

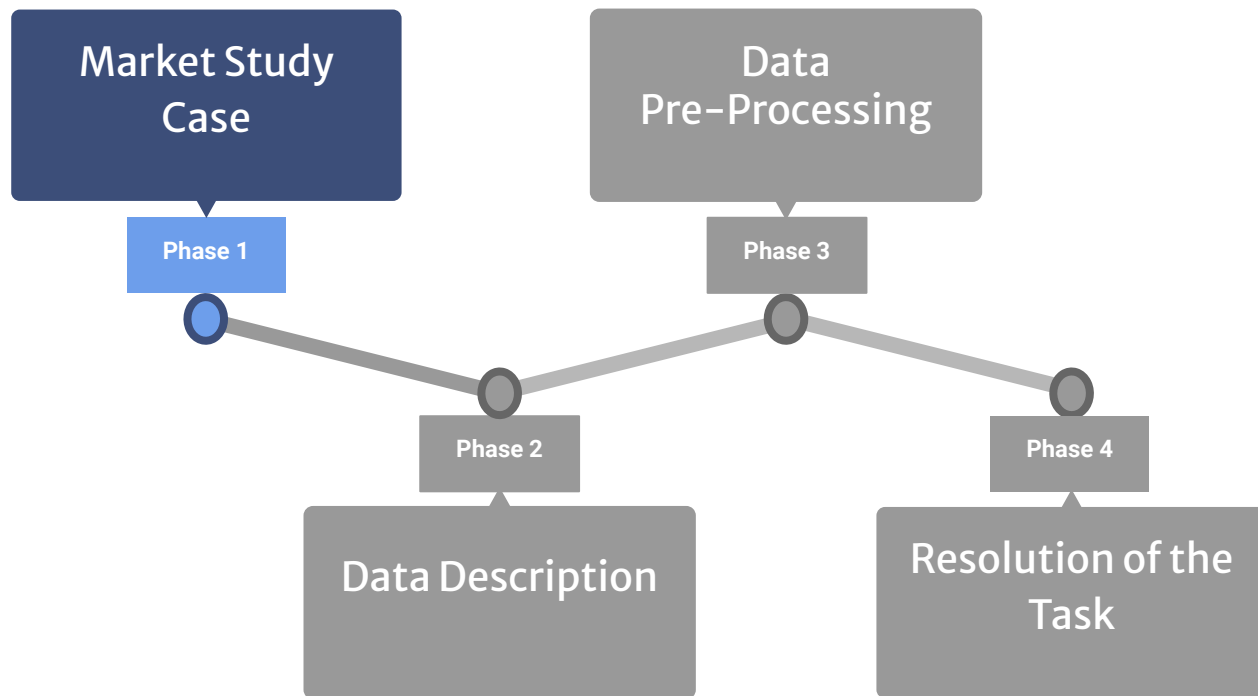
Wärtsilä

Presentation of a Market Study

Candidate:
Pietro Morichetti



RoadMap



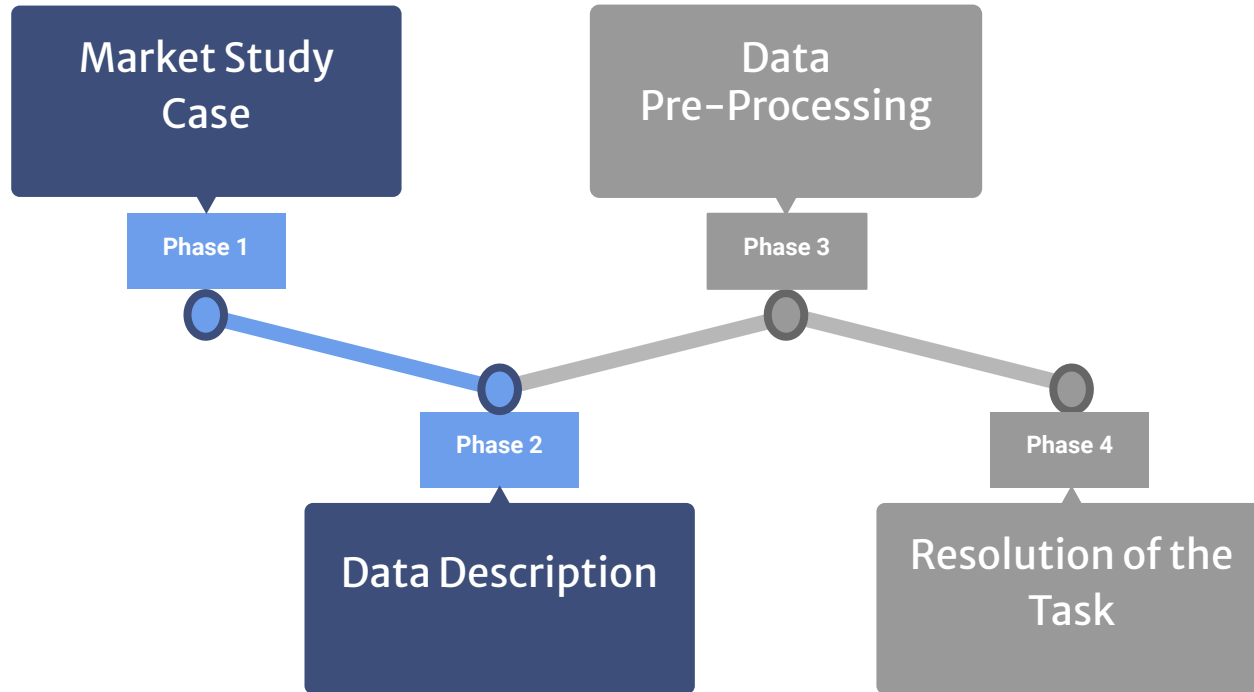
market case study

Some terminologies:

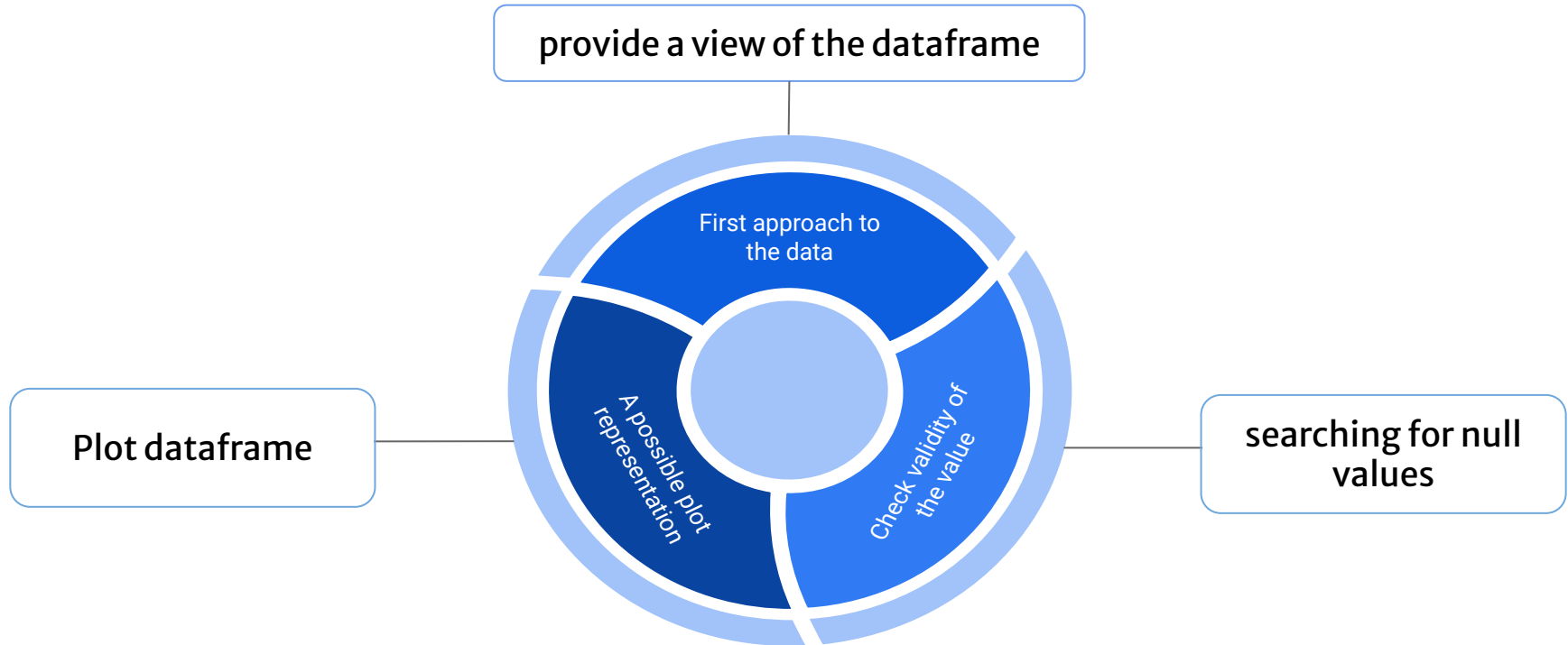
- **Design Speed** is the optimal speed of the vessel for which it was built
- **Profile Speed** is the operational speed of the vessel
- **Max Operational Speed** is the speed for which the vessel spent 95% of the sailing time, below the operational speed
- **Excess propulsion power** is the main engine power that can be reduced

