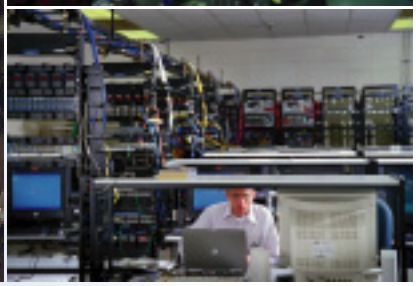

INL's value-added IV&V identifies potential risk and impacts and recommends mitigation strategies.

Independent Verification & Validation

Providing premier service to a broad range of customers

A proven leader

Idaho National Engineering Laboratory (INL) is a proven leader in the Independent Verification and Validation (IV&V) of processes and products generated throughout a systemís design lifecycle, including the traditional waterfall, spiral and rapid application development methodologies. We are proud of our record of providing unbiased, professional support to our customers, presenting assistance in hardware and software design, and system infrastructure, requirements trace, implementation, testing, deployment and maintenance. The Department of Energy has identified INL as a premier systems engineering laboratory.

Value-Added IV&V

Customers receive independent, professional support from INL,which as a DOE national laboratory, provides knowledgeable and impartial assessment. Our role as an honest broker ensures an assessment agent that is not directly involved in the system's development, is not influenced by designers or developers, and provides the customer with objective opinions. In addition, INL works on a cost recovery basis, eliminating profit as an assessment influence.

We tailor the traditional IV&V approach to a methodology that fits our customer's specific needs. We call this "Value-Added IV&V."

Traditional IV&V methodology is a technical review of processes and products with the key purpose of identifying deficiencies.

We have extended the traditional IV&V role beyond the identification of deficiencies. We identify potential risks and impacts, and recommend mitigation strategies. Our value added approach not only tests final products, but also evaluates intermediate products. This earlier identification saves the customer money on the end product and provides a valuable management tool for addressing problems before they occur.

Recent Projects

INL provided Yucca Mountain Project (YMP) contractor, Bechtel-SAIC (BSC) with IV&V assessments of more than 500 legacy software codes that are used for analyses and subsequent evaluations.

Former Director of the Office of Civilian Radioactive Waste Management, Margaret Chu recognized our IV&V efforts in supporting the YMP mission through our independent assessments and subsequent recommendations for acceptance and/or remediation of legacy software. Our evaluations of the legacy software are used by the

Continued on back

National Security

INL
Idaho National Laboratory

INL has conducted IV&V assessments of legacy software codes.

For more information

Carl J. Wharton
(208) 526-2619
Carl.Wharton@inl.gov

Gary L.Thinnes
(208) 526-9298
Gary.Thinnes@inl.gov

INL is a U.S. Department of Energy national laboratory operated by Battelle Energy Alliance

Continued from front

Nuclear Regulatory Commission in evaluating the YMP License Application for the storage of highly radioactive nuclear waste.

INL has provided the National Guard Bureau's Reserve Component Automation System Project Management Office with IV&V support over an eight-year period. We actively participated as members of the Source Selection Evaluation Board and as expert valuators during the competitive demonstration. We evaluated operating systems, communications, databases, integrated logistics support, site surveys, infrastructure, system and software design, and deployment. We have also served other government agencies and military and civilian customers.

INL engineers provide a variety of IV&V services to government, military and civilian customers.

Technical Expertise

We have technical expertise in a broad range of scientific and engineering disciplines to evaluate developments in conceptual design, prototyping development, production, testing and support, including independent laboratory testing. We evaluate feasibility, performance, system interfaces and system impacts through concept development. We ensure requirements have technical integrity, are clear, complete, consistent and testable, and do not conflict with other program constraints.

We assess designs to ensure that requirements are appropriately satisfied, and monitor development activities to ensure compliance. We examine vendor documentation for process requirements, and document reviews are conducted and produced for each phase of the system lifecycle. Finally, we provide independent testing to validate configuration integrity of the entire system infrastructure.

Software Application

This IV&V approach has been used in software environments that employ rapid applications development, spiral development, rapid prototyping and the traditional waterfall lifecycle. We have performed software IV&V on projects implementing an object-oriented approach for software development and reuse as well as the structured design approach to software development. We perform our IV&V in a active, up-front atmosphere that promotes teamwork and customer interaction. This style eliminates unexpected disclosures in reports, which can often impact project schedules and generate an adversarial relationship with the developers.

Summary

INL's IV&V approach is an effective management tool that has the proven benefits of identifying problems early in the lifecycle and facilitating project communication and coordination while ensuring that the customer's requirements are satisfied.