Jose Cortes, EE, MBA

Mobile: 407-808-2443	**Education:** EE, Vision Systems, OpEX, business
E-mail: jose.cortes7@gmail.com	**Travel:** 15% International / Domestic as needed
Industries: Aerospace, Medical, Manufacturing, R&D	**Bilingual:** English / Spanish

Role as **Director of Engineering**

(Req: -)

Profile

Experienced leader with hands-on expertise in Medical, Aerospace and commercial manufacturing & operations, delivering impactful solutions from concept to market under AS9100, ISO 9001, ISO 13485, & 21 CFR 820 standards. I have a track record of optimizing processes, managing complex projects, and delivering measurable improvements. Known for building strong teams, identifying strategic opportunities, and turning goals into results.

Core Competencies

Manufacturing:

- ✓ **Manufacturing 4.0 5-layers:** PLC/Edge, HMI, SCADA, MES, ERP, Cloud
- ✓ **Process Optimization & Control** – Skilled in using tools like DFM/DFA/DFT, SPC, OEE, and line balancing to improve process efficiency and product quality.
- ✓ **Supplier & Quality Management** – Proficient in managing suppliers through AVL, SCAR, FAI, and QMS tools to ensure component reliability and compliance.
- ✓ **Manufacturing Systems & Equipment Reliability** – Experienced in OEE tracking, MES integration, preventive maintenance, and equipment qualification to reduce downtime and improve throughput.
- ✓ **Lean Inventory & Logistics** – Knowledgeable in Kanban, JIT, ERP/MRP systems, and kitting strategies to streamline inventory flow and reduce waste.

Process Improvement & Operational Excellence (OpEx):

- ✓ **Lean & Six Sigma Expertise –** Skilled in applying tools like 5S, VSM, DMAIC, Kaizen, and TPM to streamline operations and reduce waste.
- ✓ **Design and optimization –** end-to-end workflows and systems
- ✓ **Strategic Program Leadership –** Proven ability to lead multi-site, long-term improvement initiatives with strong planning, stakeholder alignment, and measurable impact.
- ✓ **Coaching & Talent Development** – Experienced in mentoring Green/Black Belts and delivering hands-on plantwide improvements.
- ✓ **Change Management –** Adept at driving culture shifts and business transformation through structured change
- ✓ **Centralized support functions** – Standardization, cost efficiency, elimination of redundancy.

Corporate Management:

Project Financial Management

- ✓ Budgeting and forecasting (cost-to-complete, margin, gain/fade analysis)
- ✓ Understanding of P&L, ROIC, OE, workflows efficiency, and LEAN

People Leadership / Management

- ✓ **Team & People Leadership –** Managed cross-functional teams, workload distribution, training, and performance with a focus on accountability and situational leadership.
- ✓ **Project & Resource Planning –** Applied PMP methodologies and WBS structures to drive project execution, scheduling, and resource optimization.
- ✓ **Operational Execution & Tracking –** Oversaw execution through critical path planning, labor allocation, and productivity monitoring to meet CI goals.
- ✓ **Stakeholder Engagement –** Led team and vendor coordination, facilitated effective meetings, and provided milestone reporting to align with strategic objectives.

Supply Chain General Operations

- ✓ **Inventory investments**, maximum and target inventory levels, safety stock levels and service level requirements, in transit lead times, shipment limits, shipping, receiving, and transportation calendars.
- ✓ **Demand and Sources** (Sales Orders and Forecast), forecast administration, Make to Stock (Forecast Planning)

Aerospace Manufacturing, process improvement, operations

- ✓ **AS9100 Quality Management & Problem Solving**: Led Material Review Board (MRB) activities for electro-optical subsystems; conducted root cause analysis (RCA) using FMEA, and Fishbone methodologies; enforced RCCA and SCARs to ensure compliance with AS9100 and MIL-STD requirements.
- ✓ **Risk & Compliance Oversight**: Applied MIL-STD-882E and AS9100 risk management frameworks to proactively identify and mitigate system safety hazards in military electro-optical manufacturing processes.
- ✓ **Product & Process Development**: Directed Design for Manufacturing (DFM), testing, and producibility of space-qualified laser-based electro-optical systems per AS9100 and DoD standards, including GD&T and acceptance criteria negotiation.
- ✓ **Change & Configuration Control**: Coordinated Engineering Change Reviews and Configuration Control Boards (CCB) for electro-optical assemblies; managed DoD safety reviews and continuous improvement loops in alignment with AS9100 configuration management requirements.

