Legal Disclosures

Statements made in this Presentation are not warranties, and Iridium expressly disclaims all warranties, warranties of merchantability and warranties of fitness for a particular purpose, except as expressly set forth in the relevant Iridium Limited Warranty and the Iridium Product Sales Terms and Conditions.

The views and opinions expressed in this Presentation are solely those of the presenter and do not necessarily represent those of Iridium which makes no warranty as to accuracy or completeness of the information provided or the views or opinions presented. The information in this Presentation is subject to change without notice.

Read and understand the Iridium User Manual and the safety warnings and information contained in that Manual before using any Iridium product.

Iridium® is a registered mark of Iridium Satellite LLC and its affiliates. All other registered marks, trademarks, service marks and logos are property of their respective holders. Information is subject to change without notice.

Iridium GMDSS

Maritime Academy Training Pack
Module Two: Iridium® GMDSS

V1.0
Updated September 2023

Training Overview & Usage Guide

- Adoption of Iridium GMDSS is rapidly increasing among Safety of Life at Sea (SOLAS) class vessels
- This training pack is designed to deliver a complete overview of Iridium GMDSS & Iridium Certus® services to maritime colleges and schools
- Instructors are encouraged to integrate the text and media of this training pack into their respective course material
- Integration of this training pack into a maritime course will ensure that the next generation of seafarers have knowledge of Iridium GMDSS services

Module Two: Iridium GMDSS

- Iridium GMDSS & Iridium SafetyCast®
- The first Iridium GMDSS terminal: LT-3100S by Lars Thrane
- Lars Thrane LT-3100S non-GMDSS functions
- How to activate and operate an Iridium GMDSS terminal
- Changes in SOLAS GMDSS regulations
- Iridium Certus GMDSS
- Iridium GMDSS - Frequently Asked Questions

Iridium GMDSS & Iridium SafetyCast

What is Iridium GMDSS?

Distress Alert

Critical data including **ID, status, and position** are sent to a rescue coordination center (RCC) at the press of a button.

+

Safety Voice

Upon distress alert, **a call is automatically initiated** at highest priority to RCC to share additional details.

EXCLUSIVE TO IRIDIUM

+

Maritime Safety Information (MSI)

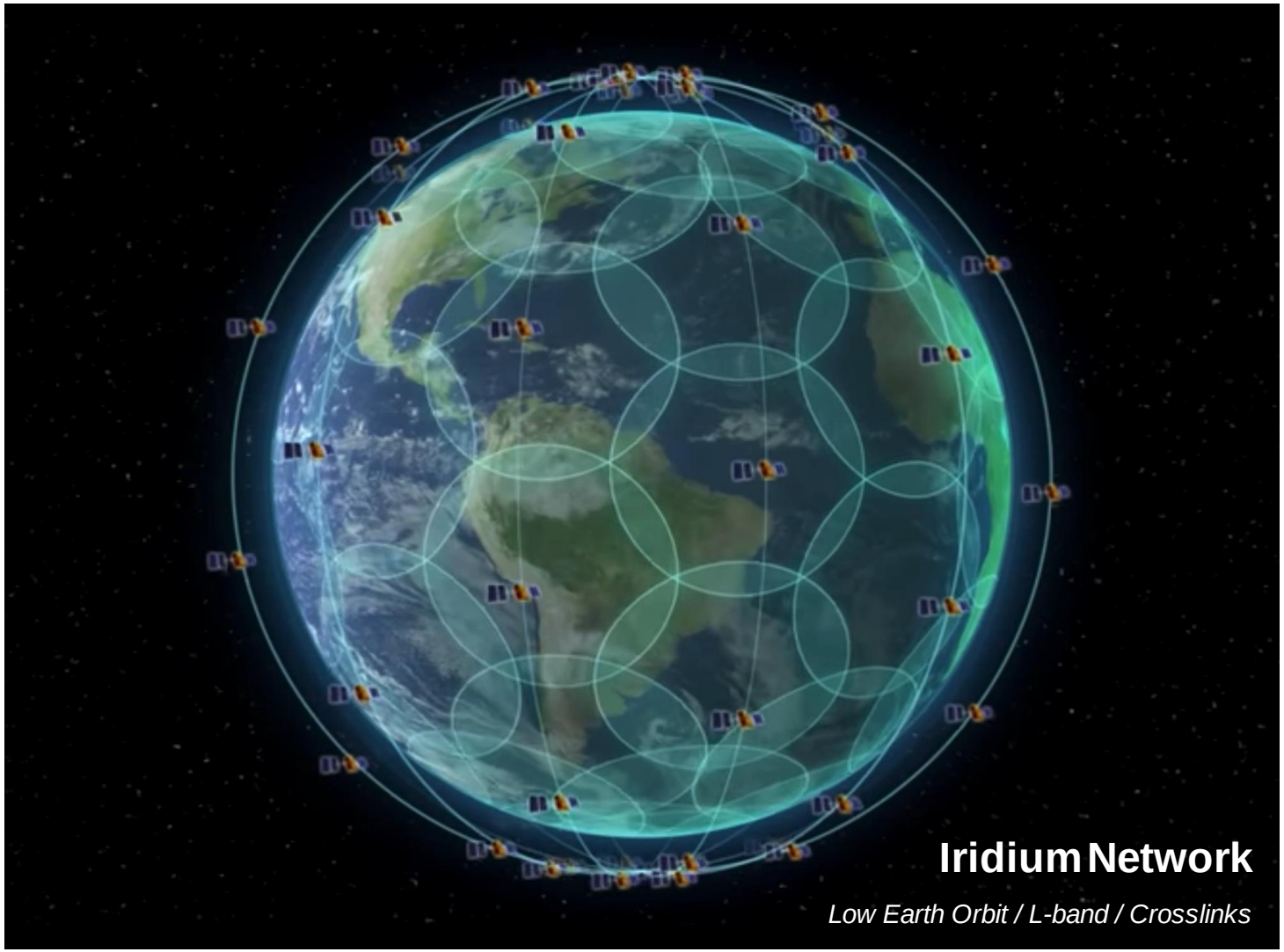
Navigational, meteorological, and other safety information is broadcast through **Iridium SafetyCast**.

