## ISS International SpA

integrated service solutions



### MAINTENANCE ENGINEERING SERVICES

| CLIENT<br>(Final Client)  | COUNTRY | SECTOR        | PERIOD |              | DESCRIPTION  |  |
|---|---------|---------------|--------|--------------|--|--|
| (Final Glient)  |         |               | Year   | Months       | Plant / Unit   | Services   |
| KT Kinetics Technology S.p.A.                                     | Italy   | Petrochemical | 2017   | Up to<br>now | Maintenance<br>Activities for<br>Petrorabigh<br>Project          | Maintenance Engineering Services   |
| KT Kinetics Technology<br>SpA<br>(Saipem Spa for Saudi<br>Aramco) |         | On-shore      | 2016   | Up to now    | Jazan Project  | <ul> <li>The Project requirement includes the followings:</li> <li>Development of Operating Manuals for Sulphur recovery Unit (SRU)</li> <li>Development of Vendor O&amp;M manual for Thermal reactor - licensed by KT</li> <li>Development of Vendor O&amp;M manual for Incinerator - licensed by KT</li> </ul> |
| ALSA Engineering &<br>Construction<br>(ADCO)                      | UAE     | On-shore      | 2015   | 6<br>months  | CO2 Injection Plant (Rumaitha) Cluster 14 (N) Cluster 15 (O) CPP | Maximo Maintenance Data Implementation (estimated tags approx 6000):  Asset Data Gathering Asset Specification Locations Hierarchy Equipment Details CSS Test Procedures Maintenance Standard Procedure & related MWI PM and related Job Plans   |











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|-----------------------------|---------|----------|--------|-------------|--|--|--|
| (Final Client)              |         |          | Year   | Months      | Plant / Unit   | Services   |  |
|                             |         |          |        |             |  | <ul><li>Safety Plans</li><li>Data Validation</li><li>Maximo Data Upload</li></ul>  |  |
| Worley Parsons<br>(ADCO)    | UAE     | On-shore | 2015   | 9<br>months | BAB-HABSHAN 1  – Phase 1  Development  Project               | Maximo Maintenance Data Implementation (estimated /tags approx 10000):  Primary Equipment Location Hierarchy Marked-up Drawings with Maintainable Units Maintenance Standard Procedures Maintenance Work Instructions Asset Details Asset Spares & Item Master Location Details Asset & Location Specification PM & Job Plan PM Programme & Workload Distribution Critical Safety System |  |
| Petrofac Emirates<br>(ADCO) | UAE     | On-shore | 2015   | 5<br>months | EPC for<br>Expansion of BAB<br>Gas<br>Compression<br>Station | Asset Integrity Management System Development:  Identification of Assets (main & sub-system)  Detailed Asset Register  Criticality Assessment Workshop  Development of HSE & BCES  Development of Performance Standards for HSE & BC Equipment  Compilation of Technical Data for RBI, RBA, RCM, CREDO Software uploading  AIMS Review & Close-out                                       |  |











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|--------------------------------|---------|-----------|--------|---------------|--|---|--|
| (Final Client)                 |         |           | Year   | Months        | Plant / Unit   | Services  |  |
| Petrofac Emirates<br>(ADCO)    | UAE     | On-shore  | 2015   | 6-8<br>months | BAB development<br>Phase II – Gas<br>Compression<br>Station,<br>wellheads, RDS,<br>substation, trunk-<br>lines | Development of CMMS implementation through the following activities (estimated tags approx12.000):  Asset Data Gathering  Asset Register and SPIR collection,  CSS Assessment, Test Standard Procedures  Document Analysis on existing Installations  Location details and Specifications  Locations Hierarchy  Equipment Maintenance Programs and Maintenance Master Plan  PM and Job Plans with associated Resources  Maintenance Work Instructions and Standard Procedures,  Safety Plans,  Mark-up Drawings (P&IDs,) based on AIMS requirements for Maintainable Units boundaries  Data Entry in MAXIMO |  |
| SICIM<br>(ENI Iraq BV)         | UAE     | On-shore  | 2015   | 6<br>months   | Zubair Oil Field<br>Development  | <ul> <li>Operating Manual Development</li> <li>Maintenance Manual Development</li> <li>CMMS Development (SAP)</li> <li>ENIMS Development</li> </ul>   |  |
| ENI Engineering E&P (AGIP KCO) | Italy   | On-shore  | 2015   | 6<br>months   | Kashagan Project   | CAD and DATA MANAGEMENT SERVICES  EMIMS Implementation of Maintenance Engineering Functionality Project Engineering Data Vs. Completion Data Assessment (in SAP)  |  |















