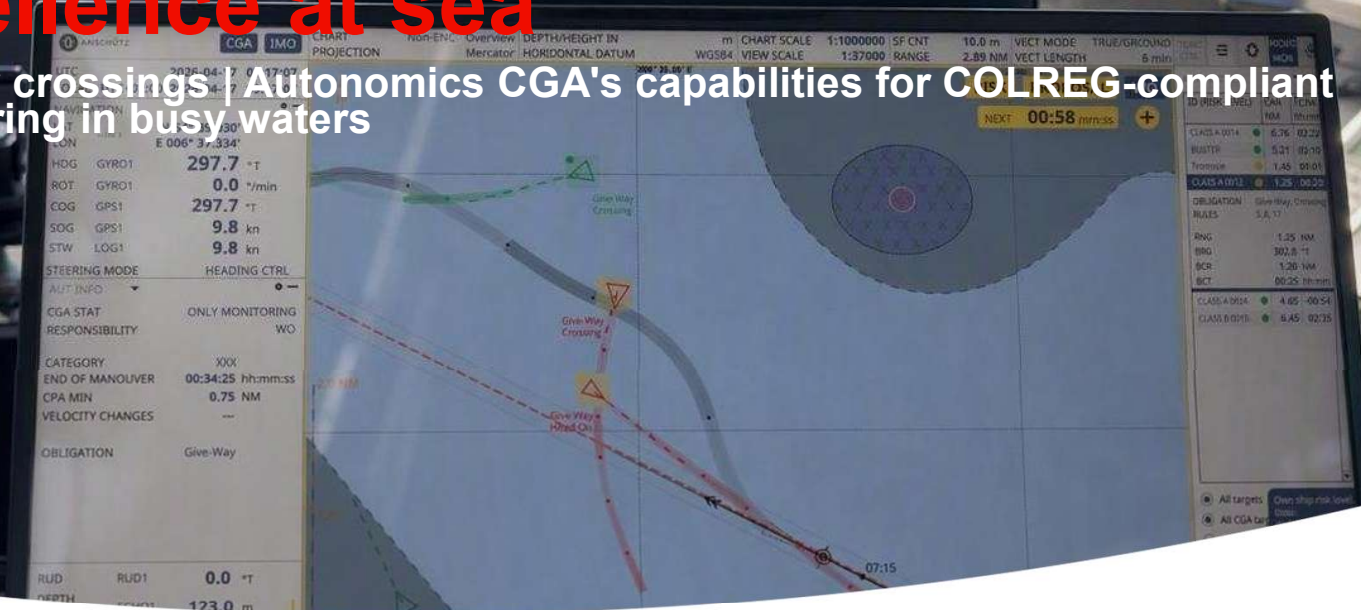


Excellence at sea

Safe ferry crossings | Autonomics CGA's capabilities for COLREG-compliant maneuvering in busy waters



