

ODYSSEA

Operating a network of integrated observatory
systems in the Mediterranean Sea

Project Deliverable Report

Deliverable Number: 9.3

Deliverable Title: Report on deployed, tested and validated mobile
app

Author(s): Vikki Batten, Jonny Goddard, Simon Keeble

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	Name	Organisation	Date	Signature (initials)
Coordinator	Georgios Sylaios	DUTH	10/11/2021	GS
WP Leaders	Laura Friedrich	WCMC	10/11/2021	LF

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Table of Contents

1	EXECUTIVE SUMMARY	6
2	INTRODUCTION	7
3	DEVELOPMENT AND FUNCTIONALITY	8
3.1	Developing the Marinomica mobile application.....	8
3.1.1	Consistent results across platforms.....	8
3.1.2	Accommodation of native phone technologies.....	8
3.1.3	Overcoming challenges	8
3.1.4	Optimising the user experience.....	9
3.2	Using the Marinomica mobile application.....	10
3.2.1	User instructions.....	10
3.2.2	Viewing and Using Maps.....	10
4	OUTREACH AND COMMUNICATION ACTIVITIES	13
4.1.1	Viewing and Using Maps.....	13
5	NEXT STEPS	14

Table of Figures

<i>Figure 2.1. The mobile application includes basic training tools such as “how-to” information to assure the quality of collected data.</i>	<i>7</i>
<i>Figure 3.1. Thumb Driven Design makes it easier to interact with the bottom of a mobile device, therefore, on the mobile application key features are split into tabs controlled from a bottom navigation component.</i>	<i>9</i>
<i>Figure 3.2. Basic Instructions on using the map.</i>	<i>10</i>
<i>Figure 3.3. Viewing the map and reordering layers.</i>	<i>11</i>
<i>Figure 3.4. Using the Meta Data tab.</i>	<i>12</i>

1 Executive Summary

The purpose of the Marinomica mobile app is to extend the web-based Marinomica application, offering remote access to the data and services. In addition, citizen science data is included to encourage interaction with the observatories and Marinomica service by the public.

The app was developed using the latest open-source technologies and is designed to operate in the same way across multiple devices.

Use of the app is being encouraged through the consortium's existing networks and is being marketed through the ODYSSEA website, Marinomica web-app website and social media.

The app is available via both [Google Play](#) and the [Apple App store](#). It has been available in Google Play since 4th October 2021 and Apple App store since 23rd October 2021.

There is a short video highlighting some of the features and functionality of the [Marinomica mobile app](#) available on YouTube.

2 Introduction

The objective of the Marinomica mobile app was to extend the functionality of the Marinomica web-based application to allow remote access to data, products and services. It also integrates citizen science data, which is visible alongside observational and model data.

The key features of the Marinomica application were identified and replicated in the mobile environment and, by using modern mobile development technologies, a single mobile app was developed and deployed across the Android and iOS ecosystems via their relative 'App Stores'.

