



# Implementation of Ensō- LIMS at **NABL certified** Indian Defense Lab

CASE STUDY

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## 1. Project Details

Naval Physical and Oceanographic Laboratory (NPOL), Kochi is one of the major R&D laboratories of Defence Research and Development Organisation (DRDO). It was setup in 1952 as an in-house laboratory of the Indian Navy, for providing scientific support to the armed services. Later it got re-christened as NPOL after the formation of Defence Research and Development Organisation (DRDO) under Ministry of Defence in 1958. Today NPOL stands out with great pride for its outstanding achievements and contributions in the areas of SONAR research and development for Navy.

NPOL was looking for Laboratory Information System and enquired for the same in the year 2019. NPOL goal was to modernize the day-to-day laboratory operations through the use of a Laboratory Information Management System (LIMS). LIMS implementations were challenging, because of the need to keep the system flexible to accommodate the constant changes in data collection and scientific methodology. With respect to that NPOL lunched an open tender for procurement of LIMS software, which was floated in the year 2019. Their main objective was to find a data centralization platform to establish flexible and dynamic decision support and process control mechanism in the organisation.

## 2. Scope of Work

NPOL broad project scope covered sample management, lab workflows, stability, instrument integration, release of products and integration with an existing ERP application. NPOL wants to increase the operational efficiency of the laboratory by implementing an automating Laboratory information management system. ENSOLIMS covers the journey of a sample from its induction into a laboratory till the end of its life cycle, including the stages of Sample Storage, Testing, Reporting and Archiving. As a sample is introduced into a lab, the LIMS operation starts by accessioning the sample on to the system and assigning it with a particular identification number. As and when the samples move through the laboratory, the related information can then be updated in ENSOLIMS system to maintain the audit trail.

Some of the major objectives of NPOL are:-

- Generating Graphical report like Bar graph, Line graph and Radar graph.
- Improved quality control laboratory workflows.
- Harmonized processes and facilitated archival and retrieval of data.

- Integrating a new business process across R&D, Quality control and Quality assurance.
- To enhance quality and cost-effectiveness.
- Improved sample and test management, traceability and ease of correlating information

### 3. Challenges

NPOL wanted a centralized [Laboratory Information Management System](#) (LIMS) that can meet the following requirements:

- Generating different type of graphical report as per the sample
- Storage of data associated with the sample analysis
- Provision to attach documents created in MS – Word / MS – Excel / PDF format.
- Supporting services for various projects with regard to sampling, analysis and reporting.
- To carry out research and development project studies.
- Huge amount of technical data from multiple project location to be acquired and processed.
- Maintaining a complete Chain of Custody (CoC) of samples, right from the samples registration to their final disposal, ensuring complete sample traceability at all times.
- Work assignment and tracking was extremely difficult resulting in effort and cost over-runs

### 4. Solution

Assessment of business process led to the idea of web-based integrated system that will cover:

- Sample Management
- Barcode generation
- Automatic Calculation
- Task management
- Test data processing

## 5. Outcome Benefits

As NPOL is one of the most significant client engagements to date, the LIMS implementation has made positive impacts for the Naval Physical and Oceanographic Laboratory. Since its implementation, ENSOLIMS has transformed the lab operations from cumbersome manual, paper based operations to a computer based, paperless environment, dramatically reducing errors and leading to improved compliance status. ENSOLIMS enable the users the ability to link supporting data to batches. Seamless graphical report generation has also enabled prioritization of critical testing activities that led to improved product testing cycle times.

NPOL is now able to track samples, whether they were in the Laboratory, or in storage. Additionally, they are able to generate barcodes and print sample labels using the same LIMS tool. They are able to track all laboratory activities, maintain the audit trail to meet audit requirements, and generate custom reports. NPOL has received a fully configurable and scalable system meeting regulatory compliance of **ISO/IEC 17025**.



*“ENSOLIMS has provides us perfect blend of functionality and integrity to us. The program meets the growing demands of Sample management and storage. Enable IT Solution team is passionate, providing us all the support needed to mirror the workflow of our Laboratory.”*

*-NPOL Laboratory Operations Team*