LOW-COST COURSE CORRECTION TECHNOLOGIES (LC^{3}T)

An Overview

by

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WHAT IS LC^{3}T?

- **Low-Cost Terminal Guidance**
  - **Strap-Down Seeker**
  - **Pyrotechnic Actuators**
  - **No Inertial Components**
  - **Semi-Active (Laser Designator) and Passive (Un-cooled IR)**
- **Corrects Only Residual Error of Projectile Launch**
  - **Typically a Few Milli-Radians for Unguided Projectiles**
  - **Use Existing Fire-Control**
  - **Can be Corrected to 50 Micro-Radians or Less**
- **Potentially Very Inexpensive**
  - **Chip Level Integration Possible**
- **Can be Retrofitted to Existing Ordnance**

BACKGROUND

- Originally Funded by DARPA (Dr. Lupo, in 1989)
- Developed Further under SDIO/IS&T Miniature Interceptor Program
- Later Funded by USAARDEC for Tactical Applications
- Licensed to Industry (GD-OTS) with Major Commitment of IRAD Funds
- DARPA Funded Mid-Caliber Projectile Demonstration
- USAARDEC Funded 2.75” HYDRA and 120-mm Mortar Retrofit

POTENTIAL APPLICATIONS

- Tube Launched Ammunition
- Small Rockets
- Guided Bombs
- Sub-Munitions (with Passive Un-Cooled IR Seeker)

SEEKER OPTIONS

- **SSPG Reticle -- For Rapidly Spinning Projectiles**
- **Quadrant Detector -- With Defocused Image**
- **"Lensless Seeker" -- Distributed Photo-Detector Elements**
- **Imaging Seekers -- Inexpensive Video Cameras**

CURRENT STATUS

- **Fully Integrated 50-mm Experimental Guided Projectiles Tested in 2003**

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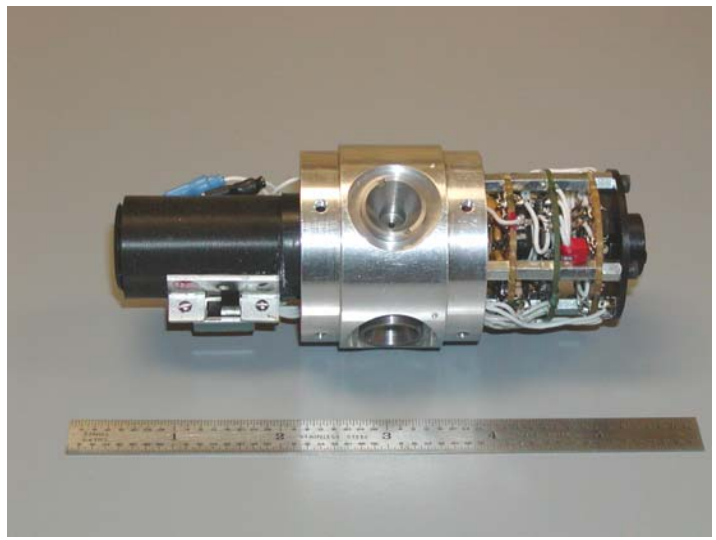
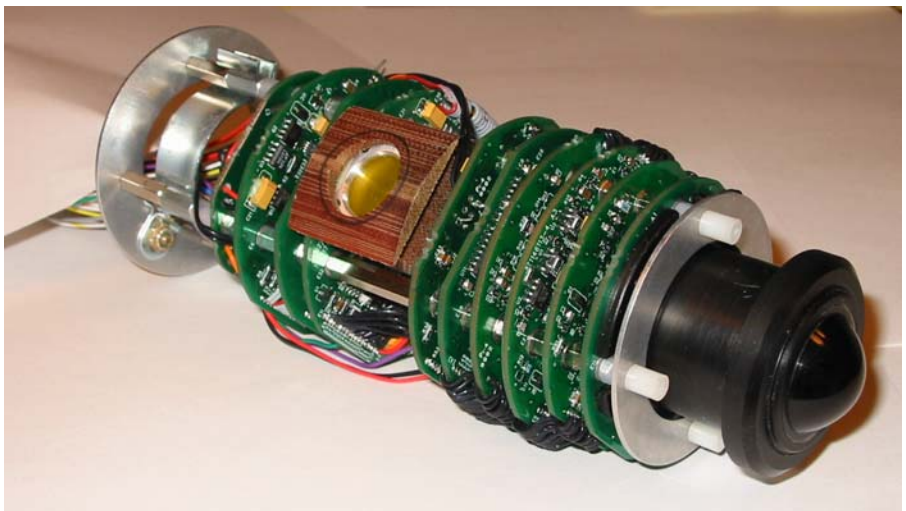
- **120-mm Guided Mortar Rounds Currently Being Field Tested**

  (GD-OTS)

HARDWARE EXAMPLES

50-mm Experimental Guidance and Diverter Package





120-mm Mortar Guidance Seeker

POTENTIAL BENEFITS

- Increased Firepower
- Greatly improved Single-Shot Kill Probability
- Large Reduction in Logistics Requirement
- Reduced Collateral Effects
- Rapid Service Introduction Possible
- **Much Lower Cost than Conventional Guided Ordnance**
- **Potentially Comparable Performance**