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DISCOVERY





Discovery

ICIS customers are operating within the energy industry and the exercise focus on shipping sector. It is best to start by browsing ICIS main site and others important sites listed below:

<https://www.dnvgl.com/rules-standards/index.html>

<https://www.gov.uk/guidance/shipping-industry-regulation>

<http://www.imo.org>

Before to start analysing the problem it is essential to understand all terminology used in the scenario.

Sanctioned port:

A sanction is a measure adopted against a country, regime or individual believed to be violating international law. Sanctions are political trade restrictions put in place with the aim of maintaining or restoring international peace and security. A sanctioned port is the port that belongs to a city or country that has been sanction.

GOALS





Goals

Within the problem that is describe to us a lot of information is mentions including the requirements which are the customer needs. Those requirements are clearly highlighted in the 1st and 4th paragraphs of [Annex 01](#)

From the given scenario, our new concept should include the following:

- 01 Give location of customer ships at any given point in time.
- 02 Indicate how much gas there is in each of their ship.
- 03 Show the route that the ship is travelling with ETA to port.
- 04 Alert customer when their ships calls at a sanctioned port
- 05 Alert customer when their ships goes off course.

UNDERSTAND THE PROBLEM



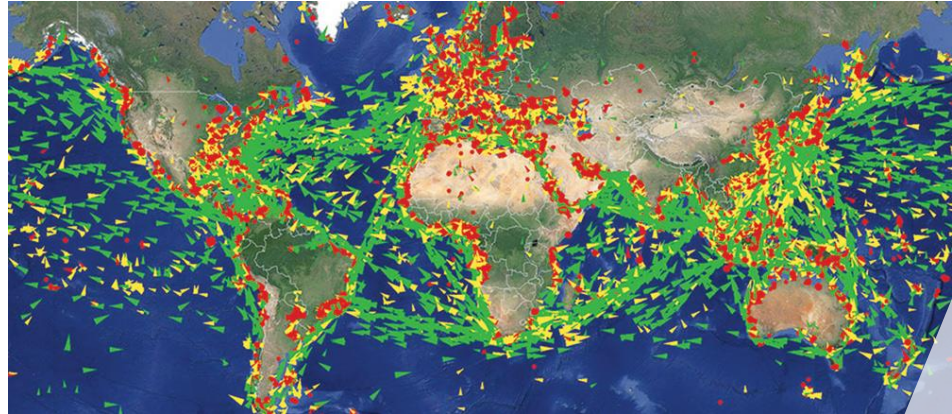


Understand the problem

1. Give accurate location of customer ships at any point in time.

The use of online vessel tracking services has increased exponentially over the last couple of years. It is now possible to provide ship tracking using the [automatic identification system \(AIS\)](#) and display real time location of the ships. The AIS combine with [Google Earth](#) will allowed to pinpoint any vessel within seconds.

Source: [Marine Insight](#)





Understand the problem

2. Indicate how much gas there is in each of their ship.

On board ship, it is very important to keep an updated record of the [quantity of liquids \(in all forms\) present in various tanks](#). Sounding is the term used for taking a measurement of the amount of fluids in the tanks of a ship. Several [sounding methods](#) are used in a ship all data recorded are stored in the “Sounding table”.

To indicate our customer the level of gas in their ships we will need to read the sounding table of each ship.

