



Engineers India Limited



Over Five Decades of
Instrumentation Experience
from Conceptual Designs To Commissioning





PROFILE

Engineers India Ltd. (EIL) is a leading global engineering consultancy and EPC company. The Company has a diverse portfolio comprising Hydrocarbon, Chemicals & Fertilizers, Mining & Metallurgy, Infrastructure, Water and Waste Management, Solar & Nuclear Power sectors.

EIL has emerged as a 'Total Solutions' engineering consultancy company providing design, engineering, procurement, construction and integrated project management services from 'Concept to Commissioning' with highest quality and safety standards. It also provides specialist services such as heat and mass transfer equipment design, environmental engineering, specialist materials and maintenance and plant operations and safety services.

EIL has successfully completed all projects, all of which are operating smoothly (in most cases at more than rated capacity), and has, hence, created an array of

satisfied clients. EIL has secured many repeat businesses from its clients which is a sign of client satisfaction, confidence and trust reposed in EIL.

Over the past five decades, EIL has executed more than 5000 projects including over 400 major projects worth USD 200 Billion in "total cost."

EIL has earned the reputation of being a veritable treasure of technical knowledge, skills and professional competence. EIL has worked with almost all process licensors and a large number of engineering/contracting companies worldwide and our engineers are well versed with international engineering codes and standards. With a workforce of over 3000 experienced employees & a variety of specialised services available under one roof, EIL offers an unique advantage to clients like none other.

**5.6 million available Technical Manhours annually
9,600 available Construction Management and Supervision Man-months annually**

GLOBAL PRESENCE

Geographical Regions	Key Countries served
Middle East	UAE Bahrain Kuwait Iran Oman Saudi Arabia Qatar Iraq
Asia Pacific	Australia Malaysia Indonesia Bangladesh Vietnam
Europe	Norway Turkey
Africa	Algeria Ghana Kenya Nigeria Angola Sudan Cameroon

