



# Artemis

## Advance Planning Briefing for Industry

8-9 April 2003

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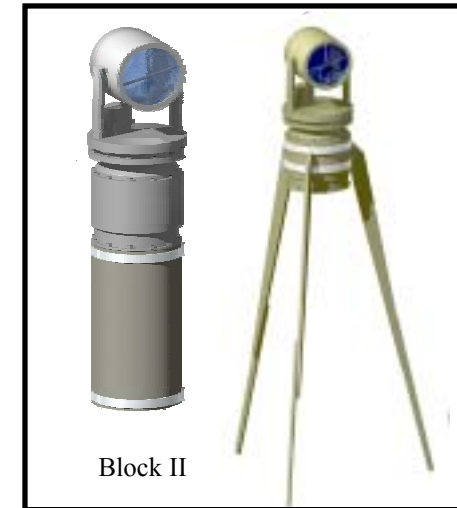
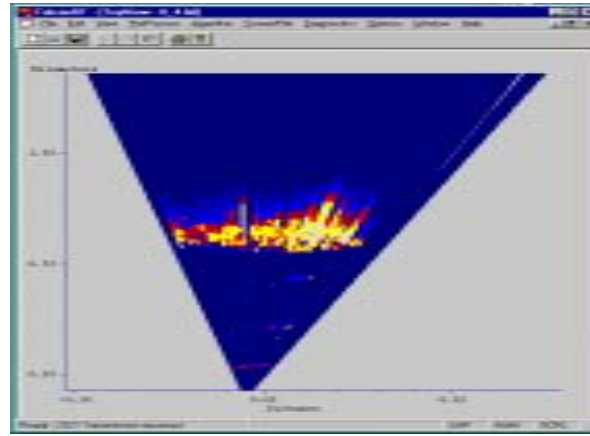
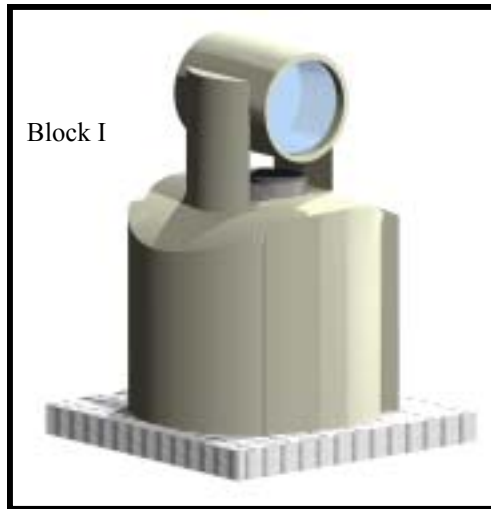
# Road Map



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- Definition
  - Overview
  - Status
  - Component Advance Development
  - Focus
  - Schedule
  - Industry Opportunities
  - Summary / Challenges



# Definition



## Develop and Field

- Active standoff Chemical Warfare (CW) detection system
  - ID CW agent vapors and aerosols and TIC
  - Near-real-time detection
  - Autonomous operation
  - Provide detailed mapping and tracking of threat clouds
  - Modular design for ease of integration



# Program Status



- Completed Analysis of Alternatives (AoA) July 01
- Component Advanced Development approved Nov 01
- 25 Sept 02 Draft Joint ORD in review
- Preparation for System Development and Demonstration

**JSIG NBC Joint Priority List Ranked 3<sup>rd</sup> in  
FY2001 and FY2002**



# AoA Recommendation



## Multi-wave Light Detection And Ranging (LIDAR)

- Technology is mature
- Risk is acceptable
- Provides maximum military utility for CW standoff detection

**Multi-wave LIDAR technology is ready for an Acquisition Program**



# Component Advanced Development



- To reduce overall program risk & develop a system architecture
- Findings/advancements will be provided to industry as GFI

<b>Title</b>	<b>Description</b>
Algorithm advancement	Combine aerosol and vapor detection; real-time background elimination
Frequency Agile Laser (FAL) reliability	Elimination of particulates within laser cavity that erode optics
Mustard Agent detection	Shift FAL frequency to detect CW Agents in 8.0 to 8.5 micron range



# Program Focus



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## Draft Joint ORD

- Joint Potential Designation - 6 March 2002
- Block I
  - Fixed Site
- Block II
  - On the move detection
    - Shipboard, Ground Mobile, Rotary Wing Aircraft, TUAV, Foot Mobile
  - Same size and shape of JSLSCAD



# Future Plans



## Schedule

Draft RFP	3QFY03
RFP	1QFY04
Milestone B	3QFY04
SDD Contract	3QFY04
Critical Design Review	1QFY05
Milestone C	3QFY07
Full Rate Production	5QFY09





# Industry Opportunities



## Block I

- FY04
  - Block I System Development and Demonstration (SDD) Contract
- FY07
  - Option 1: Low Rate Initial Production (LRIP)
- FY09
  - Option 2: Full Rate Production (FRP)



# Summary / Challenges



- Obtain Validated ORD
- Successfully complete Component Advanced Development
- Obtain Milestone B
- Award System Development and Demonstration Contract