All Three GMDSS Functions in One Small Terminal

Iridium GMDSS: The Only Truly Global Safety Solution

Coverage

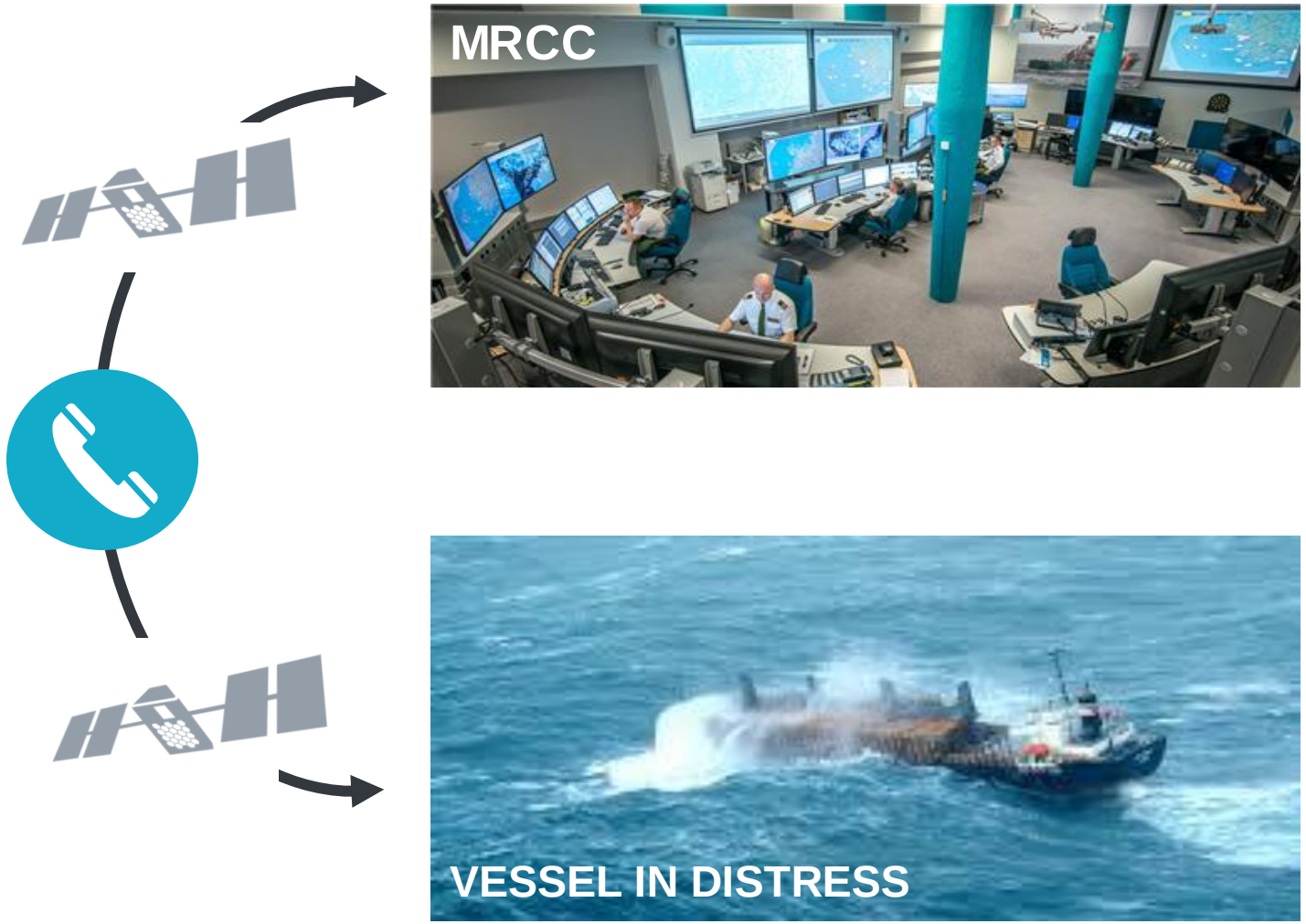
The first and **only truly global** GMDSS provides coverage over Arctic and Antarctic areas (Sea Area A4) not previously served



Iridium GMDSS – Giving Safety a Voice

Capability

Voice and data in **one terminal**; provides efficient information gathering by RCC to enable faster SAR response.



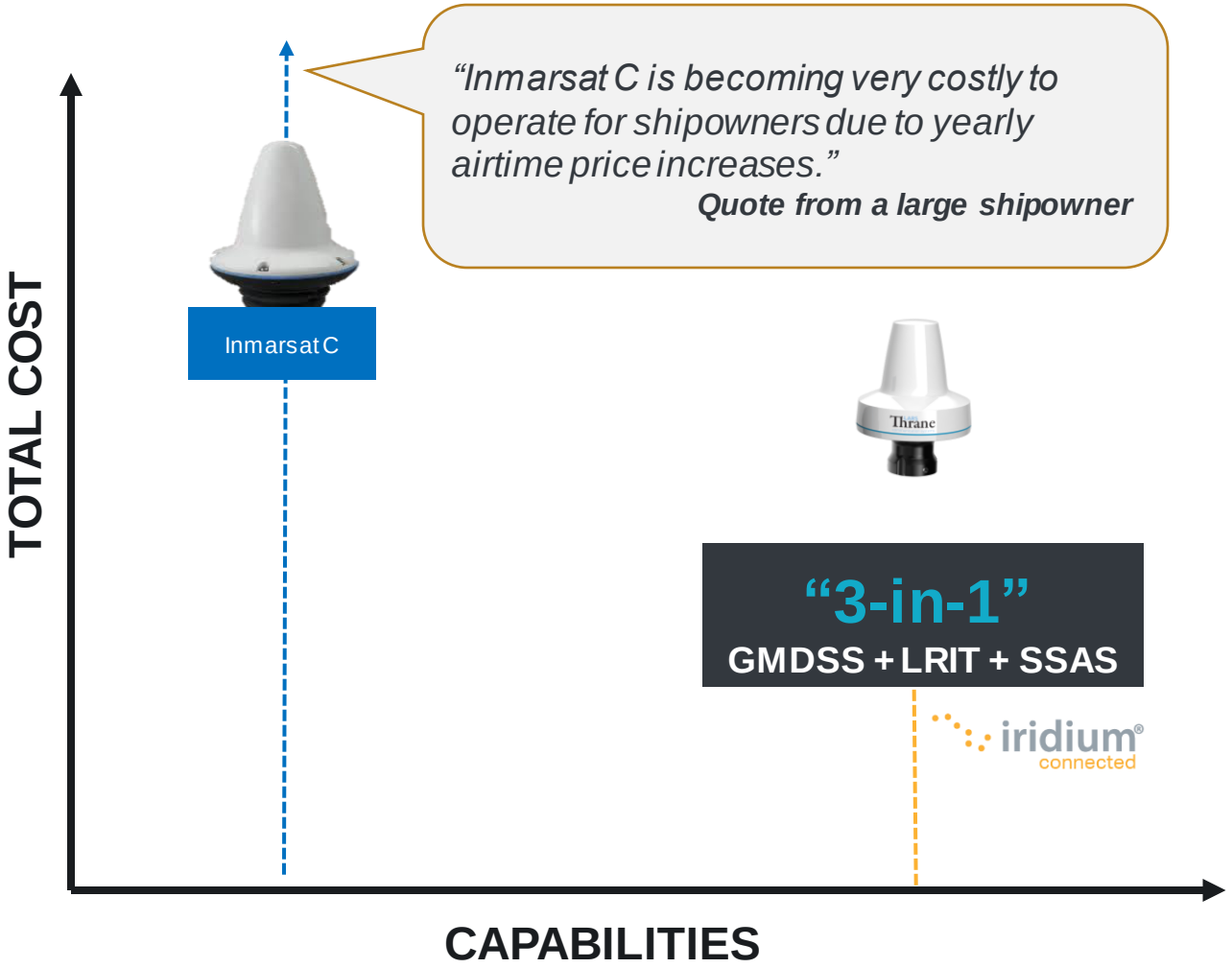
Iridium Competitive Positioning

Cost

Lower cost equipment & service versus historic option with more GMDSS and commercial services.