Capacities in m ³														
Sounding: (m)	Ullage: (m)	Trim(m): -2.0000	Trim(m): -1.5000	Trim(m): -1.0000	Trim(m): -0.5000	Trim(m): 0.0000	Trim(m): 0.5000	Trim(m): 1.0000	Trim(m): 1.5000	Trim(m): 2.0000	Trim(m): 2.5000	Trim(m): 3.0000		
0.0000	1.5620	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0033	0.0189	0.0472	0.0880		
0.0250	1.5370	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0002	0.0081	0.0288	0.0620	0.1076		
0.0500	1.5120	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0021	0.0154	0.0412	0.0793	0.1254		
0.0750	1.4870	0.0000	0.0000	0.0000	0.0000	0.0000	0.0006	0.0070	0.0256	0.0565	0.0993	0.1539		
0.1000	1.4620	0.0003	0.0003	0.0004	0.0005	0.0010	0.0036	0.0152	0.0390	0.0747	0.1221	0.1810		
0.1250	1.4370	0.0010	0.0011	0.0014	0.0020	0.0036	0.0096	0.0265	0.0553	0.0958	0.1477	0.2198		
0.1500	1.4120	0.0024	0.0028	0.0035	0.0050	0.0085	0.0190	0.0411	0.0748	0.1198	0.1760	0.2432		
0.1750	1.3870	0.0047	0.0056	0.0070	0.0099	0.0163	0.0318	0.0588	0.0972	0.1467	0.2071	0.2782		
0.2000	1.3620	0.0083	0.0098	0.0124	0.0171	0.0273	0.0478	0.0797	0.1227	0.1765	0.2409	0.3158		
0.2250	1.3370	0.0133	0.0158	0.0198	0.0271	0.0416	0.0671	0.1037	0.1511	0.2090	0.2774	0.3560		
0.2500	1.3120	0.0200	0.0237	0.0296	0.0400	0.0544	0.0897	0.1308	0.1825	0.2445	0.3162	0.3967		
0.2750	1.2870	0.0286	0.0338	0.0421	0.0563	0.0806	0.1155	0.1610	0.2168	0.2827	0.3585	0.4440		
0.3000	1.2620	0.0394	0.0464	0.0575	0.0761	0.1051	0.1446	0.1943	0.2541	0.3237	0.4030	0.4918		
0.3250	1.2370	0.0524	0.0617	0.0761	0.0994	0.1330	0.1768	0.2306	0.2942	0.3675	0.4502	0.5422		
0.3500	1.2120	0.0681	0.0800	0.0982	0.1262	0.1642	0.2122	0.2700	0.3373	0.4140	0.5000	0.5950		
0.3750	1.1870	0.0865	0.1014	0.1239	0.1564	0.1987	0.2508	0.3123	0.3832	0.4633	0.5524	0.6480		
0.4000	1.1620	0.1079	0.1262	0.1532	0.1901	0.2365	0.2925	0.3577	0.4320	0.5153	0.6074	0.7071		
0.4250	1.1370	0.1324	0.1546	0.1861	0.2271	0.2776	0.3373	0.4060	0.4836	0.5700	0.6650	0.7680		
0.4500	1.1120	0.1603	0.1867	0.2225	0.2676	0.3269	0.3951	0.4573	0.5361	0.6274	0.7251	0.8301		