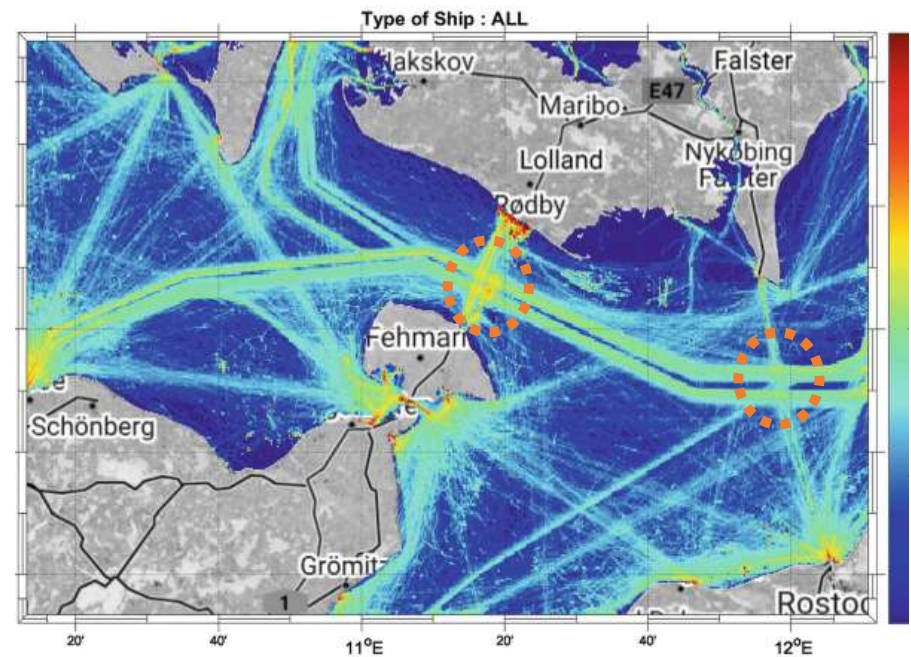
Hans-Christoph Burmeister

08/09.10.2026 | Ferry Shipping Summit 2026

Ferry Characteristics

Ferry operations

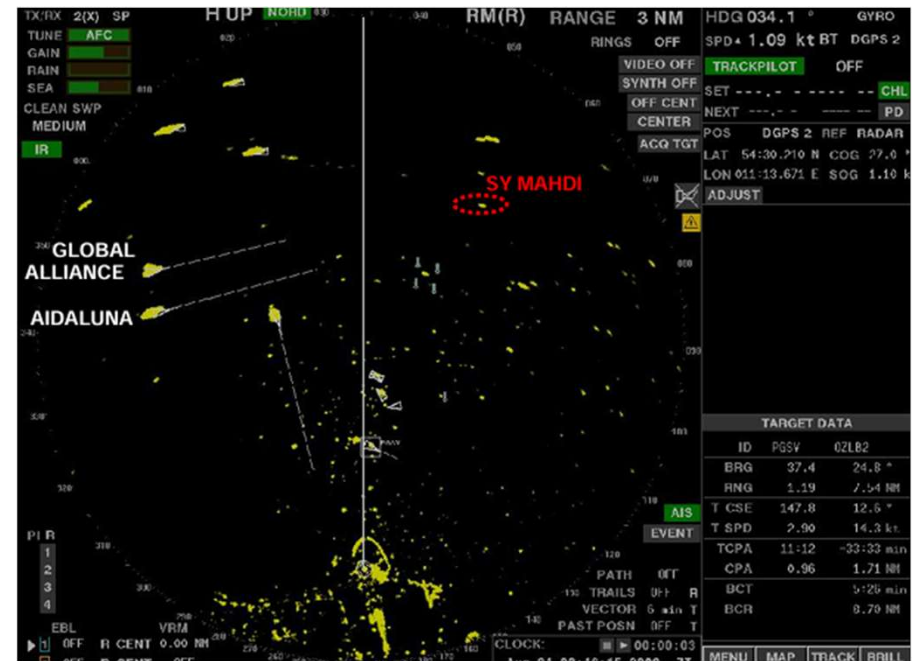
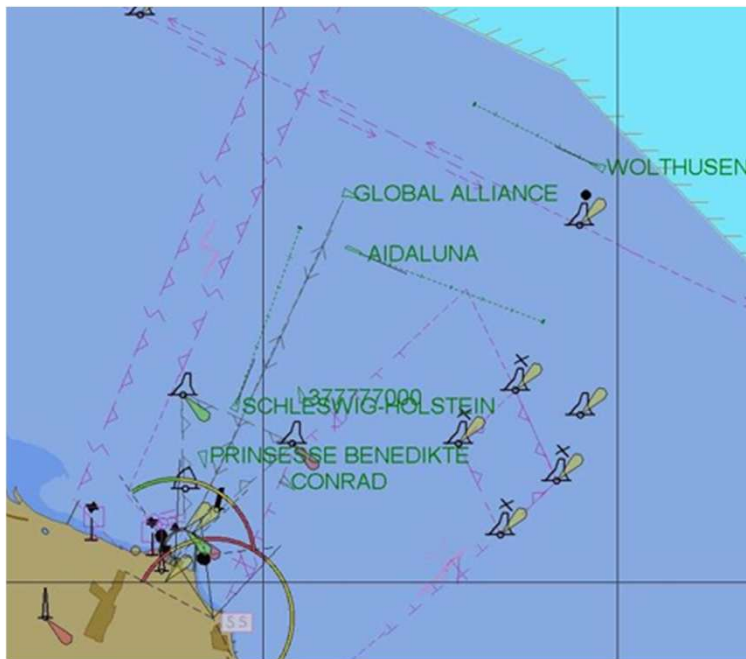
- Cargo and passenger responsibility
 - High safety requirements
- Crossing Shipping lanes is typical
 - Number of encounter situations is high



Example: Ferry Schleswig-Holstein vs. SY Mahdi



Example: Ferry Schleswig-Holstein vs. SY Mahdi



Anschütz Collision and Grounding Avoidance

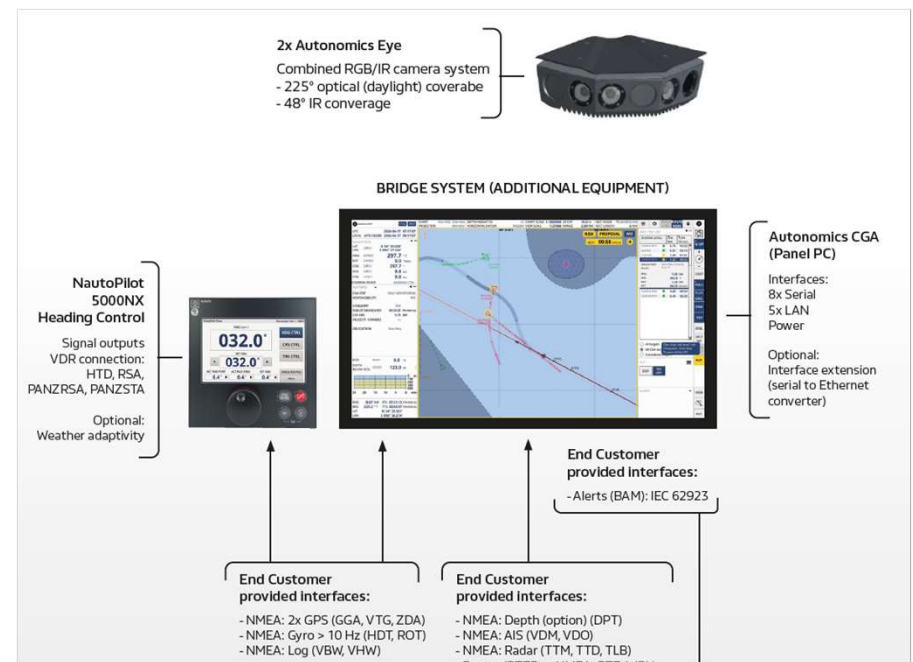
AUTONOMICS CGA is a refittable, stand-alone COLREG-compliant **collision avoidance assistance system** for onboard use acting as a virtual backup officer **executing evasive manoeuvre** via our proven Nautopilot 5000 NX.



