

# LUNAR

## Frequently Asked Questions



### Connectivity & Integration

#### **Will LUNAR provide air pressure (and status information)?**

We will be offering this later in 2021 and is on our current roadmap. LUNAR will be able to relay air pressure, time remaining, and battery status of the M1 control module. Currently LUNAR is not displaying air pressure yet. Air pressure information can be retrieved by any SCBA gauge, the SLS or the M1 Control Module.

#### **How is the M1 Control Module connected to LUNAR?**

Both devices are paired by Bluetooth connection. The go-live of this feature is planned for end of 2021.

#### **Which ways are possible to transfer SCBA air pressure information to the outside world?**

The M1 Control Module with telemetry connected to the MSA HUB can transfer air pressure data to incident command or the cloud-based service FireGrid Monitor via telemetry connectivity enabled by the MSA HUB. When the M1 Control Module is paired to LUNAR, Air pressure status information can be pushed via LTE-M connectivity to FireGrid without the need of the MSA HUB. This feature will be implemented end of 2021.

#### **What data is LUNAR transmitting when not connected to an SCBA?**

LUNAR is a standalone and wireless device. It does not need to be connected to the M1 in order to have full functionality. LUNAR was created as a standalone device to enable accountability for all personnel on scene, not just exclusive to fire. LUNAR offers full functionality on varying types of calls without the use of SCBAs. With LTE/cellular connection, the device is capable of search and rescue, personal thermal imaging, and remote monitoring – all data shared with Incident Command through direct cloud connection. If LUNAR does not have connectivity, the device is still capable of ranging and thermal imaging.

#### **LUNAR provides GPS functionality. Does this work inside the building?**

GPS does provide location outdoors only. The go-live of this feature is planned for end of 2021.

#### **LUNAR allows to search for team members in a scene. Is this working indoor although GPS is not available?**

Inside we are ranging, outside GPS does support the ranging function.

#### **Why is MSA focusing on DE, FR, UK and NL with LUNAR?**

LUNAR is using cellular technology based on LTE-M, offered by AT&T Wireless Services. MSA is depended on roaming agreements of AT&T and the respective cellular networks in the countries.

#### **In which countries is LTE-M roaming for cloud connectivity available at launch?**

By providing cellular connectivity, LUNAR is able to push data into the cloud. The full feature set is currently available in: Austria, Belgium, France, Germany, Liechtenstein, Luxemburg, Netherlands, Norway, Spain, Sweden and Switzerland.

#### **Can LUNAR talk to the MSA HUB?**

No, LUNAR acts as a direct-cloud gateway and does not connect to the MSA HUB.

#### **If I have the M1 Control Module with telemetry, MSA HUB and LUNAR, which transmission channel will be preferred?**

The product looks at LTE-M as primary. The HUB information is captured by the cloud and available as a back-up if the LTE-M connection is severed.

#### **Which technology / frequency is LUNAR using for the SAR functionality?**

The frequency is at 2.4 GHz and is valid for all markets.

#### **How many Bluetooth channels does LUNAR have?**

LUNAR has two channels, one to connect to the M1 Control Module once available, one for ALTAIR Gas detectors.

#### **Is the PASS function always active?**

We deactivate the PASS functionality in LUNAR and defer to the M1 Control Module. PASS capability is preserved.



WHEN YOU GO IN, WE GO IN WITH YOU.

**Can we activate LUNAR remotely to locate the breathing apparatus?**

Only LUNARs in alarm can be searched for.

**What are the limits of LUNAR technology inside buildings or in parking lots?**

The F.A.S.T. Technology on LUNAR has a 0.5 km Line of Sight (LoS) range – as walls and other obstructions are experienced, we would anticipate the range to decrease – we suggest fire departments trial LUNAR to ensure the product meets their specific needs.

**Are LUNAR batteries interchangeable?**

Yes, they are and you are able to purchase extra batteries for the LUNAR device.

**What is the benefit of a self-forming alarm network?**

LUNARs that are within range of each other will automatically detect and alert the user that another firefighter has gone into alarm. This compares to other technologies that require base stations or nodes to relay and coordinate the network – LUNAR effectively removes this dependency to ensure a safety network is available as soon as the device is powered on. Only LUNARs in alarm can be searched for.

