SuperGuard PT3 Universal Tracker

The PT3 Personal Tracker is a mobile GPS and communication device that allows you to track persons, keep in touch with family members, protect your children, or track your vehicles, boats trough SMS,GPRS, Internet and mobile phone browsers.

Locating People

- Built-In GPS patch Antenna for optimal GPS location
- ATMEL GPS receiver with fast TTFF and low power consumption
- Receive location details through "silent ring" or SMS command

Tracking

- Track persons or vehicles in real-time or intervals through GPRS and/ or SMS
- Access maps and GPS positions online

Communication

- Place and receive Voice Calls through GSM network
- touch-dial to 3 predefined contact numbers

Alerts

- Quick-Set 80 m Geo-Fence
- Define up to four areas as Geo-Fence over Internet
- Setup maximum speed limits

Emergency Function

- Press SOS buttons to send emergency messages to predefined contact numbers (incl. GPS position, address and road name, time, alarm message)
- Exact location with detailed map can be accessed online on mobile devices or PC
- Automatic dialing loop to predefined contacts, until one contact picks up call

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Device Features:

- **Three touch buttons to quick-dial phone calls to preset contact persons**
- **Dedicated SOS button to send emergency alarm SMS to all contact persons and automatically dial to main contact**
- **Automatic Fall-down/ Impact alarm and automatic call functions**
- **GPS Location: Receive single location requests from up to three contact persons through 2-Ring call or SMS command;**
- **GPS Tracking: automatic schedule and manual position upgrades over GPRS;**
- **Power saving options: automatic switch off of GPS and communication if no movement for 4 minutes**
- **Alerts: One-touch setup of 80 meter Geo-Fence, define additional 4 Geo-fence areas over Internet and setup Speed limits to receive alert messages in case of violations**
- **Battery: Battery low alarm through tone signal and SMS, GPS timer setup to save power, rechargeable Li-Ion battery pack**
- **PT3 supports Iridium satellite phone integration, we provide complete package solution including air time, sim card and activation, to use everywhere in the world, ideal for container ships, boats, yachts, military use**

Geo-fence activated/
G-Sensor activated/
Battery Power Indicator

Functional Indicators:
GPS = GPS availability
GSM = GSM operation/ status
GPRS = GPRS availability/ status

Select Contact numbers 1, 2 or 3 and press twice to dial out phone calls.
Press either button to accept phone calls.

SOS Button
to trigger SOS alarm

SET:
Press to activate 100m Geo-Fence around the device (GPS required). An alarm will generated and the Geo-Fence turned off automatically when leaving the area)

INFO/Power button:
Press to manually send last available position to server database (data logger).
Press 3 sec to power device off. Press again to power on.

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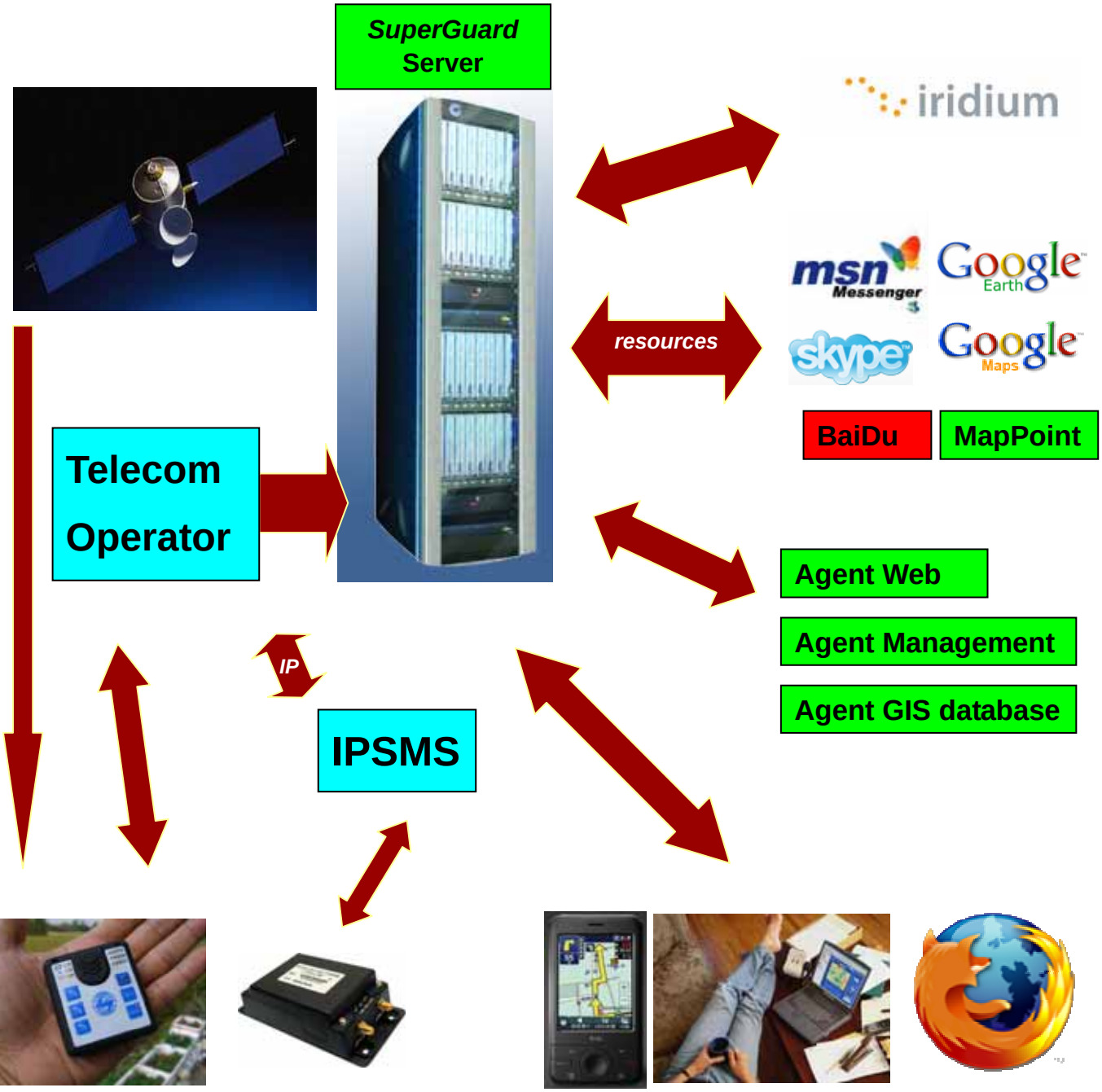
System Diagram



