Multilateration Combat Identification System (MCIS)

6th Annual NDIA Expeditionary Warfare Conference
Panama City, FL

30 October 2001

Dan Colasanti
danc@sensis.com
315-445-5064

Sensis CORPORATION

Sensis Corporation

- **First and foremost**
  - ***Serving the Marine Corps***
    - ***and the FAA***

- **A Sensor Systems Company**
  - **CAC2S … as part of Raytheon team**
  - **Radar Systems … including TPS-59 and Affordable Ground-Based Radar (AGBR)**
  - **ASDE-X … with Raytheon on our team**

Gulf War Statistics

615 American Casualties

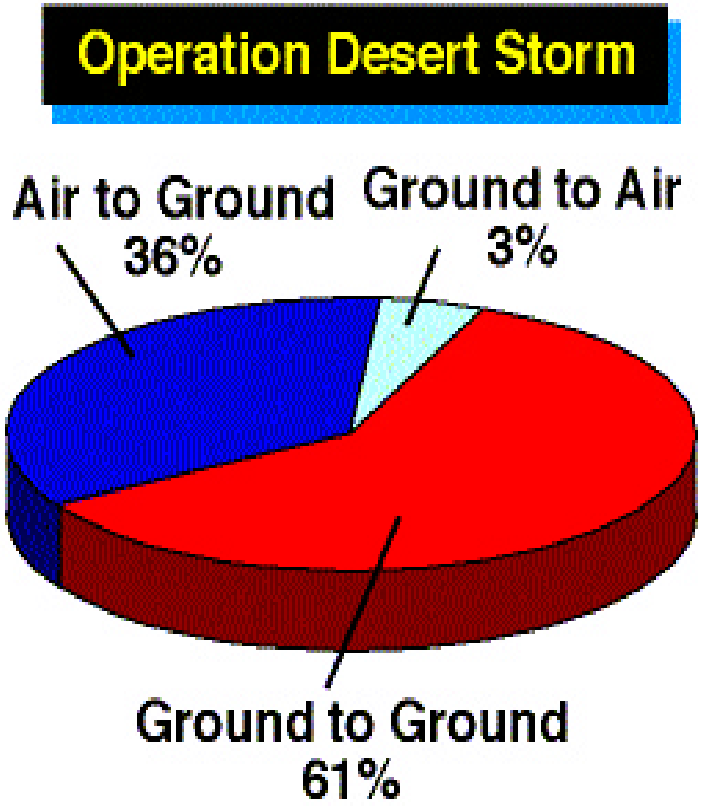
(17% fratricide related)

35 U.S. vehicles lost

(27 Fratricide related)

28 U.S. fratricide incidents

(57% G-G related)



Conclusion: CID architecture & systems needed to reduce fratricide incidents

Sensis CORPORATION

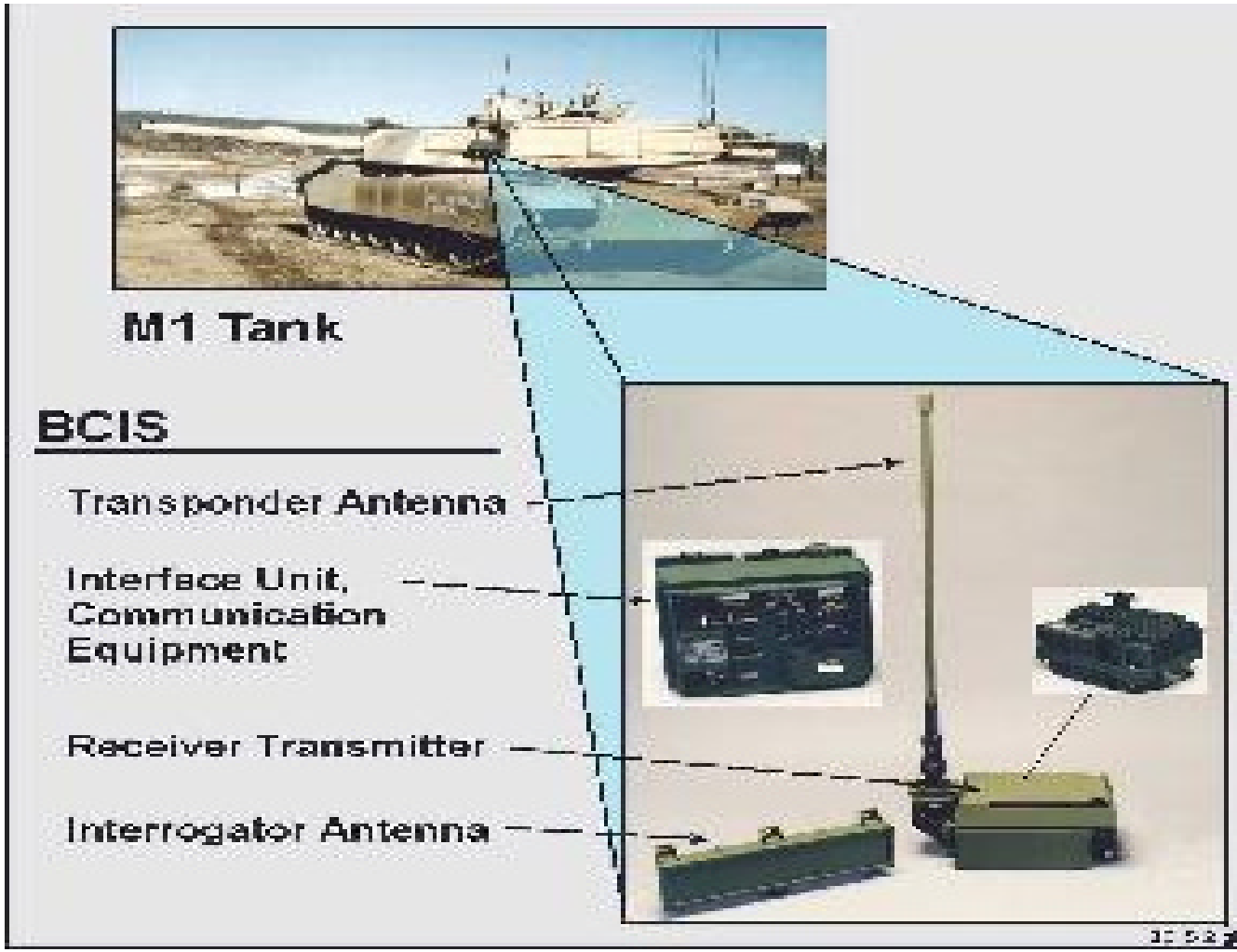
U.S. Army
Battlefield Combat Identification System (BCIS)