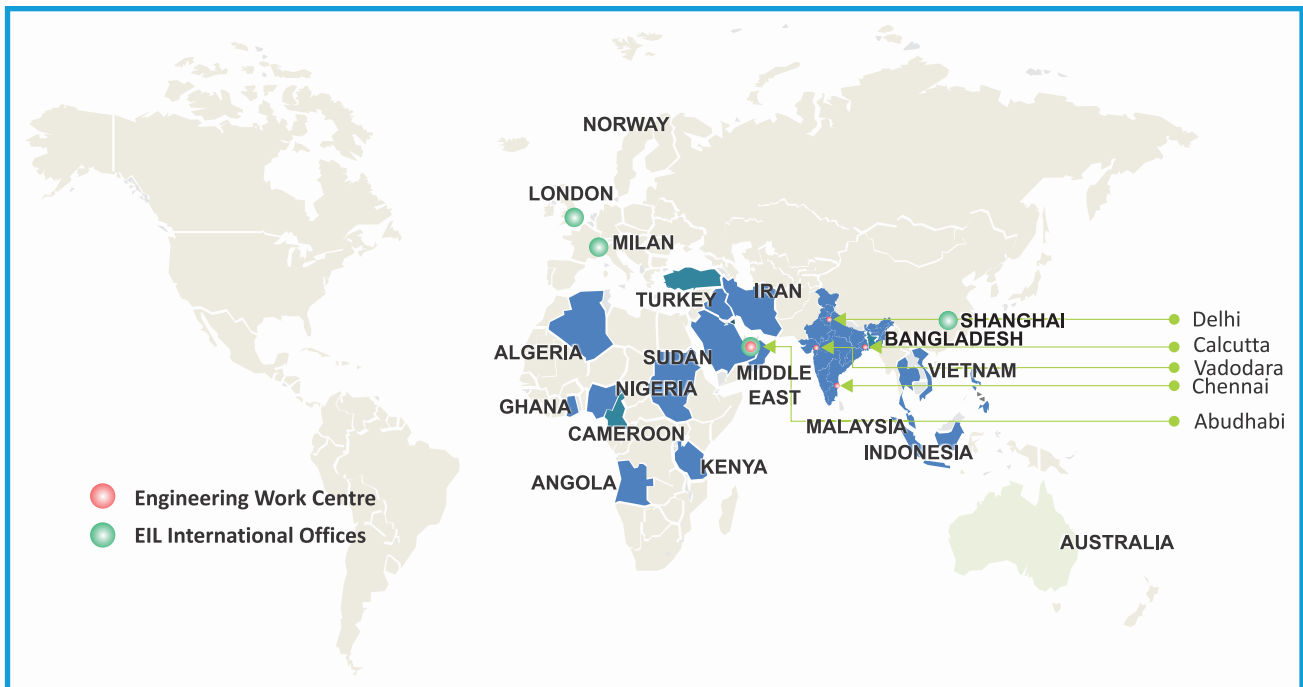
TRACK RECORD

- 72 Major Refinery projects, including 10 Grass root refineries,
- 9 Petrochemical complexes,
- 41 Oil and Gas Processing projects,
- 213 Offshore platforms including 40 process platforms,
- 46 Pipeline projects,
- 13 Ports, Storage & Terminals,
- 9 Fertilizer projects,
- 32 Mining and Metallurgy projects,
- 33 Infrastructure projects (airports, highways, bridges, water management, & energy-efficient intelligent buildings),
- 23 Turnkey/EPC projects.
- Infrastructure Projects
- Power / Captive Power Projects





EXPERIENCE CREDENTIALS & GLOBAL PRESENCE



Overseas Clients

MIDDLE EAST

ADNOC, ADMA OPCO, GASCO, TAKREER, ADCO, ZADCO, BOROUGE, BUNDUQ, NPCC, ADGAS, BANAGAS, BAPCO, ALBA, KNPC, EQUATE, PIC, NPC, ORPIC, SAUDI ARAMCO, SABIC

ASIA

PETRONAS, WIKI, PAU, TPAO, BCIC

AFRICA

SONATRACH, BOST, KPRL, DANGOTE, INDORAMA, SONANGOL, SUDAPET, WNPOC, HYDROMINE GLOBAL MINERALS GMBH Ltd.

