Wave and current service delivery to commercial shipping

Roger Proctor

Tidetech Commercial Marine

www.tidetechmarinedata.com

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About Tidetech

Small SME (~8 FTE) based, mostly, in Hobart

Specialists in delivery of metocean data in customised services

- Data scavengers, we look worldwide for 3rd party datasets of value
- Model developers, in-house capabilities for structured and unstructured ocean models
- Data synthesisers, we blend and homogenise data collections for seamless access

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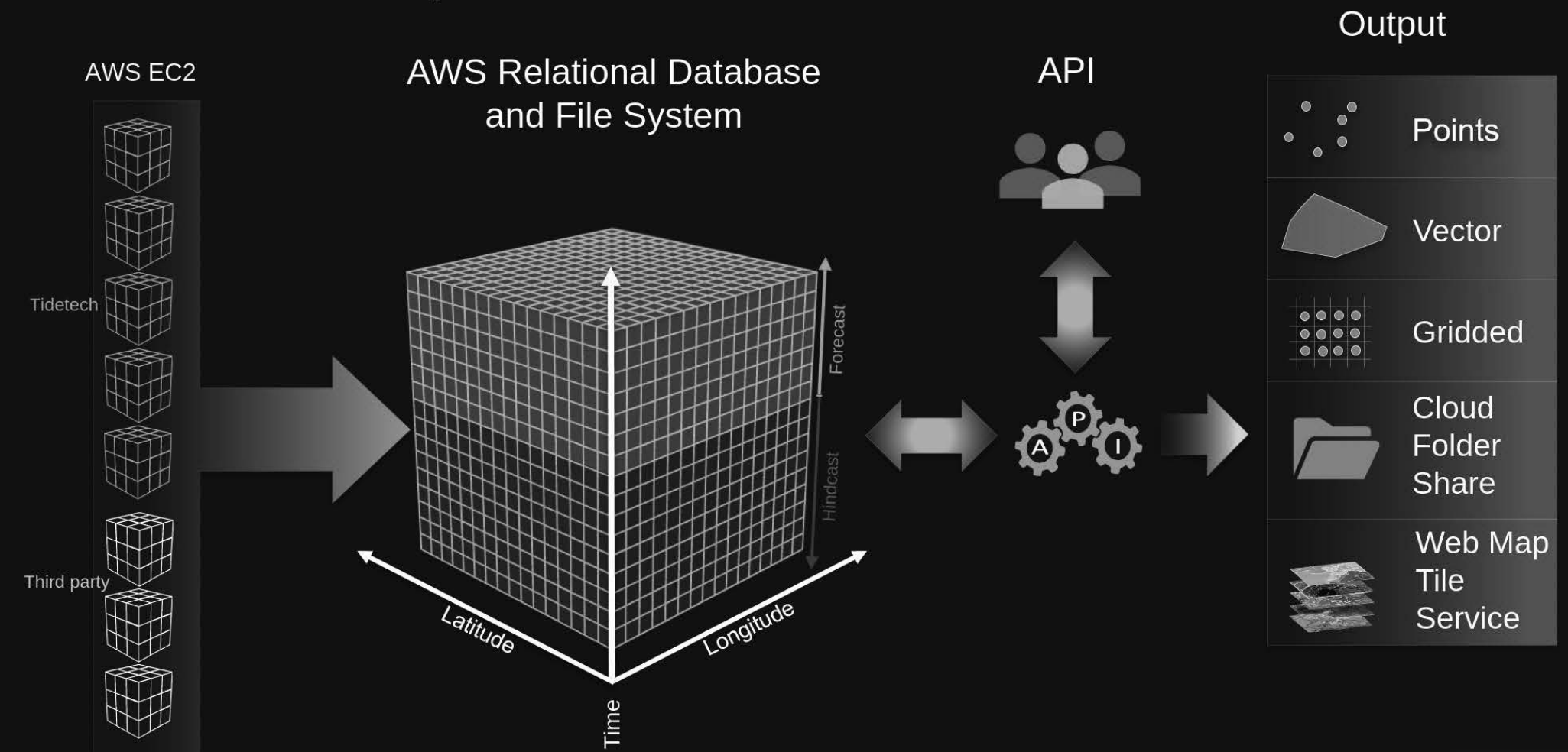
Tidetech Systems



