

Marine Asset Tracker

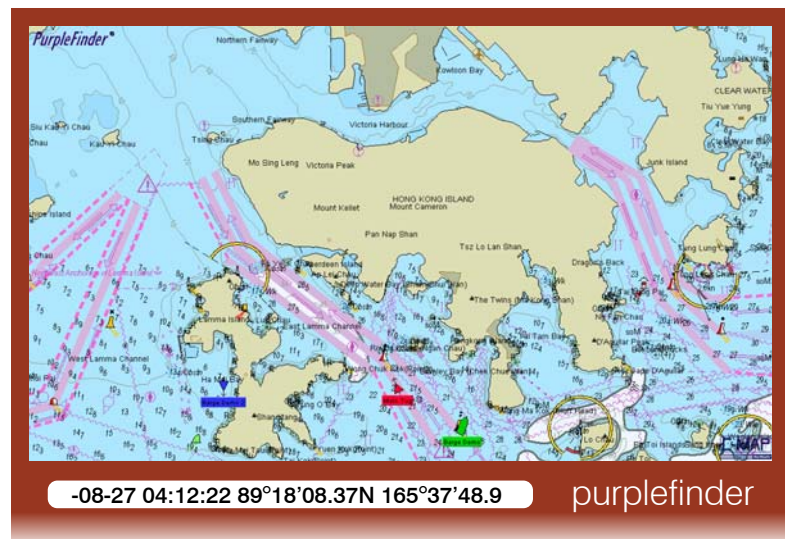
Pole Star's Marine Asset Tracker system (MAT) is comprised of reliable satellite tracking hardware linked to a powerful web-based service. It provides an effective way of automatically tracking powered and unpowered marine assets in real time.

MAT enables you to track and monitor your assets through adverse weather and sea conditions and through high risk areas which may be affecting your trade routes.

A flexible “pay as you go” service, MAT is designed primarily for use by tug and barge, support vessel and inshore operators.

Key features

- Variable position reporting frequency, from once a day to every 10 minutes
- Poll a vessel to receive an immediate position report
- View fleet on C-Map™ charts with zoom & pan functionality
- View Fleet List for latest data on entire fleet
- Weather forecasting and storm, cyclone, hurricane information
- Set your own geo-zones and receive notifications as assets enter or leave
- Receive position reports and geo-zone warnings by email and SMS
- Choice of hardware for powered and unpowered vessels



Hardware

Pole Star's MAT hardware options support different operational requirements.

For powered vessels:

- MAT1 – satellite transceiver for assets with 24v power supply.

For unpowered vessels:

- MAT2 - satellite transceiver with internal battery pack lasts 7 days before needing a recharge. Battery chargers, additional power packs and solar panels are available to extend the voyage time.

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Charges

MAT is paid for by a credit system that allows you to budget while providing flexibility in use. Activities that incur a cost are charged in credits which you purchase in advance. The system provides an online report which enables you to control your costs and you will receive a warning email to prompt you to order more credits when you need them.

Your usage

Credit charge

Receive a position report	1
Request a position report (poll)	5
Set reporting interval	8
Receive a position report / zone notification by SMS	3
MAT2 daily battery report	1
Daily service charge	3

