Executive Summary

Mobile Operations Kit (MOK)

Problem Statement:

ITSD does not have a compact mobile communications package that is self-sustained and can be used during times of crisis. Without this capability ITSD leadership may not be able to communicate with other organizations in order to provide command and control.

Proposed Solution:

For ITSD to create an expandable Communications Mobile Operations Kit (MOK) to cement its IT Continuity of Operations during times of crisis. This will provide ITSD leadership the capability to communicate with Missouri leadership ensuring ITSD can execute internal and external strategic decisions in times when traditional infrastructure has been impacted by a disaster. The MOK has the potential to be solutioned for all levels of State government.

Each MOK's capabilities may include:
* Wireless internet access with WiFi calling
* Supporting approximately 100 users
* Self-supported by solar generator
* Encrypted radio system with approximately 25-mile range

Benefits:

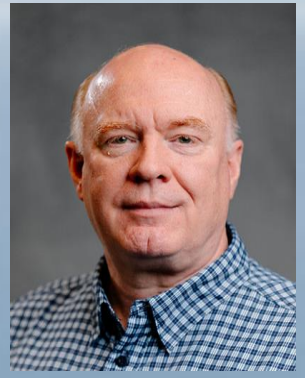
This proposal is not for a single satellite enabled unit but for multiple kits. The MOK is a customizable mobile system that contains tools enabling sustainable emergency communications and internet access for an incident command center, or within a moving vehicle. A big advantage of the MOK is its ability to connect 100 users simultaneously to satellite internet service when land-based services have failed. By establishing communications (without the use of cell towers) with the MOK, decision makers can provide real-time direction which allows command and control allowing to critical IT support and life-saving actions to the citizens of Missouri.

Final Thoughts and Next Steps:

The Mobile Operations Kit (MOK) fills a communications gap that is missing in ITSD. If selected, the MOK will set the standard for other agencies to follow. The State is well equipped with large communications packages in times of disasters. The MOK is a scalable, dynamic kit allowing for immediate command and control, and IT Continuity of Operations in ITSD.

MOBILE OPERATIONS KIT (MOK)

Blake Grosvenor, GS



Jeff Nelson, ITSD

Brent Gholson, ITSD

Dale Lingar, ITSD

Aaron Cluff, ITSD

WHAT ARE WE SOLVING FOR AND WHY?

- ITSD currently does not have a **compact mobile** communications package or Mobile Operations Kit (MOK)

- Identified **gap** in the emergency communication process

  - Bad Actors
  - Unknown power outages/crisis situations
  - Assist in Continuity of Operations
  - Extreme natural disasters

