the results, it was clear that if these issues had appeared in the field, I had no idea how long it would have taken to find them without CodeSonar."

From the outset, CodeSonar has provided deeper static analysis than Critical Link staff have experienced with other static analysis tools. Developers can use analysis results to immediately improve code, rather than waiting for review or test phases. There are direct benefits to the bottom line, notes Catalino. "By using CodeSonar, the team is able to save time and money while maintaining the level of assurance our customers expect".



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Senior Embedded
Programmer

About Critical Link

Critical Link is an electronics product development company providing off-the-shelf building blocks and services to a broad range of industries, including scientific instrumentation, manufacturing instrumentation, test & measurement, communications, and defense.

About GrammaTech and CodeSonar

GrammaTech manufactures CodeSonar, a static-analysis tool that performs whole-program, interprocedural analysis on source code. CodeSonar identifies programming bugs that can result in system crashes, memory corruption, and other serious problems. The tool is used worldwide by startups, Fortune 500 companies, educational institutions, and government agencies. GrammaTech’s staff includes thirteen PhD-level experts in programming languages and program analysis.