

Use of mobile phones in Coastal Emergencies

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Distress signals according to COLREG Rule 37



Intro - How To Call For Help At Sea – UK RNLI Safety Advice to boat users



HANDHELD VHF/DSC
Very High Frequency/
Digital Selective Calling

A handheld VHF/DSC radio with a black body and a silver antenna. The screen displays the number '16'. A red stamp with the text 'GMDSS APPROVED' is overlaid on the image.

EPIRB
Emergency Position
Indicating Radio Beacon

A yellow EPIRB (Emergency Position Indicating Radio Beacon) with a red top and a white antenna. A red stamp with the text 'GMDSS APPROVED' is overlaid on the image.

MOBILE PHONE
(in a waterproof pouch)

A black mobile phone inside a blue waterproof pouch. The pouch has a black top with a white logo that says 'RESPECT THE WATER'. The phone is shown in a vertical orientation.

PLB
Personal Locator Beacon

A grey and red Personal Locator Beacon (PLB) with a black antenna and a black strap. A red stamp with the text 'GMDSS APPROVED' is overlaid on the image.

AIS
Automatic
Identification
System Man
Overboard Device

An orange and red AIS (Automatic Identification System) Man Overboard Device. It has a long orange antenna and a red base with a yellow arrow pointing left.

TRACKER

An orange and black GPS tracker with a black screen and a black strap. The screen displays 'GPS' and 'S.O.S'.

1. Mobile phones compared with portable VHF
2. Increasing of mobile phone calls for rescue to a French MRCC
3. Important number for emergency at sea
4. Localization of mobile phone calls
5. VHF coverage issues in African coastal waters
6. Smartphone SAR applications
7. A rescue operation after a mobile phone call to MRCC

<https://www.bouyguestelecom-entreprises.fr/bblog/en-mer-sur-terre-ou-dans-les-airs-comment-rester-100-connecte/>

1. Mobile phones compared to portable VHF



1. Mobile phones compared with portable VHF - Portable VHF



- A **Mayday voice call on Channel 16** communicates the distress message to all vessels and shore stations in range. They will be able to contact the casualty
- Allow to **contact MRCC and converse with the nautical or air rescue resources** on final approach
- SAR units may use **Directional Finding (DF)** equipment
- **Range** up to 5 Nm for a 6 W device
- **People may not be comfortable to use** this equipment to send a Mayday voice call as they don't use it every day
- Good **VHF coverage** along the coast ?
- Possibility to send PAN PAN messages and SECURITY messages

- Allow to be aware of a request for assistance from another vessel, who may be very close by, and to communicate with the other vessel.
- Allow to receive weather bulletins and be aware in the event of a worsening situation.

Note :

With a **DSC-equipped radio** (some are not), distress alert is a recognised emergency signal, and it also transmits your location.

1. Mobile phones compared with portable VHF - Mobile phone



- **It's always with you so it can be an advantage**

Appear to offer a low cost alternative to VHF but they have significant weaknesses as follows :

- **Range** : Mobile networks are designed to cover land so may offer poor coverage at sea and you can very easily loose contact
- **Battery life** : the availability of service may become unreliable. A problem could arise part-way through a distress call if the phone battery were to lose its charge
- **One-way communication** – does not allow rescue vessels to listen in on the conversation between casualty and coastguard.
- **No possibility to be used with Directional Finding (DF) equipment.** SAR units cannot get a bearing of mobile signals
- **Even the “waterproof” phones suffer in a salt water environment / A pouch must to be used.**
- **Service area** : The area coverage of the service providers has increased to cover most of the channel but this cannot be guaranteed for all service providers

Recommendation : Should be seen as a secondary means of alerting in coastal areas covered by VHF

