

ENGINEERING EXCELLENCE · GLOBALLY DELIVERED

# VALORPLUS

Industrial automation, control systems, electrical & mechanical engineering design — built by engineers who take ownership of outcomes.

PLC

SCADA

PANEL BUILDING

GENERATIVE AI

HMI

ELECTRICAL DESIGN

MECHANICAL DESIGN

INSTALLATION & COMMISSIONING

# 01 WHO WE ARE

*An engineering partner, not just a vendor.*

ValorPlus is an engineering services company delivering automation, control systems, electrical & mechanical design, installation & commissioning, and AI-assisted engineering to manufacturers, OEMs, system integrators, and plant operators around the world.

We bring together the disciplines that modern machines depend on — under one roof, with one quality standard, on one delivery clock. Headquartered in India, structured from day one to serve India, Europe, the United States, and the Gulf.

**01**



## Engineering Ownership

We don't hand off problems. Our engineers own the outcome from requirement to commissioning.

**02**



## Documentation First

Every project leaves with schematics, code, and manuals your team can maintain independently.

**03**



## Global Standards

IEC, NEC, UL, and ISO-aligned work practices — deliverables plug cleanly into any market.

## 02 CORE ENGINEERING

Controls, electrical, and mechanical design — the full engineering stack.



### PLC Programming

Siemens · Rockwell · Mitsubishi · Schneider · Beckhoff



### HMI Development

WinCC · FactoryTalk · GT Designer · Wonderware



### SCADA Development

Ignition · WinCC · iFIX · Wonderware



### Electrical Design

EPLAN · E3.Series · AutoCAD Electrical



### Panel Building

Control · MCC · PCC · VFD · PLC Panels



### Mechanical Design

SolidWorks · Inventor · AutoCAD · Creo

# 03 BEYOND DESIGN

From concept to commissioned asset.



## Generative AI — Mechanical & Electrical

AI-assisted workflows to accelerate topology optimization, part consolidation, schematic auto-generation, BOM intelligence, and rapid design exploration — delivering lighter, cheaper, faster-to-build assets.



## Installation & Commissioning

On-site installation, loop checking, I/O testing, PLC/HMI/SCADA commissioning, and handover. Our engineers stay until your equipment runs to specification.

FAT · SAT · LOOP CHECKING



## Design Consultancy

Independent design reviews for cost reduction (component rationalization, value engineering) and installation time reduction (modularity, pre-wiring, build-ability).

VALUE ENGINEERING · VA/VE · DFA

## 04 WHERE WE WORK

Built for a four-region footprint.

### INDIA

HQ · Engineering base  
All service lines

### EUROPE

IEC & CE-aligned  
EPLAN / E3 workflows

### USA

NEC & UL-aligned  
Rockwell / AutoCAD Elec.

### GULF

Oil, gas & utilities  
SCADA & panel design

## 05 HOW WE WORK

A disciplined five-step delivery process.

1

### Discover

Understand the machine,  
process, and success criteria.

2

### Define

Scope document,  
architecture, and acceptance  
tests.

3

### Design

Schematics, code, HMI  
screens, mechanical models.

4

### Deliver

FAT support, documentation,  
and handover package.

5

### Support

Commissioning, warranty,  
and training available.

# 06 WHY CHOOSE US

*The ValorPlus difference.*

## Multi-disciplinary under one roof

Controls, electrical, and mechanical engineers — fewer interface errors, one accountability.

## Platform-agnostic expertise

Siemens, Rockwell, Mitsubishi, Schneider, Beckhoff — no tool lock-in.

## Standards-aligned deliverables

IEC 61131-3 programming, IEC/NEC/UL-compliant schematics.

## Transparent engagement

Fixed-scope or T&M. Clear milestones, regular reviews, no surprise invoices.

## Global delivery, local cost

Indian engineering base delivers international quality at a competitive rate.

## Long-term support

Post-commissioning support, version control, and rapid response for production issues.

# Case Studies & Domain Expertise

Our team brings hands-on experience across diverse industrial automation domains. The following case studies showcase the depth

of expertise our engineers bring to every engagement.