INDIA



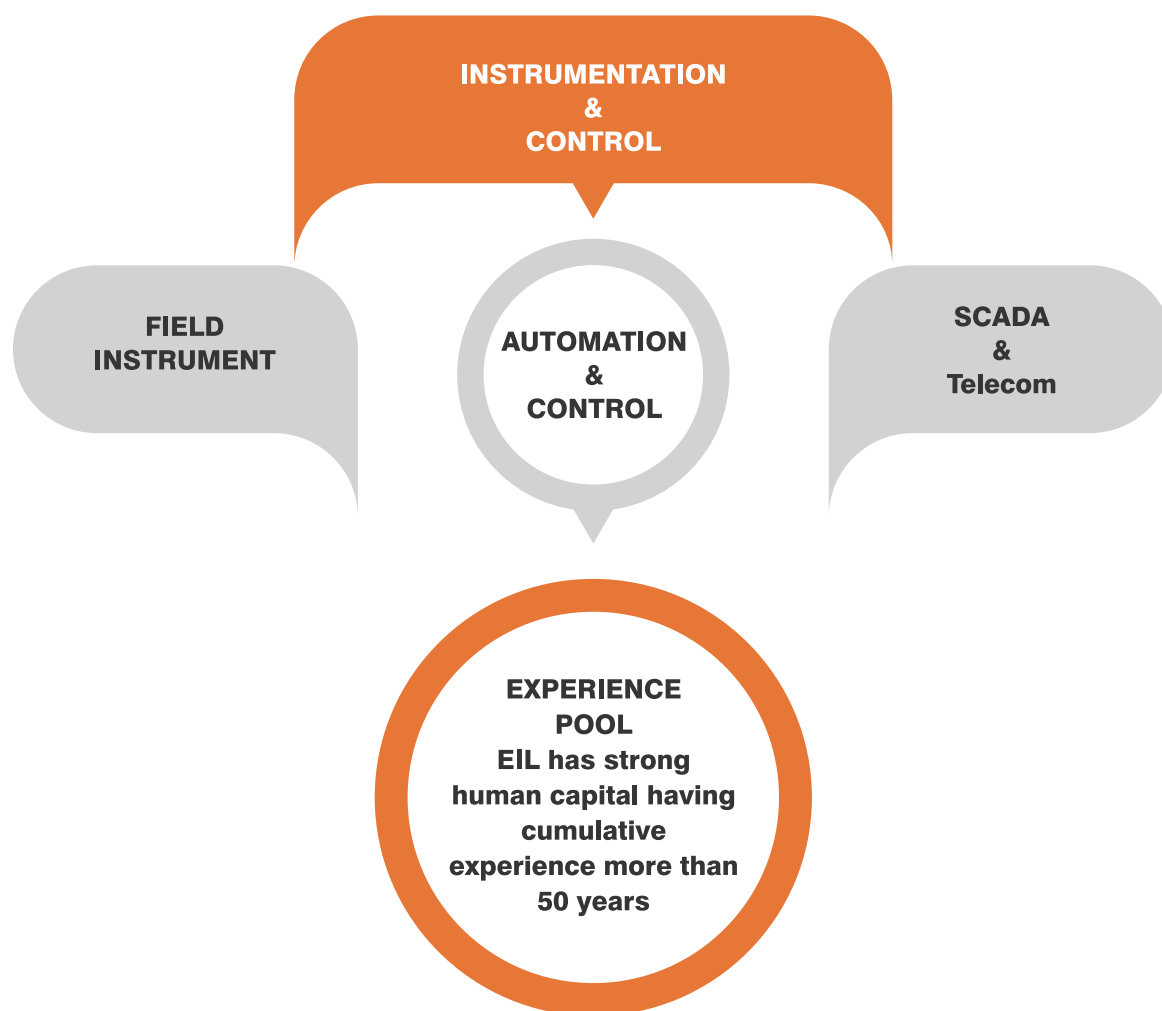
INTERNATIONAL



AN EXPERIENCED TEAM

Instrumentation & control system Engineers in EIL have always kept themselves in synchronisation with the technical and scientific evolutions and advancements through 5 decades of presence in wide ranges of Industries.

Latest Technology coupled with knowledge for appropriate utilisation of relevant Indian and International Codes and Standards are exploited to the benefit of plant operation and maintenance by providing a safe and secure environment to the plant and personnel.



With 100 plus professionals with a blend ranging from 15~25 years of experience and team of young dynamics engineers are involved in Design of Instrument and Control System, SCADA & Telecommunication for plants from Concept to Commissioning having large footprints in domestic & overseas jobs.

Manpower resources with Multi-skilled capabilities provide instant analysis and response in trouble-shooting, construction and erections supervision, design support for pre-commissioning and commissioning services.

☑ **Successfully commissioned Refinery and Petro-Complexes having 30,000 IOs and 80 OEM Control Systems**

