ORACLE

Data Management Strategy

How our data management strategy works for Sail GP

Mike Connaughton
Head of Analytics & Data Innovation
EMEA Technology Solution Specialists
8th July 2021

High Performance Data Analytics

Sail GP

- World's fastest sailing yachts
- 8 Teams, identical boats, all teams see all data
- Wind power + sea power + solar power
- Sailing athletes + Data Science athletes


SAILGP

Challenges - Data

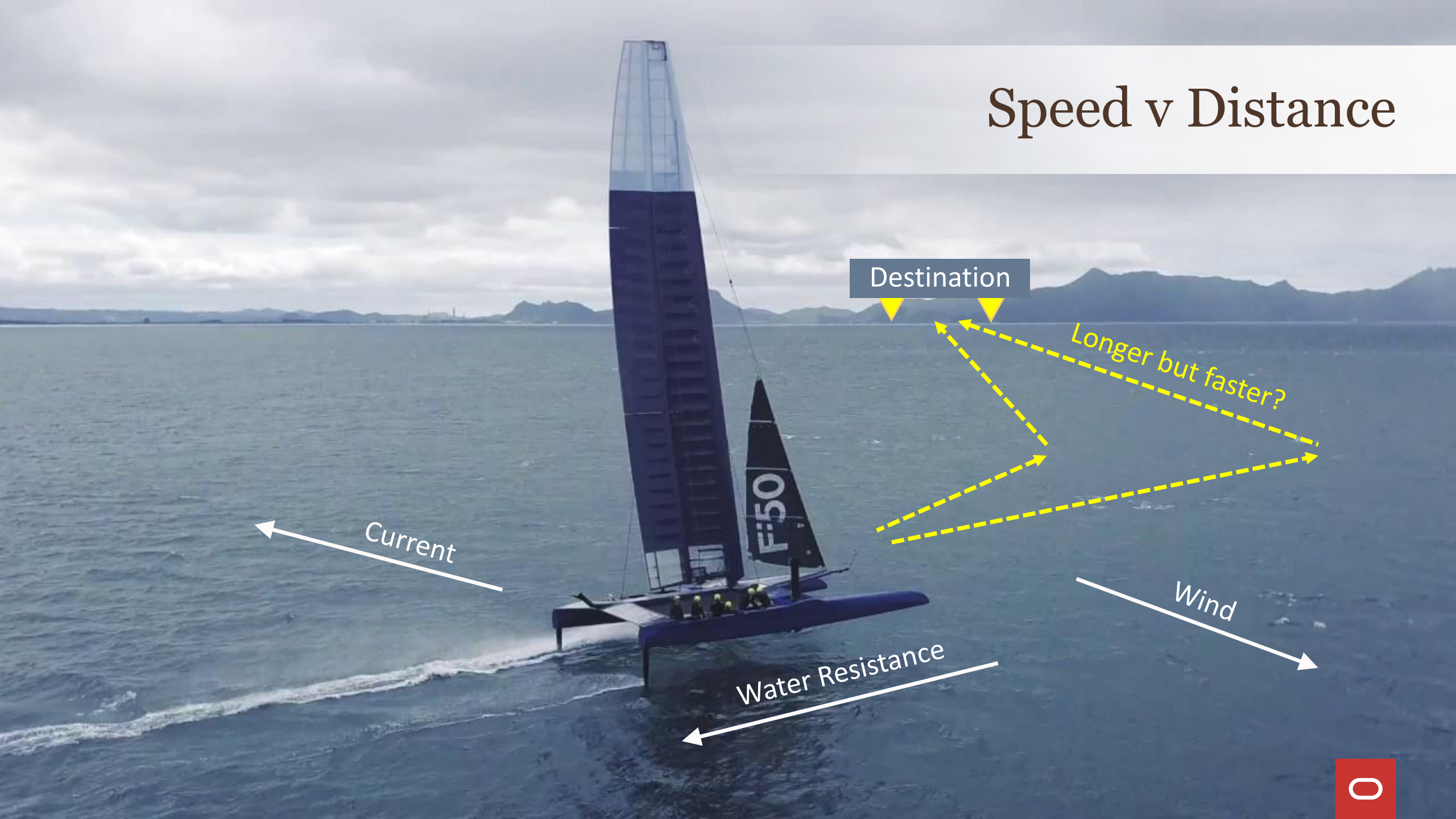
1200 data points from 900 sensors on 8 boats

Challenges – User Experience

- Simple Visuals
  - For sailing novices
  - Facts and figures, results, social media, conversational interface
- Advanced Analytics
  - For Sail GP data scientists
  - Anomalies and trends, predictions, optimising performance

