

2009 NASCIO Recognition Awards Nomination Commonwealth of Kentucky

Nomination Category:

Data, Information and Knowledge Management

Title of Nomination:

Kentucky State Police Barcoded Evidence Tracking (BEAST)

Nomination Submitted By:

Kentucky's Commonwealth Office of Technology

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Executive Summary

In 1997 the Kentucky State Police (KSP) implemented an electronic evidence tracking system. While this system served the KSP admirably, one of its biggest shortcomings was the fact that each of the six laboratories had independent databases which could not be linked together into a single, searchable data repository. Due to the increased demand to provide more advanced evidence and data tracking the KSP began searching for a system to assist in accomplishing these goals.

In June of 2007, the KSP implemented a LIMS (Laboratory Information Management System), known as BEAST (Bar Coded Evidence Analysis Statistics and Tracking).

This LIMS system is integrated with bar coders to expedite evidence receiving as it arrives at the laboratories. All evidence is bar coded and given unique identifiers to ensure proper cataloging of evidence. The BEAST LIMS also offers powerful statistical data analysis tools. These tools allow laboratory management to identify trends in data, which in turn allows for the proper allocation of time and supplies to provide the most accurate and beneficial services to the Commonwealth of Kentucky. The BEAST system serves the Central lab and also the five regional labs for the KSP with data from all of the labs integrated together. Evidence data is constantly replicated between all labs in the system allowing for consistent and timely information sharing between all analysts in the laboratory system. The BEAST system has also reduced the amount of time analysts must spend preparing reports for mailing and reduced mailing costs while increasing turnaround time.

With the implementation of the BEAST system the KSP forensic laboratory has succeeded in realizing the goal of making pertinent data more accessible to law enforcement, prosecutors, lab analysts, and the citizens of the Commonwealth of Kentucky

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Description

The Kentucky State Police (KSP) began operating a forensic laboratory in May 1951. Throughout the existence of the laboratories there has always been a commitment to maintain and provide forensic services of the highest quality. This includes accurate storage and tracking of data for the citizens of the Commonwealth of Kentucky. In 1997 the KSP implemented an electronic evidence tracking system. The initial system served admirably for the KSP. However, for the strengths that this system possessed there were also shortcomings. One of the largest obstacles was the fact that each of the six laboratories had independent databases which could not be linked together into a single, searchable data repository. . As law enforcement has progressed towards more accountability and the increased demand to provide documented evidence handling the KSP began searching for a system to assist in accomplishing these goals.

In June of 2007, the KSP implemented a LIMS (Laboratory Information Management System), known as BEAST (Bar Coded Evidence Analysis Statistics and Tracking). This LIMS system is integrated with bar coders to expedite evidence receiving as it arrives at the laboratories. All evidence is bar coded and given unique identifiers to ensure proper cataloging of evidence. The BEAST system is incredibly dynamic and allows for custom modifications based on end users requirements. The BEAST LIMS also offers powerful statistical data analysis tools. These tools allow laboratory management to identify trends in data, which in turn allows for the proper allocation of time and supplies to provide the most accurate and beneficial services to the Commonwealth of Kentucky. Database information is stored on Oracle servers which backup nightly to ensure data preservation. The BEAST system serves the Central lab and also the five regional labs for the KSP with data from all of the labs integrated together. The KSP also identified a need to expedite case reports to end users, while reducing costs of mailing fifty thousand reports annually. The BEAST system possesses the ability to post all completed reports to a secure website. Once, end users are registered with the KSP, they can access reports the moment they are complete. This has drastically increased the speed in which users obtain their results. Another benefit to this system is that it decreases the need for printing reports. This leads to a large cost savings to the KSP. To market this new benefit to end users letters were delivered to all law enforcement agencies describing the new abilities and explaining the process to become a registered user. A recent informal survey of Commonwealth and County Attorneys across the Commonwealth using the lab report BEAST web portal, showed that the prosecutors prefer self retrieval of the lab reports from the web over the old process of mailing and faxing reports. Prosecutors and investigating officers can also track the status of their case as it progresses

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through the laboratory process.

In recent times more data collection and data mining has become the answer to most operational questions within almost every industry, including law enforcement. With modern advents in technology it has become very cost effective to store large amounts of data electronically. However, the new quandary has become, being capable of retrieving the pertinent data. In order to do this, an LIMS is essential to assist in organizing this data into useable forms with minimal effort.

With the implementation of the BEAST system the KSP forensic laboratory has succeeded in realizing the goal of making pertinent data more accessible to law enforcement, prosecutors, lab analysts, and the citizens of the Commonwealth of Kentucky.

