

# Oil barges endangered by Tauktae cyclone, India

Sentinel-1 CSAR IW acquired on 04 May 2021 from 01:02:26 to 01:03:16 UTC

Sentinel-1 CSAR IW acquired on 16 May 2021 from 01:02:27 to 01:03:17 UTC

Sentinel-5P TROPOMI CLOUD acquired on 16 May 2021 from 06:37:14 to 08:18:44 UTC

Sentinel-3 SLSTR RBT acquired on 17 May 2021 from 04:57:34 to 06:02:03 UTC

Sentinel-3 SLSTR RBT acquired on 17 May 2021 from 16:08:28 to 17:46:28 UTC

Author(s): Sentinel Vision team, VisioTerra, France - [svp@visioterra.fr](mailto:svp@visioterra.fr)

Keyword(s): Emergency, natural disaster, cyclone, ship security, oil and gas, India, Pakistan



[2D Layerstack](#)

Fig. 1 - S3 SLSTR (15.05.2021) - Tauktae became the strongest tropical cyclone to make landfall in the Indian state of Gujarat since 1998. [2D view](#)

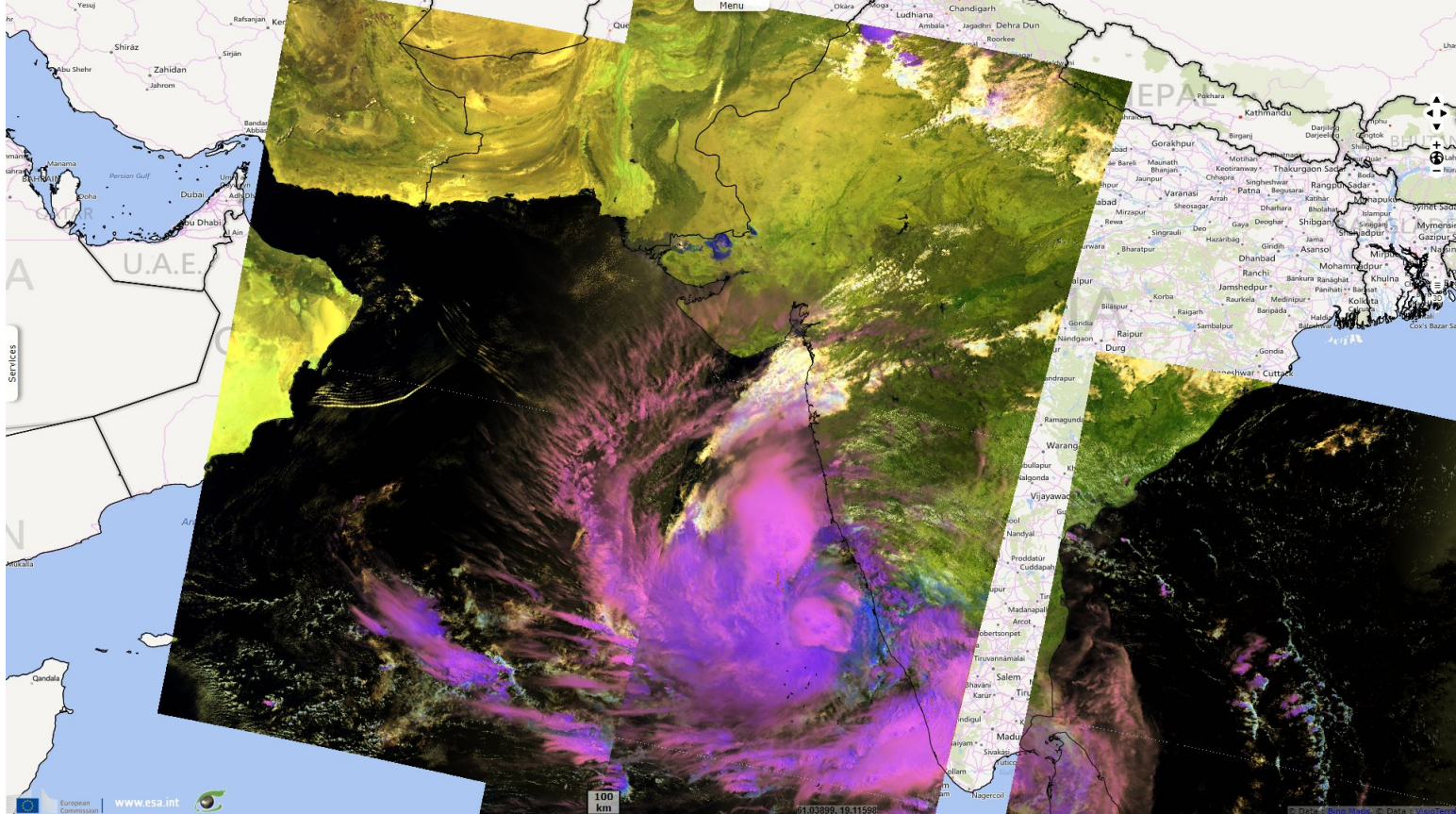
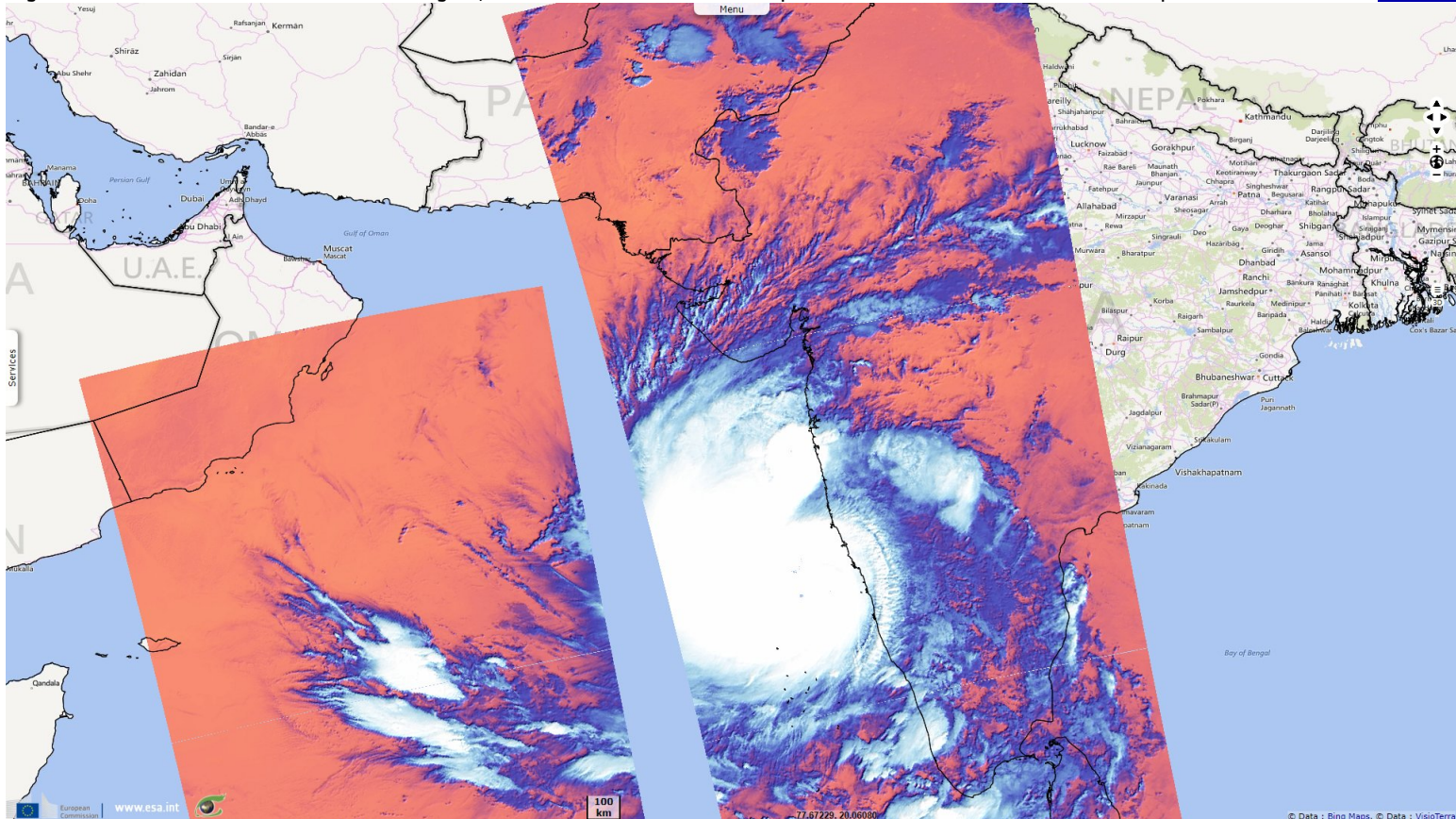


