

 **KARADGAZ**
KARADJordan

KARAD – System Integrator to EPC

KARAD – Contractor

KARAD – System Integrator to EPC

KARAD – Contractor

KARAD – System Integrator to EPC Contractor

KARAD is established in 2006 as an automation engineering company with its headquarters and integration facility in Dubai, UAE, and engineering center in Cairo, Egypt.

KARAD, was formed with the objective of being a world-class partner by providing the best solutions and services to customers in the Middle East and North Africa in the field of control, automation, electrical, and telecommunications. KARAD utilizes highly skilled personnel to execute large automation projects in oil and gas fields, as well as small to medium EPC projects.

At present, experienced project managers and discipline engineers strengthen KARAD's capability to execute lump sum turnkey projects involving Engineering, Procurement, Construction, Consultancy, Supply and Contract Management Services specializing in the fields of Electrical, Instrumentation, Telecommunication, Automation, and Artificial Intelligence in the Oil and Gas, Energy, and Utilities market.



Industries Served : Oil and Gas (Offshore and Onshore), Petrochem, Power, Utilities, Water/Wastewater, Manufacturing.

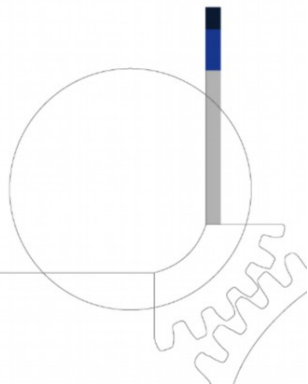
Electrical : LV/MV Switchgear Panels, DBs, UPS, Solar Power, Batteries...

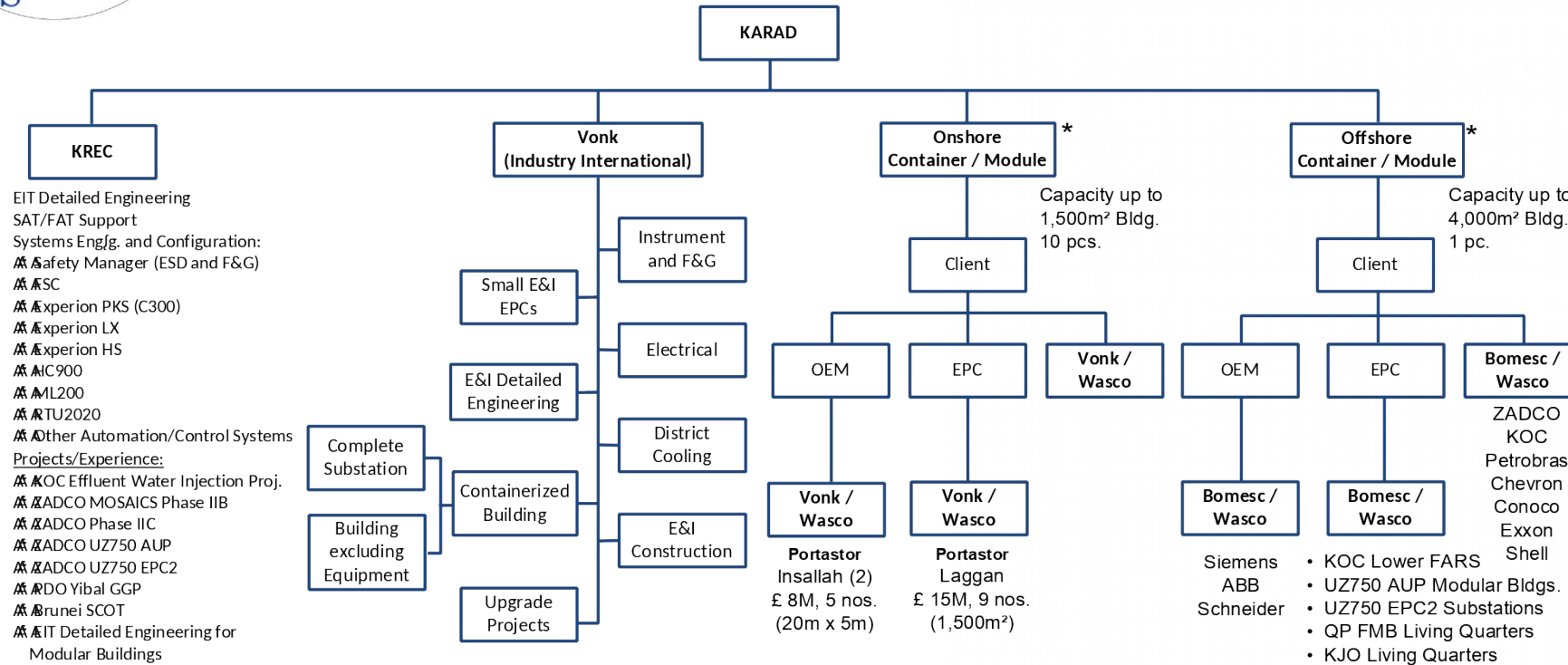
Instrumentation : DCS, ESD, FGS, PLC, SCADA, RTU, HVAC Control Panel...

Telecom : Fiber Optic Cables, Patch Panels, PAGA, CCTV, Access Control...

Modular Equipment Buildings : E-House, CCR, LER.. of any size

Turnkey solutions capability in above domains along with AMC, Site Support Services and Training services.





Electrical, Instrumentation and Telecom (EIT) Competencies

- Control Systems (incl. Design/Engineering, Assembly/Integration, Configuration, FAT, Installation, Commissioning)
 - DCS, PLC, SCADA, HMI, DDC
 - F&G System
 - ESD System
 - HVAC Control Panel
 - Field Instruments and F&G Detectors
 - Lighting and Small Power
 - IT/Telecom Equipment (Network Switches, CCTV, PAGA, Patch Panels)
 - Cables (Electrical, Instrumentation, Telecom, FO), Junctions Box, Accessories
 - EIT Bulk Materials
- Services**
- Detailed Engineering (EIT)
 - Systems Engineering (Programming, Configuration)
 - Offsite Assembly/Integration and Testing
 - Project Management
 - Site Installation/Construction
 - Testing and Commissioning
 - FAT and SAT Support
 - Troubleshooting
 - Training and Certification
 - Technical Support Center
 - Aftersales Services

EPC References

- Palm Jumeirah SNG
- Discovery Gardens SNG
- Yibal Compressor Upgrade (PDO)
- Al Ain New Cement Factory (GASCO)
- Yas Island ETS
- Sowah Island ETS
- NGD7 Pipeline (GASCO)
- Yas Island Pipeline (GASCO)
- UZ750 AUP - ELV Package (ZADCO)
- Badra-Zubaida Gas Export Pipeline (Gazprom)
- Lower Fars Heavy Oil Development Project - Package Substation Buildings (KOC)

Container Offerings and Services

- Structural Steel (Fire Rated, Blast Rated, Explosion Proof)
- HVAC (Split or Packaged)
- Fire and Gas System
- Lighting and Small Power
- Fire Suppression (NOVEC/HSSD)
- Cable Management (Trays)
- Installation of 3rd Party Equipment

