DARPA

DARPATech

2002 Symposium

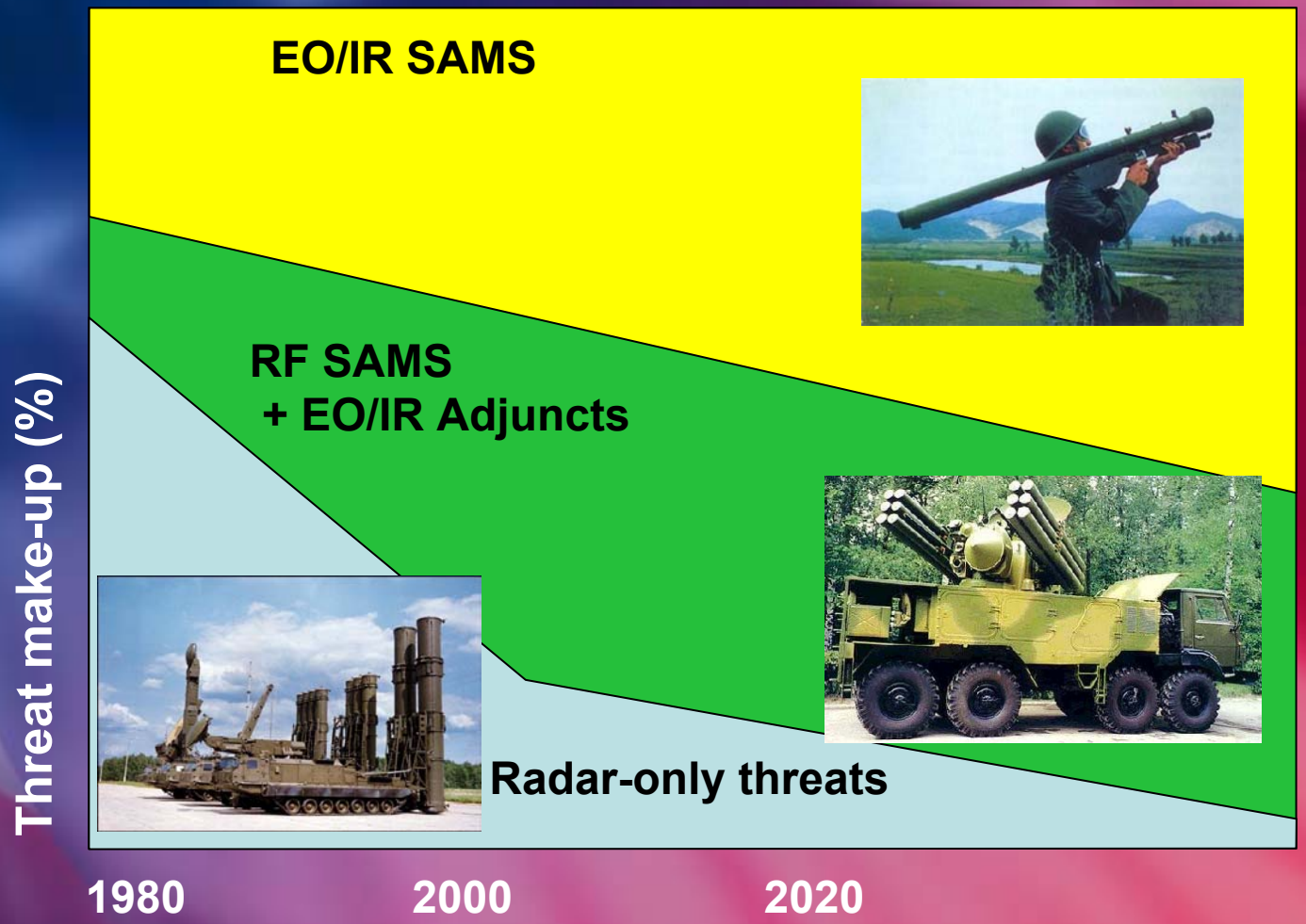
Transforming Fantasy

DARPA
Robert O. Hauge
Program Manager
Transforming
Fantasy

Advanced Optical Sensors

Mr. Robert Hauge
Special Projects Office

Multifunction Electro-Optics for Defense of US Aircraft (MEDUSA)



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Multifunction Electro-Optics for Defense of US Aircraft (MEDUSA)

Threat Diversity

Integrated RF/EO SAMs

Airborne Sensors and Missiles

EO/IR Tracker Upgrades

MANPADS (IR SAMs)

