Project Design Phase-I
Proposed Solution Template

Date	24 September 2022
Team ID	PNT2022TMID06511
Project Name	Project – Traffic and capacity analytics for major ports
Maximum Marks	2 Marks

Proposed Solution Template:

Project team shall fill the following information in proposed solution template.

S.No.	Parameter	Description
1.	Problem Statement (Problem to be solved)	Port capacity is a relevant parameter to estimate the expected performance of a port facility. Many simulation models have been used to predict traffic in ports and waterways, but they do not include provisions for estimating the port's capacity. The innovative method presented here determines a Port Network Traffic Capacity(PNTC) based on simulation. This method estimates PNTC given the configuration and processing characteristics of the port. It can be a useful tool to apply while designing ports, because only a limited number of simulations are required to estimate of the capacity of the infrastructure under consideration. Capacity Analysis represents a key piece of Traffic Impact Study-determining whether the roadways or intersections can handle the traffic. This part of our series presents an overview of the essential tasks in a capacity analysis
2.	Idea / Solution description	Automatic Identification System (AIS), has the ability to track and analyze vessel behaviour within the marine domain was introduced. Nowadays, the ubiquitous availability of huge amounts of data presents challenges for systems aimed at using AIS data for analysis purposes regarding computability and how to extract valuable information from the data. This thesis covers the process of developing a system capable of performing AIS data analytics using state of the art Big data technologies, supporting key features from a system called Marine Traffic Analyzer 3. The results show that the developed system has improved performance, supports larger files and is accessible by more users at the same

		time. To build a python application using python notebook by importing the AIS data and classifying the voyages to determine port traffic. This project explores the possibility of detecting identity fraud by using clustering techniques for extracting voyages of vessels using movement patterns and presents a prototype algorithm for doing so. The results concerning the validation show some merits, but also exposes weaknesses such as time consuming tuning of parameters.
3.	Novelty / Uniqueness	▪ Data Analytics ▪ Predicting port traffic by importin and analyzing the datasets
4.	Social Impact / Customer Satisfaction	• Employment (including labour market standards and rights) • Income • Access to services (including education, social services, etc.) • Respect for fundamental rights (including equality) • Public health and safety.
5.	Business Model (Revenue Model)	AIS message validation K-means clustering
6.	Scalability of the Solution	Automatic Identification System (AIS) transponders broadcast information about position, course, speed and its navigational status. Originally, the purpose was solely collision avoidance