- **Medical Devices (Class II) manufacturing**
  - ✓ **PRODUCT development**: Microscopy vision systems, sustaining and design controls (ISO 13485 & 21 CFR 820)
  - ✓ Technical documentation submission collaboration, Imaging systems.
  - ✓ **Quality & Risk Management –** Applied ISO 14971 and 21 CFR 820 frameworks for CAPA, hazard analysis, and FMEA to ensure patient safety and compliance.
  - ✓ **Diagnostic Imaging Devices:** Image sensors, theory of X-ray, MRI and microscopy systems.
  - ✓ **Validation & Inspection –** Led V&V, FAI, in-process and final product inspections; ensured Gage R&R and CTQ alignment in Class II device workflows.
  - ✓ **Audit & Documentation Control –** Managed DHRs, DMRs, eBRs, and audit trails; conducted internal/external audits and supported pre-shipment validations.
  - ✓ **Regulatory & Compliance –** Ensured ISO 13485 and FDA compliance; maintained OSHA/EPA records and traceability through UDI and serialization systems.

Core Electrical Engineering R&D:

- ✓ **Image sensors** of all wavelengths and related polarization optics.
- ✓ **Power Electronics Design:** Converters, Inverters, and battery systems, RF, wireless sensors, camera modules, High-speed I/O:USB, SPI, I2C, I2S.
- ✓ **RF systems & wireless sensors:** CAN bus, RS485, Wi-Fi, or LoRa.
- ✓ **Analog / Digital** electronics design for military and medical projects.
- ✓ **Embedded Systems & Connectivity:** hardware and debugging, development from schematic design through PCB layout to assembly.
- ✓ **Analog & Bio-sensing Technologies:** bio-sensing tech relevant to wearables, bioinstrumentation, haptics or health devices

Research and Development (R&D) initiatives: Feasibility studies, experiments, IRADs for new product introduction (NPI)

Technical Manager – Inspection Imaging
JNCIS Industrial IIoT Cloud Solutions Jul 2022 – Present

- Manage the end-to-end implementation of industrial manufacturing 4.0 IIOT and MQTT imagery processing solutions leveraging drone inspection images, ensuring successful delivery of cloud-based analytics platforms for government and commercial clients.
- **Project Management** of a team of Cloud Engineers for infrastructure and deployment, ML Engineers for development and training
- **Manage business** claims, reimbursements, invoices, purchase orders and time sheets.
- **Product Lifecycle Management:** Lead end-to-end product development with customer needs.
- **Product Strategy Development:** Create road maps and detailed requirements based on user feedback, performance data, and trends.
- **Cross-Functional Leadership:** Drive execution of initiatives across engineering, marketing, sales, compliance, and operations.

EE R&D Staff & Medical Devices manufacturing
Beckman Coulter Life Sciences: Microscopy Urinalysis business unit Feb 2018 – Jul 2022

