Jump-Start Capital Project Engineering

Re-creating Historical Engineering – 100X faster

The Case

Most of the time, a new capital project will reference or reuse previous operational processes as well as historical project information. Very often, these engineering documents (P&IDs, datasheets, etc.) will be recreated and then updated based on new project information. Historical documentation are often stored in paper format, or digitally as scans and PDFs. Even in the case where some of the latest in CAD software applications are able to convert PDFs into DWG drawings, the symbols crucial to these drawings are lost in the conversion and their attributes cannot be edited. Therefore, recreation of these engineering documents is a tedious, cost-laden, and most importantly, non-value added undertaking that involves an enormous amount of manual work and causes delays in the project.

On average, recreating a one-page P&ID takes 8-10 hours, increasing to 12-15 hours for an intelligent P&ID (e.g., Smart P&ID). Recreating a 50-page P&ID from a reference plant takes 400 to 700 man hours for an experienced drafter, and can lead to weeks of engineering work. This does not include generation of line lists, instrument lists, valve lists, etc. For a larger scale project, this could lead to months of manual work, with extra time and key engineering resources culled away to review, verify and approve this work.

2 to 100 times faster	**50% to 90% cost saving**
iENG PID **0.1~ 3 Hours/PID**	**6 ~12 Hours/PID**

100 times faster

The application of AI technology – more specifically, visual recognition for image and text and machine learning – would allow a historical engineering document to be recreated in minutes or even seconds.

Intelligent Project Solutions is deploying technology to develop iENG, an application that contains an algorithm which allows engineering information to be "read," extracted and understood in three simple steps:
1) User uploads a scan or PDF version of a P&ID to iENG.
2) iENG's AI algorithm recognizes and extracts engineering information and its relationships.
3) Engineering information is then easily recreated, updated and revised, and can be used to generate other engineering deliverables, or migrated to other engineering tools, asset management systems, or digital platforms such as digital twins.

iENG also takes the information extracted and places them into a dataset, allowing users to conveniently search for information they need. Equipped with AI's continuous learning and improvement algorithm, iENG also reduces the risk associated with human error, making the operation of plants and factories safer.

IPS is working to develop AI technologies that will understand learn patterns in the engineering information it extracts, and then automate engineering design for equipment, layouts, and more, drastically reducing the amount of work required for capital project engineering processes.

IPS can help you work smarter and faster. Work with us today!