

Weather Routing for "CIC Normandy Channel Race"

Weather Models used:

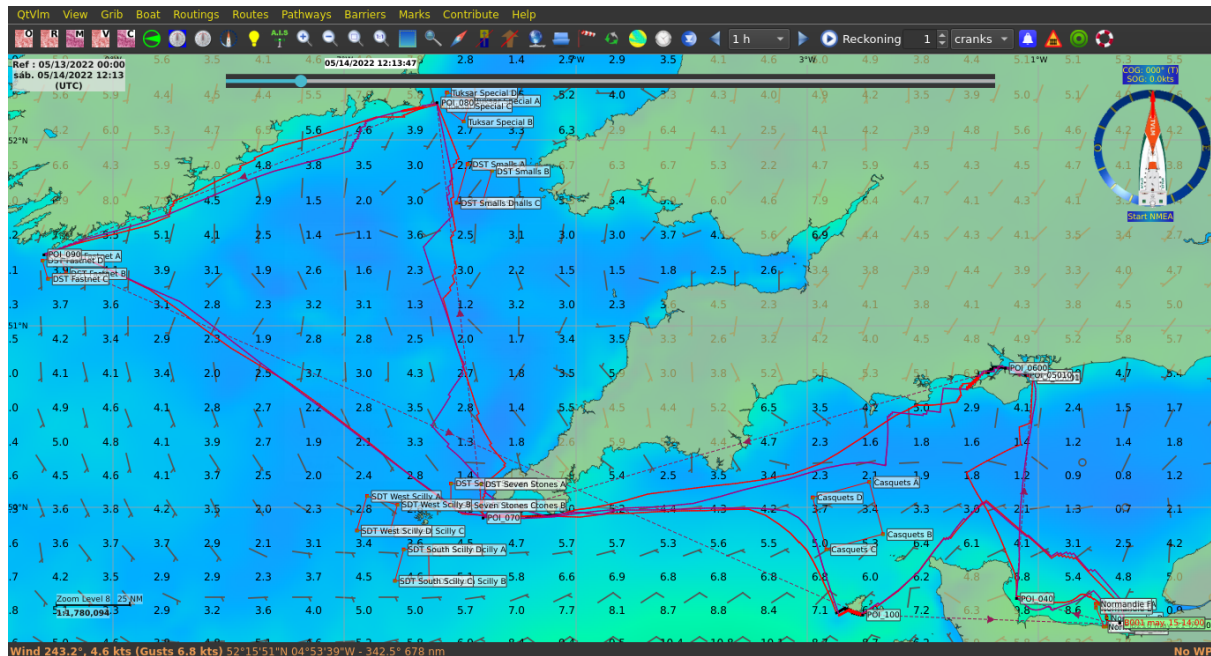
- ICON-EU (waves model: WW3): 7km res X 1h (7 days range)
- Arome HD (Meteo France, waves model: MFWAM) : 1km res X 1h (just 2 days range)
- WRF 12km and 4km (Opengribs, waves model: WAM, it has its own currents model) : 4km res X 1h (just 3 days range)

In all the cases, to extend the forecast horizon, this gribs where coupled with GFS 0.25°x0.25° with 1h step