"3-in-1"

GMDSS + LRIT + SSAS



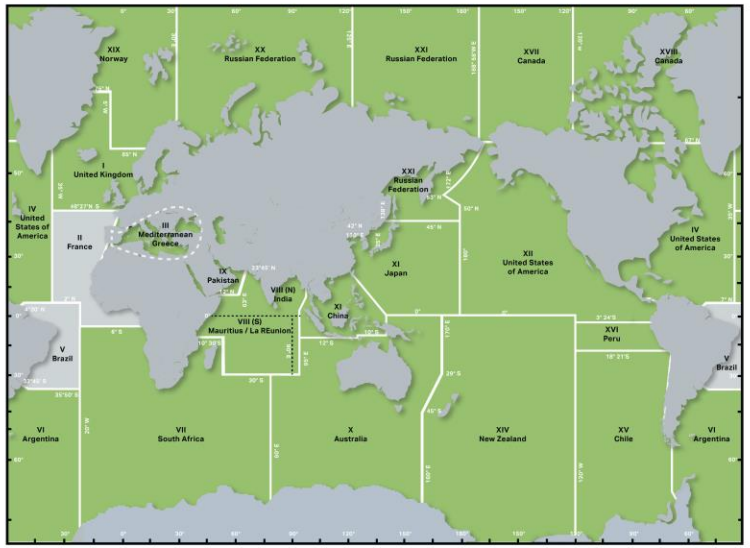
Iridium MSI Broadcast (Iridium SafetyCast)

- Maritime Safety Information (MSI) are navigational and meteorological warnings, meteorological forecasts, and other urgent safety-related messages broadcast to ships to assist them in staying safe

- The pictures show which METAREAS and NAVAREAS are able to broadcast through Iridium SafetyCast

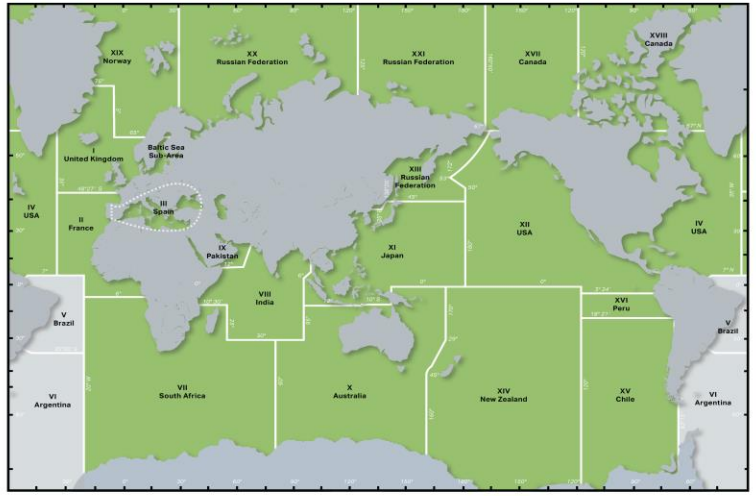
- NOTE – MET and NAV providers are constantly updating the broadcast information to Iridium SafetyCast; for the most recent information, please check Iridium GMDSS Service Updates

METAREAS SENDING INFORMATION TO IRIDIUM SAFETYCAST℠



iridium

NAVAREAS SENDING INFORMATION TO IRIDIUM SAFETYCAST℠



iridium

iridium

Key Advantages of Iridium GMDSS

Every terminal allows access to all three GMDSS services:

- The only GMDSS to provide Distress Voice
- Distress Alert, Distress Voice & Maritime Safety Information
- Distress Alert and Distress Voice through one button
- Distress Alert Relay and calling options for RCC
- Clear information = fast and accurate response (time is key)

Other features for easy contact with help or assistance

- Directly call or message RCCs (advise of problem that could become an emergency)
- Direct dial medical assistance or advice
- Hydrographic Office to report navigational hazards

Our 3Cs Strategy

- **Cost** – all three services at lower cost of existing terminals
- **Coverage** – Fully global
- **Capability** – One button, ~ 30 seconds

Other Key Features

Distress Alert Relay

An RCC distress priority broadcast to all vessels within a designated area, advising them that a nearby vessel is in distress and directing them to assist in rescue.

Ship-to-Shore Distress Calling

The highest priority call that is initiated by a ship to an RCC, and used when a vessel or person is in distress.

Medical Advice

Mariners can obtain medical advice from RCCs by using a short code to contact radio-medical services. Iridium does not charge for Medical Advice calls.

Medical Assistance

Mariners can obtain medical assistance from RCCs by using a short code to contact radio-medical services. Iridium does not charge for Medical Assistance calls.

Short Code Dialing

Report Maritime Danger*

- To the NAVAREA Coordinator
- Can help NAVAREA warnings

Medical Assistance (MEDEVAC)*

- Initially through to the RCC (triage)

Medical Assistance (ADVICE)*

- Initially through to the RCC (triage)

Maritime Assistance*

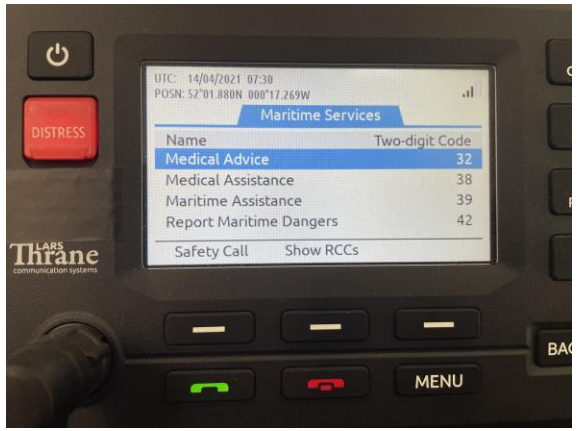
- To the RCC

UK MTO*

- UK Maritime Transport Operations East Africa/Indian Ocean

32	Medical Advice (no Medevac)
38	Medical Assistance (suspect Medevac)
39	Maritime Assistance (RCC)
42	Report Maritime Danger (NAVAREA)
9715	UK Maritime Transport Operations (UK MTO)

SAFETY PRIORITY



Iridium applies no charges to calls made using the short codes above. Medical advice or assistance may be charged separately.

Changes in SOLAS GMDSS Regulations

Changes in SOLAS GMDSS Regulations

Satellite Service

In 2018, **Iridium** was approved by IMO to offer *Recognized Mobile Satellite Service* for use in GMDSS. Iridium became an alternative to Inmarsat C.

Sea Area A3 & A4

A3 is defined by the coverage area of Inmarsat. Effective Jan.1, 2024, A3 depends on the satellite service. **Iridium** offers full global coverage, so A4 will not exist in an Iridium configuration.

HF/MF & Navtex

From January 1, 2024 in **Sea Area 3**:

- No need for second HF if vessel equipped with Iridium Connected® terminal
- MF: Only 2.182 & 2.187MHz
- IMO removes the requirement for Navtex if you have EGC