Sailing Basics

Speed v Distance



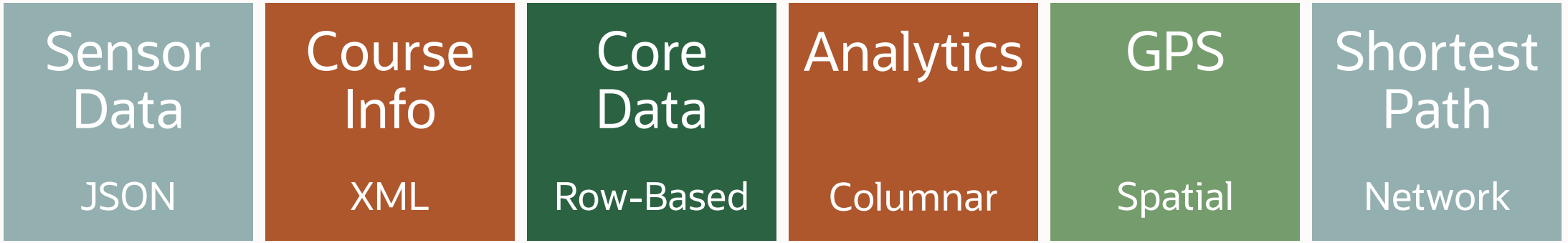
Using the Foils

Team GB breaks 50 knots

Team GB breaks boat

Data Ingestion and Preparation

Data Requirements

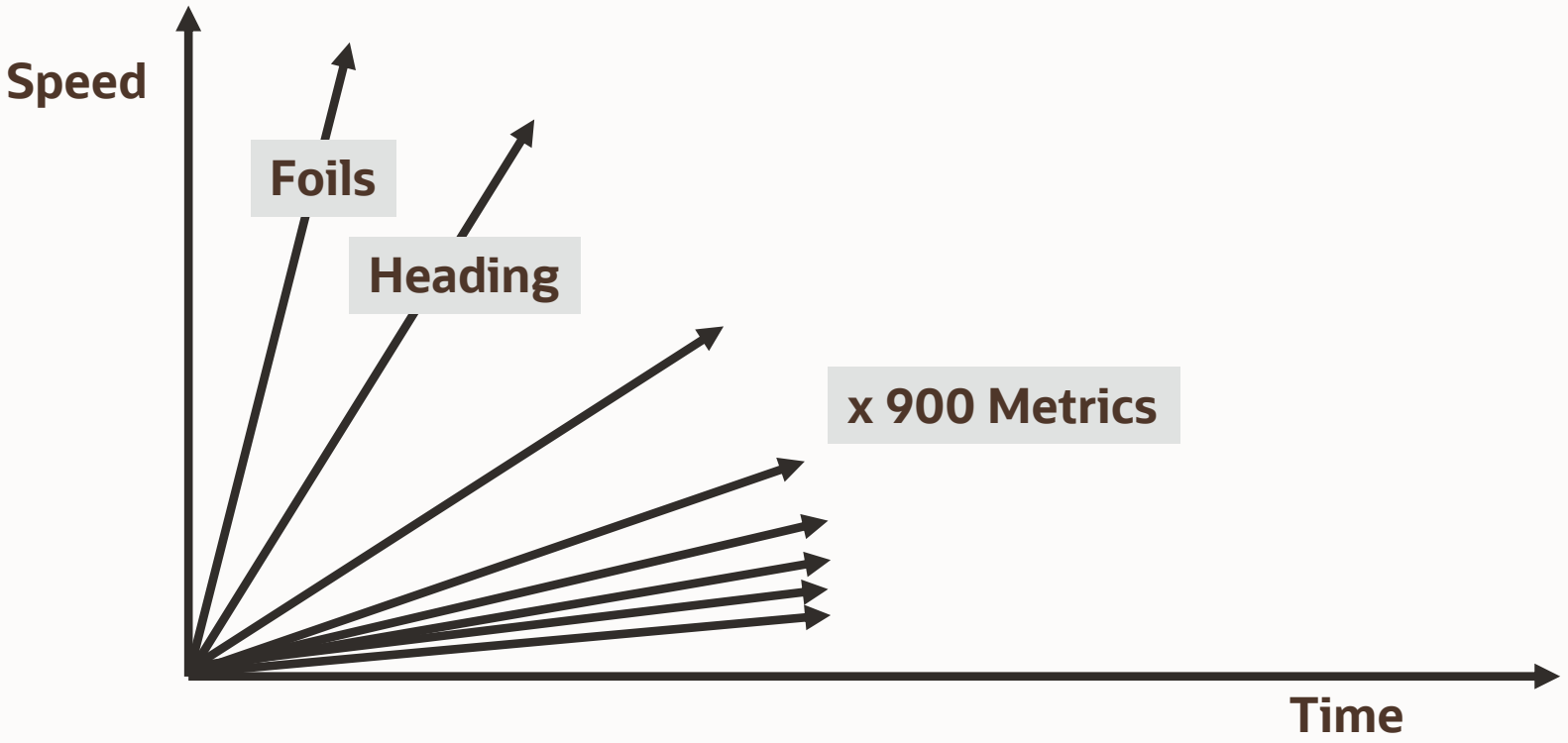


Analytics

What happened to GBR ?

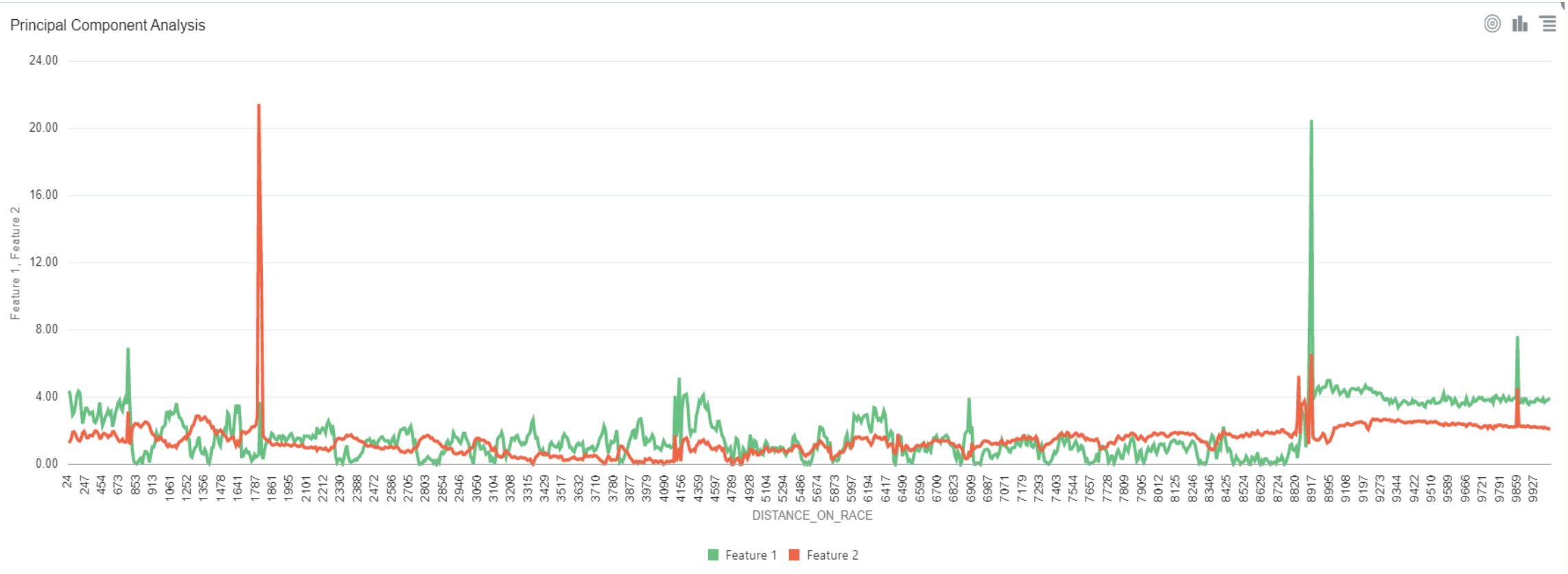
What happened to GBR ?

Each race generates 900 data points per second for each boat



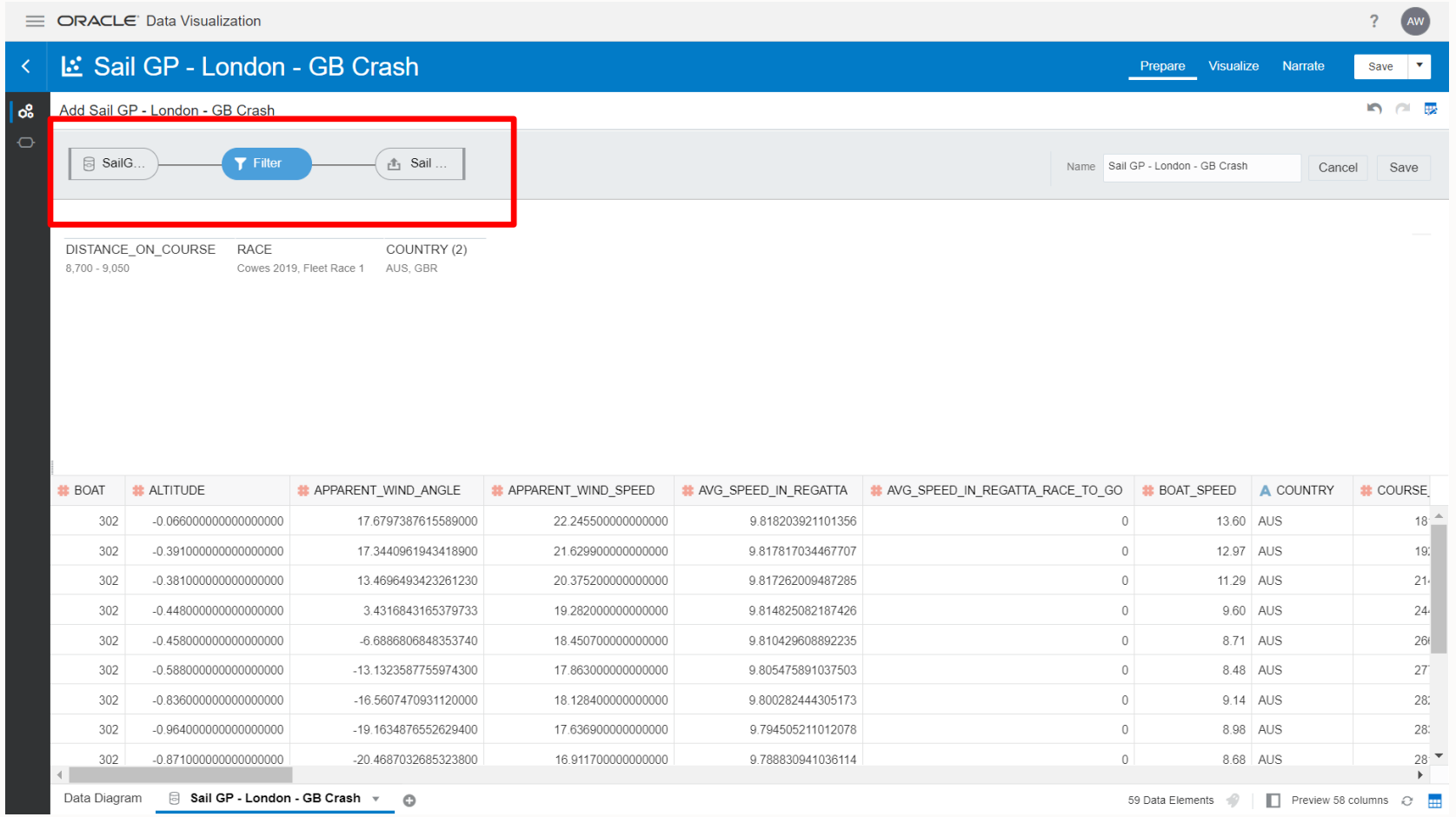
What happened to GBR ?