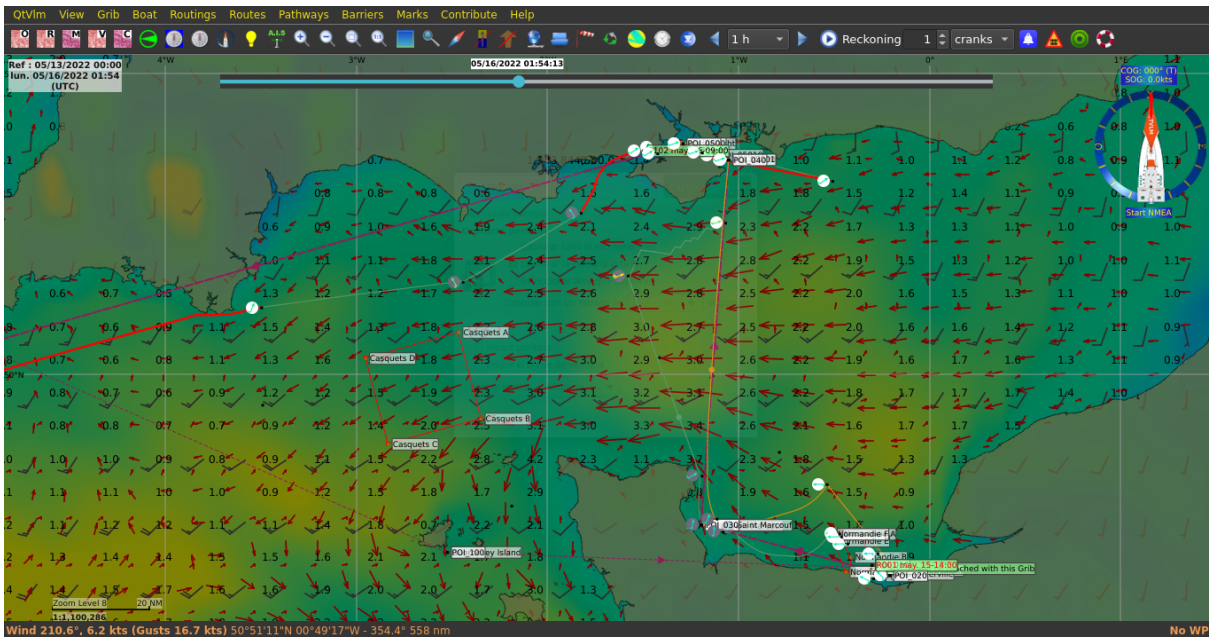
Currents model:

- RTOFS 0.08° resolution

Multi-grib routes:



ICON-GFS route in red, and Arome-GFS route in violet



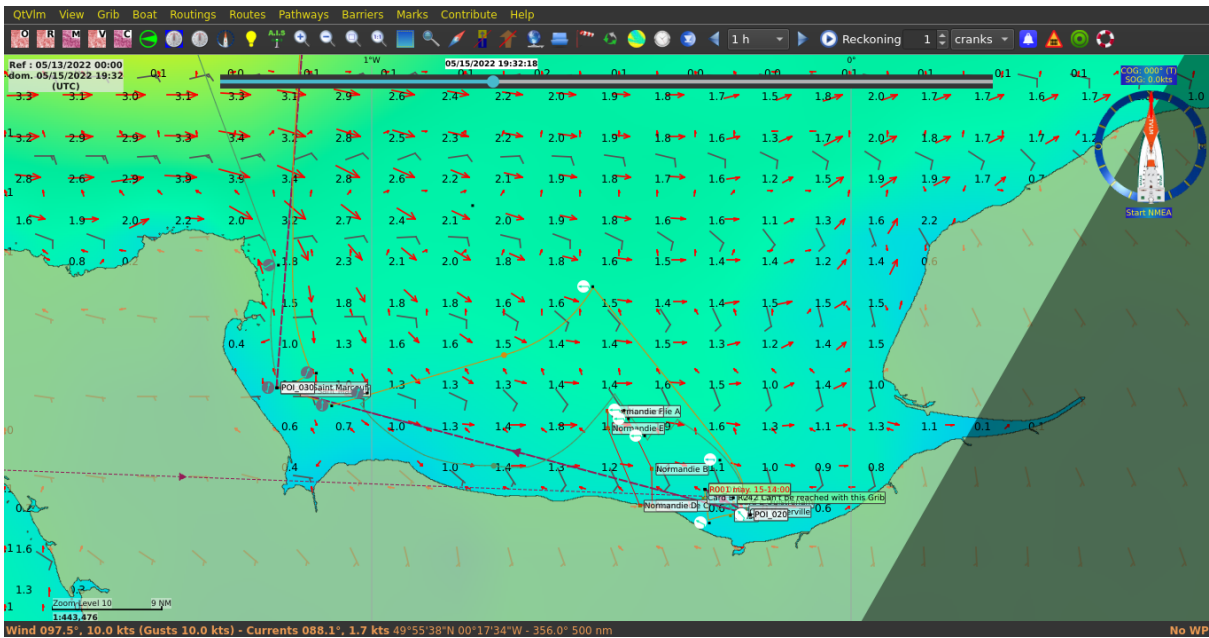
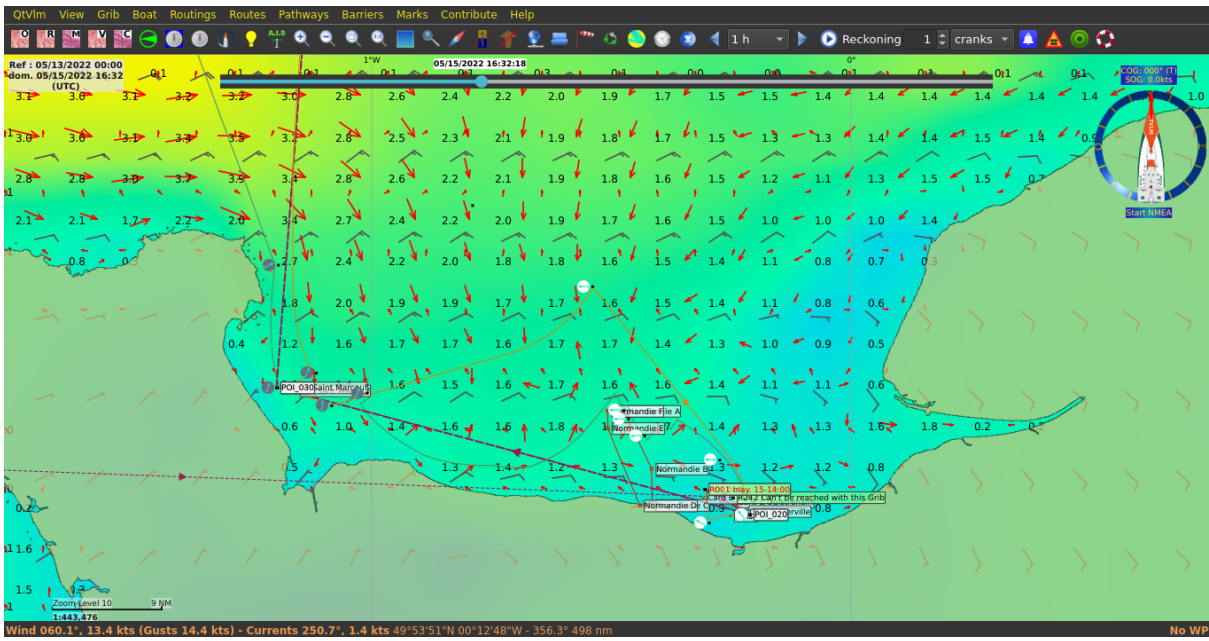
For the first part of the race we also made a routing with WRF (orange). It represents the currents much better.

We will divide the weather routing of the race in 7 main legs:

1. From Start until Saint Marcouf
2. From Saint Marcouf to Ile de Wight
3. From Ile de Wight to Phare Wolf Rock
4. From Phare Wolf Rock to Trustar Rock
5. From Trustar Rock to Fastnet
6. From Fastnet to Ile de Guernesey
7. From Ile de Guernesey to finish

Leg 1

The Race will start, based on WRF with ESE winds of 9/12kts in the departure and ~15kts from E at N of the Normandy restriction area. It will veer to ENE during the evening and then at night to SE and then SW. That's why WRF suggest to go N at the beginning to catch stronger winds from ENE, when it veers to SE gybe and start going WSW, to gain S for then sail better to the island with the veering to SW.