| ID | Constraint |
|-----|---|
| FR1 | The analysis shall identify the products, vessel segments and customers with the highest market potential. |
| FR2 | Select the vessels built after 2005 |
| FR3 | Consider a sailing time as the time spent at speeds higher than 3 knots. |
| FR4 | All vessel segments other than cruise, ferries, gas tankers, containerships, dry bulk and wet bulk are to be excluded |
| FR5 | Select vessels could reduce their main engine power by at least 10% without affecting 95% |

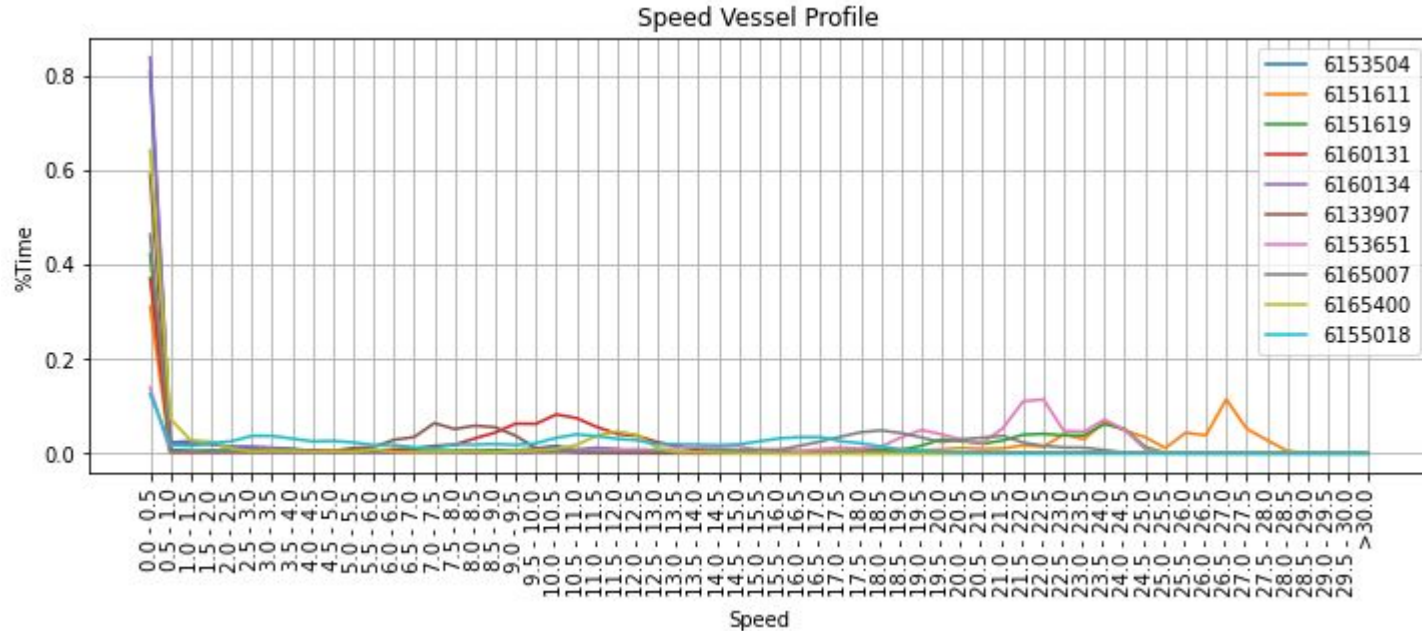
RoadMap



Data Description

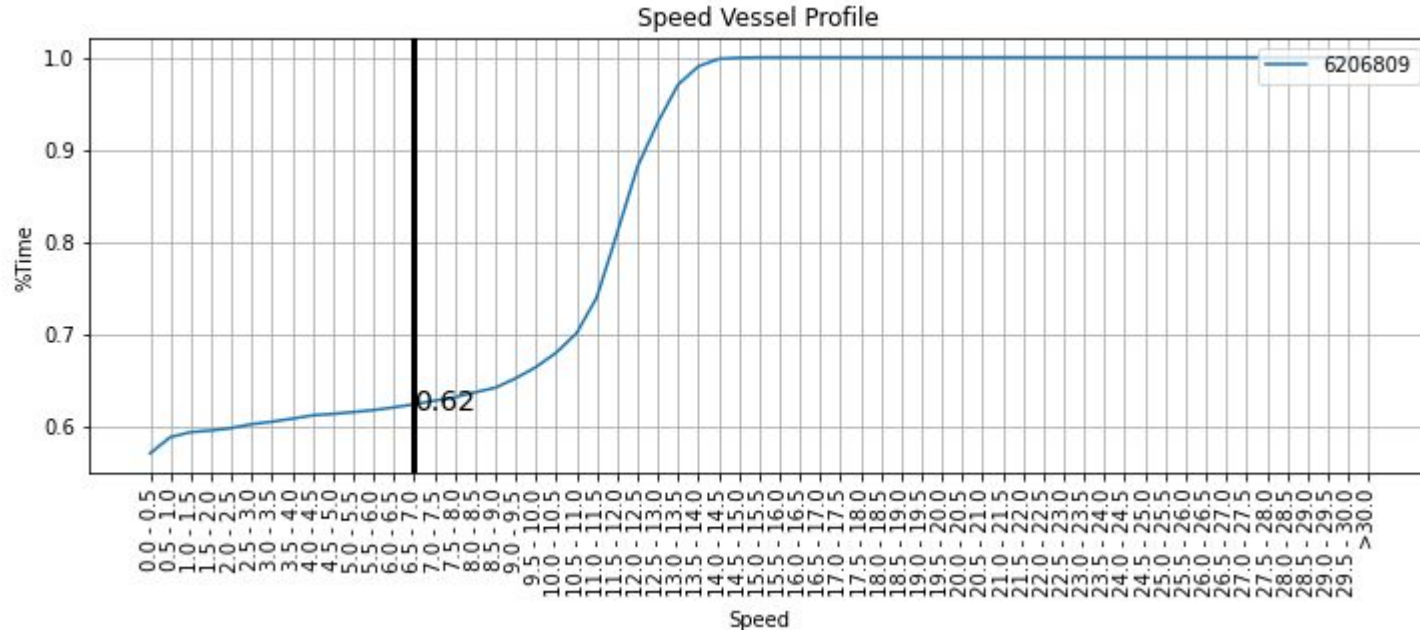


Data Description: Speed Vessels Profile



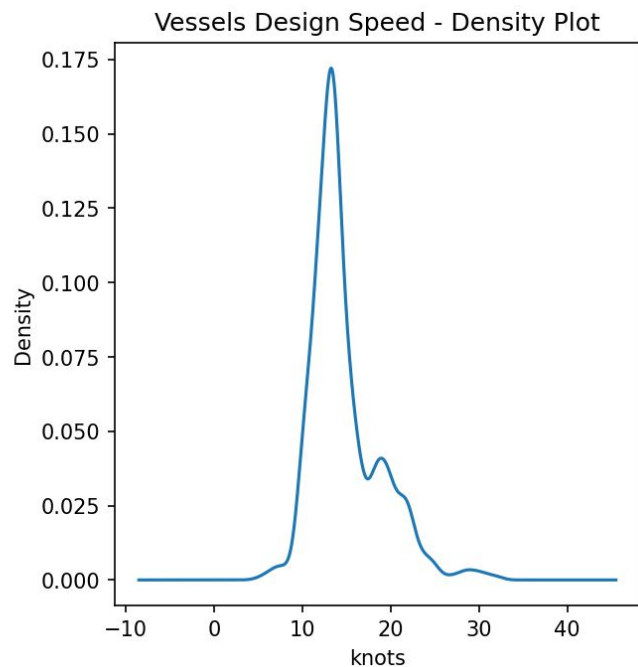
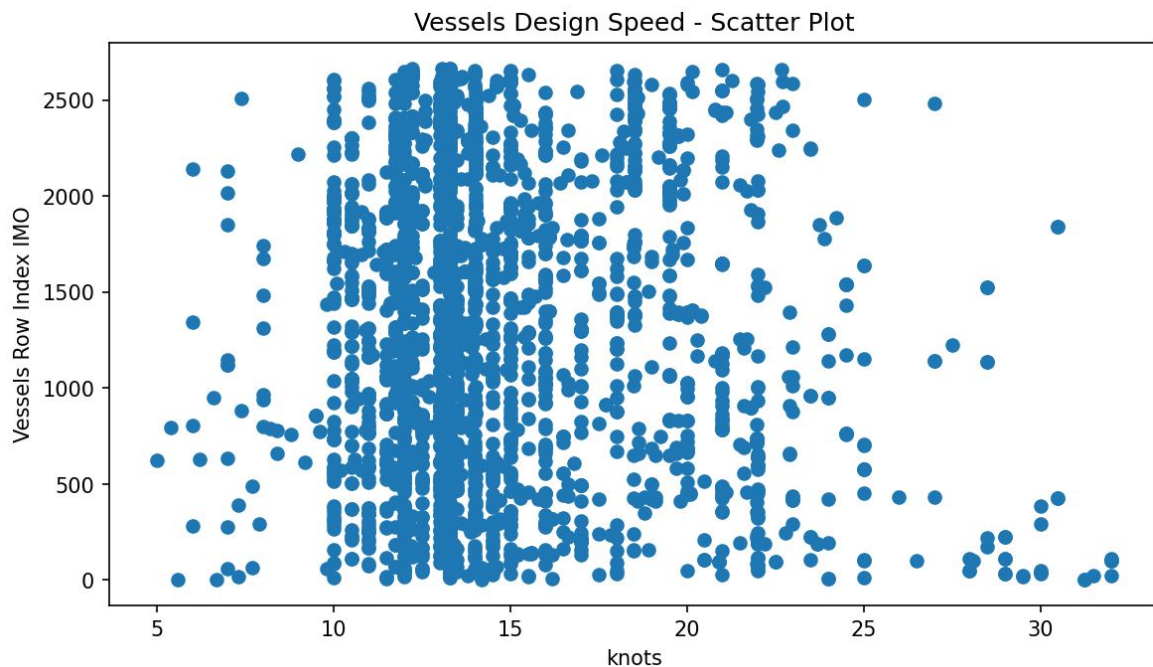
The vessels depicted sail at low speed most of the time