Current

mmW

Ground -to- Ground

IFF System



Sensis CORPORATION

A Method to Increase Combat ID Confidence

From ASDE-X for FAA

- Target Processing
- Multilateration
- Tracking
- Sensor Data Fusion

Intersecting the Future

Multilateration CID System (MCIS)

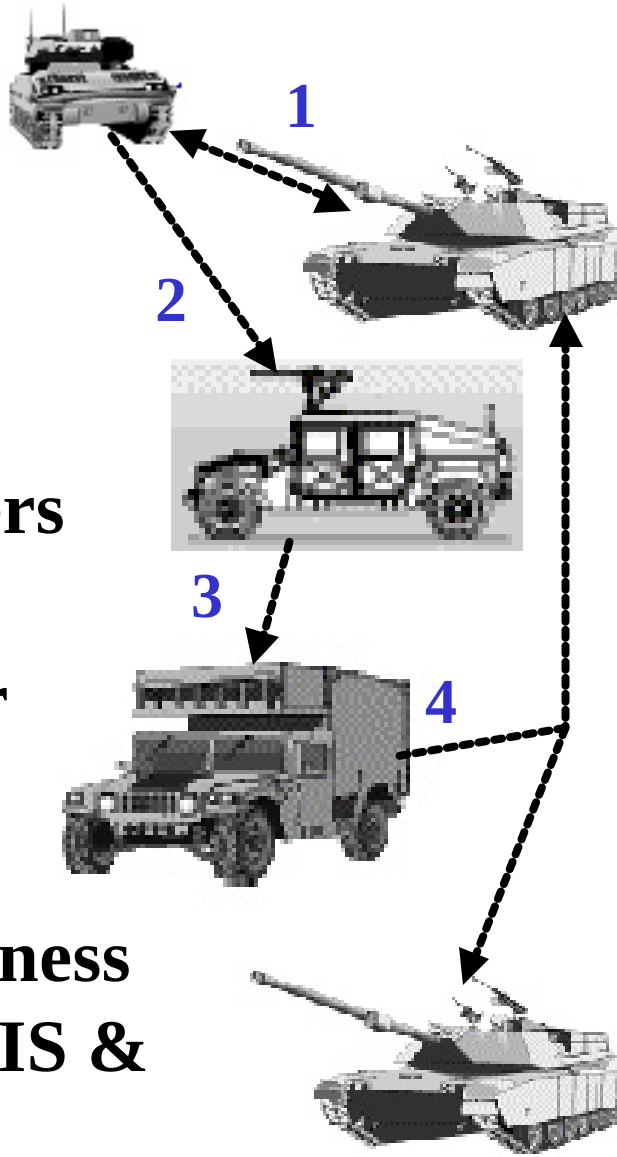
- Sensor Interfacing
- Sensor Tracking
- Sensor Data Fusion
- Sensor Systems C2 Integration

From CAC2S for USMC

Sensis CORPORATION

Process Order

MCIS Concept



Step 1 BCIS Query & Reply Process

Step 2 Target replies to MCIS Receivers

Step 3 BCIS and multi-spectral sensor reports to MCIS Processors

Step 4 Fused data (Situational Awareness & Target Identification) to BCIS & FBCB2

Sensis CORPORATION

Summary

MCIS combines multilateration process with sensor data fusion to achieve the following benefits:

- ***Corroborate*** **the shooter's BCIS decision**
- ***Localize*** **friends better**
- ***Support*** **BCIS to resolve "unknowns"**
- ***Better define*** **the battlespace for all warfighters**
- ***Provide functional backup*** **to some BCIS related system failures**

Concept uses proven technology to achieve continuous Situational Awareness on the battlefield

Sensis CORPORATION

Definitions

- **AGBR - Affordable Ground-Based Radar**
- **AN/TPS-59 - USMC's transportable, 3-D, long range, L-band search radar**
- **ASDE-X - Airport Surface Detection Equipment-X**
- **BCIS - Battlefield Combat Identification System**
- **C2 - Command & Control**
- **CAC2S - Common Aviation Command & Control System**
- **CID - Combat Identification**
- **FAA - Federal Aviation Administration**
- **FBCB2 - Army's Force XXI Battle Command Brigade & Below**
- **G-G - Ground-to-Ground**
- **IFF - Identify Friend or Foe**
- **NDIA - National Defense Industrial Association**
- **MCIS - Multilateration Combat Identification System**
- **mmW - millimeter Wave**
- **SA - Situational Awareness**
- **TI - Target Identification**

Contact Dan Colasanti at danc@sensis.com or (315) 445-5064 for further details