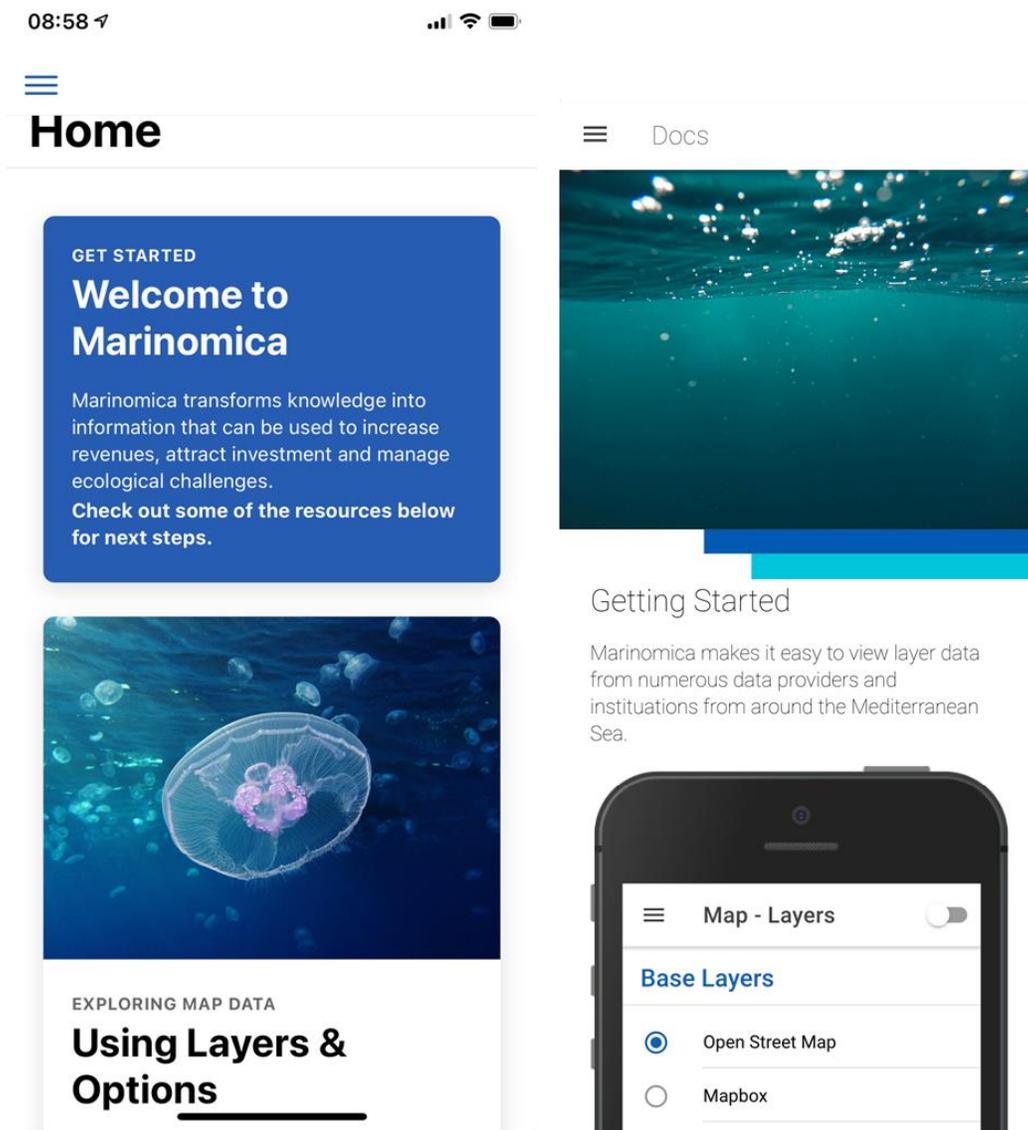


FIGURE 2.1. THE MOBILE APPLICATION INCLUDES BASIC TRAINING TOOLS SUCH AS “HOW-TO” INFORMATION TO ASSURE THE QUALITY OF COLLECTED DATA.

3 Development and functionality

The Marinomica mobile application is a version of the Marinomica platform designed for use on Android and iOS devices. It has been designed and developed to optimise performance and the user experience on mobile devices.

Basic training tools, such as “how-to” information have been included in the application.

Some changes developed for the mobile app will be rolled back to benefit Marinomica.

3.1 Developing the Marinomica mobile application

There are a multitude of approaches for developing mobile applications, including using native tech stacks for iOS and Android, using a framework that compiles into native (such as React Native) or by way of tools such as Cordova and Capacitor. As Marinomica’s use of open-source mapping technology largely depends on the DOM (Document Object Model), the decision was made to use Capacitor via the Ionic framework, thus providing easy access to the DOM and other web-based technologies used by mapping libraries such as OpenLayers and Leaflet.

The app uses React and standard web technologies. These can be adapted across multiple platforms, thus significantly cutting down the development time across different devices.

3.1.1 Consistent results across platforms

The Ionic framework leverages its own UI (User Interface) library to render consistent (although platform-specific) results across iOS and Android devices, using native implementations of certain UI elements where appropriate.

3.1.2 Accommodation of native phone technologies

The mobile application accommodates native phone technologies such as ‘vibrate’. This is very useful for signalling changes in the UI. For example, the reordering of map layers in Marinomica mobile is accompanied by vibration when moving layers into order, providing the kind of haptic feedback that isn’t possible via a desktop application.

As an application's core code is cached in memory, the mobile application is naturally faster in many areas than its desktop counterpart.

The simplification of the API (Application Programming Interface) for mobile makes for faster map loading times.