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Customers

Shipping		Competitive Sailing	Recreational
Wärstsilä* ABB* Napa Class NK* RINA CUBE* Danaos Shipping* VISWA Group* Euronav* Austal* Deep Sea Technologies Navidium DMCC Delta International	Enamor Force Technology Lemisoller OneOcean QTAGG DTN WNI We4Sea DNV*	34th and 36th Americas Cups Olympic Sailing Teams The Ocean Race Vendee Globe Sydney to Hobart Race Fastnet Race Expedition Software Adrena Software Time Zero Software Evolution Software Multiple individual subscribers to our yacht racing packages	Johnson Outdoors* Raymarine* Weathertrack App Multiple subscribers to our Tidemap web viewer – kayakers, fishers, stand up paddleboarders, swimmers, small powerboats and sailing dinghies
Defence	**Pollution Control**	**Offshore Oil and Gas**	**Marine Asset Risk**
TPGroup*	Riskaware	RINA* Royston	Polestar Global

*listed companies

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How does commercial shipping use waves and currents?

- Route planning – either across oceans or in coastal seas
- Route optimisation – safety at sea, on-time arrival, fuel usage efficiency
- Timetable planning – knowledge of tides enables advanced timetabling

- Operational – i.e. forecasts for 7-15 days
- Strategic – e.g. 5 years hindcast analysis of ship performance
- Future operations – e.g. next year’s ferry timetable utilising tidal information

What waves and current data does shipping use?

Global and/or regional model datasets

Waves:

- Significant wave height, primary wave period and mean wave direction
- Wind waves – height, period, direction
- Swell waves - 1st component height, period, direction
- Primary wavelength, from the deep water dispersion relation
- 30 minute to hourly intervals, 2 – 10 km resolution

Currents:

- Ocean surface currents
- Tidal currents – coupled to the ocean currents
- Regional tidal currents, or tide plus surge currents
- Occasional requests for bottom currents or vertical current profiles
- 20 minute to hourly intervals, 100m – 10km resolution

How do they get the data?

Via calls to our API, e.g. json request options for

- Points, e.g. along a route, so varying in space and time
- Polygons, e.g. to give an uncertainty estimate along a route
- Entire forecasts, for ingest into ECDIS or web service display
- CSV, netcdf, grib options

Bucket sharing on AWS

FTP, or (old style) email attachments

Some examples of current and wave use

Route optimisation

ECDIS service

Live cattle transport

High resolution ship routes in Singapore Strait

Ferry operations

If shipping were a country, it would be the world's sixth-biggest greenhouse gas emitter

Route optimisation to reduce fuel consumption is a win-win

This optimised journey, taking the northern route, gives 11% reduction in fuel, saving ~$40,000.

New pollution regulations make for increased need for optimisation

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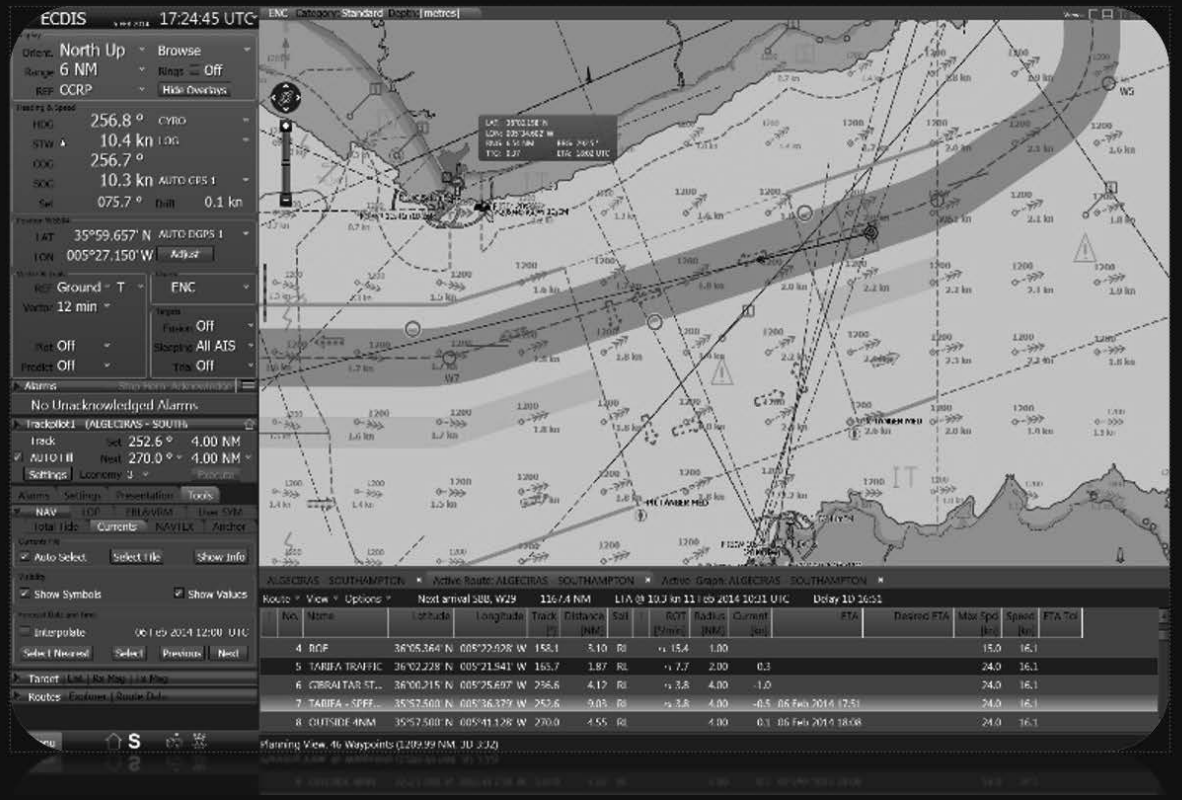
Integration into ECDIS