* - Agency Agreement

2007-2010

2011-2012

2011-2012

2011-2013

2014-2017

2015-2016

2015-2017

2016-2018

2019-2021



Automation, Instrumentation and Control System Projects



KOC Effluent Water Injection Project



Supply of Gas to New Al Ain Cement Plant for Arkan



Shell Majnoon Facilities Packaged Substations



UZ750 Island Surface Facilities Modular Building Fabrication



42" Onshore Export Pipeline at West Qurna Field



EPC for Badra-Zubaida Gas Export Pipeline Project



KOC Lower FARS Heavy Oil Packaged Substation



EPC- Main Control Building Pipeline Network at Maqta

2007

KARAD DUBAI ESTABLISHMENT IN JEBEL ALI - DUBAI

2007

KREC ESTABLISHMENT (KARAD REMOTE ENGINEERING CENTER) HIGH VALUE, LOW COST ENGINEERING CENTER

2008

HONEYWELL RECOGNITION KREC SETUP IN CONJUNCTION WITH HONEYWELL

2011

KARAD TURNED FROM SYSTEM INTEGRATOR TO EPC CONTRACTOR

2012

KARAD RECOGNIZED AS A MAJOR DCS/ESD/FF INTEGRATOR

2013

KARAD-VONK JOINT VENTURE WITH DUTCH GIANT IMTECH

2014

KARAD AWARDED (Honeywell FieldProducts System Integrator EMEA REGION)

2014

PURCHASE OF SPARK TECHNOLOGIES FZE

2015

KARAD INTO MAJOR MODULARIZED SOLUTIONS

2016

ISO 9001 AWARD FROM BUREAU VERITAS

2017

INDUSTRIAL LICENSE FROM JEBEL ALI FREE ZONE - DUBAI

2018

ABU DHABI BRANCH OPENING

2018

VAT REGISTRATION

2019

EGYPT ENGINEERING CENTER TURNED INTO A MAIN BRANCH (KARAD EGYPT)

2020

DIGITAL TRANSFORMATION SECTOR ESTABLISHED

2021

COOPERATION AGREEMENT WITH PETROMAINT SIGNED

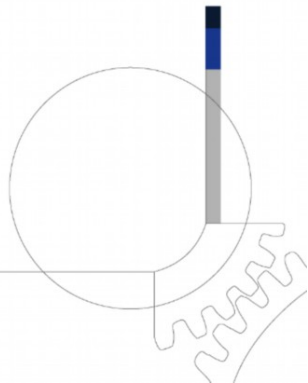
2023

ESTABLISHMENT OF KARAD TÜRKİYE

Establishment of KARADGAZ



- **KARADGAZ** (Owned TEKGAZ).
- 5,000sqm fabrication facility in Türkiye.
- Design, Engineering, Procurement, Manufacturing, Installation, Testing, O&M, Consultancy, Management & Supervision, and R&D Studies for the following:
 - Natural Gas Installation and Conversion Works
 - Pressure Reduction and Measuring Stations
 - Natural Gas Leakage Search and Elimination
 - Cartridge Steel Filter and Heat Exchanger Manufacturing
 - Natural Gas City and Organized Industrial Zones Distribution Systems Design
 - Medium and High Pressure Transmission Line Design
 - Hydraulic Modeling, Thermal Stress Analysis, Creation of Plan Profiles
 - Construction of polyethylene and steel pipelines
 - Non-Destructive Testing (Licensed from Turkish Atomic Energy)
 - Cogeneration and Trigeneration



Establishment of KARAD Jordan

KARAD Jordan

- **KARAD Jordan** is a Management Contractor Company registered and established in Jordan.



Feasibility/HAZOP Study

Basic Design

Conceptual Design

Detailed Design

Assembly

Design

Karad has considerable knowledge and experience in developing comprehensive and **tailored solutions** for oil & gas, energy, construction, chemical and power industries.

- Detailed Design
- Front End Engineering
- Process Engineering
- Structural Engineering
- Civil Engineering
- Electrical Engineering
- Mechanical Engineering
- Instrumentation and Control
- Systems Engineering & Integration
- System Architecture
- Feasibility Studies

Build

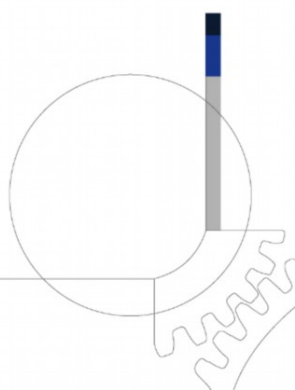
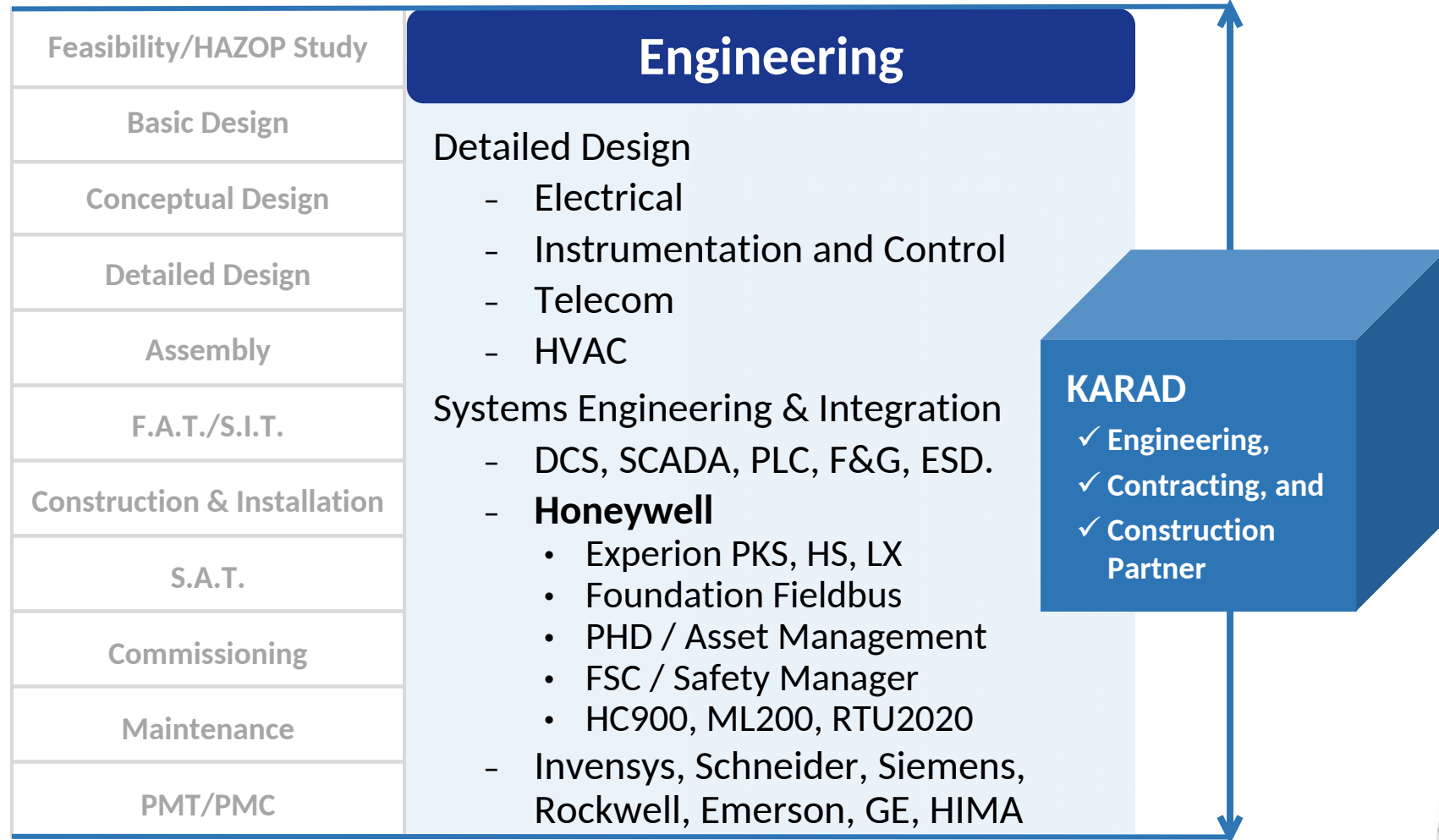
We offer a **single point of contact** with engineering, procurement and construction (EPC) responsibility and operation and maintenance capabilities to ensure on-time delivery and smooth operation.

