

MUHAMMAD ABUBAKAR

Project Management Professional (PMP®, PMI-RMP®, PMI-ACP®) | Oil & Gas Skid Packages & LDS

Mechanical engineer with 10+ years of experience, including 5+ years as Lead Engineer on vendor-side delivery of process skids (SIL-3 HIPPS, chemical injection, transfer, solar) and engineering of Conventional WHCP, for projects in the Middle East, Africa, and the USA, with skids fabricated in the UAE and USA. Hands-on commissioning and SAT of pipeline Leak Detection Systems (LDS) using RTTM, NPW, and fiber-optic technologies in Pakistan and KSA, plus pre-award engineering to Aramco SAES and ADNOC AGES specifications.

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Experience

SENIOR PROJECT ENGINEER • GULFNET SOLUTIONS • AL KHOBAR, KSA • JUL 2026 – PRESENT

- Responsible for the end-to-end engineering and project-execution lifecycle of Leak Detection Systems, from detailed design and system configuration through commissioning and post-implementation support.
- Commission fiber-optic (DAS) Leak Detection Systems at Saudi Aramco sites on two crude oil pipeline projects: site surveys, calibration (mapping fiber length to pipeline length), data collection, and LDS software parameter tuning.
- Plan and conduct internal and customer-witnessed SATs with cross-functional teams, reviewing SAT procedures and project documents against client specifications and site conditions, in line with Saudi Aramco site HSE requirements.
- Prepare and deliver customer training for operation and maintenance of the LDS.

Projects:

1. Commissioning and SAT of Fiber-Optic (DAS) LDS for Berri Onshore Pipelines – Jubail, KSA (Saudi Aramco)
2. Commissioning and SAT of Fiber-Optic (DAS) LDS for Dammam Field Development Pipelines, Phase II – Abqaiq, KSA (Saudi Aramco)

LEAD ENGINEER • INTECH AUTOMATION INTELLIGENCE • HYBRID (UAE/PK) • MAR 2018 – JUL 2026

Projects Division

Managed design-package reviews, vendors, fabrication supervision, and integration testing of process skid packages through FAT and client close-out, and the engineering of Conventional WHCP packages.

- Delivered 44 process skids (17 SIL-3 HIPPS; 24 chemical injection, transfer, and solar skids; 3 chemical injection skids with a consolidated platform), fabricated in the UAE and USA for BP (Iraq) and Zeon Chemicals (USA), with a combined contract value of over USD 4M.
- Led multidisciplinary teams and vendors (peak: 10 engineers, 4 CAD engineers, 20 laborers, and 8 vendors), managing cost, baseline schedule, and quality with weekly and monthly progress reporting.
- Owned the package procurement cycle: material requisitions, technical bid evaluations, vendor selection, commercial negotiation, subcontract preparation, vendor kick-off meetings, and expediting.
- As part of the on-site recovery team at the UAE (Ras Al Khaimah) fabricator, brought a halted BP skids project back on track: cut a forecast 3-month delay to 3 weeks, compressed the PO cycle from 4 weeks to about 3 days, and delivered all 24 skids on the mutually agreed timeline.
- Managed fabricator-originated change orders on the chemical injection, transfer, and solar skids without commercial or schedule impact, through a consolidated engineering-and-fabrication contracting model based on HIPPS lessons learned and a PMI-aligned integrated change control process (introduced on this project, then adopted portfolio-wide).
- Avoided over USD 113K in project costs and about 12 weeks of schedule on the BP and Zeon skids through BP-approved engineering queries on valve and tubing specifications, in-house engineering, and alternative technical solutions, while maintaining full client compliance.
- Secured BP approval of previously rejected, lower-cost vendors from China and Italy by aligning their QA systems, procedures, and ITPs with BP specification requirements, saving over USD 200K versus switching to pre-qualified alternatives.
- Established the QA/QC function on the HIPPS scope (ITPs, TPI, NCR management) without schedule impact, while optimizing TPI man-days during fabrication.
- Built HSE requirements into the project management plans for skids and LDS projects, and upheld and enforced HSE procedures within the team through fabrication, testing, and site work.