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Hardware Specifications

GENERAL	
The unit utilizes GPS to receive time, date, longitude, latitude, speed, direction data; GPRS for data exchange with Control Base and GSM for communication and short messaging	
GSM	
▪ GSM/ GPRS Module	SIM 340 Quad-band GPRS module GSM 850 MHZ GSM 900 MHz (2 watt) Class 4 GSM 1800 MHz (1 watt) Class 1 GSM 1900 MHZ
▪ GSM Antenna	Built-In
GPS	
▪GPS Module	ATMEL based L1, C/A code Receiver 20 Channels
▪Sensitivity	-158 dBm
▪Protocol	SuperGuard protocol
▪ GPS Antenna	Active patch antenna build in
▪Accuracy	10m-20m
Update rate	Max 30sec. Configurable. Default setting 120 Second
▪Start Time	Cold Start: 44s Hot Start: 8s (open sky)

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PT3 Features and Function List

DEVICE CONFIGURATION

GeoFence Setup --------- Uploads restricted geographic areas to PT3 Device

Function/ Feature	Description
Manual Geo-Fence activation	Users can setup one Geo-fence of 80m by pressing the GEO button. When the device leaves the area, will send GPS data and status to the Control Base through GPRS or SMS (fallback). The Control Base send text message containing address details and alert text to all Contact numbers.
Additional Geo-Fence Setup	- Additional 4 Geo-fences can be loaded through commands containing longitude/ latitude parameters. If a Geo-Fence violation occurs, the device will send GPS data and status to the Control Base through GPRS or SMS (fallback). The Control Base will send text message containing address details and alert text to all Contact numbers.

LOCATION AND TRACKING FEATURES

Location and Tracking: polling, setup tracking period and interval, start/ end tracking

Function/ Feature	Description
Automatic Location Report	By default, the device will send updated GPS and status information via GPRS to the Control Base in intervals of every 60 seconds. If GPRS is not available at the time, the device will stop sending data until GPRS is available again, unless a tracking schedule (described below) has been configured, which allows sending data as SMS for fallback. If the device is not moving for a continuous period of 4 minutes, it will switch to power saving mode by disabling GPS. GPS acquisition will

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	resume after the device is being moved.
Single Location requests:	3-RING Call (From Contact Numbers only) : - Hanging up after 3 rings during a call placed from one of the Contact Numbers will let the Device send last available GPS + status data + Contact# as GPRS package or SMS (fallback) to Control Base - The Control Base shall send text message with address details and status to inquiring Contact#. SMS Command: Polling the last available GPS position through SMS command from the Control Base/ Websites or authorized contact numbers. The device sends last available GPS + status data as GPRS package or SMS (fallback) to Control Base
Tracking Schedule Setup	Tracking schedules can be setup at the Control Base or by users through connected Websites Period: 0-65534 (minutes). Interval: 0, 60-65534 (seconds). Device will send GPS data and status via GPRS or SMS (fallback) to the Control Base over a period of (*value*) minutes in an interval of (*value >60sec*) seconds until the end of the time period (max. 45 days). NOTE: The Device will confirm by sending back the first data package or SMS right after placing the Tracking command. If the Device has been powered off during the tracking period, the unit will only resume after being powered on again, and stop tracking after the tracking period is up.
Real-Time Tracking (RTT)	RTT can be initiated at the Control Base or by users through connected Websites. GPRS connectivity through device is required. Max. Period: 0-65534 (minutes). The device will go GPRS online and send GPS data and status to the Control Base over a period of (*value*) minutes in an interval of ca. 10 seconds until the time period (max. 65534 minutes) has ended.
Manual location data logger	The device owner can initiate a current location report to Control Base through pressing the INFO button on the device.
NOTE: During RTT or other features that require the Device to go GPRS online, no phone calls or other SMS commands can be received at the same time.	