Principal Component Analysis filters 900 dimensions down to 2



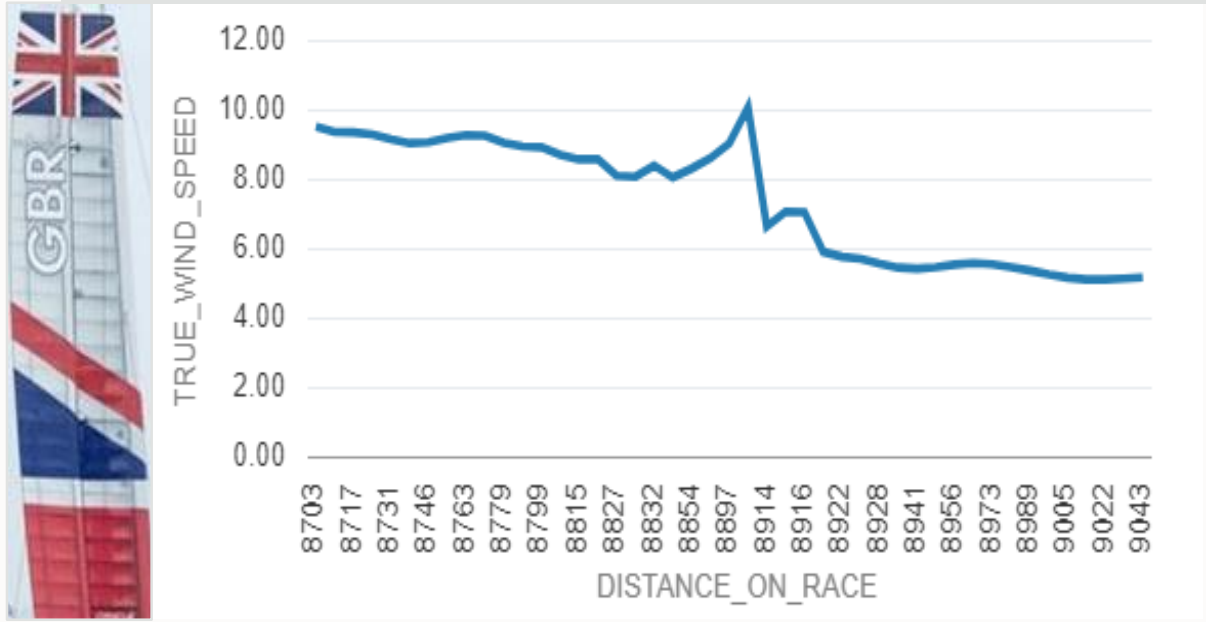
What happened to GBR ?

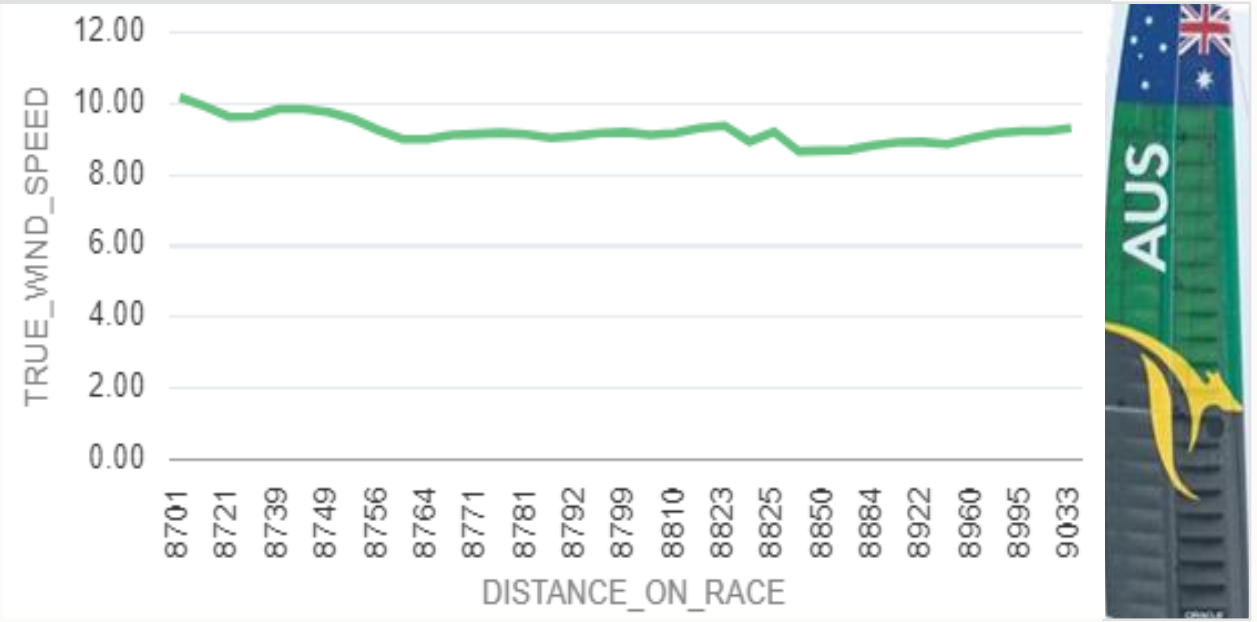
Filter all visuals to just data related to GBR incident



What happened to GBR ?

Wind Data





Predictions and Machine Learning

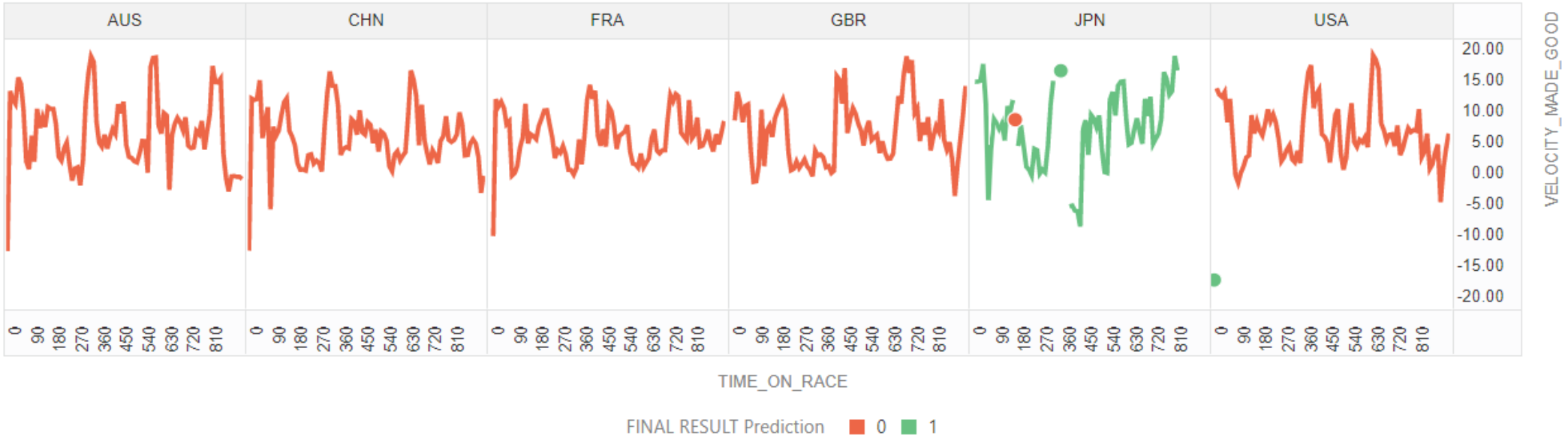
Predict race winner in real time - Statistics

