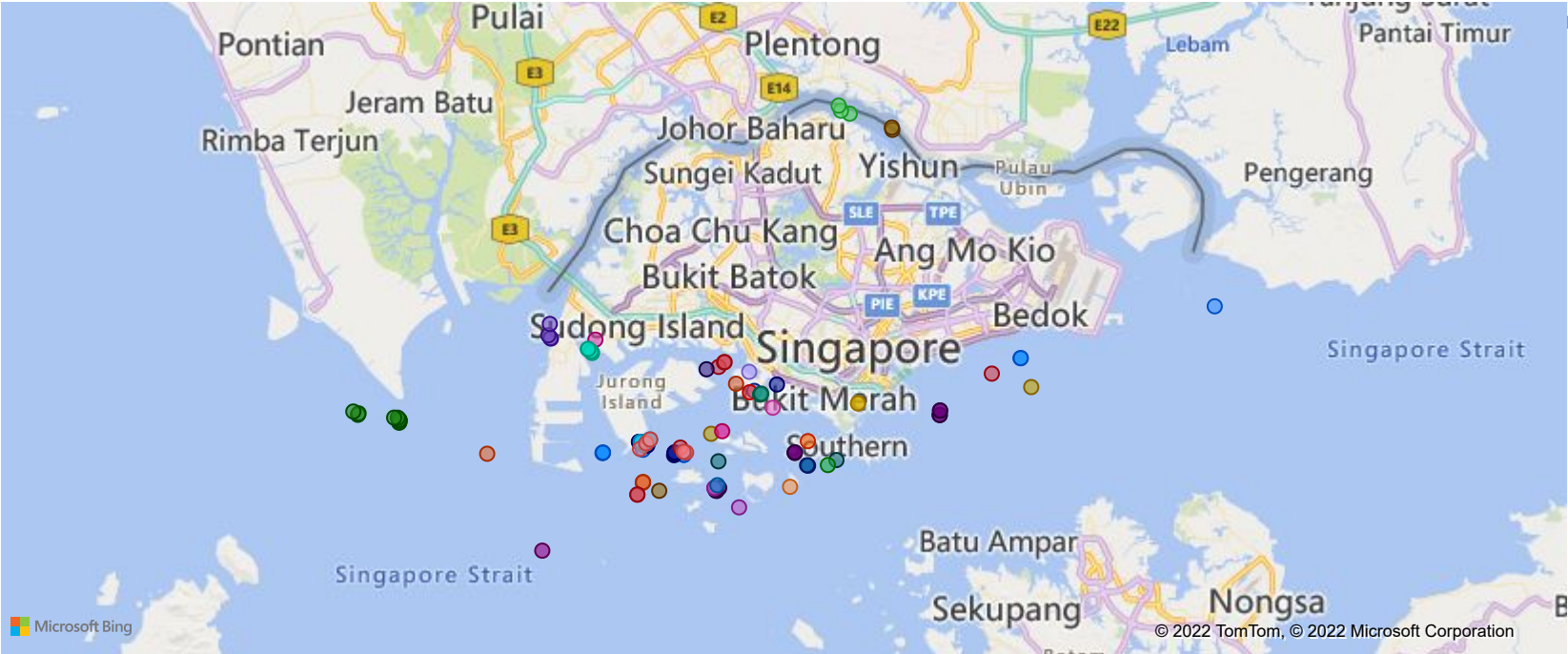


Abnormal Vessels in AIS system



mmsi	x	y	sog	cog	TrueNormal	TruePowerOutage	TrueAbnormal	normal	powerOutage	abnormal
566218000	1.22	103.71	0.00	340.00	0	1	0	0	1	0
566218000	1.22	103.71	0.00	150.00	0	1	0	0	1	0
566218000	1.22	103.72	0.00	18.00	0	1	0	0	1	0
566218000	1.22	103.72	0.00	333.00	0	1	0	0	1	0
566218000	1.22	103.72	0.00	67.00	0	1	0	0	1	0
566218000	1.22	103.72	0.00	141.00	0	1	0	0	1	0
566218000	1.22	103.72	0.00	325.00	0	1	0	0	1	0
566218000	1.22	103.72	0.00	126.00	0	1	0	0	1	0
566218000	1.22	103.72	0.00	113.00	0	1	0	0	1	0
566218000	1.22	103.72	0.00	348.00	0	1	0	0	1	0
566218000	1.22	103.72	0.00	47.00	0	1	0	0	1	0
566218000	1.22	103.72	0.00	291.00	0	1	0	0	1	0
566218000	1.22	103.72	0.00	41.00	0	1	0	0	1	0
566218000	1.22	103.72	0.00	131.00	0	1	0	0	1	0
566218000	1.22	103.72	0.00	142.00	0	1	0	0	1	0

Training Testing Data

Training Data	Testing Data
11205	7471

Class Type

Abnormal	Normal	Power Outage
253	204	18219

Class Type in Training Data

Type	Abnormal	Normal	Power Outage
SMOTE	10924	10924	10924
Without SMOTE	146	135	10924

Performance

Accuracy	F1-score	Precision	Recall
99.94	100	100	100