Iridium GMDSS Simplifies the Mariner's Life

Iridium's First GMDSS Terminal: LT-3100S by Lars Thrane

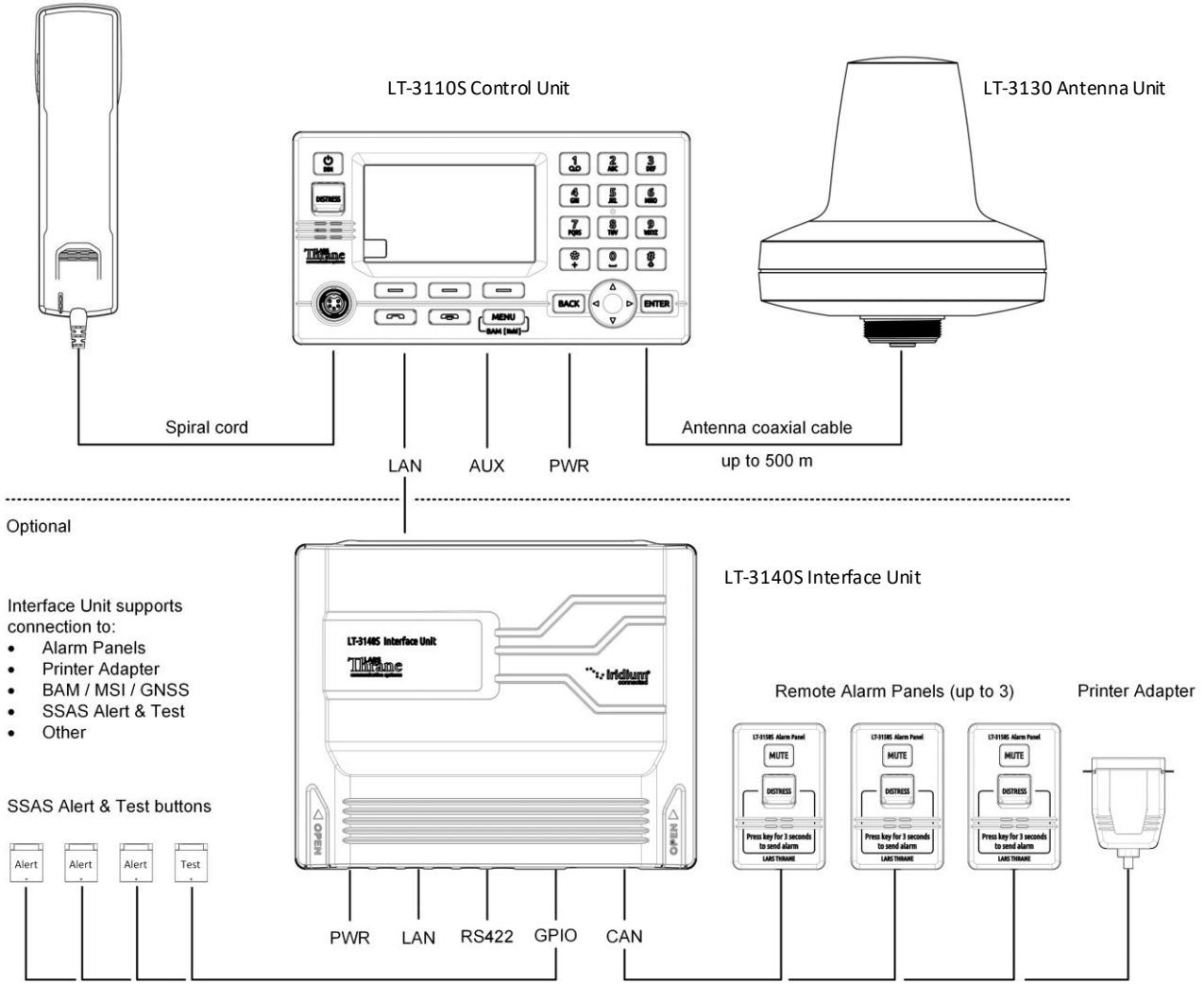
Lars Thrane LT-3100S GMDSS Terminal

Consists of:

- Control unit
- Handset
- Antenna unit

NOTE: Up to 500 meters of coaxial cable RG214 between antenna and control unit with a 24V PSU (150m with 12V)

LT-3100S GMDSS System



The LT-3100S Multi-Service Platform

GMDSS Functionalities:

- Distress Alert
- Distress Call (safety)
- Maritime Safety Information (MSI – also known as EGC)
- Priority Messaging (to RCC)
- Bridge Alert Management (BAM)
- Navigational (NAV) interface
- Alarm panel
- Printer output

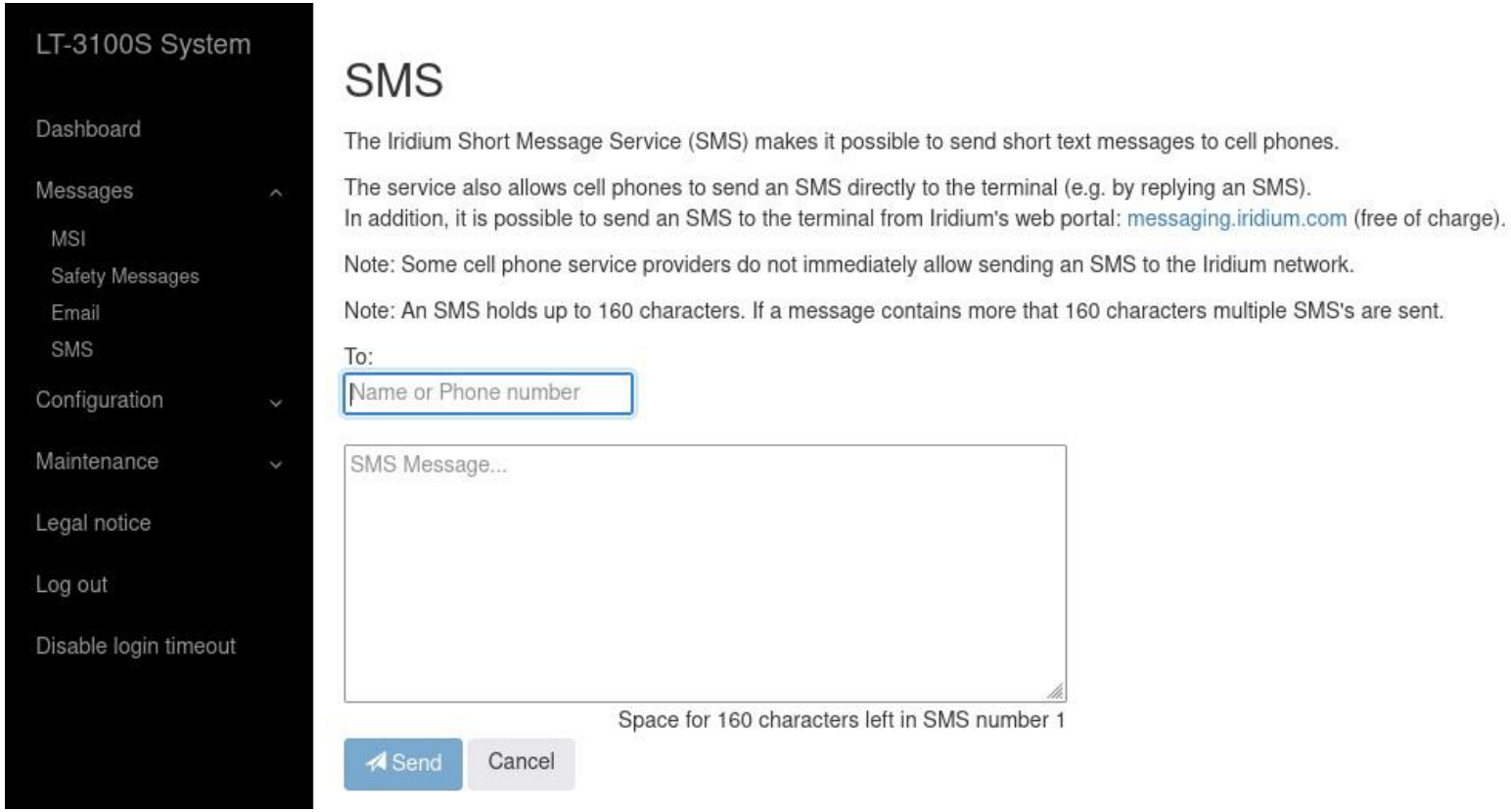
Non-GMDSS Functionalities:

- For daily communication
  - Voice
  - SMS
  - Email
  - Tracking
  - GPS/GNSS output
  - Extra SIP telephones
  - Analog telephone adaptor
- Ship Security Alert System (SSAS)
- Long-Range Identification & Tracking (LRIT)