Current race position + Average speed for rest of course

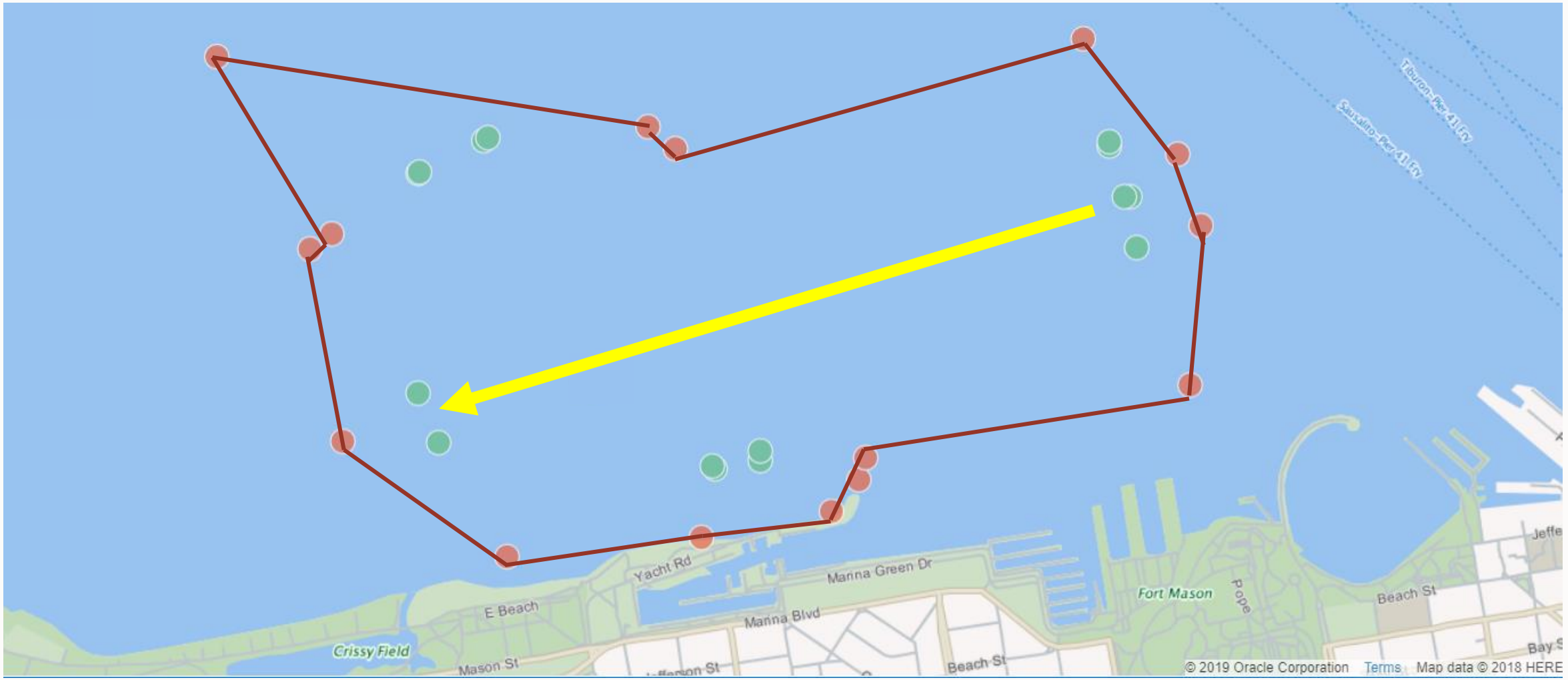
Predict race winner in real time – Neural Network

AUS	CHN	FRA	GBR	JPN	USA
Final Finish Position per Country	Final Finish Position per Country	Final Finish Position per Country	Final Finish Position per Country	Final Finish Position per Country	Final Finish Position per Country
2	5	6	3	1	4

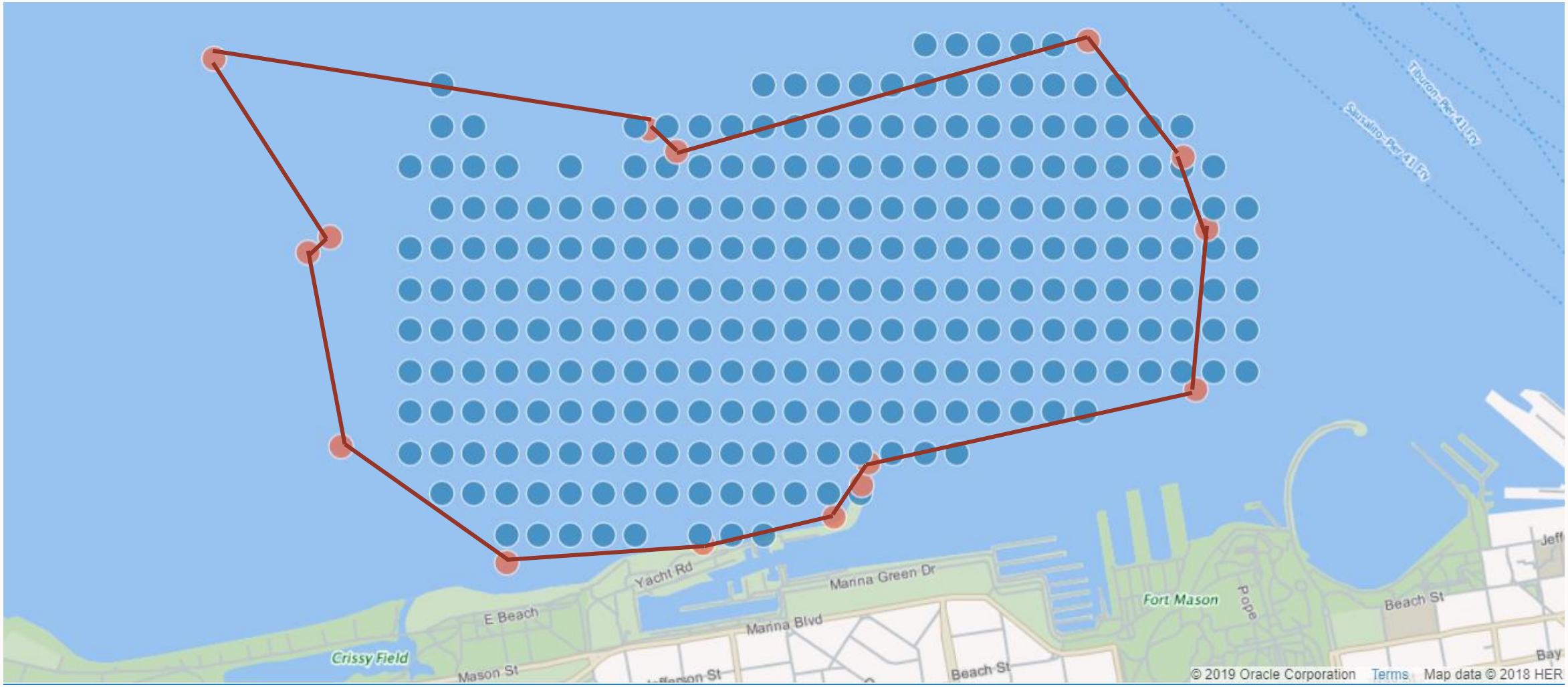
Accuracy of Neural Network Model



Predict the optimal course - “The Ghost Boat”