3.1.3 Overcoming challenges

The size of mobile screens presents some challenges in the display of data due to size constraints. A number of techniques have been employed to overcome these limitations such as end-users greater use of modal screens. Much of the drag and drop functionality in the desktop application has been replaced by modals for this reason.

3.1.4 Optimising the user experience

The application utilises a principle called ‘Thumb Driven Design’ which reflects the fact that the user will find it easier to interact with the bottom of their mobile device. For this reason, key features of the application are now split into tabs controlled from a bottom navigation component, see Figure 3.1.



FIGURE 3.1. THUMB DRIVEN DESIGN MAKES IT EASIER TO INTERACT WITH THE BOTTOM OF A MOBILE DEVICE, THEREFORE, ON THE MOBILE APPLICATION KEY FEATURES ARE SPLIT INTO TABS CONTROLLED FROM A BOTTOM NAVIGATION COMPONENT.

3.2 Using the Marinomica mobile application

Instructions on using the application can be accessed directly from the Home screen.

3.2.1 User instructions

Users can access simple instructions on using the map features by clicking on **Using Layers and Options** or **Discover More**. This takes the user to basic step by step instructions, swiping right to see the next step. (See Figure 3.2). Alternatively, users can access instructions by going to the *Menu*, which is in the top left corner of the home screen, and choosing *Docs*.

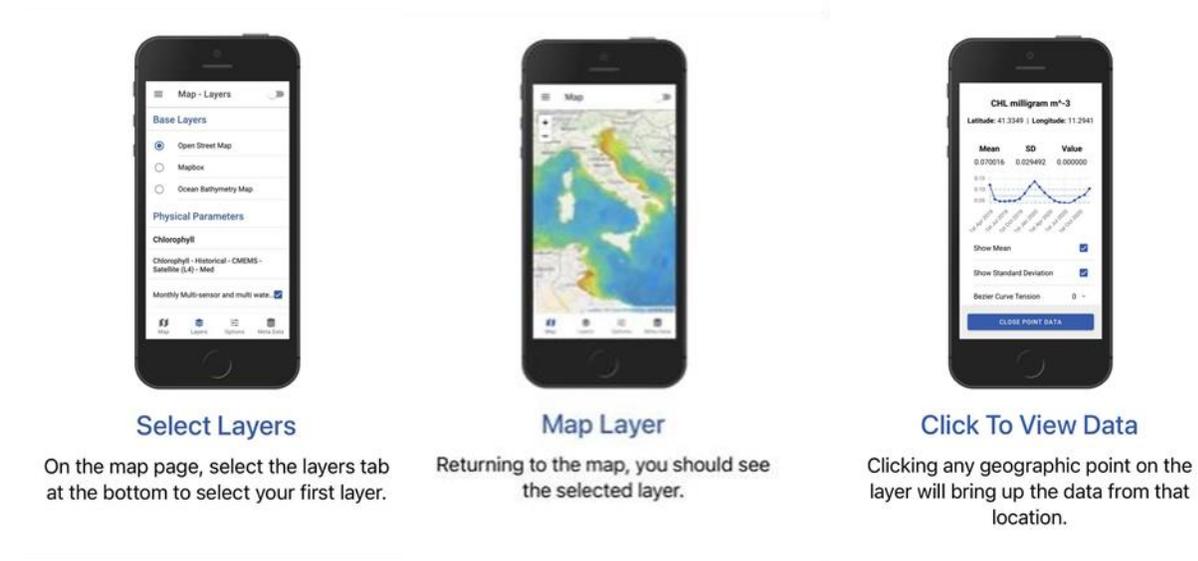


FIGURE 3.2. BASIC INSTRUCTIONS ON USING THE MAP.

3.2.2 Viewing and Using Maps

Once the user has chosen the basic map and layers, they can click on the points for further information and reorder the layers by simply dragging them into a different order. (Figure 3.3).

