



# MNMS

## Multipurpose NanoMissile System



### Summary

- Multi-booster configurations can be tailored to many mission sets
- Can be augmented with U.S. Army surplus ATACMS and MLRS motors
- Low cost: \$1M per flight
- Benign bi-propellants: ethane & nitrous oxide
- Operationally responsive: 24-hour requirement from storage call up to launch ready

**USASMD/ARSTRAT will demonstrate a revolutionary low cost, low complexity multi-configuration missile for use in a variety of tactically relevant suborbital and orbital applications.**

The Multipurpose NanoMissile System is low cost because it is very simple: it is an integrated tank/booster/engine design, it has a benign bi-propellant liquid engine, and it uses existing launch support and launch site hardware. It can also accommodate existing Army Tactical Missile System (ATACMS) and Multiple Launch Rocket System (MLRS) motors to augment performance as well as provide an important application for these surplus Army assets. The configurable boosters can be tailored to many specific missions: missile defense target vehicle, infrared and radar sensor exerciser, hypersonic test vehicle for aerospace components, pop-up reconnaissance system, highly responsive orbital launch vehicle for very small payloads (10 kg to low earth orbit) and even very long range strike with small conventional munitions.

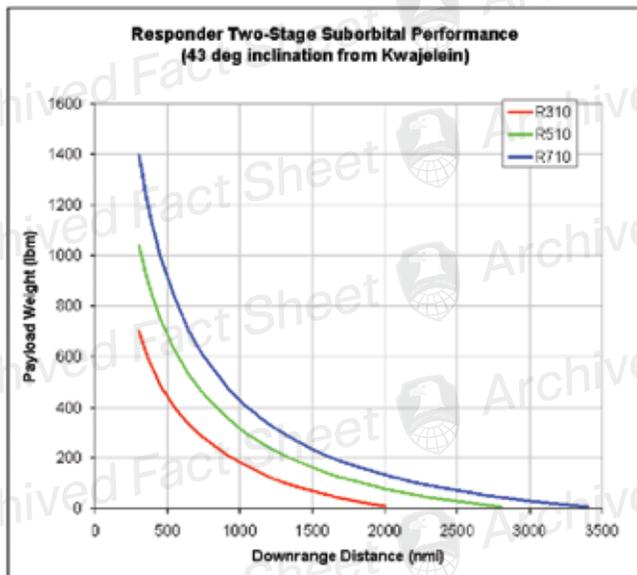
## Multipurpose NanoMissile System

To achieve enhanced capabilities for the Warfighter from space, a necessary requirement is to have the ability to fly into and through space to include both sub-orbital and orbital missions. To test and exercise key space and missile defense technologies, a dedicated missile is required to boost these technologies into their required trajectories or orbits. Currently the U.S. Army has no such capability despite being the largest user of missile defense and space technologies. The Army also has the largest inventory of missiles and rockets, yet they have been designed primarily as weapons and not platforms to test missile defense and space technologies. The Multipurpose NanoMissile System will combine the Army's great requirement for these technologies with an enormous surplus of ATACMS and MLRS engines to produce a low cost, simple missile dedicated to bringing enhanced capabilities from space to the U.S. Army ground component Warfighter.

### Multiple Configurations

Suborbital, Single Stick, 2-Stage	\$277K
Suborbital, Single Stick, 2-Stage, with ATACMS Booster	\$153K
Suborbital, Single Stick, 3-Stage, with ATACMS Booster	\$306K
Suborbital/Orbital*, Core & 4 Strap-ons, 4-Stage	\$1M

\*1-10 kg to 250 nmi circular; incl=43



### Suborbital Performance & Capabilities

Example (red trace): Two-state MNMS

- 3-1-0 Version - 2 Strap-on boosters for 1st stage
- Assumes 9 degrees due east launch from Reagan Test Site
- Assumes aerodynamically "clean" vehicle "throw weight" of 475 pounds to 500 nmi downrange or 200 pounds to 1000 nmi downrange



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