Lars Thrane LT-3100S
Non-GMDSS Functions

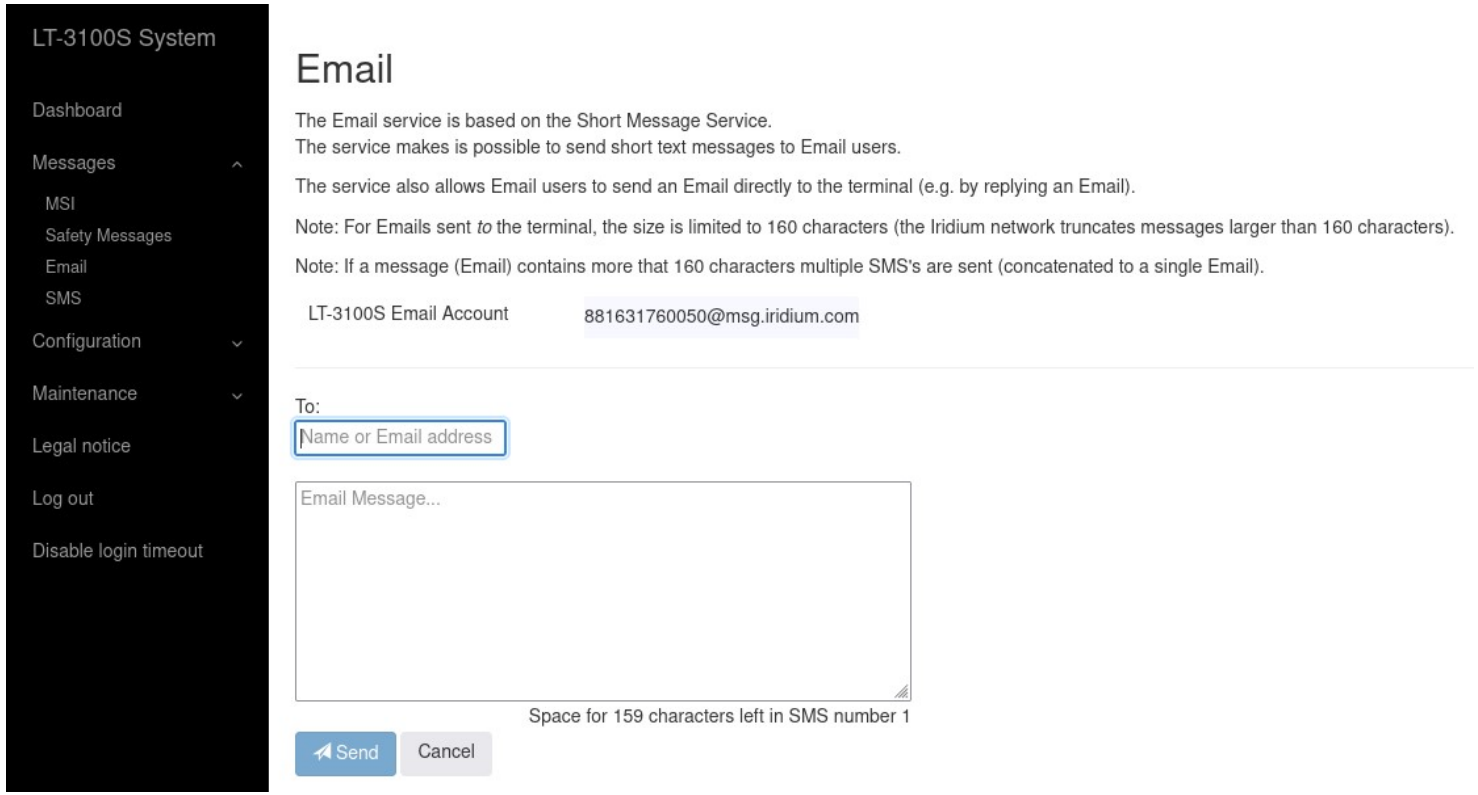
SMS Messaging on LT-3100S

- The LT-3100S has a built-in SMS messaging agent
- SMS text messages can be easily sent and received within the terminal's web interface, without the requirement for mobile senders to be verified
- Rich messaging is not supported
- Messages will appear as a standard SMS on the recipient's phone
- The recipient must be able to send messages to +8816 numbers
  - NOTE: This is commonly blocked by mobile network operators
  - Recommended that the mobile user requests the block to be lifted by their operator



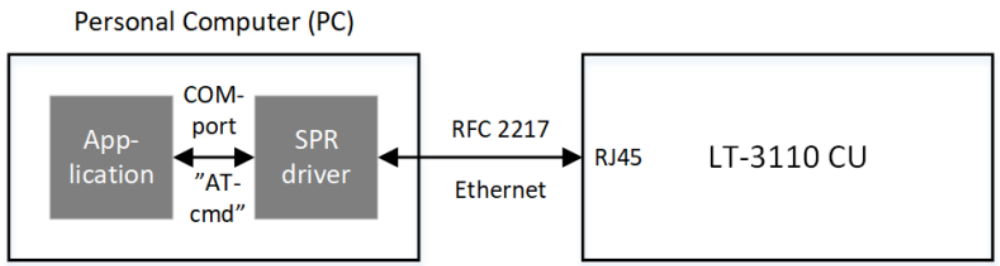
Email Messaging on LT-3100S

- The LT-3100S has a built-in email to SMS messaging agent
- Text-only email messages can be easily sent and received within the terminal's web interface
- Shore-based recipients do not need to be verified by Iridium
- Emails are sent/received using SMS
- Attachments are not supported
- Messages will appear as a text-only email on the recipient's mail client



Modem Data Services

- The LT-3100S can provide modem data services for low-bandwidth applications
  - Ideal for mail clients that can send text-based emails with small attachments
  - The bandwidth is only 2.4Kbps, which limits the message size
  - Data calls are charged as per voice (per minute)
- Modem data services must be enabled within the LT-3100S web interface
  - An Ethernet to RS232 service must be installed on the Windows PC
- Compatible and optimised email clients include:

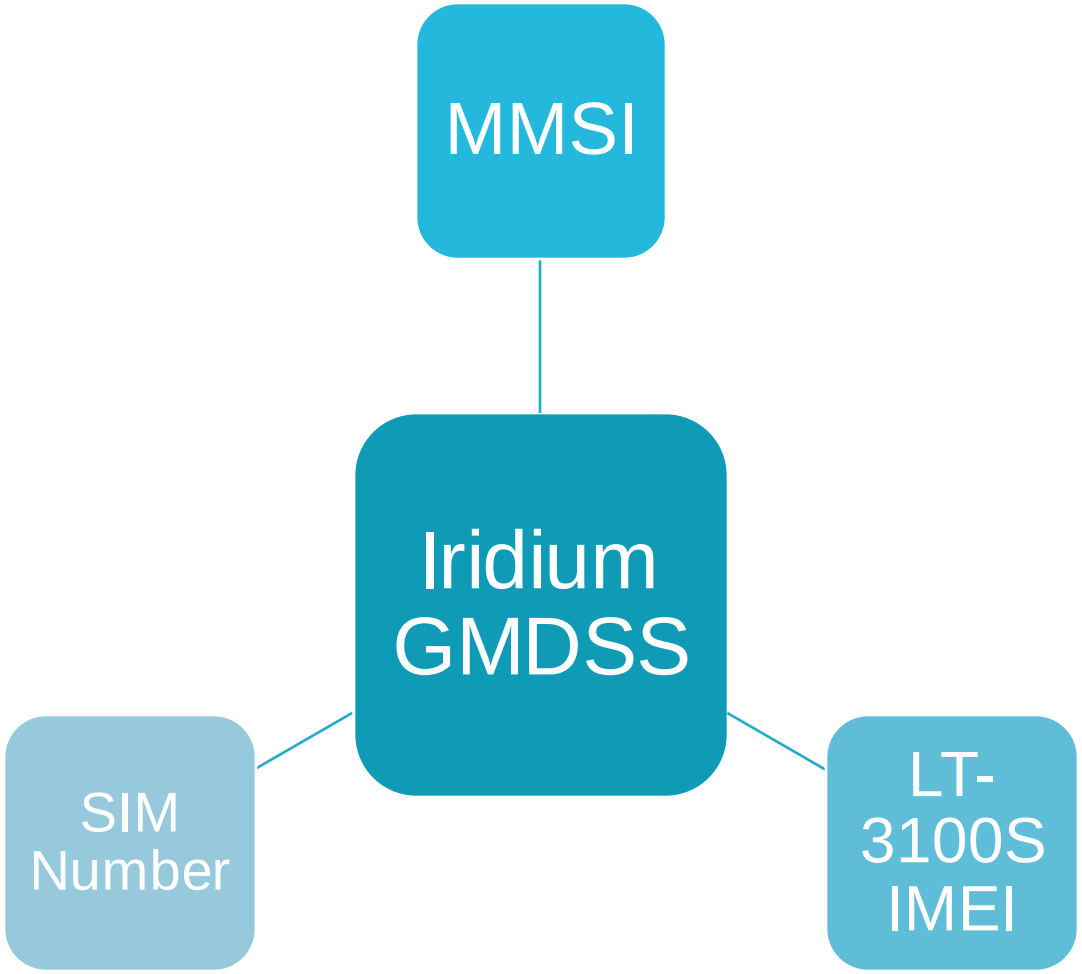


External E-mail Programs	
SkyFile Mail	Marlink
OnSatMail	AST
GTSeaMail	GTMaritime
SpeedMail	SpeedCast
Iridium Mail & Web (RedPort Optimizer)	Pivotel (Global Marine Network)

How to Activate and Operate an Iridium GMDSS Terminal

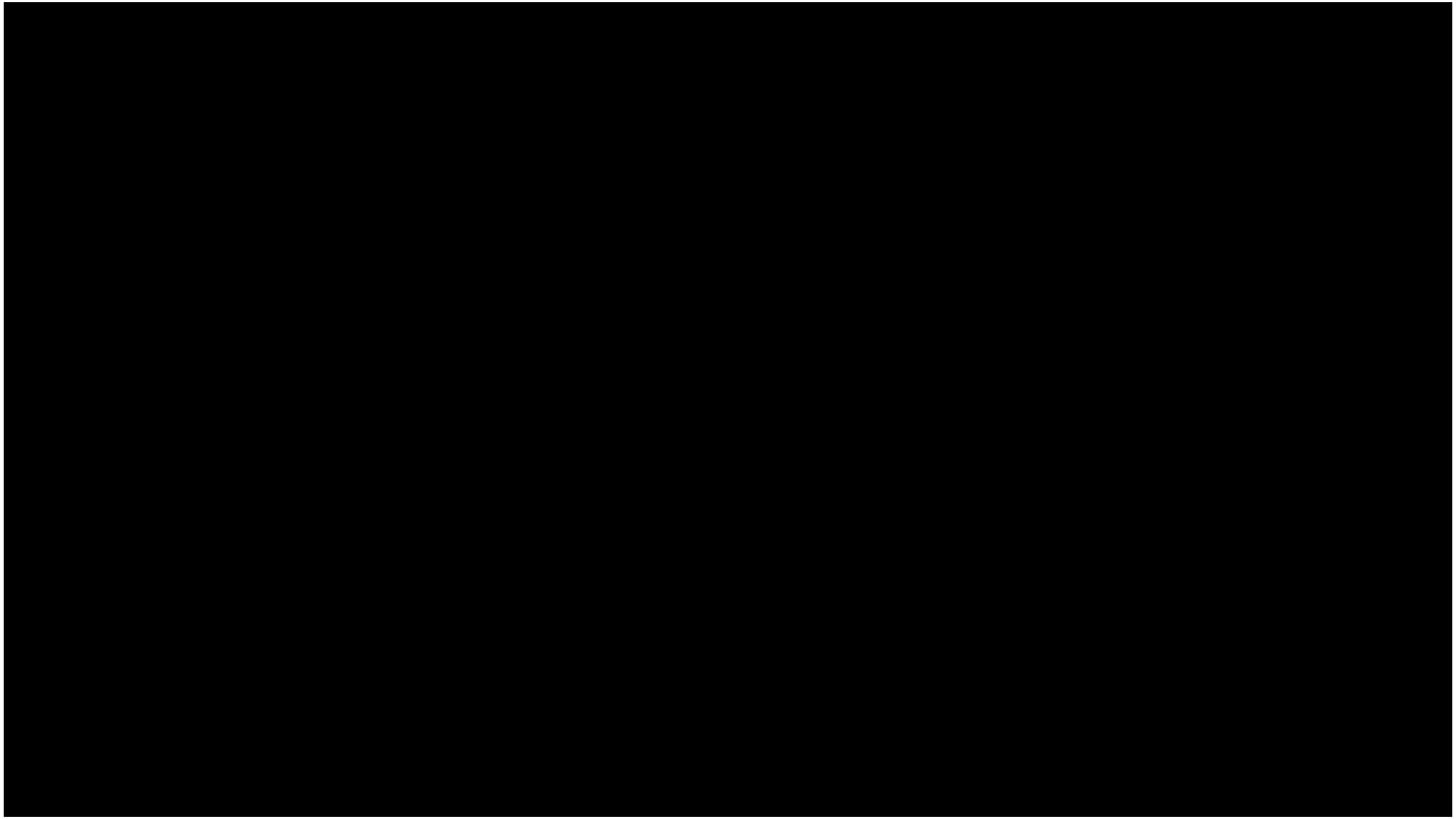
The Iridium GMDSS Holy Trinity

- The Holy Trinity is necessary for successful activation
  - Vessel MMSI*
  - SIM Card Number (Iridium GMDSS only)
  - GMDSS terminal IMEI** number
- These need to be validated and entered by the Iridium Service Provider into Iridium's provisioning system
- The installer should confirm that the details match
- When the Holy Trinity is correct, activation is automatic



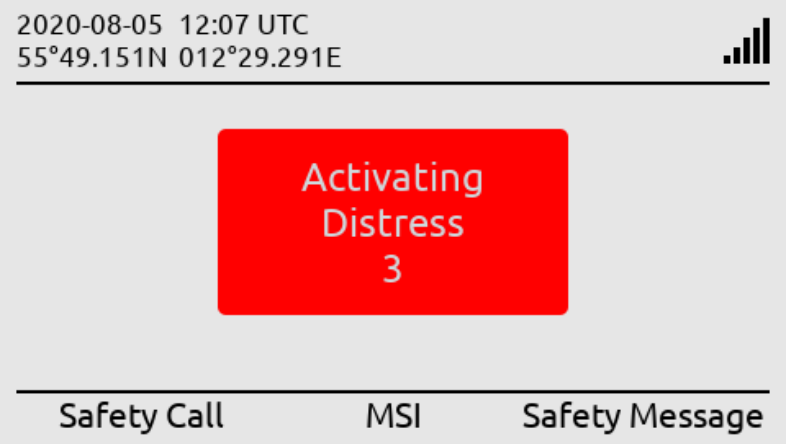
*Maritime Mobile Subscriber Identity
**International Mobile Equipment Identify