The beginning is the same as ECMWF predicts, so I feel more confident with this scenario than the ICON one.

At night, a thunderstorm is expected to come from the W. If it is raining heavily down the cloud, then the cold air will descend from the cloud and blow outwards. So this cloud-wind will sum to the environment wind from SE. So at the E of the cloud there will be no wind, and at the W the wind will increase. Maybe you can pass this cloud by the S and then catch the increased winds at W.



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This figure illustrates how to manage a rainy cloud.

Leg2 (mean TWA expected: 120/140°)

For this leg it is expected the SW wind to be established, 9-12kts. But in the morning wind will veer to SSW and increase up to 18kts (Gusts 25kts).

As the wind is blowing from SW, it accelerates in the channel and I prefer to be more W to catch the Gust first and pointing down with them.

It will be really important to consider the current in this crossing (almost 3kts current): based on WRF it will go to the W and change to E in the morning but for that time you will be approaching the island. So consider that you will have to make a heading more to E to counteract the current that takes you to the W.

Rounding the island, I prefer not to be so close to its SE coast because with winds from SSW, the wind will slow down near the coast for the effect of the island. And you will have more wind in the NW channel of the island because it will be channelled with SW wind.

| | TWS | TWD | TWA | SOG | COG (T) | GUSTS | RAIN | COMB WAVES HGT | WIND WAVES HGT | WIND WAVES DIR | WIND WAVES PER | SWELL WAVES HGT | SWELL WAVES DIR | SWELL WAVES PER | |
|------------------|-----------|---------|---------|-----------|---------|-----------|------------|----------------|----------------|----------------|----------------|-----------------|-----------------|-----------------|---|
| 05/15/2022 14:00 | 8.58 kts | 091.21° | 81.33° | 5.79 kts | 173.05° | 12.11 kts | 0.01 kg/m2 | 0.19m | 0.06m | 155.77° | 1.18s | 0.13m | 038.48° | 3.65s | 0 |
| 05/15/2022 15:00 | 8.46 kts | 136.60° | 131.70° | 7.01 kts | 003.93° | 10.25 kts | 0.02 kg/m2 | 0.13m | 0.05m | 154.52° | 1.43s | 0.10m | 031.00° | 3.73s | 0 |
| 05/15/2022 16:00 | 7.46 kts | 085.84° | 124.59° | 7.09 kts | 321.29° | 8.01 kts | 0.07 kg/m2 | 0.19m | 0.06m | 187.12° | 1.15s | 0.15m | 037.84° | 3.71s | 0 |
| 05/15/2022 17:00 | 10.66 kts | 086.53° | 125.42° | 7.21 kts | 321.17° | 9.36 kts | 0.23 kg/m2 | 0.26m | 0.05m | 243.61° | 0.62s | 0.21m | 044.99° | 3.64s | 0 |
