

Client	Oil and Gas
Profile	Client is the world's second largest oil and gas exploration, production, refining, and distribution company. In particular, Client makes significant investment in developing its own proprietary applications software to assist in exploration, including mathematical manipulation of terabytes of seismic and other data, visualization of that data, geological and geophysical interpretation of the data, risk management, and decision support systems.
Challenge	Convert research of mathematical algorithms and multi-disciplinary collaboration into software components to be used worldwide by exploration (geologists, geophysicists, petro physicists) and integrate into existing exploration software. Ongoing maintenance and upgrading of existing applications to meet evolving research developments.
Solution (What Bluware Did)	<p>Multiple iterations (one for each application) of complete software development cycle, including:</p> <p>Requirements: Worked with researchers to turn lab results and visions into focused product requirements. Collaborated with other development teams for integration with other applications.</p> <p>Design and analysis: Included formal object oriented design employing UML, design patterns, etc., GUI mockups and product prototypes.</p> <p>Implementation: Employed agile development methodology to deliver components on four to eight week cycles.</p> <p>Testing and documentation: Created a suite of tests (unit, destructive, performance, integration, GUI, regression) and maintained test coverage statistics. Provided all user and developer documentation and training materials.</p> <p>Integration and Deployment: Integrated all software components with other teams and deployed a single global suite of exploration software.</p> <p>Maintenance, enhancement, and general support of these applications.</p>
Benefits	<p>Turnkey exploration applications that reduced cost over development by Client staff.</p> <p>New and improved tools to find potential hydrocarbons in increasingly hostile and complex fields.</p> <p>Increased confidence and risk mitigation through application of new, independent data sources.</p>
Consultants	Team involving project manager, a systems architect, two geophysicists, three mathematical algorithm specialists, a technical writer, a test engineer, a configuration/build manager, two visualization specialists, and five general software engineers.
Type	Turnkey scientific applications software primarily on large workstations and computational clusters with terabyte datasets.
Project Length	Continuous. Multiple projects (in excess of 14) to develop individual applications within overall project.
Tools/Technologies Utilized	Sun Solaris, Linux, Windows (2000 and Vista), C++, STL, Boost, Python, FORTRAN, Qt (3 and 4), Motif, OpenGL, OpenInventor, CVS and SVN, Jira, MS Project, UML, design patterns, agile development methodology