

MRL

Manufacturing Readiness Level (MRL) is a standardized measurement of manufacturing maturity and risk for a given technology solution.

MRL assessments are critical to ensuring that technology can be produced at the best value and on-time.

Design Profit, Inc., has incorporated an MRL assessment tool into its existing powerful design analysis software. Design Profit® provides knowledge and evidence required to progress through a weapon program contract.

Design Profit® provides a standardized process to assess MRLs along with cost and producibility metrics.

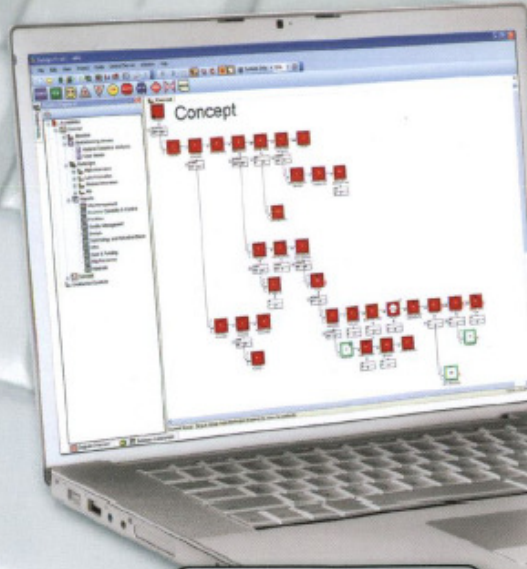
Design Profit®
DoDI 5000.02

EXECUTIVE SUMMARY

Analysis of Alternatives (AoA)

	Pre-Concept	AoA - Design 1	AoA - Design 2	AoA - Design 3
TRL	4	4	5	2
MRL	3	3	3	2
Parts	142	94	104	85
Steps	930	748	818	680
Actual Time (min)	397.87	339.96	361.08	231.60
No. of Operators	77.861	66.723	69.539	44.641
Fasteners	51	33	39	26
Ergo Dangers	77	63	57	62
Poka Yoke Issues	68	44	34	46
Total Weight	1.89 lb	1.77 lb	1.80 lb	0.90 lb
Piece Cost	\$5,098.22	\$4,974.24	\$4,781.98	\$3,488.29
Total Labor Cost	\$551.06	\$479.00	\$505.47	\$329.38
Q Burden	\$1,066.89	\$1,066.89	\$1,057.84	\$883.15
Total Cost	\$6,715.97	\$6,519.92	\$6,345.29	\$4,700.83
Investment Cost	\$83,925	\$56,000	\$70,925	\$120,500
Annual Savings	N/A	\$4,705,054	\$8,896,231	\$48,363,432

PROGRAM CONFIDENCE



Design Profit® MRL exposes risk, rolls up costs and provides direction early at the architecture concept phase.

Reveal issues and costs associated with technology and manufacturing to mitigate risk while costs are low.

Objective metrics provide knowledge and evidence that drive a simple, optimum solution.

Objective Metrics

MRL

TRL

Piece Cost
Labor Cost
Cost of Quality
Total Defects per Unit (TDU)
Right First Time (RFT)
Step Count
Part Count
Fasteners
Complexity Score
Ergo Dangers
Poka Yoke Issues
And Many More !



THE WEAPON SYSTEMS ACQUISITION REFORM ACT OF 2009

Passed the House and Senate in unanimous votes and was signed into law on May 22, 2009

This Law requires Defense Weapon Programs to:

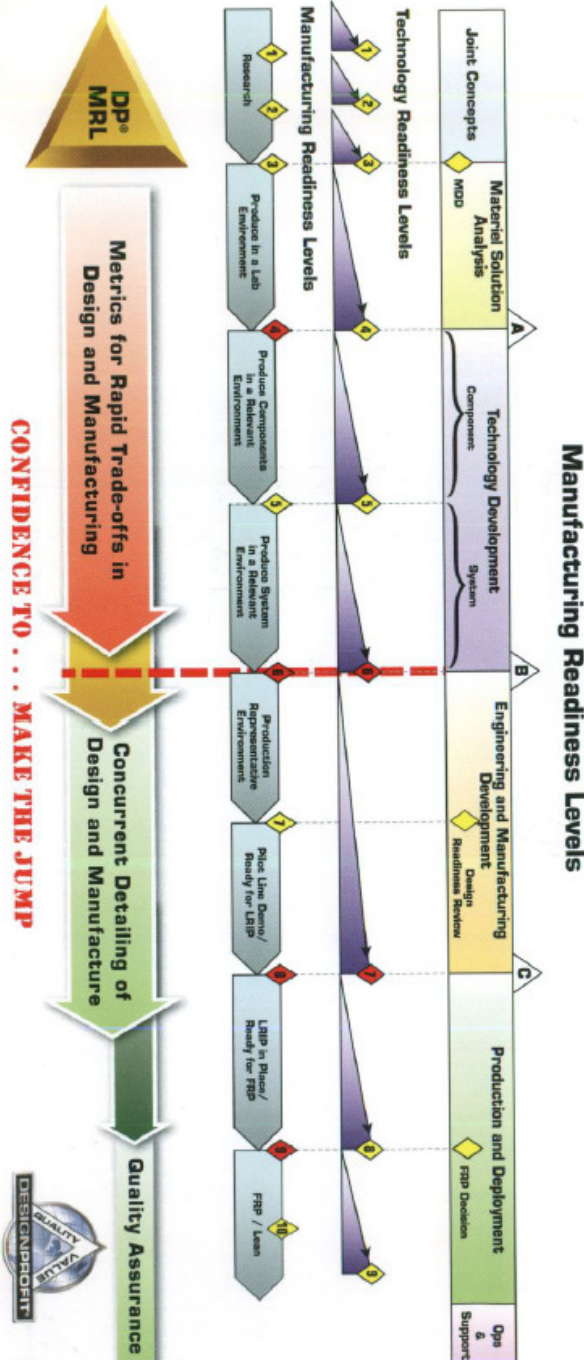
- Perform trade-offs between cost, schedule and performance early in the program cycle
- Conduct preliminary design reviews before giving approval to new acquisition programs
- Show reasonable cost and schedule estimates using unbiased data
- Periodically review and assess the maturity of critical technologies

Design Profit® is a powerful tool that is easy to learn and easy to use. It provides fast results that are needed to reduce program risk and costs.

Munro & Associates, Inc.

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Manufacturing Readiness Levels

ASSESSMENT TOOL



Munro & Associates, Inc.®