Laser Beam Riders

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MEDUSA Layered System

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MEDUSA Layered System

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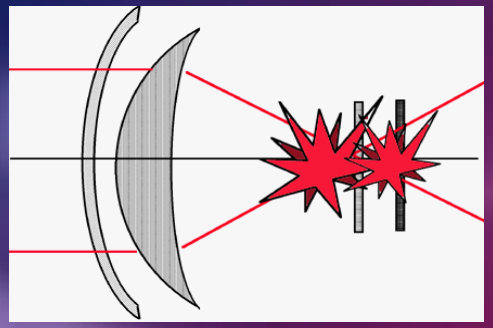
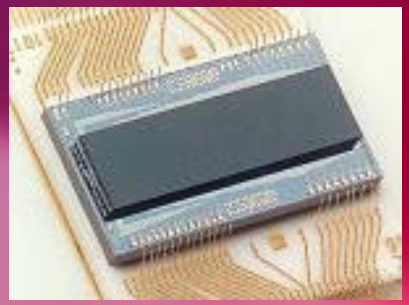
MEDUSA Program Outline

Techniques & Measurements



Component Technology Developments



System Development

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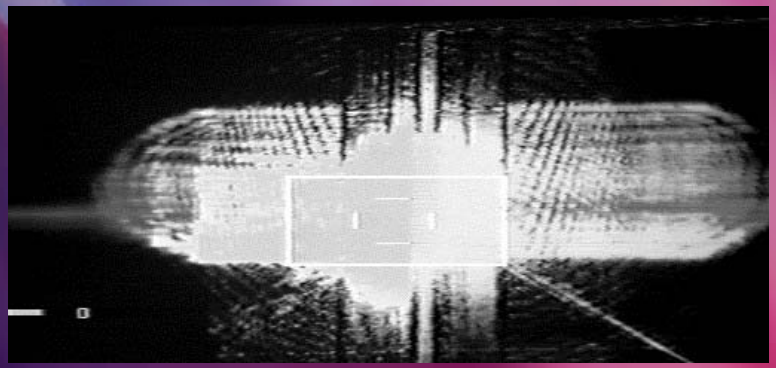
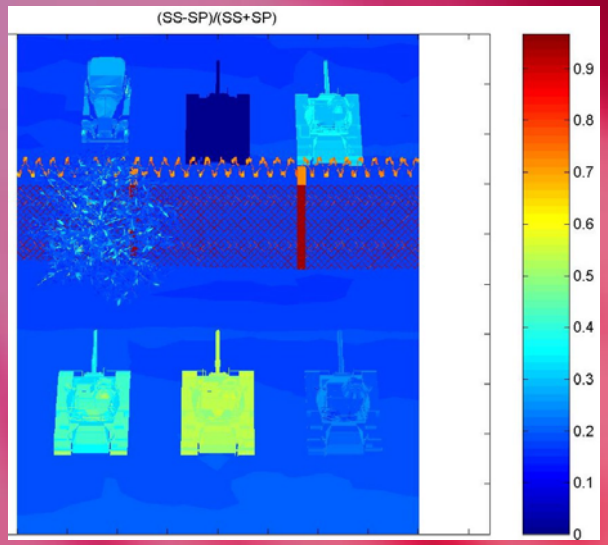
Measurements and Techniques

- Clutter Characterization
- Target Signature Measurement
- Target Classification Techniques
- Optical Countermeasure Techniques





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Component Technology Development

- Laser Sources

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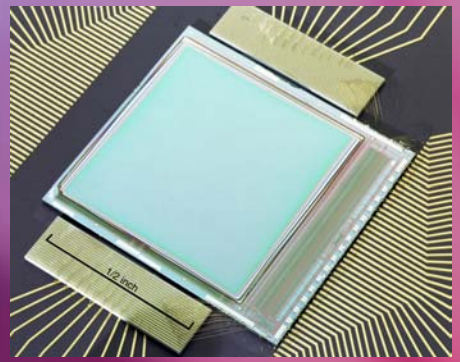
Component Technology Development

- Laser Sources
- Detectors



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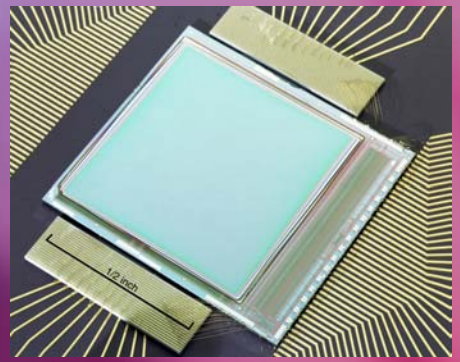
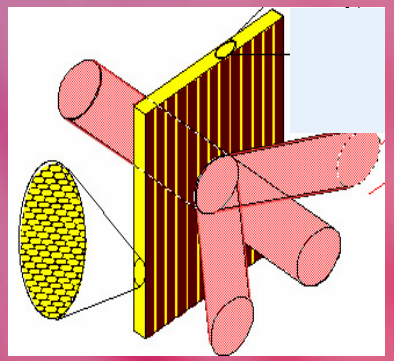
Component Technology Development