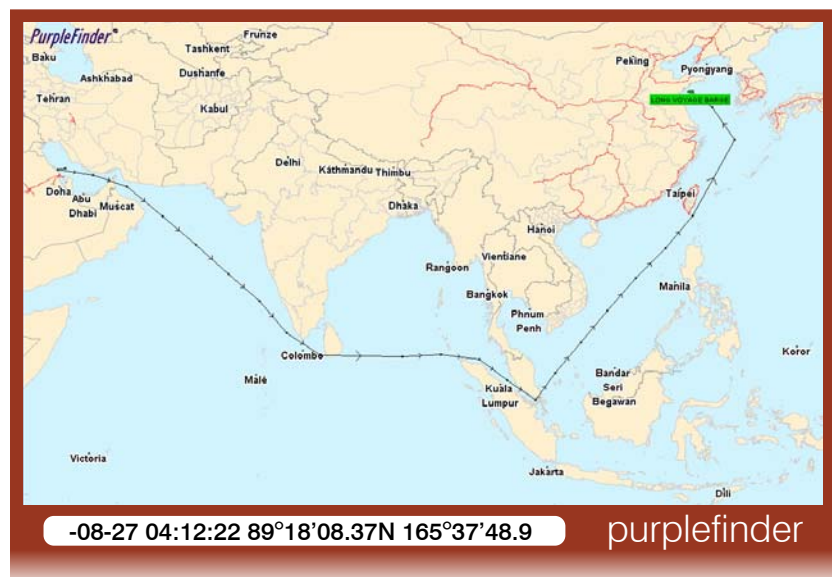
- There is a one-off fee for registering a transceiver on the Pole Star MAT system. This is not charged again, unless you run out of credits and have to re-register the transceiver.
- The daily service charge is incurred from the day the transceiver is registered on the MAT system.
- Credits can be purchased in packs of 1000, 2000 and 3000. (Typical use is 4 position reports per day which would cost the user 210 - 240 credits per month.)

Examples of MAT usage and flexibility

Routine use

MAT1 hardware is ideal for tracking longer voyages when fitted to powered vessels. In the example below, the voyage took 5 weeks.

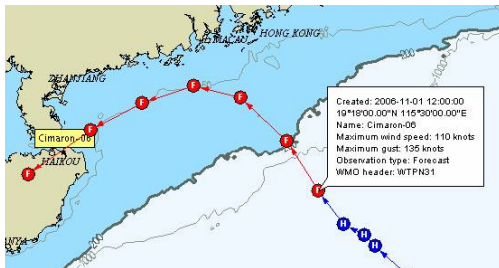
If the tracked asset is unpowered, the battery powered MAT2 hardware should be used. Additional battery packs and/or solar panels can extend the voyage duration to many weeks.



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Monitoring weather conditions



Cyclone: historical (H) and forecast (F)

The MAT weather information shows a cyclone very close to the planned route of the barge. You set the reporting interval to every 30 minutes in order to monitor the voyage. After 10 hours, when the barge is out of the danger area, you set the reporting interval back to once every 6 hours. The charge for monitoring this incident is: 20 credits for received position reports, 16 credits for twice using the Set reporting interval command, making 36 credits in total.

Requesting a position report (poll)

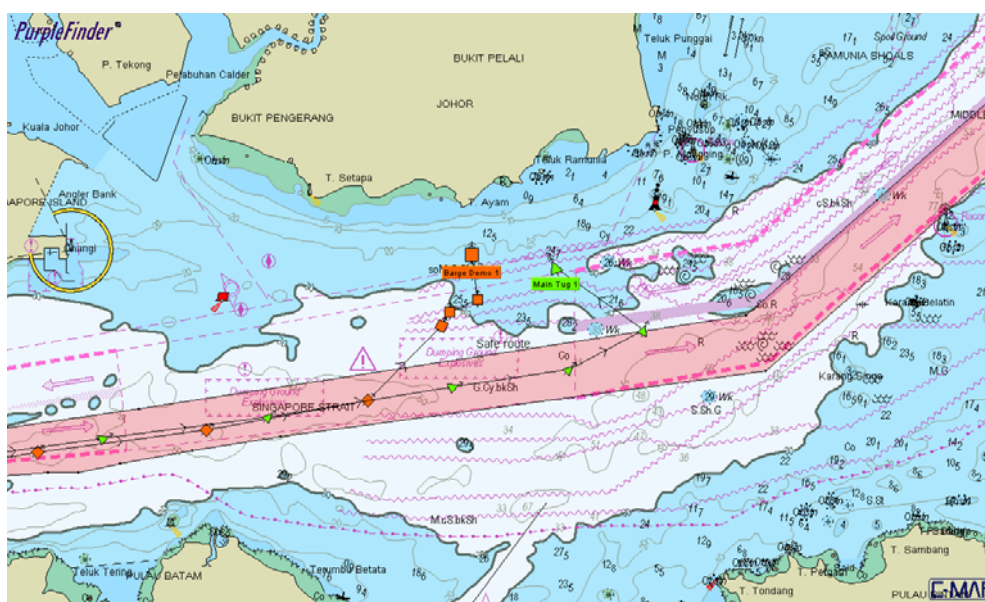
The tug and barge are running late for their scheduled arrival at the next port of call and you need to arrange another berth for the barge to discharge its cargo. In order to update the ETA, you need an immediate position report so you Request a position report (poll) from the barge. The charge for this is 5 credits plus 1 credit for the received position report making 6 in total.