1. Mobile phones compared with portable VHF - Mobile phone



May be very useful also on the shore to contact emergency services

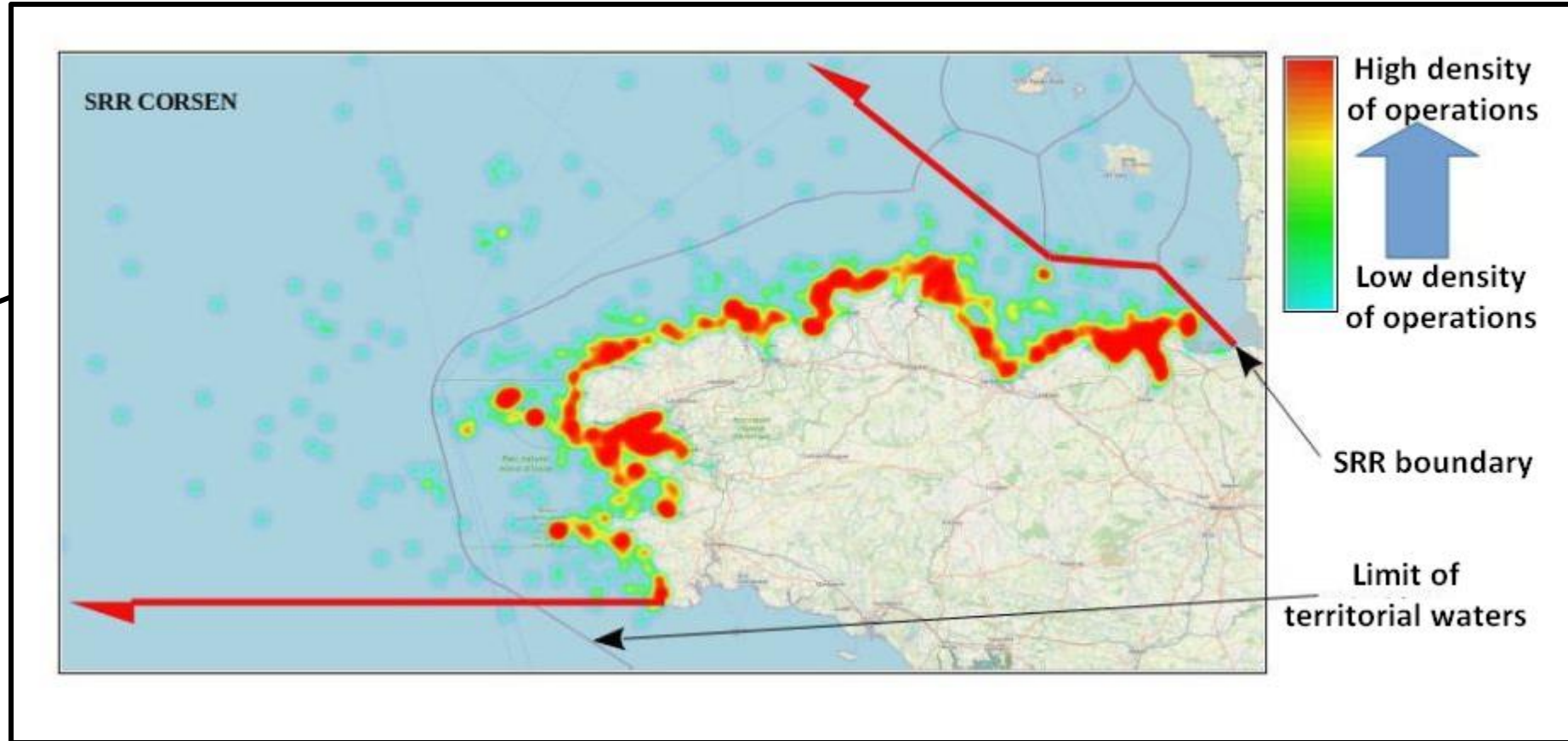


A man saved after getting trapped by mud

At sea, mobile phone should be seen as a secondary means of alerting in areas covered by VHF