- Lead sustaining electrical design changes with 25+ **cross-functional employees** (supply chain, engineering, quality, manufacturing, regulatory, etc) in **audit readiness, compliance gap closure**, and risk management across medical product lines for *Urinalysis business unit*.
- Worked with cross-functional R&D teams to launch next generation microscopy products, support 510(k) submissions via strategic planning and regulatory alignment.
- Led a cross-functional initiative to proactively identify and replace end-of-life electronic components in legacy urinalysis analyzers. Utilized ASCP Collection data and supplier PCNs to drive redesigns and BOM updates, avoiding $1.2M in potential downtime and ensuring uninterrupted field support for over 10,000 global instruments.
- Developed a safety and risk management plan for the project. Create and maintain the risk register, identify, analyze, and mitigate project risks.
- **Continuous improvement:**
  - **Enterprise-Level:** Implemented Standard Work, Value Stream Management, Daily Management, Risk Management for Miami and Chaska to improve efficiency
  - **Individual-Level:** Continuous Improvement, Problem-Solving Mindset, Accountability, Skill Development, Visual Management Engagement
- QA Design Controls 21 CFR 820.30(a-j) compliance to prevent FDA's form 843 and ensure compliant, production-ready designs
- QA ISO standards (9001, 13485, 14971) at Chaska, MN manufacturing facility for manufacture of Urinalysis microscopy medical device
- Participated in customer complaint analysis and full CAPA process, Conducted First Article Inspections (FAIs).
- CM, ODM: Jabil for circuits assembly, Advanced Circuits for prototyping, Celestica for electronics, Flextronics for electronics.
- Led cross-functional teams in the **design transfer** of the **DxU Iris urinalysis platform**, coordinating with global production and quality.
- Championed **QMS compliance, PLM workflows**, **VA/VE** efforts, and CAPA closure in collaboration with **Quality** and **Manufacturing**.
- Collaboration with R&D and sustaining to ensure successful design change transfers, NPI efforts and prototyping efforts.
- Worked alongside Supply Chain Operations Reference (SCOR) to ensure (EOL) efforts, pre-production builds, and on-time delivery
- Implemented Plan-Do-Check-Act (PDCA) methodology within a medical device quality management system, applying Global Product Quality (GPQ) and Quick Response Quality Control (QRQC) to improve product integrity and ensure regulatory compliance.
- Directed the execution of a "FOD / scrap" initiative in sterile and non-sterile device manufacturing, incorporating daily defect reviews and proactive process controls to minimize nonconforming material and prevent recurrence.

Engineering Manager of NPI, R&D Manufacturing Operations
PHOTON-X Electro Optics / Computer Vision Systems Feb 2013 – Feb 2018

- **Electro-Optical Engineering Design**: Managed development of custom vision systems across UV-C to LWIR spectral bands, hyperspectral, thermal, and Time-of-Flight systems; engineered 2D-to-3D real-time camera systems for electro-optical integration; reviewed 2D/3D electro-mechanical designs using SolidWorks eDrawings and Altium step files for approvals.
- **Hardware & Software Integration**: Coordinated integration of software/hardware features, testing, and customer acceptance for DoD and commercial imaging platforms; applied EE fundamentals including Altium PCB, RF, image sensors, ASIC, and interfaces (I2C, UART, SPI, USB, MIPI, I2S).
- **Advanced Imaging Systems Development**: Led development and launch of AI-driven 2D/3D imaging systems for DoD avionics programs across UV to LWIR bands, including hyperspectral and Time-of-Flight technologies.
- **Manufacturing Process Optimization**: Drove shop floor improvements in tooling, routings, and root cause analysis to increase efficiency, reduce scrap, rework, and CapEx for test, assembly, and automated die testing equipment.
- **Cross-Functional Manufacturing Coordination**: Collaborated with design, quality, procurement, and planning teams to ensure smooth product handoffs and ECN implementation; oversaw quality assurance for reliable, secure, bug-free hardware.
- **Quality Operations Leadership**: Directed daily quality operations and long-term strategies across manufacturing and engineering to meet cost, quality, and delivery goals for government aerospace and military contracts.
- **Production Metrics & Data-Driven Decisions**: Managed throughput, yield, and labor efficiency using Oracle ERP data to guide operational improvements and maintain production schedules.
- **New Product Introduction & Risk Management**: Accelerated field deployment of advanced imaging hardware by balancing risk, timelines, and cost to improve margins while meeting delivery commitments.
- **Program & Project Management**: Managed multiple DoD, commercial, DoT, Army, and Air Force projects; handled engineering program oversight from proposal submission to concept, through production and acceptance.
- **Resource & Financial Oversight**: Controlled costs, optimized CapEx, improved profit margins, and ensured on-time delivery across diverse customer programs through strategic planning and resource allocation.