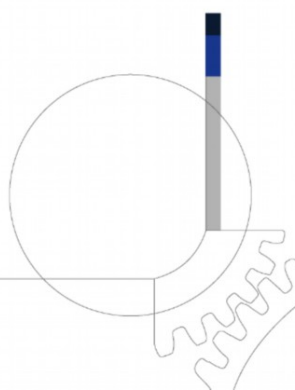
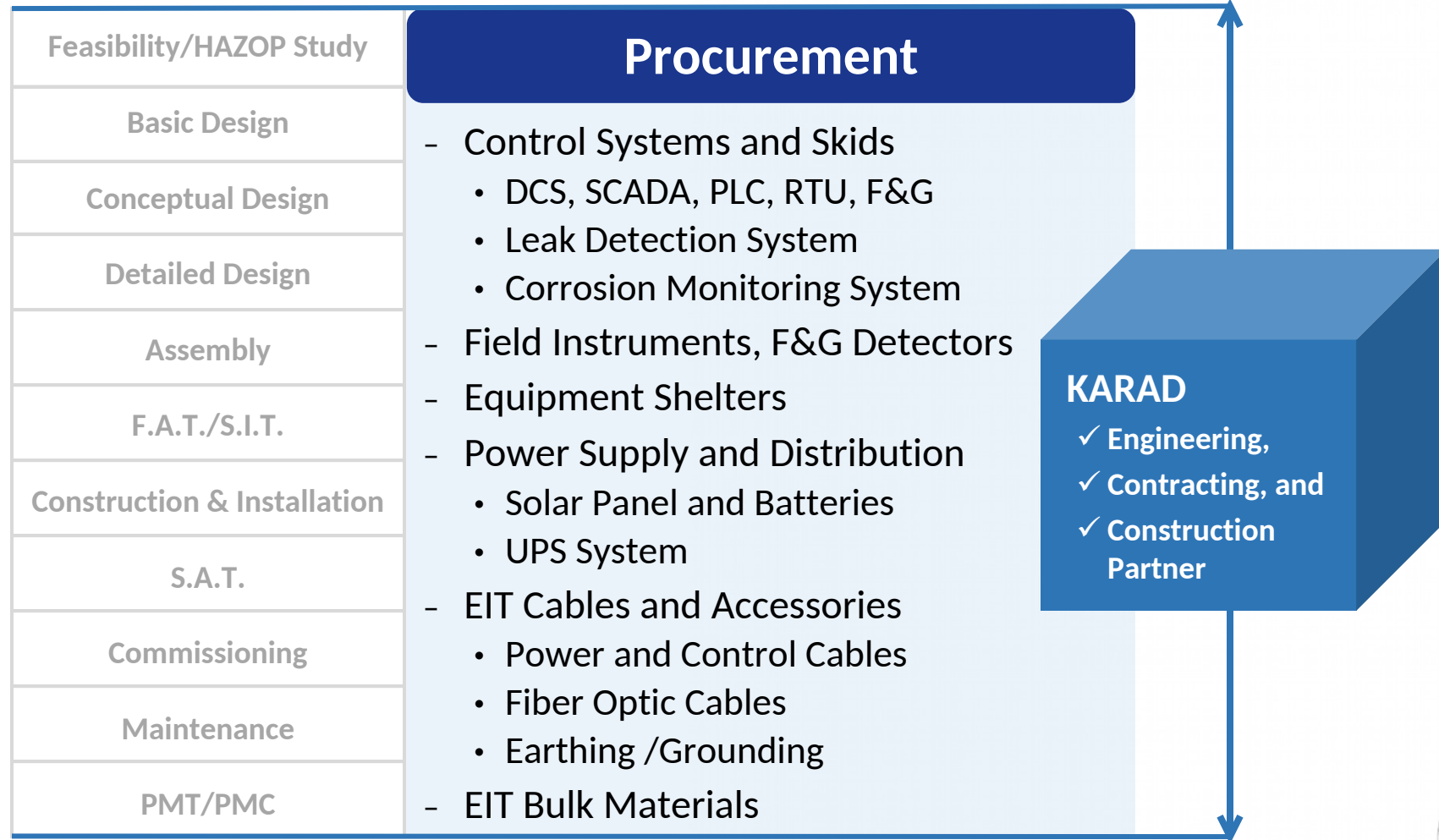
- Procurement and supply of materials and equipment
- Shipment and logistics
- Civil and site infrastructure
- Site management and supervision
- Installation
- Pre-commissioning
- Commissioning and start-up
- Project management
- Schedule and performance guarantees

