

## CUSTOMER CASE STUDY

---

# Global EPC L&T boosts collaboration and insight with AVEVA

L&T Hydrocarbon Engineering - [www.lnthydrocarbon.com](http://www.lnthydrocarbon.com)  
Industry - EPC

## Goals

- Unite information from many different sources
- Integrate engineering data with the 3D model to ensure consistency and quality
- Remove data silos and boost integrated collaboration

## Challenges

- New data repository needed to accommodate existing software and legacy data
- Install new system without interrupting workflow

## Results

- Established a single-point information repository
- Better able to meet the needs of India's largest crude oil producer

## Solutions

- AVEVA™ Asset Information Management
- AVEVA™ Unified Engineering
  - AVEVA™ Engineering
  - AVEVA™ Electrical and Instrumentation
  - AVEVA™ PDMS  
(now superseded by AVEVA™ E3D Design)

L&T Hydrocarbon Engineering specializes in upstream EPC projects for the oil & gas industry. One of its most important customers is India's Oil & Natural Gas Corporation (ONGC), which produces around 70% of the country's crude oil. L&T had already seen the benefits of ONGC's data-centric approach to project handover, which is why the company set out on its own project to define and implement a single-point repository of data. At the same time, the project would speed up communication and decision-making, integrate 3D model, P&ID, and engineering data seamlessly, and enable efficient online search for faster navigation, querying, sorting, consolidation, and reporting. The result was a solution based on AVEVA Asset Information Management, which integrates data from L&T's extensive suite of engineering, design, and project management solutions.

---

**"Integrated engineering shows its inherent strength when we need to navigate between different formats and different data types. We can be looking at the 3D model of a certain well or an area, and call up anything, from its P&ID schematics to the structural calculations."**

**Mr. V.J. Shanker**

Engineering Head, L&T Hydrocarbon

## Progressive implementation

After considering all the risks and various implementation options, L&T decided to implement its new integrated engineering program in three stages. In stage one of implementation, L&T integrated all P&ID and 3D model data at the as-built stage of a project.

L&T carried out the second stage of integration, for ongoing projects, in two steps, starting at the approved-for-construction-deliverables stage and completing with the as-built stage. They took this approach on two ongoing wellhead platform projects. Following the success of its first two stages, the company was able to confidently implement integrated design from the start of a project.

## Five steps to AVEVA Asset Information Management

Deploying any enterprise-level system with many different stakeholders requires a detailed and well-structured plan. Here, AVEVA's implementation specialists applied a proven, stepwise methodology that fully addressed L&T's needs and business processes. AVEVA Asset Information Management deploys in five steps:

1. Requirements analysis
2. System design
3. System build and validation
4. Training and documentation
5. Full production deployment

In the requirements-analysis phase, L&T's project team considered not only the hardware, software, and internal execution issues, but also the different usage requirements of the company's engineering teams and of their clients.

In the design phase, the team fine-tuned the requirements specification and addressed functional and technical issues, such as workflows, data types, document formats, naming conventions, class libraries, and so on.

