



communications
KDI Precision Products, Inc.

M734A1 Multi-Option Fuze for Mortars & M783 PD/DLY Fuze

Product Improvement Program

Presented By
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Outline

- M734 - M734A1 - M783 Evolution
- Fuze Characteristics
- Mortar Ammunition
- Integrated Product Team
- PIP Methodology
- PIP Process Map
- Continuous Product Improvements
- PIP Results
- Future Product Improvements
- Summary



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M734 - M734A1- M783 Evolution

M734 PRODUCTION PROGRAM

M734 Development (1970's) - KODAK

M734 Production (Early 1980's to ~1997) - KODAK then ATK/Accudyne

- Mid 1970's CW Proximity Technology
- Upleg early (safety) issues
- Component Obsolescence

M734E1 MATERIEL CHANGE PROGRAM

M734E1 GOVERNMENT INITIAL DESIGN EFFORT 1991

M734E1 Development (1993-1997) – Joint Government and KDI 1993 – 1999

TYPE CLASSIFICATION - STANDARD WITH
M929, M934A1, M821A2, AND M722A1 CARTRIDGES 1996





M734 - M734A1 - M783 Evolution (cont.)

M734A1/M783 PRODUCTION

- Performance Based Management Contract
- Continuous Design Improvement
- Contractor Maintained TDP
- Dynamic Component Obsolescence Program

M734A1 Production (FY1998-2002)

1998 – 2003

– Competitive Award to KDI

M783 LRIP (FY01-02) Bundled with M734A1 Production

2000 - 2003

M734A1/M783 Production (FY2003-2007)

2003 – Present

– Competitive Award to KDI



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FUZE CHARACTERISTICS


	<u>M734A1</u>	<u>M783</u>
Mode Settings: 60/81mm Proximity (PRX) (7 Feet Height of Burst (HOB))	PRX	IMP
120 mm PRX (14 Feet HOB)	PRX	IMP
IMPACT (IMP) (Backup mode to Prox)	IMP	IMP
DELAY (DLY) – 50 to 150 msec (Also backup mode to Prox / Imp)	DLY	DLY

Electronic Arming: Apex Detection **YES** **NO**

Mechanical Arming: Setback then sustained airflow to Turbine Alternator/Safe and Arm geartrain to remove final mechanical lock