Autonomics CGA System Components

Autonomics CGA Hardware

- Autonomics CGA Panel
 - Visualisation of avoidance maneuvers
 - Optional: Camera view
- Autonomics Eye (2x)
 - Daylight and IR EO Sensor
 - Machine Vision capability
- NautoPilot 5000 NX
 - Automatic evasive maneuver execution



ANSCHÜTZ

UTC 2026-08-25 18:53:55
LOCAL UTC+02:00 2026-08-25 20:53:55

NAVIGATION

LAT

LON

GPS1

N 47° 38.384'

W 005° 28.374'

HDG

GYRO1

163.2 ° T

ROT

GYRO1

-0.1 °/min

COG

GPS1

163.2 °

SOG

GPS1

19.6 kn

STW

LOG1

19.6 kn

STEERING MODE

TRACK CTRL

AUT INFO AND DEPTH INFO

RNG

NM

ETA

hh:mm:ss

BRG

° T

TTG

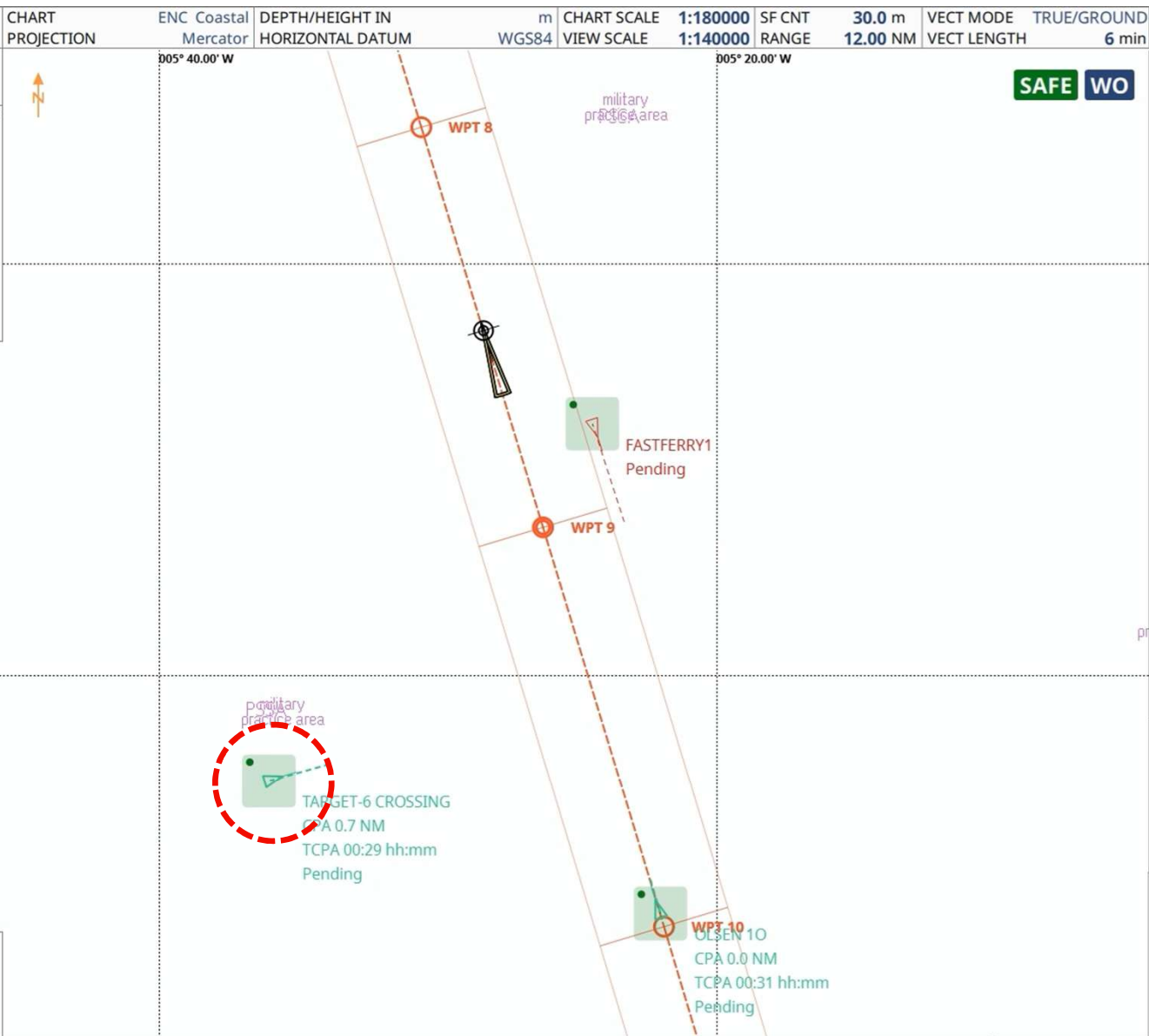
hh:mm:ss

LAT

°

LON

°



SAFE

WO

TRACK ROUTE

CTRL MON

AUT / TGT LIST

ID (RISK LVL)	CPA NM	TCPA hh:mm
BEN R...FFSEN	-.-	---
FASTFERRY1	1.6	-00:32
GRIMALDI	5.7	02:35
MS QUALLE	-.-	---
ORION	0.3	06:01
TARGE...SSING	0.7	00:29
BULKER	4.8	-01:43
FASTCAT	0.1	-00:36
OLSEN 10	0.0	00:31
SCOT ...RRIER	-.-	---
STENA2	4.4	05:56
STENATANKER	11.9	-02:00

All targets

All CGA targets

Considered targets

AUT

DISP

TGT LIST

ALERTS

TGT MGMT

2026-08-25

17:06:10

NEW TARGET - 1 NEW TARGET(S) FROM AIS2

N UP

+ -

CENT

STND

PLAN

SAIL

SYM

TGT

ERBL

DFLT SET

AUT

MOB

ACK

ANSCHÜTZ

UTC **2026-08-25 18:53:55**
LOCAL **UTC+02:00 2026-08-25 20:53:55**

NAVIGATION

LAT	GPS1	N 47° 38.384'
LON	GPS1	W 005° 28.374'
HDG	GYRO1	163.2 °T
ROT	GYRO1	-0.1 °/min
COG	GPS1	163.2 °
SOG	GPS1	19.6 kn
STW	LOG1	19.6 kn

STEERING MODE **TRACK CTRL**

CHART
PROJECTION **Mercator**
ENC **Coastal**
DEPTH/HEIGHT IN **m**
HORIZONTAL DATUM **WGS84**
CHART SCALE **1:180000**
VIEW SCALE **1:140000**
SF CNT **30.0 m**
RANGE **12.00 NM**
VECT MODE **TRUE/GROUND**
VECT LENGTH **6 min**

SAFE **WO**

AUT / TGT LIST

