

## **DESIGNING AND IMPLEMENTING A SECURED AND CENTRALIZED FORENSIC DATA PRESERVATION AND STORAGE SYSTEM FOR THE PHILIPPINE NATIONAL POLICE CRIME LABORATORY**

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### **ABSTRACT**

Forensic science plays an important role in determining evidence-based analysis for criminal cases. Evidence-based decision making together with scientific data establishes robust forensic analysis and interpretation for all forensic disciplines which aids the criminal justice system (McElhone et al. 2016). To achieve this, a systematic and centralized approach in evidence collection, data preservation and storage system must be presented in the process, thus protecting the confidentiality, integrity, and availability of data in the presentation of evidence during court proceedings. We will be discussing the necessary components and logical structure in building this system to make it resilient from unauthorized disclosure, tampering and destruction. We will end this paper with a conclusion which might help the organization to prepare and achieve an International Standardization Organization (ISO) ISO/IEC: 27001 - Information Security Management System (ISMS) Certification in the future.

### **INTRODUCTION**

The Philippine National Police (PNP) Crime Laboratory has its origin from the Fingerprint Section G-2 Division of the Military Police Command, Armed Forces in the West Pacific of the United States Army (AFWESPAC) which was organized on May 19, 1945.

On May 26, 1959, it was organized as a separate unit of the Philippine Constabulary (PC) and was renamed as Philippine Constabulary Forensic Laboratory. On December 01, 1960, pursuant to Table of Organization and Equipment 3-07 (TO and 3-07), the unit was renamed as the Philippine Constabulary Central Crime Laboratory.

On June 28, 1961, the PC Central Crime Laboratory was activated as a separate unit from the Armed Forces of the Philippines pursuant to Special Order Number 453.

The PNP Crime Laboratory is an ISO 9005:2015 Quality Management System

(QMS) Certified since 2006 (PNP Website, 2021).

### **ORGANIZATIONAL STRUCTURE**

Currently, the PNP Crime Laboratory has five (5) crime laboratory offices in the National Capital Region (NCR) with sixteen (16) regional crime laboratory offices and one hundred one (101) crime laboratory office in the province.

Under the leadership of the PNP Crime Laboratory Director are the OIC Chief of Staff, Deputy Director for Operations, DDFS and Deputy Director for Administration. The two (2) primary divisions under these leadership are the Administrative Resource Management Division and Operations Management Division where ten (10) secondary divisions are operating. These are:

1. Medico-Legal Division
2. Fingerprint Identification Division.

3. Forensic Chemistry Division.
4. Physical Identification Division.
5. Firearms Identification Division.
6. Questioned Document Examination Division.
7. Forensic Photography Division.
8. Polygraph Division.
9. DNA Division.
10. Scene of Crime Operations Division.

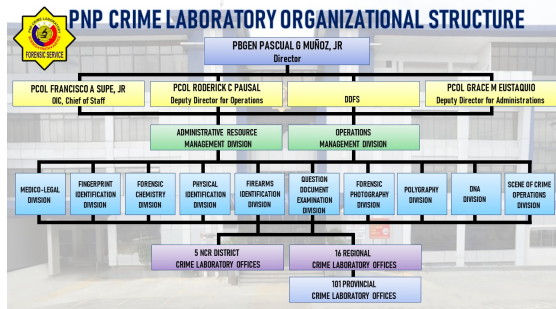


Fig. A. shows the existing organizational structure of the PNP Crime Laboratory as of October, 2021.

## THE OBJECTIVE

This paper aims to design and implement a fast and systematic approach that can be utilized within a solid chain-of-custody to preserve and secure digital information that represents the manual collection of evidence and forensic data based on scientific testing.

The overall objective of this design and implementation is for the organization to generate a complete, standard, and uniformed reporting which includes the overall historical chain-of-custody that is immutable, verifiable, tamper-proof, and admissible in court.

We must understand that the overall admissibility of these generated reports relies not only with the evidence but with the overall process together with the integrity of the personnel's who conducted the collection, handling, and testing of this

evidence. Therefore, it is necessary that this information should be centralized and stored for historical purposes which may be beneficial for data science that can be used for crime prevention and future reference.

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