Fig. 2 - S3 SLSTR (15.05.2021) - At its strongest, its 1-minute sustained wind speed reached 220 km/h and its lowest pressure 950 hPa. [2D view](#)

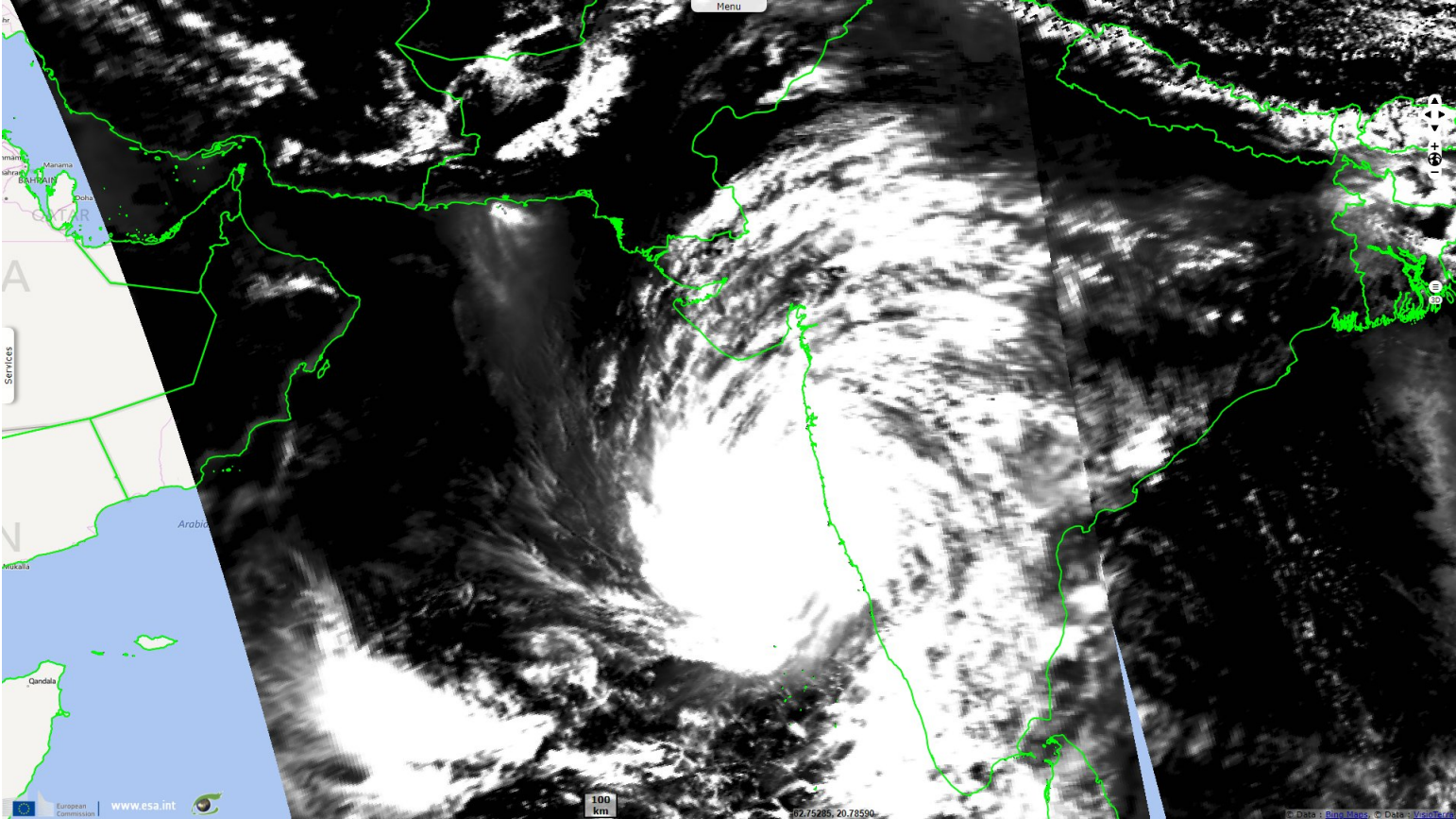




India's western state of Gujarat braced for cyclone Tauktae, reported to be the strongest storm to hit the region since 1998. Jessie Yeung and Swati Gupta [report](#) for CNN: "The Indian military is continuing search and rescue operations for a third day after a deadly cyclone left scores missing and stranded at sea. Cyclone Tauktae, the strongest storm on record to hit India's west coast, has killed at least 40 people since it made landfall in western Gujarat state on Monday night. The cyclone formed in the Arabian Sea, and tore past the financial hub of Mumbai, in Maharashtra state, before reaching Gujarat. Its strong winds and heavy rain caused flooding and destruction in low-lying coastal regions, even before it made landfall."

Fig. 3 - S5P TROPOMI (16.05.2021) - Cloud cover - It made Tauktae the equivalent of a high-end Category 3 tropical cyclone.

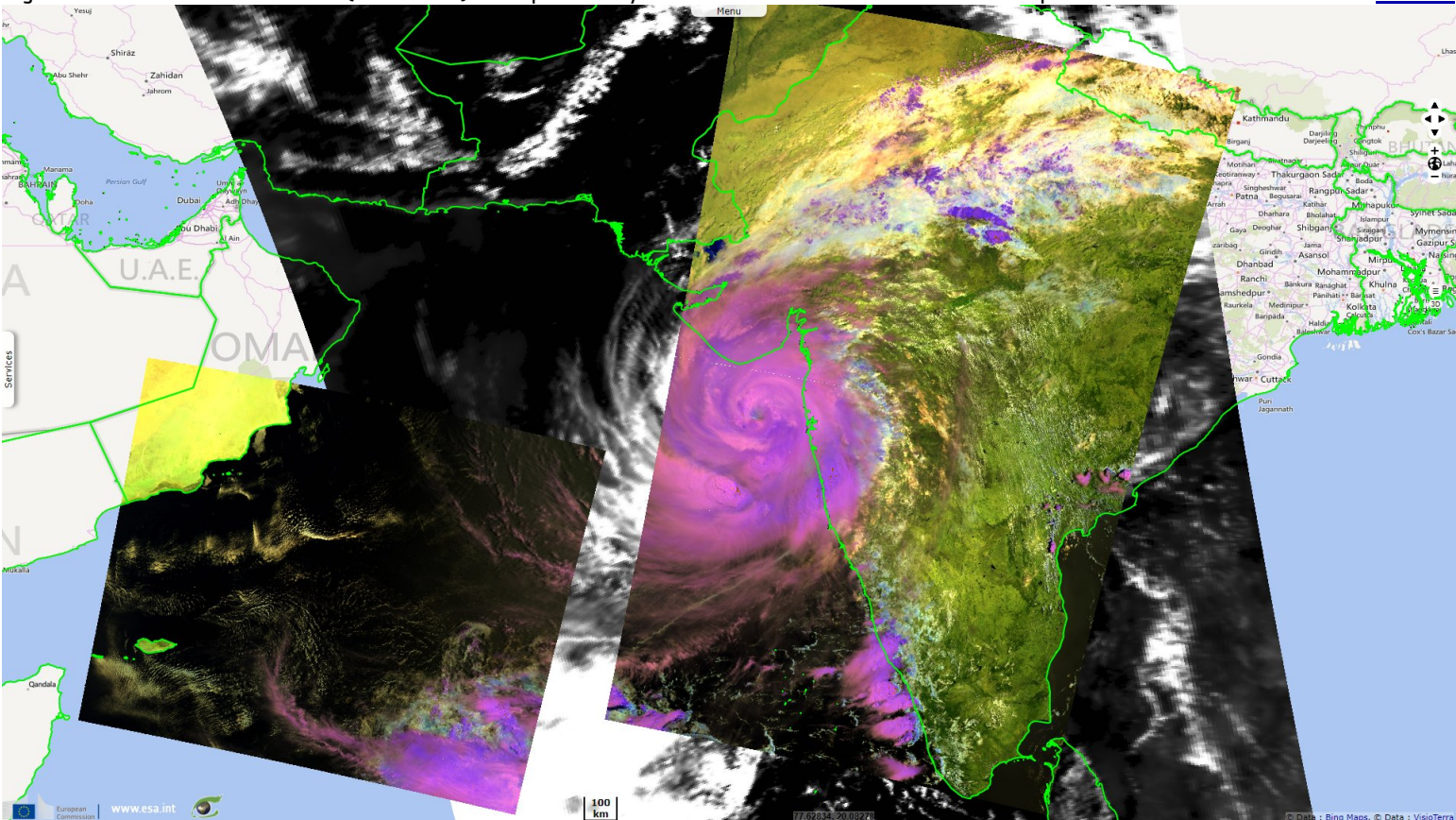
[2D view](#)