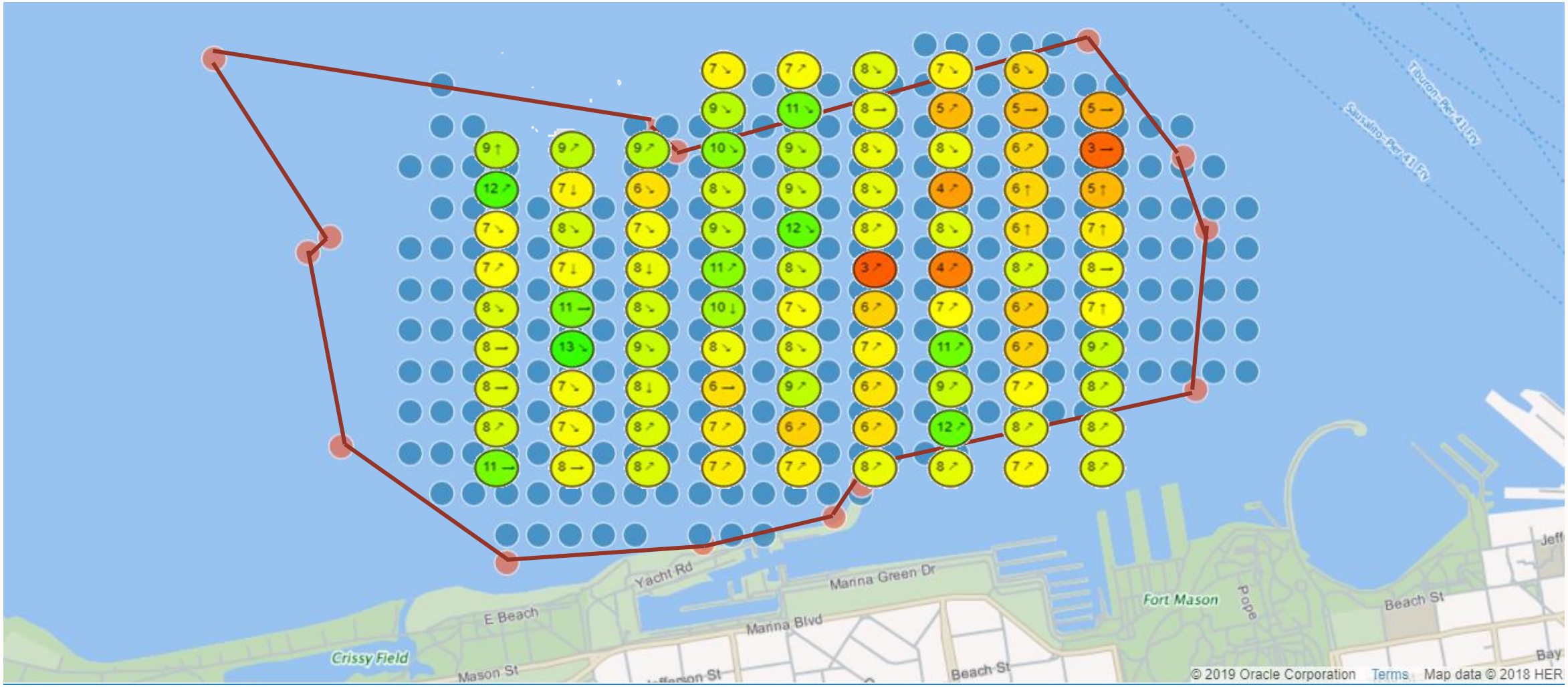


Divide the course into a Spatial Grid



Overlay Wind Speed + Direction

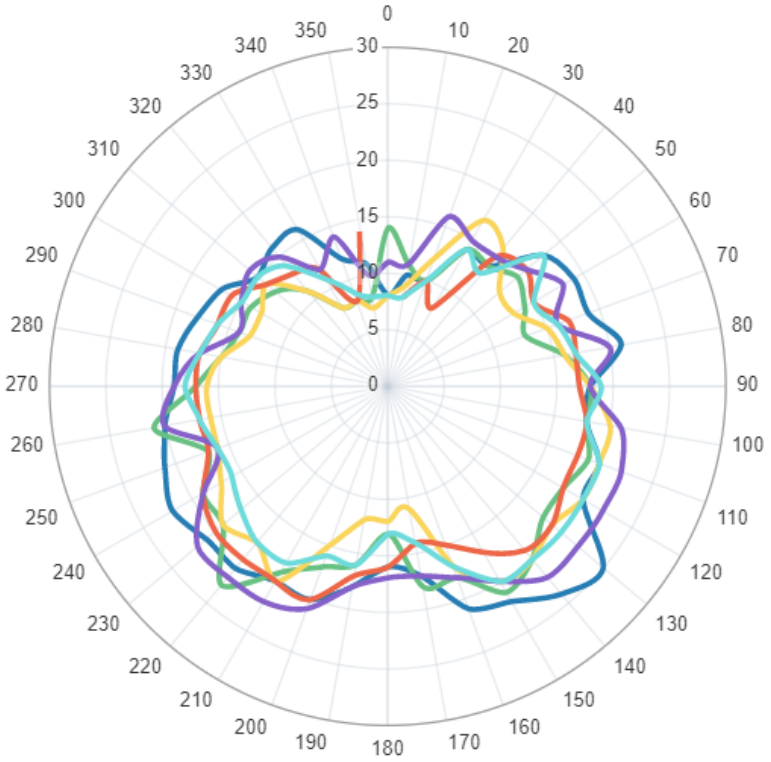
Using Data from all Boats



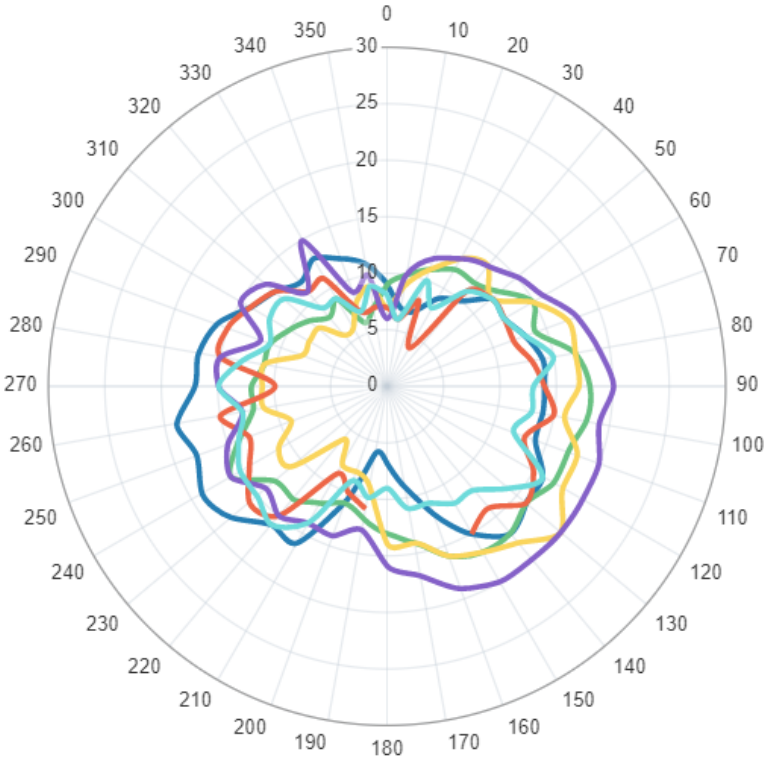
Predict Best Possible Boat Speed

For every wind speed, wind angle and direction using data from all boats

High Wind



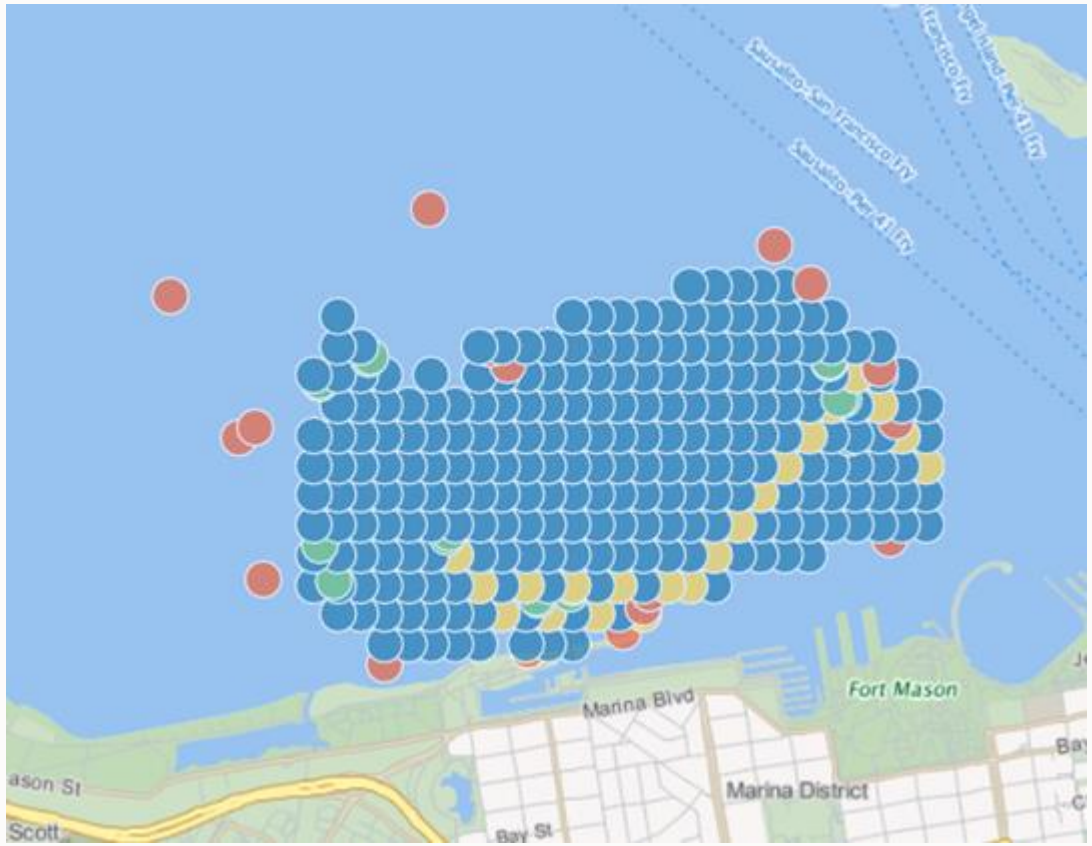
