

Case History: Simulator Integration

TrainingPartner integrates with Lockheed Martin flight simulators.

Sector: Corporate

Industry: Aerospace

Revenue: \$37,213,000,000
(Lockheed Martin Corporation)

Project Location: Lockheed Martin
MS2 in Akron, Ohio

LMS Requirements: 300

TrainingPartner purchased: 2002

Integration: F-16 Flight Simulators



Lockheed Martin is an advanced technology company that develops products and services in the areas of aeronautics, electronics, space systems and information technology.

When Lockheed Martin sells technology such as aircrafts to its customers, it also provides training systems for both pilots and maintenance personnel. The training system must handle student and instructor registration, training records and certifications. Not only must the system schedule classrooms, it must also schedule training on simulators, aircraft and other equipment, such as aircraft engines. Because of the nature of this training, it is vital that the results be carefully and thoroughly tracked – including the complex records from simulators.

For its military customers, Lockheed Martin has developed simulators for the F-16 aircraft. "The training center is a full mission simulator, which means that it can do everything from take-off, fighting, landing and just about any mission that a pilot of an F-16 would be able to perform," remarks Don Bowles, formerly a Senior Database Analyst with Lockheed Martin Maritime Systems & Sensors (MS2) in Akron, Ohio.

Bowles, who has over 30 years of training experience that ranges from developing courses and instructing to designing two Training Management Systems for customer use, explains that the mission training can be done singly or using groups of simulators. Student registration consists of a combination of data, rights and passwords that determines which simulator is required and what a particular student is permitted to do during training.

Once training has begun, the simulator records each 'event' that occurs with times, scores and instructor comments. "In five minutes on a simulator you might have 10 or 12 different events that the student performs from weapons deployment to evasion maneuvers," says Bowles. "In the past, you either captured that information on the simulator or you had to manually keep track of it and enter it into a training database."

The hurdle is that manual tracking can't capture those results in detail. Bowles stresses, "Some of the events happen so quickly, you can't catch them all." And the disadvantage to tracking the information on the simulator alone is that you must come to the simulator to review the results. "Most simulators have the capability of rerunning a mission. Allowing you to have to go back and run the mission 3 or 4 times to catch every event," explains Bowles.

When MS2 went looking for a learning management system (LMS) that could handle specific military training and work with its F-16 simulators, it had a list of over 300 requirements.

After evaluating a number of systems, MS2 chose the TrainingPartner LMS from GeoMetrix Data Systems Inc. While no LMS could provide off-the-shelf the functionality specifically required by MS2 for this project, TrainingPartner offered the capability to tailor every screen with custom fields, dialogs and functions.

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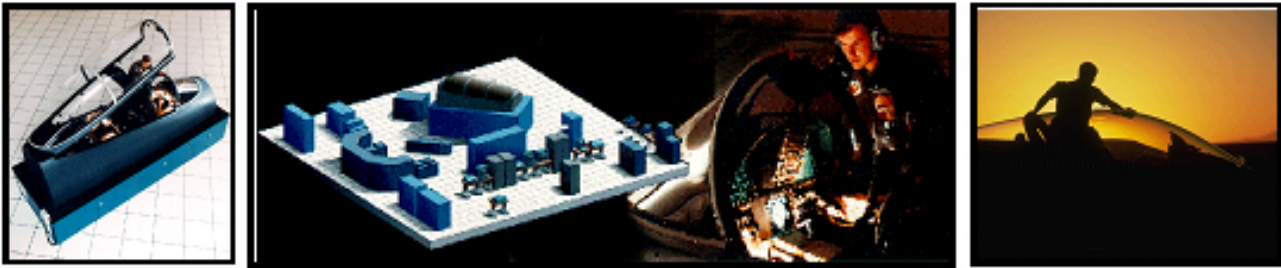


TrainingPartner is also designed to let system administrators perform most customizations themselves. "The system administrators can tailor it themselves, so changing the database and changing what is on the screen can be done in house," observes Bowles. "Whoever is using it can define what events they want to track."

MS2 added custom fields throughout the application to deal with its complex scheduling and registration needs, and tailored TrainingPartner for air tasking orders, which contain the data that pilots use to plan their

the student failed, when they occurred, what occurred and what the instructor's comments were for a report," comments Bowles. "It's easy to modify TrainingPartner's reports on the fly. It takes about one minute to alter the report to generate some specific items."

In addition to adding fields and functions, TrainingPartner provides the capability to turn off specific screens for some users. Authorized users can view sensitive information, while other TrainingPartner users can see only non-sensitive areas of the system. This combined with other security features in Oracle and



missions.

GeoMetrix consulting helped refine the system by creating an import/export capability between TrainingPartner and the simulators. Registration and mission data is sent to the simulator and the results of simulator training are sent back to TrainingPartner.

"You could have up to 100 different events occur during a mission and TrainingPartner captures from the simulator the exact times – to the second – when that occurs and maintains all the scores and any comments by the instructor."

Bowles continues, "Every single function in TrainingPartner has a blank screen that is assigned just for customization by the system administrator." "We have used this very extensively to take information from and give information to the simulator."

Since custom fields in TrainingPartner form part of the database, full reporting and analysis is available for all data." TrainingPartner can just select the events that

TrainingPartner prevents unauthorized access of any sensitive information. For example, an instructor can pull up mission results – view scores, check times, read comments and more – while resource management personnel scheduling classrooms and simulators cannot.

As a result of all these changes, Lockheed Martin was able to use its simulators as they were designed and then tailor TrainingPartner to work around them. Now, when Lockheed Martin sells F-16 aircraft, it not only provides the simulators to its customers, but can also provide an integrated learning management system that manages classroom and equipment resources, shares data with simulators, secures sensitive information and provides full reporting and data analysis.

And MS2 continues to modify screens and dialogs as needs change. Bowles observes that if a simulator needs modifications after it is up and running, it can be very expensive. But making changes to TrainingPartner can be done easily. "The type of changes that have to be made in training are what data is kept, where it's kept and how you can see it. And this only takes two minutes to change in TrainingPartner."

For more information visit: www.lockheedmartin.com

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