HMEL	24000 I/Os
GAIL (PATA)	27800 I/Os
IREP (KOCHI)	23000 I/Os
BCPL	28600 I/Os
BORL	18000 I/Os

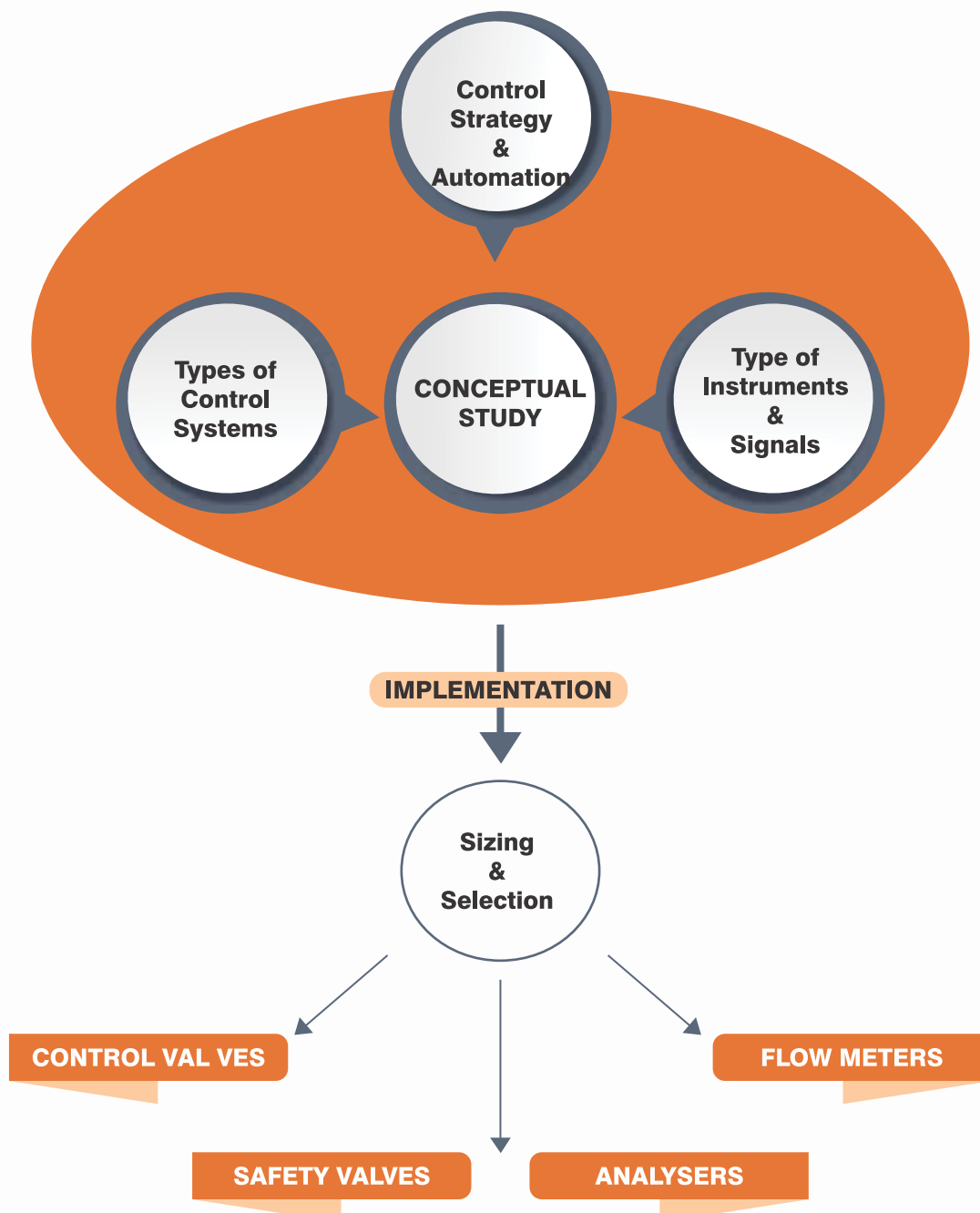
Conceptual study & Support to Basic Process Package Development & FEED

Instrumentation and control systems are carefully designed and executed at every stage of projects using the skill, knowledge and experience of engineers to meet End-user expectation by ensuring better plant performance, reduced maintenance high quality output, and improved safety & security.

Vast experiences in Basic Engineering and Extended Basic Engineering of Instrumentation and Control with almost all Process Licensors are captured while finalising the process package.

Control Systems, are selected with an aim to provide maximum automation to the Process plants and keeping in mind the growing complexity, integrated operational requirement, cost control, demanding accuracy and efficiency of implementation.

Sizing and Selection of critical Instruments are initiated at an early stage so that maximum information are available in the Process Package / FEED itself which accelerates concurrent engineering and procurement.