Distress Alert Operation: In Case of Distress

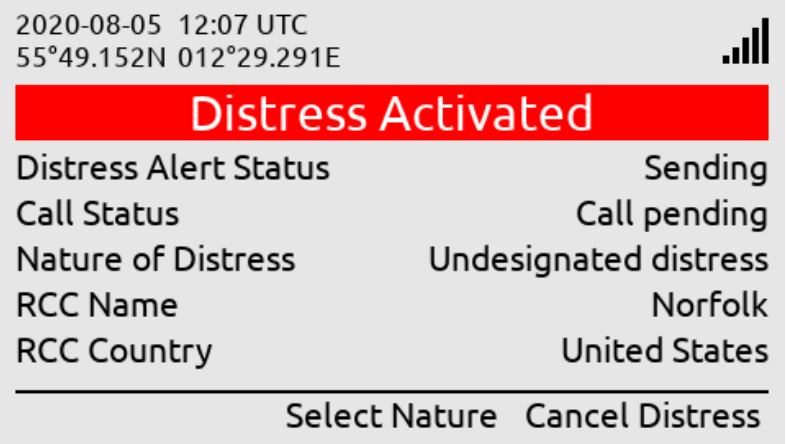


Distress Alert Operation: In Case of Distress

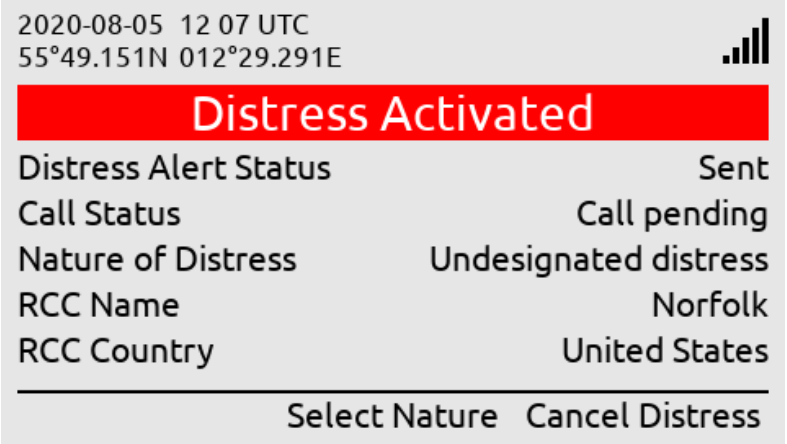
1. Press + hold DISTRESS for 3 seconds



2. Distress Alert Activated



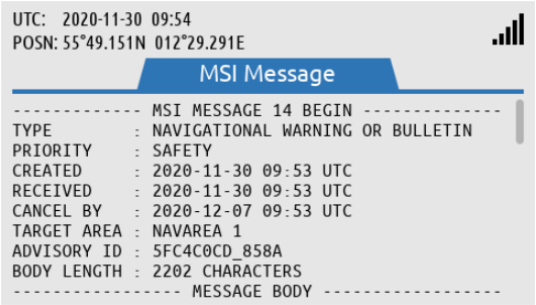
3. Distress Alert Delivered (incl. position and ID)



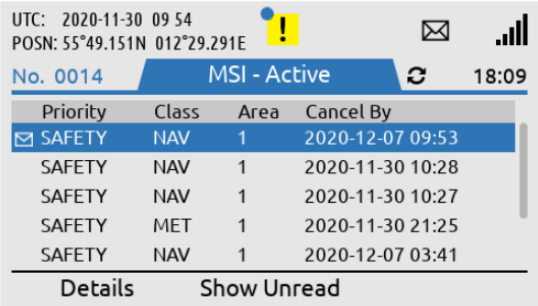
- The terminal automatically calls the RCC after the distress alert is initiated
- Voice connection between the vessel and RCC commences within 30 seconds

Reading MSI on the LT-3100S Terminal

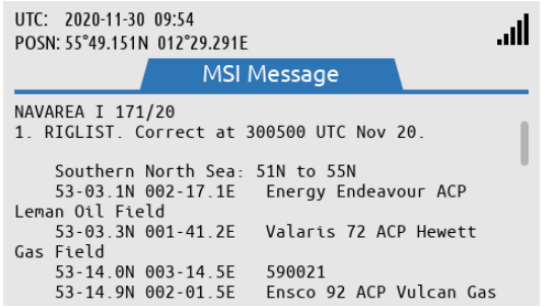
- The ! icon indicates that new MSI messages have been received
- Press the MSI soft button to access the MSI messages



- Press the Up or Down arrow to scroll through the MSI message
- Press the Back button to return to the MSI Message List
- Notice that the ✉ icon has disappeared as the MSI message has been read



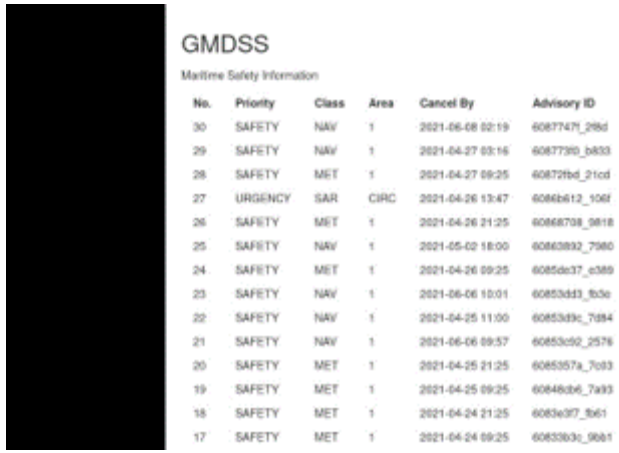
- Unread MSI messages are shown with the ✉ icon
- Press the Up or Down arrow to select the new message
- Press the Enter button to read the required MSI message



- Press the Up or Down arrow to select a different MSI message to read, and Enter to select
- Press the Back button to return to the MSI message list