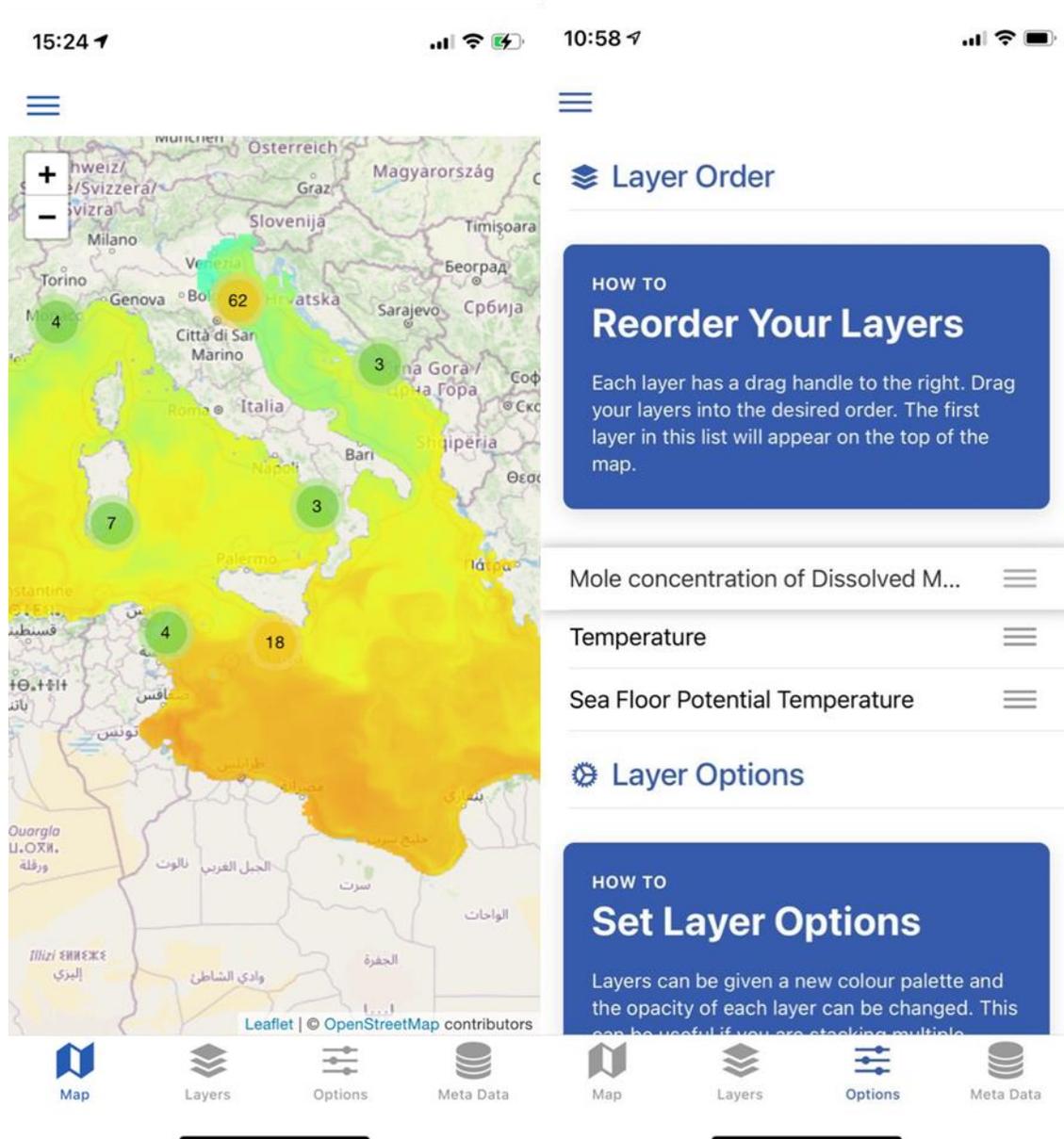


FIGURE 3.3. VIEWING THE MAP AND REORDERING LAYERS.

Choosing the Meta Data option brings up additional information, where available:

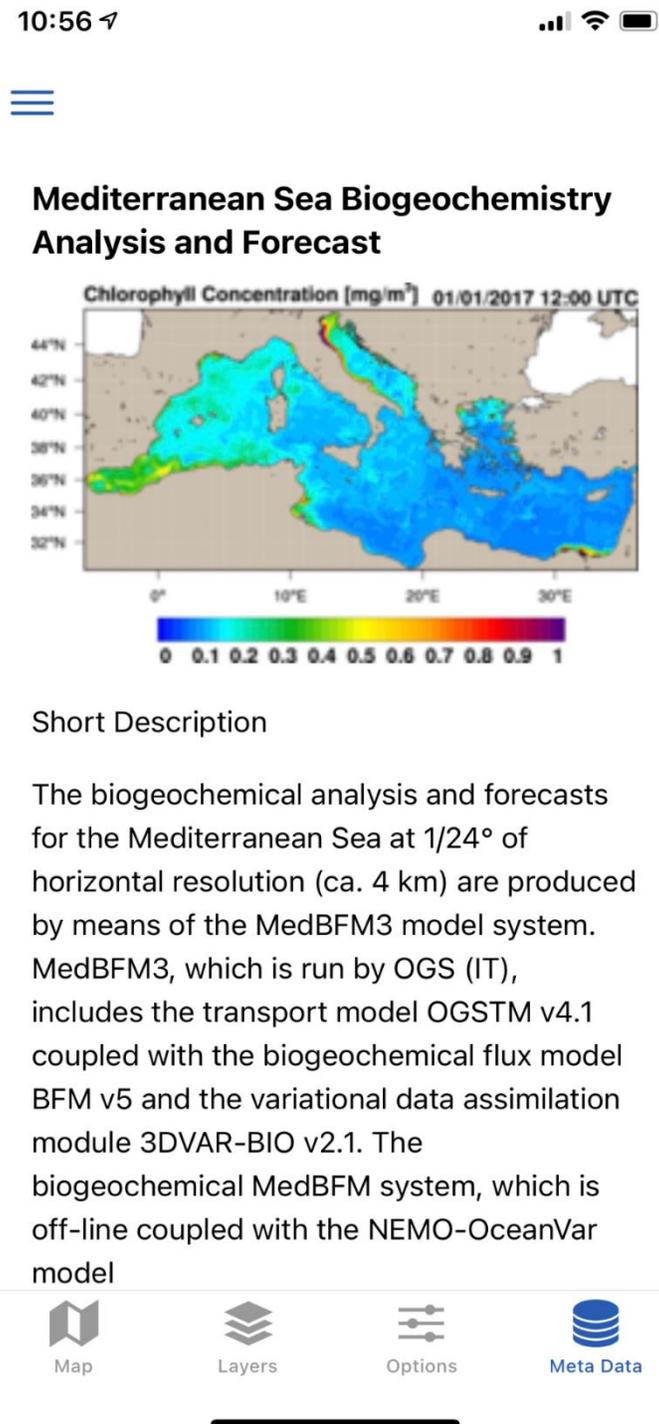


FIGURE 3.4. USING THE META DATA TAB.

4 Outreach and Communication Activities

The Marinomica mobile app has been uploaded to [Google Play](#) and [Apple App stores](#) and is now available for Android and iOS users to download and use. This has been communicated to the ODYSSEA partners to enable them to promote it through their extended networks.

4.1.1 Viewing and Using Maps

The Marinomica mobile application will be promoted via both the ODYSSEA website and blog, Marinomica platform website and ODYSSEA social media.

News items and posts will inform end-users and stakeholders that the mobile application is available as well as its features and benefits. There is a short YouTube video showing [how the Marinomica mobile application looks and works](#) that will be used for promotion and instruction.

The ODYSSEA end-of-project conference will highlight the mobile application. This event will be attended by key stakeholders and partners (D11.6).

5 Next Steps

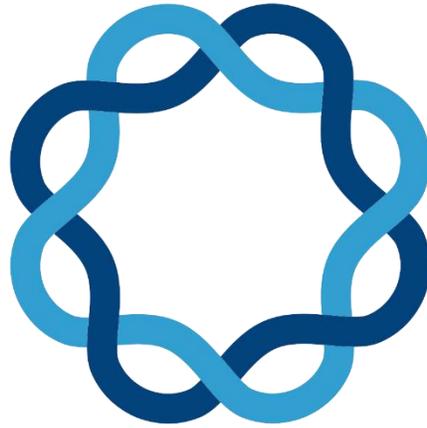
The app will be continually developed following feedback and is part of the Marinomica ecosystem, therefore, expected to be maintained over the coming years.

As part of the Marinomica ecosystem, download statistics will be monitored. Feedback from users will be encouraged and considered for future versions.

The mobile application will be part of the commercial offering of the Marinomica business.

As the dashboard components are further developed, these will be incorporated into the mobile app.

It is planned to integrate alerting into the Marinomica to alert users should certain conditions arrive and this alerting mechanism will also be added to the mobile app.



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