2. Increasing of mobile phone calls for rescue to a French MRCC

High rate of incidents in coastal waters



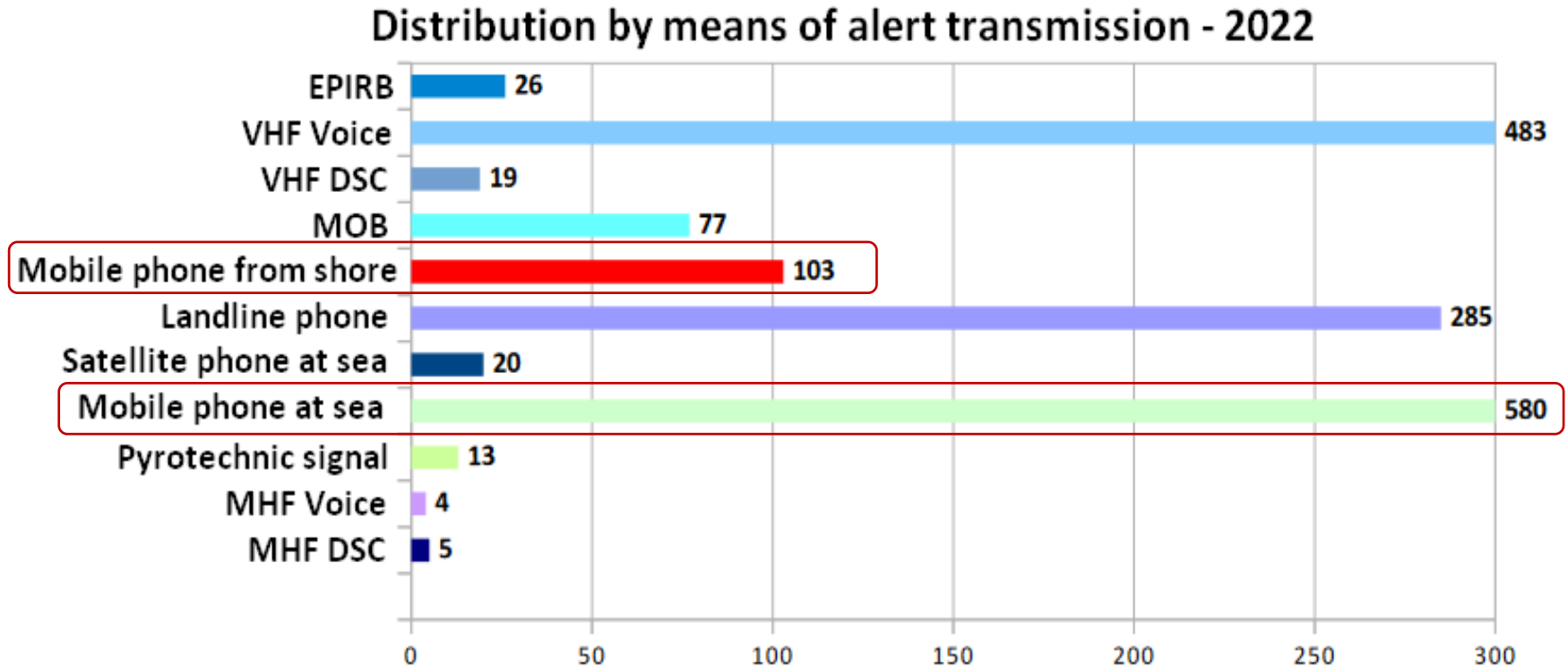
1023 SAR incidents in 2022
92% in territorial waters (< 12 Nm)

2. Increasing of mobile phone calls for rescue to a French MRCC

Figures show that mobile phone at sea is the first means of alerting

telephone calls account for 60% of all emergency calls

47 % of the alerts sent from sea were with mobile phones



In 2023, 1078 alerts were sent from sea to this MRCC by a mobile phone (versus 580 in 2022)

3. Important number for emergency at sea

Most of countries have adopted important numbers linked with emergency services (Police, Emergency Medical Service, Fire & Rescue Service, etc.).