"Branches of the military, including the air force and navy, are now scouring the sea to rescue personnel on all operational oil rigs and vessels that were in the path of the cyclone. One barge, operated by the Indian Oil and Natural Gas Corporation (ONGC), held a crew of 261 people when it sank in an offshore oilfield on Monday due to the force of the cyclone. As of Thursday, the navy has rescued 188 crew members and recovered 26 bodies, said a navy spokesperson, adding it was still searching for the remaining 47 personnel."

Fig. 4 - S3 SLSTR + S5P TROPOMI (17.05.2021) - Complementary view of S3 SLSTR and S5P TROPOMI acquired within two hours.

[2D view](#)



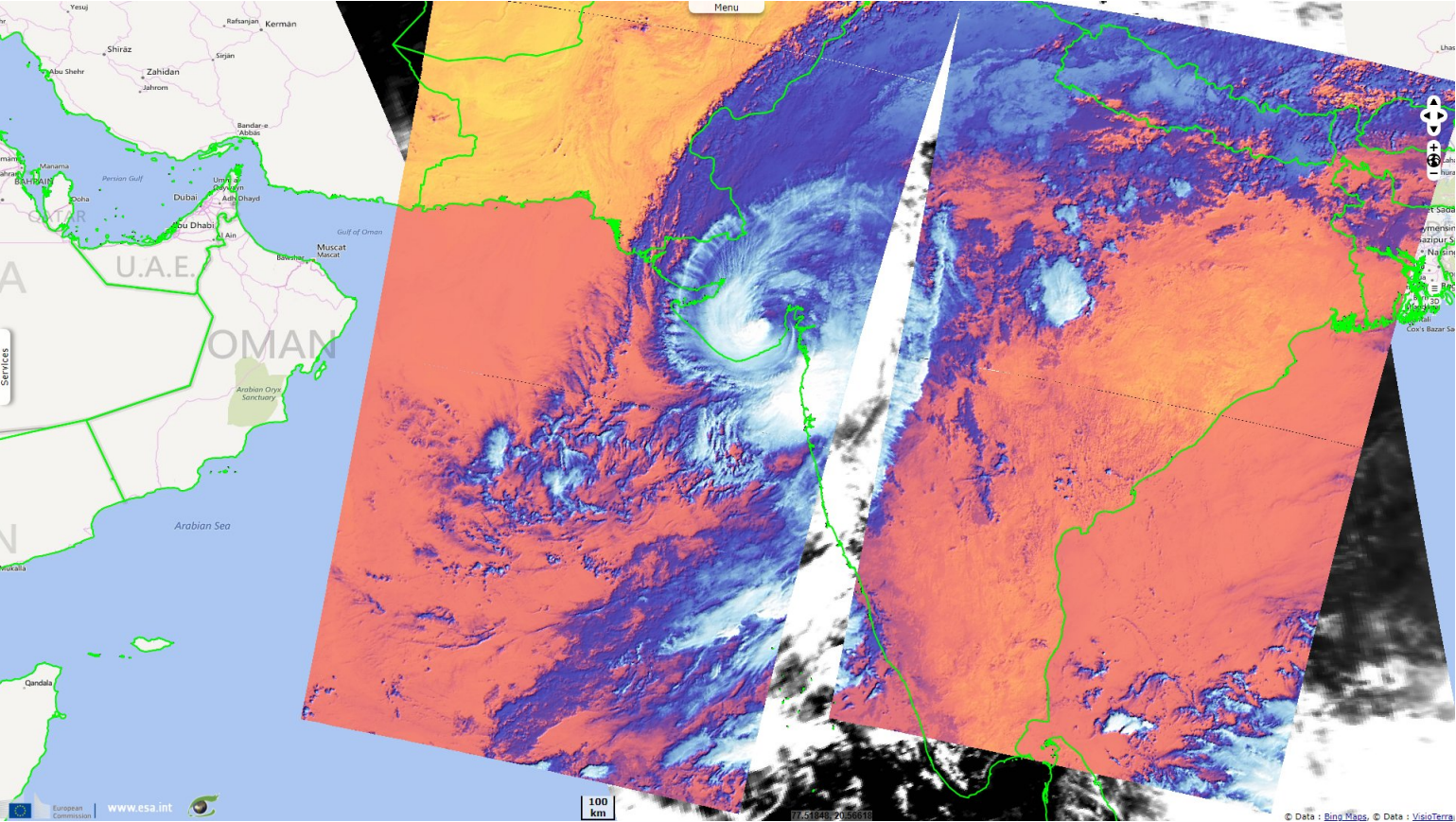
"We have five ships in the area and two are coming back with the rescued personnel and remaining three are staying for search and rescue," said spokesperson Vivek Madhwal. Late Tuesday, the navy said search and rescue operations would include helicopters and other naval assets, despite