0.4750	1.0870	0.1918	0.2224	0.2624	0.3114	0.3694	0.4361	0.5115	0.5953	0.6875	0.7878	0.8942		
0.5000	1.0620	0.2269	0.2618	0.3058	0.3586	0.4201	0.4901	0.5686	0.6553	0.7502	0.8528	0.9618		
0.5250	1.0370	0.2659	0.3049	0.3526	0.4090	0.4739	0.5472	0.6296	0.7181	0.8156	0.9199	1.0278		
0.5500	1.0120	0.3096	0.3515	0.4029	0.4626	0.5309	0.6072	0.6915	0.7837	0.8836	0.9889	1.0970		
0.5750	0.9870	0.3551	0.4017	0.4566	0.5198	0.5911	0.6703	0.7573	0.8520	0.9539	1.0598	1.1678		
0.6000	0.9620	0.4052	0.4554	0.5138	0.5801	0.6543	0.7363	0.8259	0.9230	1.0263	1.1324	1.2399		
0.6250	0.9370	0.4590	0.5126	0.5742	0.6436	0.7206	0.8053	0.8973	0.9966	1.1006	1.2065	1.3133		
0.6500	0.9120	0.5164	0.5734	0.6390	0.7103	0.7900	0.8772	0.9716	1.0726	1.1767	1.2819	1.3879		
0.6750	0.8870	0.5775	0.6376	0.7052	0.7802	0.8625	0.9520	1.0486	1.1506	1.2542	1.3587	1.4635		
0.7000	0.8620	0.6421	0.7052	0.7756	0.8532	0.9380	1.0297	1.1283	1.2302	1.3331	1.4365	1.5401		
0.7250	0.8370	0.7103	0.7762	0.8493	0.9294	1.0164	1.1104	1.2100	1.3114	1.4132	1.5153	1.6176		
0.7500	0.8120	0.7820	0.8507	0.9262	1.0087	1.0979	1.1938	1.2935	1.3938	1.4944	1.5951	1.6958		
0.7750	0.7870	0.8573	0.9284	1.0064	1.0911	1.1823	1.2796	1.3853	1.4773	1.5764	1.6755	1.7747		
0.8000	0.7620	0.9360	1.0096	1.0898	1.1765	1.2697	1.3669	1.4642	1.5616	1.6591	1.7566	1.8542		
0.8250	0.7370	1.0180	1.0940	1.1763	1.2650	1.3595	1.4551	1.5508	1.6466	1.7424	1.8383	1.9342		
0.8500	0.7120	1.1030	1.1813	1.2657	1.3562	1.4500	1.5439	1.6380	1.7320	1.8261	1.9203	2.0146		
0.8750	0.6870	1.1907	1.2710	1.3575	1.4482	1.5432	1.6395	1.7353	1.8177	1.9102	2.0027	2.0952		
0.9000	0.6620	1.2806	1.3626	1.4498	1.5403	1.6312	1.7220	1.8128	1.9036	1.9944	2.0853	2.1762		
0.9250	0.6370	1.3724	1.4557	1.5433	1.6325	1.7217	1.8110	1.9002	1.9895	2.0787	2.1680	2.2572		
0.9500	0.6120	1.4658	1.5498	1.6370	1.7247	1.8123	1.9000	1.9877	2.0753	2.1630	2.2507	2.3384		
0.9750	0.5870	1.5605	1.6447	1.7307	1.8168	1.9029	1.9880	2.0751	2.1612	2.2473	2.3334	2.4195		