- Reviewed multidisciplinary design packages, including piping stress (CAESAR II), structural (STAAD Pro), and lifting calculations. Identified deficiencies in vendor deliverables before fabrication and secured client approval of engineering queries that delivered cost and schedule savings.
- Led integration testing of complete skid packages (ESD systems, electro-hydraulic actuators, pumps, valves, and instrumentation) through to client FAT sign-off and introduced remote FAT delivery across the HIPPS scope.
- Prepared commissioning procedures, mechanical handling studies, and O&M manuals for client use, and owned project close-out: punch-list closure, final data books, ITP sign-offs, handover, knowledge transfer, and lessons-learned collection, including management of the lessons-learned repository.
- Standardized the skids portfolio by authoring the Skids Project Execution Framework (including a scope matrix allocating activities between INTECH, subcontractors, and OEMs), co-authoring the Engineering Design Guidelines, and building 27 governance artifacts, 28 engineering calculators, and cost and manhour estimation tools, integrating PMI practices into organizational SOPs.
- Developed a Power Apps document control application with approval workflows, version control, and SDRL alignment for under USD 1K, compared with an estimated USD 180K in-house build.
- Established the Mechanical Trainee Development Program and mentored 10+ junior engineers in design-package development, proposals, and FAT execution, developing several to deliver integration and testing activities independently.

Projects:

1. Design and Fabrication of Conventional Wellhead Control Panels (Client: Renaissance Africa Energy, formerly Shell SPDC – Nigeria) – fabrication ongoing as of Jul 2026
2. Design, Fabrication, and Testing of Potassium Hydroxide, Ammonium Bromide, and Hydrogen Peroxide Chemical Injection Skids (Client: Zeon Chemicals – USA) – project and design lead, bid to close-out
3. Design, Fabrication, and Integration of Chemical Injection, Chemical Transfer, and Solar Skids (Client: BP – Rumaila, Iraq)
4. Design, Fabrication, and Integration of SIL-3 High Integrity Pressure Protection System (HIPPS) Skids (Client: BP – Rumaila, Iraq). See details

Leak Detection Systems (LDS) Team

End-to-end supply, configuration, installation, commissioning, and tuning of a leak detection and batch tracking system (PSI Pipelines) for the MFM pipeline (Client: Pak-Arab Refinery Limited (PARCO), Pakistan). See details

- Commissioned PSI Pipelines leak detection and batch tracking system across the 364 km MFM pipeline, achieving site acceptance benchmarks: <1% flow-rate leak detection, ±1 km location accuracy, <0.1 bar pressure drop sensitivity, and <7 false alarms/month; validated via proof-of-concept tests on a 155 km segment.
- Integrated multi-site data via OPC into PSI software and developed custom m42 scripts to enhance pressure-gradient modeling, simulate pump-induced negative pressure waves, and eliminate operational false alarms.
- Collaborated with the PSI team in Berlin to build real-time transient data models, pipeline topologies, and interactive graphic interfaces for live simulations and leak sensitivity studies per API RP 1149 (1993, 2015).
- Designed and delivered tiered training programs for PARCO staff: in-depth software logic, code, and math for engineers; practical leak detection and data interpretation for operators; and post-installation maintenance protocols.

Pre-Award Engineering

- Worked on 80+ technical proposals and led 35+ for the USA, Iraq, and wider MENA, covering chemical injection, HIPPS, and metering skids, plus Conventional WHCPs, for clients including Aramco, ADNOC, and Shell.
- Prepared proposals against client specifications (Aramco SAES, ADNOC AGES, KOC Standards, SABIC, BP ROO Standards, Shell DEP), owning the pre-award workflow from scope identification, clarifications, and deviations through OEM and fabricator RFQs, effort estimation, and technical submission.
- Established and enforced a pre-award risk management framework, tracing risks from scope and specification review through to budgeting and translating them into commercial contingencies.
- Established and enforced a rework management framework across pre-award cycles, logging rework and implementing corrective and preventive actions through an in-house Power Apps tool.
- Reduced proposal-engineering cost by over 60% per proposal by replacing outsourced engineering with in-house process, mechanical, and civil engineering capability, including the relevant software.
- Built an internal application on INTECH's Empower-GPT platform, as product owner, that analyzes RFQ data and generates data sheets — cutting proposal review time from about 7 days to 2.