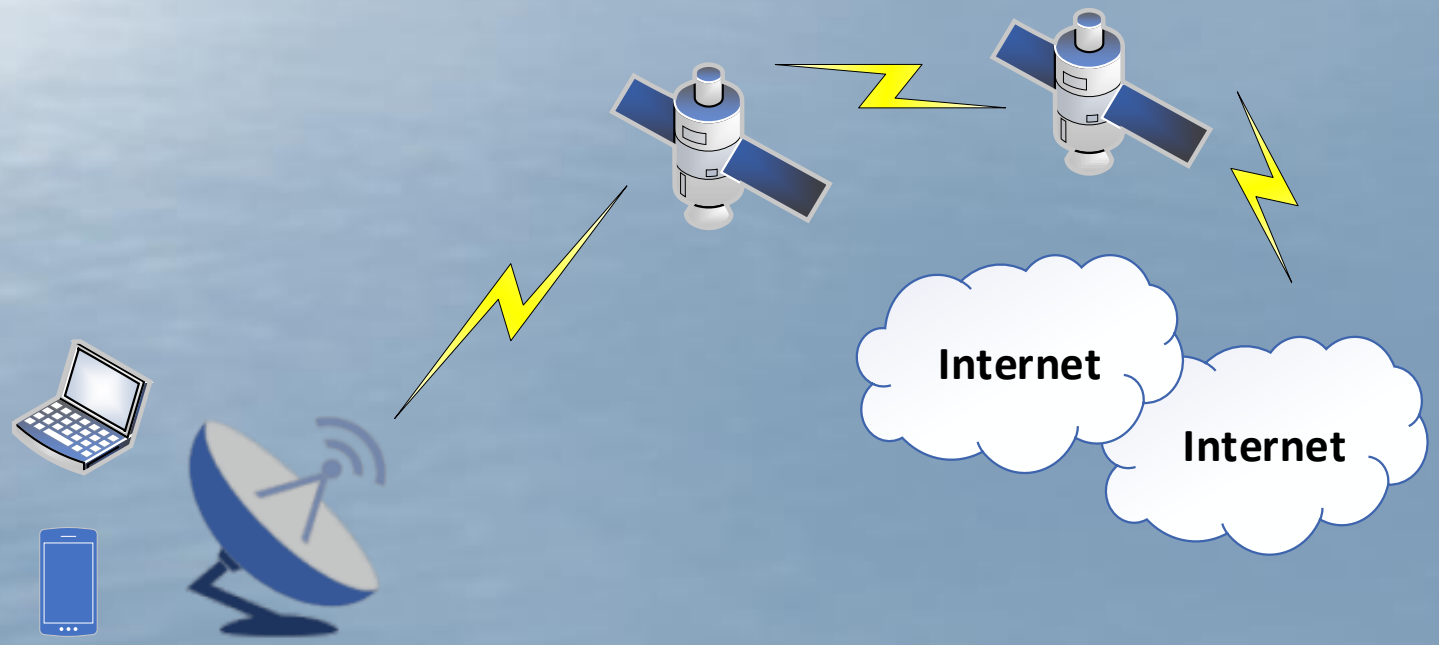
HISTORICAL PRECEDENT

- In 2011 Joplin was destroyed by an EF5 tornado
  - Damaged 10 cell towers and 7,500 homes for over 22 miles
  - No infrastructure or cell coverage for over 48,000 citizens
- In 2019 Jefferson City was hit by an EF3 tornado
  - Damaging cell towers and 80 government buildings extending 32 miles

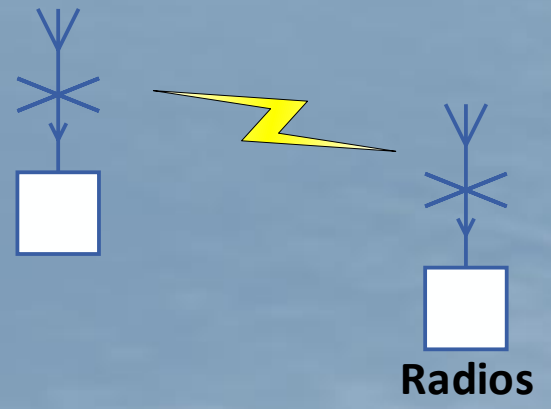
WHAT DOES IT LOOK LIKE?

Below are visual representations of the two primary components of the MOK.

- **Satellite internet service** when cellular infrastructure is unavailable.
- **Mobile radios** for on scene voice communication.



✓ **Encrypted** radios with approximately 25-mile range



FOOTPRINT AND PRICE

- 1 Office of Administration/Commissioner
- 1 ITSD CIO
- 1 Truman Building (ITSD Go Kit)
- 1 Secondary Kit (ITSD Go Kit)
- 1 Springfield (State Data Center)

The MOK is a scalable which allows the user to choose for the situation:

Option #1	
RoamSat Gen 3:	$4,000
UHF Radios (6):	$4,000
DMR Repeater:	$2,200
Generator: 1200 Watt:	$1,000
Add'l Equipment:	$ 200
Total:	**$11,400 each**

Option #2	
RoamSat Gen 3:	$4,000
Generator: 600 Watt:	$ 700
Add'l Equipment	$ 200
	$4,900 each

Option #3	
RoamSat Mini:	$2,000
Generator: 350 Watt:	$ 400
Add'l Equipment:	$ 200
	$2,600 each

RETURN ON INVESTMENT

- Rapid Response to **Save Lives**—Priceless!
- Reliable communications refines media coverage; managing the potential increase in Cyber Threats
- Immediate **Command and Control** of State employees and State Data Centers
- Minimize Disruption for Missouri Citizens and Families

Mobile Operations Kit (MOK) Whitepaper

ITSD does not have a compact mobile communications package that is self-sustained and can be used during times of crisis. Without this capability ITSD leadership may not be able to communicate with other organizations in order to provide command and control.

Why is this important to ITSD?
On September 26th, 2024, Hurricane Helene devastated much of the eastern US, with most of its damage concentrated in western North Carolina, Georgia, and eastern Tennessee. During this storm, 3,400 cell sites knocked were offline (Hardesty and Goovaerts, 2024). These impacts were much the same as those from Katrina, leaving millions of people without a method do communicate or organize relief efforts post disaster. Another unfortunate disaster hit our own Joplin, Missouri. In 2011, an EF5 completely destroyed portions of this Missouri region while damaging 10 cell phone towers, as well as 7,500 homes. Due to the extensive damage to cell towers, AT&T and Verizon brought in multiple 'Cell on Wheels' to help the community. This generational EF5 tornado's footprint was 22 miles long, destroying the lives of 48K people.

