



IRIDIUM – PUSH TO TALK

Commercially available Q2, 2015

IRIDIUM PTT

OVERVIEW

Fast

LEO and built for speed

Truly Mobile

Small devices with lower power needs

Global

Coverage anywhere

Affordable

Both devices and service

Flexible

Able to be reconfigured in seconds by the end customer



IRIDIUM - PUSH TO TALK PTT

THE PRINCIPLE:

Iridium Push To Talk....

It's an extremely easy to operate satellite based, 2-way radio system.

● What do you need?

- A Device (handset)
- Talk Group

● What do you do?

- Choose your required **Talk Group size** – small, medium or large*
- Assign the device to a **Talk Group** and any handset within that 'Talk Group' can communicate at the 'push' of a button to **ALL** the other users.



*See slide 8 for further details

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HARDWARE:

- **Iridium PTT uses the Iridium Extreme PTT device**
(pictured here)

- The user selects PTT mode from the menu – then ‘pushes’ the button ‘to talk’ to ALL the other users within a talk group.
- The button can be depressed for a maximum of 20seconds allowing that time to communicate your message.
- Using PTT does not require a sim card, it will use the IMEI number of the device.
- Each device will support up to 15 Talkgroups.
- The communication (which is AES256 encrypted) is transmitted across the existing Iridium satellite network.



Note: Existing Extremes cannot be upgraded and Iridium are not offering an 'upgrade' programme.

IRIDIUM PTT

HARDWARE

• Form Factor	Handheld
• Durability	Mil-Spec: IP65
• Service Support	PTT, Location Updates, Telephony, SMS, Circuit-Switched Data, SBD
• Power	Rechargeable Battery
• Speaker Audio	High/Low Audio or Headset
• Accessories	Chargers, External Antenna, Docking Stations, Audio and Data Connectors
• Customer Need	Global, mobile, critical calling, Push-to-Talk
• Start-Up Time	20 seconds
• Mobility	Everywhere
• Wearable on body	Yes
• Environmental specs	IP65, Mil-Spec, -10C to +55C temps
• *Battery standby time	Up to 54 hours (Phone Mode), up to 16.5 hours (PTT Mode)
• Battery talk time	Up to 6.5 hours (Phone Mode), up to 5 hours (PTT Mode)
• External antenna included	Yes
• Developer platform	Online location tracking
• Messaging capabilities	SMS, configurable SOS, twitter updates, location sharing

*Higher capacity battery than 9575 handset.



Subscriber Equipment - Iridium 9523 Core

- This module can be integrated into a device.
- The durability of it is dependant of the product.
- The service can support:
 - PTT
 - Location Updates
 - Telephony
 - SMS
 - Circuit-Switched Data
 - SBD



- Power is dependant of the product
- Audio is dependant of the product

IRIDIUM PTT

RECOMMENDED ACCESSORIES FOR HARDWARE

● Docking Station

- Manufacturers: Beam & ASE
- To allow use from inside a vehicle or building.
 - Other bespoke products will become available.
- Ideal for various applications, including Emergency Services, Commercial Transport, Mining, Defence, Government.



Pricing on request.



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TALK GROUPS

- **There are 3 talk group sizes available:** *these are defined as an area in any global geographic location.*

● Small	100,000 KM²
● Medium	300,000 KM²
● Large	750,000 KM²

- You can buy more than one talk group if needed.
eg x2 small giving you a total of 200,000KM²



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ONLINE COMMAND CENTRE

AST activates your Talkgroup/s, then provisioning is set up by you/your customer in the Iridium PTT –online command centre . This process is quick and simple to follow using ‘Drag & Drop’ configuration, with fast operation and real time changes.

The screenshot displays the Iridium PTT Online Command Centre interface. The top section shows a map of Europe with a blue circular area over the United Kingdom and a blue rectangular area over Germany. The bottom section is a 'Devices' management panel. It features a grid of 30 device icons, each with a unique Iridium number and a status indicator (e.g., 'Unused'). A search bar is located at the top right of the device grid. Below the grid, there is a 'Talkgroup: TennaT' section with a list of device numbers and a 'TennaT' icon. The interface includes navigation tabs for 'Talkgroups' and 'Devices', and a 'Logout' button in the top right corner.