the 'extremely challenging circumstances.'

Fig. 5 - S3 SLSTR (17.05.2021) - Tauktae's 1-minute sustained winds at landfall were estimated at 205 km/h.

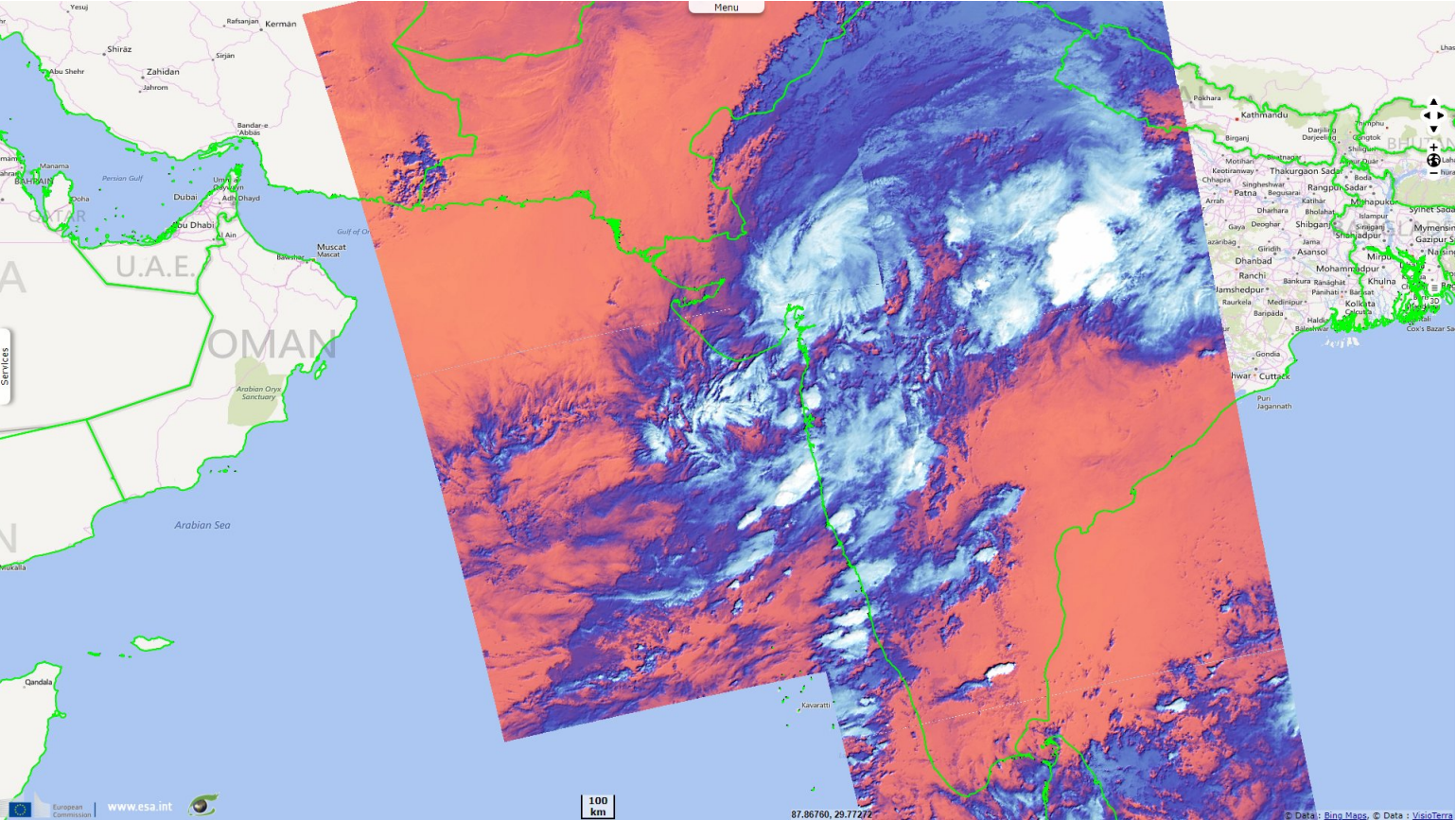
[2D view](#)



"Another barge, the Gal Constructor, ran aground off the west coast of Mumbai on Monday. The navy deployed a helicopter and several emergency vessels to evacuate the 137 crew members on board, all of whom are accounted for. Two other barges are being towed to safety by ONGC tugboats, Madhwal said. ONGC is India's biggest oil and gas company, with many of the barges used to service its offshore operations."