- 01 Engine Assembly Line (I6, I8, V12, V16)
- 02 MES — PINPOINT Integration with ERP & SOP
- 03 IIoT — Telit Gateway, AWS & Sight Machine
- 04 Indexer Machine — Multi-Station Automation
- 05 Robotic Integration — Pick & Place, Grinding
- 06 Logistics — Pallet & Tote Line Design
- 07 Primary & Secondary Packaging Lines
- 08 Grinding Machine — Camshaft & Crankshaft
- 09 Aluminum Plant Integration
- 10 Water Purification & Water Injection
- 11 Tote Handling System — Lift, Conveyor, WCS
- 12 Pallet Handling System — Crane, RGV, AMR



I6, I8, V12 & V16 — Complete Powertrain Assembly Solutions

*Our team has hands-on experience in designing, developing, and delivering this type of solution.*

## Key Features & Integrations

- Leak Tester — Pressure & vacuum decay for block, head, oil gallery
- Nut Runner — Multi-spindle torque with angle monitoring & traceability
- RFID Integration — Pallet-level tracking for full build genealogy
- Vision System — Component presence, orientation, surface defects
- IPV (In-Process Verification) — Real-time quality gates
- PLC & SCADA with full MES/ERP connectivity
- Multi-variant single line handling 4+ engine families

## Team's Approach

- Designed multi-variant assembly lines for I6, I8, V12, V16 platforms
- Integrated leak testers, nut runners, RFID, vision, and IPV stations
- Centralized recipe management for rapid changeover

## Results & Impact

- Cycle time targets achieved across all engine variants
- Zero-defect delivery with integrated vision & IPV enforcement
- 95%+ OEE with predictive maintenance integration
- Full digital traceability from raw material to finished engine



Manufacturing Execution System with ERP, SOP & Multi-Variant Engine Assembly

*Our team has hands-on experience in designing, developing, and delivering this type of solution.*

## Key Features & Integrations

- PINPOINT MES deployment for engine assembly line management
- ERP integration — real-time production orders, BOM sync & traceability
- SOP management for 4 engine families: I6, I8, V12, V16 (25 variants each = 100 total)
- Desoutter torque tool integration — recipe-driven torque & angle parameters per variant
- Cognex vision system — part verification, barcode reading & defect inspection
- IPV (In-Process Verification) — station-level quality gate enforcement
- Digital work instructions displayed at each station per active variant
- Poka-yoke enforcement — wrong part / wrong sequence lockout

## Team's Approach

- Configured PINPOINT MES to manage 100 engine variants across 4 platform families
- Integrated Desoutter controllers, Cognex cameras, and IPV stations into MES workflow
- Built ERP-to-MES bridge for automatic work order download and production reporting

## Results & Impact

- 100% SOP compliance enforced digitally across all 100 variants
- Changeover time between variants reduced to near-zero with recipe auto-load
- First-pass yield improved through poka-yoke and vision-based verification
- Full build genealogy and traceability from ERP order to shipped engine



Industrial IoT Platform with Edge Gateway, Cloud Analytics & Unified Dashboard

Our team has hands-on experience in designing, developing, and delivering this type of solution.

## Key Features & Integrations

- Telit IoT gateway for edge data collection from PLCs, sensors & field devices
- AWS IoT Core — secure MQTT-based device connectivity and data ingestion
- AWS S3 / Timestream for scalable time-series data storage
- Sight Machine integration — AI-driven manufacturing analytics platform
- Unified dashboard — OEE, downtime, quality, energy on a single screen
- Real-time alerting and anomaly detection across production lines
- Protocol translation — Modbus, OPC-UA, EtherNet/IP to cloud MQTT
- Secure VPN tunneling and certificate-based device authentication

## Team's Approach

- Deployed Telit gateways at machine level for edge data acquisition and protocol bridging
- Architected AWS cloud pipeline — IoT Core, Lambda, S3, Timestream for data flow
- Integrated Sight Machine platform for AI-powered analytics and single-pane-of-glass dashboard

## Results & Impact

- Plant-wide visibility achieved on a single dashboard across all production lines
- Unplanned downtime reduced by 25% through real-time anomaly detection
- Data-driven decisions enabled with AI analytics on quality, throughput & energy
- Scalable architecture — additional lines onboarded in days, not weeks



*Multi-Station Rotary Indexer — Load, Check, Process, Sort*

*Our team has hands-on experience in designing, developing, and delivering this type of solution.*

## Key Features & Integrations

- Loading Station — Automated part feeding with orientation detection
- Checking Station — Dimensional & presence verification sensors
- Process Station — Machining, pressing, or assembly operations
- Good Part Station — Verified parts to output conveyor
- Bad Part Station — Rejected parts segregated with fault logging
- Servo indexer with programmable dwell times
- Integrated safety guarding with light curtains & interlocks
- HMI with real-time station status and fault diagnostics

## Team's Approach

- Engineered precision rotary indexer with dedicated stations
- Automated good/bad segregation with reject chute management
- Servo-driven indexing with sub-millimeter repeatability

## Results & Impact

- Throughput increased by 40% over manual sorting
- Rejection accuracy improved to 99.8%
- Operator dependency reduced from 3 to 1 per shift
- Zero unplanned stops in first quarter of operation



*Pick & Place and Grinding Applications with Industrial Robots*

*Our team has hands-on experience in designing, developing, and delivering this type of solution.*