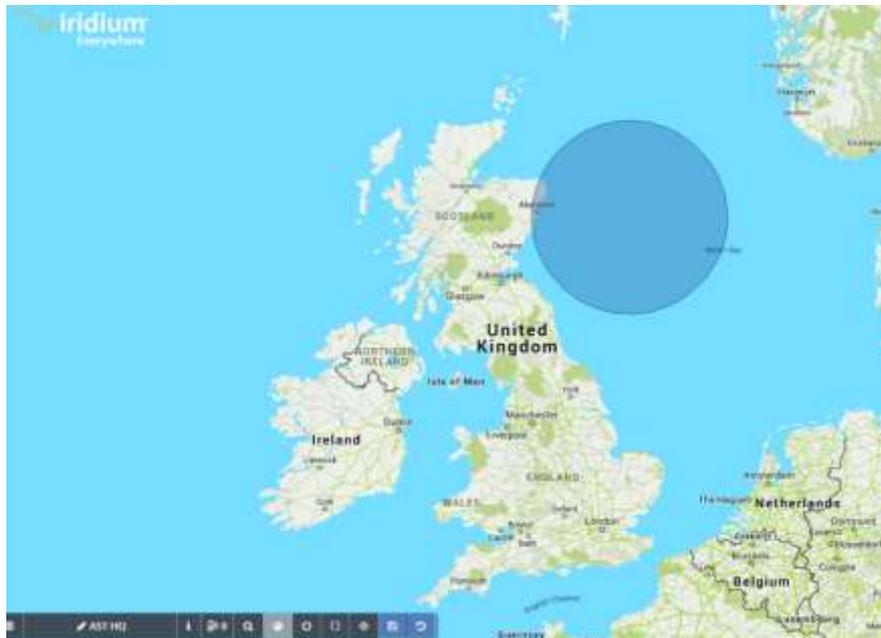


IRIDIUM PTT

SELECTING REGIONS WITHIN YOUR TALK GROUP

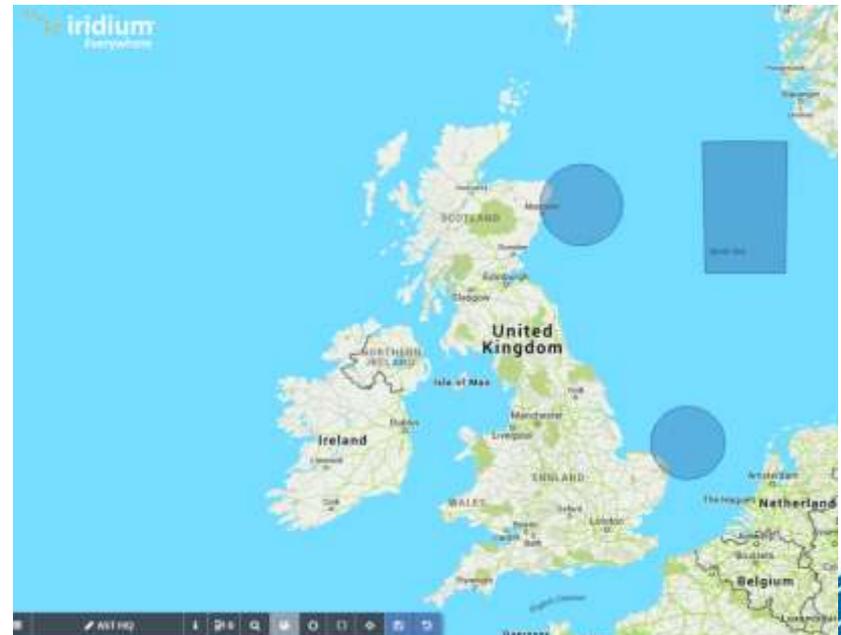
- **Circular or Square/Rectangular shaped coverage areas are created within the online 'Command Centre' by placing on to 'Google' maps & choosing your required size. Each shape is known as a 'region'.**
- **A talkgroup can consist of one large region or a maximum of 10 smaller regions.**

Below is a Talk Group with 1 region



- **Circle - minimum region size - 75 KM radius**
- **Square - minimum region size - 150 KM²**

