

# Global Free Space Optical Network

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## Abstract

A commercial Sub Orbital, Lunar & Mars secure space tourism telecommunications system will combine a new Free Space Optical space tourism telecommunications system and operate to provide scalability to perform earth observation capabilities for state of the art human performance. Details of an efficient new network for the sub orbital community takes existing British FSO design to scale includes elements of ground receivers, on board receiver's capability for comms between satellites and high-tech sensors to enhance human performance for individuals exposed to space tourism flights

## Global FSO Methodology

An individual undertaking a space tourism flight is exposed to increased stress compared to a terrestrial flight and performance indicators Heartbeat, Oxygen, Co2, Dehydration, to be extracted from Sweat The Alpha & Beta trial is to offer a secure network alternative across space ports and this Global Space Port FSO idea developed through last next-generation suborbital researchers conference December 2017 with FAA & NASA Flight Opportunities & research conducted as a post graduate researcher for Kings College of London & Ofcom UK during 2018.

The idea expanded to include a global space port footprint and presented to Queensland Government in February 2019, ideas for the development of their future Space Economy Australia & research conducted includes an equine option for ground based assistance with emergency services and insurance related monitoring for rapid response fire services



Figure Insert: FSO NASA Flight Opportunities Global Network Proposal

## Emotion in Motion

During suborbital flights or large crowded areas or equine farms the ability to prevent and predict needs an additional level of secure messaging for the purpose of big visuals of emotions of the people that on the flight or in the area that is being observed and monitored with the proximity that has location challenges and includes a sensor for wearable and uplink downlink using FSO

Emotion in Motion Elements



## Pilot: Elektra

A pilot is proposed already with Copenhagen Sub Orbital (they are a Danish project to send first person into space using 100% crowd sourced funding to build a sub orbital rocket in Copenhagen). In addition the suborbital community can contribute to reuse capability for wireless monitoring Pre Natal, High Performance of Sports, Defence & Remote Location Elite Sports such as Motor Racing, Football, Sailing, Basketball, Hiking Alpha: Dehydration & CO2 levels Beta: Toxicity, Cancer



Figure Insert: FSO Alpha Sensor

## Conclusions

The Sub Orbital community will benefit with a new FSO NASA linked Satellite & Sensors for Sub Orbital Earth Based Observation to enhance capability of early predication and prevention to help assist human sub orbital, lunar or mars spaceflight.