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ALARM FEATURES

Personal Security Alarm Messages:

Automatic and manually triggered alarm reports to Control Base and Contact numbers

Function/ Feature	Description
SOS Emergency (indicator: SOS)	When SOS button is pressed, the Device will send the last available GPS data and status through SMS to the Control Base. The Control Base will itself send text message with address details, time and alert text to all Contact numbers, with the text (example): After sending SOS status, the Device will dial the number of Contact #1. If a 'busy' signal is received, the unit will automatically dial Contact #2, #3 and so on. NOTE: The GSM cannot distinguish between directly answering a call and automatic answering services. If the busy-call is forwarded and answered through the operator (f.e. "The person you have called is temporarily not available" etc.), the module will accept it as a successful connection.
Fall-Down/ Impact Alarm	The device can be preconfigured and activated with either of three G-Sensor triggers: Small vibration = Moving Notice, will be triggered when the device is picked up or otherwise moving Fall-Down Alarm, will be triggered when the device is dropped or the person who carries the device falls down Impact Alarm, will be triggered when a sudden velocity drop, similar to a car crash happens. After sending G-Sensor alarm, the Device will send the location information with alarm message to control base.
Moving Notice **(indicator: C1 receive one phone call)**	Send $VIB,x (x=0~9. 0=disable, 1=minimum sensitivity, 9=max sensitivity) When PT3 receive this command, the G-sensor will be activated, if the device is being moved, an alarm call will be dialed to contact #1, then hung up after 1 rings.
Geo-Fence Alarm	If the device has been configured with a set of restricted geographic

(indicator: Out Of Area)	areas (Geo-Fences), the following activities will be triggered when a Geo-Fence violation occurs: The device will send alarm package and GPS coordinates to the Control Base through GPRS (or SMS fallback). The Control Base software will find the street name and closest intersection from a map server and send an SMS text message to all authorized Contact numbers, including the text (example): “Peter is in Arlington., near intersection Fairfax Ramp; GEO Fence Violation !”
Maximum Speed Alarm **(indicator: Speeding)**	If the device has been configured with a maximum speed limit, the following activities will be triggered when the speed recorded through GPS exceeds this limit: The device will send alarm package and GPS coordinates to the Control Base through GPRS (or SMS for fallback). The Control Base software will find the street name and closest intersection from a map server and sends an SMS text message to all authorized Contact numbers, including the text (example): “Peter is in Highway 166, near intersection Gleebe; Speeding”
Battery Low Warning **(indicator: Battery Low)**	If the included battery pack in the device runs low on power, all 3 LED lights will flash in sequence, and the device will give an alarm sound for a period of time: In addition, the device will send alarm package and GPS coordinates to the Control Base.

PHONE CALL FUNCTION

Phone Call Features; Power On/Off: Placing and Accepting Phone Calls

Function/ Feature	Description
Place Phone Call	The Device can place phone calls to 3 predefined contact numbers. Select the contact phone number 1, 2 or 3 and press twice to place a

	phone call. To end a phone call, press either of the number buttons again.
Accept Phone Calls	The device can accept phone calls from any number. To accept a call, press any of the number buttons. To end a phone call, press either of the number buttons. NOTE: During phone calls, no commands for location requests or real time tracking can be processed at the same time.
NOTE: If no SIM card is applied, the GSM LED will remain on. You will not be able to operate the unit without SIM card and battery inserted.	

Additional device configurations and diagnostic features

Function/ Feature	Description
Automatic Answering (optional)	The PT3 can be configured to switch to automatic answering mode for incoming phone calls. When a call gets connected, the microphone sensitivity will switch to highest, while the speaker will be muted for monitoring features.
Speaker/ microphone levels	Volume levels and microphone gain can be adjusted through command.
Diagnostic commands	A set of diagnostic commands is available to interrogate firmware version, original initialization parameters, communication related and device configuration details and remaining battery voltage. In addition, online diagnostic over GPRS connection can be conducted to view GPS and GSM signal strength, NMEA output data and button controls.
OTA Device upgrading	Firmware can be upgraded via GPRS connection. Specific host IP and port can be addressed through upgraded command.