Numbers are given per countries in ITU website :

https://www.itu.int/net/itu-t/inrdb/e129_important_numbers.aspx?country=73&pg_size=50

Country/Geographical Area	Number	Service category	Additional information	Allocated or assigned	Note	Last update
Tunisia	1819	Other	Elderly help line	-	-	2012-04-03
Tunisia	1880	Child help-line	-	-	-	2012-04-03
Tunisia	190	Medical	-	-	-	2012-04-03
Tunisia	197; 193	Traffic	-	-	-	2012-04-03
Tunisia	197; 193	Police	-	-	-	2012-04-03
Tunisia	198	Fire	-	-	-	2012-04-03
Tunisia	198	Hazards	-	-	-	2012-04-03

The designations employed and the presentation of material in this list do not imply the expression of any opinion whatsoever on the part of ITU concerning the legal status of any country or geographical area, or of its authorities.

3. Important number for emergency at sea (cont.)

Some countries have chosen an important number to call for emergency at sea.

Since 2015 in France, 196 has been the important number linked with the MRCCs.

At this time 37% of emergency calls were made by mobile phone

This implementation was accompanied by a communication of informations and recommendations :

What happens when I call 196?

I am put in direct contact with the MRCC.

MRCC is now considered by regulation to be as a maritime emergency service, in the same way as Ambulance Service and Fire Service in the mainland.

It does not replace the European 112 number.

With 196, CROSS does not need to know the location of the caller, which increases the effectiveness of the emergency services.

If not in coverage area GSM of your operators other ones are obliged to route the call to 196 with priority

When should I call 196?

When I am a witness or victim in the following circumstances:

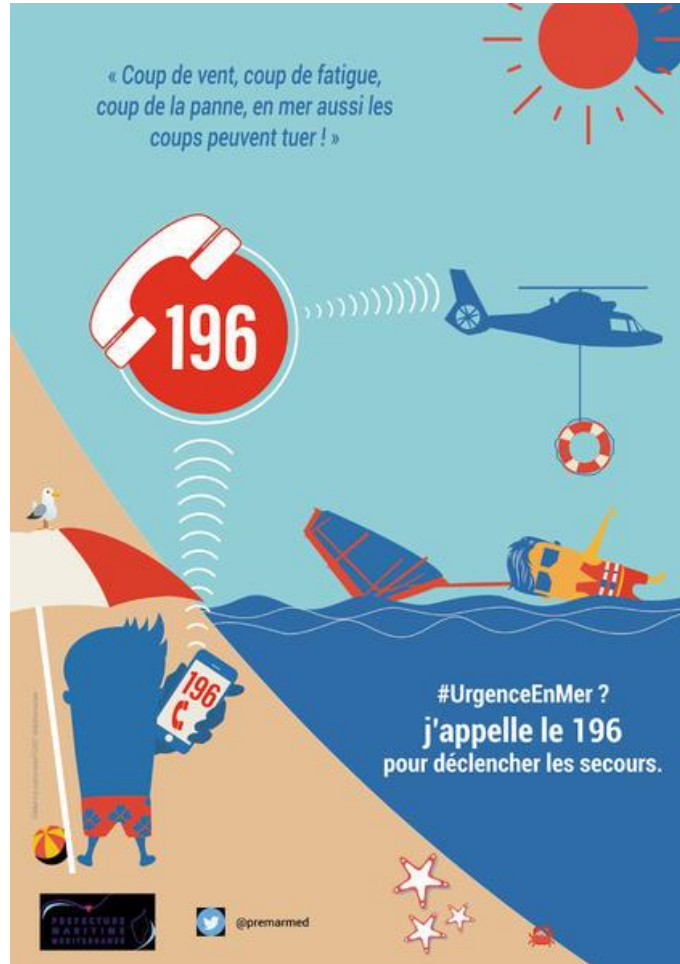
- a distress situation at sea,
- an emergency situation at sea,
- in the event of concern for any person at sea who has not been heard from,
- for any fact observed at sea that seems abnormal, that puts a person or a danger to a person or a boat.
- for any genuinely worrying situation

But beware of the limits of 196 !

In some coastal areas and quickly in marine areas, You will no longer have a telephone network. This means that the mobile phone does not replace the onboard VHF when you are sailing.

3. Important number for emergency at sea (cont.)

And **196** received also a wide publicity aimed at potential users.



4. Geolocalisation of mobile phone callers

Accurate caller location in case of an emergency is one of the most significant information for MRCC

196 is an emergency number so MRCC can get the location of the caller with an accuracy of 30 metres.