**What is the benefit of the custom-designed Circularly Polarized Directional Antenna?**

The technological jump for LUNAR with regards to directional antenna implementation is related to the mechanical design. The directional antenna was custom designed with external specialists to ensure alignment with the thermal imaging plane as well as fitting in a hand-held form factor. The circular polarization is important as it allows for a uniform radiation pattern ensuring consistent performance regardless of the orientation of target (laying facedown/up) or how the searcher is holding the device – this compares to linearly polarized antennas which are dependent on both, i.e. the Pak Tracker, which could lead to inconsistent performance.

**How does the ranging using Pulse Radar (distance measurement) work?**

We have implemented radar technology working with external specialists for our specific use case – indoor point to point distance measurement without fixed infrastructure – essentially being deployed instantly without other dependencies. We have also utilizing multiple (redundant) antennas for additional sampling and algorithm development to ensure we can better detect interference when present.

## Alarms

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**What types of alarms does LUNAR have?**

Motion, manual, and hardware. If the device is motionless for 30 seconds, LUNAR will go in to motion alarm. If either button is held down for approximately three seconds, the device goes in manual alarm. When LUNAR self-detects that there is an internal issue, the device places itself in hardware alarm.

## Thermal Imaging

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**Do I need an export licence for the thermal imaging of LUNAR?**

It requires a similar license like the EVOLUTION 6000 series.

**What is the type of sensor used for the TIC inside LUNAR (resolution)?**

The thermal image resolution of the TIC core is 206 x 156 (32,136 pixels).

**What is the dynamic range and the maximum temperature reading of the TIC core?**

The dynamic range is the temperature variance a TIC can see without saturating. LUNAR's range is 370°C, so -30 to 330° C. The maximum temperature reading is 999°C.

**How many thermal image palettes are available on the device simultaneously?**

2 of more than 20 different palettes. These can be chosen with the mobile app FireGrid Configure.

**What exactly is Edge Detection?**

Edge Detection is a thermal palette exclusive to LUNAR, which accentuates areas of temperature difference with a bright green highlight over a white-hot overlay.

## LUNAR Scope of Delivery

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### **What is LUNAR's scope of delivery?**

LUNAR device, LUNAR Battery, Single Point Charger, LUNAR Quick Start Guide, LUNAR Registration Guide (for registering a LUNAR device in FireGrid)

## Personalisation & Configuration

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### **Can I personalise and configure LUNAR?**

Yes; using the mobile app FireGrid Configure, you can configure specific parameter settings, update the software, and personalize the device with a name.

### **How many characters are possible for the individual configuration of the device?**

15 characters for first and last name, 10 for department, seat number can be counted.

## Monitoring

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### **What are my monitoring options?**

FireGrid Monitor is the local monitoring app for use on iOS and Android tablets by Local Incident Command on-scene. Using the app, you have access to real-time device and incident data – air pressure, time remaining, active number of personnel on-scene, devices on-scene, active alarms, who is in alarm, who is searching for them, and how long the incident has been on. In addition, Local Incident Command can also issue an evacuation notification.

There is also Remote Monitoring available from anywhere there is access to an internet connection. This is a read-only view of real-time information transmitted from active scenes.

### **Is the Connected Firefighter solution GDPR compliant?**

Yes, we are. Our Privacy Statement provides transparency about the data that may be processed by Safety io when customers use our Safety io applications.

### **Is FireGrid compatible with internal software widely used in the Fire Service? Can it be linked to other software?**

We are evaluating this on a case by case basis but have no definitive plans at the moment.

### **Does Cloud technology involve additional budget for the Fire Service?**

The Cloud access for FireGrid Monitor will not add additional fees. The LTE-M network access for LUNAR devices do not add additional fees either. FireGrid Premium is a subscription model which includes remote monitoring capabilities.

### **Does LUNAR show date and time on the display?**

LUNAR has date and time on it and there is a timestamped event log. However, we do not show times to the end user because we let FireGrid deal with the different time zones.