

Iridium 9575 Extreme and Delorme inReach as GPS Trackers

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GPS Trackers

□ Safety

- **An additional informational tool in emergencies**
A Personal Locator Beacon (PLB) is the NSF ARSLS standard tool for safety. PLB required by Government of Greenland
- **Ideally, does not require operator activation**

□ Logistics

- **Tracking of assets (e.g., vehicles, boats)**
- **Informative of deviation from research itinerary**
- **Near real-time display of location for outreach**

Ski-Doo Installation



Summit Station, Greenland

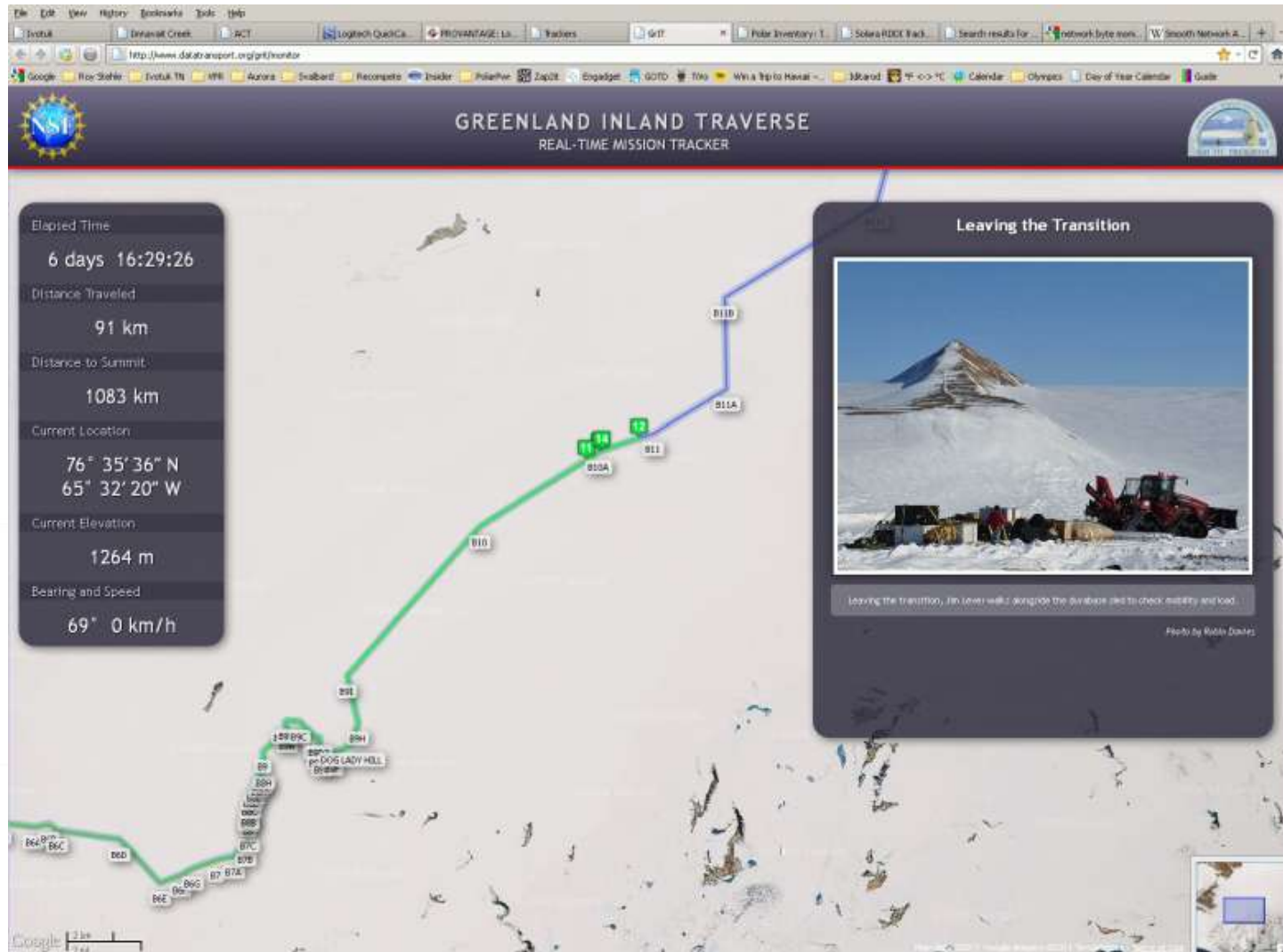
- ❑ **Weatherproof enclosure**
- ❑ **12 VDC vehicle power**
- ❑ **No operator input**

- ❑ **GPS Trackers originally designed for snow machines. Also used on tractors.**

Greenland Inland Traverse



Greenland Inland Traverse



Iridium 9575 Extreme Satphone

- ❑ Ruggedized
- ❑ IP67 water spray protection
- ❑ SMS & SBD position reports
 - SOS function
 - Adjunct to ever-present satphone



from 881631459731@msg.iridium.com
subject SMS from 881631459731@msg.iridium.com
to roy.stehle@sri.com

2/10/2012 4:56 PM

I am here Lat+64.826083 Lon-147.861766 Alt +452 ft GPS Sats seen: 04
<http://map.iridium.com/m?lat=64.826083&lon=-147.861766> Sent from my Iridium handset

Customer-controlled 9575 SMS

❑ Simple E-mail and/or Text messages

Subject: SMS from 881622450139@msg.iridium.com
From: 881622450139@msg.iridium.com
Date: Wed, 09 Jan 2013 21:59:53 +0000
To: roy.stehle@sri.com