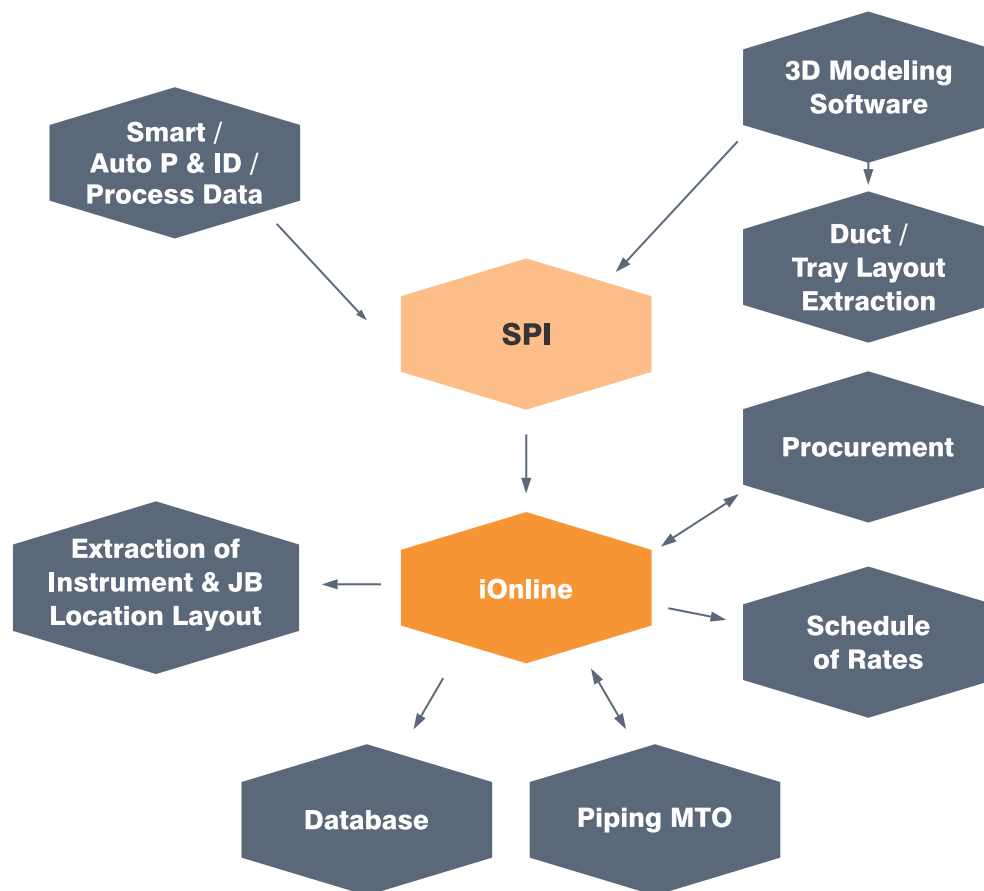


Complete Automated Work Flow:

Instrumentation engineering deliverables are completely automated in a well evolved work flow utilising a multitude of in-house software modules (iOnline) following the international standards' formats and commercially available software such as Smart Plant Instrumentation (SPI).

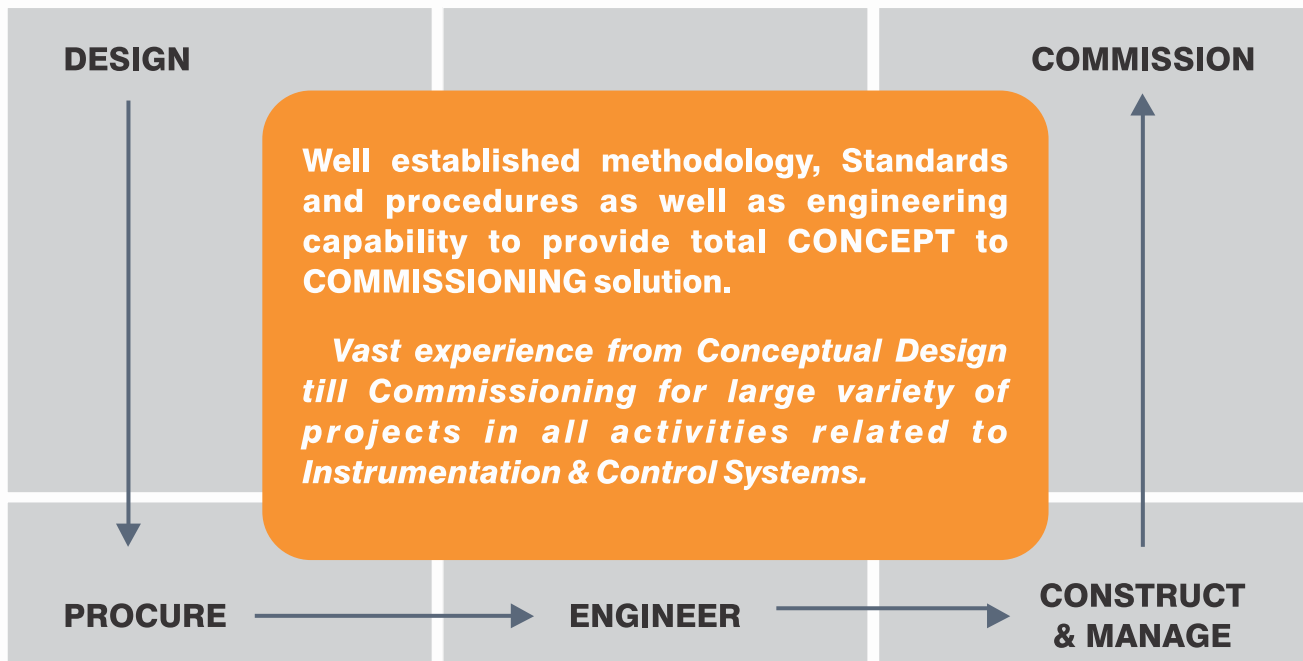
Core function of Instrumentation design, engineering and procurement are managed through iOnline software which is integrated with other divisions' software like Piping, Inspection, Warehouse management etc. for online engineering data flow within the organisation.

