

11th Chemical Process Safety Sharing (CPSS)

The Pioneering Pathway- Transforming Safety in the Intelligent Industry

Dr. Haim Srur & Maor Shahar
haim.srur@go-arc.com

GOARC





Contents



About GOARC

Industry4.0 from steam to Data

Industry4.0 Main challenges

The future of Intelligent Industry

GOARC's vision and technology

GOARC – enables the journey towards intelligent industry



Oil & Gas



Petrochemical



Utilities



Shipyards



Mining



Construction

Facts and Stats

- 100 Global site implementation
- X0,000 Active users
- 19 Luanguages

Main Partners

AVEVA Capgemini

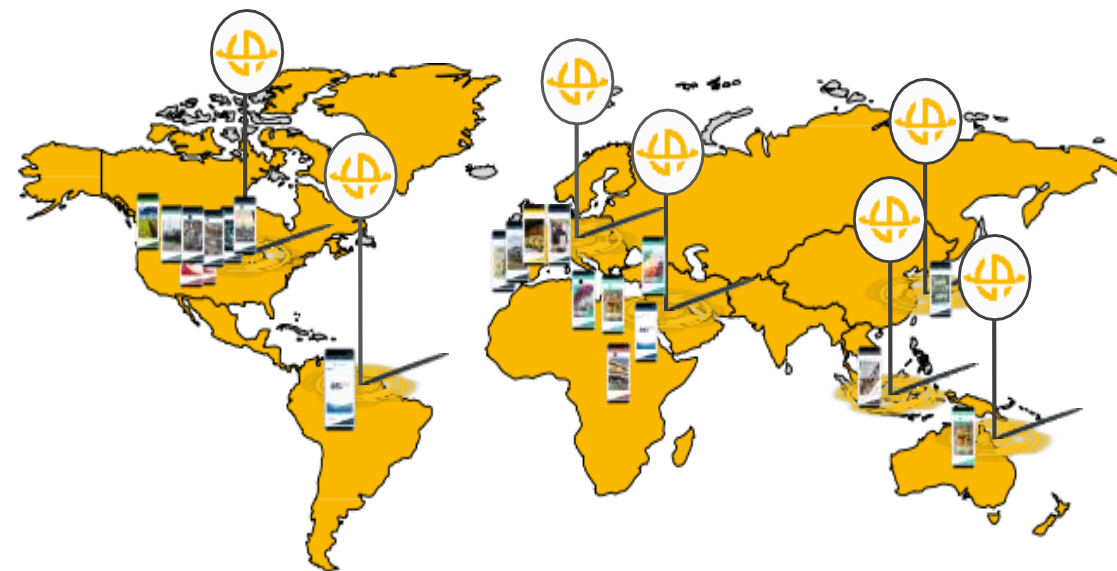


Global Recognition



GOARC's Mission

To build the best AI connected worker platform connecting humans, machines and systems enabling the journey towards intelligent operations



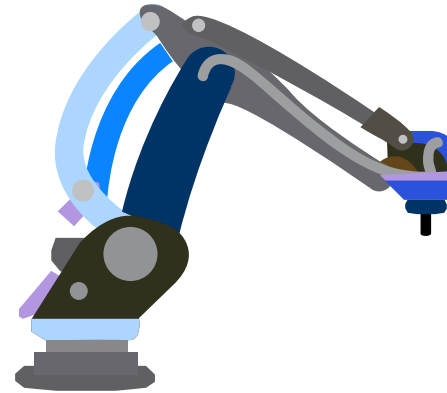
GOARC's Vision



The 4 Industrial revolutions



Second Industrial Revolution: electric energy makes mass production possible
(Beginning of the 20th century)

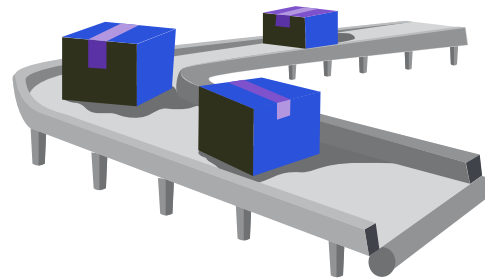


Fourth Industrial Revolution: Internet of Things makes networked manufacturing possible. Connecting virtual and physical
(Since the 21st century)

1.

First Industrial Revolution: steam power makes mechanical production possible
(Late 18th century)

2.



3.

Third Industrial Revolution: IT and computer technology allow for more manufacturing automation
(Beginning of the 1970s)

4.



From **Steam** to **Data** as the main energy for scale



The industry 4.0 Wave

From **Digitalization** through automation to **Autonomous**



Data Driven



Domain 4.0
Digitalization



Connected
Worker/factory
Automation



Autonomous
Factory
Autonomy

Time

11th Chemical Process Safety Sharing (CPSS)
22nd Jun. 2023, Thailand





RAYONG 2300

Why we are not there already by
NOW?