## Key Features & Integrations

- Pick & Place — High-speed handling with vision-guided positioning
- Grinding — Force/torque sensor feedback for consistent finish
- Custom EOAT — Vacuum, magnetic, mechanical grippers
- Vision-Guided Robotics — 2D/3D camera for dynamic part location
- Offline programming with simulation for rapid deployment
- Safety-rated perimeter guarding & collaborative zones
- Integration with upstream/downstream conveyors

## Team's Approach

- Deployed 6-axis robots for high-speed pick & place operations
- Integrated force-controlled grinding with adaptive path programming
- Designed custom end-of-arm tooling for multi-part handling

## Results & Impact

- Cycle time reduced by 35% vs. manual grinding
- Surface finish consistency improved to Cpk > 1.67
- ROI achieved within 14 months of deployment
- Eliminated ergonomic risks of manual grinding



Complete Pallet & Tote Conveyor System — End-to-End Material Flow

*Our team has hands-on experience in designing, developing, and delivering this type of solution.*

## Key Features & Integrations

- Pallet Conveyor — Heavy-duty roller & chain for palletized loads
- Tote/Bin Line — Accumulation conveyors with divert & merge
- Barcode/RFID scanning at every transfer point
- Automated stretch wrapping and labeling stations
- WMS/WCS integration for dynamic routing & priority handling
- Ergonomic pick stations with light-directed picking
- Scalable modular design for future extensions

## Team's Approach

- Designed complete pallet & tote conveyor infrastructure
- Integrated ASRS, VLM, and AMR interfaces for seamless flow
- Implemented WMS-driven routing logic with real-time tracking

## Results & Impact

- Material delivery lead time reduced by 50%
- Warehouse-to-line accuracy improved to 99.95%
- 30% labor cost savings through automated routing
- Enabled JIT delivery to 12+ production cells



Primary & Secondary Package Line — Complete End-of-Line Solutions

*Our team has hands-on experience in designing, developing, and delivering this type of solution.*

## Key Features & Integrations

- Primary — Filling, capping, labeling, inspection of individual units
- Secondary — Case packing, shrink wrapping, bundling
- Automated case erector and sealer integration
- Robotic palletizer with multi-SKU pattern management
- Vision-based print & label verification (OCR/OCV)
- Serialization & track-and-trace for pharma/FMCG compliance
- Recipe-driven changeover for 10+ SKU families

## Team's Approach

- Designed integrated primary and secondary packaging lines
- Automated case erecting, filling, sealing, palletizing, labeling
- Implemented serialization and aggregation for regulatory compliance

## Results & Impact

- Line speed achieved: 120+ packs per minute
- Changeover time reduced from 45 min to under 10 min
- Packaging waste reduced by 20%
- Full serialization compliance achieved on first audit



*Precision CNC Grinding for Automotive Powertrain Components*

*Our team has hands-on experience in designing, developing, and delivering this type of solution.*

## Key Features & Integrations

- CNC cylindrical grinding for cam lobe profiles & journal diameters
- Multi-axis interpolation for non-round (cam) profile generation
- In-process gauging with automatic wheel compensation
- Wheel dressing with diamond roll — profile & plunge modes
- Automatic balancing system for grinding spindle
- Coolant filtration, temperature control & flow management
- Part loading/unloading via gantry or robotic automation
- SPC integration with real-time Cpk monitoring

## Team's Approach

- Developed PLC/HMI programming for multi-axis CNC grinding cycles
- Integrated in-process gauging, wheel dress compensation, and auto-correction loops
- Designed SCADA dashboards for OEE, reject analysis, and spindle health monitoring

## Results & Impact

- Sub-micron surface finish achieved consistently ( $R_a < 0.2 \mu\text{m}$ )
- Cycle time optimized to meet high-volume production targets
- Scrap rate reduced below 0.5% with closed-loop gauging
- Unplanned downtime cut by 30% with predictive spindle analytics



*End-to-End Process Automation for Aluminum Smelting & Processing*

*Our team has hands-on experience in designing, developing, and delivering this type of solution.*

## Key Features & Integrations

- Pot line automation — anode effect monitoring & bath control
- Casting line PLC/SCADA for continuous & DC casting operations
- Fume treatment plant controls & environmental compliance
- Power distribution & rectifier control systems
- Metal transfer & launder temperature management
- Anode baking furnace sequence control
- Plant-wide MES integration for production tracking
- Alarm management & historian for regulatory reporting

## Team's Approach

- Integrated PLC, SCADA, and MES across smelting, casting, and fume treatment
- Designed electrical systems for high-amperage rectifier and pot line power
- Implemented plant-wide alarm rationalization and historian archiving