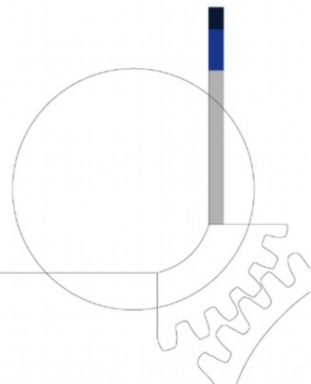
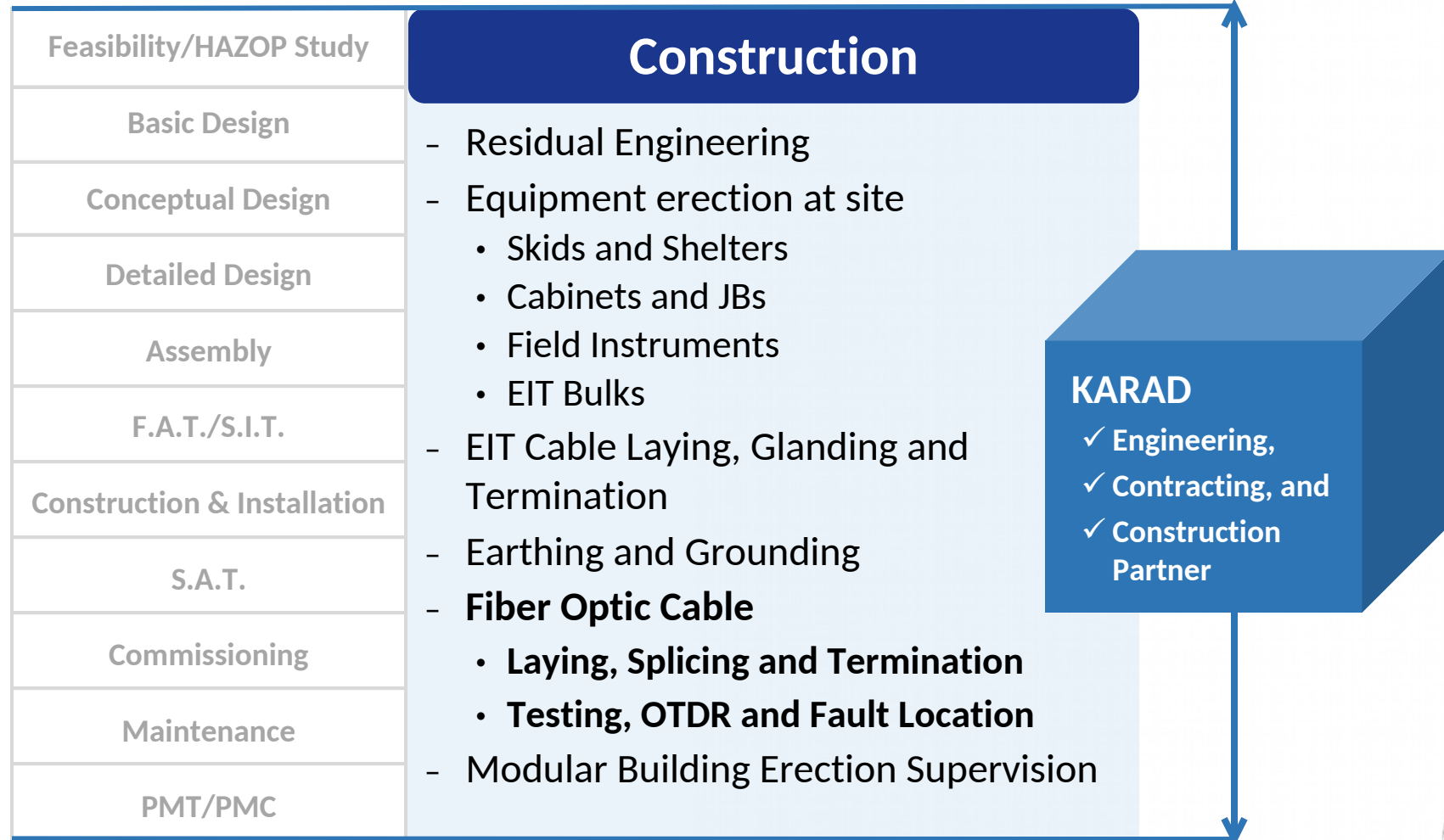
Operate and Maintain

We provide a comprehensive understanding of energy systems, including **fully integrated** assets and advanced software complete with value adding **lifecycle services**.

- Day-to-day operation
- Health and safety management
- Performance management
- Dedicated on-site operation and maintenance teams
- Preventive and predictive maintenance
- Human resources and training
- Maximized return on investment
- Ensured operational efficiency
- Optimization and cost predictability







Multi-Vendor Solutions..

Honeywell

ABB

EMERSON™

SIEMENS

Schneider
Electric

Rockwell
Automation

YOKOGAWA 

EAT•N

vonk®



tyco



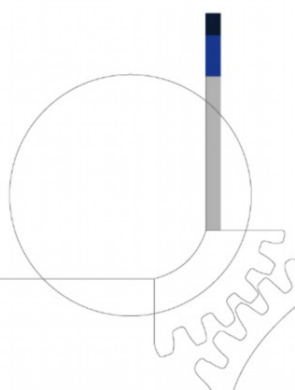
AUTOMATEDLOGIC
 **United Technologies**

3W NETWORKS

 **TEKGAZ**

BOMESC

U
wasco



Trusted by Industry Leaders..



PETRONAS



وزارة النفط
MINISTRY OF OIL



بالم ديستريكت كولنج
Palm District Cooling



Jin
Cheng



SAMSUNG
ENGINEERING

Petrofac



Saipem



TechnipFMC



Power Generation

LPG Recovery

Flare Gas to Power Plants

CO2 Removal

Mobile Power Plant

Power Plants

Egyptian Oil & Gas sector is highly dominated by the diesel generators; however, upon conducting feasibility studies, has proven that by switching from diesel to gas generators will reduce the operating costs of the End-Users by minimum 38%. Hence, a boom in demand is expected during this transition. Initial investment for the system requirements are:

- **Redundant Gas Generators**
- **Standby Diesel Generators**
- **Overhead Transmission Line**
- **Transformer/RMU Package**
- **Substation Control and Monitoring System (SCADA)**
- **Distribution Boards and E-house**

Gas Recovery Plants

Gas flaring has been the conventional approach in Egyptian Oil & Gas sector; however, with the technology transfer brought by Karad and its partners, stakeholders have realized that meeting energy demand over the next century will require not just producing more, but producing it more efficiently and capturing more value from previously flared streams Proposed technology covers:

- **Cryogenic Gas Plants**
- **Refrigerated JT Gas Plants,**
- **LNG Plants**
- **Mixed Refrigeration and Propane Refrigeration Skids**
- **Metering Skids and Receivers**
- **LPG Fractionation Systems**

Process Asset Insight

Egypt government is making sound arguments for process plants needing to change dramatically over the next 8-10 years to be more flexible, data driven, and intelligent; to make decisions more accurately and faster. Now, the need has become a mandate along with profound implementable strategies. Software as a Service (SaaS) provider partners offer:

- **Digital Transformation**
- **Intelligent Drawing Platform (IDP)**
- **Self-Service Analytics (AI and ML)**
- **Artificial Intelligence (AI) Based Predictive Maintenance**
- **Asset Reliability and Efficiency**
- **Superior Operational Excellence**

Metering Skids

Pipeline and Compression

Security and Leak Detection

Digitalization and AI

Asset Management

Honeywell

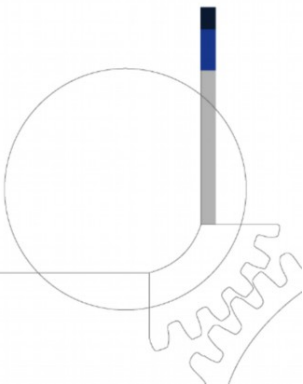


Honeywell Field Products System Integrator of the Year 2014 for Europe, Middle East and Africa (EMEA) region.

Strategic and Solution Partners

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Strategic and Solution Partners





Audubon Companies

Audubon Companies is based in US and is a global provider of engineering, technical and management services for energy, power & utility, and infrastructure markets, from conceptual design, engineering, and fabrication, to construction, installation, commissioning, and operations.



TEKGAZ

Türkiye based Design, Engineering, Procurement, Manufacturing, Installation, Testing, O&M, Consultancy, Management and Supervision, and R&D Studies for Natural Gas Installation and Conversion Works, Pressure Reduction and Measuring Stations, Medium and High Pressure Transmission Line Design, Construction of polyethylene and steel pipelines, etc.



