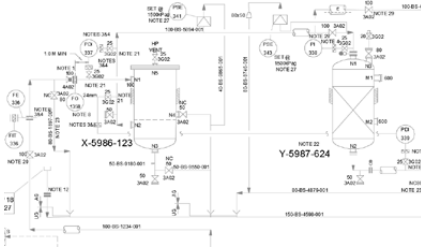# Trusted Subcontractor in Brownfield Data Digitization

Industry 4.0 technologies have become a necessity for all industry organizations which want to stay competitive. Leading enterprise engineering software providers have powerful suits of solutions for digital design, procurement, construction and operations. Implementation of these systems requires data. For newly designed facilities the data is being generated on the go, however a majority of installations in use today have been built in pre-industry 4.0 era thus they require digitization. That is when 19E can step in.

## Source Documentation



## Source Material Scanning

Small and large format scanning, image corrections, multipage document compilation of source documentation (critical only or of any other scope). The service can be performed by 19E or local sub-contractor supervised by 19E accordingly to customer's choice.

## Metadata Extraction

Digital documents cataloguing (binder ID, transmittal ID, document type, document ID, revision ID, etc.). Automatic text recognition (OCR) for searchability improvement. AI based document categorization and metadata attributes extraction.

## Data Extraction

Extraction of TAGs and basic data for piping and instrumentation from P&ID's BOM's, Isometrics, other design, construction, maintenance documentation. Manual and/or AI based automatic extraction of attribute values, basic rule-based cleaning and integrity verification.

## Model Creation

Creation and integrity validation of the 2D/3D installation model from design and operational documentation and other as-is data sources (LIDAR, surveying data, etc.) at any given level of details. In-house or external support of industry experts (power, chemical, construction, manufacturing).

## LiDAR Point Cloud TAGging

Tagging of database information (instrumentation and piping) on LiDAR scans/photo-panoramas. Optionally LiDAR scanning and point cloud processing via local partners if required.

To boost production rate, maximize quality and minimize costs we use our in-house production automation platform - **Pandora**. The platform uses AI techniques for data extraction automation and/or data validation. The platform gives customer access to real-time dashboards and accurate billing for comprehensive progress monitoring and cost tracking.
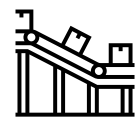


## Industries:



**Power Generation**



**Oil & Gas**



**Chemical**



**Manufacturing**

19E acts as a subcontractor to organizations implementing industry 4.0 technologies to large enterprises such as EPC companies, engineering software providers and their local or global partners.