Data Description: Speed Vessels Profile



Cumulative distribution is intercepted by a knots range associated with the design speed of the vessel

Data Description: Vessels Design Speed



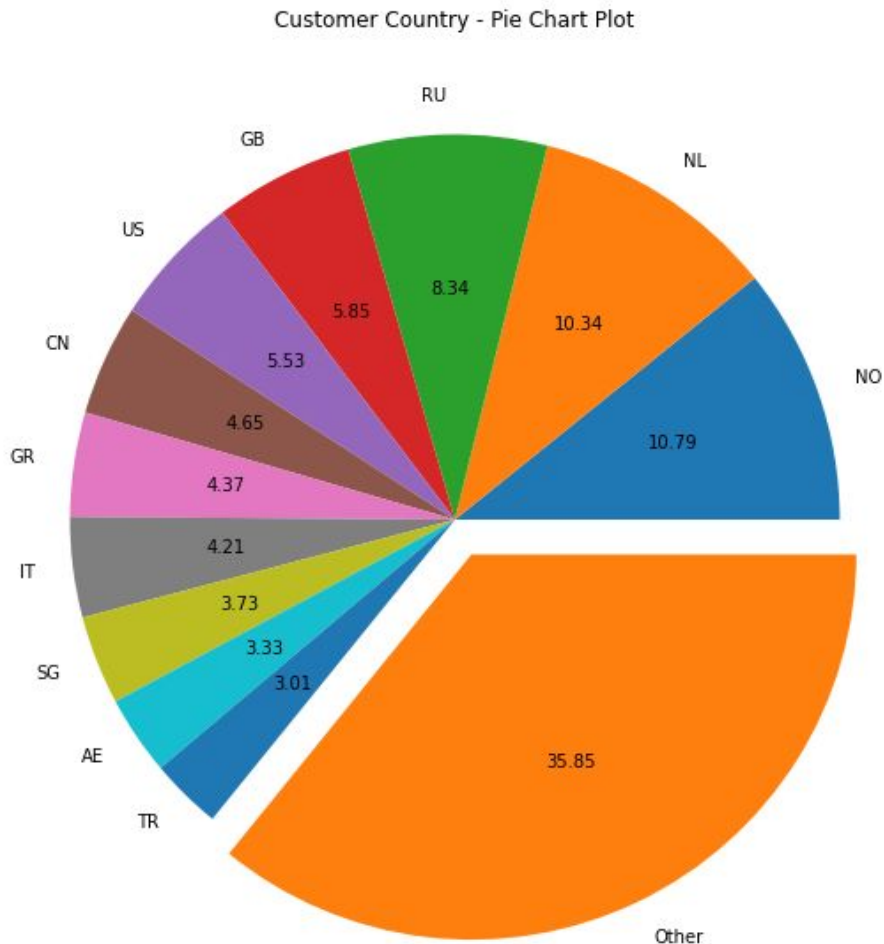
Most of the vessels has a design speed among 10 and 15 knots