I am here Lat+37.454449 Lon-122.176500 Alt +6 m GPS Sats seen: 04
<http://map.iridium.com/m?lat=37.454449&lon=-122.176500> Sent from my Iridium handset

Subject: SMS from 881622450139@msg.iridium.com
From: 881622450139@msg.iridium.com
Date: Wed, 09 Jan 2013 22:01:23 +0000
To: roy.stehle@sri.com

EMERGENCY Lat+37.454449 (stdv 0039) Lon-122.176500 (stdv 0039) Alt +6 m GPS sats 04
2013-01-09 22:00UTC Batt 82% User lang en Sent via Iridium

Subject: SMS from 881622450139@msg.iridium.com
From: 881622450139@msg.iridium.com
Date: Wed, 09 Jan 2013 22:03:17 +0000
To: roy.stehle@sri.com

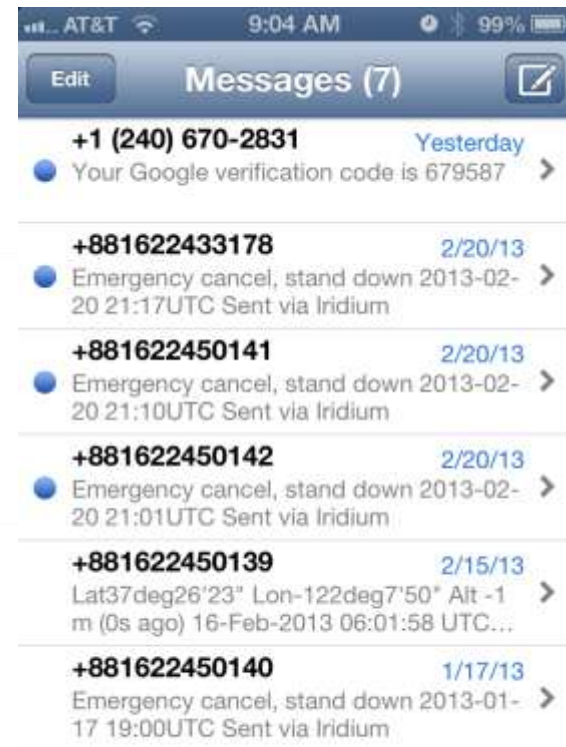
Emergency cancel, stand down 2013-01-09 22:03UTC Sent via Iridium

SMS Messages

❑ Expensive

- \$0.35 per message
- 30 minute message interval, 10 hour day, 30 days/month
600 messages = \$210/month

❑ Awkward to process



SBD Messages

- ❑ **Provided by Iridium Service Providers**
 - **34 Byte location message**
 - **\$7/month plus airtime charges**
SBD 17 Plan: \$21.00/month incl. 17 kB; \$1.40/kB over
600 messages = \$32.76/month total plus voice plan
 - **ISP's Website shows present location**
 - **SOS Services incur additional monthly charges**
- ❑ **Full Location Based Service via Custom Portal**
 - **Non-Disclosure Agreement to learn record formats**
 - **Certification by Iridium**
 - **Full access to records from 9575 for plotting, alerting, etc.**

SBD Message Re-routing Hybrid

- ❑ **Iridium Service Provider routes to your server**
 - **34 Byte location message**
 - **\$5/month plus airtime charges**
SBD 17 Plan: \$21.00/month incl. 17 kB; \$1.40/kB over 600 messages = \$30.76/month
 - **Your responsibility for SOS services**
 - **Your plotting services**



9575 Comments

- ❑ **Single package for voice, data, tracking**
 - **Single set of batteries; carry spare for extra tracking power**
- ❑ **Rechargeable Li-Ion batteries**
- ❑ **Accessories to charge satphone and use antenna**
 - **GPS antenna built into satphone; external antenna Iridium only**
 - **Connector seal can fall out w/ battery**
- ❑ **Battery bail hard to grasp**
- ❑ **Trace-compliant model runs DOD SIMs**
- ❑ **Potentially less sensitive than 9505A**



Delorme inReach



- ❑ **Uses Iridium SBD messaging**
- ❑ **Mates with smartphones or GPS for messaging and display**
- ❑ **SOS functionality by GEOS**
- ❑ **Floats**

SBD Messages

Service plans provide unlimited tracking

	Safety Plan	Recreation Plan	Expedition Plan
Annual (12 Months)	\$9.95 Monthly	\$24.95 Monthly	\$49.95 Monthly
Seasonal (4-month minimum)	N/A	\$39.95 Monthly	\$64.95 Monthly
SOS	Unlimited	Unlimited	Unlimited
Predefined Messages from inReach	10 per month shared with Messages	Unlimited	Unlimited
Messages	10 per month shared with Predefined Messages	40 per month	120 per month
Tracking	\$0.25	Unlimited	Unlimited
Overage	\$1.50 per message	\$0.50 per message	\$0.25 per message

GPS Tracker Comparison

	9575 Extreme	inReach
Dimensions (in)	5.51 x 2.36 x 1.06	3.4 x 2.85 x 1.73
Volume (cu in)	13.8	16.8
Weight (grams)	247	227
Operating Temperature (C)	-10 to +55	-20 to +70
Durability	IP65	IP68 Floats
Battery Lifetime (hrs)	30 standby	125 lithium ~60 alkaline
Battery	Rechargeable Li-Ion	Primary or Rechargeable
Tracking Interval	5 min to 1 week	10 in to 4 hrs