Reading MSI on the LT-3100S Web Interface

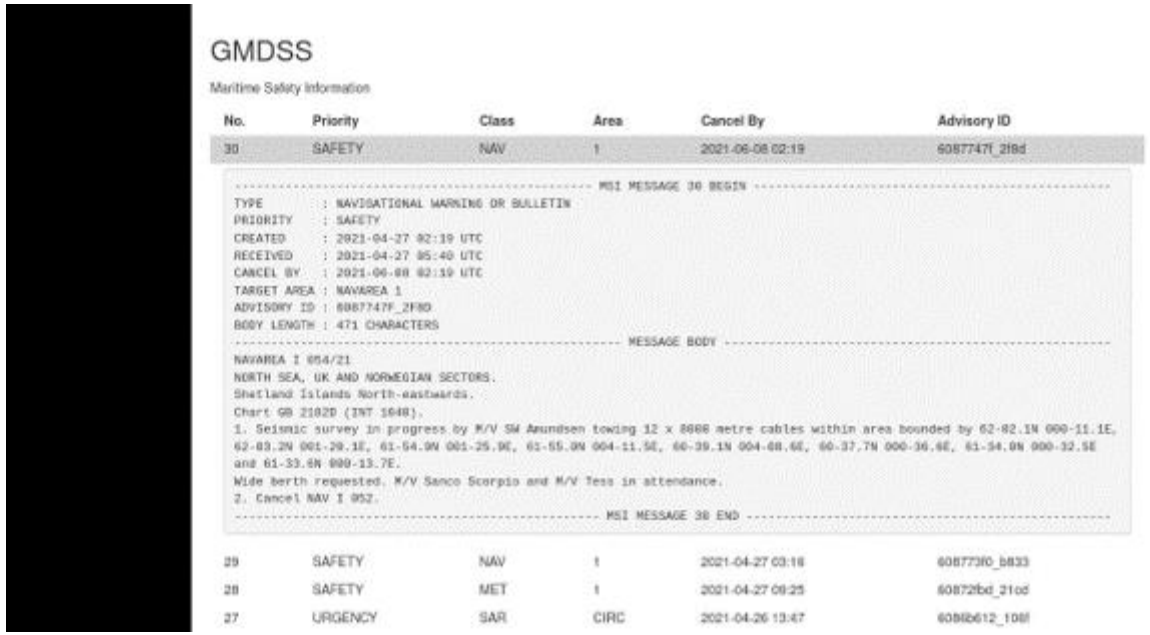
- Log into the LT-3100S web interface
- Click on Messages > MSI
- The received NAV & MET messages are displayed
- New messages are shown in bold
- Clicking on the message will show its text
- Messages can be printed (if required) using the computer's attached printer



GMDSS

Maritime Safety Information

No.	Priority	Class	Area	Cancel By	Advisory ID
30	SAFETY	NAV	1	2021-06-08 02:19	6087747f_2f8d
29	SAFETY	NAV	1	2021-04-27 03:16	608773f0_b833
28	SAFETY	MET	1	2021-04-27 09:25	60872fbd_21cd
27	URGENCY	SAR	CIRC	2021-04-26 13:47	6086b612_106f
26	SAFETY	MET	1	2021-04-26 21:25	60868708_9818
25	SAFETY	NAV	1	2021-05-02 18:00	60860892_7980
24	SAFETY	MET	1	2021-04-26 09:25	6085de37_e389
23	SAFETY	NAV	1	2021-06-06 10:01	60853dd3_fb3e
22	SAFETY	NAV	1	2021-04-25 11:00	60853d9c_7d84
21	SAFETY	NAV	1	2021-06-06 09:57	60853c92_2576
20	SAFETY	MET	1	2021-04-25 21:25	6085357a_7c83
19	SAFETY	MET	1	2021-04-25 09:25	60848cb6_7a93
18	SAFETY	MET	1	2021-04-24 21:25	6083e3f7_fb61
17	SAFETY	MET	1	2021-04-24 09:25	60833b3c_9bb1



GMDSS

Maritime Safety Information

No.	Priority	Class	Area	Cancel By	Advisory ID
30	SAFETY	NAV	1	2021-06-08 02:19	6087747f_2f8d

```
------------------------------------------------------------ MSI MESSAGE 30 BEGIN ------------------------------------------------------------
TYPE        : NAVIGATIONAL WARNING OR BULLETIN
PRIORITY    : SAFETY
CREATED     : 2021-04-27 02:19 UTC
RECEIVED    : 2021-04-27 05:40 UTC
CANCEL BY   : 2021-06-08 02:19 UTC
TARGET AREA : NAVAREA 1
ADVISORY ID : 6087747F_2F8D
BODY LENGTH : 471 CHARACTERS
------------------------------------------------------------------ MESSAGE BODY ------------------------------------------------------------------
NAVAREA I 054/21
NORTH SEA, UK AND NORWEGIAN SECTORS.
Shetland Islands North-eastwards.
Chart GB 2102D (INT 1648).
1. Seismic survey in progress by M/V SW Amundsen towing 12 x 8000 metre cables within area bounded by 62-02.1N 000-11.1E,
62-03.2N 001-20.1E, 61-54.9N 001-25.9E, 61-55.0N 004-11.5E, 60-39.1N 004-08.6E, 60-37.7N 000-36.6E, 61-34.0N 000-32.5E
and 61-33.6N 000-13.7E.
Wide berth requested. M/V Sanco Scorpio and M/V Tess in attendance.
2. Cancel NAV I 052.
------------------------------------------------------------ MSI MESSAGE 30 END ------------------------------------------------------------
```

29	SAFETY	NAV	1	2021-04-27 03:16	608773f0_b833
28	SAFETY	MET	1	2021-04-27 09:25	60872fbd_21cd
27	URGENCY	SAR	CIRC	2021-04-26 13:47	6086b612_106f

Iridium Connected® GMDSS Terminals

Iridium Certus Value Added Manufacturers' Roadmap

Iridium Certus GMDSS – Next Generation Safety

Iridium Certus GMDSS represents the next generation in maritime safety terminals operating globally. Designing with multi-function in mind, Iridium Certus GMDSS is a single system that will provide maritime safety services alongside primary and VSAT Companion services.

Iridium GMDSS options:

- **Iridium GMDSS 1st Generation Terminal: LT-3100S**
  - Entry-level services
    - Voice, Data (2.4Kbps), SMS & Tracking

- **Iridium Certus GMDSS NextGen Terminals: Iridium Certus 100, 200 & 700**
  - Data speeds up to 704 Kbps down and 352 Kbps up (Iridium Certus 700)
  - Iridium GMDSS & broadband services (including VSAT Companion) in a combined terminal

Iridium Connected GMDSS: Planned Terminals*

LARS Thrane communication systems

LT-3100S

COBHAM Intellian THALES LARS Thrane communication systems

Iridium Certus

In Service

Iridium Certus 200/700 GMDSS - Q4 2024

*Iridium Certus GMDSS terminal specifications are subject to change by the manufacturer

iridium

Iridium GMDSS: Frequently Asked Questions

A Printer is Required?

The LT-3100S has the capability to have an approved GMDSS printer connected*, but this is not required

- As per **IEC 61097-16, Edition 1.0, 2019-07, Part 16**
- The LT-3100S is **capable** of having an approved printer attached

- Class vetting and port state inspectors may not be aware of the different Applicable Standard for the LT-3100S
  - Potential confusion with the Inmarsat C Applicable Standard **IEC 60945-4**, which mandates an approved printer needs to be connected to the terminal
- Be aware: Some flag states may still mandate that an approved printer is attached to the LT-3100S
- Additionally, shipping company policy may still require a connected printer to print MSI messages

*LT-3140S & Printer Adapter is needed to connect printer.

Iridium GMDSS Simplifies Daily Bridge Management of MSI Messages

Accounting Authorities

- Inmarsat C terminals are required by flag states to have an Accounting Authority (AA) appointed
- An AA acts as an approved billing intermediary between the Inmarsat C terminal and Land Earth Stations (LES) and service providers
  - AAs have an Identification Code (AAIC) which tells an Inmarsat C terminal where to route non-distress traffic
    - For example, LV06 or NL06
  - Billing and invoices generated for AA services may take a significant amount of time to arrive with a fleet
  - Charges generated for AA services may be unpredictable
- **Iridium GMDSS requires no billing intermediaries, therefore produces no AA costs**
  - Provision and billing are provided directly with Iridium's GMDSS service partner
    - Predictability and transparency for Iridium GMDSS services

Iridium GMDSS Simplifies Billing by Not Requiring AA Services

Thank You!

Iridium GMDSS Saves Lives

@IridiumComm @MyIridium @Iridium @IridiumComm

iridium