Fig. 6 - S3 SLSTR (18.05.2021) - Over 236 000 people found protection in mass shelters at one time. This happens at the worst of the Covid-19 crisis in India.

[2D view](#)



"So far, deaths have been recorded in the western states of Maharashtra, Kerala, Karnataka, Gujarat and Goa. Harshal Patel, the Gujarat relief commissioner, said Wednesday they were 'accidental casualties' in the wake of the cyclone. Other state authorities have cited lightning strikes, building collapses, and the falling of trees and electricity poles as cyclone-related causes of deaths."



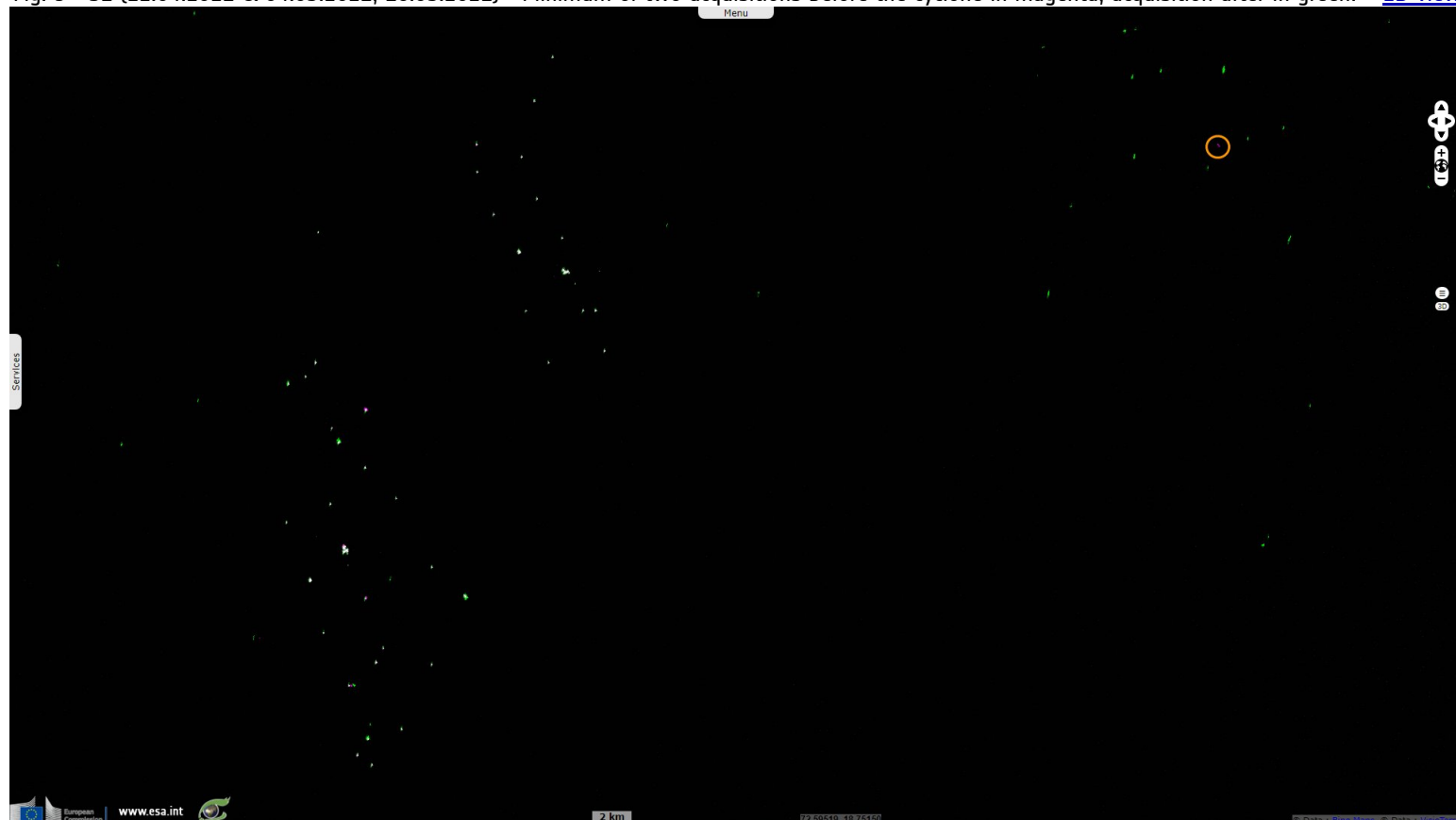
### 2D view



*"More than 2435 villages lost power, though 484 have since had it restored. Storm surges of up to 4 meters could bring significant coastal flooding to the region, the IMD warned. Ahmedabad, the most populated city in Gujarat, could see nearly 102mm of rainfall in the next 24 to 48 hours -- more than its average rainfall from January through June."* Though this year's monsoon season isn't scheduled to start until June 1, it might arrive early due to Cyclone Tauktae's landfall and the change of winds, according to CNN meteorologists.

