

MOSES ADOPTION



PROVIDING EFFECTIVE
SECONDARY COMMUNICATION
METHODS FOR 2030

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FIRST THINGS FIRST

- I am not an LMR expert
- Technology must be adopted carefully and thoughtfully
- I am an advocate for maintaining LMR, other technologies are not ready to replace LMR

BACKGROUND – THE POTENTIAL OF FAILURE

- Our modern approach to communications is efficient, economical, and rapidly advancing.
- In some instances single points of failure still exist.
- These points of failures can have an outsized impact on health and safety countywide.



CASE STUDIES

- Metcalf Sniper Attack – April 2013
 - “The most significant incident of domestic terrorism involving the grid that has ever occurred”
- Tubbs Fire – October 2017
 - “During the 2017 wildfires, it was learned the (region) lacked a well-designed telecommunications network that was resilient enough to survive wildfires.”
- Camp Fire – November 2018
 - “At a certain point, I couldn’t maintain direct communication with Cal Fire. By the time it got to the point where I needed to request resources, the phones weren’t working.”
- PG&E Planned Power Outages – Fall 2019
 - “having cell sites down is an incredible public safety concern that consumers cannot access emergency services”



MODERN TECHNOLOGICAL RELIANCE

- VOIP phones
- Cell phones
- Most landlines
- Internet
- LMR backhaul
- Healthcare devices
- Business, economy, POS
- Increasingly: everything else



MOBILE OPERATING SATELLITE EMERGENCY SYSTEM



MOSES is mobile infrastructure



P25 Compliant Gateway



Agency owned cell tower (Verizon and AT&T)



WiFi, P2MP, Mesh



Satellite Backhaul



Self powered, EMP hardened



Military grade encryption, remote administration

M.O.S.E.S.

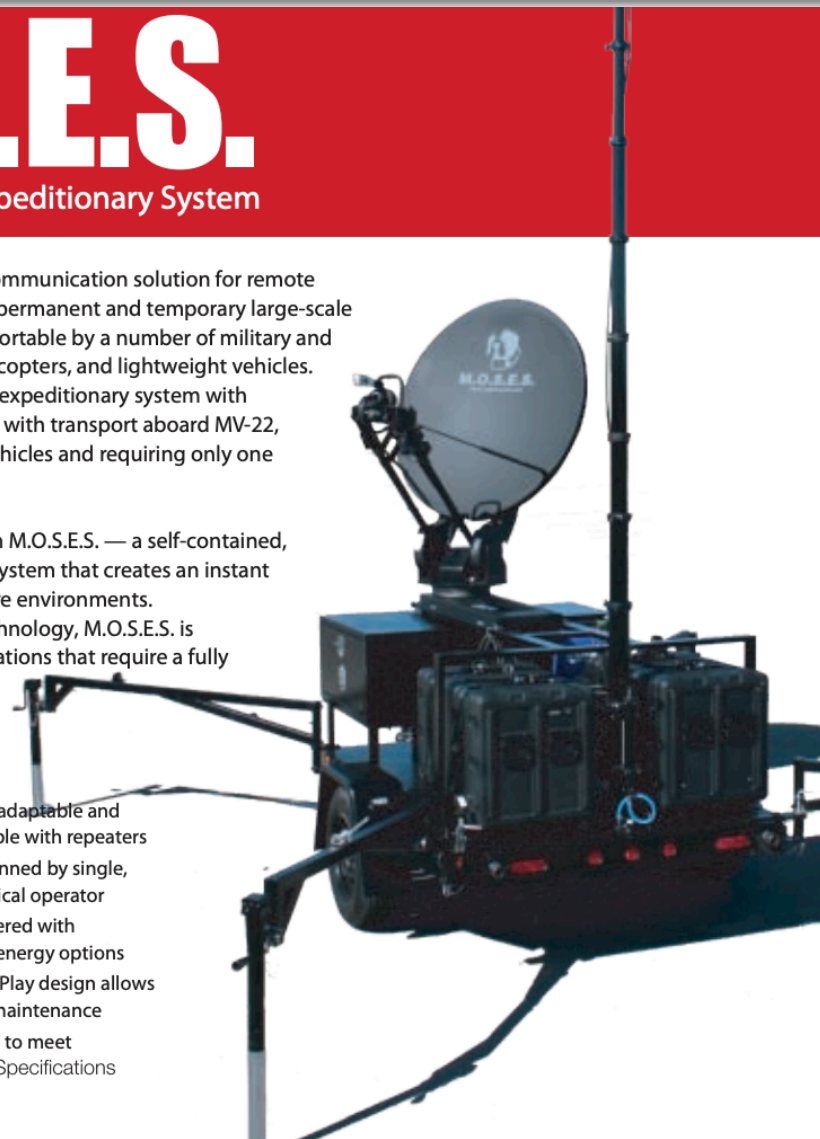
Mobile Operations Satellite Expeditionary System

M.O.S.E.S. offers the ideal secure satellite communication solution for remote teams, expeditionary operations and both permanent and temporary large-scale operating areas. The system is easily transportable by a number of military and commercial options, including military helicopters, and lightweight vehicles. M.O.S.E.S. was designed as a cost effective, expeditionary system with a gross weight and dimensions compatible with transport aboard MV-22, being towed by Internally Transportable Vehicles and requiring only one user for setup.

Never get caught in a dead zone again with M.O.S.E.S. — a self-contained, highly-portable wireless communications system that creates an instant communications bubble in the most austere environments. Utilizing state-of-the-art, military grade technology, M.O.S.E.S. is designed for mobile, high-endurance operations that require a fully operational communications system with only the push of a button.