French MRCCS use technology AML (Advanced Mobile Location) that enables the provision of location information.

In the event of an emergency call to 196, an AML-enabled smartphone (all Android and iOS devices worldwide) automatically sends accurate location information of the caller to the MRCC. This information is derived from the location data of the phone (GNSS, Wifi).

The implementation of caller location criteria is a priority for EU member states. Since March 2022, all the smartphones sold in the European single market must offer the possibility to send handset-derived location information of the caller to the emergency services. This is already the case for a large majority of smartphones, namely all Android and iOS phones.

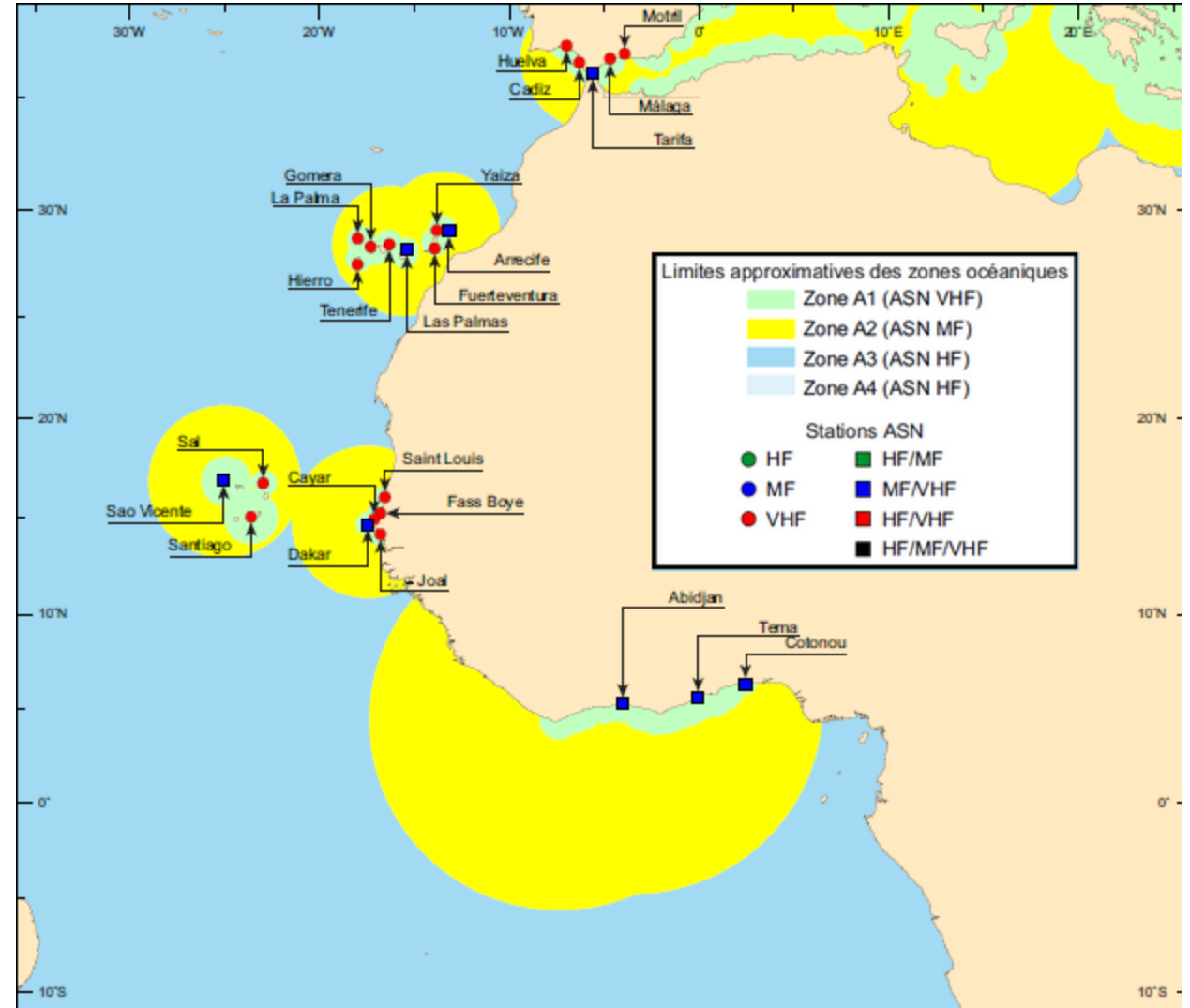


5. VHF coverage issues in African coastal waters

VHF coverage may vary significantly in the coastal waters of the African countries.


