Biometric fingerprinting research papers examples

Law, Criminal Justice

Foundation Fingerprinting is a concept in biometrics and forensics that use technology to capture data based on biological features. This technology stores information in large databases used by law enforcement officer in crime investigation. The infrastructure captures fingerprint details using a finger print scanner (Maltoni et al, 2009) while the sensor captures the finger information and matches DNA details to create a profile of individual data. This large collection of DNA based information enables the police to match crime scenes with culprits or criminals that may be involved with such incidences. Finger printing plays a crucial role in crime investigation to help police link criminal acts to suspects. This biometric fingerprinting device creates a central repository that stores criminal data used by law enforcement agencies. This technology will use a live scan device to capture the details of a fingerprint, and store the details in a central database. This will allow DNA profiling, to help in investigations. Needs analysis Previous technologies used photographs to help in crime scene investigation. Most areas are connected to high speed camera’s that capture the pictures of the scenes. However, with the onset of technology, more advanced technologies such as biometric finger printing solves the limitations of other legacy systems. The fingerprinting technology uses biometric scans to help map all processes in scene investigation. It registers all suspects involved in earlier crimes, to help build a complex system that will integrate all 911 calls for a prompt response when an incident occurs. Criminal activities are becoming advanced due to technology. Criminals use tactics to evade arrests by law enforcement officers. This technology presents an automated approach that produces a list of probable culprits for investigation. It has the capability of

recognizing fingerprints vital for the law enforcement officers, in which a state level database automates crime aspects for easier investigation. The technology helps in gathering evidence to bring criminal acts to justice. The system is also capable of solving rape cases through computer searchable DNA databases. This police technology project will utilize client machines, and modules integrate to a server. The police will use the client machines to perform basic searches. The modules will integrate different computing systems between the client machines and the servers while the server will handle all transaction requests from multiple police stations. Project plan A plan is a formal document that sets the activities required to accomplish the project objective (Gido, 1985). The biometric fingerprinting project starts on 15. 02. 2014 and ends on 23. 10. 2014. The cost of implementing the project is $700 million and will cater for the hardware, software and the overall network infrastructure. The main objective is to assist law enforcement officers map crime suspects to various crime scenes. The project objective is to be met by establishing the project management team overseen by the project manager. The project manager will handle overall project management responsibilities. He ensures proper project execution until at the sign off.

Costing also need to be controlled to ensure the project does not exceed the budget. In order to facilitate all management processes, a work breakdown structure facilitates the entire biometric fingerprinting project. On the other hand, a communication plan outlines the communication process in order to update stakeholders on the progress.

It will outline the steps in briefing the progress of the project, as well as help

monitor and control any deviation within the project management duration. On the other hand, a risk mitigation plan helps in risk identification, analysis and mitigation (National Research Council, 2005). In this, a waterfall diagram tracks project activities and reduces a likelihood of risk from occurring. During the implementation period, a risk register for the fingerprinting project will help develop responses to the risks.

One such risk in the biometric fingerprinting project is the likelihood of problems in platform integration. This is because the biometric project consists of hardware from different vendors. While the success of the biometric fingerprinting project relies on a competent team, communication is vital to assist report on different elements of the project. This will help the state agencies to communicate effectively with the federal agency, in order to communicate the project essentials to respective stakeholders. It is a key part as it helps in performance reporting of different project stages. In this, stakeholders and the government will be able to make decisions based on project information. Aquire the technology This involves all procurement related issues in acquiring the biometric devices. The biometric fingerprinting project relies on scanners, database systems and a network infrastructure. The quality assurance team guides on the acquisition of the right devices from external vendors, while the technical and user committees will help give directives on specifications. The project will consist of a fingerprint scanner, processor to store captured images and a networked database (Hall, 2008). The procurement of these devices follows state procurement laws. In place is a procurement team that is responsible for all the evaluation of these devices based on minimum specifications.

This is to ensure faster response times in information processing so that the network does not suffer from any bottleneck and slow performance issues during DNA searches and profiling. The procurement manager will issue a request for proposal, a request for information to ensure that intended project cost is within the budget, and delivery of the best hardware specification. Through this, vendor qualification can be assessed in order to invite bids from selected vendors to assist establish a contract, and delivery based on outlined decision criteria to help ensure conformance to hardware and software specifications. Implement the technology The implementation plan includes all efforts that help to achieve the overall project objective. This is a blueprint towards completing the biometric fingerprinting project. An implementation plan ensures the achievement of project deliverables. It allows audit trails to ensure conformance at each stage. The plan involves the technical committee for approval after which performance tests ensure that errors do not occur and accurate data obtained (Kimmons & Loweree, 1989) during querying and searches. In the testing process, stress tests and execution tests will ensure that the system meets design specifications. The biometric fingerprinting project aims to help in crime investigation. Maintain the technology

However, maintenance is key to ensure that the system implemented does not fail. The law enforcement officers will operate the computing system. On the other hand, a system performance log to help track performance issues will facilitate ongoing maintenance activities. Upgrades on the network will ensure that the technology works in order to help in crime investigation.

Maintenance is critical in other fine tuning aspects to improve speed and efficiency of computer platforms.

References

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