ID (RISK LVL)	CPA NM	TCPA hh:mm
BEN R...FFSEN	-.-	-.-
FASTFERRY1	1.6	-00:32
GRIMALDI	5.7	02:35
MS QUALLE	-.-	-.-
ORION	0.3	06:01
TARGE...SSING	0.7	00:29
BULKER	4.8	-01:43
FASTCAT	0.1	-00:36
OLSEN 10	0.0	00:31
SCOT...RRIER	-.-	-.-
STENA2	4.4	05:56
STENATANKER	11.9	-02:00

☐ All targets
☐ All CGA targets
☒ Considered targets

AUT

DISP **TGT LIST**

ALERTS

TGT MGMT **1 of 8**
2026-08-25 17:06:10
NEW TARGET - 1 NEW
TARGET(S) FROM AIS2

The screenshot shows a maritime radar display with a vessel's track and target list. The vessel's track is shown as a dashed line with waypoints WPT 8, WPT 9, and WPT 10. The vessel's current position is marked with a green dot and a red dashed circle. The target list on the right shows various vessels with their CPA and TCPA values. The bottom right corner displays an alert for a new target from AIS2.

ANSCHÜTZ

UTC

2026-08-25 19:10:37

LOCAL

UTC+02:00 2026-08-25 21:10:37

NAVIGATION

LAT

GPS1

N 47° 33.171'

LON

GPS1

W 005° 26.020'

HDG

GYRO1

162.9 ° T

ROT

GYRO1

1.5 °/min

COG

GPS1

162.8 °

SOG

GPS1

19.6 kn

STW

LOG1

19.6 kn

STEERING MODE

TRACK CTRL

AUT INFO AND DEPTH INFO

RNG

-- NM

ETA

--:-- hh:mm:ss

BRG

-- ° T

TTG

--:-- hh:mm:ss

LAT

--° --'

LON

--° --'

CHART

ENC Coastal

DEPTH/HEIGHT IN

m

CHART SCALE

1:180000

SF CNT

30.0 m

VECT MODE

TRUE/GROUND

PROJECTION

Mercator

HORIZONTAL DATUM

WGS84

VIEW SCALE

1:140000

RANGE

12.00 NM

VECT LENGTH

6 min

TRACK

ROUTE

CTRL

MON

AUT / TGT LIST

ID (RISK LVL)	CPA NM	TCPA hh:mm
BEN R...FFSEN	3.0	05:50
FASTFERRY1	1.7	-00:49
GRIMALDI	6.1	02:18
MS QUALLE	2.1	05:53
ORION	0.4	05:45
TARGE...SSING	0.6	00:19
BULKER	5.2	-01:59
FASTCAT	0.2	-00:53
OLSEN 10	0.0	00:14
SCOT ...RRIER	--	--:--
STENA2	3.1	05:38
STENATANKER	11.4	-02:18