Power Supply: Air Flow driven Turbine Alternator

Setback: 1,000 TO 14,000 G's

Temperature:  -40F TO +145F OPERATIONAL

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Mortar Ammunition

Ammunition

120mm

M934A1 MO HE



M929 Smoke



81mm

M821A1 MO HE



60mm

M720E1 MO HE



M768 PD HE



M722A1 Smoke



XM1046 MAPAM



Fuzes



M734A1 M783

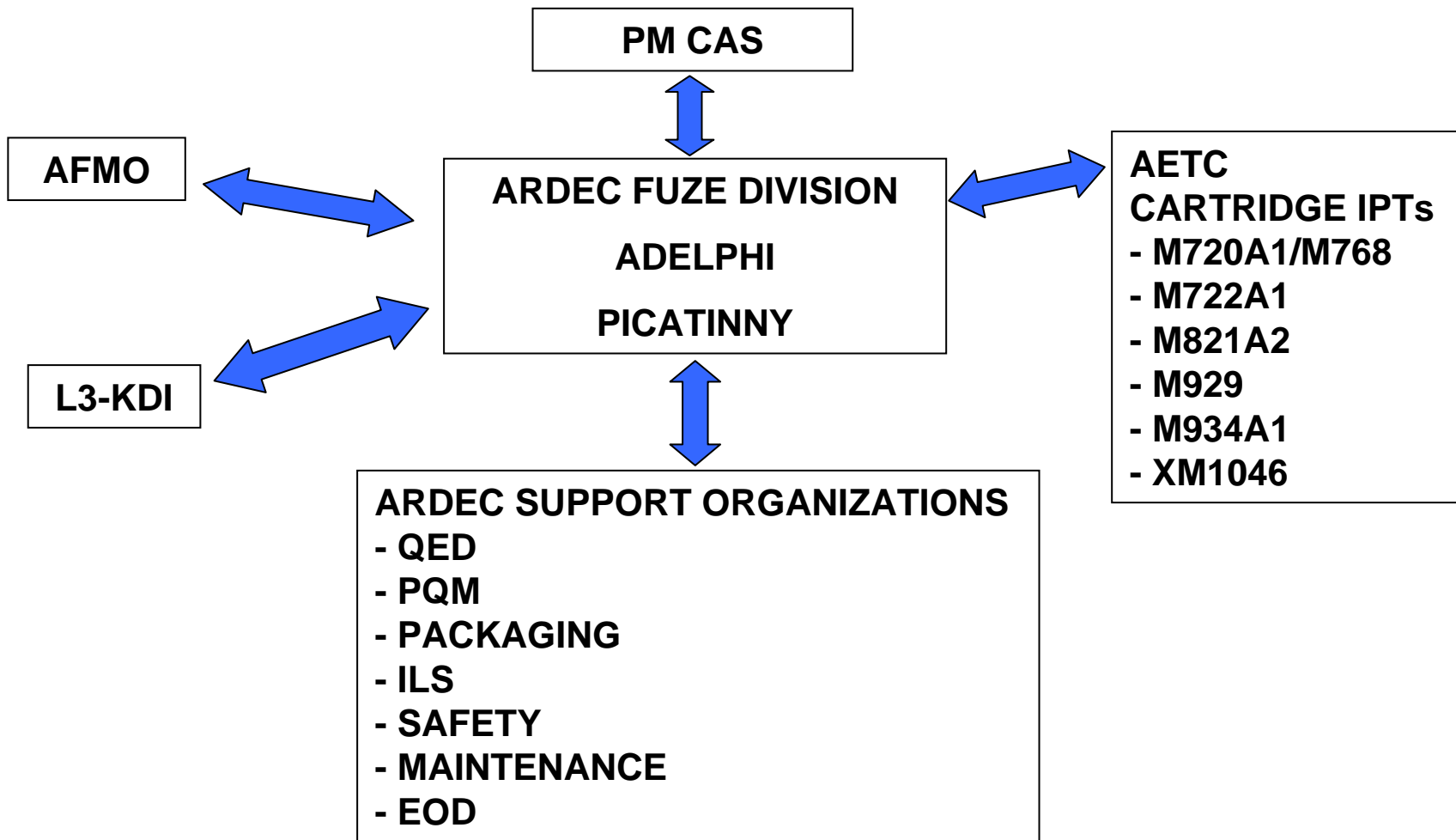
M734A1 & M783 fuzes are ballistic matches to the M734 and M745 fuzes.



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INTEGRATED PRODUCT TEAM





Product Improvement Methodology

- Maintain up to date technological practices
 - Mitigates Electronic Component Obsolescence
 - Enhance Producibility/Manufacturability
 - Increased Capability & Safety
- Core Contractor/Government IPT working together to submit, design, & qualify improvements is the key to the success of this program.
- The product improvements are individually qualified and validated prior to implementation.
- Product Improvements are implemented as ECPs, sometimes with cost savings.