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# Backup



# AoA Results Summary



Technology Area	Performance Against							Capability
	Vapors		Aerosols		Surface Contamination		Discriminate	Ranging Mapping
	Trigger	ID	Trigger	ID	Trigger	ID	Bio/Non-Bio	
Active Emitter Lidar-Multiple Wavelength	Green	Green	Green	Green	Green	Green	Yellow/Orange	Green
Active Emitter Lidar – Single Wavelength	Red	Red	Green	Red	Red	Red	Brown/Orange	Green
Active Emitter Doppler Radar	Red	Red	Green	Red	Red	Red	Red	Green
Fourier Transform Infrared Spectroscopy	Green	Green	Red	Red	Red	Red	Red	Red
Multispectral and Hyperspectral	Green	Green	Red	Red	Red	Red	Red	Red



# System Overview



- Active Standoff Chemical Warfare (CW) detection system
- Near real-time identification of CW agent aerosols and vapors
- Autonomous operation with warning and alarming functions interfacing with service C4I systems
- Detailed mapping and tracking of threat clouds
- Modular design for ease of integration
- Warfighter Benefits
  - Maximum warning and battlefield awareness
  - Enables Preventive measures versus countermeasures





# Artemis Prototypes



## Active Stand-off detection development

### 1<sup>st</sup> Prototype: JSWILD (FAL)

- Demonstrated sensitivity
- Aerosol as well as vapor detection/ID of CW agents



### 2<sup>nd</sup> Prototype: JSWILD (Wildcat)

- Transportable, fully integrated
- 20 km detection capability demonstrated

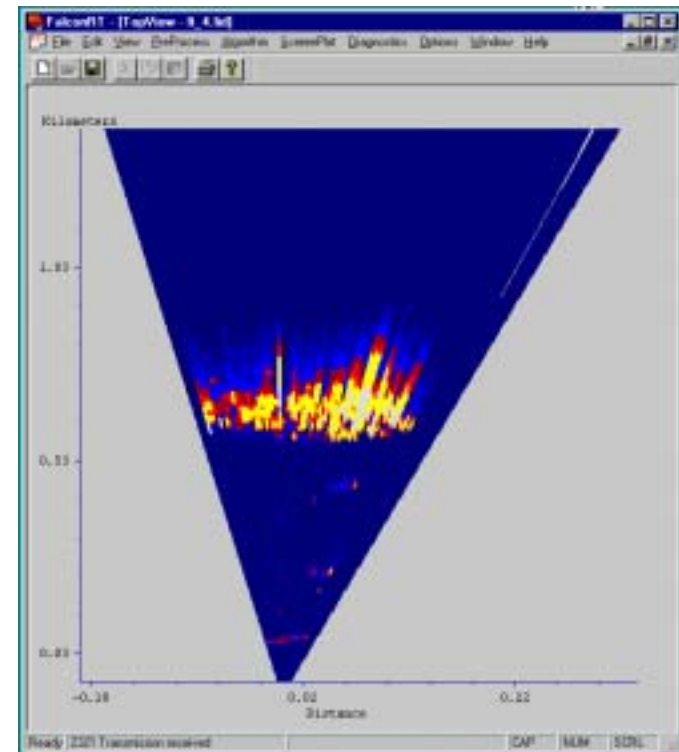
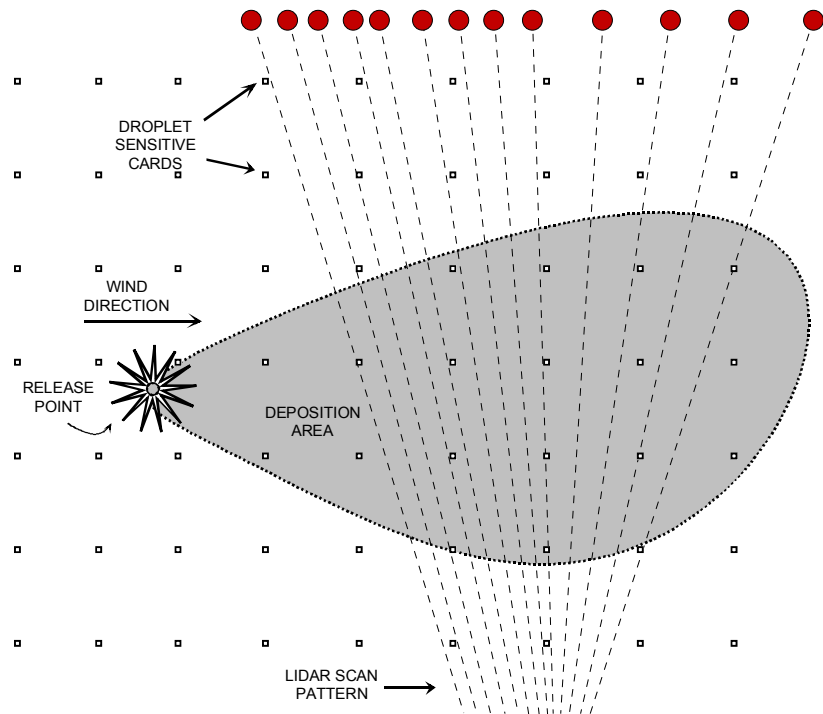




# FAL Surface Contamination Prediction



## *Real-time Detection & Surface Mapping to 0.5 g/m<sup>2</sup> Proves Concept for Large Area Decon Application*



***Expected detection level of 0.01 g/m<sup>2</sup>***