Electronic chart display and information system

Showing inclusion of Tidetech currents

Royal Princess



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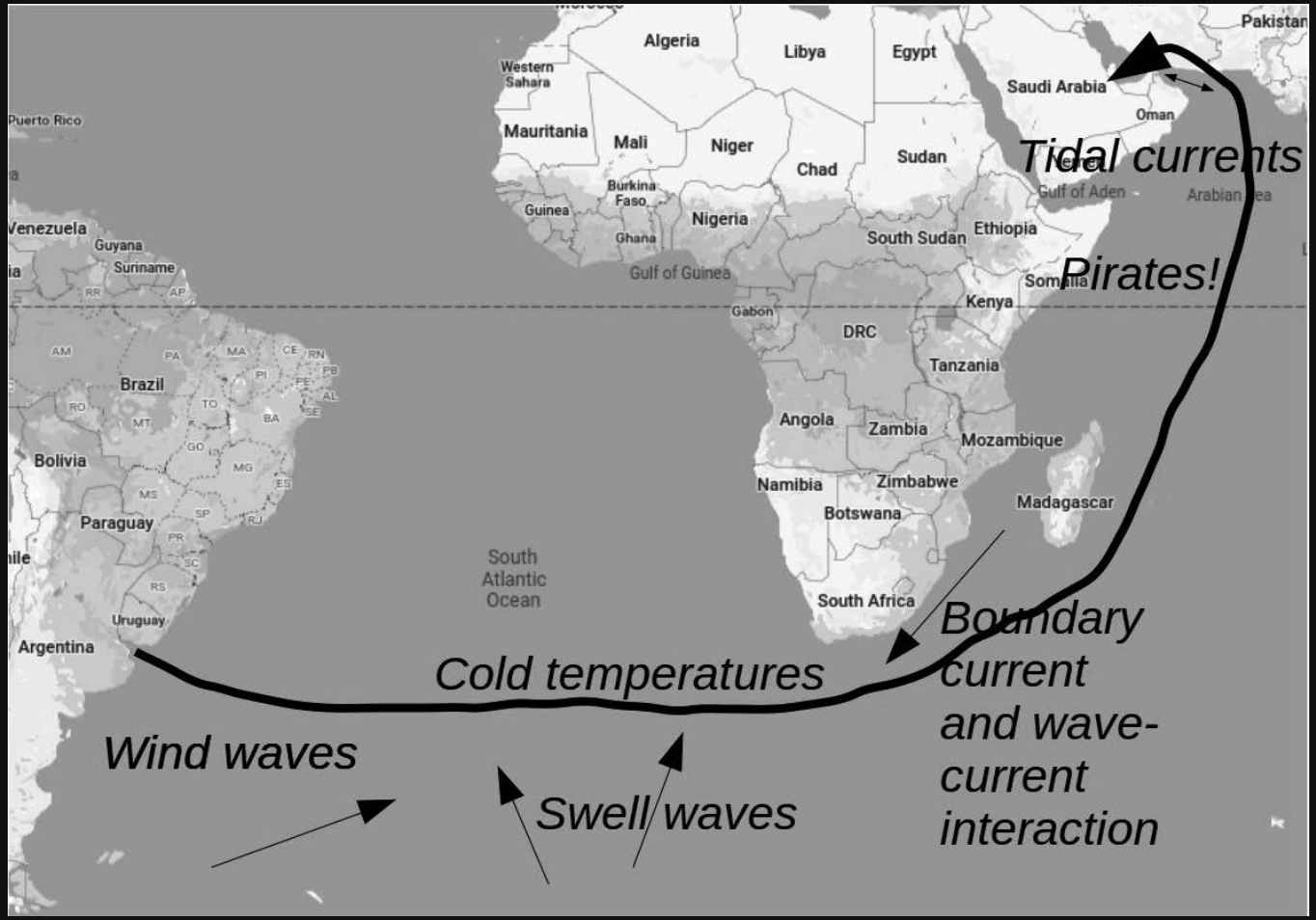
Live cattle transport
– health of cattle affected by waves, currents and air temperatures