To help solve this communications gap, we recommend a **Mobile Operation Kit (MOK)**. The MOK will assist ITSD in cementing its IT Continuity of Operations during times of crisis. Furthermore, this will provide ITSD leadership the capability to communicate with internal and external (for example, the Commissioner or FEMA) organizations ensuring ITSD can execute strategic decisions in times when traditional communications infrastructure has been impacted by a disaster. Whereas the MOK creates many communication possibilities, the MOK **does not** replace Missouri's State Emergency Management Agency or Missouri Task force1. The MOK is solutioned as a small footprint communications package to thrive when cell towers and infrastructure have been destroyed or is unavailable. The MOK has the potential to be solutioned for all levels of State government.

There are many benefits to the MOK, but arguably one of the highest regarded is the **scalability**, depending on the communication requirements. There are many options the MOK presents to ensure it meets the needs of the situation. Whereas, ITSD has been identified as needing the benefits of a MOK, this kit can be easily solutioned for other agencies pending on their specific requirements.

What is included in the MOK? As mentioned, this is scalable, but all the potential begins with the RoamSat Gen3 antenna. The RoamSat Gen3 is more than just a Starlink, it is in a rugged thick molded encasement for travel. In addition, it allows up to 100 users with download

speeds of 225Mbps, and uploads at 125Mbps. Furthermore, a huge advantage is the internal battery that lasts 7 hours, and wireless capabilities of 3,200 sq ft. The RoamSat Mini is approximately one-half the size weighting 11 pounds. The RoamSat Mini will fit in a standard sized backpack and is TSA approved. The wireless capability is 1,200 sq ft. The typical life span of a RoamSat is 5-7 years depending on general maintenance and usage.

Another option included in the MOK is a solar generator. There are several sizes of mobile generators and our recommendation ranges from a 1200-Watt Power Station, down to a 350-Watt Power Station. These generators can be purchased with a solar panel which will make the MOK self-sustaining. Other than charging the RoamSat, these generators are recommended for powering other devises such as workstations, routers, and cell phones.

Lastly, another recommended item the MOK can provide are handheld UHF radios. These radios are encrypted Digital Mobile Radios (DMR) which are traditionally used in the commercial sector. If selected to be included in the MOK, these radios can provide **on-scene quick voice interaction**. On-scene may mean trying to speak to those reviving a server room or used as an on-scene commander. DMR's traditionally extend to approximately 1 mile, but with the use of a UHF radio repeater DMR's may extend to 25 miles. The typical life span of a DMR is also 5-7 years depending on maintenance and usage.

What does this cost?

The RoamSat uses the Starlink structure that has monthly costs at: 50GB at $65; 500GB for $165; 1TB for $290; 2TB for $540. For the encrypted DMRs there is a $700 FCC licensing fee that will last 10 years. There are also applications fees for each user at $35. There will be annual general maintenance costs to include broken/wore cabling or other small requirements.

Final Thoughts and Next Steps:

In summary, it has been identified ITSD does not have a compact mobile communications package that is fully organic and self-sustained; the MOK fills this communications gap. As mentioned, one of the many benefits is that the MOK is scalable, and users can select what matches their communications requirements. The backbone of the MOK is the RoamSat3 (or RoamSat Mini) which will provide internet access and WiFi calling without using cell towers. In addition, to augment the RoamSat (or RoamSat Mini), is a generator supplying power to many devises, which may include UHF handheld radios. If selected, the MOK could set the standard for other State agencies and organizations to follow.

Show Me CHALLENGE

Inspired in part by the hit TV show "Shark Tank" and other simillar competitions, the **Show Me Challenge** is a new way for employees of Missouri's 17 executive departments to compete to identify solutions that improve how we serve out citizens, cut out unnecessary bureaucratic work, and/or save time and money.

To compete in the Show Me Challenge, please do the following:

1. Complete all fields of the below template. *(help guide is available at showmechallenge.mo.gov/resources)*
2. Submit your pitch via www.showmechallenge.mo.gov/pitch-form.html

Pitch submission deadline: June 10, 2025

Note: must be state employee at time of winning to be eligible for prize money.

