# Range Global Services

- Range Global Services (RGS) is a Mobile Satellite Service (MSS) Company founded in 2012

- RGS has a direct working relationship with Iridium, Globalstar, LightSquared, Inmarsat and VSAT Providers to offer a full portfolio of MSS solutions

- Primary focus was on voice solutions, but data and PTT has become more requested solutions in recent years

- Headquarters in Austin, TX, with locations in Kaneohe, HI and London, UK
    - Also have a global networks of dealers and distribution partners

Importance of Satellite Communications

- The transfer of data is becoming increasingly important across all sectors of satellite communications, as people are relying more on data

- Data usage has surged over satellite networks in recent years, as voice communications is now declining
  - This includes e-mail
  - Social media with video uplinks
  - SBD and M2M

- IoT is the fastest growing segment in MSS
  - IoT represents 60% of the overall business, and is growing

Mobile Users Lack of Coverage

Peron

Only 37% of landmass has access to LTE
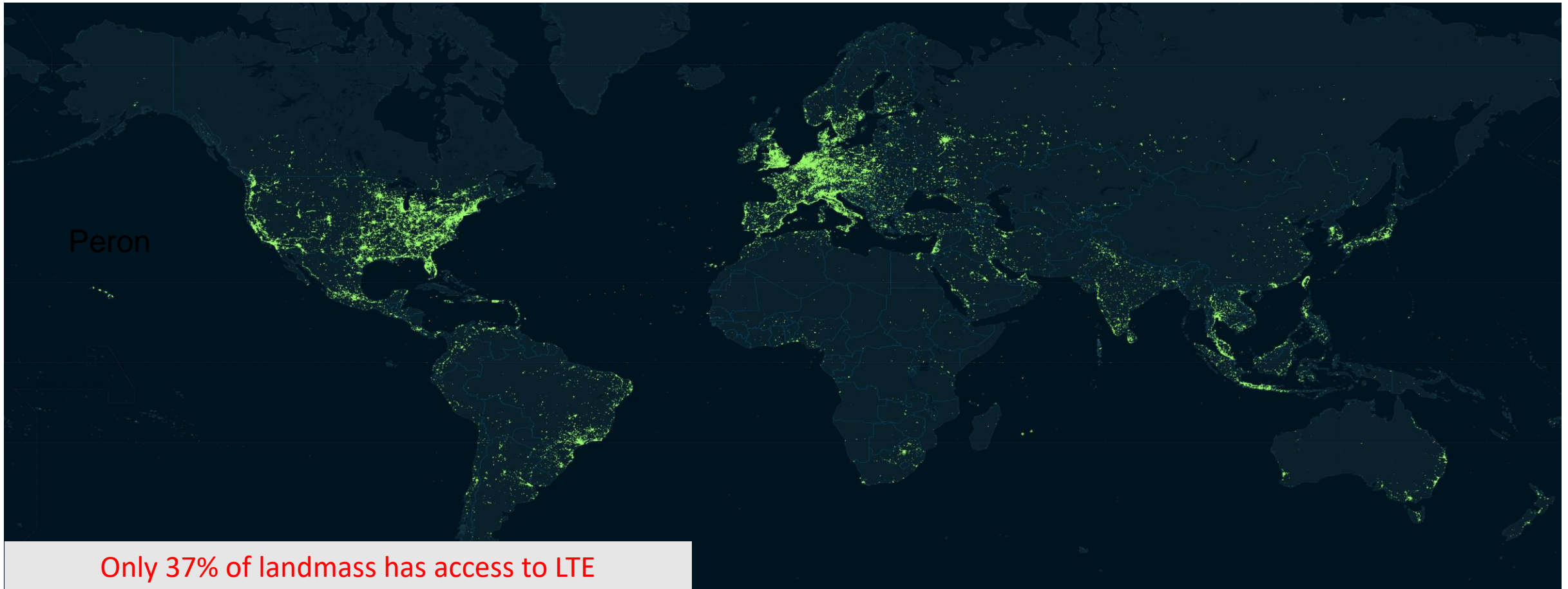
Coverage Throughout Asia/PAC

- A good amount of the islands throughout the south pacific don't have the infrastructure for data, or even voice solutions

- Many areas it is not cost efficient to build ground networks

- Historically, satellite equipment and data charges have been cost prohibitive and the leading barrier to entry

- Current low cost solutions, ie Iridium Handsets and GO!, are too slow for customers to use as real data solutions – 2.4kbps but are excellent voice and texting solutions

What Are Customers Looking For

- Reliable service at more affordable prices

- Data speeds that allow to use traditional e-mail, native apps, send and receive larger files – data speeds of 356kbps to 700kbps and higher

- Interoperable service capabilities

- Integrated multi-service terminals

- Antennas that are small and easily installed on vehicles, buildings, or in remote areas
  - No large dishes

Broadband and Narrowband

BROADBAND

- Enterprise networking
- Mobile backhaul
- Trunking
- Government
- Consumer broadband

NARROWBAND

- Mobility
- Voice
- IoT
- Basic data transfer
- SMS/Text Messaging

Inmarsat BGAN/IsatHub and Iridium CERTUS

BGAN/iSavi

- Legacy product that has been around for years
- Portable, size of a laptop
- Speeds of 356-464kbps
- Geo stationary satellite based
- Affordable equipment and service
- App based so customers use their smart devices for voice, text, email and native apps

CERTUS

- Officially launched in 2019
- LEOS Satellites = true global coverage
- 356kbps upgradeable to 700kbps
- High equipment cost but lower MB pricing
- App based so customers use their smart devices for voice, text, email and native apps

