

Safer Sailing By Streamlining Rescue Efforts
with Couchbase Capella

Industry

- [High-tech](#)

Customer application

- Communication and Location Tracking App

Use Case

- [Field service](#)

NoSQL Solution

- [Field service](#)
- [IoT](#)

Product

- [Couchbase Capella](#)
- [Couchbase Capella App Services](#)
- [Couchbase Lite](#)

Key features

- Full-Text Search (FTS)
- Sync
- Query (SQL++)
- Mobile

Cloud provider

- [AWS](#)

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MOLO17 is a Couchbase partner that securely unlocks enterprise data potential with 100% uptime and uninterrupted business continuity. Its products and solutions leverage the best of NoSQL database technologies to guarantee an always-available, fast and consistent user experience, delivering quality outcomes for mission-critical applications such as search-and-rescue, via the cloud for all types of mobile devices.

When the MOLO17 team was approached by Insiel SpA to build a location tracking and communication application for Barcolana, the world-renowned regatta in the Gulf of Trieste, they turned to Couchbase's fully managed backend designed for mobile, IoT, and edge applications - Capella App Services on AWS.

CHALLENGES

- Relaying coordinates and location information to the coast guard via radio resulted in a higher likelihood for inaccuracies and miscommunication due to the close proximity of vessels
- It took a long time to find sailors in the open sea, since there are more than one thousand boats that all look similar
- Lack of internet connectivity while boats are on the water delayed communication and assistance

OUTCOMES

- 200 app downloads and 10 boats rescued in minutes vs hours
- Precise, one-tap location information from sailors leading to safer events and faster emergency response times
- Streamlined information flow, offline availability, and near real-time synchronization even while the app is in the background
- Happier, safer sailing teams

“With the support of Insiel SpA and our partner Couchbase, MOLO17 is proud to have delivered a strategic tool that the Italian Coast Guard can deploy in emergency situations where it is critical to precisely locate and communicate with vessels at sea.”

— **Daniele Angeli**
Founder & CEO, MOLO17

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“This is the second solution MOLO17 delivers in the emergency-rescue field, both using Couchbase technologies.”

Daniele Angeli,
Founder & CEO, MOLO17

THE CHALLENGE: CREATE A SAFE ENVIRONMENT FOR SAILORS THROUGH REAL-TIME FEEDBACK AND LOCATION TRACKING

Insiel SpA is an IT company owned by the north-east Italian regional government of Friuli Venezia Giulia that offers solutions for the government and management of the Public Administration, health care and local public services in Friuli Venezia Giulia. When they approached Couchbase partner MOLO17 to develop a mobile application for sailing crews participating in Barcolana, a world-renowned regatta in the Gulf of Trieste, they had two main goals:

- Enable a sailor to send distress messages to the organization overseeing the regatta
- Provide visibility of a sailor’s exact location so help could be delivered quickly and efficiently in an emergency situation

Factors that made developing this type of application a challenge included the lack of internet connectivity while boats are on the water. MOLO17’s ability to deploy mission-critical capabilities offline through Couchbase Capella App Services made them the perfect fit for the project.

During previous Barcolana events, sailors would relay coordinates and location information to the Coast Guard via radio. While this method is still considered the de-facto standard for rescue operations, Insiel had a vision to offer an additional tool to the Italian Coast Guard and to the organizers of the event to improve their responses after requests for help. When relying on information from a distressed sailor, there was a higher likelihood for inaccuracies and miscommunication. Additionally, in some cases it took a long time to locate sailors in the open sea because of the thousands of boats that all looked similar. The Italian Coast Guard needed a more efficient way to identify the boats that required assistance with precise location information in real-time.



THE SOLUTION: STREAMLINED INFORMATION, OFFLINE AVAILABILITY AND REAL-TIME SYNCHRONIZATION

The suitably named app, YouSeaMe, was developed for Insiel and made available to the Italian Coast Guard with sailors in mind to help rescue people in open seas if challenges arose. There are two versions of the app (available in both iOS and Android) - one for the sailors to send distress messages, and one for the emergency medical service operators located in the harbor of Trieste, ready to intervene in case of need.

The version for sailors has an SOS button as soon as they open the app. Rather than relaying incomplete information back and forth with the Coast Guard, sailors' smartphones are used to provide their precise location even while the app is in the background. Through the SOS button, sailors are then able to select the type of incident that has occurred, such as engine failure or a medical emergency, and include voice notes and/or pictures before submitting their request. The version used by the Italian Coast Guard seamlessly synchronizes data and combines geospatial queries with standard queries to fetch boats' geolocation, direction and speed for real-time feedback and historical path tracking in order to provide a safe environment for all participants in the events.

In addition to the mobile apps, a backend web platform was developed to provide the control room team an overview of each boat's movement in real-time, enabling them to react in case of an incident and assign the proper rescue vehicle based on the boat type (e.g., length, weight, incident kind). The app won't replace the legacy radio system entirely, but it provides a more effective add-on for sailors.

The solution built by MOLO17 for Insiel SpA and powered by Couchbase on AWS offers situational awareness, streamlined information flow, offline availability, near real-time synchronization and effortless integration with existing databases.



Couchbase + AWS Better Together for

- Versatility
- Performane
- Scalability
- Value
- Global Availability

A SUCCESSFUL EVENT AND MORE TO COME

The YouSeaMe app was highly successful at Barcolana - both the sailors and emergency medical response team reported extremely precise and real-time geo-positioning, all while maintaining low battery usage on their mobile devices, thanks to an optimized algorithm created by the MOLO17 team. The app's easy-to-use interface also meant that users did not require any special training prior to the event.

Overall, the October 2022 regatta saw 1,400 boats participate along with 34 rescue vehicles (33 boats and 1 helicopter) on-site at the event. In total, there were 200 downloads of the YouSeaMe app. Ten boats submitted an SOS request through the app due to mechanical failures and 100% were successfully rescued in minutes compared to what previously would have taken much more time. This was in sharp contrast to the five boats that needed rescue but were not leveraging the app - using "legacy" radio channels led to difficulties in being rescued promptly.

This is only the beginning of what MOLO17 and Insiel have in mind. Conversations have already begun around expanding the use of YouSeaMe to all regattas throughout the Italian peninsula as well as leveraging it in the Alps for hikers, whose current solution is unable to stream data in real-time without an internet connection or cache any data inside the app. Expanding the use of this new solution will streamline rescue operations and increase the safety of users - a win-win for all involved.



At Couchbase, we believe data is at the heart of the enterprise. We empower developers and architects to build, deploy, and run their mission-critical applications. Couchbase delivers a high-performance, flexible and scalable modern database that runs across the data center and any cloud. Many of the world's largest enterprises rely on Couchbase to power the core applications their businesses depend on. For more information, visit www.couchbase.com.