Shanghai Hoto Engineering Inc.

HOTO is committed to providing total solutions for engineering, construction, innovation, and development of energy and chemical industry, and has GRADE A qualification for both engineering design and engineering consulting for petrochemical, chemical and pharmaceutical industry.



BOMESC Offshore Engineering Company Limited

Tianjin based an Engineering, Procurement and Construction (EPC) company providing comprehensive services for modular steel fabrication to offshore/onshore oil and gas including LNG, and mining projects.



Vonk EUA BV

Dutch based multidisciplinary solutions provider and technology integrator specialized in the Oil & Gas as well as other high-grade industries, with the main focus on Electrical, Control & Automation and Power Electronics.



Raffinate Technologies

U.S. based Engineering, Procurement, Fabrication and Commissioning (EPFC) Company (Texas, North Dakota), specializing in upstream gathering, midstream treating and processing, downstream fractionation and transportation terminals.



Wison Offshore & Marine (Hong Kong) Limited

Shanghai based an Integrated Engineering, Procurement, Construction, Installation, Commissioning (EPCIC) solution provider for the industries of oil & gas, global energy and high-technology; focusing on quality module fabrication for onshore & offshore plants and innovative floating solutions for LNG value chain developments



3W Networks

The largest Telecoms and Security Systems Integrator operating in the Middle East, Africa and Asia Pacific regions. The focus of 3WN is to provide Information and Communication Technology (ICT) and Security Solutions to Oil & Gas, Power and Water, Telecom Operators, Transport and Commercial sectors.



WASCO

A leading integrated energy group that operates in the global market providing Pipeline Services, Engineering & Fabrications Services, E&P Services, Field Services and solutions to oil and gas players over the world.



Keumsung Security

A leading Korean manufacturer of high quality CCTV and Access Control Systems.



Vonk

Shell GTL (Pearl), APCM (Qatar)

- Pearl Plant Wide Virtualization Project
- 120.000 + Hardwired I/O
- Renewal of IT Infrastructure for:
 - Process Automation System
 - Electrical Network and Monitoring System
- FEED, Conceptual and Detailed Design, Upgrade
- **No Plant Shutdown**



Seria Crude Oil Terminal (Brunei)

- Oil Terminal Rejuvenation
- Complete Instrumentation and Systems Upgrade
- **Online Transfer of Control to New CCR**
- Reverse Eng'g., Conceptual and Detailed Design, Installation, Commissioning, Start-up



Vonk

Total Anguille Rejuvenation and Telecommunication Project (Gabon)

- 14 Offshore Oil Stations, 3,000 I/Os
- Upgrade of all DCS and IPS systems
- New Central Control Room
- Multiple brands existing DCS/IPS
- Reverse Eng'g., Detailed Design, SIT, Installation, Commissioning, Start-up



Upgrade of Shell Gamba Processing Facility (Gabon)

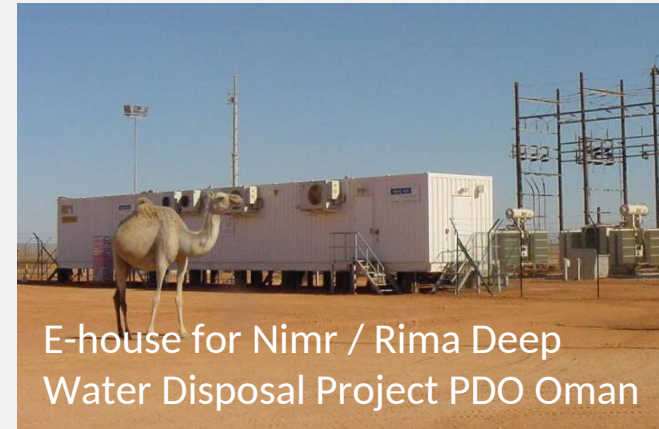
- Complete Online Upgrade
- Control Room Rejuvenation
- Demolition of Pneumatic System
- Reverse Eng'g. of Relay based control to DCS



Vonk

Cawthorne Channel Further Oil (Nigeria)

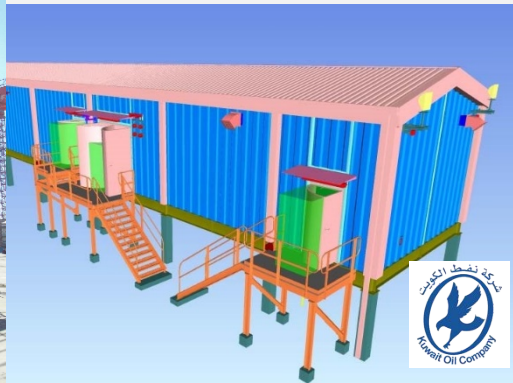
- Basic and Detailed Design
- XHP, HP and LP vessels
- DCS and Instrument Protective Systems
- CCTV, Telecom, Power Management Systems
- Supply of Complete Skids
 - Inlet Manifold
 - ESD/HIPPS
 - Gas Reduction Skid



Bomesc

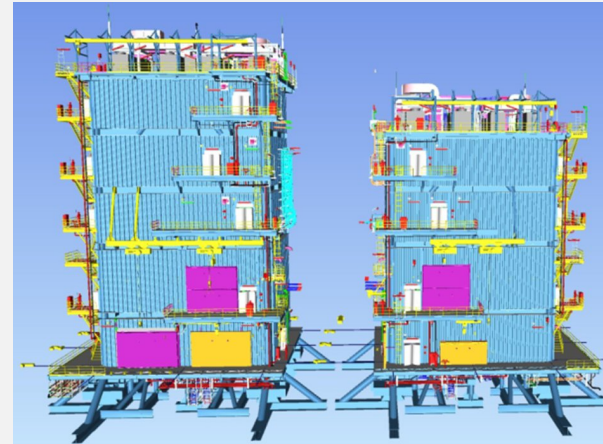
KOC Lower Fars Packaged Substations (Kuwait)

- 24 nos. single pc. building
- 2 hours fire rated
- Module Dimensions:
 - 30.8m × 6m × 3.4m (23 nos.)
 - 32.8m × 6m × 3.4m (1 no.)



Petronas FLNG2 Project (Malaysia)

- 2 Nos. E-House
- Total Weight: 3,974 MT
- Module Dimensions:
 - 19m × 17m × 45m (5 floors)
 - 19m × 17m × 39m (3 floors)



Bomesc

YAMAL LNG Project (Russia)

- 21 Modules for 3 Packages
- Total Weight: 42,780 MT
- Biggest Module:
 - 98m × 36m × 19m (E-House)



UZ750 EPC2 Project (UAE)

- 5 Nos. Packaged Substations
- Total Weight: 9,000 MT
- Module Dimensions:
 - 78m × 25m × 13m (1 no.)
 - 64m x 22m x 7.4m (3 nos.)
 - 52.7m x 21m x 14.3 (1 no.)



