



PROJECT PROFILE

RUGGEDIZED DETECTION EQUIPMENT PRODUCT DEVELOPMENT

CLIENT CHALLENGE

A large international supplier of specialized analytical detection equipment (ie. narcotics, explosives, radiation, etc., for airport and port security) that is sold to governments and agencies around the world had a requirement to develop a ruggedized version of one of their existing detection products for use in extreme environments. The Company required New Product Development and Project Management expertise for the entire new product development cycle of this very large project (budgeted over \$2m).

Prior to the incorporation of Palladium Product Development and Design several current Palladium personnel were retained to provide:

- Complete project management and cost control for a multi-disciplinary team of internal and client resources
- Establish baseline capabilities of the existing product: Electrical/Electronics/Environmental/Shock Sensitivity
- Incorporate Voice of the Customer data
- Concept/Industrial design: Electrical/Electronics/Environmental/Shock & Vibration/Space Claim
- Knowledgeable COTS sourcing
- Proof of Principle (POP) models: Subassembly and System Mockups
- Design for manufacturing, FMEA
- Prototype CAD modeling
- Scheduling and Cost Controls
- Detailed Design
- Prototype Build
- Prototype Validation



PROJECT HIGHLIGHTS

- Effective project management for all project phases leading to PRD, CDR and DDR
- Previous Product Development experience on analytical detection equipment
- Knowledgeable COTS sourcing and experience dealing with OEM manufacturers
- Knowledge of the codes and standards applicable to the product design based on target markets Eg. MIL, ISO, IEC, CSA/UL/CE/RoHS
- POP models that prove the physics of concepts before designs are taken to the detailed prototype stage.
- FEA to analyze shock and vibration characteristics to minimize expensive, long lead time prototype builds
- CFD to estimate thermal performance to minimize expensive, long lead time prototype builds
- Continuous tracking of critical project parameters of space claim, weight and cost using Solidworks custom properties and BOMs
- DFMA expertise
- Use of up to date design collaboration tools: Edrawings, weekly meetings, conference calls, issue list,
- Earned Value Analysis (EVA) and meeting minutes

The overall Project approach developed by the outsourced team enabled the client to:

- Track ongoing project design status and critical project parameters
- Mitigate design risks by using an intelligent mix of POP models/testing, analytical analysis, and OEM collaboration
- Provide a well documented path to more detailed design and prototype development
- Provide completed physical prototypes for extensive evaluation and field testing by our client's end Customer

ONGOING SUSTAINING ENGINEERING

Following the incorporation of Palladium Product Development and Design ongoing engineering services have been provided to the company and several of the same key personnel (some with over 20 years industry experience) are still active with the client in continued upgrades and product improvement programs. Design modifications related to manufacturing efficiencies, researched quality improvements and implementation of client/user feedback are part of the company's continued quality improvement ideology.