HW/SW Test & Manufacturing Engineering Manager – Electronics Missile Test & Manufacturing Clearance: Secret
L-3/Harris Coleman Aerospace: LOCKHEED MARTIN Jun 2006 – Jan 2013

Avionics Guidance Unit (GNU) flight hardware Manufacture
- Directed manufacturing and integration of custom test equipment for flight avionics, ensuring full compliance with AS9100 quality standards.
  - Design of battery system for Missiles in avionics: Charge/Discharge Curves, Capacity Fade, State of Charge (SoC), Depth of Discharge (DoD), Coulombic Efficiency, Round-trip Efficiency, Internal Resistance / Impedance Growth.
  - Utilization of UL 9540 / 9540A, NFPA 855, IEC 62619 / 62133, IEEE 1547 for system compliance.
- Conducted First Article Inspections (FAIs), tracked scrap, rework, throughput, on-time delivery, and labor efficiency metrics for continuous.
- Led all V&V test activities, including technical oversight, scheduling, cost control, risk mitigation, and cross-functional coordination.
- Oversaw automated test equipment (ATE) validation, supporting site-level test infrastructure under AS9100 and Missile Defense Agency (MDA)

System Design, Integration & Test
- Managed full system design and assembly, integration, and test of (GNC) subsystems for LRALT ballistic missile targets.
- Led integration and critical-to-quality (CTQ) qualification testing of flight computers, embedded systems, and communications.
- Directed military-grade semiconductor integration into Navigation & Guidance (N&G) electronics, ensuring mission-critical reliability.

Engineering Reviews & Product Lifecycle
- Implemented Configuration Control Board (CCB) processes to align documentation and configuration baselines across product lifecycles.

Continuous Improvement efforts:
- ✓ Enterprise FOD (Foreign Object Debris) program for manufacturing and system at facility.
- ✓ Led cross-functional Kaizen events to enhance production efficiency in classified and defense-critical operations, incorporating risk controls, error-proofing (poka-yoke), operator enablement, and morale building.
- ✓ Directed precision manufacturing processes across composite layup, electronics manufacturing, and final assembly for defense-grade components.

Worked with missile RF systems:
RF fundamentals: electromagnetic theory, impedance matching, S-parameters, RF propagation, antenna theory.
RF design & simulation: antenna design, RF front-end architecture, HFSS modeling, link budget analysis, grounding/shielding.
RF testing & validation: VNA and spectrum analysis.

Reliability, Diagnostics & problem-solving initiatives
- Performed failure mode analysis, fault tree analysis, and risk assessments (PFMEA) for complex PCBAs and flight-critical systems.
- Applied 5 Whys, Ishikawa (Fishbone), DMAIC (Six Sigma), A3 Problem Solving (Lean), Root Cause Analysis (RCA), 5D, RCCA, and 5-Why techniques to resolve nonconformances and drive design-for-reliability initiatives.
- Introduced Lean diagnostic practices and data-driven metrics to reduce test cycle time, improve yield, and contain costs.

R&D Member of Technical Staff – Semiconductor Manufacturing – wafer die / packaging reliability Nov. 1995 – Sept. 2005
(AT&T / NOKIA) **Bell Labs Semiconductors**

