Air to Ground Wing
Direct Attack Systems Group
Eglin AFB

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Fuze Programs
DSU-33 & FMU-152 (JPF)

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Overview

- **DSU-33**
  - **Description**
  - **Status**
  - **Schedule**
  - **Future DSU-33 Roadmap**
- **JPF**
  - **Description**
  - **Mission Timeline**
  - **Capabilities**
  - **Testing**
  - **Schedule**
  - **Production Status**
- **Summary**

Direct Attack Systems Group

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DSU-33 Proximity Sensor

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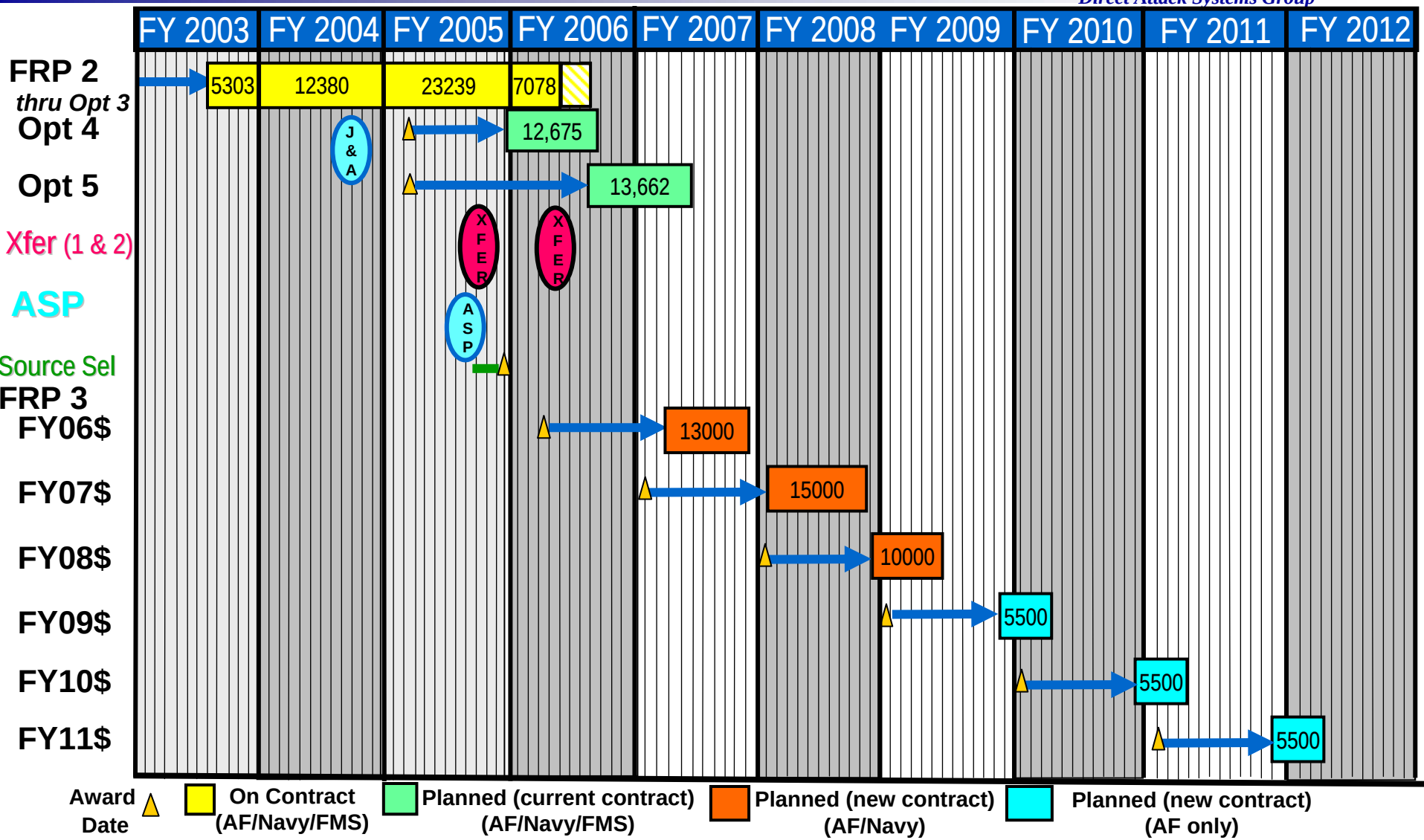
DSU-33B/B Description