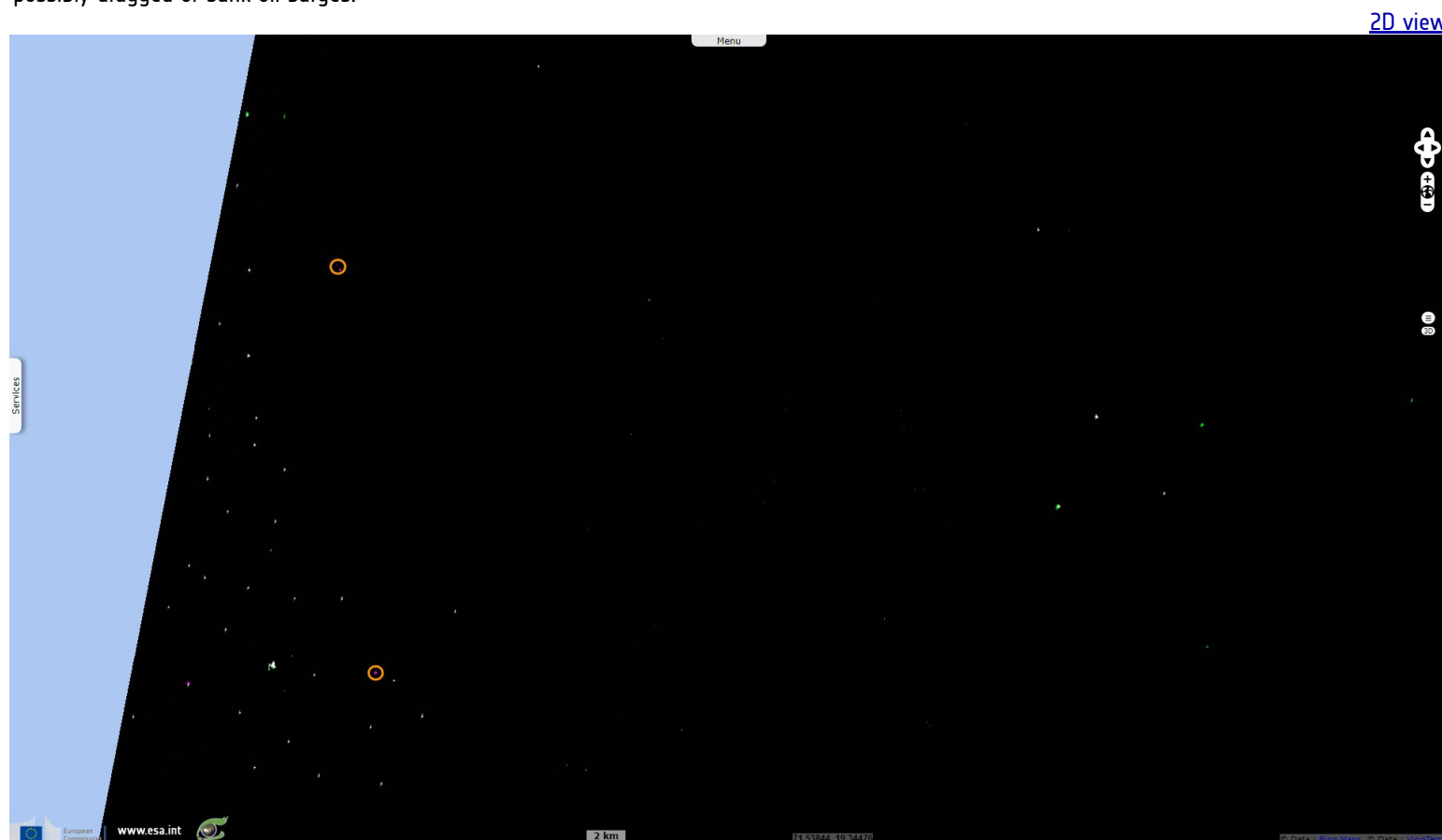


Fig. 9 - S1 (22.04.2021 & 04.05.2021; 16.05.2021) - Minimum of two acquisitions before the cyclone in magenta, acquisition after in green. [2D view](#)