| CLIENT (Final Client)                  | COUNTRY SECTOR |           | SECTOR PERIOD |              | DESCRIPTION   |  |  |
|--|----------------|-----------|---------------|--------------|---|--|--|
| (Final Client)                         |                |           | Year          | Months       | Plant / Unit  | Services   |  |
| BONATTI SpA<br>(Mellitah Oil & Gas BV) | Libya          | On-shore  | 2014          | 12<br>months | WAFA Inlet Gas<br>Compression<br>Station Project<br>(WIGCS) | Development of Maintenance Engineering Activities:  Master Equipment List (MEL)  Maintenance Criticality Analysis  Maintenance Plan  Maintenance Manuals  Spare Parts Analysis   |  |
| QATAR PETROLEUM. QP (Qatar Petroleum)  | Qatar          | Off-shore | 2014          | 12 months    | HALUL Offshore<br>Oil Terminal                              | Development of Operation & Maintenance Manuals for the following units:  Incoming Crude Oil Pipeline Crude Oil Distribution Manifold QP Crude Oil Storage Tanks Crude Oil Transfer, Export & Import Systems Formation Water Disposal Systems Sour Gas System Sweet Gas System Flaring System Open & Closed Drain Systems F/G Detection & Monitoring Systems Firefighting Systems Firefighting Systems Electrical Power Generation and distribution systems Instrument, Utility and Starting air Systems Potable Water Systems Diesel Fuel systems Nitrogen Plant |  |











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| CLIENT   | COUNTRY    | JNTRY SECTOR | PERIOD |              | DESCRIPTION                       |   |  |
|--|------------|--------------|--------|--------------|-----------------------------------|---|--|
| (Final Client)   |            |              | Year   | Months       | Plant / Unit                      | Services  |  |
|  |            |              |        |              |                                   | <ul> <li>Halul Heliport</li> <li>Telecommunication Systems</li> <li>Halul Harbor</li> <li>Waste Water Treatment System</li> <li>Sewage Treatment System</li> </ul>  |  |
| Abu Dhabi Company for<br>Onshore Oil Operations -<br>ADCO.<br>(ADCO) | U.A.E      | On-shore     | 2013   | 24<br>months | BAB GAS<br>Compression<br>Station | <ul> <li>Development of CMMS implementation through the following activities:</li> <li>Asset Data Gathering</li> <li>Asset Register and SPIR definition,</li> <li>Gap Analysis and Asset Assessment on Existing Installations</li> <li>Document Analysis on existing Installations</li> <li>Criticality Analysis</li> <li>MEL Development</li> <li>Locations Hierarchy and gather locations,</li> <li>Equipment Maintenance Programs</li> <li>Maintenance Work Instructions and Procedures,</li> <li>Safety Plans,</li> <li>Mark-up Drawings (P&amp;IDs,) based on AIMS requirements,</li> <li>Data Entry in MAXIMO.</li> </ul> |  |
| GLOBAL PETROPROJECT<br>SERVICES AG<br>(KPO)                          | Kazakhstan | On-shore     | 2013   | 12<br>months | Karachaganak<br>Project           | Field Supervision O&M Services  |  |















| CLIENT (Final Client) COUNTR                             | COUNTRY SECTOR | PERIOD    |      | DESCRIPTION  |   |  |
|--|----------------|-----------|------|--------------|---|--|
| (Final Client)   |                |           | Year | Months       | Plant / Unit                                    | Services   |
| NETCO DIETSMANN<br>(Nigerian Agip Oil Co.<br>NAOC)       | Nigeria        | On-shore  | 2013 | 12<br>months | Okpai CCGT<br>Power Plant                       | Maintenance Supervision Services   |
| NIGERIAN AGIP OIL CO.<br>NAOC<br>(Nigerian Agip Oil Co.) | Nigeria        | On-shore  | 2013 | 24<br>months | Port Harcourt<br>Living Quarter                 | Maintenance Coordination Services  |
| TECNOMARE SpA<br>(Eni E&P SpA)                           | Pakistan       | On-shore  | 2013 | 2<br>months  | BHIT & BADHRA<br>field & Gas<br>Treatment Plant | Development of preliminary Maintainability Analysis for Bhit Gas Treatment Plant Full Field development and wellhead new items of Bhit and Badhra gas field  |
| TECNOMARE SpA<br>(Eni E&P SpA)                           | Pakistan       | On-shore  | 2013 | 4<br>months  | BHIT & BADHRA<br>field & Gas<br>Treatment Plant | Development of preliminary availability analysis and reliability data analysis for a feasibility study relevant to Bhit Gas Plant optimization. In particular, the study encloses different configurations of Bhit and Badhra gas field and Bhit Gas Treatment Plant review. |
| TECNOMARE SpA<br>(Eni E&P SpA)                           | Italy          | Off-shore | 2013 | 2<br>months  | BIANCA &<br>LUISELLA<br>platforms               | Development of the following Maintenance philosophies at platform in Adriatic sea (Italy):  Preliminary Operation & Maintenance Philosophy Redundancy and Sparing Philosophy Accessibility & Maintainability Criteria Guideline.   |

