| 05/15/2022 18:00 | 10.12 kts | 087.97° | 126.93° | 6.52 kts | 321.00° | 8.60 kts | 0.70 kg/m2 | 0.30m | 0.00m | 183.33° | 0.00s | 0.25m | 050.10° | 3.62s | 0 |
| 05/15/2022 19:00 | 10.51 kts | 112.90° | 135.10° | 7.11 kts | 238.93° | 9.03 kts | 0.68 kg/m2 | 0.28m | 0.01m | 189.51° | 0.57s | 0.24m | 050.39° | 3.65s | 0 |
| 05/15/2022 20:00 | 9.41 kts | 141.45° | 112.46° | 7.00 kts | 253.52° | 8.01 kts | 0.37 kg/m2 | 0.26m | 0.03m | 196.76° | 1.45s | 0.24m | 052.15° | 3.61s | 0 |
| 05/15/2022 21:00 | 7.72 kts | 168.34° | 85.75° | 6.32 kts | 253.81° | 7.01 kts | 0.11 kg/m2 | 0.26m | 0.04m | 213.18° | 1.42s | 0.25m | 054.73° | 3.48s | 0 |
| 05/15/2022 22:00 | 7.11 kts | 188.98° | 98.22° | 6.68 kts | 287.43° | 12.08 kts | 0.06 kg/m2 | 0.24m | 0.02m | 214.69° | 1.20s | 0.24m | 055.74° | 3.48s | 0 |
| 05/15/2022 23:00 | 8.07 kts | 207.36° | 130.70° | 7.69 kts | 338.90° | 17.52 kts | 0.03 kg/m2 | 0.24m | 0.03m | 216.20° | 1.38s | 0.24m | 056.77° | 3.54s | 0 |
| 05/16/2022 00:00 | 9.14 kts | 239.00° | 124.85° | 10.31 kts | 000.93° | 22.83 kts | 0.00 kg/m2 | 0.29m | 0.06m | 225.21° | 1.45s | 0.26m | 063.43° | 3.58s | 0 |
| 05/16/2022 01:00 | 13.79 kts | 244.47° | 119.92° | 10.41 kts | 003.55° | 23.30 kts | 0.00 kg/m2 | 0.40m | 0.05m | 234.62° | 1.44s | 0.29m | 195.07° | 6.28s | 0 |
| 05/16/2022 02:00 | 18.33 kts | 243.10° | 121.54° | 13.44 kts | 003.87° | 23.10 kts | 0.05 kg/m2 | 0.44m | 0.07m | 241.88° | 0.96s | 0.35m | 261.06° | 7.66s | 0 |
| 05/16/2022 03:00 | 20.40 kts | 241.31° | 123.63° | 13.67 kts | 004.26° | 23.75 kts | 0.02 kg/m2 | 0.39m | 0.16m | 242.50° | 1.46s | 0.27m | 256.96° | 7.40s | 0 |
| 05/16/2022 04:00 | 18.78 kts | 241.09° | 124.28° | 12.75 kts | 004.92° | 21.19 kts | 0.04 kg/m2 | 0.37m | 0.21m | 234.13° | 1.75s | 0.20m | 149.98° | 4.59s | 0 |
| 05/16/2022 05:00 | 10.66 kts | 246.36° | 119.36° | 8.97 kts | 005.43° | 18.17 kts | 0.01 kg/m2 | 0.27m | 0.17m | 217.50° | 1.71s | 0.14m | 111.67° | 3.12s | 0 |
| 05/16/2022 06:00 | 10.57 kts | 255.78° | 48.40° | 5.65 kts | 304.18° | 22.76 kts | 0.03 kg/m2 | N/A | N/A | N/A | N/A | N/A | N/A | N/A | 0 |

Logbook of the WRF route. You can see the change from E to SE and then SW of Leg1.

Leg3 (mean TWA expected : 80/100°)

For this Leg the wind is supposed to be ~6kts from SE at the beginning, and then increasing up to 18kts (gusts almost 30kts) after Plymouth and rotating to S.

With the SSE winds, there must be more wind on the W side of the coast tips.