## Results & Impact

- Energy consumption per ton of aluminum reduced by 8%
- Environmental compliance achieved with real-time emission monitoring
- Production throughput improved with optimized pot line control
- Reduced manual interventions with automated casting sequences



*Industrial Water Treatment, RO Systems & High-Pressure Injection for Oil & Gas*

*Our team has hands-on experience in designing, developing, and delivering this type of solution.*

## Key Features & Integrations

- RO (Reverse Osmosis) plant automation — multi-stage control
- Chemical dosing systems — pH, chlorine, anti-scalant management
- Filtration stages — multimedia, activated carbon, cartridge filters
- High-pressure water injection pump control & sequencing
- Flow, pressure, and quality monitoring (TDS, pH, turbidity)
- VFD-based pump speed control for energy efficiency
- Remote monitoring via SCADA with cloud connectivity
- Compliance with EPA / CPCB water quality standards

## Team's Approach

- Designed PLC-based control for multi-stage RO and filtration systems
- Integrated water injection pump sequencing with high-pressure safety interlocks
- Built SCADA dashboards for real-time water quality, flow, and pump health monitoring

## Results & Impact

- Water recovery rate improved to 85%+ through optimized RO staging
- Chemical dosing accuracy improved, reducing consumable costs by 15%
- Injection pressure maintained within 1% of setpoint under varying loads
- Remote monitoring enabled 24/7 oversight with minimal on-site staff



*Automated Tote Storage, Retrieval & Distribution with Safety PLC Integration*

*Our team has hands-on experience in designing, developing, and delivering this type of solution.*

## Key Features & Integrations

- Safety PLC architecture — SIL-rated emergency stop, zone interlocks & safe speed
- Tote Lift — multi-level vertical transfer with position verification sensors
- Tote conveyor network — accumulation, divert gates & merge points
- Automated tote erector and lid placement stations
- Pick-to-light & put-to-light stations for order fulfillment
- Barcode / RFID scanning at every handover point for full traceability
- WCS integration for dynamic tote routing and priority sequencing

## Team's Approach

- Designed end-to-end tote handling with Safety PLC for all motion and zone management
- Integrated tote lifts, conveyors, and pick/put stations into unified WCS
- Built SCADA dashboards for real-time tote tracking, equipment health, and throughput monitoring

## Results & Impact

- Tote throughput increased by 45% with automated storage and retrieval
- Safety compliance achieved with SIL-rated PLC across all motion equipment
- Order fulfillment accuracy improved to 99.97% with scan-verified handovers
- Reduced manual tote handling by 80%, eliminating ergonomic injuries



Automated Pallet Storage, Transfer & Distribution with Safety PLC Integration

Our team has hands-on experience in designing, developing, and delivering this type of solution.

## Key Features & Integrations

- Safety PLC architecture — SIL-rated zone control, area scanners & safe torque-off
- Stacker Crane — heavy-duty AS/RS for pallet storage up to 1,500 kg per pallet
- RGV (Rail Guided Vehicle) — pallet shuttle between dock, storage & production
- AGV / AMR — flexible pallet transport with obstacle avoidance and fleet management
- Pallet Lift — hydraulic / chain-driven vertical transfer with overload protection
- 4-Way Shuttle — compact pallet movement within deep-lane racking systems
- Shuttle System — channel-level pallet handling for FIFO/LIFO sequencing
- WMS/WCS integration for dynamic routing, slot allocation & inventory management

## Team's Approach

- Designed complete pallet handling infrastructure with Safety PLC governing all equipment zones
- Integrated stacker cranes, RGVs, AGVs/AMRs, pallet lifts, and 4-way shuttles into plant-wide WCS
- Built centralized SCADA with real-time pallet tracking, equipment diagnostics, and KPI dashboards

## Results & Impact

- Pallet storage density increased by 60% with deep-lane shuttle racking
- Full Safety PLC compliance — zero safety incidents since commissioning
- Dock-to-production pallet delivery time reduced from 25 min to 8 min
- Automated fleet management enabled 24/7 unmanned pallet operations

LET'S BUILD SOMETHING

# Start a conversation with ValorPlus.

Whether you're modernizing a machine, commissioning a new line, or looking for an engineering partner who can scale with you — we'd love to hear about your project.



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## Our Expertise

- 01 Engine Assembly Lines
- 02 MES / PINPOINT Integration
- 03 IIoT — AWS & Sight Machine
- 04 Indexer Machines
- 05 Robotic Integration
- 06 Logistics Line Design
- 07 Packaging Automation
- 08 Grinding Machines
- 09 Aluminum Plant Systems
- 10 Water Purification & Injection
- 11 Tote Handling Systems
- 12 Pallet Handling Systems