In some areas, especially near major ports and densely populated areas, VHF coverage is generally reliable. But in more remote or less developed regions, coverage may be limited or non-existent.

Mobile network coverage is better. Mobile phone may be the only means to reach rescue services if in range of the mobile phone network.



6. Smartphone SAR applications





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MARITIME
ORGANIZATION

E

4 ALBERT EMBANKMENT
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COMSAR.1/Circ.56
30 November 2012

GUIDANCE ON SMARTPHONE AND OTHER COMPUTER DEVICE SAR APPLICATIONS

IMO Circular [COMSAR.1/Circ.56](#) warns about potential safety concerns of IMO about the use of such applications where the application relies on e-mail as a form of notification.

E-mail has not been approved as a means of distress notification to an RCC. There is no guarantee that an e-mail alert will be received by the appropriate authorities (including RCCs);

Recommendations to Member Governments

“Safety/Security at Sea” IORIS Application in Kenya

IORIS is a comprehensive platform for maritime domain awareness and information sharing among coastal states, regional organizations, and maritime stakeholders **in several countries of East Africa.**

IORIS application **strengthens relationship between coastal communities and maritime law enforcement actors and SAR services.**

Users can send distress calls through the application, providing essential information such as the nature of the emergency, vessel details, and the exact location of the incident.

In Kenya, informations are first received by **KCGS Operation Centre** which reacts to inputs and/or notifies relevant agencies (including MRCC Mombasa for SAR issues) and IORIS.

*This application is part of
Go Blue project in Kenya,
Funded by the European Union
Implemented by Expertise France
For the Kenya Coast Guard Service*