- Laser Sources
- Detectors
- Compact Beam Steering





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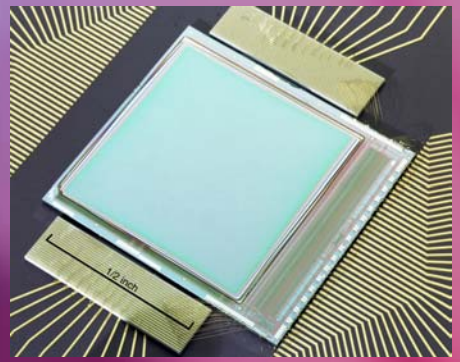
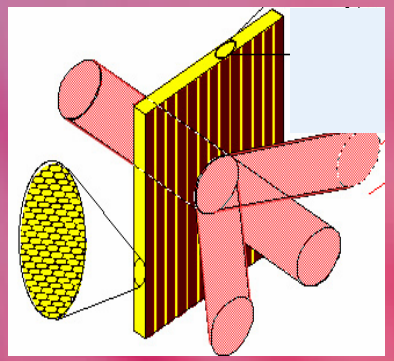
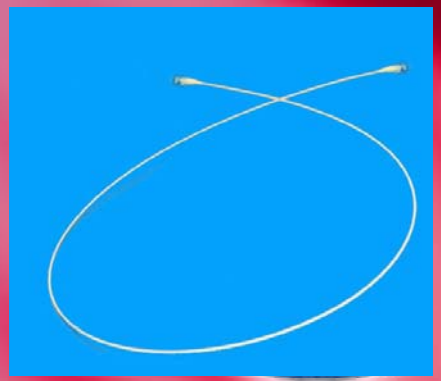
Component Technology Development

- Laser Sources
- Detectors
- Compact Beam Steering
- IR Waveguides







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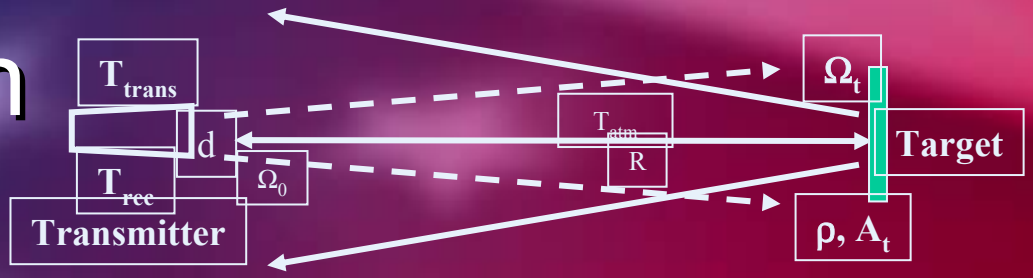
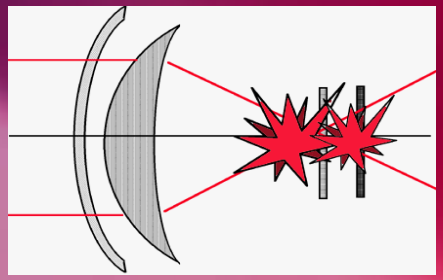
System Development