TEAM INFOMRATION

OpEx Coach name: Melody Reichel

Email: melody.reichel@oa.mo.gov

	Team Member Name and Email *ex: Mo Mule, Mo.Mule@oa.mo.gov*	Department (select) *Administration*	Division (type) *Commissioner's Office*
1.	Dale Lingar, dale.lingar@oa.mo.gov	Administration	Mobile Operations Kit
2.	Aaron Cluff, aaron.cluff@oa.mo.gov	Administration	Mobile Operations Kit
3.	Brent Gholson, brent.gholson@oa.mo.gov	Administration	Mobile Operations Kit
4.	Blake Grosvenor, blake.grosvenor@oa.mo.gov	Administration	Mobile Operations Kit
5.	Jeff Nelson, jeff.nelson@oa.mo.gov	Administration	Mobile Operations Kit
6.		Other	
7.		Other	
8.		Other	

PITCH

Pitch name Mobile Operations Kit (MOK)

What is the problem you are addressing? *(no more than 200 words)*

ITSD does not have a compact mobile communications package that is self-sustained and can be used during times of crisis. Without this capability ITSD leadership may not be able to communicate with other organizations in order to provide command and control and ensure IT Continuity of Operations for ITSD.

What is the root cause of the problem? *(No more than 200 words)*

Since ITSD does not have a Mobile Operations Kit (MOK), it creates a gap in the emergency communication process. The State has agencies and organizations that already address large scale crisis situations, but it has been discovered that ITSD does not have a modular communications package to ensure leadership can continue command and control as well as IT Continuity of Operations within the division.

* Extreme natural disasters
* Bad Actors
* Unknown power/outages/crisis situation
* Continuity of Operations

What is the potential solution? *(No more than 100 words)*

For ITSD to create an expandable Communications Mobile Operations Kit (MOK) to cement its IT Continuity of Operations during times of crisis. This will provide ITSD leadership the capability to communicate with others ensuring ITSD can execute internal and external strategic decisions in times when traditional infrastructure has been impacted by a disaster. The MOK has the potential to be solutioned for all levels of State government.

Each MOK's capabilities may include:
* Wireless internet access with WiFi calling
* Supporting approximately 100 users

Which area of impact is your primary focus? *(choose one - if other, please specify)*

Cost reduction/savings
Increase efficiency
Reduce bureaucratic burden
Improve citizen experience
other

IT Continuity of Operations

What is your primary measure for impact?
(measures should follow SMART principles: Specific - Measurable - Actionable - Relevant - Time Bound)

Primary Measure	Current Status	Target
1) Establish satellite communications for voice	1) Assuming cell towers are not available, and satellite communications will be required, ITSD does not have voice capability.	1) 100% success - Establish a connection and verify voice communications with an endpoint.
2) Establish satellite communications for data	2) Assuming cell towers are not available, and satellite communications will be required, ITSD does not have data capability.	2) 100% success - Establish a connection and send/receive data with an endpoint. with an endpoint.

What is the suggested benefit? *(less than 100 words)*

This proposal is not for a single satellite enabled unit but for multiple kits. The MOK is a customizable mobile system that contains tools enabling sustainable emergency communications and internet access for an incident command center, or within a moving vehicle. A big advantage of the MOK is its ability to connect 100 users simultaneously to satellite internet service when land-based services have failed. By establishing communications (without the use of cell towers) with the MOK, decision makers can provide real-time direction which allows command and control allowing to critical IT support and life-saving actions to the citizens of MO.

PROJECT PLAN

What are the major activities and milestones to deliver your solution?(*If additional room is needed, please attach a separate document).*

Milestone/Deliverable	Activity	Due Date
NDI/ RFP Process	NDI Approved	1 Dec 2025
	RFP Approved	1 Feb 2026
	Vendor Selected	1 July 2026
Receive Mobile Communica	Inventory Equipment	15 Aug 2026
	Internal Testing of Equipment	20 Aug 2026
Set-Up non-Secure Equipm	Confirm voice and Data	15 Sept 2026

REQUIRED RESOURCES AND SUPOPRT

What is the expected project duration? *(choose one)*

More than 12 months

Does your project require any specialized skills to complete? If so, list.

Yes — Radio training; Cyber Security policies

Does your project require a statutory change to complete? If so, explain. *(less than 100 words)*

No

Can you implement your project with your current resources? If not, explain. *(less than 100 words)*
strongly recommended: provide a cost breakdown in your additional materials.

No, all the equipment is not available to create a Mobile Operations Kit (MOK) for ITSD. To create the MOK, equipment must be purchased. An easy to use MOK training plan or reference book must be created.
A recommended price range for the MOK will be $2,600-$11,400 per kit. The price range depends on ITSD's tailored requirements and if certain products are needed in the MOK.

Are there other factors critical to design and implement your project? *(no more than 50 words)*

Yes, this equipment will require monthly maintenance.
The MOK will incur approximate annual costs of $1,000 to support each kit.

ADDITIONAL MATERIALS

Please list any additional materials you have provided.

- Executive Summary
- 2 page Whitepaper
- MOK Powerpoint