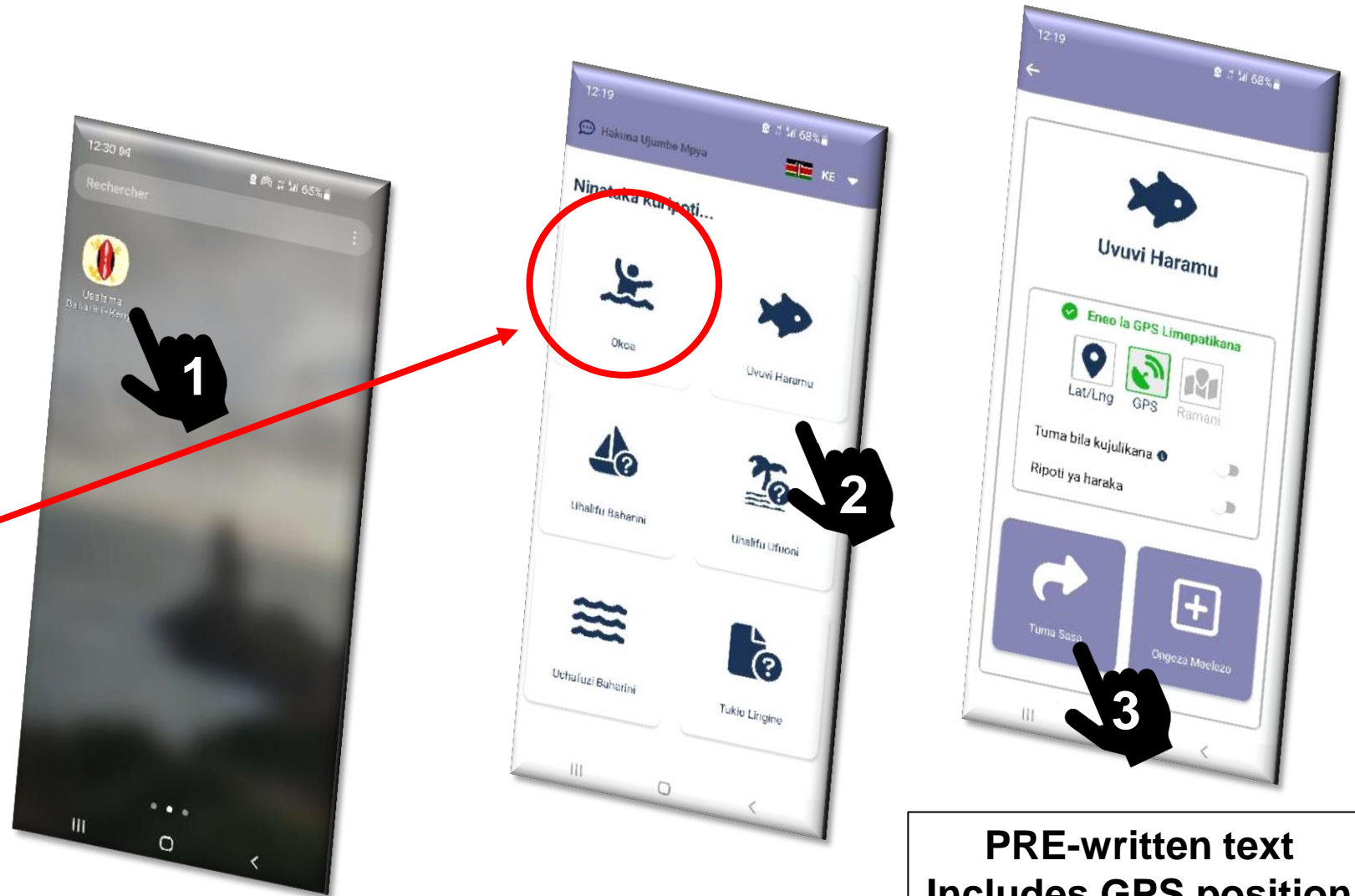


“Safety/Security at Sea” IORIS Application in Kenya

Users : Coastal professionals agreed by Kenya Coast Guard Service (KCGS)

Reporting options :

1. **Safety of Life**
2. Illegal fishing
3. Smuggling at Sea
4. Smuggling Inshore
5. Pollution
6. Other event



**PRE-written text
Includes GPS position**

Languages: English and Kiswahili. Future versions in other languages for other countries

“Safety/Security at Sea” IORIS Application in Kenya

IORIS application offers the possibility to chat with the operational centre

The screenshot displays the IORIS application interface with a top navigation bar containing 'Messages', 'Forms', 'Documents', 'Active Users', 'Markers', and 'Coastal App Chat'. Below this is a 'New Conversation +' button. The main chat area is titled 'Search and Rescue' and shows a conversation between 'Livoi Francis' and 'KEN: XOC Operator'. The messages are as follows:

- Livoi Francis** 2023-12-13 10:04:30 UTC: Report a distress situation needing urgent help
- KEN: XOC Operator** 2023-12-13 10:14:52 UTC: thank you iam joc operator pleasa provide more detail location of vessel no.of crew board
- Livoi Francis** 2023-12-13 10:17:49 UTC: Location and picture shared. I'm not a certain to how many crews on board. Thank you
- KEN: XOC Operator** 2023-12-13 10:31:20 UTC: ok we going send team of our officers to save the stution
- Livoi Francis** 2023-12-13 10:42:00 UTC: Thank you a lot.
- KEN: XOC Operator** 2023-12-13 10:55:21 UTC: welcom thank you for your information.

Below the chat area is another section titled 'Illegal Fishing' with a message from 'KEN: XOC Operator' dated 2023-12-13 10:19:56 UTC: thank you very much if you have more information please let as know.

“Safety/Security at Sea” IORIS Application in Kenya

Operational at the end of February 2024. Further development for all IORIS countries with CRIMARIO programme.

Kenyan fishermen were targeted as potential users. Distribution of app began in May 2023.