All targets

All CGA targets

Considered targets

AUT

DISP

TGT LIST

ALERTS

TGT MGMT

2026-08-25 17:06:10

NEW TARGET - 1 NEW TARGET(S) FROM AIS2

1 of 8

N UP

+ -

CENT

STND

PLAN

SAIL

SYM

TGT

ERBL

DFLT SET

AUT

MOB

ACK

ANSCHÜTZ

UTC **2026-08-25 19:12:57**
LOCAL **UTC+02:00 2026-08-25 21:12:57**

NAVIGATION

LAT	GPS1	N 47° 32.442'
LONG	GPS1	W 005° 25.696'
HDG	GYRO1	163.3 °T
ROT	GYRO1	-0.1 °/min
COG	GPS1	163.3 °
SOG	GPS1	19.6 kn
STW	LOG1	19.6 kn

STEERING MODE **TRACK CTRL**

CHART **ENC Coastal**
PROJECTION **Mercator**

DEPTH/HEIGHT IN **m**
HORIZONTAL DATUM **WGS84**

CHART SCALE **1:180000**
VIEW SCALE **1:140000**

SF CNT **30.0 m**
RANGE **12.00 NM**

VECT MODE **TRUE/GROUND**
VECT LENGTH **6 min**

DEVELOPING RISK **WO**

AUT / TGT LIST

ID (RISK LVL)	CPA NM	TCPA hh:mm
BEN R...FFSEN	3.8	05:46
FASTFERRY1	1.6	-00:52
GRIMALDI	5.7	02:16
MS QUALLE	1.2	05:49
ORION	0.3	05:42
TARGE...SSING	0.7	00:17
BULKER	4.7	-02:02
FASTCAT	31.6	-00:49
OLSEN 10	0.0	00:12
SCOT ...RRIER	-.-	-.-
STENA2	4.6	05:37
STENATANKER	11.9	-02:18

☐ All targets
☐ All CGA targets
☒ Considered targets

AUT

DISP **TGT LIST**

ALERTS

TGT MGMT **1 of 8**
2026-08-25 17:06:10
NEW TARGET - 1 NEW TARGET(S) FROM AIS2

ANSCHÜTZ

UTC 2026-08-25 19:13:30
LOCAL UTC+02:00 2026-08-25 21:13:30

NAVIGATION

LAT

GPS1

N 47° 32.270'

LON

GPS1

W 005° 25.619'

