

Dimensionally Accurate
Reconnaissance Turret
Eyekon Systems LLC
Dr. Paul Konkola
HTDV

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Problem

Seeing first and persistently gives the warfighter an advantage and saves lives.

Existing optical beam steering solutions are:

- Too slow for persistent surveillance and tactical LADAR needs.
- Too big, heavy, and power consuming for many UAVs.
- Not compatible with enabling laser applications (tactical LADAR and directed energy).

EyeKon Systems is developing a beam steering solution that will enable revolutionary solutions for persistent surveillance, LADAR, and directed energy.

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Solution

- What is your novel solution to the problem?
 - Fast. ~100x faster accelerations and slew rates than prior art for military remote sensing.
 - Accurate, compact, and integrate-able beam steering.
 - Offloads sensors and/or lasers from the moving part while solving couple' stability and reaction force compensation challenges.
- What are you doing that is so special?
 - New spindle design that meets the repeatability and environmental requirements of the aerospace environment
 - High force density motors in appropriate form-factor
 - Reaction force compensation
 - Power efficient electronics
 - Compact, high speed, high resolution metrology
 - Light-weighted optics (for larger apertures)
 - A-thermal designs and calibrations

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Team

- Who is on your team and why?
 - Paul Konkola, Ph.D., Massachusetts Institute of Technology.
 - Precision engineering, electro-magnetics, optics, electronics, control systems, manufacturing engineering.
 - Lisa Konkola. Tufts University, Fletcher School of Law and Diplomacy.
 - Contracts, market research, reporting, business administration, transition partner development.
 - Several manufacturing and strategic partners
- Any unique advantages?
 - Multidisciplinary approach to engineering
 - IP

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Status

- What have you achieved to date?
 - Design, tooling, and component fabrication for breadboard proof-of-concept system
 - Currently building and testing system
- What are your next major milestones?
 - Complete breadboard
 - Breadboard test report

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Company Profile

- Company name: Eyekon Systems LLC
- Date Founded: 2008
- No of employees: 2
- Business areas: Electro-opto-mechanical R&D, laser applications, precision engineering, persistent surveillance.
- Latest Project: Dimensionally Accurate Reconnaissance Turret

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