Bomesc

UZ750 Accommodation and Utilities Project (UAE)

- 17 Buildings
- Blast and Fire Rated Structures
- Dimensions of Key Buildings:
 - 48.8m x 7.6m x 8m (DO)
 - 9.6m x 9.6m x 9.7m (LOR)



QP FMB Project (Qatar)

- Living Quarters and Utility Platform
- Total Weight: 11,000 MT
- Module Dimensions:
 - 49m x 29m x 32m (LQ)
 - 60m x 37m x 31m (UP)



Bomesc

Wheatstone LNG OSBL/ISBL Modules and Slug Catchers (Australia)

- 78 Modules
- Total Weight: 69,685 MT
- Biggest Module:
 - 80m × 36m × 26m



Modules for RGP6 Iron Ore Mine P1 and P2 (Australia)

- 161 Modules
- Total Weight: 18,800 MT



Wasco

TCO Gathering Project - Package Substations (Kazakhstan)

- 21 nos. Distribution Substations
 - 22.3m x 11.4m (2 nos.)
 - 18m x 9.2m (1 no.)
 - 18m x 4m (5 nos.)
 - 13m x 4m (8 nos.)
 - 16m x 4m (5 nos.)



TCO Project - Package Substations (Kazakhstan)

- Schneider Electric (7 nos.)
 - 60m x 16m
 - 54m x 16m x 7.2m
 - 48m x 16m x 7.2m
 - 42m x 16m x 7.2m
- Siemens (3 nos.)
 - 60m x 16m



Wasco

Rajasthan Block Development Package Substations (India)

- Full Turn-key project that includes 15 Substations
- 13.2m x 4.8m x 4.2m



PBR NdBR Singapore Project (LANXESS)

- Fully-integrated E-house complete with 66KV switchgear, 415V LV Switchgear, UPS
- 4 Substations



Wasco

PNG LNG (APCI) Project (Australia)

- 11 Substations
- E-house complete with 66KV/33KV/6.6KV Switchgear, and 415V LV Normal Switchgear
- Biggest Module:
 - 65.8m × 9.7m × 5m



Cendor Phase 2 FPSO (Malaysia)

- Fully-integrated E-house complete with 6.6KV switchgear and 415V LV Normal and Essential Switchgear
- 26m x 20m x 12m



Wasco

Gladstone LNG Plant Project - Prefabricated Powerhouse and Electrical Equipment Package

- 9 Substations
- Biggest Module:
 - 56.3m × 16.5m × 5.6m



OSX-3 FPSO Project (Brazil)

- Fully-integrated E-house complete with 6.6KV switchgear, 415V LV Switchgear, 2.5 MVA Transformers
- 35m x 20m x 8.5m



3W Networks

EPC for Main Control Building For Pipeline Network at Maqta

In partnership with Karad, 3WN
Carried out telecom migration scope, and new Control building telecom activities



Abu Dhabi Crude Oil Pipeline Project (ADCOP)

Optimum Integrated Telecommunication, Safety and Security Systems Solutions



3W Networks

Niger optical data transmission infrastructure

Complete Fiber Optic Infrastructure solutions for super-fast and secure broadband network delivered nationwide

Client: Niger West African operator SONITEL



Expansion of ZESCO

- Expand and modernize electrical Transmission and Power Distribution infrastructure in Zambia
- Secure and reliable SCADA System for ZESCO Regional Control Centre (RCC) responsible for the remote operation and control of the 33kV and 11kV Substations at more than twenty sites





UptimeAI is the first artificial intelligence based plant monitoring software, combining predictive maintenance with explainable failure modes/recommendations, and self-learning workflows to mitigate equipment failures and performance loss in process industries.



Honeywell Process Solutions is an industry leader and a pioneer in providing automation control and instrumentation solutions and services for the oil and gas; refining; pulp and paper; industrial power generation; chemicals and petrochemicals; biofuels; life sciences; and metals, minerals and mining industries.



Elsewedy Electric is a fully integrated energy solutions provider from raw materials such as metals and plastics to inputs across the spectrum of wires, cables, and electrical products, to contracting and turnkey infrastructure projects and electricity generation through competitively advantaged wind technology.



VisualAIM is a UK-based company providing cloud-based Asset Integrity and Performance Management software and support services. The total asset integrity management systems are provided to all the phases of the oil and gas industry and uses Smart Drawings, which has the power to provide any imaginable data set within a few minutes.

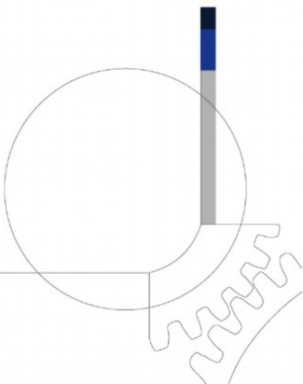


Innio is a leading provider of renewable gas, natural gas, and hydrogen-based solutions and services for power generation and gas compression in the full range of mobile and stationary applications whether running on oilfield gas direct from the ground or on transported liquid natural gas.

Digital Transformation

Digital Transformation

Digital Transformation



Signed Agreements with Software Companies

After the first quarter of 2020, KARAD realized the importance and the growing need in market for DIGITAL TRANSFORMATION solutions, providing situational awareness, predictive maintenance, remote monitoring and other related features.

KARAD signed agreements with VisualAIM and UptimeAI software companies to represent them in Middle East and Africa regions.

DIGITAL TRANSFORMATION is the integration of digital technology into all areas of a business and industries, it involves transforming operations into digitalized form, and providing virtual workspace enabling clients to experience new features for managing their assets

Offered Solutions shall rapidly increase clients' operating margins and market share by increasing their efficiency, agility, and productivity while improving safety and sustainability.





VisualAIM, a software company providing solutions for clients to more safely and productively operate and maintain physical assets from within the familiar environment of Piping & Instrumentation (P&IDs) and Process Flow Diagrams (PFDs), Isometric Drawings and Electrical Diagrams.