HDG

GYRO1

164.4 ° T

ROT

GYRO1

18.1 °/min

COG

GPS1

163.7 °

SOG

GPS1

19.6 kn

STW

LOG1

19.6 kn

STEERING MODE TRACK CTRL

AUT INFO AND DEPTH INFO

RNG

NM

ETA

hh:mm:ss

BRG

° T

TTG

hh:mm:ss

LAT

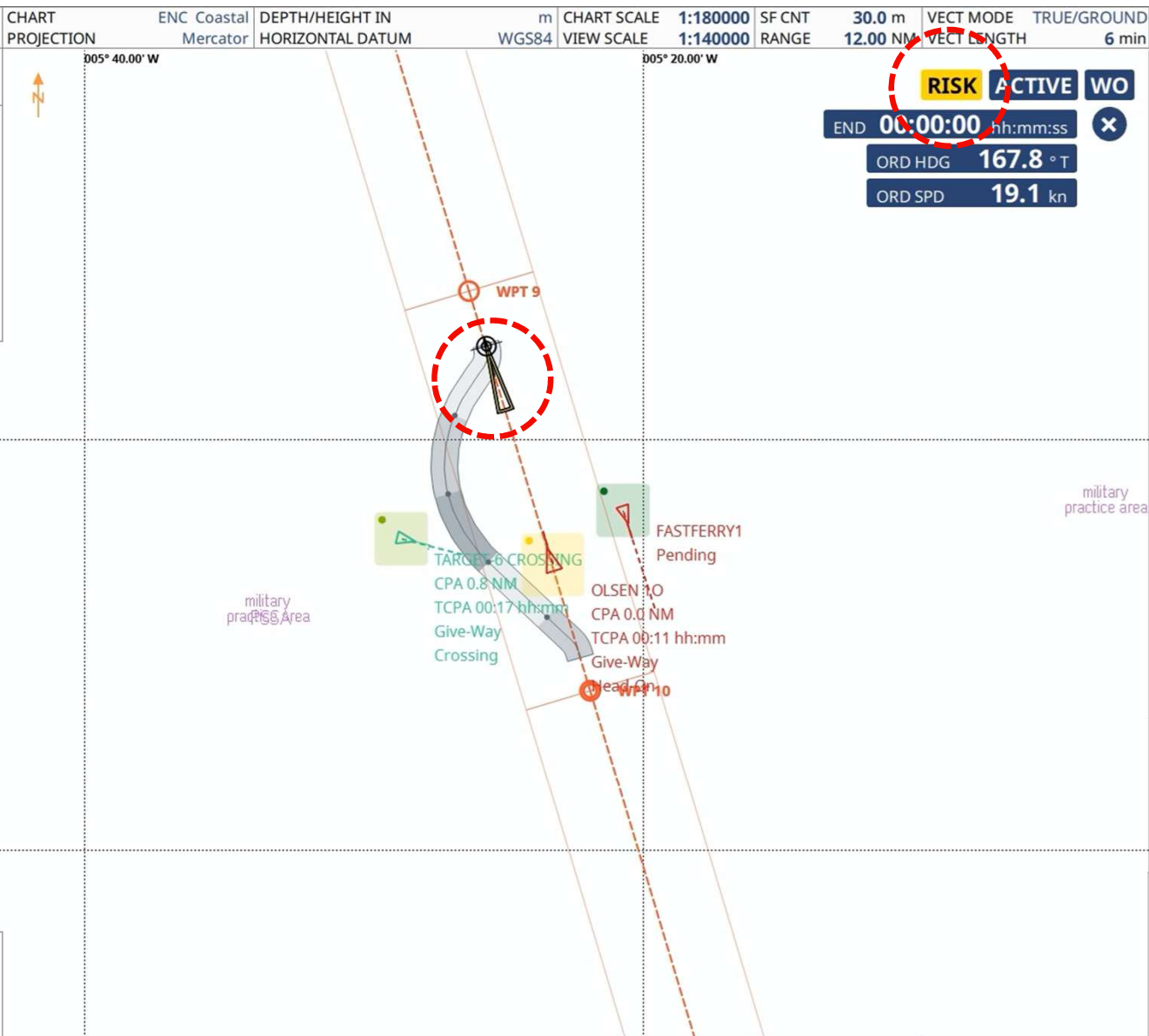
°

'

LON

°

'



RISK ACTIVE WO

END 00:00:00 hh:mm:ss

ORD HDG 167.8 ° T

ORD SPD 19.1 kn

TRACK ROUTE CTRL MON

AUT / TGT LIST

ID (RISK LVL)	CPA NM	TCPA hh:mm
BEN R...FFSEN	3.7	05:45
FASTFERRY1	1.5	-00:52
GRIMALDI	5.6	02:15
MS QUALLE	1.0	05:48
ORION	0.9	05:40
TARGE...SSING	0.8	00:17
BULKER	4.7	-02:03
FASTCAT	31.7	-00:49
OLSEN 10	0.0	00:11
SCOT ...RRIER	-.-	--:--
STENA2	4.6	05:37
STENATANKER	11.9	-02:19

All targets

All CGA targets

Considered targets

AUT

DISP TGT LIST

ALERTS

TGT MGMT 2026-08-25 17:06:10 1 of 8
NEW TARGET - 1 NEW TARGET(S) FROM AIS2

N UP

+ -

CENT

STND

PLAN

SAIL

SYM

TGT

ERBL

DFLT SET

AUT

MOB

ACK

ANSCHÜTZ

UTC2026-08-25 19:25:01
LOCAL UTC+02:002026-08-25 21:25:01

NAVIGATION

LAT

GPS1

N 47° 28.794'

LON

GPS1

W 005° 27.035'