Fishermen training at Watamu (Kenya)

6. Smartphone SAR applications - SAFETRX application in South Africa



A tracking app, used internationally and customised for South Africa.

SafeTrx is available to download from the Apple App Store and Google Play Store.

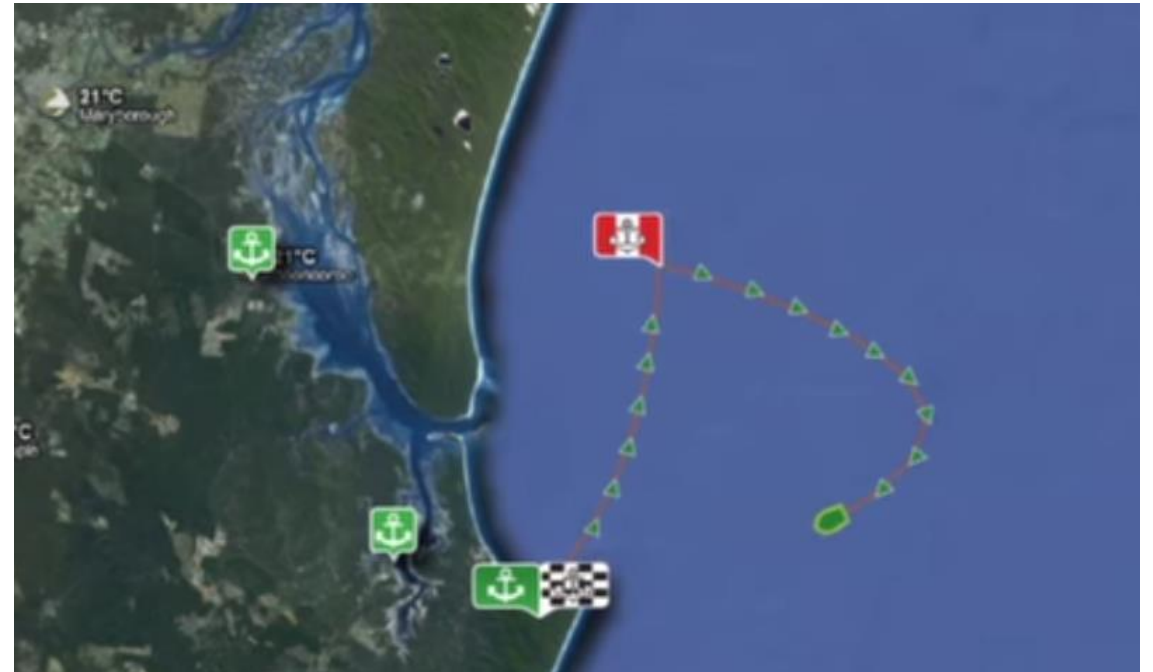
Enter your vessel details, the people on board, your planned route and your ETA. And load your emergency contact details (i.e spouse / person at home).

If you are late or if you press the panic button, NSRI is alerted and get your position.

False alarms do happen so, while we are preparing to launch, a controller will call you or your emergency contact to verify if it was a mistake.

It takes the “search” out of search and rescue.
And the best part - it's for free!

<https://www.nsri.org.za/water-safety/safetrx/>



8. A rescue operation after a mobile phone call to MRCC



7. A rescue operation after a mobile phone call to MRCC

22 DEC 2023

The capsizing of the boat threw the two occupants into the water.

They could manage to get on top of the overturned hull and called MRCC with a mobile phone.



7. A rescue operation after a mobile phone call to MRCC



A rescue helicopter was scrambled by MRCC to pick up the two occupants in hypothermia and send them to hospital.

The towage of the capsized boat was carried out by a lifeboat.



- Mobile phones are increasingly used to call for help by boat users and water sports enthusiasts.
- Users should be aware of mobile phones weaknesses
- An important phone number dedicated to maritime emergencies calls should be considered by national authorities.
- The mobile phone may be an essential means of linking up with the emergency services in coastal areas without VHF coverage.
- The geolocation function of a mobile phone can be exploited by MRCC.
- VHF remains recommended, especially when in range of a shore station.

Thank you for your attention