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|---|-----------|----------------------|------|--------------|---|--|--|
| (Final Client)                              |           |                      | Year | Months       | Plant / Unit  | Services   |  |
| ENI ALGERIA<br>PRODUCTION B.V.<br>(Eni SpA) | Algeria   | On-shore             | 2012 | Up to<br>now | Sonatrach Menzel<br>Ledjmet<br>East(MLE) pj/<br>BRN Project/<br>HMD Project | Multi discipline technical assistance and Supervision on Site during plant Operation and Start-up phases:  O&M Mechanical supervision  O&M Instrumentation Supervision  O&M Fire Fighting Supervision  O&M HVAC Supervision  O&M Pipeline Supervision  O&M Telecomm. Supervision  Safety Coordination  QA/QC Management  NDT & Insp. Supervision |  |
| ISTITUTO ITALIANO DI<br>SALDATURA (IIS)     | Italy     | On-shore             | 2012 | 3<br>months  | Various   | <ul> <li>Training Course on the following topics:</li> <li>Reliability, Availability and Maintainability (RAM) theory</li> <li>Reliability, Availability and Maintainability (RAM) practical approach and exercitations</li> </ul>   |  |
| SAIPEM SpA<br>(Santos)                      | Australia | On-shore<br>Pipeline | 2012 | 10<br>months | GLNG Gas<br>Transmission<br>Pipeline  | Development of Operating & Maintenance Manual and Training Manual. In addition, the following Maintenance Procedures have been developed:  Pig Detectors Scraper Launcher/Receiver Valves & Pressure Safety Valves ESD Valves Hydraulic Power Unit (HPU)   |  |

















| CLIENT                         | COUNTRY | SECTOR    | PERI      | OD          | DESCRIPTION                                   |  |
|--------------------------------|---------|-----------|-----------|-------------|---|--|
| (Final Client)                 |         |           | Year      | Months      | Plant / Unit                                  | Services   |
|                                |         |           |           |             |   | <ul> <li>UPS &amp; Batteries System</li> <li>Shelters</li> <li>Anode Ground beds</li> <li>CCTV System</li> <li>PABX &amp; Data System</li> <li>WAN System</li> <li></li> </ul>   |
| TECNIMONT KT<br>(PGNiG)        | Poland  | On-Shore  | 2011-2012 | 4<br>months | LMG Project -<br>Sulphur Recovery<br>Unit     | <ul> <li>Maintenance procedures development for the following equipment:</li> <li>Filters &amp; Cartridges Filters</li> <li>Gas / Liquid Separators</li> <li>Regeneration Gas Separators</li> <li>Steam Coils</li> <li>Shell &amp; Tube, Air Coolers (Forced draft) &amp; Plate Heat Exchangers</li> <li>Vessels &amp; Columns</li> <li>Internals (Trays and Packing)</li> <li></li> </ul> |
| TECNOMARE SpA<br>(Agip KCO)    | Italy   | Off-shore | 2011      | 2<br>months | Kashagan<br>Onshore FPD<br>Plant              | Development of Failure Mode and Effect Criticality Analysis (FMECA) for Kashagan Onshore FPD Plant in FEED phase.  |
| TECNOMARE SpA<br>(Eni Iraq bv) | Italy   | On-shore  | 2011      | 1<br>month  | Zubair Mishrif<br>Degassing<br>Stations, Iraq | Development of a Quantitative Risk Assessment carried out with the purpose to estimate the associated replacement costs. The subject of this cost estimation is a "brown field project" of existing degassing stations in Zubair Oil Field.  |