| | TWS | TWD | TWA | SOG | COG (T) | GUSTS | RAIN | COMB WAVES HGT | WIND WAVES HGT | WIND WAVES DIR | WIND WAVES PER | SWELL WAVES HGT | SWELL WAVES DIR | SWELL WAVES PER |
|------------------|-----------|---------|---------|-----------|---------|-----------|------------|----------------|----------------|----------------|----------------|-----------------|-----------------|-----------------|
| 05/17/2022 01:30 | 5.25 kts | 144.28° | 95.49° | 4.96 kts | 239.80° | 8.92 kts | 0.00 kg/m2 | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| 05/17/2022 02:30 | 5.95 kts | 133.78° | 105.87° | 4.94 kts | 239.91° | 11.15 kts | 0.00 kg/m2 | 0.82m | N/A | N/A | N/A | 0.82m | 229.40° | 8.46s |
| 05/17/2022 03:30 | 9.13 kts | 137.46° | 102.04° | 7.12 kts | 239.48° | 14.52 kts | 0.00 kg/m2 | 0.85m | N/A | N/A | N/A | 0.84m | 229.86° | 8.45s |
| 05/17/2022 04:30 | 10.89 kts | 141.98° | 97.46° | 8.44 kts | 239.42° | 15.61 kts | 0.00 kg/m2 | 0.90m | N/A | N/A | N/A | 0.89m | 231.81° | 8.43s |
| 05/17/2022 05:30 | 12.23 kts | 153.64° | 109.17° | 9.57 kts | 262.85° | 17.30 kts | 0.00 kg/m2 | 0.97m | N/A | N/A | N/A | 0.95m | 231.28° | 8.42s |
| 05/17/2022 06:30 | 13.94 kts | 162.97° | 99.62° | 10.21 kts | 262.63° | 21.44 kts | 0.00 kg/m2 | 1.05m | 0.40m | 169.28° | 2.84s | 0.97m | 231.14° | 8.41s |
| 05/17/2022 07:30 | 13.94 kts | 166.44° | 95.69° | 9.89 kts | 262.64° | 18.52 kts | 0.00 kg/m2 | 1.12m | 0.55m | 172.03° | 3.70s | 0.97m | 227.50° | 8.62s |
| 05/17/2022 08:30 | 11.83 kts | 179.65° | 82.34° | 8.08 kts | 262.14° | 17.06 kts | 0.00 kg/m2 | 1.21m | N/A | N/A | N/A | 0.83m | 226.18° | 10.13s |
| 05/17/2022 09:30 | 10.00 kts | 180.43° | 81.40° | 7.43 kts | 261.75° | 17.06 kts | 0.00 kg/m2 | 1.36m | N/A | N/A | N/A | 1.17m | 220.40° | 8.99s |
| 05/17/2022 10:30 | 9.89 kts | 175.26° | 81.05° | 8.03 kts | 256.16° | 14.47 kts | 0.00 kg/m2 | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| 05/17/2022 11:30 | 9.63 kts | 167.70° | 88.47° | 8.23 kts | 256.17° | 15.60 kts | 0.00 kg/m2 | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| 05/17/2022 12:30 | 9.85 kts | 175.30° | 80.72° | 8.08 kts | 256.01° | 18.62 kts | 0.00 kg/m2 | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| 05/17/2022 13:30 | 10.01 kts | 178.18° | 77.67° | 7.97 kts | 256.23° | 20.01 kts | 0.00 kg/m2 | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| 05/17/2022 14:30 | 14.19 kts | 164.83° | 90.85° | 8.80 kts | 255.79° | 21.90 kts | 0.00 kg/m2 | 2.10m | N/A | N/A | N/A | 1.77m | 225.39° | 10.82s |
| 05/17/2022 15:30 | 15.80 kts | 171.81° | 83.64° | 8.48 kts | 255.63° | 25.16 kts | 0.00 kg/m2 | 1.96m | N/A | N/A | N/A | 1.89m | 231.33° | 13.67s |
| 05/17/2022 16:30 | 15.12 kts | 184.90° | 70.36° | 8.91 kts | 255.27° | 29.03 kts | 0.00 kg/m2 | 0.53m | N/A | N/A | N/A | 0.39m | 130.53° | 5.20s |
| 05/17/2022 17:30 | 17.37 kts | 188.76° | 66.32° | 9.57 kts | 255.08° | 28.53 kts | 0.00 kg/m2 | N/A | N/A | N/A | N/A | N/A | N/A | N/A |

Leg4 and on:

Now we will only focus on the first 3 legs (3 days). And leg 4 should be seen from the boat.