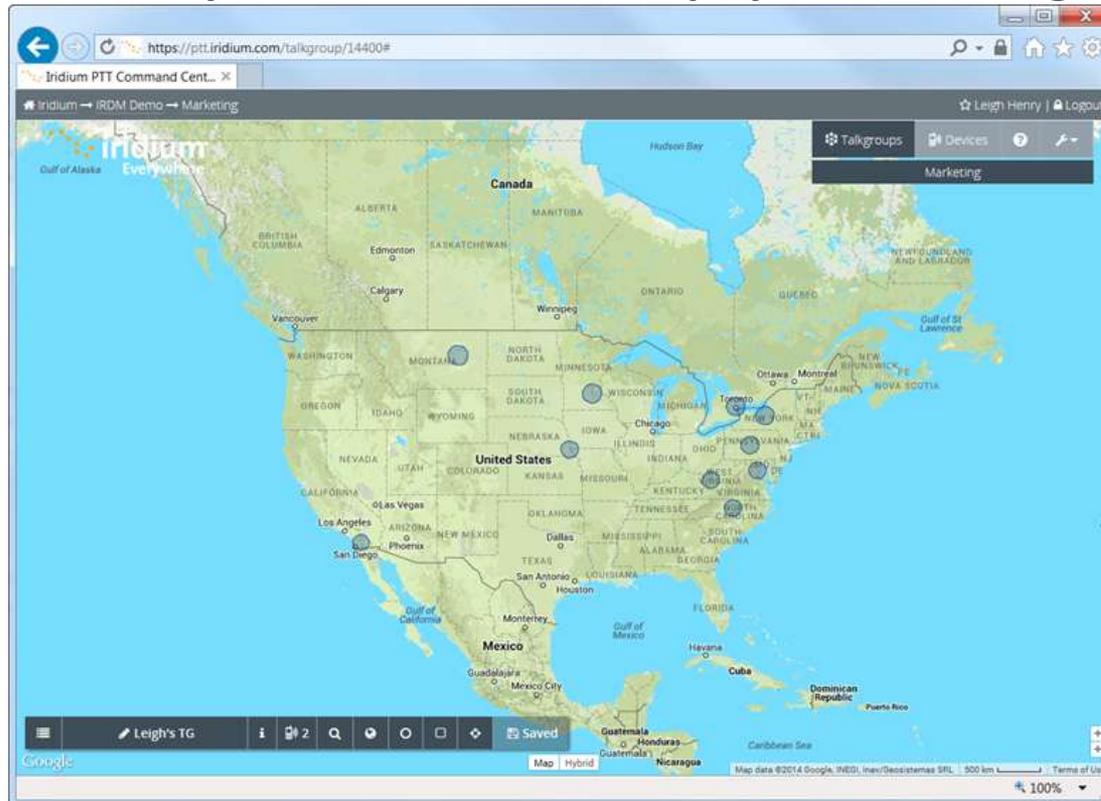
Below is same size Talk Group (size) split into 3 regions



- **Maximum region size - up to chosen Talkgroup size**
- **Maximum region size - up to chosen Talkgroup size**



This example shows a Talk Group split into 10 regions



- With this configuration you could have 10 users deployed in different countries, all communicating to one another within the same talk group, at the push of a button.



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DEVICES PER TALK GROUP

- **How many handsets can you have in a Talk group?**
- **Since the Iridium PTT service is a broadcast service, there is no practical limit to the number of devices that may be part of a Talkgroup.**

