

## Alpine Rescue Team – InReach Response

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**Purpose:** Guidance in handling responses to SAR missions initiated by or involving InReach satellite messenger devices.

### Background:

DeLorme's InReach is a family of personal devices designed to share position information in non-emergency situations and to activate a response similar to a 911 call in emergency situations. Unlike the similar PLB technology, in which the hardware is produced by commercial firms and the service provided by the US Government, InReach hardware and services are both provided by a commercial firm using the Iridium satellite constellation. InReach requires the purchase of annual subscriptions to activate various types and levels of services. The key differentiating factor with InReach compared to similar competitive offerings is that the system allows for two-way messaging.

The underlying service providers for InReach are DeLorme as the manufacturer of the hardware and developer of the software for the physical units; Iridium as the commercial satellite operator upon which InReach operates; and GEOS as the emergency services alerting and coordinating firm (GEOS is also the service provider for InReach competitor SPOT).

There are several versions of InReach hardware in the field. One type integrates with DeLorme GPS units. Another connects to Android and iOS smartphones and tablets via Bluetooth and is controlled via an installed app.

In non-emergency situations positions and messages can be sent to designated individuals via email and text messages, and to public and private websites. An emergency message which InReach refers to as an SOS is sent to the GEOS Rescue Coordination Center which in turn contacts local law enforcement to notify them of an activation, provide location, and information on the owner of the InReach unit. **Position information is delivered to local authorities in decimal degree coordinates using the WGS 84 datum.**

If activated positions are transmitted every 10 minutes in non-emergency situations, and can also be sent on-demand. If the SOS function is activated the unit attempts to transmit position every 30 seconds. Battery life on fresh lithium batteries when transmitting locations is claimed to be 125 hours.

### Procedures:

1. An InReach SOS notification will be delivered to a County PSAP, in our case the Clear Creek or JeffCo Dispatch facilities from the RCC. During an activation they will provide location of the unit and information on the unit's owner. They will also attempt to use the 2-way communications capability of the InReach unit to ascertain the nature of the emergency and will provide that information as they receive it.
  - a. An SOS should be treated in the same manner as a 911 call.
  - b. ML's should assume that the last coordinates transmitted is near the true position of the subject and should dispatch search teams to that location.
    - i. Subsequent position updates should help determine if the subject is stationary or mobile, and if the latter direction of travel.
  - c. Since the coordinates are in decimal degrees, WGS 84 and Alpine's standard is UTM, NAD 27 either convert the locations to UTM at Ops for the field team or have a single field team member enter the lat/long coordinates and datum into a handheld GPS while others retain UTM format. If at all possible do not ask field teams to convert the coordinates themselves while enroute to the subject.

- d. If a Mission Leader wants to attempt to ask questions of the InReach owner those requests at this time need to be made via the GEOS RCC. They are working on a tool to allow law enforcement or SAR to directly message a unit during a response but that capability is not yet available.
  - 1. GEOS Response Coordination Center contact number: 936-582-3190
- 2. If a subject who is known to have a InReach unit is missing but there has been no SOS it may still be possible to use InReach information to aid in a search.
  - a. Check if Reporting Parties or friends are aware of the subject's use of InReach and most importantly if the subject has created a InReach website that allows others to monitor location on a near-real time basis. If such a website exists obtain the URL and password (if required) from the RP and check for recent locations.
    - i. Note: this may be best done by a team member at their home with a solid Internet connection rather than trying to do so from Ops via a wireless data connection.
    - ii. InReach also allows for sending geotagged posts to the social media sites Twitter and Facebook. Check to see if the subject uses such services and if there have been any recent updates that may contain location information.
  - b. InReach also provides the ability to capture location information within the user's account on InReach's registration and account management system. If the subject is known to use InReach this possibility should be investigated and account logon credentials obtained.  
**Note that InReach requires a request to access a personal account to come from Law Enforcement.** The contact information for account access is:
    - i. GEOS Response Coordination Center: 936-582-3190

**Cautions:**

Treat an InReach location as the center of a search area and not as "the" location. It is a GPS unit and is subject to degradation due to all the same factors impacting standalone GPS units: satellite constellation configuration, obstructions, multipathing, other GPS units or electronics interfering, etc. Confidence in location will increase if it remains relatively constant over a period of time with recurring updates.

The InReach Connect unit uses a smartphone app to manage the functions of the unit. This app puts a heavy drain on the smartphone battery. Be aware that even if the smartphone battery dies the unit continues to function with its final settings. An SOS transmit can be activated from the unit itself; it does not require the smartphone app.

**Developed to assist the SAR mission incident commanders of Alpine Rescue Team. Provided as-is for the consideration of SAR units. Other SAR units should develop local protocols as appropriate and necessary for your agency's use.**