- **Joint ACAT III program**
- **System Description:**
  - **Radar Proximity Sensor**
  - **Provides Height of Burst (HOB) fire pulse signal to the fuze for JDAM and GP bombs (FMU-139 & FMU-152A/B Fuzes)**
- **Performance Parameters:**
  - **Height of Burst: 5-35ft (80%)**
  - **Multiple Weapon Release: 2 or more**
  - **Operational Life ("B/B"): 200 seconds**
- **Program Info:**
  - **Phase – Full Rate Production (AF, Navy & FMS)**
    - **To date: ~ 43,000 DSU-33 sensors built (2 contracts)**
    - **On Contract: currently 48,000**
    - **FMS: case pending**
  - **Contract Type – FFP**
  - **Contractor - Alliant TechSystems**

DSU-33 Status

- Full Rate Production – Alliant Techsystems (ATK) prime contractor
  - 1400 to 2000/month
  - Production through March 06
- Current Contract – Basic contract w/ 5 options (each 12k) = 72,000 qty limit
- Presently through Option 3 w/ 48,000 sensors on contract
- Options 4 & 5 exercised ~ pending: 24,000 remaining
- ECP (DSU-33 C/B if approved) – Production cut-in Aug 05
  - Obsolete parts
  - Reduced costs
  - Improved producibility

DSU-33 Program Delivery Schedule



Future DSU-33 Roadmap

- **New Full & Open Competition in late FY05 – early FY06 contract award**
  - **Flexible, multi-year contract**
  - **Funding through FY11**
  - **Approximately 53,000 sensors**

- **Transfer Program to OO-ALC/WMG**
  - **Increment 1 Current Contract/sustainment: Fall 05**
  - **Increment 2 New Contract**
    - **30 Dec 05 (no requal)**
    - **30 June 06 (requal)**

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Joint Programmable Fuze (FMU-152A/B)

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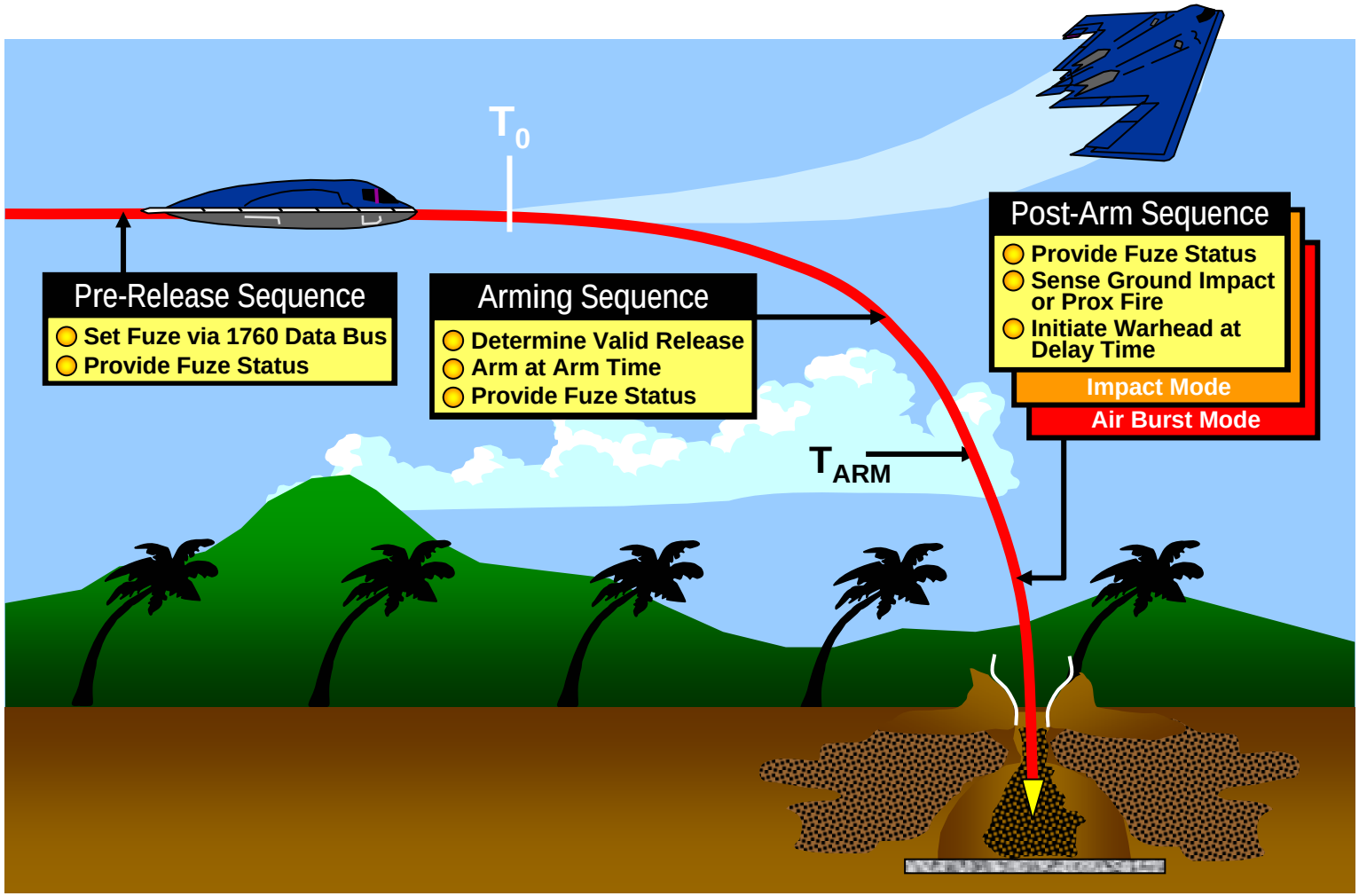
Description