Product Development Division

- Designed the Prognosis and Diagnosis bearing-test jigs end-to-end in Pro-E while carrying out structural design, materials selection, subcontractor evaluation and supervision (CNC grinding, milling, casting, welding), and incoming

inspection, generating controlled training data for INTECH's AI condition-monitoring program; owned the manufacturing budget and cost control, delivering both jigs within budget.

MANAGEMENT TRAINEE • ATTOCK REFINERY LIMITED • RAWALPINDI, PK • AUG 2017 – MAR 2018

- Delivered ARL's first in-house piping stress analysis (18-inch line with a 1.25-ton valve addition, CAESAR II per ASME B31.3) and first in-house RC retaining-wall design (static and seismic, ACI 318-08), work previously outsourced.
- Performed turnaround inspection of distillation columns, pressure vessels, heat exchangers, and pipelines using UT, LRUT, Brinell Hardness, MPI, and DPT across the LUMMUS, HCU, HBU1, and Reformer plants.

PROJECT PLANNING & CONTROLS ENGINEER • FAUZ ENGINEERING PRIVATE LIMITED • LAHORE, PK • SEP 2016 – JUL 2017

- Planning and cost-control engineer on FAUZ's first large-scale plant-piping project (FTMM battery plant, about 100,000 diameter-inches of CS, HDPE, and CPVC piping): Level 3/4 schedules, S-curves, BOQs from 2,500+ drawings, procurement planning, cost control, and variation orders.
- Prepared project plans and bid-stage proposals for piping, tank, vessel, and structural fabrication, including POGC U-stamped vessel skids and MOL water storage and treatment tanks.

Education

B.Sc. MECHANICAL ENGINEERING • UNIVERSITY OF ENGINEERING & TECHNOLOGY, LAHORE • 2016 • CGPA 3.66/4

Certifications

1. PMI Risk Management Professional (PMI-RMP®) – ID 4311022 – 2026 ↗ – PMI – USA
2. Project Management Professional (PMP®) – ID 3840928 – 2024 ↗ – PMI – USA
3. PMI Agile Certified Practitioner (PMI-ACP®) – ID 4074680 – 2025 ↗ – PMI – USA
4. Piping Design Engineer – 2024 ↗ – Kagira Drawing Solution
5. Level 4 Diploma in Integrative Counselling – 2019–2022 – Specialization: Relationship Management – (CPCAB-UK)

Training

1. Problem Solving and Decision Making – 2025 – REDC - LUMS
2. Project Management x AI Training Series (4 Courses) – 2025 – PMI – USA
3. Primavera P6 – 2017 – Pakistan Institute of Management
4. Design of Pressure Vessels – 2025 – Velosi Training Institute
5. Pipe Stress Analysis using PASS/START-PROF – 2025 – PASS Suite
6. CADWorx Design Review – ID 1642868759461890 – 2024 – Hexagon AB
7. Leak Detection and Batch Tracking Simulation and Modeling – 2019 – PSI - Berlin

Memberships

1. Saudi Council of Engineers (SCE) – Membership No.: 1280804
2. Pakistan Engineering Council (PEC) – Membership No.: MECH32626
3. Project Management Institute (PMI – USA) – Membership No.: 9751036

Skills

- **Project & Program Management:** EPC package delivery (vendor-side), pre-award & proposal engineering, cost & schedule control, risk & change management, vendor/subcontractor coordination, FAT/SAT & commissioning, PMI- and Agile-aligned execution
- **Engineering Domains:** process skid design, HIPPS, chemical injection & transfer, metering & custody transfer, Conventional WHCP, pipeline leak detection (RTTM/MCMB/NPW/FO LDS), piping design and analysis
- **Standards:** ASME/ANSI, API, ACI; Client specs — Aramco SAES/SAMSS, ADNOC AGES, BP ROO Standards, Shell DEP
- **Leadership & People Management:** team building and mentoring (10+ engineers developed), conflict resolution, stakeholder and client-relationship management, cross-cultural and distributed-team coordination
- **Tools:** MS Office, CADWorx, AutoCAD, Primavera P6, CAESAR II, STAAD Pro (Basics), PSI Pipelines, SolidWorks, Solid Edge, Pro-E, Navisworks, ANSYS Mechanical APDL, PASS/START-PROF, Microsoft Dynamics, Microsoft Power Apps, MATLAB.