

## ERIC A. GRAY

Senior Database Architect



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### Educational Background

B.S., Computer Science, Sonoma State University

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### Professional Experience

Mr. Gray joined STI in 2000. His primary focus is database design and development, project management, and software engineering. His special interest and expertise lie in systems analysis, data modeling, ETL (Extract Transform Load) systems, and scalable database architectures.

Mr. Gray has designed and implemented a number of software and database applications for STI. He is currently enhancing a Data Management System (DMS) that processes air quality and meteorological data received from monitoring sites operated by the San Francisco Bay Area and South Coast Air Quality Management Districts and the Shanghai, China, Environmental Monitoring Center. The system supports automated and manual quality control (QC) checks and uses real-time instrument reliability data to verify ambient pollution readings. The DMS also serves as the core of the AIRNow system which was reengineered for the U.S. Environmental Protection Agency (EPA) and AIRNow-International in 2009.

Mr. Gray's ongoing work involves software development for the EPA's AIRNow project. He designed and developed the system architecture, the system's Oracle database, and the automatic data processing and QC software. The system has been running since summer 2001 and has successfully processed hundreds of millions of data records. A major upgrade of AIRNow was completed in 2009 and involved the migration of the Oracle 10g-based system to SQL Server 2005 to take advantage of DMS development and to save significant costs in maintenance and licensing.

Mr. Gray's previous work at STI involved the design and development of the multi-billion record Air Quality Archive (AQA) Oracle database. The AQA supported multiple 2006-2008 EPA and other agency projects such as the EPA Multipollutant Trends Report; EPA, Southeast States Air Resources Managers (SESARM), and ABT Toxics Data Analysis Support; and the EPA Photochemical Assessment Monitoring Stations (PAMS) Network Assessment. The system provided extensive automatic QC and created a variety of summarized data sets to support data analysis.

Mr. Gray's other projects at STI include the Air Quality Exchange Challenge Grant (AQDE) program in 2007-2009; Mr. Gray set up an Exchange Network Node at STI to process AQDE XML data from New York, New Jersey, and Delaware. In 2006 and 2007, Mr. Gray developed AIRNow Gateway, which provided text files and web services to the AIRNow community and air quality researchers. Since 2003, Mr. Gray has also provided extensive database and software support for STI's various ozone and particulate matter forecasting systems including automated tools based on regression and Classification and Regression Trees (CARTs) for several cities.

Prior to his work at STI, Mr. Gray worked at HealthVision, Inc., as a Project Manager for the Physician Assistant program, which involved automation, classification, and analysis of a patient's clinical notes using Microsoft Visual Basic, C++, and SQL Server. As a member of HealthVision's System Architecture Group, he helped determine the C++ Object Oriented Design (OOD) and Object Oriented Programming (OOP) standards to be used in HealthVision's products.

Mr. Gray was Senior Software Engineer for Project Data System's U.S. Department of Housing and Urban Development (HUD) application software. He was a Consulting Software Engineer for Parker Hannifin Compumotor, Inc., designing the technical support staff's Customer Service and Problem Tracking System. He also provided staff training in C++, OOP, and OOD techniques.