Understand the problem

3. Show the route that the ship is travelling with ETA to port.

The shipping lanes are there to ensure navigational safety by regulating maritime traffic. Besides, sticking to pre-determined route makes sure that the ship does not venture into unsafe waters and saves valuable time and fuel. A GISbased electronic navigational chart can guide a ship's crew to follow a particular path. We could use a similar system to predict or indicate the vessel path.





Understand the problem

4.Alert customer when their ships calls at a sanctioned port.

To accurately inform our customer that their ships calls at a sanctioned port we will have to maintain an ever-changing lists of country ports that are added or remove from the following sources:

Those are the main index available of sanctioned countries.

Source: [GFSC](#)

UN Security Council Sanctions Committee	www.un.org/sc/committees/index.shtml
HM Treasury in the UK	www.gov.uk/sanctions-embargoes-and-restrictions
Office of Foreign Assets Control (OFAC)	www.treasury.gov/resource-center/faqs/Sanctions/Pages/ques_index.aspx
States of Guernsey	www.gov.gg/sanctions



Understand the problem

5.Alert customer when their ships goes off course.

Using the ships AIS with a navigation system should allow us to monitor if any ships goes off course its designated routes.



Vessel Navigation System

RESOLUTION





Resolution

ICIS ship information						Enter keyword	Q Search
Location	Ship Name	Ship ID	Gas capacity onboard	Estimation arrival date	Destination port		
	The Berg Tanker	14556	25100 m3	2023 / 11 / 14	Shanghai main port		
	The Amsterdam	55887	60500 m3	2018 / 08 / 20	Rotterdam UK		
	The Aldgate	87745	150000 m3	2025 / 01 / 07	Singapore		
	The Berg Tanker	14556	25100 m3	2023 / 11 / 14	Shanghai main port		
	The Amsterdam	55887	60500 m3	2018 / 08 / 20	Rotterdam UK		
	The Aldgate	87745	150000 m3	2025 / 01 / 07	Singapore		
	The Aldgate	87745	150000 m3	2025 / 01 / 07	Singapore		
	The Berg Tanker	14556	25100 m3	2023 / 11 / 14	Shanghai main port		
	The Amsterdam	55887	60500 m3	2018 / 08 / 20	Rotterdam UK		
	The Aldgate	87745	150000 m3	2025 / 01 / 07	Singapore		

Show items 1 to 10 of 25 items << < > >>



Resolution

Indication that the ship call at a sanctioned port

ICIS ship information						Enter keyword	Q Search
Location	Ship Name	Ship ID	Gas capacity onboard	Estimation arrival date	Destination port		
	The Berg Tanker	14556	25100 m3	2023 / 11 / 14	Shanghai main port		
	The Amsterdam	55887	60500 m3	2018 / 08 / 20	Bandar Abbas		
	The Aldgate	87745	150000 m3	2025 / 01 / 07	Singapore		
	The Berg Tanker	14556	25100 m3	2023 / 11 / 14	Shanghai main port		
	The Amsterdam	55887	60500 m3	2018 / 08 / 20	Rotterdam UK		
	The Aldgate	87745	150000 m3	2025 / 01 / 07	Singapore		
	The Aldgate	87745	150000 m3	2025 / 01 / 07	Singapore		
	The Berg Tanker	14556	25100 m3	2023 / 11 / 14	Shanghai main port		
	The Amsterdam	55887	60500 m3	2018 / 08 / 20	Rotterdam UK		
	The Aldgate	87745	150000 m3	2025 / 01 / 07	Singapore		

Show items 1 to 10 of 25 items << < > >>



Resolution

Click on location icon to navigate to ship location info screen

ICIS ship information					
Enter keyword					Search
Location	Ship Name	Ship ID	Gas capacity onboard	Estimation arrival date	Destination port
	The Berg Tanker	14556	25100 m3	2023 / 11 / 14	Shanghai main port
	The Aldgate	87745	150000 m3	2025 / 01 / 07	Singapore
	The Amsterdam	55887	60500 m3	2018 / 08 / 20	Rotterdam UK



Resolution

Click on close icon to go back to previous screen

Ship Location and Route screen ✕

Latitude
 North South

Longitude
 East West

Ship info
Ship Name
Destination port
Estimation arrival date

— South America to Mediterranean
— South America to Europe
— South America to Far East
— Far East to British Columbia and U.S.A.
— Far East to Europe
— North Europe/Mediterranean/U.S.A. to Far East
— Europe to South America
— USA to South America

Annex 01

We would like you to come up with a first stab at a product concept for ICIS customers.

Problem:

The customer's ship liquefied natural gas around the world. At any point in time they need to know where their ships are, how much gas is in each ship and the route that the ship is travelling.

The customer will use ICIS information to establish whether they should sell the gas when they are in port, wait to sell or ship to another destination.

To work this out they will use formulae that ICIS provide in the interface to establish a spot price for the gas (they can choose from several different formulae) and will add variables such as the quantity of the gas, the number of days to wait / travel (some gas will be lost to evaporation over time) and cost of fuel to travel further.

They will want to monitor their ships on an ongoing basis and be alerted if the ship calls at a sanctioned port or goes off course.

Output:

1. An outline of your concept
2. A proposal for how you would approach the project.

We are more interested in your process than in final visual designs. We would like at least one visual of the product idea. Attached is one of our personas which you can use to learn a little more about the end users.