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|-------------------------------------|---------|----------------|--------|--------------|---|---|--|
| (Final Chefft)                      |         |                | Year   | Months       | Plant / Unit  | Services  |  |
| TECNOMARE SpA<br>(Eni E&P SpA)      | Italy   | On-shore       | 2011   | 1<br>month   | Jangkrik Gas Field Development (Off-shore & On- shore facilities) | Development of Preliminary Operability and Maintainability Strategy applied for the Jangkrik Field Development Project from the assets detailed design (Project Selection) phase, to production operations activities till the DEC-AB phase.                  |  |
| KTI STAR<br>(KTI Star)              | Egypt   | On-shore       | 2010   | 4<br>months  | El Arish<br>Gas<br>Compression<br>Station                         | Development of Maintenance Services such as:  Production Plant Maintenance Management  Maintenance & Inspection Plan definitions.  CMMS field updating  |  |
| TECHNIP KTI SpA<br>(Iplom Refinery) | Italy   | On-shore       | 2010   | 12<br>months | IPLOM Refinery.<br>H2 Generation<br>Unit                          | Maintenance Engineering Services development:  Maintenance Plan definition  Asset Register  MEL  Spare Parts list  Equipment Maintenance Procedures  Risk Based Inspection (RBI) development  Failure Mode Analysis  Criticality Analysis  Maintenance Manual |  |











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| CLIENT (Final Client)               | COUNTRY | OUNTRY SECTOR | PERIOD |              | DESCRIPTION                               |   |  |
|-------------------------------------|---------|---------------|--------|--------------|---|---|--|
| (Final Client)                      |         |               | Year   | Months       | Plant / Unit                              | Services  |  |
| TECHNIP KTI SpA<br>(Iplom Refinery) | Italy   | On-shore      | 2010   | 12<br>months | IPLOM Refinery.<br>HydroCracking<br>(MHC) | Maintenance Engineering Services development:  Maintenance Plan definition  Asset Register  MEL  Spare Parts list  Equipment Maintenance Procedures  Risk Based Inspection (RBI) development  Failure Mode Analysis  Criticality Analysis  Maintenance Manual |  |
| TECNIMONT KT SpA<br>(KTI Star)      | Egypt   | On-shore      | 2010   | 2<br>months  | El Arish Gas<br>Compression<br>Station    | Development of Maintenance Engineering Services such as:  MAXIMO Asset Management System Support Service:  Maintenance Data Gathering  Asset Register  Maintenance Plan   |  |
| TECNOMARE SpA<br>(NAOC)             | Nigeria | On-shore      | 2010   | 1<br>month   | Standard<br>Compression<br>Station        | Development of Preliminary Operability and Maintainability Philosophy applied for Standard Gas Treatment and Compression Station installed in Nigerian Country for the development of non-associated Gas field and/or the recovery of associated gas.         |  |











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|--------------------------------|------------|---------------|-----------|--------------|---------------------------------|--|
| (Final Client)                 |            |               | Year      | Months       | Plant / Unit                    | Services   |
| TECNOMARE SpA<br>(Eni SpA)     | Italy      | On-shore      | 2010      | 14<br>months | World Wide ENI<br>Installations | Development of Maintenance Services such as:  Asset Integrity Management System Development  Gap Analysis of Existing Installation  Development of Standard for O&M of Metering Stations  Standardization of ENI Metering Stations  Facility Procedures  Asset management software development |
| Tecnomare SpA<br>(Eni E&P SpA) | Italy      | On-shore      | 2008/2009 | 12<br>months | Oil Gathering<br>Plant          | Operation and Maintenance Manual Development   |
| EE SpA<br>(Agip KCO)           | Kazakhstan | On-shore      | 2006/2007 | 24<br>months | Gas & Oil<br>Treatment Plant    | Asset Register Data & Document Management  |
| EE SpA<br>(Agip KCO)           | Kazakhstan | On-shore      | 2006/2007 | 24<br>months | Gas & Oil<br>Treatment Plant    | Maintenance Data & Document Management   |
| Snamprogetti Ltd (NAOC)        | Nigeria    | On-shore      | 2005/2006 | 16<br>months | LNG Plant<br>Bonny Island       | Maintenance Engineering services for LNG plant   |
| Snamprogetti Ltd (NAOC)        | Nigeria    | On-shore      | 2005/2006 | 16<br>months | LNG Plant<br>Bonny Island       | Customization, supply and implementation of the Organization and Management System (OMS) backed-up by "CMMS" software package  |











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