HDG

GYRO1

167.7 ° T

ROT

GYRO1

-14.4 °/min

COG

GPS1

168.2 °

SOG

GPS1

19.5 kn

STW

LOG1

19.5 kn

STEERING MODETRACK CTRL

AUT INFO AND DEPTH INFO

RNG

NM

ETA

hh:mm:ss

BRG

° T

TTG

hh:mm:ss

LAT

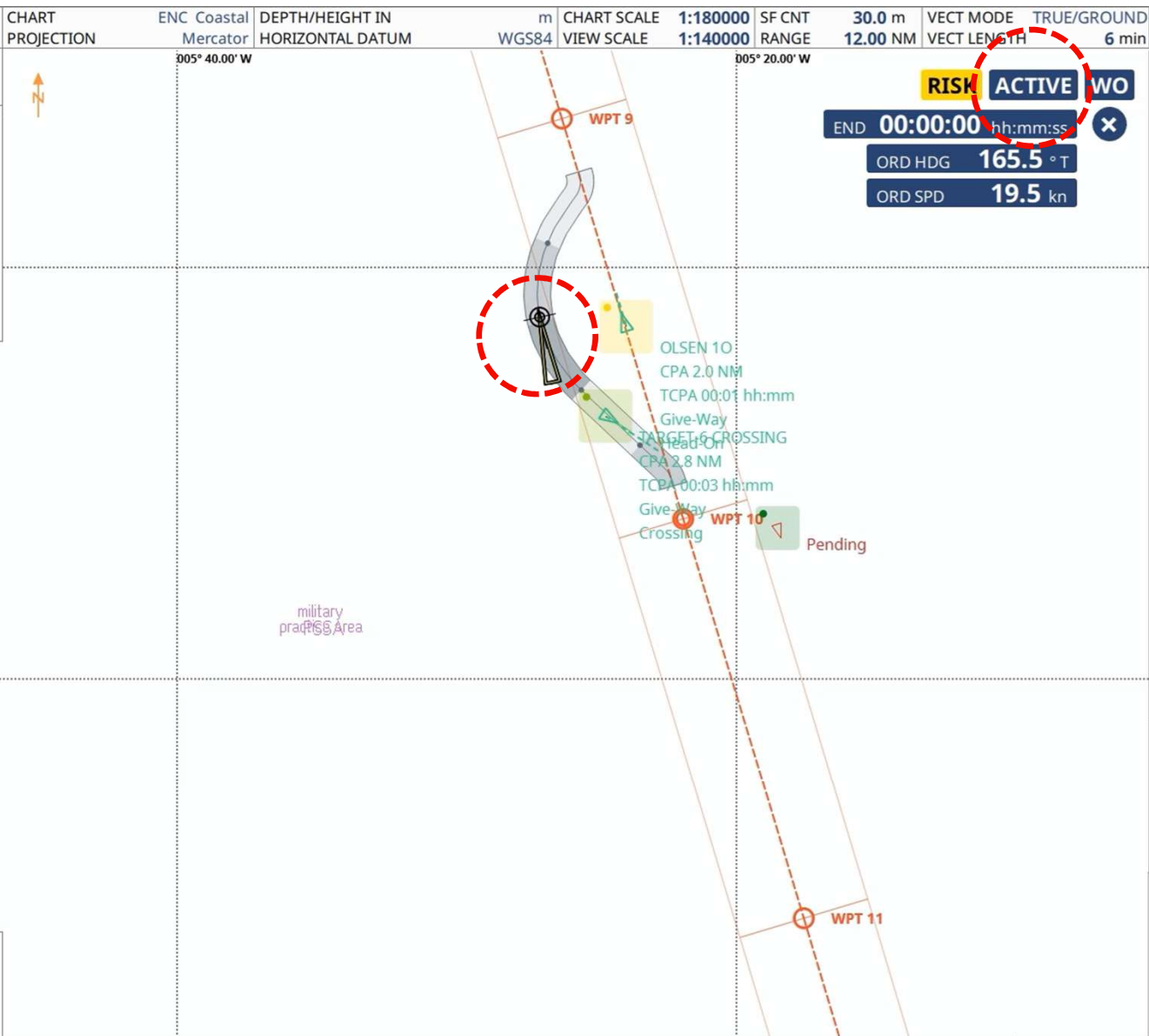
°

'

LON

°

'



TRACK ROUTE CTRL MON

AUT / TGT LIST

ID (RISK LVL)	CPA NM	TCPA hh:mm
BEN R...FFSEN	13.9	05:17
FASTFERRY1	1.4	-01:13
GRIMALDI	0.2	01:59
MS QUALLE	10.2	05:19
ORION	11.2	05:12
TARGE...SSING	2.8	00:03
BULKER	2.6	-02:17
FASTCAT	31.1	-00:58
OLSEN 10	2.0	00:01
SCOT ...RRIER	-.-	---
STENA2	16.4	05:40
STENATANKER	13.1	-02:24

All targets

All CGA targets

Considered targets

AUT

DISP TGT LIST

ALERTS

TGT MGMT

2026-08-25 17:06:10

NEW TARGET - 1 NEW TARGET(S) FROM AIS2

1 of 8

MOB

ACK

ANSCHÜTZ

UTC 2026-08-25 19:36:15
LOCAL UTC+02:00 2026-08-25 21:36:15

NAVIGATION

LAT

GPS1

N 47° 25.938'

LON

GPS1

W 005° 23.847'

