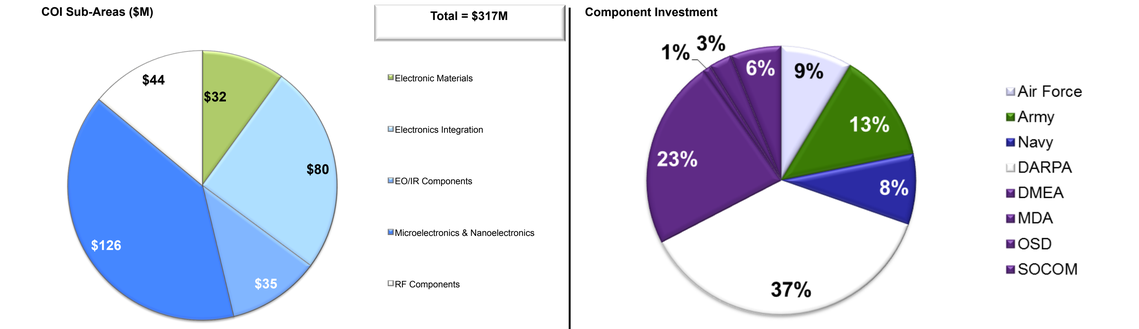
Advanced Electronics

The advanced electronics technologies encompassed by this CoI include those that provide for the processing of information; detection of chemical, biological, radiological and nuclear threats; radio frequency (RF) sensing, transmission, communication; electro-optical/infrared (EO/IR) sensing, transmission, and communication; motion detection including assured references; and the underlying enabling technologies, among others.

Thrust Areas

- **Electronics Integration: packaging and reliability**
- **Electronic Materials: synthesis and characterization**
- **EO/IR Components for sensing, transmission and communication**
- **Microelectronics and Nanoelectronics: mixed signal, digital processing and emerging architectures**
- **RF Components for sensing, transmission and communication**

DoD Investment Profile



Gaps and Opportunities

Gaps

- **Lack of second source of supply for Trusted leading edge microelectronics**
  - ≤ 90nm bulk and silicon on insulator (SOI) complementary metal oxide semiconductor (CMOS), Cu backend of line (BEOL)
  - 90nm SiGe
  - Trusted Mask manufacturing
- **Beyond Si Scaling and Devices**

Opportunities

- **Integrated Photonics Manufacturing Institute (IPMI)**
- **Trusted FPGAs and application specific integrated circuits (ASICs)**
- **Heterogeneous Integration of disparate semiconductors and additive manufacturing technologies**

Engagement Opportunities

- **Annual Government Microcircuit Applications and Critical Technology Conference – 23-26 March, 2015, St. Louis, MO**
- **Cooperative Research and Development Agreements (CRADA) – Ability to collaborate formally with DoD Laboratories**
- **One-on-one Technical Exchanges – Either at DoD or Industry locations**
- **Formal DoD Request for Information and/or Broad Agency Announcements**
- **Small Business Innovation Research Program (SBIR)**