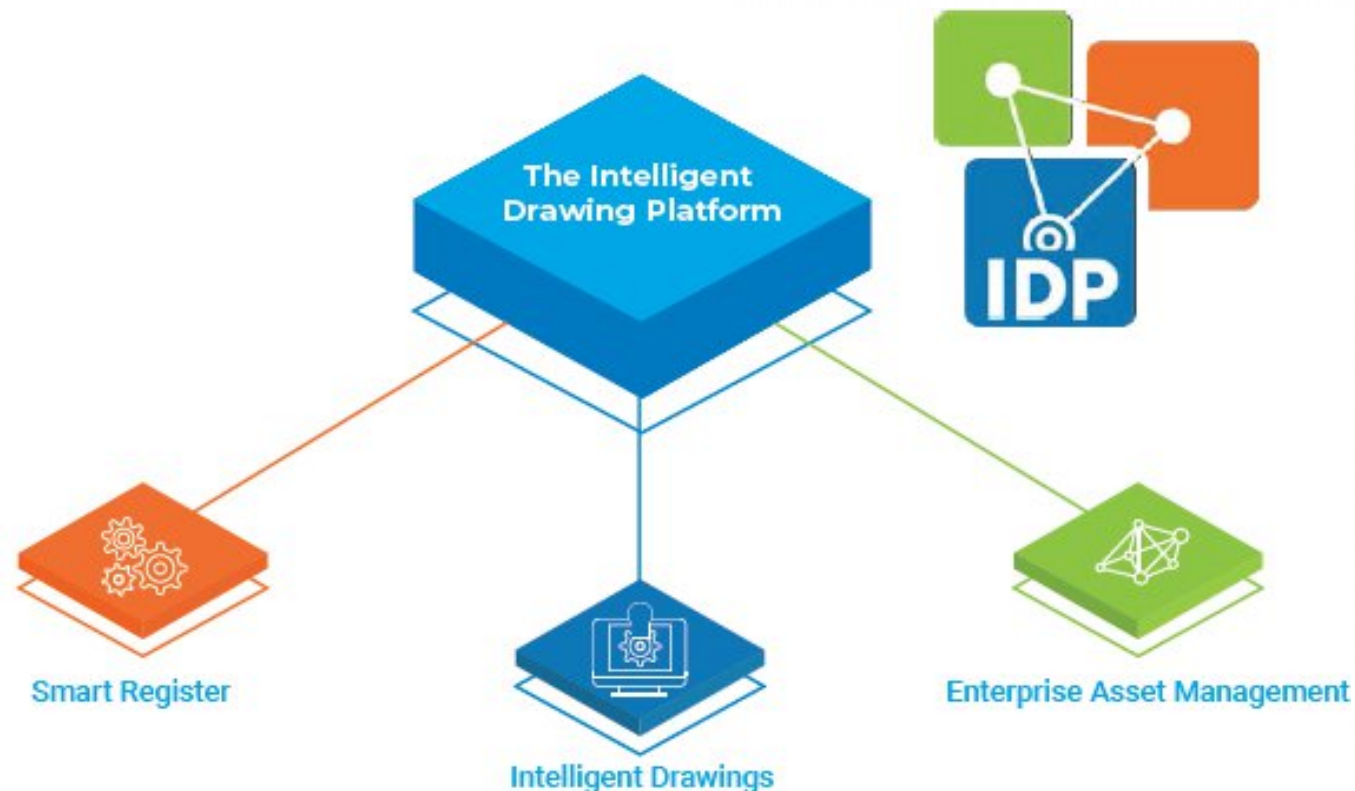
VisualAIM offers IDP (Intelligent Drawing Platform), a web based software that provides a virtual workspace for asset management through a wide range of features that are beneficial through all project phases.



UptimeAI operationalizes artificial intelligence ("AI") to the needs of plant engineers enabling them to predict equipment and performance issues in advance before they result in losses.

Combining AI and subject matter knowledge, UptimeAI mimics experts by continuously learning and explaining complex issues to achieve high availability, high efficiency, and reduced maintenance

- The Intelligent Drawing Platform (IDP) is a disruptive intelligent visualization technology, with drawing transformation benchmarked at 4.3 seconds per drawing.
- Provides a wide range of features, beneficial through all project phases.
- It acquires process data in a very fast, accurate and easy way from uploaded CAD drawings.



Smart Register

- Extracts mission critical data from input drawings. Understand key relationships between drawings, assets, instruments, and components.
- Extracted data is then used to fill projects' inventories for all instruments, equipment, piping and all other process components, and to show the relationships and interdependencies between them.
- All this data is stored in structured database ready to be used in generating all kinds of reports.

Intelligent Drawings

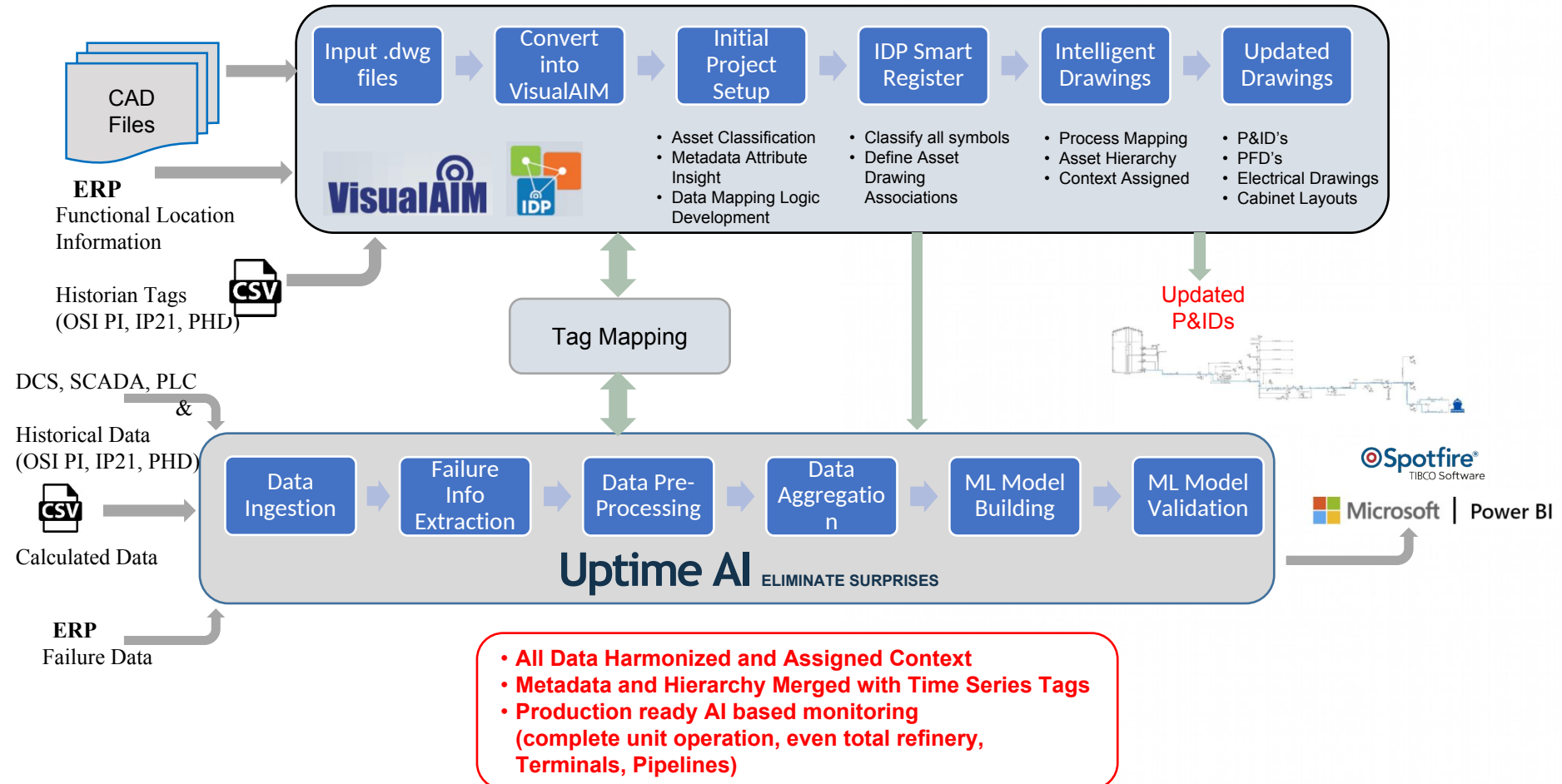
- Digitally transforms plant drawings: P&IDs, PFDs, One Line, Loop, Marshalling Panel, Junction Box, etc. and introduces intelligence into uploaded drawings.
- The user is given the ability to visualize the process details, connectivity between assets, interdependencies between different parts of process, and also visualize information by recoloring some parts to indicate updated information, for example a certain risk on a certain asset.

