IARPA VideoLINCS Lightning Talk
Kitware, Inc.

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Kitware Computer Vision Team

Website: https://kitware.com/expertise

Kitware Company Overview

- **Open-source software R&D:** algorithms & applications, image & data analysis, training data, integration, & testing
- **200+ employees:** ⅓ PhD, ⅓ masters
- **Offices:** Albany, NY; Chapel Hill, NC; Arlington, VA; Minneapolis, MN; Lyon, France
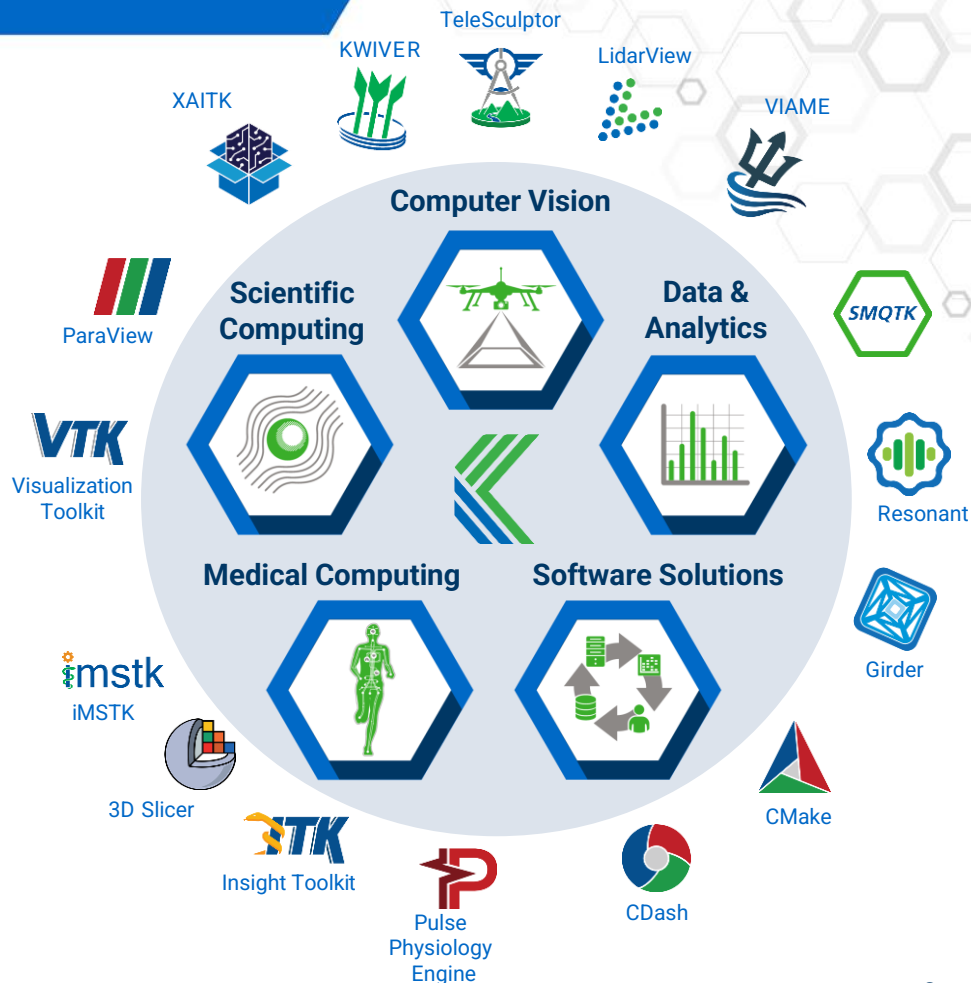- **Secure facility:** Albany, NY; 44+ cleared personnel, TS+ clearances

Commercial and Government R&D Services
- **Commercial: 10% of Revenue**
  - Multiple purchasing, contracting and licensing mechanisms
  - Commercial business models to suit commercial business needs
- **Government: 90% of Revenue**
  - Wide range of federal customers including DoD, IC, DOE, NIH, NOAA
  - All government-funded software is provided with **unlimited rights** to the government
  - Software released as **open source** when permitted

XAITK

KWIVER

TeleSculptor

LidarView

VIAME

ParaView

Scientific Computing

Computer Vision

Data & Analytics

SMQTK

VTK
Visualization Toolkit

Resonant

Medical Computing

Software Solutions

Girder

iMSTK

3D Slicer

VTK
Insight Toolkit

Pulse Physiology Engine

CDash

CMake

kitware

100% Employee Owned

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Kitware's VideoLINCS-relevant capabilities

- **(TA-1) Person re-identification with and without clothing changes. Past work on vehicle re-ID.**
  - DARPA URSA, IARPA BRIAR, 15+ years of tracking programs
- **(TA-2) Geometric camera projections and inverse projections**
  - IARPA CORE3D, DARPA URSA, Telesculptor
- **IRB and privacy-compliant truthed video data collection and annotation - large-scale data collection and annotation**
  - IARPA DIVA and BRIAR.
- **Open set recognition, anomaly detection, low-shot learning.**
  - DARPA SAIL-ON, Learning with Less Labeling
- **Large-scale collaborations with universities including integration and hardening for blind program evaluations and technology transition to operational agencies.**

Overhead shot from Kitware's BRC2 collect, funded by IARPA on BRIAR. The collection involved:
- 248 IRB-consented human subjects **usable in technical papers**
- 26 video sensors (2 on UAVs) indoor, outdoor
- 756.8 raw video hours (4.2TB)

Kitware's VideoLINCS Teaming Needs

- **Kitware plans to prime a proposal team**
- **We're looking for partners with expertise in:**
  - (TA-1) Vehicle re-identification
  - (TA-1) Instance-level recognition for generic object categories
  - (TA-2) Security camera network mapping
  - (TA-2) Image and video geo-localization
  - Pre-training and distillation for multi-modal video models
  - Supportive data collection technologies
- **Partners would participate collaboratively with Kitware's team, and deliver software to the government with unlimited rights.**