Significance to the Improvement of Government

The Kentucky State Police (KSP) has always strived to achieve transparency of functions within the agency. One aspect of this goal is communications with all KSP law enforcement agencies, the over 400 local police departments, and those individuals who prosecute the laws of the Commonwealth of Kentucky. The BEAST system has allowed us to greatly increase our abilities to share data among law enforcement agencies, prosecutors, and lab analysts. This has been achieved with the use of the BEAST web site and the uploading of all forensic reports that can then be downloaded by all registered users from a secure website. From this website users can track the status of their case, current data in regards to their case, and once the case is complete can download their report. This has allowed all laboratories to stop mailing reports and simply refer the users to the website. Not only has this sped up the process for cases being returned it has also saved the Commonwealth money in regards to postage and paper costs. It has also allowed the KSP laboratories to become more environmentally conscious. Currently, there are over 3,000 registered users for the BEAST system.

Another benefit to the BEAST system is that it has allowed the laboratory to reallocate some resources. Resource allocation is vital to every government agency. The goal of all administrators is to allocate resources in a manner to produce the most efficient combination that is possible, with the resources that are available. The BEAST system has allowed administrators to reallocate the most vital resource to the laboratory, analyst's time. Trained analysts are able to spend more time processing cases and performing analysis instead of spending large amounts of time preparing "hard" copies of reports to be mailed to end users. The BEAST system has also reduced the amount of calls that the laboratories receive for requests on status reports. This once again has allowed

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analysts to focus on their primary job, analyzing cases. For the KSP police to achieve their goal of creating a collaborative environment with government agencies, care and clear intent had to be maintained with communications throughout the implementation of the BEAST system.

For the KSP to reap the full benefits of the BEAST system, all government agencies, including law enforcement and prosecutors were advised in regards to the BEAST system. This included providing information on procedures regarding use of the BEAST system, how to access the secure website, and how to obtain secure usernames and passwords. The benefit to this transparency is it has allowed end users to offer suggestions on the BEAST system which in turn has allowed the KSP to better serve the end users of the Commonwealth of Kentucky.

The BEAST system has allowed for faster turn around times for cases and improved communications with government agencies. This has ultimately benefitted the entire Commonwealth of Kentucky.

Benefit of the Project

The Kentucky State Police (KSP) forensic lab serves all KSP posts and over 400 local law enforcement agencies within the Commonwealth of Kentucky. The combination of the state and local law enforcement agencies, provide service for the entire Commonwealth of Kentucky and its approximately 4 million residents. Early in the inception of the laboratory it was realized that accurate and consistent evidence tracking and data storage was critical to providing the residents of Kentucky with forensic services of the highest quality. Throughout the many years that the laboratory has been in production, there has always been a mind set of ascertaining better ways to serve the public. Through many different forms and versions the KSP has always strived to store evidence and data in ways which were readily accessible to law enforcement, prosecutors, laboratory analysts, and the public. As the Kentucky State Police laboratory continues to grow and evolve, there is a constant need to improve upon current procedures. In June of 2007 the KSP forensic laboratories implemented the BEAST (Bar Coded Evidence Analysis Statistics and Tracking) system to help in better serving the Commonwealth of Kentucky.

The BEAST system serves the Central lab and also the five regional labs for the KSP. Based on the design of the KSP laboratory system there is a central lab that offers all forensic disciplines and five regional labs that offer fewer forensic disciplines. Based on this design, the sharing of data and of evidence is crucial to providing the highest quality of forensic services to the citizens of the Commonwealth of Kentucky. Evidence may enter the system at a regional lab, but may need additional analysis at the central lab. With past systems this

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scenario represented logistical problems in tracking evidence and data. However, with the BEAST system and the novel approach of replicating all data to the central lab, this issue has been eliminated. Another advantage of this replicated model is that it ensures consistent viewing between all labs, due to the constant replication of data. This is accomplished by utilizing multiple servers that all communicate with the central server. Once, data has been received at the central lab, the data is then "shared" with the remaining labs, ensuring consistent data exchange between all six labs. Another novel approach that has been accomplished with the implementation of the BEAST system is peer reviews. All reports must pass through peer review. In some scenarios, analysts located at regional labs are trained in specific disciplines but do not have additional analysts available to conduct peer reviews in that discipline at their physical location. In the past this required printing reports/results and mailing them to another lab for peer review. Once, the peer review was completed the process would have to be repeated to return the corrections to the analysts. Due to the BEAST system this process can be all be accomplished electronically and documented, negating the use of the mail system and the loss of time waiting for corrections