Data Description: Vessels Info

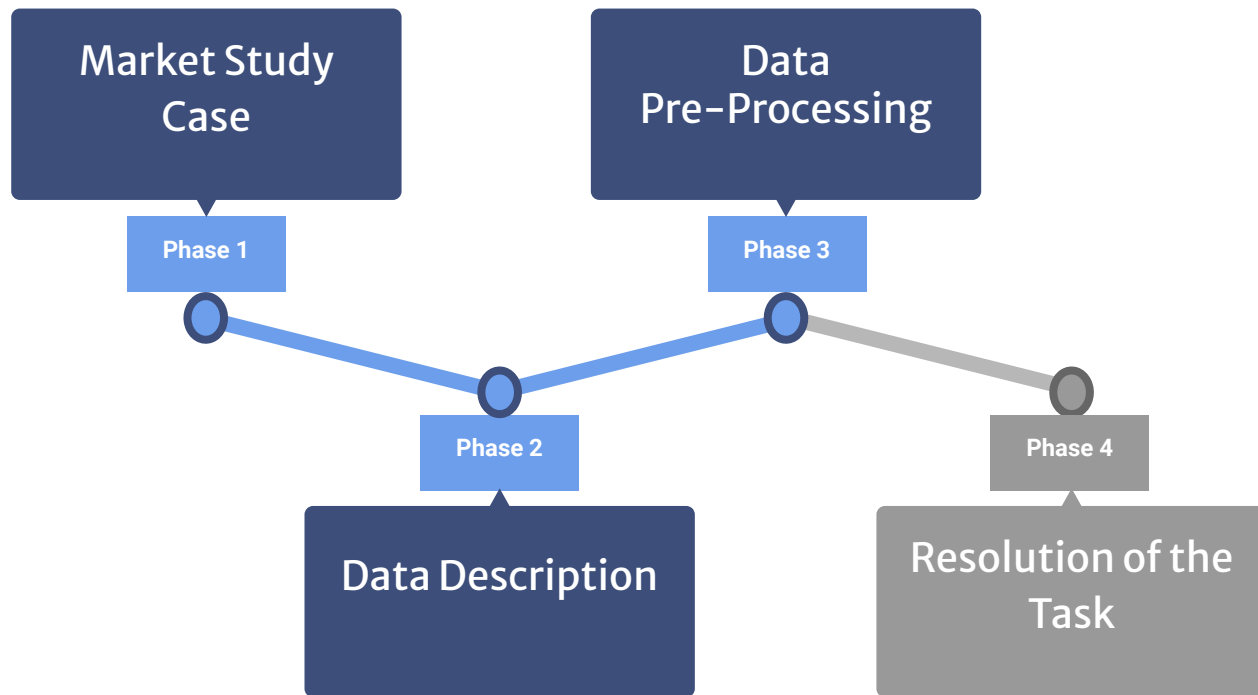
Pie chart shows the percentage of customers for each country.

Most of the customers belong from Russia, Netherlands and Norway.

