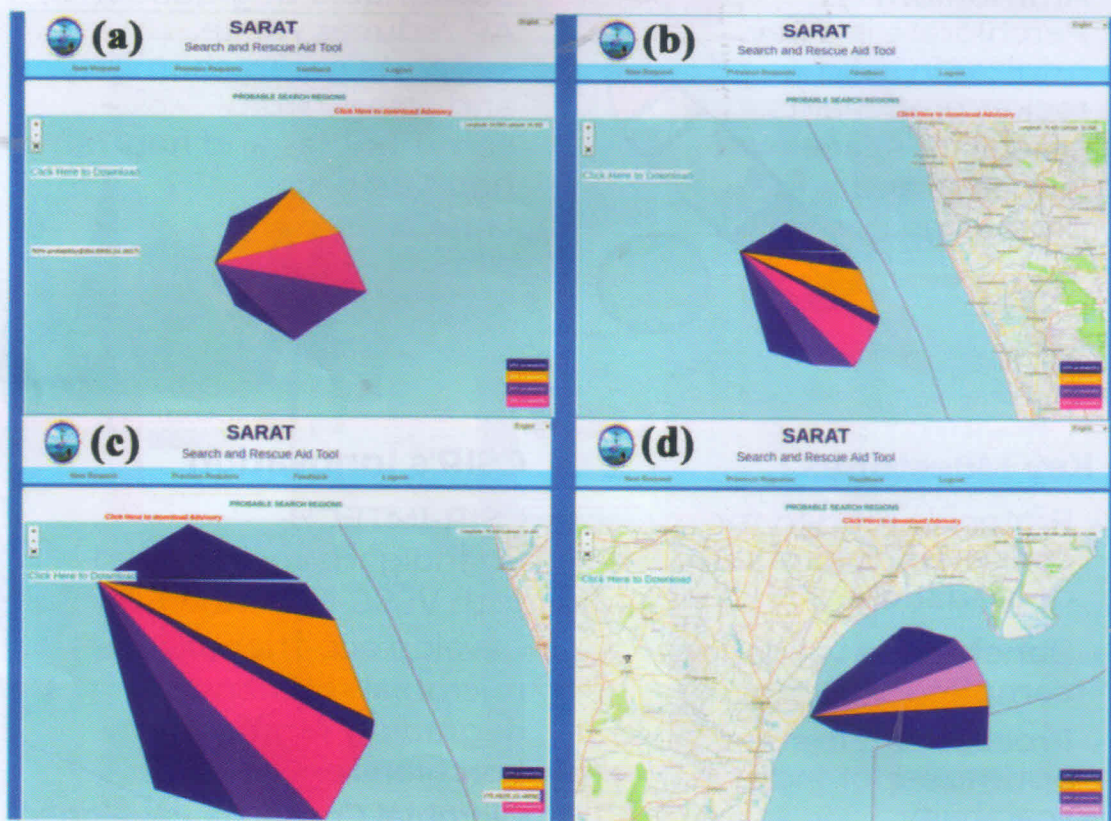


# SARAT-2

## A SMARTER EYE ON THE OCEAN



**I**N case of a ship or aircraft going missing over the ocean, searching for survivors or wreckage becomes a race against time. Every hour lost can mean the difference between saving lives and recovering bodies. In the Indian Ocean, where the weather is unpredictable and distances are huge, finding objects adrift has always been one of the hardest challenges for Search and Rescue (SAR) teams.

To address this issue, the Indian National Centre for Ocean Information Services (INCOIS) developed the Search and Rescue Aid Tool (SARAT) in 2016. Based on the “leeway” model, SARAT predicts how missing persons, life rafts, or debris move due to winds, currents, and waves. For the Indian Coast Guard, the main SAR agency of the country, this tool became a vital resource for planning operations throughout the northern Indian Ocean.

However, in spite of its usefulness, SARAT had its limitations too. In reality, the predicted search areas often did not spread out from the exact last known position of a missing object, but from a mathematically convenient point at the edge of a trajectory cluster. This slight flaw sometimes led the rescuers started looking in the wrong place. In rescue missions where every minute matters, such mistakes can be costly.

In view of this, scientists at INCOIS started working on their model again. In 2023, the Ministry of Earth Sciences (MoES) launched SARAT-2, which was the new version that can fix this issue and adds a number of new features. Most importantly, the change is simple yet important: the search area now spreads evenly in all directions from the exact last known location of the item, whether it’s a lost lifeboat, cargo