- System - FMU-152A/B, FZU-55A/B, Cable, and Closure Ring
- Requirements based from JDAM JORD (CAF 401-91-III-A, 10 Mar 01)
- Cockpit Selectable Arm/Delay Times
  - Allows In-flight Retargeting
- Will Be Interchangeable with Current FMU-139, FMU-143 & FMU-124
- Single Fuze Compatible with Mk82, Mk83, BLU-110, Mk 84, BLU-109, BLU-113, and upcoming BLU-122 Warheads
- Weapons: All JDAM Variants, Backward Compatible with AGM-130 and GBU-10/12/15/16/24/27/28
- Joint AF & Navy Program
  - (AF Lead)
- FMS Australia/Netherlands

FMU-152A/B Mission



Fuze Capabilities

Characteristic	FMU-152A/B	FMU-139C/B	FMU-143	FMU-139D/B PIP
Warhead Type	Both	Blast-Frag	Penetrator	Penetrator
Prox Capability	YES	YES	NO	YES
Power Supply	FFCS, FZU, GBU-15	FFCS, FZU	FZU, GBU-15	FFCS, FZU
Low Drag Arm	4, 4.5, 5, 5.5, 6, 6.5, 7, 7.5, 8, 8.5, 9, 9.5, 10, 14, 21, 25	4, 6, 7, 10, 14, 20	5.5, 12, 21	4, 6, 7, 10, 14, 20, 25, 30
High Drag Arm	2, 2.6, 3, 3.5, 4, 5 with Lockout	2, 2.6, 4, 5	NONE	2, 2.6, 4, 5
Delay Time	Inst, 5, 15, 25, 35, 45, 60, 90, 180, 240 msec; 15, 30, 45, 60 min; 4, 8, 12, 16, 20, 24 hr	Inst, 10, 25, 60 msec	30, 60, 120 msec	Inst, 5, 10, 15, 35, 45, 60, 90, 180, 240 msec
Shelf Life	20 Years	10 Years	10 Years	10 Years
Service Life	10 Years	180 Days	180 Days	1 Year
Programmability	YES	NO	NO	YES
Unit Cost	$2,310	~$1,100	~$2,515	~$1,500

FAAT IV Final Results

	Planned	Executed	Success	Failure	Comments
Contractor FAAT	36	36	33	3	
Flight Tests	36	36	33	1	2 No-test
Sled tests	5	5	4	1	
Static Arena	9	9	9	0	
Totals	**86**	**86**	**79**	**5**	

Demonstrated FAAT Reliability – 94.1%

Other Testing Completed to Date

- **AFOTEC completed JPF Operational Testing as part of the GBU-38/B IOT&E on B-2A**
  - **30 FMU-152A/Bs tested -- 29 successes, 1 No-test**
- **AFOTEC completed GBU-38/B QRC test on F-16C**
  - **6 FMU-152A/Bs tested – 6 successes**
- **AFOTEC completed GBU-38/B QRC test on F-15E**
  - **1 FMU-152A/Bs tested – 1 success**
- **JPF Lot Acceptance Testing (LAT)**
  - **140 total tests completed – 131 successes, 8 failures, 1 no test**

Total Testing (to Date)

	Planned	Executed	Success	Failure	Comments
FAAT IV	86	86	79	5	2 No-test
JPF AFOTEC Flight Tests	30	30	29	0	1 No-test
AFOTEC GBU-38 QRC Tests	7	7	7	0	
JPF LAT Testing (to date)	140	140	131	8	1 No-test
Totals	**263**	**263**	**246**	**13**	**4 No-test**