Inmarsat IsatHub

IsatHub

- Made by Addvalue, Wideye iSavi
- Speeds 384/240kbps
- Battery life of 2.5 hours
- Unlimited monthly data plans
- WiFi range of 30 meters/100 feet
- Weighs under 2 pounds/roughly 7 inches by 1.2 inches

Inmarsat BGAN/Explorer 510

- Made by Cobham

- Speeds 464kbps

- Battery life of 2.5 hours

- IP66 rating – extreme dust and weather tolerances

- WiFi range of 100 meters/328 feet

- Weighs 3 pounds/roughly 8 inches by 1.6 inches

Iridium NEXT

- Iridium just completed the launch of its NEXT constellation last January
- $3 Billion satellite network
- Total of 81 new satellites
  - 66 in orbit
  - 9 in orbit spares
  - 6 ground spares
- 12.5 year design life
- Solutions now available for 356 to 700 kbps
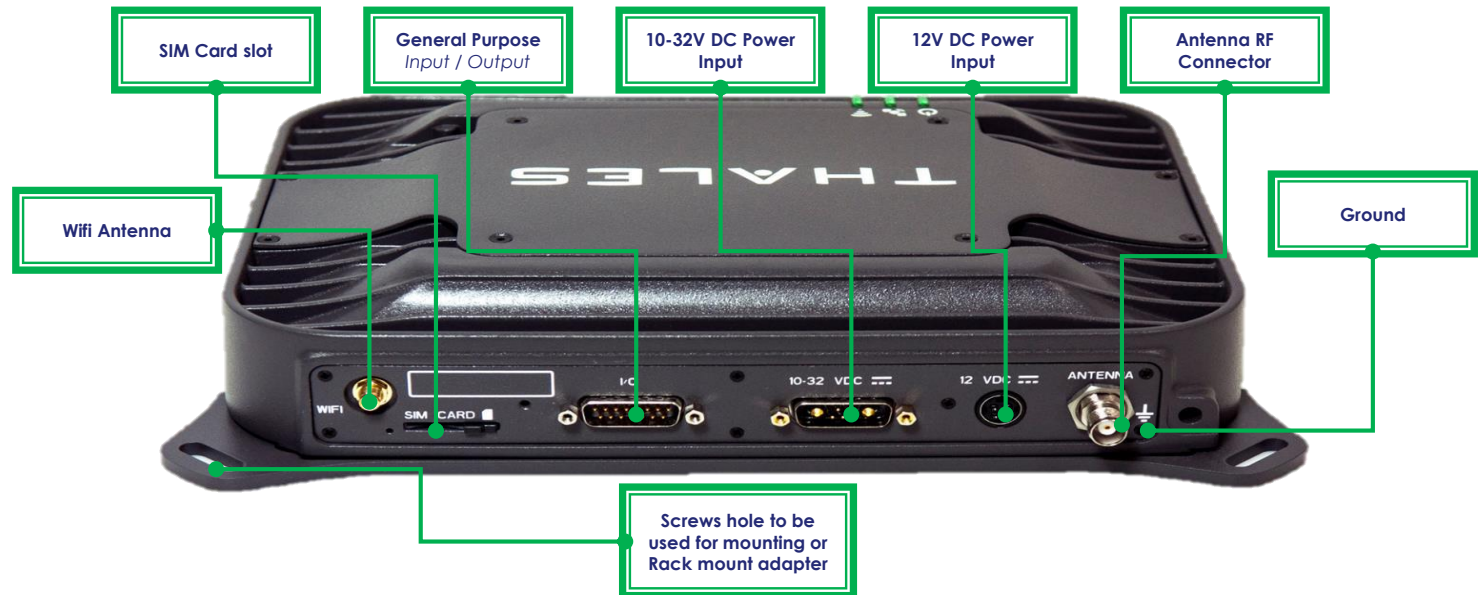- First generation equipment will continue to work on new constellation

Iridium CERTUS Thales MissionLINK

- 700 Kbps ready w/3 HQ voice lines
- Easy vehicular and fixed site installation
- Hybrid Network Management (external WAN)
- Radio Gateway
- True global coverage

- Small TU and Antenna

Land Mobile Unit

- Antenna weighs 2.8kg

SIM Card slot

Wifi Antenna

General Purpose
Input / Output

10-32V DC Power Input

12V DC Power Input

Antenna RF Connector

Ground

Screws hole to be used for mounting or Rack mount adapter

Additional Applications Enabled by Certus

- Use of Smartphone Push to Talk Applications
  - Ability to connect on 4G networks or Iridium as back up using MissionLINK WAN failover features
  - Low Latency network benefits use of Push-to-Talk
- Failover for PBX Networks
  - Multi-line (3) simultaneous voice capability of terminals configurable to integrate with PBX systems to act as back communication solutions in case of emergencies
- Backhaul of P25 radio traffic or picocell traffic to connect with radio or cellular infrastructure to core network
- OBM for VSAT or Fiber Networks
- Telemedicine enabling faster triage response

Iridium Product Roadmap

- Iridium CERTUS 9770 Terminal
  - Will allow for smaller/portable units providing voice and data solutions
  - Data speeds ranging from 28-100kbps
  - App driven
  - Products available late 2020/first quarter 2021
- Iridium CloudConnect
  - Will be the first and only satellite cloud-based solution that offers truly global coverage for IoT applications through Amazon Web Services (AWS)
  - Will make it easier to do business by "translating" industry-standard IoT protocols and Iridium Short Burst Data, allowing them to communicate with one another
  - This exchange enables any IoT device connected through the Iridium network to speak natively with Amazon's cloud-based server and its user interfaces
  - Expected launch first quarter 2020
- Rumors of a new Iridium handset available in late 2021/2022 timeline