AIM MICROSENSORS CE Problem Statements

Current sensing solutions:

Slide 17
https://www.jpeocbrnd.osd.mil/Portals/90/2021_JPEOCBRND_Command%20Brief%2016x9_1.pdf

Problem Statement #1 – "Sensor"

Problem Statement Title: Multi-phase, interoperable and modular hazardous material sensing solutions

Problem Statement: Current technology lacks an integrated, easy-to-use, easy-to-maintain, **platform** agnostic sensing capability that collects and detects hazards in solid, liquid, and/or gas phases over **complex operational areas**.

Definitions:

Platform – means of delivering the sensing solution. Examples include but are not limited to: unmanned aerial vehicle, unmanned ground vehicle, unmanned marine vehicle, traditional vehicle, throwable device, launchable device

Complex operational area – environments/conditions the sensing solutions will encounter. Examples include but are not limited to urban/city (in and around structures), military bases, airports, stadiums, ports

Problem Statement #2 – "Micro"

Problem Statement Title: Optimized SWaP-C hazardous material sensing solutions

Problem Statement: Size, weight, power and cost (SWaP-C) are the key primary driving factors during sensor development. Current system and component (ie batteries, communications, sensors, etc) technologies are large, heavy, with high power demands, and high cost, which limits the application/deployment of hazardous material (solid, liquid, and/or gas) sensing solutions.

Definitions:

Optimized size – no larger than a softball

Optimized weight – no heavier than 2 lbs

Optimized power – capable of operating up to two (2) years without recharging or battery replacement

Optimized cost – production-quantity unit cost not to exceed $200

Problem Statement #3 – "Deployable"

Problem Statement Title: Sensor Integration and Delivery

Problem Statement: Current **deployment/delivery methods** for hazardous material detection are designed for limited/specific applications, with minimal threat or platform plug-n-play functionality and compatibility.

Definitions:

Delivery methods – driven, dropped, thrown, shot, flown, carried, worn

Deployment methods – recoverable or disposable