- Maintained the quality and integrity of wafer fabrication and testing process for R&D.
- Green/Black belt mentoring and project initiatives for advanced manufacturing in semiconductors large-scale, multi-year, multi-site program delivery
- Planned and Executed Burn-in tests to assess wafer level failure analysis and data collection.
- Optimized production manufacturing process for .35um, .25um semiconductor process in class 1 / class 100 cleanrooms of the Advanced Development and Research Facility at Bell Labs (ADRF).
- Used of statistical process control (SPC) tools, and metrology data collection on 8" wafers. Developed reliability calculations for environmental burn-in tests and qualifications and wafer die packaging and die bonding.
- Used Lean-6-Sigma principles to improve on process in the areas of:
  - ✓ Diffusion, Chemical Etch, Plasma Etch, Chemical baths, Ion Implantation, wafer laser scribing, and Metrology.
- Developed and maintained database for disseminating results, data sources, and test plans, and accelerated testing results to other Bell-Labs engineering staff worldwide.
- Collaborated with Failure Analysis team to determine die and packaging failure modes.
- investigated and resolved manufacturing and processing difficulties, excessive product rejections, and low yields to decrease overall product cycle time.
- **Cycle Time Reduction**: Overall Cycle Time (CT), Queue Time, Tool Utilization Rate, Mean Time Between Failures (MTBF), Mean Time To Repair (MTTR), Throughput Rate, Move Rate, Bottleneck Identification Rate; **Yield Improvement**: Wafer Yield, Die Yield, Defects Per Million Opportunities (DPMO), First Pass Yield (FPY), Overall Equipment Effectiveness (OEE), Scrap Rate, Statistical Process Control (SPC) Violations, Corrective Action Cycle Time.

Education & Certifications

- MBA – Florida Institute of Technology – *Technology Management* (2019)
- Graduate Certificate, RF/Microwave Engineering – University of South Florida (2010)
- B.S. Electrical & Computer Engineering – University of Central Florida (1995)
- Certifications: EVMS[1] (2020), SCM[2] (2018), PMP[3], DLM[4] (2018), Altium Designer (2013)
- Google Data Analytics[5] (2025), AWS data Engineer Associate[6] (2025), LabView RealTime (2010)

Selected Achievements

- **Beckman Coulter** - Enterprise-Wide Lean Deployment across multi-site operations: Miami, FL and Chaska Minnesota for medical device manufacturing which reduced operational costs by $12M over 1 year.
- **Beckman Coulter -** Led the strategic rollout of lean principles across missile manufacturing site, implementing Kaizen events, and standardized work practices. Achieved >20% efficiency gains and improved OEE (Overall Equipment Effectiveness) by 18%.
- **Beckman Coulter -** Cut production costs by 20% at *Beckman Coulter* through global sourcing strategies and implementation of RoHS compliance protocols.
- **Beckman Coulter -** Reduced production defects by 22% using Six Sigma and Kaizen methods, driving measurable quality gains across multiple product lines.
- **Beckman Coulter -** Led a cross-functional initiative to proactively identify and replace end-of-life electronic components in legacy urinalysis analyzers. Utilized ASCP Collection data and supplier PCNs to drive redesigns and BOM updates, avoiding $1.2M in potential downtime and ensuring uninterrupted field support for over 10,000 global instruments.
- **L3Harris -** Led the execution of a $15M missile subsystem production program**,** delivering 3 weeks ahead of schedule and under budget.
- **L3Harris -** Delivered zero-defect validation and handover of high-reliability missile guidance hardware for Lockheed's MRBM program.
- **L3Harris -** Reduced scrap by 15% via MRB efforts for manufacture of Flight Avionics components.
- **Photon-X -** Negotiated and captured over $5M in engineering change proposals (ECPs) by identifying design scope gaps.
- **Photon-X -** Increased program margin by 12% within 1st year by standardizing earned value tracking and optimizing supplier workflows.
- **Photon-X -** Secured over $22M in SBIR/STTR funding for R&D programs, aligning with long-term commercialization strategies.
- **Bell Labs AT&T -** Designed and deployed a company-wide continuous Improvement certification curriculum via web course training.
- **Bell Labs AT&T -** Increased semiconductor yield by 35% at through SPC (Statistical Process Control) and advanced failure analysis.

[1] Earned Value management
[2] Supply Chain management
[3] PMBoK credits for Project management taken, test in Spring 2026.
[4] Distribution & Logistics management
[5] AI for data visualization, data cleaning, and data structuring
[6] Cloud Storage and Data analysis