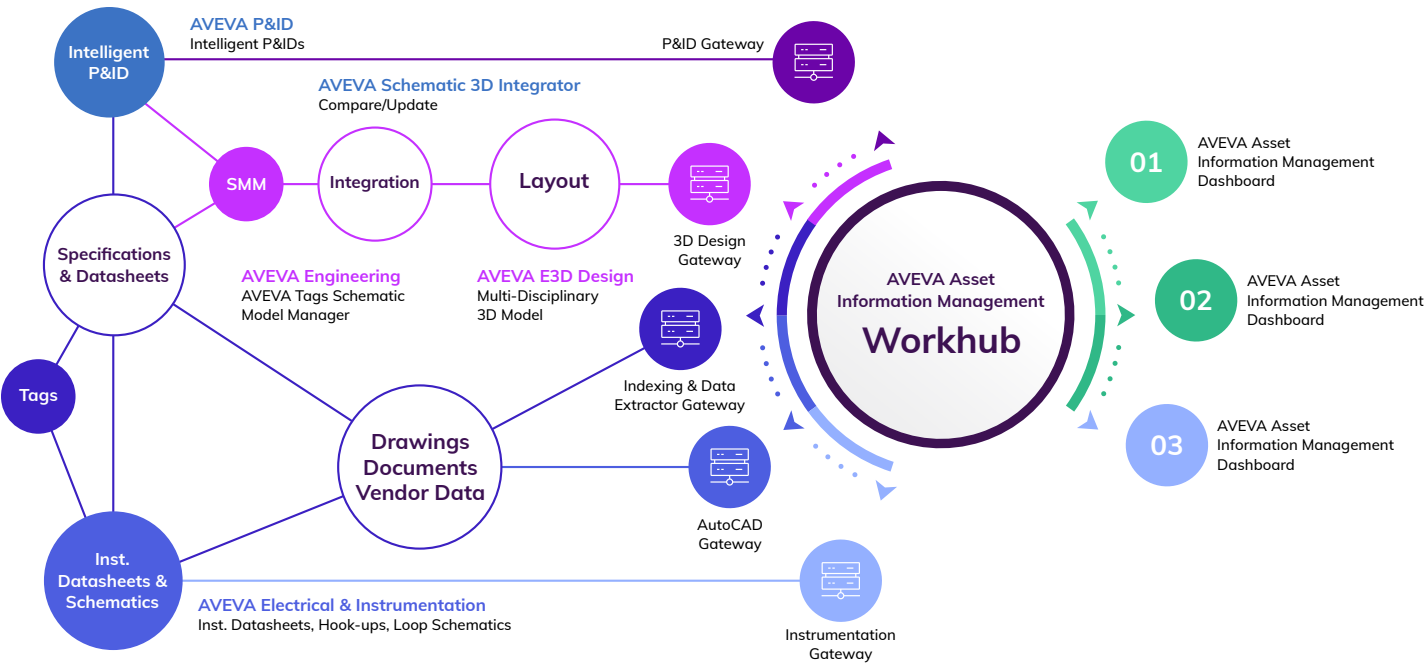
This phase then informed the system build stage, involving template creation, information standards, as well as system configuration and customization. The team used representative data in testing and validation to highlight and resolve any problems.

With AVEVA's support, L&T was able to carry out detailed administration training in project setup, customization, template creation, data population, and troubleshooting. User-level training programs and materials were prepared, covering areas such as scope, responsibilities, workflows, gate protocols, and work instructions. For specific tasks, stage-wise checklists were compiled.

The diagram below illustrates the final integrated solution, drawing information from a wide variety of sources. AVEVA Asset Information Management makes coherent, contextualized information readily accessible to users.

“We have now got a scalable, multi-source data application, which is a major advantage for a customer. As it’s not vendor-specific, it readily accepts data from all sources via the different Gateways, which can be customized. It’s also noninvasive, so it does not affect the source data in any way. And being able to perform powerful searching and reporting on data of known quality, using only a standard web browser, makes it an invaluable solution for engineering, operations and maintenance tasks.”

-  
Mr. V.J. Shanker  
Engineering Head, L&T Hydrocarbon



## Integration in action

All new asset data is published to AVEVA Asset Information Management and made readily available via user-friendly search, navigation, and report capabilities.

AVEVA Electrical and Instrumentation plays a key role in generating all datasheets, hook-ups, loop schematics, and similar deliverables. AVEVA Engineering auto-populates the required inputs from process engineering. Then, using AVEVA PDMS (now AVEVA E3D Design) to ensure a safe, maintainable, operations-friendly, clash-free design, the L&T team developed a comprehensive, 3D model, which it then integrates with P&ID schematics using a comprehensive. L&T ensures consistency between 3D, 2D, and 1D data using the “compare” and “update” functionality.

L&T’s own project execution processes have also benefitted substantially. The integration of engineering data with the 3D model ensures consistency, which results in high-quality deliverables. Single-point data entry enables L&T to avoid error-prone duplication and reduces the need for interdisciplinary checking. Information from multiple projects can be stored and reused on future projects, reducing project costs, risk, and timescale, which enables the company to more easily build up and exploit a growing body of proprietary expertise.

---

“We have achieved our objective of a single-point information repository, automated our change management processes, and streamlined project data handover to the client. With this technology, we gain the efficiency benefits of integrated engineering and meet – or often exceed – the expectations of our customers.”

-

**Mr. V.J. Shanker**

Engineering Head, L&T Hydrocarbon

Mr. Shanker is enthusiastic about the success of the implementation, which has proven to be a win-win result for both L&T and its clients.