



INMANIBUSMEIS

presents

# TRAMA™



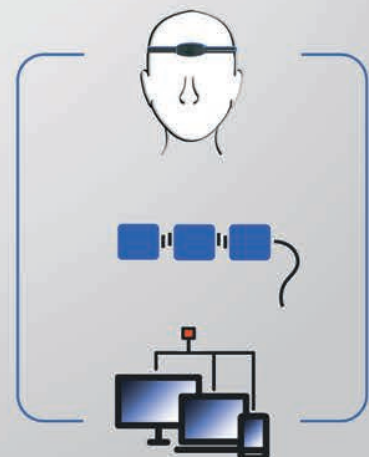
## THE SELF MONITORING KIT SYSTEM

TRAMA™ is an innovative wearable technology for remote monitoring of the physiological (SPO<sub>2</sub>+HR) and geographical data of one or more wearers at once.

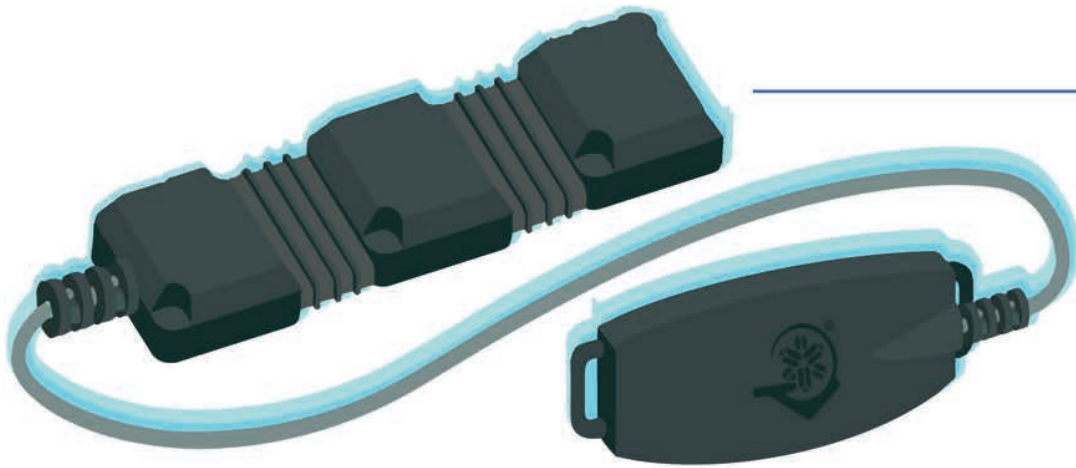


### COSTITUENT PARTS

- TRAMA™ Headband with probe , or probe incorporated into caps, or helmet's padding
- Wearable compact hardware
- TRAMA™ Smartphone with TRAMA™ app
- TRAMA™ Base receiver programme



TRAMA™ is set up to have the probe on the forehead, it can be incorporated into a headband, the helmet's padding or into a baseball cap or beanie.



**SMALL, CONFORTABLE,  
EASY TO USE, LIGHTWEIGHT,  
FULLY WEARABLE AND COMPATIBLE  
WITH CLOTHING, RELIABLE**

**TRAMA™ probe includes**  
pulse oximetry, measuring heart rate  
and oxygen saturation available real time, allowing to assess  
the physiological status of the user.



**TRAMA™ sensor is connected**  
to a portable handles receiver (a smartphone) via Bluetooth  
reducing the need of wires and making the system  
portable and adaptable to the equipment worn by the user.

**TRAMA™ smartphone app includes**

GPS location, accelerometers,  
and collects the data and buffers a  
data packet every 4 seconds, displaying  
information both locally and remotely  
to a base receiver programme.



# TRAMA™

**TRAMA™ sensor allows to assess the physiological status of the user, and TRAMA™ software gives valuable information about his/her operational effectiveness.**

Useful data are provided to identify the degree of exertion exhibited by the wearer, and therefore to alert of high level of fatigue which can reduce efficiency and effectiveness during ongoing tasks. TRAMA™ gives the ability to monitor the wearer performance and wellbeing, thus supporting to prevent and minimise the number of accidents at work. It can be applicable also during training and in training settings where the risk versus benefits must be closely managed to mitigate any risk and prevent casualties from occurring.



*As fatigue takes over the body, many personnel do not realise, nor are they willing to acknowledge that their performance and the performance of others are deteriorating; however physical threat combined with psychological stress and lack of sleep can lead to mistakes and expose to risks.*

- Firefighters
- First Responders
- Soldiers
- Personnel at risk of environmental injury
- Operators involved in life threatening situations

# TRAMA™



## Scuola Addestramento dei Vigili del Fuoco di Trento

*Dr. Andrea Molesi*

Used during firefighters training sessions, the system proved effective as it gave comparable readings of SpO<sub>2</sub> when direct comparison of SpO<sub>2</sub> were made on other devices and heart rate monitors too. It appeared to provide accurate real time readings during exercise in a challenging and harshness environments. The systems provides useful real time data to verify continuous performance and wellbeing of users, in order to mitigate any risk, promptly intervene and/or prevent casualties from occurring. Moreover it renders data available for observation and study of physiological changes during particular tasks assigned to operators.

## British Services Dhaulagiri Medical Research Expedition 2016

*Lt Col Jonathan Round  
and Matt Smith*



A developmental remote monitoring system produced by INMM® was taken to the remote mountain environment in the Nepalese Himalayas to be used at high altitude during periods of exertion by personnel on the British Services Dhaulagiri Medical Research Expedition 2016. Overall the system was effective and straightforward to use, the measured parameters, oxygen saturation and pulse, were accurate and gave comparable readings to other SpO<sub>2</sub> devices (Nonin Onyx II) and heartrate monitors (Garmin Fenix 3 HR) that were being used by the team members for other medical research projects. The system's battery life allowed for up to 8 hrs (4 x 2hr) of data collection before needing to be charged and the GPS system was able to provide accurate geotagging data to the base receiver for detailed mapping of the trekking route taken.



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