Low Wind



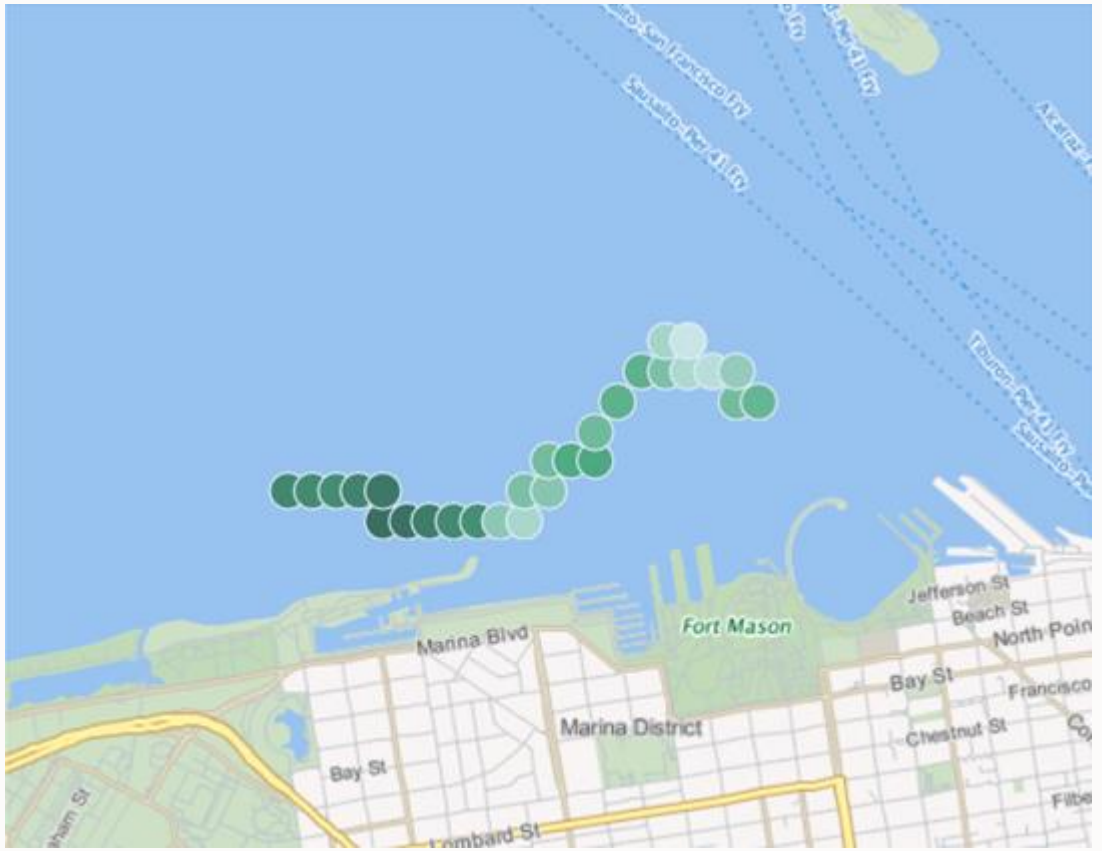
COUNTRY AUS CHN FRA GBR JPN USA

Compare with actual course taken

Optimal Course

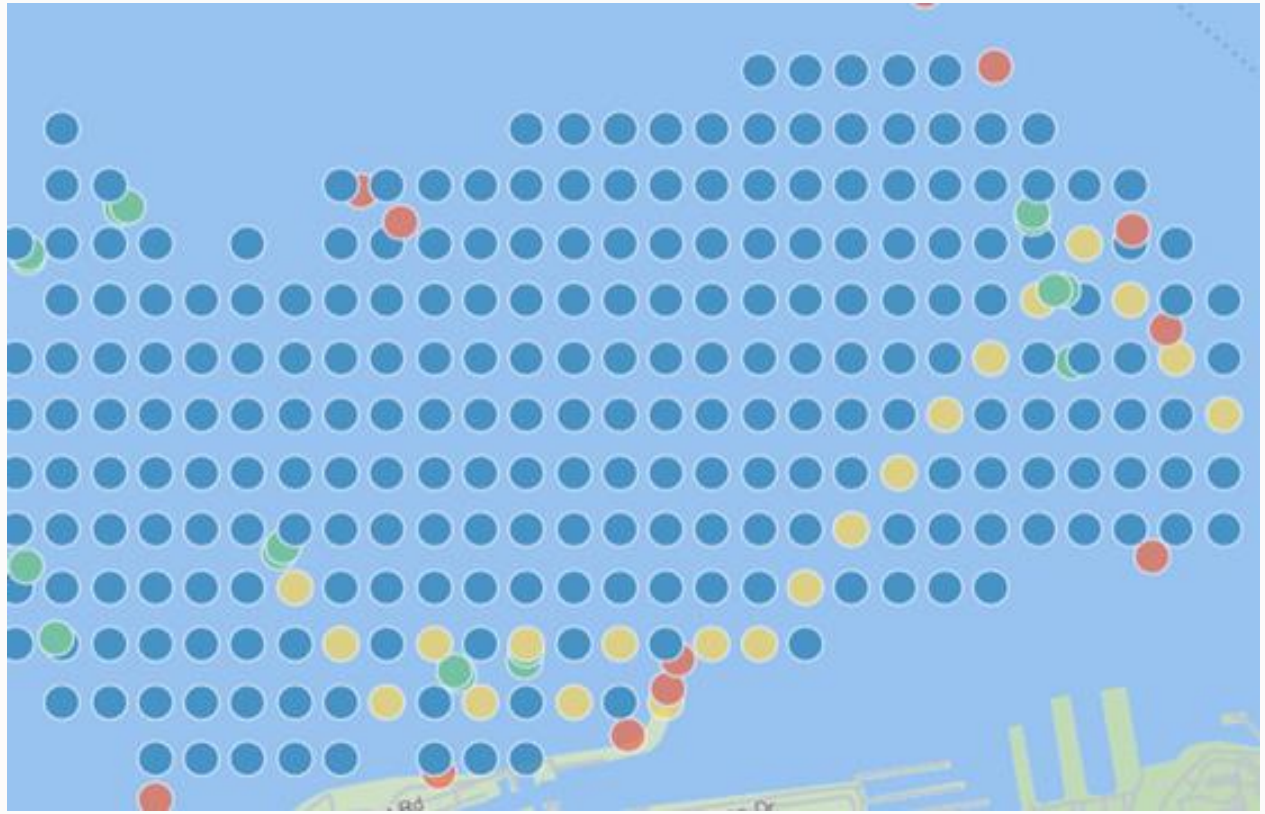


Actual Course

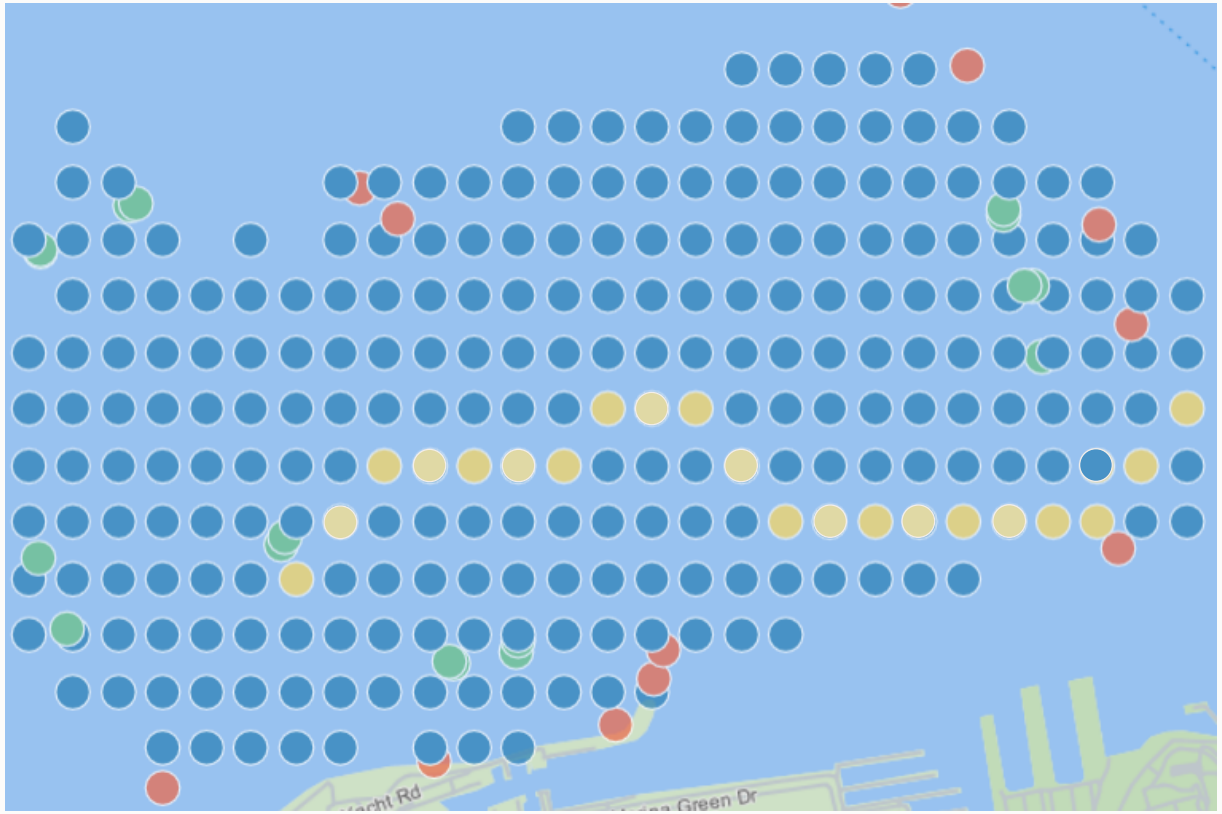


Ghost Boat model

Version 1.0

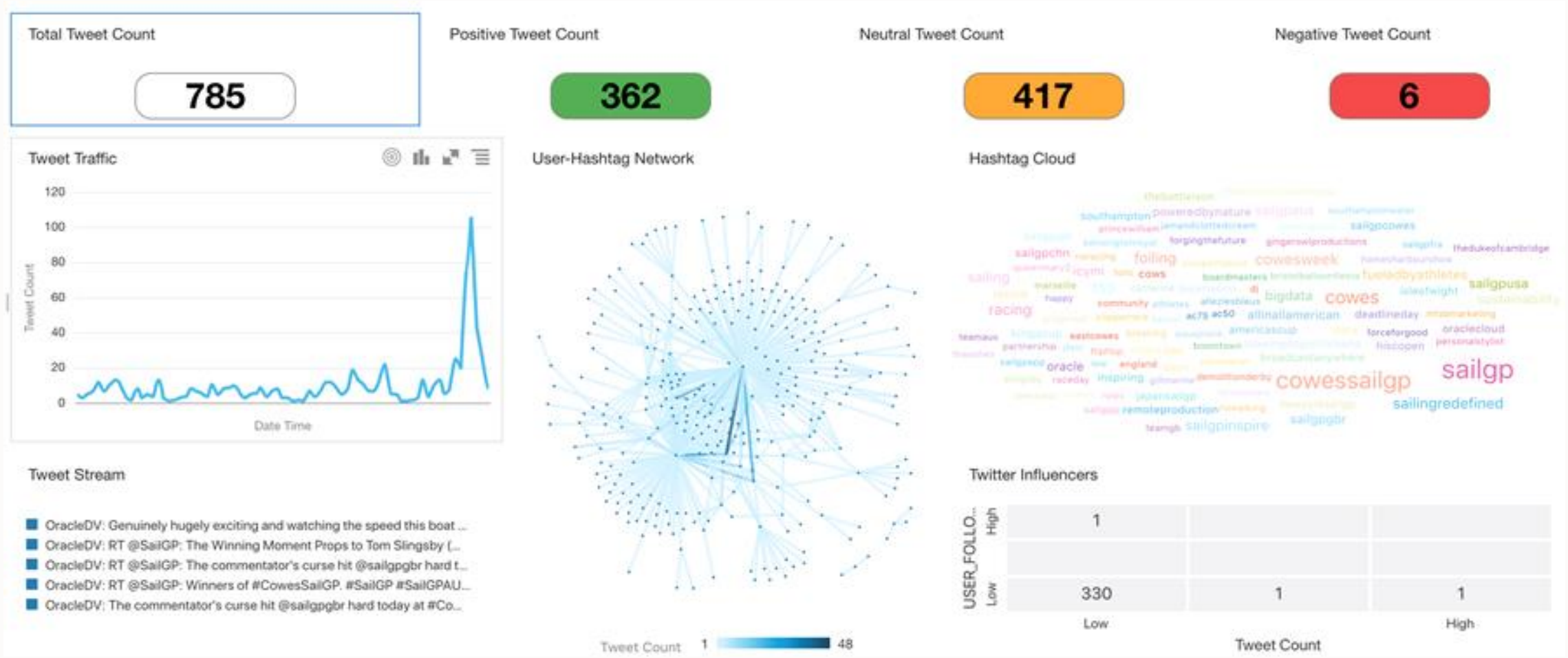


Version 2.0



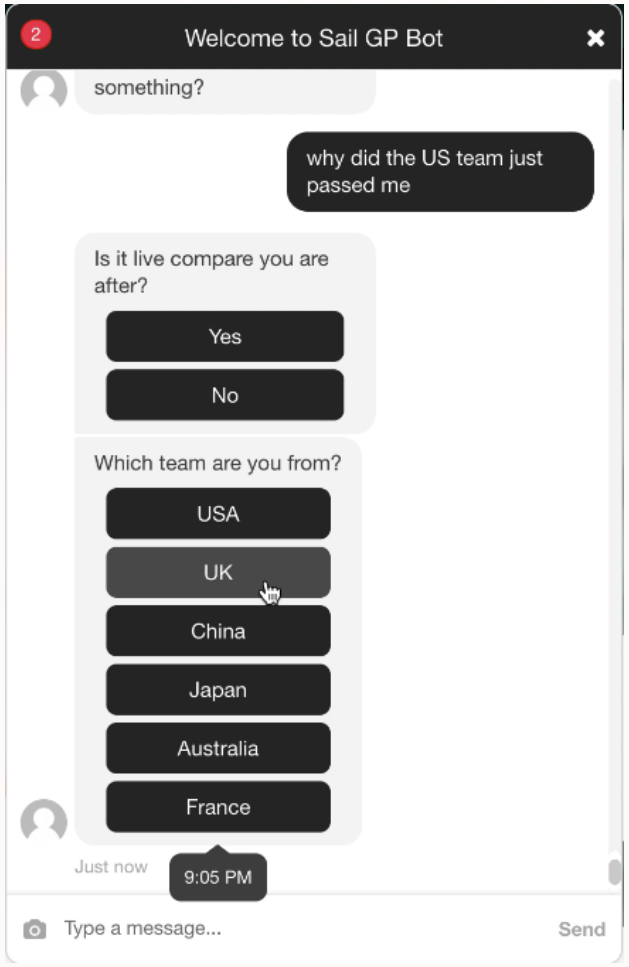
Social Interactions