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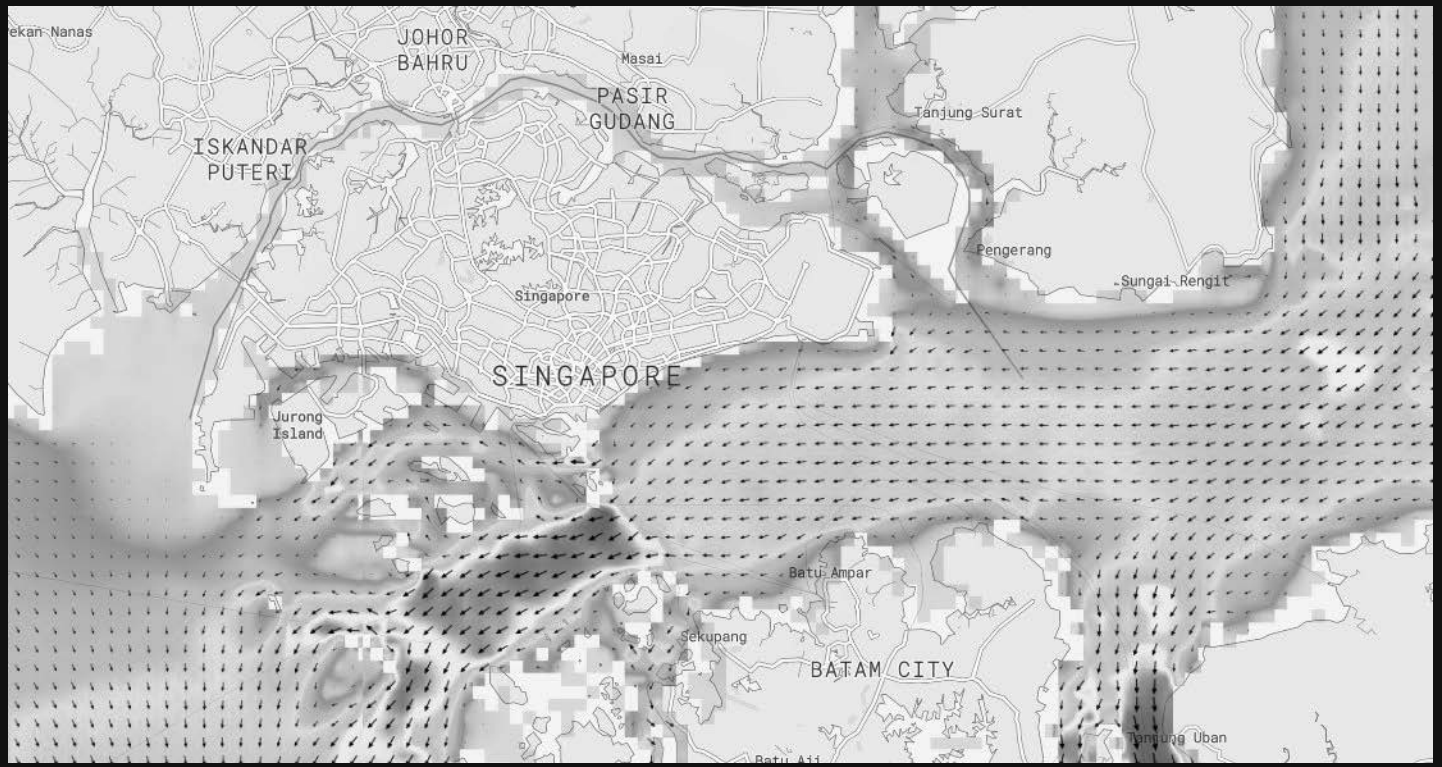
High resolution ship routes in Singapore Strait