- System Design
- Breadboard System/Lab Demo
- Brassboard System/Flight Demo





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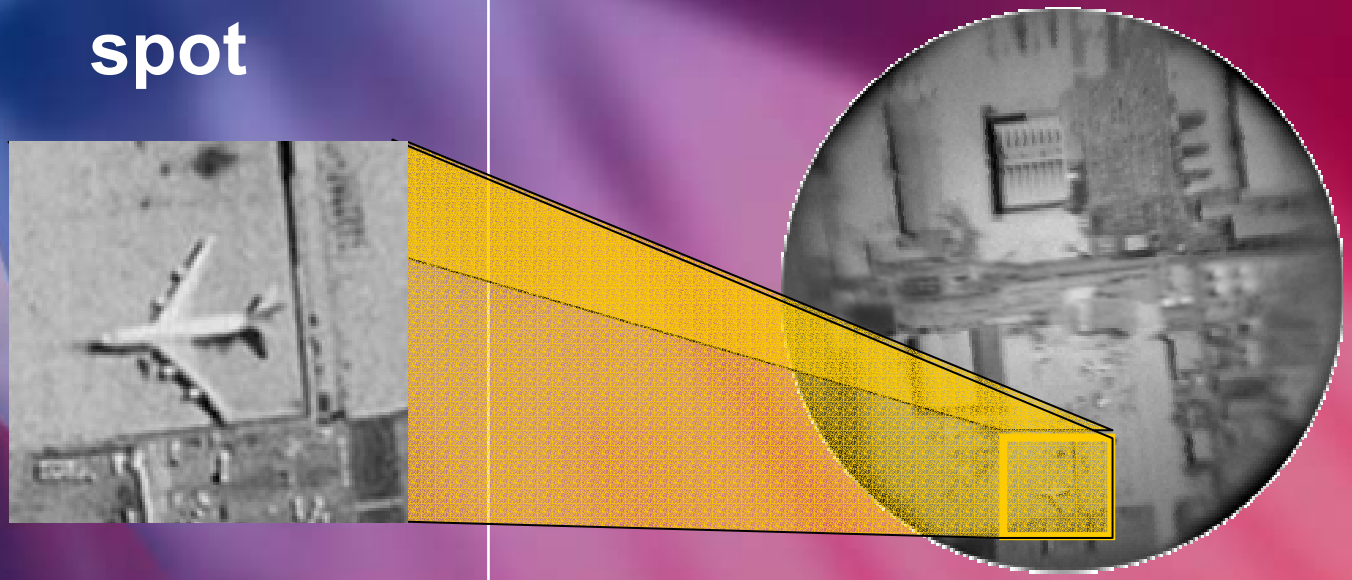
Dual Mode Imaging

TODAY	FUTURE
High-resolution imagery in small spot	Wide-area MTI surveillance *and* high-resolution spot image



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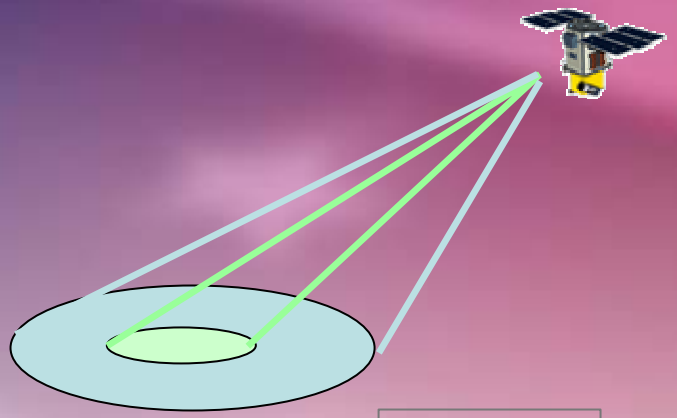
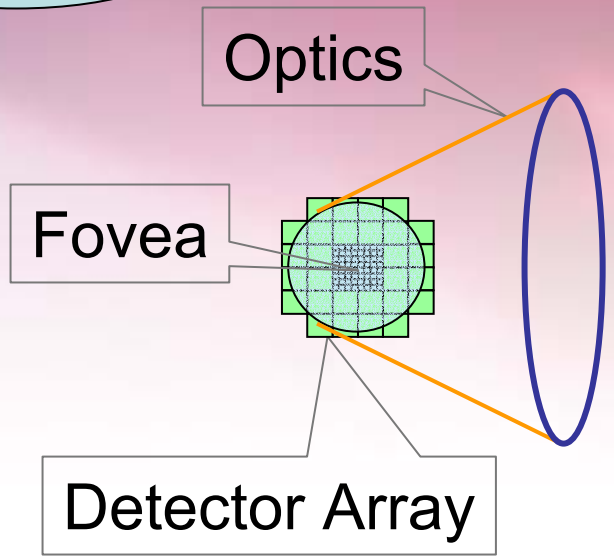
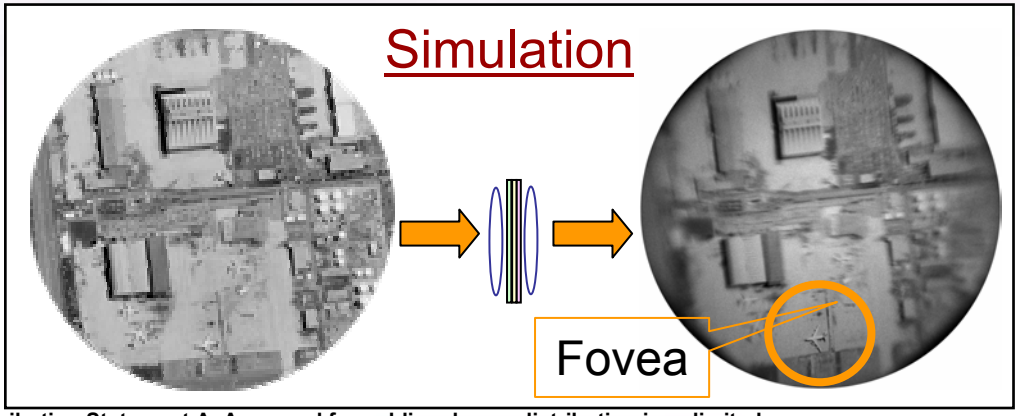
Dual-Mode Sensing Options