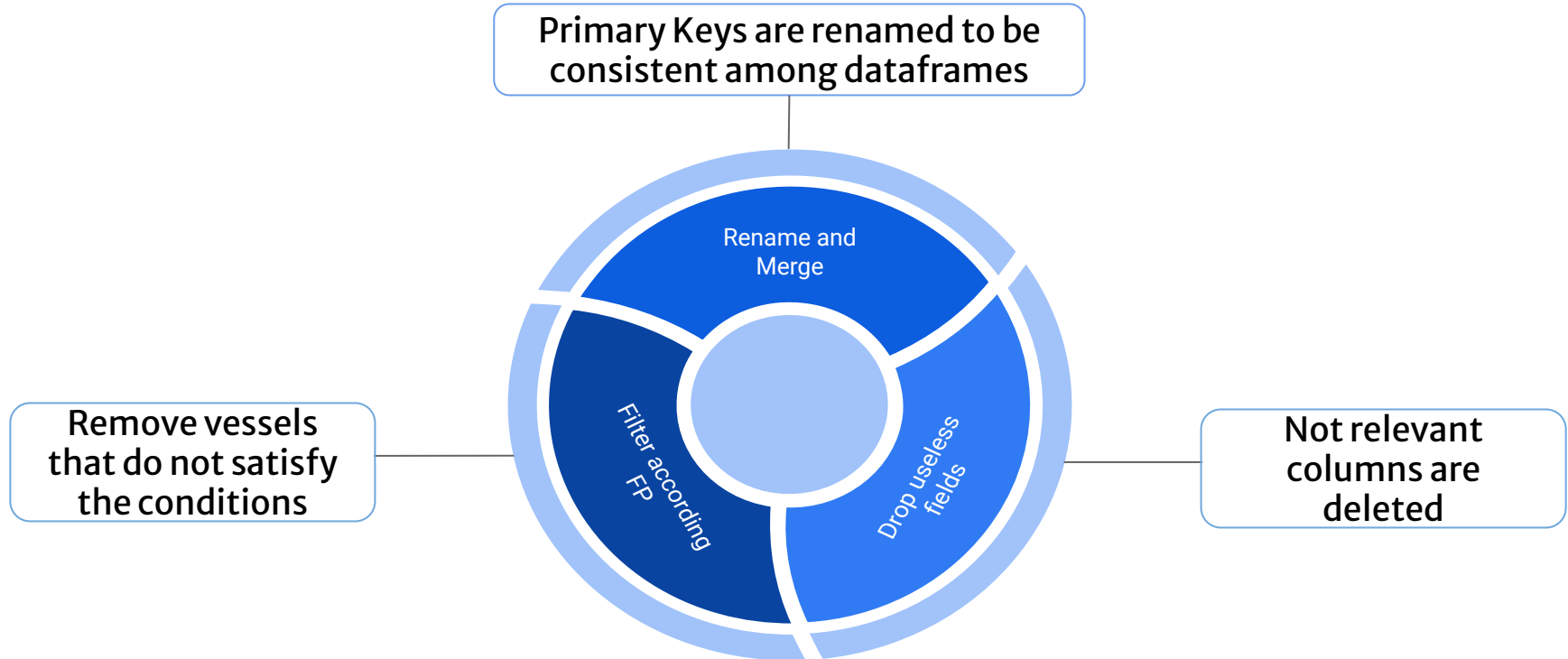
Other refers to customers belong from countries with a percent less than 3.0%.