The SPI software, being utilised for generation of Instrument Index, Specification sheets, sizing to merge the data base with end-user SPI platform, is also integrated with iOnline Module to exploit the automation built-in catering to in-house methodology of document generation.



Main Automation Consultant (MAC)

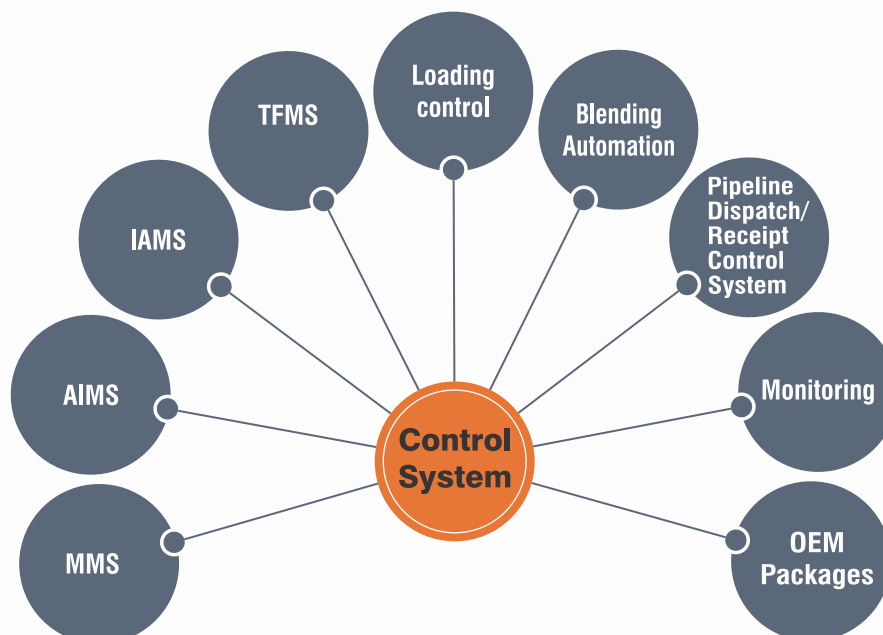
Basic Design Engineering, Procurement, detail engineering, Construction and Commissioning Management.



With 100 plus professionals involved in Design of Instrument and Control System, SCADA & Telecommunication for plants from Concept to Commissioning having large experience of domestic & overseas jobs.