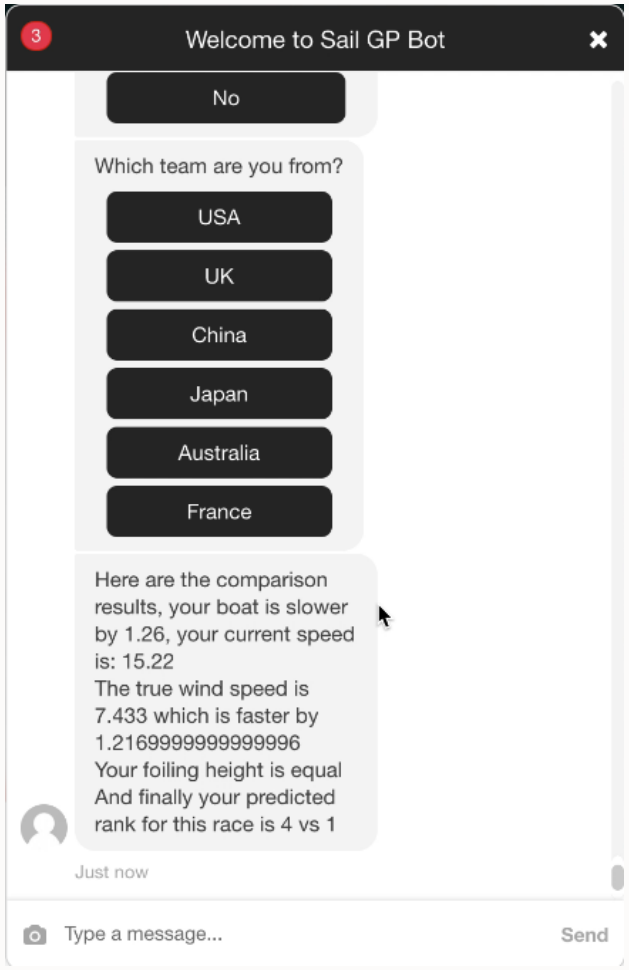
Social Media Analysis



Digital Assistant V2.0 – “Talk to the Boat”

Ask the Boat for Performance Stats, Competitive Info etc

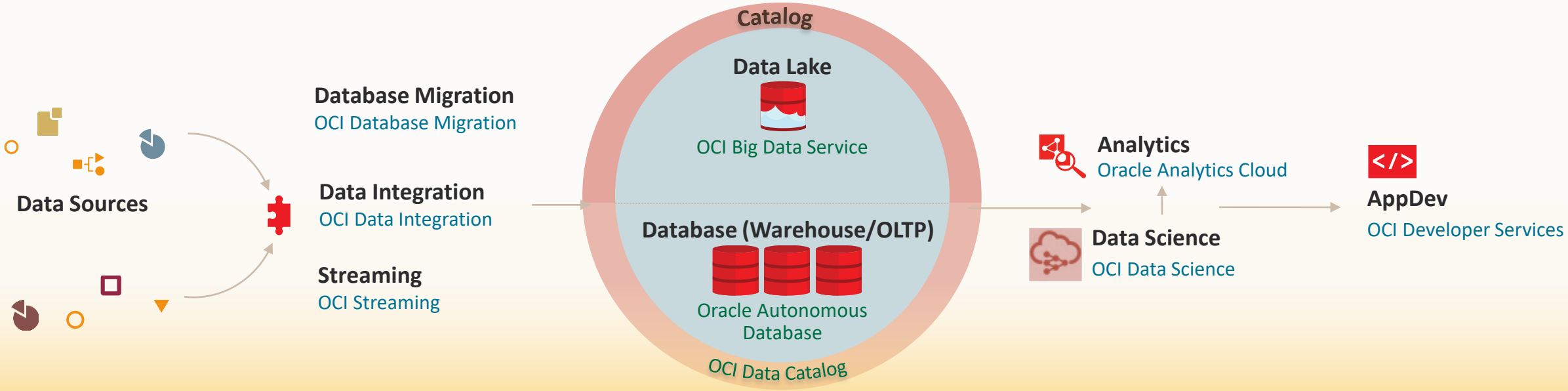




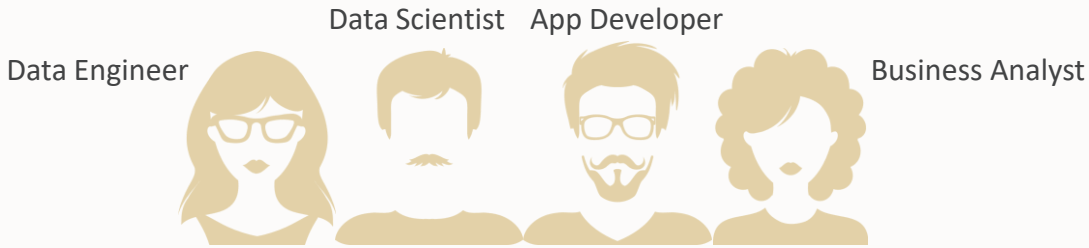
SAILGP

Oracle's Data Analytics Platform

End-to-end Platform for Data Ingestion, Data Management, Predictive Analytics & Apps



Oracle Cloud Infrastructure: Built for Artificial Intelligence and High Performance Computing Workloads



Some options for how we can help…

- Support Rewards
- Free Case 4 Innovation Prototype creation
- Free implementation with cloud lift services
- Free Hands on Test Drives – Analytics, Autonomous DB, AI/ML/Data Science
- Free Data Management maturity assessment


ORACLE