Iridium has
successfully tested scenarios
with

10,000

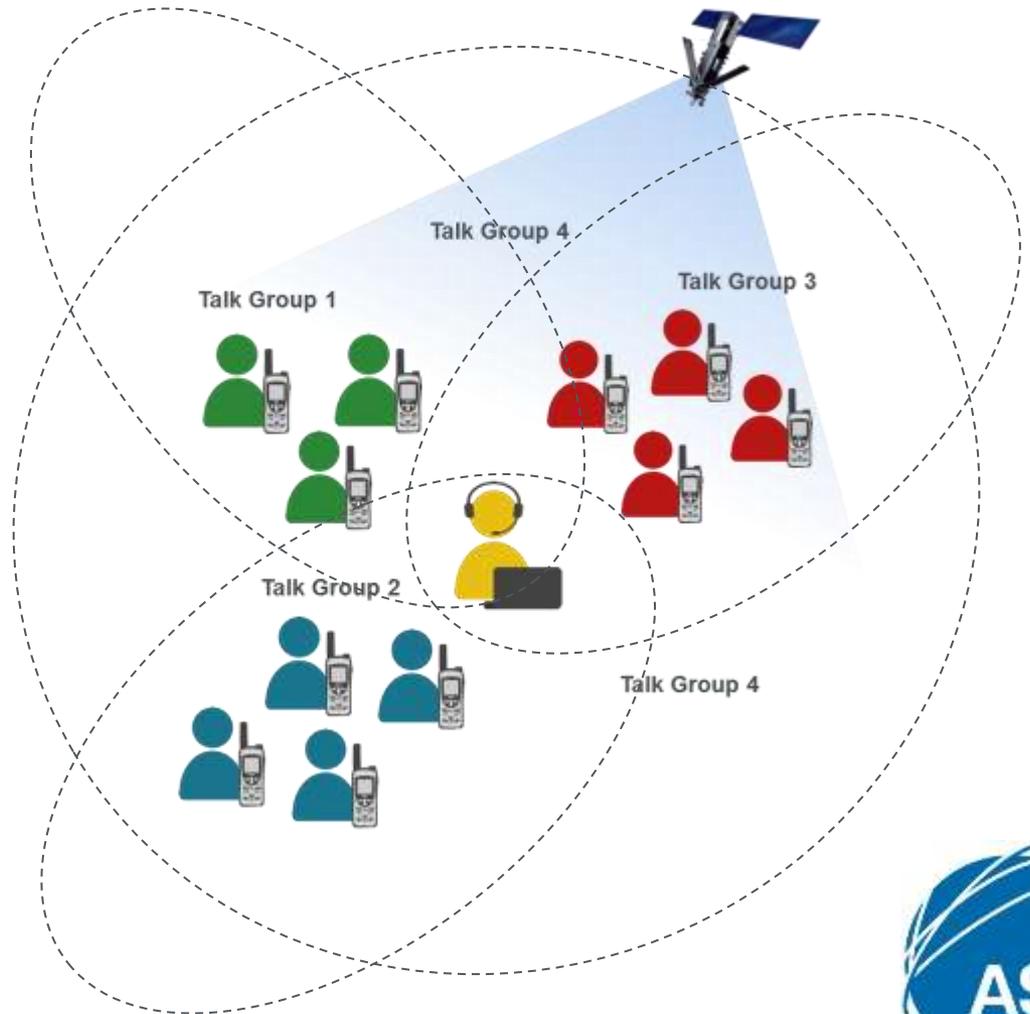
devices in
a talkgroup.



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SHARED TALK GROUPS

- The “Trunking” concept inherent in the Iridium PTT service allows a large number of users to share talkgroups
- Global, Federal and Regional agencies and organizations can respond to events such as emergencies and share talkgroups to communicate
- Each device supports up to 15 Talkgroups



IRIDIUM PTT

PRICING

Iridium PTT has two monthly fees: one for the **Device** and one for the **Talkgroup**. Both sets of charges are assessed separately.

● **Device Monthly Fee**

- \$120 suggested end user pricing (based on AST 440 tariff), which provides unlimited usage of device for PTT talkgroups; There are no per-handset usage charges for PTT.
- Customers can add on a standard voice plan with current Iridium voice rates. (sim card based)

● **Talk Group Fee**

- Based on size of talkgroup and usage.
- Usage, calculated in minutes, is defined by the total monthly use of a talk group.

Pricing based on AST Iridium PTT 440 End User tariff.

Size of <u>Talkgroup</u>	Monthly Usage Allowance (Minutes)			Overage*
	600	6,000	Unlimited	(\$/Min)
Small	\$160	\$440	\$520	\$0.38
Medium		\$880	\$1000	\$0.58
Large		\$2,160	\$2,400	\$1.44
X-Large			\$5,6000	
Jumbo			\$12,800	



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EXAMPLE PRICING

- Using AST Iridium PTT 440 End User tariff.

	Firefighters	Police	Disaster Recovery
Handsets	50	10	100
Handset MRC	\$120.00	\$120.00	\$120.00
Monthly Handset Charges	\$6,000	\$1200	\$12,000
Talkgroup 1			
Size	Small	Small	Small
Usage	6000	Unlimited	600
Monthly Charges - Talkgroup 1	\$440	\$520	\$160
Talkgroup 2			
Size	Small	Medium	Large
Usage	6000	6000	6000
Monthly Charges - Talkgroup 2	\$440	\$880	\$2,160
Talkgroup 3			
Size	Medium	N/A	N/A
Usage	6000		
Monthly Charges - Talkgroup 3	\$880		
Total Talkgroup Cost	\$1,760	\$1,400	\$2320
Total Handset and Talkgroup Costs	\$7,760	\$2,800	\$14,320
Average cost per handset/month	\$155.00	\$260.00	\$143.00



IRIDIUM PTT

MAIN MARKETS



First responders
and public safety



Government/military



Construction, utilities
and oil & gas



Aviation/maritime





www.theastgroup.com