

## Parts Obsolescence

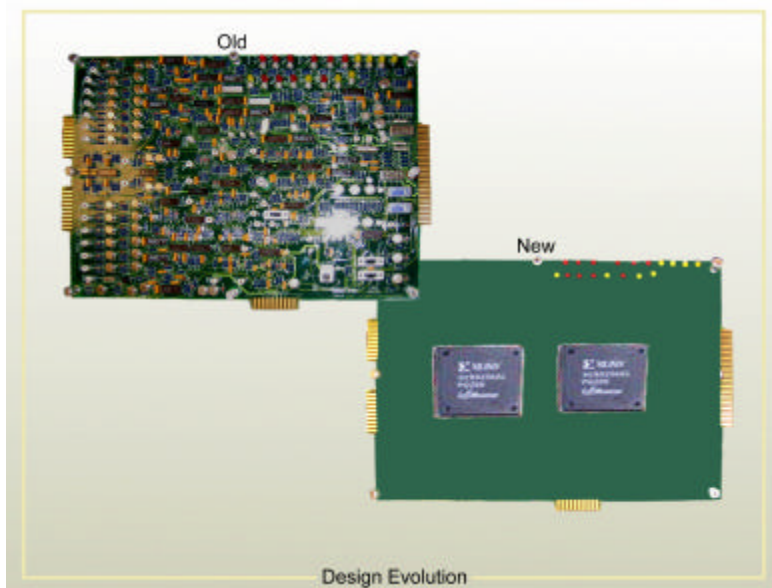
The M&T Company has a comprehensive engineering, design and logistics support capability to solve obsolescence problems with fielded / deployed electronics equipment. We provide complete project management and engineering support ranging from identifying the obsolete component through engineering the solution, to acceptance testing.

*“Maintain Readiness and Save Acquisition Dollars by Solving Parts Obsolescence Problems”*

### Obsolescence Engineering

When piece parts become obsolete impacting readiness and threatening the service life of your fielded equipment, we can either:

- Find alternative parts that are pin to pin compatible at the chip or circuit card level,
- Find alternative parts that require some minor circuit card redesign,  
OR
- Reverse engineer the existing circuit card if necessary, to replicate its form, fit and function, providing a system logistic support solution.



#### Obsolescence Experience

- Redesigned 9 AN/AAM-60 Circuit Cards.
- Redesigned Voltage Controlled Oscillator.
- Redesigned AN/ASQ-173 Pitch Circuit Card RF Multiplexor.

## Obsolescence Process

### General Process

- ◆ Identify Obsolete Parts
- ◆ Gather Source Data
- ◆ Analyze Data for Form, Fit and Function (FFF) Equivalent Alternate Part
- ◆ Incorporate part in circuit card
- ◆ If alternate part not totally FFF compatible, modify Circuit Card
- ◆ If alternate part does not exist, model function of component or entire circuit card to reduce to custom chip or chip set.
- ◆ Build Prototype
- ◆ Test Prototype / Revise Data
- ◆ Begin Production

### SOFTWARE TOOLS

- Xilinx Integrated Software Environment (ISE)
- Terradyne LASAR
- Mirocap
- ORCAD Schematic Capture and Layout

### HARDWARE TOOLS

- BP Microsystems Programmer
- Xilinx XC1765 and FPGAs
- PSpice A/D
- Anadigm AN10E40 Field Programmable Analog Array (FPAA)
- Anadigm Designer

### Analog Model Process

- ◆ Model circuit using Technical Data Package in PSpice / Microcap.
- ◆ Select replacement components from library.
- ◆ As required, export component design into Application Specific Integrated Circuits to reduce chip size.
- ◆ Simulate circuit design in a FPAA tool.
- ◆ Produce ROM load from the FPAA tool.
- ◆ Load ROM using BP Systems programmer.
- ◆ Complete redesign of existing system to incorporate the ROM, FPAA, and remaining circuitry that cannot be assimilated into the FPAA design

### Digital Model Process

- ◆ Model circuit in an ISE tool
- ◆ Simulate design of the circuit to ensure complete match of the design
- ◆ Produce a ROM load from the ISE Tool
- ◆ Load ROM using BP Systems programmer
- ◆ Complete redesign of existing system to incorporate the ROM, Field Programmable Gate Array (FPGA) and remaining circuitry that was not incorporated into the FPGA design.

Please visit our web site at <http://www.cdi-gs.com/mt>

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