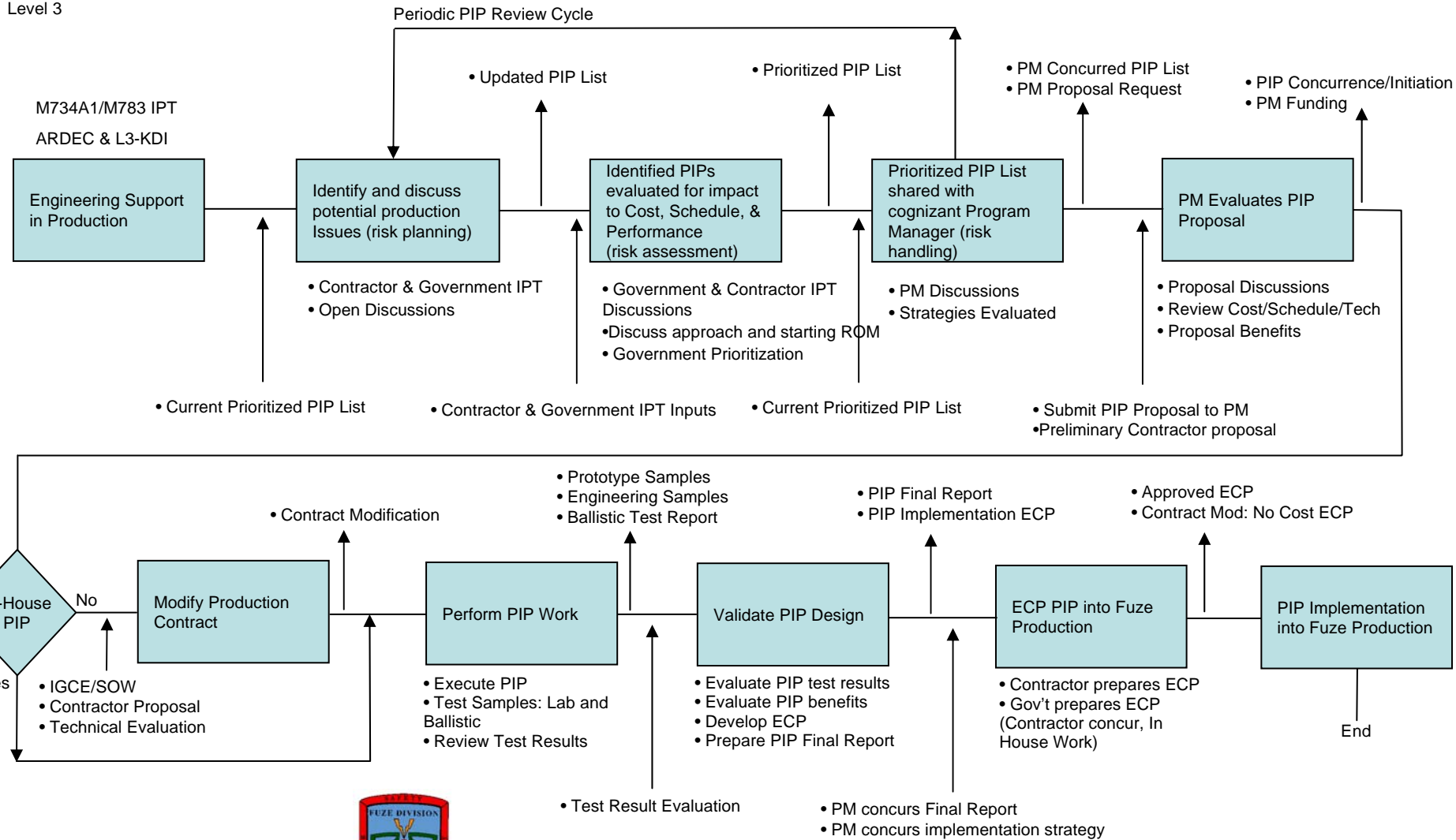


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PIP Execution Process Map

Level 3



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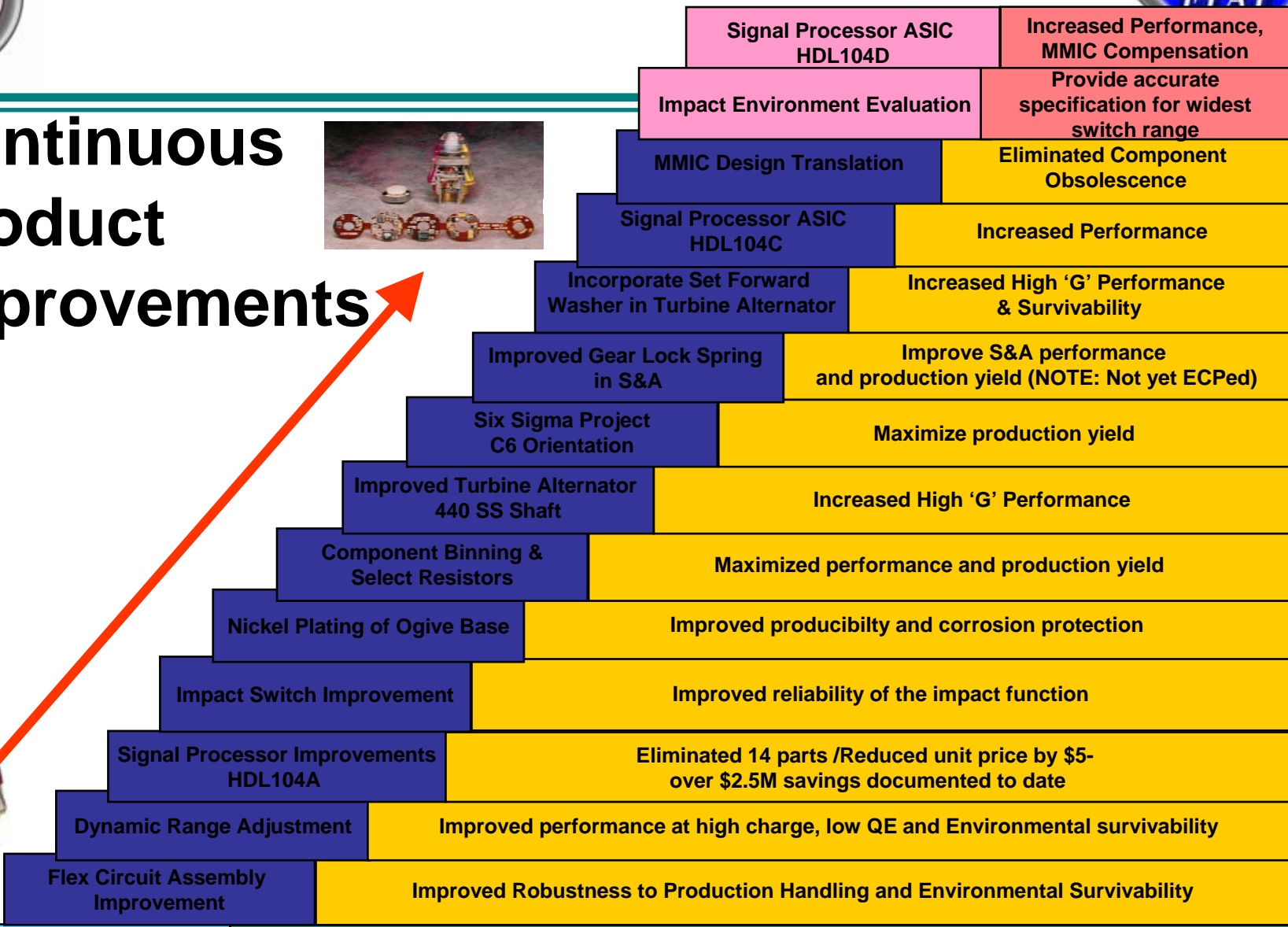
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On - Going

1996 to Current

Continuous Product Improvements



Materiel Change to M734
1993 - 1996

Resulted in M734A1 Fuze - Improved Safety, HOB Accuracy, ECM, State of The Art Electronics



PIP Results

– M734A1: Interfixes 6 to 9

- 711, 546 Fuzes Manufactured
- 61 Lots, 61 Accepted, 20 with no failures
- 6,370 Rounds tested, 5 duds & 90 out of mode
- Reliability as set 98.40%
- Overall Function Reliability 99.51%

– M783: Interfixes 2 & 3

- 195,080 Fuzes Manufactured
- 12 Lots, 12 Accepted, 7 with no failures
- 718 Rounds tested, 0 dud & 7 out of mode
- Reliability as set 99.3%
- Overall Function Reliability 100%





Future Product Improvements

- **Next Generation Microcontroller**
- **Next Generation Signal Processor**
- **Circuit Re-Layout for Industry Standard Components**
- **Fuze Transceiver Updates**
- **Insensitive Munitions**
- **FCS Mortar Fuzing Requirements**
 - Remote Set
 - Direct interface with MFCS
 - Extended Range





Summary

- **Product Improvement Program (PIP) allows for dynamic Technical Data Package.**
 - Anticipates and mitigates component issues.
 - Resolves Production Problem Areas.
- **The M734A1/M783 PIP is our production risk reduction program.**
 - Periodic review and prioritization.
- **All parties, PM & IPT, must agree that there is benefit to an improvement.**