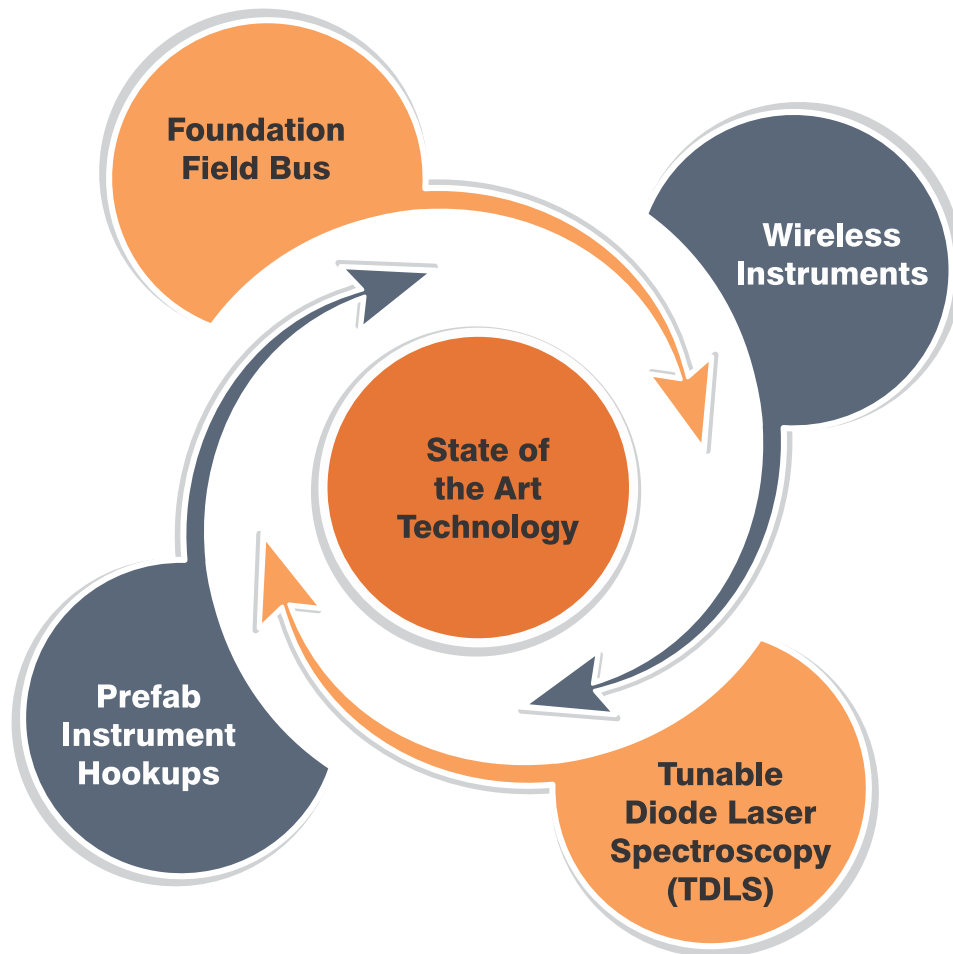
Control System Configuration

EIL formulates overall Control system configuration considering the operational flexibility and integration of subsystems like Alarm Information Management System (AIMS), Instrument Asset Management System (IAMS), Machine Monitoring System (MMS) for predictive maintenance, Blending and Offsite Automation, Tank Farm Management System (TFMS), Loading control system, Pipeline dispatch/receipt control system, Utility monitoring and overall monitoring.



EIL Aligns with State of the Art Technology

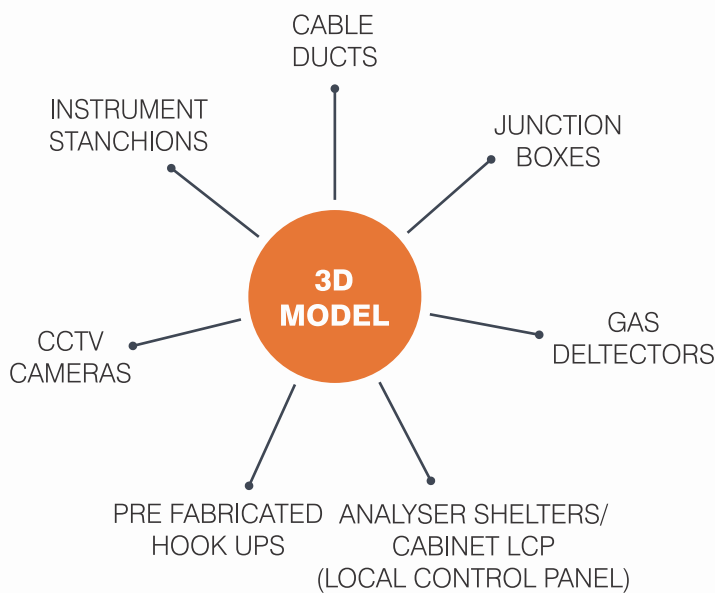
- ☑ Integration of Package control systems supplied by OEM's into plant DCS/ESD, development of logics and sequences for entire plant, simulation and testing of logics in DCS works as well as Site for commissioning