Using a geo-zone in an emergency

You have set up a geo-zone which defines a safe route for your barge (see chart below). You have programmed the MAT system to alert you by SMS, should a position report be transmitted when the vessel is outside this safe area. As the barge leaves port, you set the reporting interval to every 10 minutes, so you will have almost immediate notification of the vessel leaving the zone.

In a meeting, you receive notification on your mobile phone that the barge is outside the geo-zone. At any PC, you login to the Pole Star MAT service to find out the current location of the barge, as shown on the chart below. (The barge icon is orange and the tug icon is green.)

The master informs you that the tow line has broken in bad weather and the barge is drifting. You monitor the progress of the recovery operation on screen. The charge for monitoring this incident is: 3 credits for receiving a zone notification by SMS and 1 credit for each position report received.



The "safe route" geo-zone is shown in pink

Marine Asset Tracker (MAT) Feature Summary

Pole Star's MAT system is very flexible. Different hardware combinations allow you to design the system you need. The use of credits allows you to manage your assets while controlling your costs.

FEATURE	DESCRIPTION	
PRICING		
Registration	One-off fee for registering a transceiver on the MAT system	✓
Pay as you go	Credits system allows for flexible usage	✓
HARDWARE OPTIONS		
MAT1	Kit includes satellite transceiver, bracket and cable (requires 24v power)	✓
MAT2	Transceiver unit with internal battery pack for use on unpowered vessel	✓
MAT2 external power pack	Battery pack to extend time between recharges by 7 days	✓
MAT2 power	Battery charger for charging MAT2 unit and external battery packs (required for MAT2 and MAT2 external battery pack warranties)	✓
MAT2 solar panels	External solar panel (3 sizes) with cable connection to MAT2 or MAT2 external battery pack	✓
MAT2 fitting clamp/bracket	A permanent fixture to the vessel to allow a MAT2 and external battery pack to be easily installed and removed	✓
CHARTS		
Fleet List	Latest position report data and map for each vessel	✓
Interactive Fleet Map	Shows the position of fleet on C-Map™ charts with zoom and pan	✓
Weather information	10 day meteorological forecast and cyclone information	✓
Geo-zones	Set and display your own zones	✓
POSITION REPORTING		
Automatic Position Report (APR)	A position report sent automatically at a fixed interval set by the user	✓
Set reporting interval	Send a command to change the interval between automatic position reports	✓
Request a position report (poll)	Send a command to request an immediate position report	✓
Overdue position reports	Receive a warning if a vessel has not reported	✓
MAT2 daily battery report	Days life remaining and the rate at which the batteries are discharging	✓
Position report history	View and download a log of all position reports	✓
Enter position	Manually enter position reports	✓
TOOLS		
Postings	Manually enter extra information to be displayed in a position report	✓
Email notifications	Send position reports to an unlimited number of email addresses	✓
SMS notifications	Send position reports to up to 3 phone numbers by SMS	✓
Geo-zone notifications	Alert when vessel reports a position in or out of a user defined zone	✓
USERS		
Master user	A username and password with full control of the service	✓
Standard users	Ability to create up to 10 Standard logins to access specific parts of the fleet eg by superintendent or type of vessel	✓



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