



ELECTRONIC
SYSTEMS
DIVISION

TECHNICAL
SERVICES
DIVISION

ELECTRONIC
MANUFACTURING
SERVICES

CMMI Technology Tracks

*CMMI for Small Projects and Organizations
Zero to CMMI Level 3*

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◆ Agenda

- Introduction
- Company Demographics
- Initial Goals and Assumptions
- Challenges
- Plan/Results Schedule
- Class C Appraisal Results
- Approach to the Organizational Process Manual (OPM)
- Templates and Tools
- Key Artifacts
- Lessons Learned
- Costs
- Current Status
- Questions?

◆ Introduction

- Share our experience as a small company
- Limited set of resources
- No past history of CMM or CMMI achievements
- 2+ years to achieve a CMMI level 3 rating

◆ Company Demographics

- Founded 1979
- Privately held, certified small business
- Approximately 200 employees (90 engineers)
- Electronic and information systems design, development, and manufacturing
- DoD and ISO 9001-2000 certified manufacturing center
- Primary Engineering Product: DoD electronic products
- Full lifecycle development projects
- Customers: Major Primes
- \$27 Million sales
- Corporate headquarters located in Melbourne, Florida

◆ Initial Goals

- Fall 2002: Achieve CMMI level 3 rating within a year
- Grow to a 250 engineering-base company; larger business base
- Provide high tech and reliable products

◆ Assumptions

- ISO 9001:2000 certification achieved earlier in the year
- If we have ISO, we should get CMMI
- We already have compliance to many level 2s and 3s
- CMMI will provide better processes and additional business

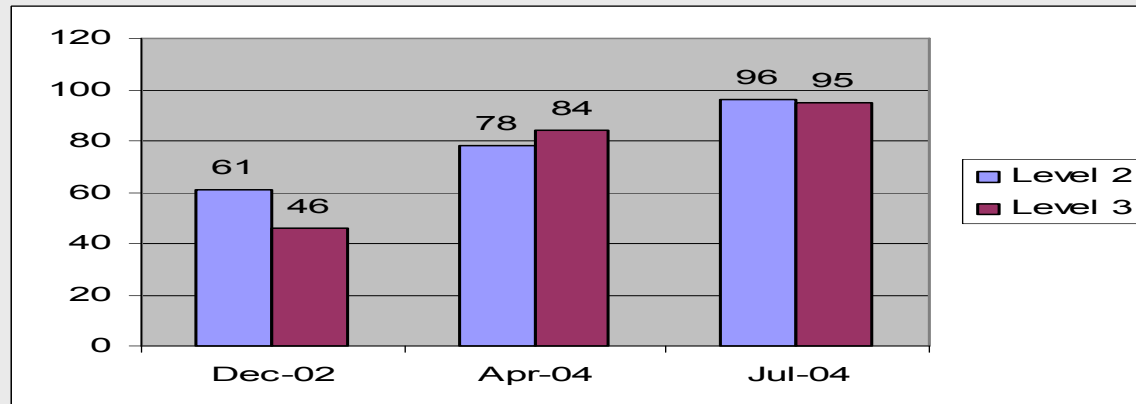
◆ Challenges

- Migration to defined, managed and repeatable processes
- Needed to educate the Company about CMMI
- Many engineering processes did not exist
- Needed to establish the Engineering Process Group (EPG), monthly status meetings, and an EPG charter
- Limited resources (part-time efforts)
- Florida hurricanes!

◆ Plan/Results Schedule

- Initial Class C Appraisal 12/2002
- Process creation/documentation updates 01/2003 - on
- 2nd Class C Appraisal 04/2004
- Measurement Workshop 04/2004
- 3rd Class C Appraisal 07/2004
- Training 05/2004 - on
- Execution 05/2004 - on
- Class B Appraisal 10/2004
- Class A Appraisal 03/2005

◆ Class C Appraisal Results (*documentation only*)



- Andy Felschow, The Process Company - TPC PRISM tool™
- 1st 12/2002:
 - Many artifacts, procedures exist, ISO focus, not CMMI focus
 - Significant documentation findings, many CMMI elements missing, no OPM
 - Good upper management commitment
 - Slightly ahead compared to the norm for orgs just starting
- 2nd 04/2004:
 - OPM exists but with some gaps
 - Improvements needed in MA, SAM, PI and OPD
- 3rd 07/2004:
 - Documented process fits the requirements

- ◆ Approach to the Organizational Process Manual (OPM)
 - Roadmap to all procedures
 - 4 Sections
 - Organizational Process (OPF, OPD, OPT)
 - Project Management (PP, PMC, IPM, RSKM, SAM)
 - Engineering (RM, RD, TS, PI, VER, VAL)
 - Support (MA, CM, PPQA, DAR)
 - Matrix approach
 - Each process area contains a table with five columns:
Practice area ID, ISO 9001:2000 paragraph #, CMMI practice area requirement, procedures, artifacts
 - Appendix
 - Key Process Areas/Procedures/Artifact Matrix
 - All procedures on Company Intranet; hyperlinks within OPM to referenced procedures

◆ Templates and Tools

- Program Management Plan (PMP)
- Software Design Document (SDD)
- Software Development Plan (SDP)
- Systems Engineering Management Plan (SEMP)
- Requirements Management Plan (RMP)
- Test Plans and Procedures
- QA Audit checklists
- Standard Measurements
- Procedure Checklist
- Program Data Sheet
- Stakeholder Roster and Involvement Matrix
- Rational Rose, ClearCase and ClearQuest, Telelogic DOORS

◆ Key Artifacts

- PMP, SEMP, SDP, RMP, Test Plans
- Test Reports
- Design Documents (SDD)
- Peer Review Evidence
- Stakeholder Matrix
- Program Data Sheet
- Monthly Measurements
- Training Plan/Evaluations
- Program Status Reports
- Monthly Process Report
- Process Improvement Requests
- Lessons Learned

◆ Lessons Learned

- Return on investment evident
 - New requests for proposals requiring CMMI level 3
 - Better processes, better products
- 50+ procedures total, 15 new, 30+ updates required
- Initial goal of 1-year timeframe was not realistic
- 2+ years required with limited resources
- Specific training needed on CMMI, new procedures
- Standardization of procedures at times difficult
- Ongoing process improvement required

◆ Costs

- \$270,000
 - 2+ years
 - Small core team (8)
 - Part-time effort
 - 200 employees/90 Engineers
 - \$27 Million sales
- Training, Tech Pubs, Travel
- EPG efforts and meetings
- Appraisal costs

◆ Current Status

- Class B appraisal results (10/2004)
 - 96 % Level 2, 96 % Level 3
 - Close with minor gaps
 - Size estimation model and procedure
 - Lessons Learned
 - Training
- Class A forecast (03/2005)
 - We'll be good to go!

◆ Questions?