3-D Modelling of Instrumentation:

3D modelling, being the latest state-of the art plant simulation platform, is considered as an excellent means for executing, checking and controlling the design for construction and is always given a special focus in the organisation for generation of key Instrumentation deliverables like instrument Cable routing and Instruments / Junction Boxes layout.

EIL ensures accuracy and compatibility in using 3D modelling solutions extensively through a pool of experienced modellers and engineers, which facilitates smooth and timely execution during construction.



Advantages:

- **Plan Early**
- **Minimise interface & fouling in inter-disciplinary engineering**
- **Increased Accuracy of Take-Offs**

- **EIL has an experience of executing over 4000 projects of various sizes with the entire Instrumentation & Control System Design performed in-house.**
- **EIL has been a pioneer in rendering service in all the modes of project implementation , i.e., :**
 - **EPC**
 - **FEED + PMC**
 - **EPCM**

Control Upgradation for Adding Value to Projects through Revamps

EIL provides exclusive services for Plant Modernization and System replacement for DCS, ESD or OEM control systems to upgrade existing systems for State of the Art Delivery through:

- ☑ Site data collection
- ☑ Interaction with operation and maintenance personnel
- ☑ Evolve Implementation plan for Optimization of shut-down time
- ☑ Adequacy check
- ☑ Enhancement of Control room, UPS, cable ducts and cable entry to control room

Some examples are:

- KNPC PLC replacement, Heater modification
- ZADCO modification
- ZADCO PLC replacement
- ONGC Bombay High
- BPCL Offsite Automation
- HPCL Advance Control
- CPCL Offsite Automation
- GAIL - Pata

EIL ensures highest levels of Safety & Security in Design through an Integrated Network & Services

PLANT SAFETY AND SECURITY

- **Fire & Gas Detection System**
- **Detector Location Layout**
- **Integration with Fire Station & DCS**

- **Plant Surveillance**
- **CCTV System**
- **Access Control System**
- **Perimeter monitoring**
- **Intrusion detection**

Safety Studies & ESD System Specifications, HIPPS, SIL Verification Study as per IEC 61508 & 61511 by EIL TUV Certified Engineers.

SAFETY is a Lifecycle process- From concept to commissioning

Terrestrial Trunked Radio System (TETRA) – Wireless Communication System inside Plant area for both Hazardous and Safe Areas.

System Studies for both Fibre Optic & Microwave Radio System of Telecom & SCADA. Recommendation for augmentation of SCADA & Telecom in Pipelines, On-shore, Off-shore platform.

EIL Major Projects

EIL has an experience of executing over 4000 projects of various sizes with the entire Instrumentation and Control System design performed in-house. Some of the major ones are as per the following list:

Project	Location	Client
INTERNATIONAL PROJECTS		
Tabriz Petrochemical Complex	Iran	Tabriz Petrochemical
Khorasan Petrochemical Complex	Iran	Khorasan Petrochemical
Bandr Imam Petrochemical Project	Iran	Fajr Petrochemical Company, Tehran, Iran
Qusahwira Full Field Development Project	Abu Dhabi	N P C C / A D C O
DOMESTIC PROJECTS		
Panipat Refinery	Panipat, India	IOCL,
Bongaigaon Refinery	Assam, India	BRPL
Mahul Refinery	Mumbai, India	BPCL
Bharat Oman Refinery	Bina, India	BORL
Guru Govind Singh Refinery	Bhatinda, India	HMEL
Haldia Refinery & Petrochemicals	Haldia, India	IOCL
Maharashtra Gas Cracker Complex	Nagothane, India	IPCL
Dahej Petrochemical Complex	Dahej, India	OPAL
Alumina Refinery	Damanjodi, India	NALCO
GAIL Petrochemical Complex	Pata, India	GAIL







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Delivering Excellence through People