- Zoom
- "Eyeball-like"
- Electronic fovea







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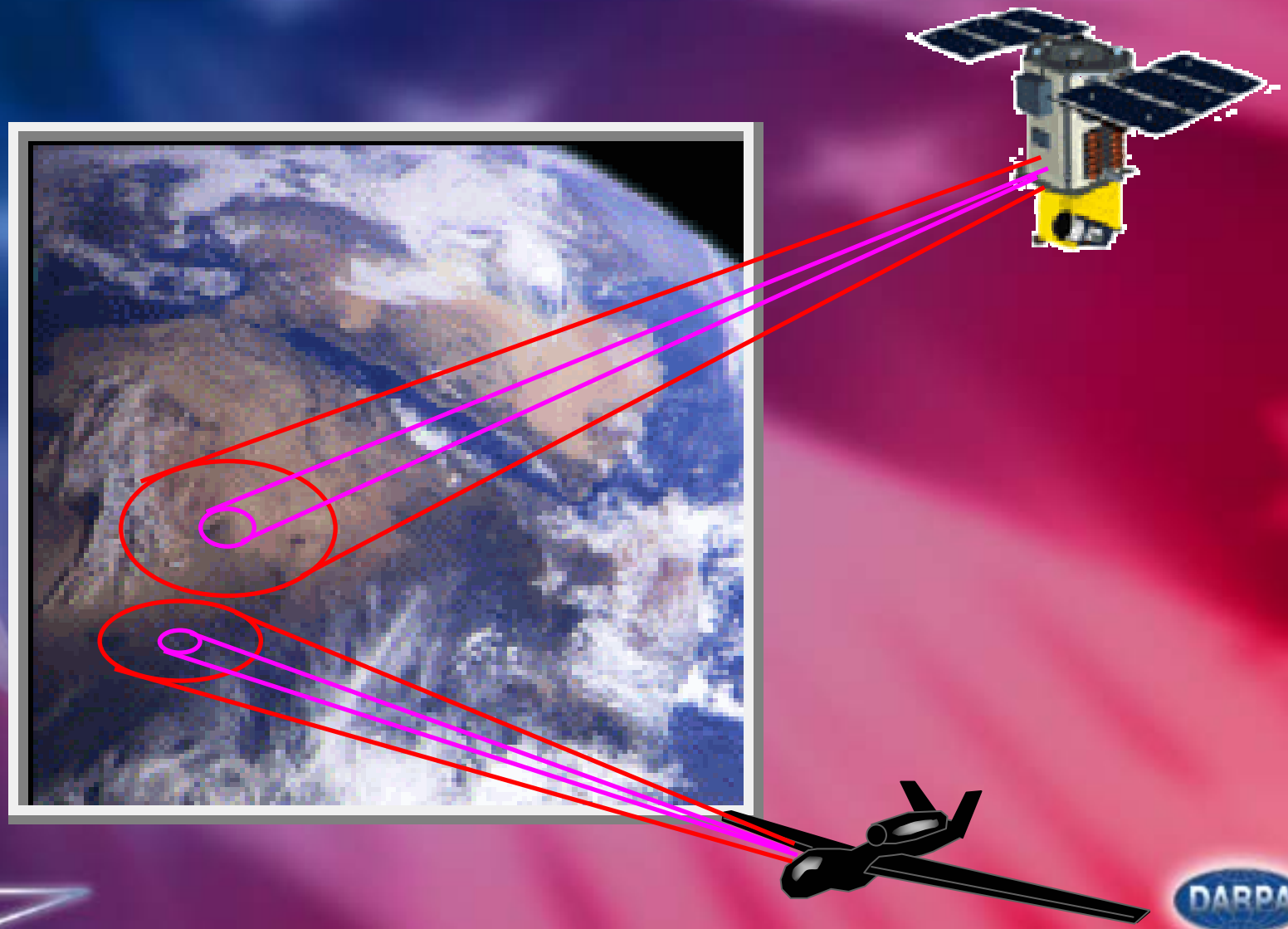
Dual Mode Optical Sensor



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