Enterprise Asset Management

- Develop actionable insights with externally connected apps to increase visibility into your enterprise.
- Using all collected data stored in structured database, including all tag names, items specifications, flow rates, temperature ranges, materials, lifecycle ...etc., the platform provides a higher level of features giving the user analytics, maintenance data, data about risk factors for each asset, inspection data management system...etc.

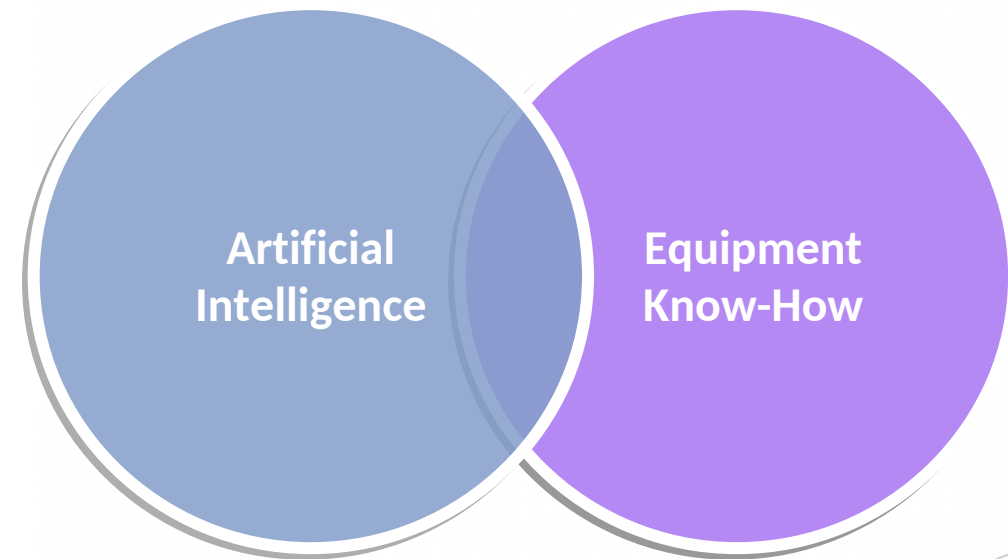
Work Processes that Deliver Results within 2-3 Months

- Visualization thru Familiar Drawings &/or Tools of Choice
- Assets Inventoried
- Hierarchy Assigned
- All Drawings Standardized



UptimeAI .. Eliminate Surprises

- UptimeAI uniquely **combines Artificial Intelligence with Subject Matter Knowledge** to explain interrelations across groups of equipment, adapt to changes, identify anomalies, and give prescriptive diagnosis like a human expert would, resulting in high availability, high efficiency, and reduced maintenance.
- UptimeAI's artificial intelligence engine builds **unsupervised deep learning models** from past timeseries, failure, and maintenance data to differentiate good and bad operation. The software analyzes the **real-time operational data from the historian** to generate alerts about impending issues.



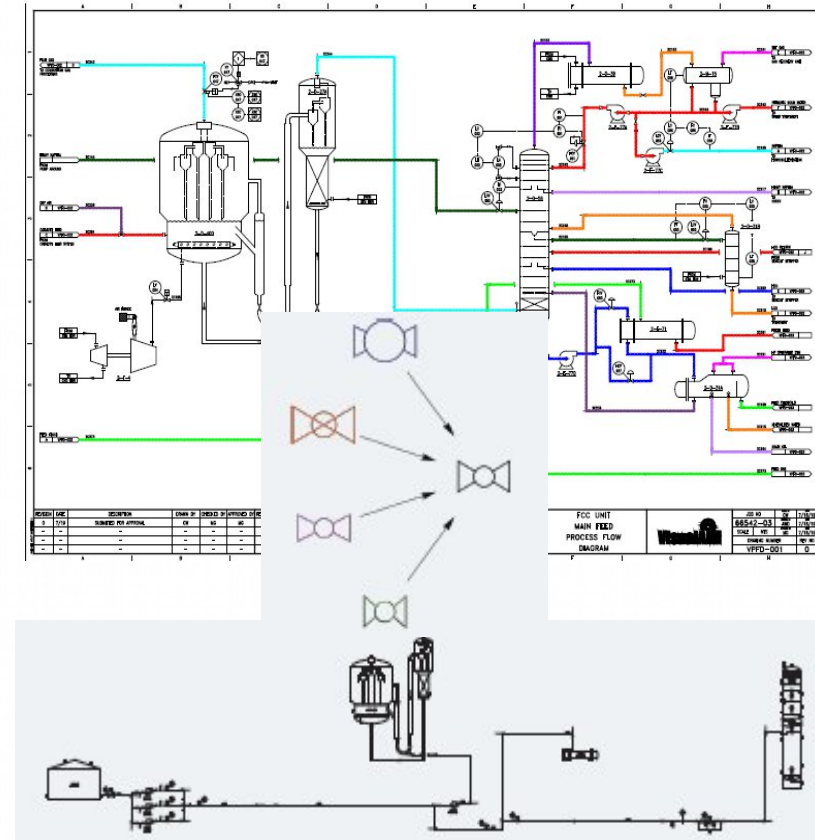
VisualAIM .. Success Stories

Problem Statement:

“Inconsistent P&IDs, no two P&ID’s or symbol libraries look the same, causing lack of confidence in the accuracy of the drawings. Client needs to standardize but this can take years.”

Solution:

The IDP drawing standardization feature, standardizing 4,000 P&IDs. All blocks in the CAD drawings are programmatically replaced with corresponding blocks from a standardized CAD legend including categorizing drawing layers to the owner operator’s standard layer set.



VisualAIM .. Success Stories

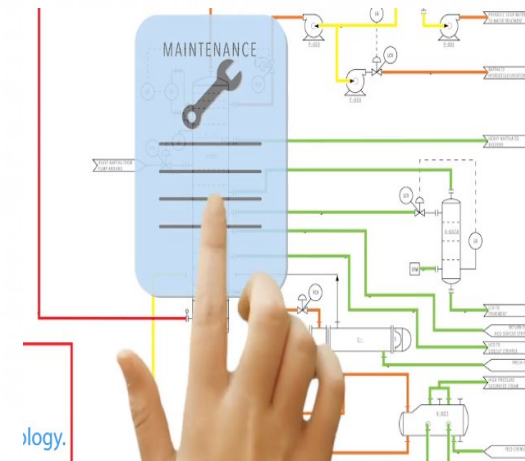
Problem Statement:

“90% of client’s product movements are managed manually, using radios in the field, they’re operating in the blind and don’t have the time to sift through every paper copy of P&IDs for each product movement. they need to make more effective decisions in less time.”

Solution:

The IDP drawing to drawing navigation feature provides situational awareness and visualization across the terminal dramatically improving the reliability of the product movement work process.

Field changes to the work order are managed on the IDP Smart Tablet, allowing the operator to track each step in the product movement visually from the one-line diagram on their smart tablet.



The Reality.. Major Projects

The Reality.. Major Projects

The Reality.. Major Projects