Overall Reliability to date – 95.0%

93.1% @ 80% confidence level

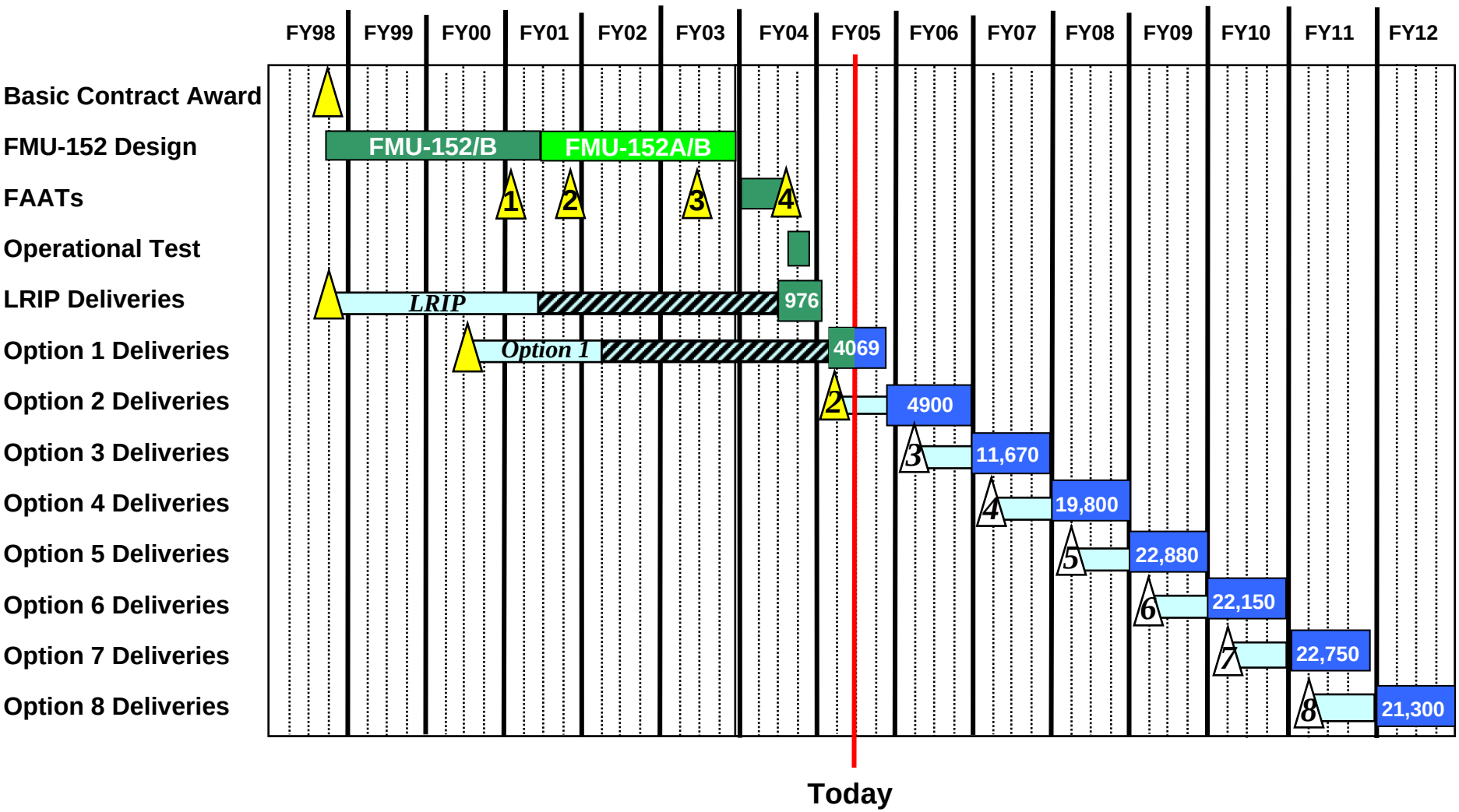
Operational/Flight Usage Reliability – 98.6%

95.8% @ 80% confidence level

Lot Acceptance Testing

- Fuzes are operationally tested in a Test Set
- Fuzes are environmentally conditioned ranging from hot (+160°F), ambient and cold (-65°F)
- 13 different scenarios are used testing all aspects of possible power, arm & delay times, & fuzing
- Number of fuzes tested based on Acceptance Quality Level (AQL)
- Future Depot Surveillance Testing will use same test set—scheduled to start in 2008 (recur every 3 yrs)

Joint Programmable Fuze Current Schedule



Production Status

- **Production**
  - **LRIP Complete – Dec 04**
  - **Option 1 – delivering – expected completion Sep 05**
  - **Option 2 – awarded Dec 04**
    - **4550 USAF units**
    - **First FMS case for JPF**
      - **350 fuzes**
- **Deliveries**
  - **CENTAF**
  - **ACC bomber force (CONUS)**
  - **STAMP**

DSU-33, JPF & HTSF Summary

- **Both the DSU-33 and JPF programs are up and running as productions programs**
- **JPF has reached RAA and production rates are growing**
- **HTSF is being closed out**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Any Questions?