HDG

GYRO1

133.2 ° T

ROT

GYRO1

-0.1 °/min

COG

GPS1

133.2 °

SOG

GPS1

19.6 kn

STW

LOG1

19.6 kn

STEERING MODE TRACK CTRL

AUT INFO AND DEPTH INFO

RNG

NM

ETA

hh:mm:ss

BRG

° T

TTG

hh:mm:ss

LAT

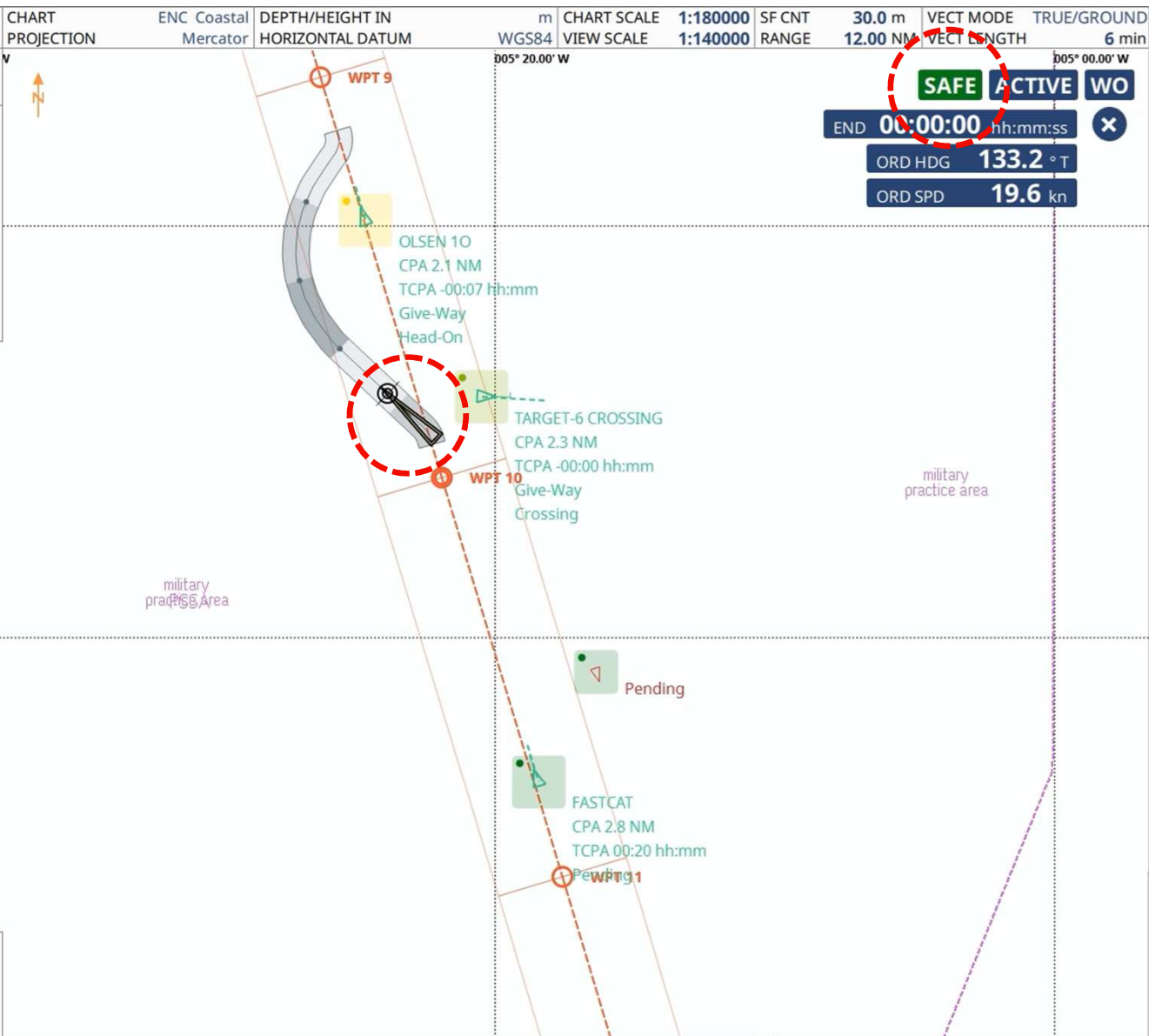
°

'

LON

°

'



TRACK ROUTE CTRL MON

AUT / TGT LIST

ID (RISK LVL)	CPA NM	TCPA hh:mm
BEN R...FFSEN	41.2	07:14
FASTFERRY1	7.9	-00:14
GRIMALDI	21.3	02:13
MS QUALLE	46.3	07:11
ORION	43.7	07:05
TARGE...SSING	2.3	-00:00
BULKER	23.9	-01:43
FASTCAT	2.8	00:20
OLSEN 10	2.1	-00:07
SCOT ...RRIER	-.-	-.-
STENA2	41.9	04:14
STENATANKER	20.3	-03:34

☐ All targets
☐ All CGA targets
☒ Considered targets

AUT

DISP TGT LIST

ALERTS

TGT MGMT

2026-08-25 17:06:10

NEW TARGET - 1 NEW TARGET(S) FROM AIS2

1 of 8

MOB

ACK

Autonomics CGA: Better human and economics

Lower crew workload and fatigue

- Transparent, COLREG-compliant recommendations
- Target prioritization
- Automated execution by Autopilot integration



Long-term economic value

- No need for new bridge
- Avoid future performance loadings
- Less annual FFO deductibles



To make it specific

Automatic execution of 30-60min evasive manoeuvres after human approval relieving officers

To make it specific

Performance loadings are 1% of annual OPEX, H&M
FFO deductibles 0.25-0.5% of ship value

Ship owner situation in general

- **Shortage of officers** ongoing and growing globally
- **Human failure** despite modern sensing technology in maritime accidents
- **Economic pressure** and cost flexibility requirements, also due to geo-political tensions

Estimated Supply and Demand Balance 2026

The current supply-demand situation for the global seafarer workforce is estimated at a shortage of 39,100 officers and a surplus of 56,890 ratings.



Commercially
available summer
2027

Autonomics CGA combines **safety benefits** with **mid-term financial benefits**, low integration efforts addressing ferry operators needs to make navigation safe.

Key Take away: Autonomics is an answer to challenges in ferry operations

Thank You