

Pixel!FX Products in Action

Technology To Catch A Thief

TRW Integrates Pixel!ENGINE With Its Fingerprint ID System

TRW Inc., a global Fortune 500 manufacturing and service company headquartered in Cleveland, Ohio, provides high-tech and engineering products as well as systems integration for the automotive and space and defense industries. The TRW Systems & Information Technology Group develops specialized software applications, which can entail integrating the software



with existing commercial products.

Such is the case with TRW's fingerprint identification system currently being implemented for the police force fingerprint bureaus throughout England and Wales. The

National Automated Fingerprint Identification System (NAFIS) is designed for processing, storing and comparing both ten-print records and "scene of crime" marks. (The State of Ohio also employs a similar system, TRW's Automated Fingerprint Identification System.) Captured fingerprint data is scanned into NAFIS, which then compares the fingerprints with those contained in its central database. Officers submit searches to identify fingerprints and determine who committed a particular crime.

Prior to obtaining NAFIS, officers performed this task by hand. "NAFIS allows them to save time," Jim Radley, a TRW Assistant Project Manager for NAFIS, says. "Using the automated fingerprint imaging and encoding tools, they can search a much larger database more quickly." According to Radley, NAFIS will eventually store over six million ten-print records and will be installed in 43 locations throughout England and Wales.

When TRW's Systems & Information Technology Group began developing NAFIS, the team originally used a "bare bones" scanning component created by one of the company's subcontractors. However, the scan driver was not intended for use with newer scanner models, and it caused the system to crash frequently. Additionally, the application had problems with error handling and did not provide repeatable results, Radley stated. Therefore, TRW evaluated other products and selected Mentalix,

Inc.'s Pixel!ENGINE, which includes a TCL-based scripting interface and may be used as an Application Programming Interface (API) for adding scanning capabilities to existing systems.

Scanners used with the NAFIS system are calibrated each morning with two types of targets: reflective, for capturing fingerprints from paper; and transparent, for acquiring "lifts" that have been taken from other objects. "With Mentalix, we get consistent results; the other system was a major headache," Radley says. "So Pixel!ENGINE clearly solved a couple of serious problems we had out in the field."

TRW Senior Engineer Phil Pedersen concurs: "With the old driver, even when we scanned the same image twice, we never got the same results. With Pixel!ENGINE, we get the same repeatable images and the best quality ... We are a lot more comfortable with the image quality produced by Pixel!ENGINE."

TRW needed a reliable, consistent interface for scanning "scene of crime" marks, such as latent fingerprints, into its NAFIS system.



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**Phil Pedersen,
Senior Engineer at TRW**

"Pixel!ENGINE's reliability has been the best for us," Pedersen continues. "The interface is very simple to use. Since it was already written, we were able to drop it into our system in two days."

Because TRW often tests new workstations, the company also values the application's compatibility with multiple UNIX platforms. "And Mentalix's software is upgraded as the operating system version is upgraded," Radley mentions.

Pedersen says that the other scan drivers TRW considered lacked the long-term support the company required. "Mentalix has been very helpful in answering our developers' questions. Pixel!ENGINE is one of the easiest commercial off-the-shelf products we've had to integrate."



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