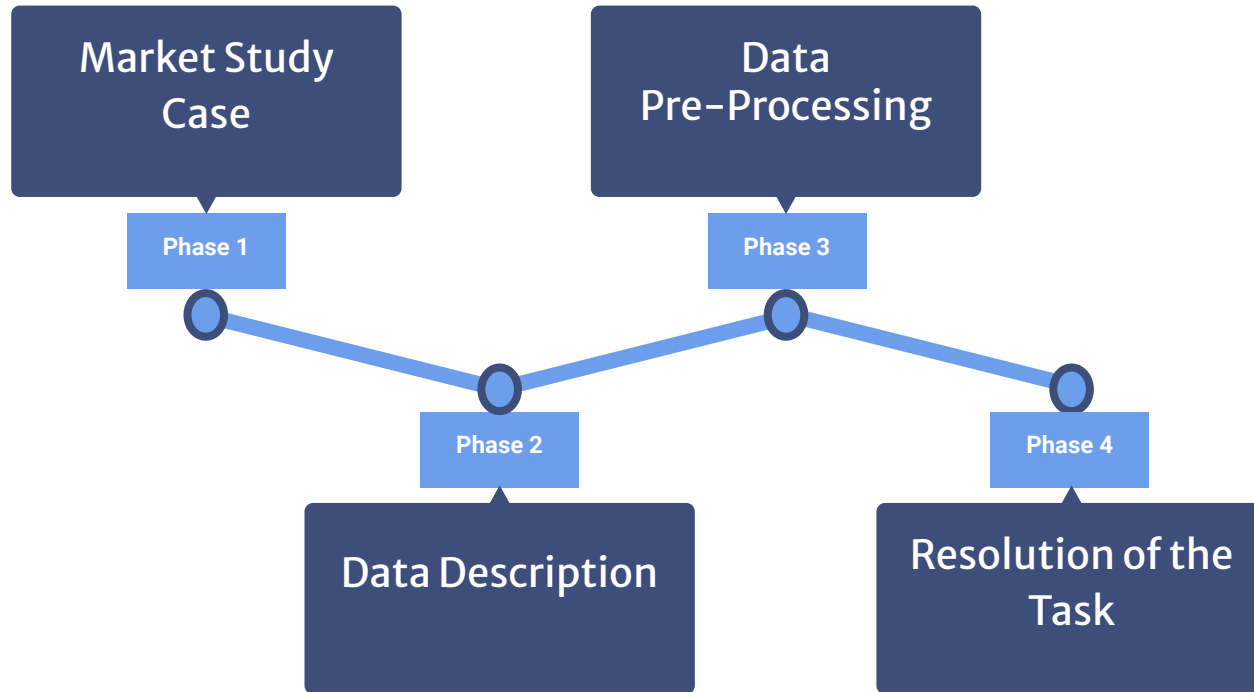
RoadMap



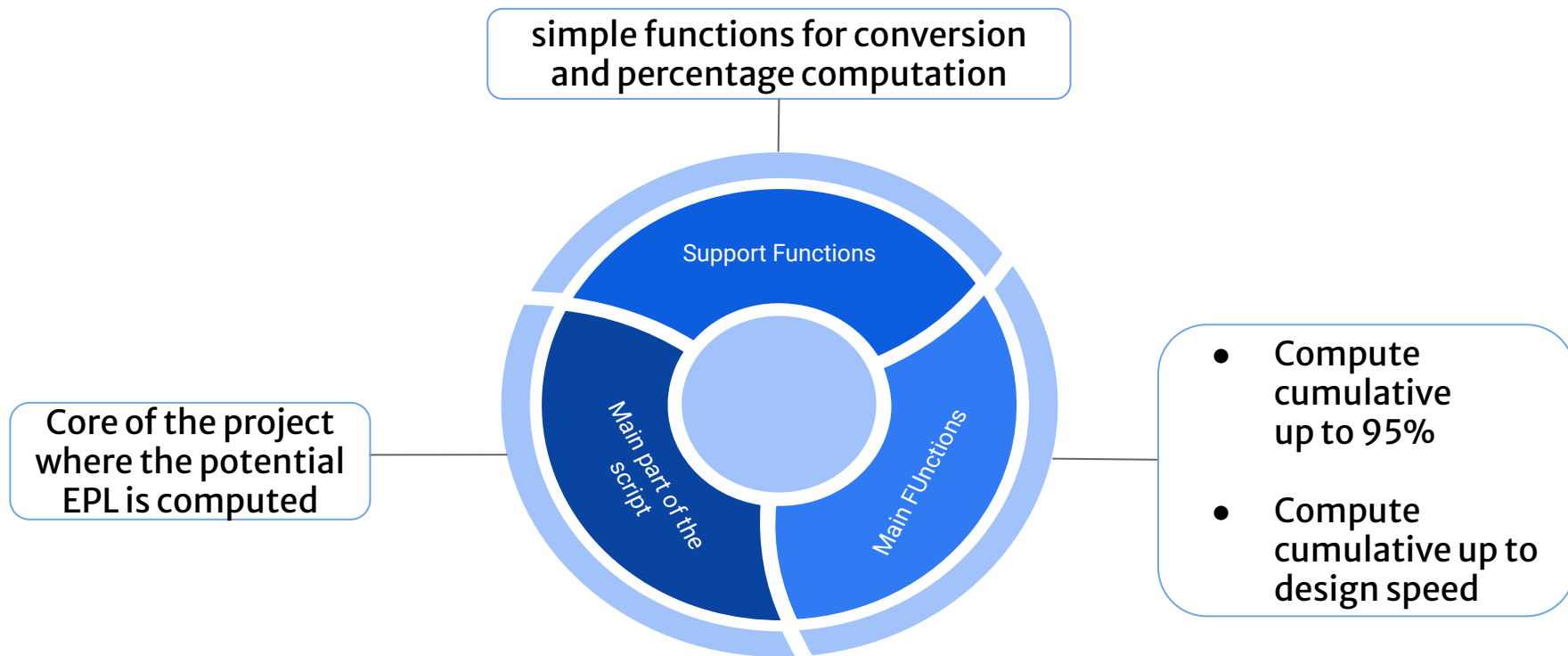
Data Pre-Processing



RoadMap



Resolution of the Task



Resolution of the Task

Calculate the EPL Potential

1. 85% Main Engine Power
2. Sailing at Design Speed
3. Max Op Speed
4. Real Prop Power
5. Engine Power Reduction

Filtering at 10%

Pick Vessels with an Engine Power Reduction at least of 10%

Merge

Merge resulting dataset with the most relevant columns of the Vessels Info dataset

- The vessels satisfying the given constraint are 226
- EPL Percentage range from 10% to 88%, with an average value of 31 ± 16 %

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Thanks for your Attention