

INGEST's design dramatically improves speed and overall data capacity, enabling real-time, multi-user display of the conditions affecting the testing grounds.

ABERDEEN PROVING GROUND

The US Army team at Aberdeen Proving Ground, needed a faster and more accurate system for collecting and reporting crucial environmental data

"Weather and terrain have more impact on battle than any other physical factor, including weapons, equipment and supplies," said Col. Gerald R. Svoboda, US Army Intelligence Center and School. Delivered on time and within budget, Mind Over Machines provided the US Army a strategic advantage in weapons testing - and another tool to ensure the safety of the U.S. soldiers and civilians conducting critical weapons testing.

Aberdeen Proving Ground (APG) conducts weapons testing, research and training. One of APG's key analyses includes the examination of how various weather conditions affect the weapon's performance and the safety of humans in the vicinity of testing. The analysis process includes the gathering of data by APG Atmospheric Effects Team meteorologists, manual analysis and reporting. The findings of the analysis are used by testing teams to predict the safety of the tests. With this monitoring and prediction capability, the Army can conduct safe tests - and this saves lives.

Getting this data right can be a matter of life and death in a testing zone.

APG's existing sensor data system limited the quality and timeliness of the data reporting. The APG Atmospheric Effects Team relied on four disparate, sensor-based systems to gather this data. The various systems were limited in the

OVERVIEW

Industry
Military

Location
Aberdeen, MD

Size
\$1 Billion budget

Need
Get better data, faster

Solution
A unified system, aggregating and serving real-time, multi-point data

Results
An enhanced decision support system that contributes to the safety of U.S. soldiers and testing teams

Services
Requirements Assessment
Software and Database Design and Development
User Experience Design
Data Quality

WHEN RESULTS MATTER

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types of data they captured, and could not share information, which created an unacceptable delay between collection, analysis and reporting. APG also shouldered a great maintenance burden to sustain sensor data system operations. The data system did not meet new DoD security guidelines, nor were the respective databases interoperable. The Department of Defense directed the APG to upgrade its technology.

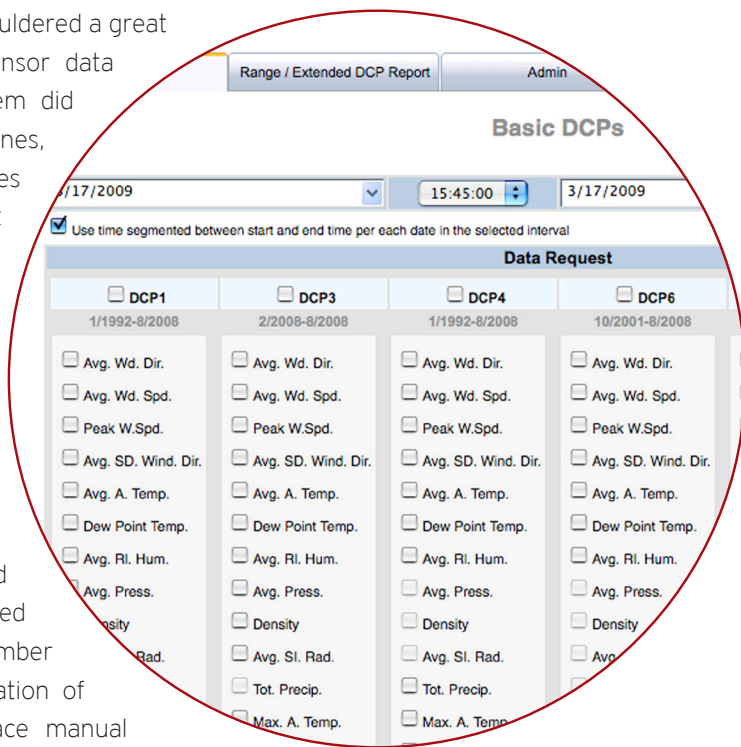
Mind Over Machines envisioned and developed a datamart with robust data-verification technology, enabling real-time analysis of 100+ sensor sources

Mind Over Machines developed a system our APG partners named INGEST. The system features a number of dramatic improvements: aggregation of sensor data, algorithms that replace manual calculations, a color-coded and alarmed notification system, better reporting functionality, error correction, and the ability to reconfigure sensors for a variety of factors—just to name a few.

Our team derived requirements, developed the solution architecture, designed the information architecture and error detection/correction algorithms, engineered software, developed databases and fielded a fully-functional prototype. Together with the APG team, we set up and conducted parallel system testing to ensure complete and accurate functionality. While the initial plan called for six months of parallel testing, INGEST's improvements were so dramatic and the functions of the new system so stable, that APG adopted the system after just three weeks of tests.

Quality Matters - APG meteorologists deliver better data, so military officers and testing teams can make better decisions

The INGEST system includes a data warehouse and business intelligence capability, giving the Army the ability to evaluate a sensor's reliability and accuracy. Built upon sophisticated algorithms that assess the health and accuracy of neighboring sensors, this new capability reduces erroneous data transmissions - improving the overall quality of the data sets.



About Mind Over Machines

Mind Over Machines is a Maryland-based consulting and technology services company serving public and private sector clients. Mind Over Machines' core competencies include full-lifecycle development and support of enterprise systems, business analysis and process engineering, IT strategy, and user-experience design. Mind Over Machines has successfully supported federal civil agencies for more than 10 years and employs a diverse and technically skilled workforce.