FEATURES:

- Weighs under 1800 lbs (WET)
- Easily transported on a 5' X 7' trailer
- 15 minute set-up time
- WiFi, VOIP, FaxIP, Radio, Video UAV capable
- Runs both encrypted and unencrypted channels simultaneously
- Network adaptable and expandable with repeaters
- Easily manned by single, non-technical operator
- Self-powered with multiple energy options
- Plug and Play design allows for easy maintenance
- Designed to meet NAVAIR Specifications



OPTIONS FOR CONNECTIVITY



Wide Area
Network



Satellite



Wired



Wireless



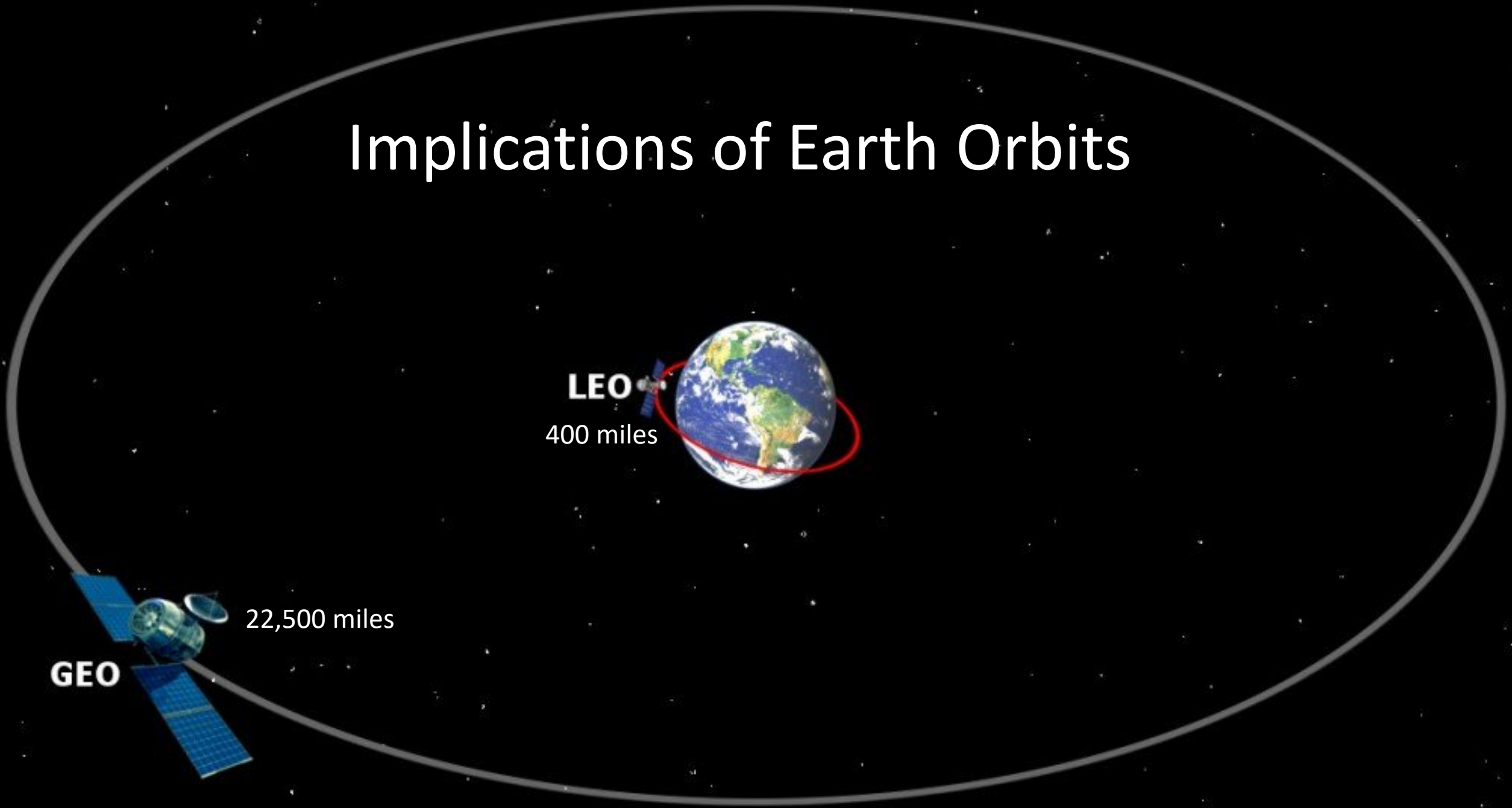
Mesh



Implications of Earth Orbits

LEO
400 miles

GEO
22,500 miles



LOCAL CONNECTIONS

- Wifi – 802.11
- Cellular – AT&T and Verizon
- Wired
- Mesh between units
- LMR – Mobile Repeater

ESSENTIAL FACTS

- Trailer size: 5X8', 1800lbs
- Power: UPS and onboard generator for 24 hours of runtime
- Highly configurable and upgradeable
- Push button deployment
- 10+ mile coverage area
- Simultaneous Users: 1,000-10,000+

STEPS AFTER ACQUISITION

- Merge HFN project with MOSES deployment
- Develop deployment plan for LMR, explore HAM capability
- LEO early adoption
- Incorporate MOSES into regional training and response

A satellite is shown in orbit against the black background of space. It features a long, rectangular solar panel array on the left, a central body with a large, circular, gold-colored antenna, and another smaller solar panel on the right. The Earth's horizon is visible at the bottom, showing a blue atmosphere and a brownish landmass. The word "QUESTIONS?" is written in white, sans-serif capital letters in the center of the image.

QUESTIONS?