High resolution – 100m – represent shipping lanes
additonal seasonal monsoonal ocean impact

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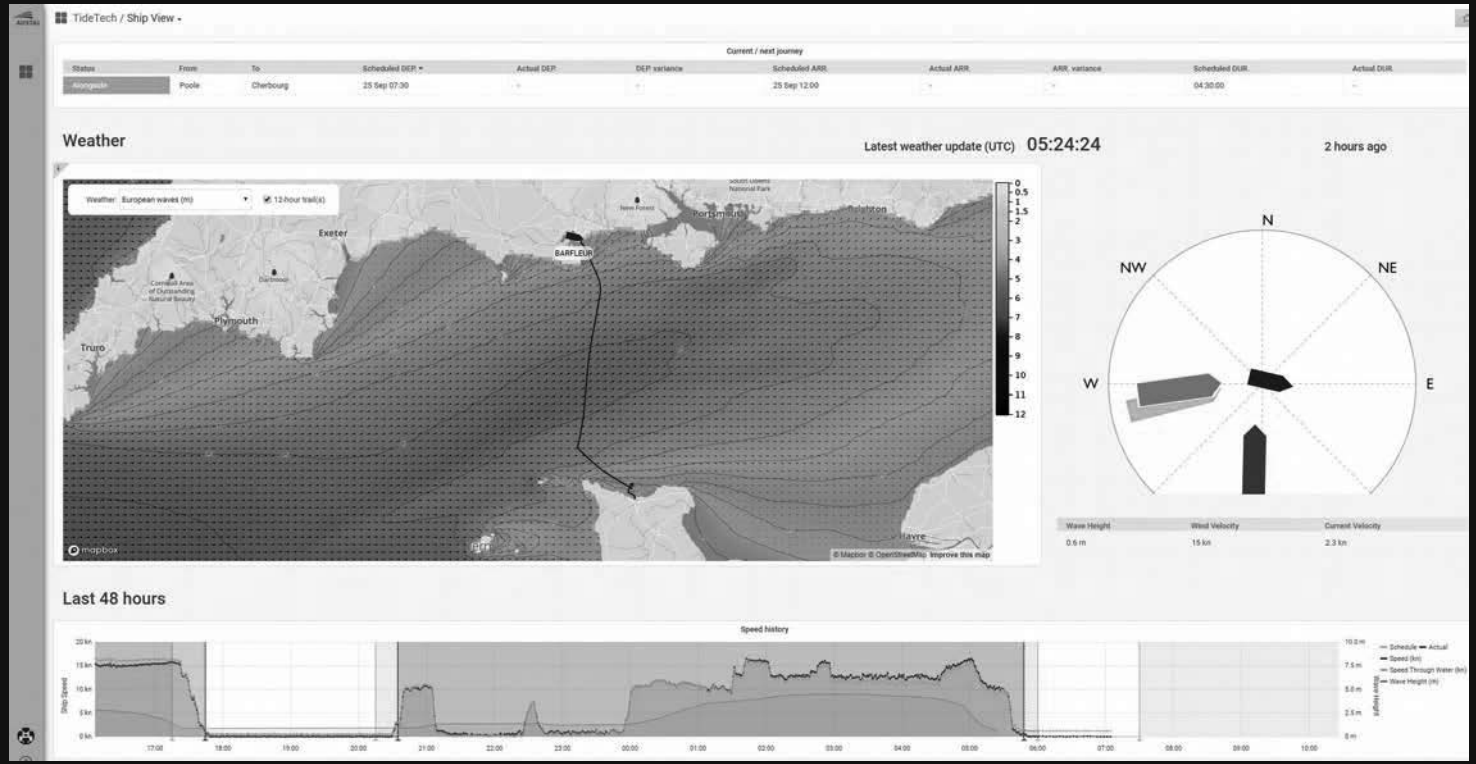
Austal MarineLink

– showing Brittany Ferry and journey modification because of large waves



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Contact details:

www.tidetechmarinedata.com

support@tidetech.org

tel: +61 4 3763 3748

roger.proctor@tidetech.org

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