



Odontology Section - 2012

F14 Forensic Dental Data Standardization for Law Enforcement Applications

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After attending this presentation, attendees will be introduced to the various standardization activities currently underway to specify forensic dental data interchange and to cover the differences, similarities, and proposed harmonization of efforts in this area.

This presentation will impact the forensic science community by highlighting the numerous forums working to develop a standard for forensic dental information exchange: INTERPOL; the American Dental Association; the DVI community; and, the National Institute of Standards and Technology Information Technology Laboratory (NIST-ITL). Although the business users involved in each of these efforts are different, their data needs are similar. The creation of a common dataset among these various bodies would not only coordinate work efforts, but would benefit the forensic dental community by creating a common definition for data and a common way of specifying and defining that data while still allowing different encoding formats. This would lead to greater inter-operability of systems and streamline law enforcement and forensic efforts involving the exchange of dental information.

The American National Standard Institute/National Institute of Standards and Technology-Information Technology Laboratory (ANSI/NIST-ITL) publishes a biometrics-oriented standard known as the NIST Special Publication 500-271 ANSI/NIST-ITL 1-2011 American National Standard for Information Systems—Data Format for the Interchange of Fingerprint, Facial & Other Biometric Information that is used by Law Enforcement Agencies in over 100 countries. This standard defines not only the dataset for forensic information, but the formats and the data specifications to exchange biometric information on such metrics as friction ridge data for fingerprints, palm print, plantar prints, as well as facial metrics, and iris recognition data. It also covers the transmission of scar, needle mark and tattoo images, and related data, as well as DNA information for automated recognition and forensic use. Domestically, it is used by the Federal Bureau of Investigation, the Department of Defense, the Department of Homeland Security, the Department of State, and all state governments, as well as most local police departments to transfer biometric information amongst law enforcement agencies. It also forms the basis for fingerprint submissions to INTERPOL and its member countries.

Following the 2011 update of the standard, ANSI/NIST-ITL would like to address the next biometric modalities such as voice and dental records, as well as define new metrics for describing bitemarks that are submitted for analysis. ANSI/NIST-ITL has established a working group that is currently chaired by a representative of the Government of Argentina, and involves specialists from around the world. The ADA Specification 1058 has served as a starting point for forensics data standardization, but the hope of ANSI/NIST-ITL is to not only define the dataset, but the electronic protocol in which to transfer the information.

The goal of this presentation is to call for the development of a unified set of electronic specifications to submit to INTERPOL and ANSI/NIST-ITL by bringing together all business users to form a common foundation for forensic dental data exchange and to attempt to unify the DVI needs with the needs of law enforcement and government. This will involve several different stakeholders: forensic dental specialists, information technology specialists, standard development organizations, law enforcement, disaster recovery organization representatives, and others in order to ensure that all of the various needs and requirements are met.

Pub. 500-271 ANSI/NIST-ITL 1-2011, ANSI/ADA Specification No. 1058, Forensic Dental Data Set