

Exsys Case Study



Jet Aircraft Diagnostics

Cessna Aircraft Corporation



Jet aircraft are some of the most complex machines engineered. Diagnostic and repair problems are a major challenge, requiring knowledge of many different types of systems. Cessna Aircraft Company supports large numbers of customers worldwide and must provide immediate, accurate diagnostic advice and support. To assist in this effort, they used Exsys Corvid® to build a suite of diagnostic knowledge automation expert systems for support on their Citation X aircraft.

The Cessna Citation X is one of the fastest and most advanced business jets flying today. The Cessna Citation X can climb to 43,000 feet in only 30 minutes and cover 3900 statute miles at mach .86 (600 miles an hour). The Citation X avionics and flight controls systems use state of the art manufacturing techniques and components. Diagnosing the many systems on-board is a complex task.

The Exsys Corvid knowledge automation system's powerful reasoning logic provides immediate assistance to assess and fix problems with the aircraft's systems, or systems of systems. The customer is presented with a series of questions about the problems they are experiencing in an interactive session. Based on their responses they are given clear, specific recommendations on how to fix the problem. The reasoning diagnostics incorporate the logic of the expert systems with wiring diagrams, schematics and images of controls to illustrate the questions being asked and repair procedures recommended.

The Cessna Citation X diagnostic system has multi-access by Citation owners and operators. It is distributed on a CD with the purchase of a Citation X, and updated via subscription. The Cessna Service Center hotline support staff uses the same system 24 hours a day, 7 days a week. In addition, the diagnostic system is also available to subscribers on the Cessna support web site. By using the Corvid system for "self-help" support and on the Cessna hotlines, Cessna provides consistent, accurate advice based on the knowledge of the top experts in the company.

The Cessna aircraft diagnostic system was built using Exsys Corvid by Cessna Customer Support Hot Line staff with collaboration, training and support provided by Exsys Inc. While already a skilled Exsys Corvid knowledge engineer, the main developer stated that he was able to build and implement new systems 3 times faster after attending a training class at the Exsys training facility.

Use of the Citation diagnostic system has reduced aircraft downtime significantly resulting in substantial cost savings, and maximizing customer safety and satisfaction.

A portion of some of the Cessna diagnostic systems can be run from:

<http://www.exsys.com/cessnatop.html>



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