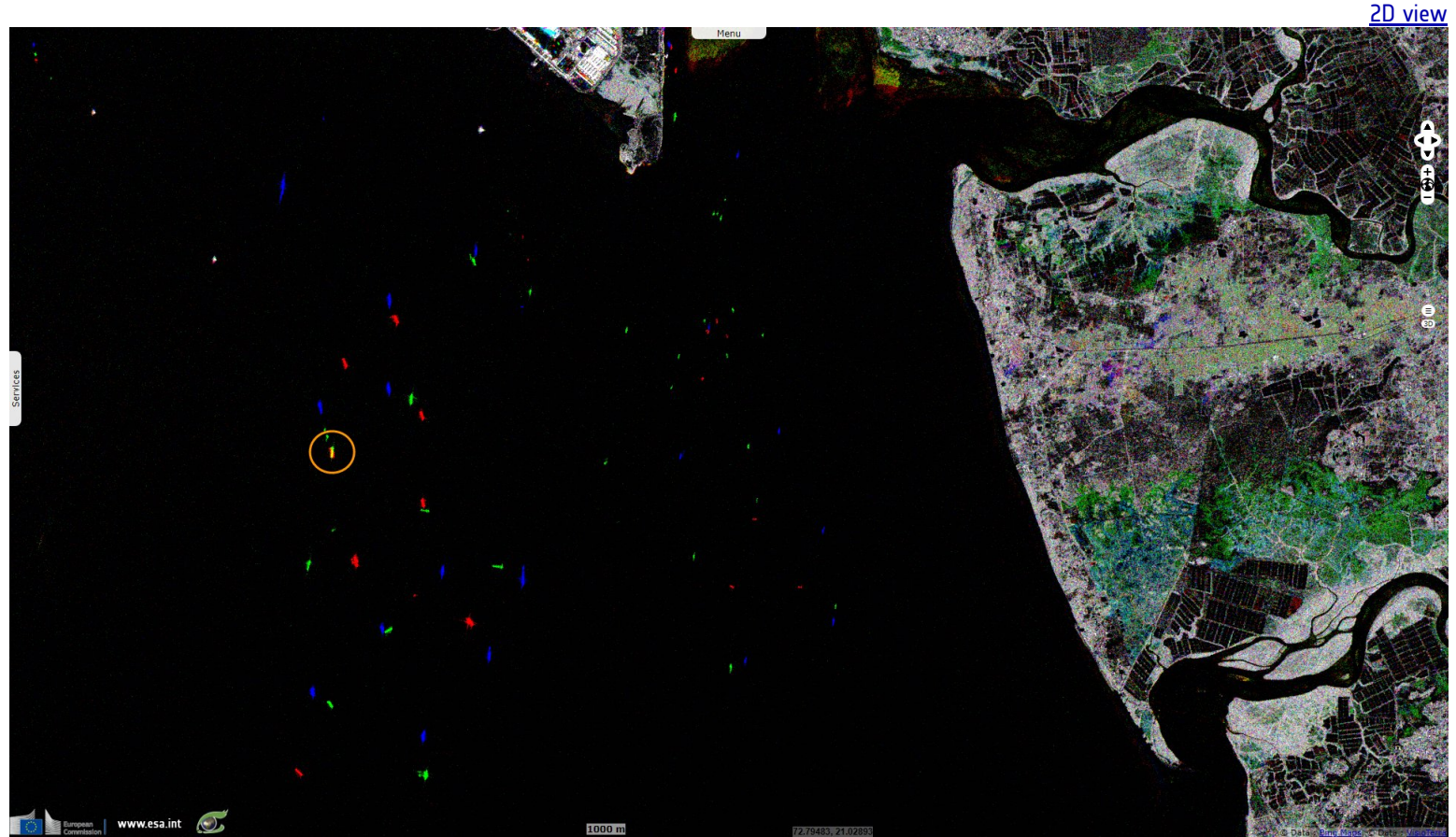
The BBC [completes](#): "The Indian navy has mounted a massive air and sea rescue mission for the missing oil workers, which is being hampered by huge waves: 'There are waves of 6 to 7.6 m, the winds are high and the visibility is low,' said navy spokesman Vivek Madhwal. More than 200 000 people in low-lying areas were moved to shelters, sparking fears of possible new coronavirus clusters in coming weeks. And the federal government has also ordered the vaccine drive to be halted in several coastal towns believed to be at risk."

Fig. 10 - S1 (22.04.2021 & 04.05.2021; 16.05.2021) - The fixed ships that are not present anymore after the cyclone show in magenta. These are possibly dragged or sunk oil barges.



In another article [written](#) by Jessie Yeung and Esha Mitra, CNN deals with the consequences of the cyclone regarding the pandemic: "India is the global epicenter of the pandemic. Its health care system has collapsed and patients are still dying from shortages of oxygen and other supplies. The government is more fragile and under greater scrutiny than before, as it struggles to contain the outbreak while facing heavy criticism both at home and overseas. And the cyclone could be just the harbinger of more disaster to come, as India's months-long monsoon season approaches."













Fig. 11 - S1 (22.04.2021; 04.05.2021; 16.05.2021) - The fixed ships that are not present anymore after the cyclone show in yellow. These are possibly dragged or sunk oil barges.



Jessie Yeung [adds](#): "Among the 400 Covid-19 hospitals in Gujarat, power supply has been disrupted to 100, said Rupani on Tuesday. All the hospitals have backup generators -- but these appliances failed at four hospitals, leaving them without electricity. Authorities are working to repair the affected generators, Rupani said. Vaccinations have been suspended across Gujarat. 'The big concern was that of Covid,' he said. 'The oxygen which we produce has been transported to our hospitals, but we also have to send oxygen to other states such as Maharashtra, Rajasthan, Delhi, Haryana, etc.'"

Tauktae resulted in at least 90 deaths in India, 5 in Pakistan and left another 81 people missing. The cyclone made landfall in Gujarat the same day as India recorded its, at the time, highest single-day COVID death toll, with 4329 deaths reported.

*The views expressed herein can in no way be taken to reflect the official opinion of the European Space Agency or the European Union.  
Contains modified Copernicus Sentinel data 2021, processed by VisioTerra.*

More on European Commission space:							
More on ESA:				<a href="#">S-1 website</a>	<a href="#">S-2 website</a>	<a href="#">S-3 website</a>	
More on Copernicus program:				<a href="#">SciHub portal</a>	<a href="#">Cophub portal</a>	<a href="#">Inthub portal</a>	<a href="#">Colhub portal</a>
More on VisioTerra:				<a href="#">Sentinel Vision Portal</a>	<a href="#">Envisat+ERS portal</a>	<a href="#">Swarm+GOCE portal</a>	<a href="#">CryoSat portal</a>