Digital transformation

<30% of digital transformation efforts succeed

1. Lack of clear strategy
2. Resistance to change
3. Failure to align digital strategy with business objectives
4. Collection of initiatives



Dark Data

The Paradox of Industry 4.0

80% of the data generated in the process industry remains unstructured and unanalyzed instead of adding business value





Brownfields factories



Data silos

Aging talent

Aging assets

Partial automation

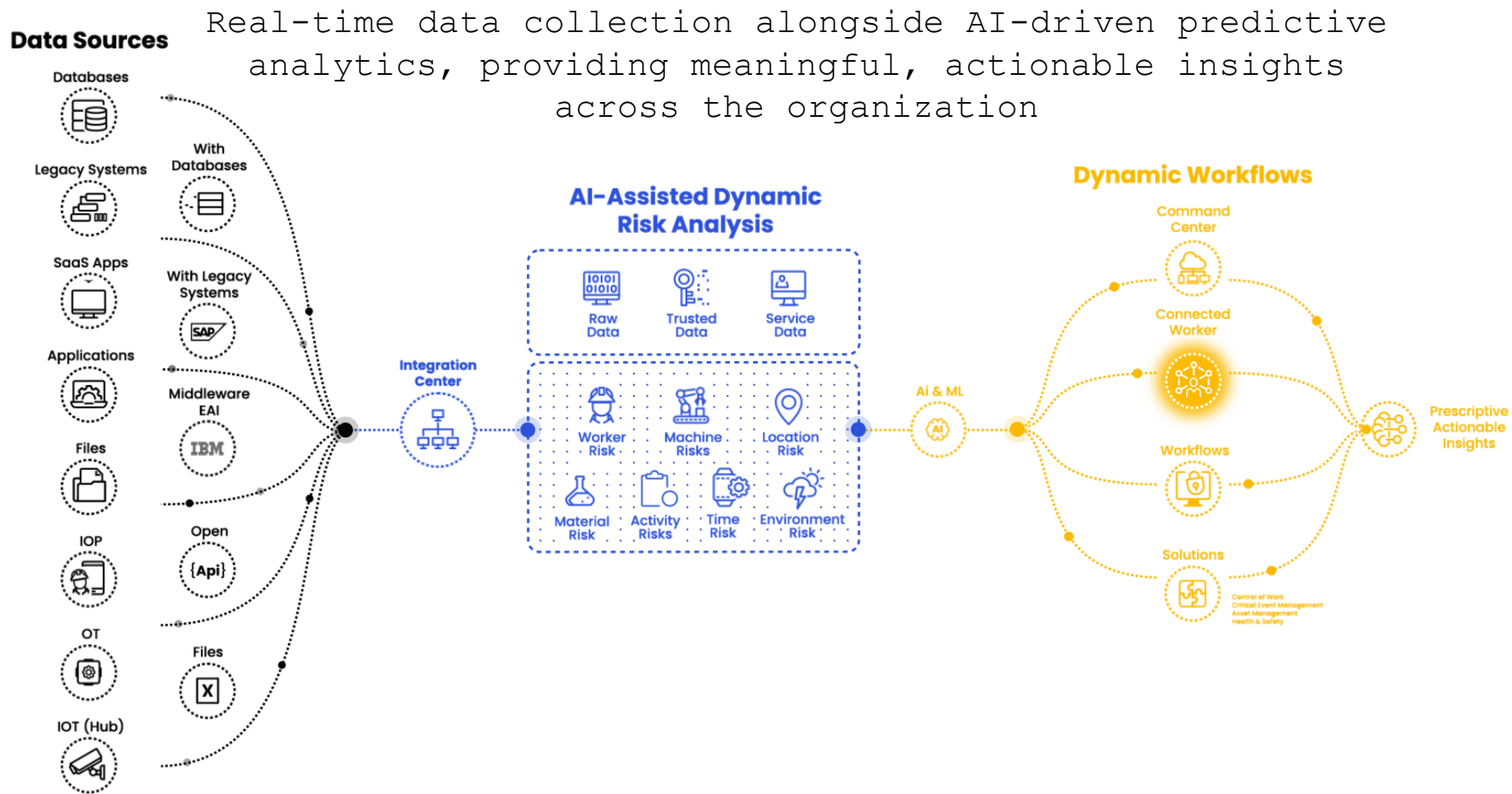
4⁵
94 H



New look of the new assets of the Process Industry

White Paper

GOARC's Safety 4.0 Platform



GOARC – Paving the Path to the Autonomous Factory



Data Driven

Safety 4.0®
platform – real-time intervention



Safety 4.0
Prevention

Safe connected
platform



Connected Worker
Prescription

SMAR UNIT –
CEREBROOM™



Autonomous Factory
Automation

Time



GOARC's Platform and Technologies



Platform Architecture



Multi-tenant
SaaS cloud
first



Mobile first



Worker
centric



AI embedded



Single data layer



Command Center

GOARC's 4.0 Platform

Command Center

Connected Worker

AI / ML

Control
of Work

Critical
Event
Management

Asset
Performance
Management

Health &
Safety

Environmenta
l

Permit
To Work

Shift
Management

Emergency
Preparedness

Emergency
Management

Operato
r
Rounds

Asset
Management

Incident
Management

Hazard
Management

Emission
Management

Lockout
-Tagout

Audits

Human and
Operational
Performance

Air
Noise

Water
Light

Waste



11th Chemical Process Safety Sharing (CPSS)
22nd Jun. 2023, Thailand





Platform Architecture



Multi-tenant
SaaS cloud
first



Mobile first



Worker
centric



AI embedded



Single data layer



Command Center

GOARC's 4.0 Platform

Command Center

Connected Worker

AI / ML

Control
of Work

**Critical
Event
Management**

Asset
Performance
Management

Health &
Safety

Environmenta
l

Permit
To Work

Shift
Management

Emergency
Preparedness

Emergency
Management

Operato
r
Rounds

Asset
Management

Incident
Management

Hazard
Management

Emission
Management

Lockout
-Tagout

Audits

Human and
Operational
Performance

Air
Noise

Water
Light

Waste



11th Chemical Process Safety Sharing (CPSS)
22nd Jun. 2023, Thailand





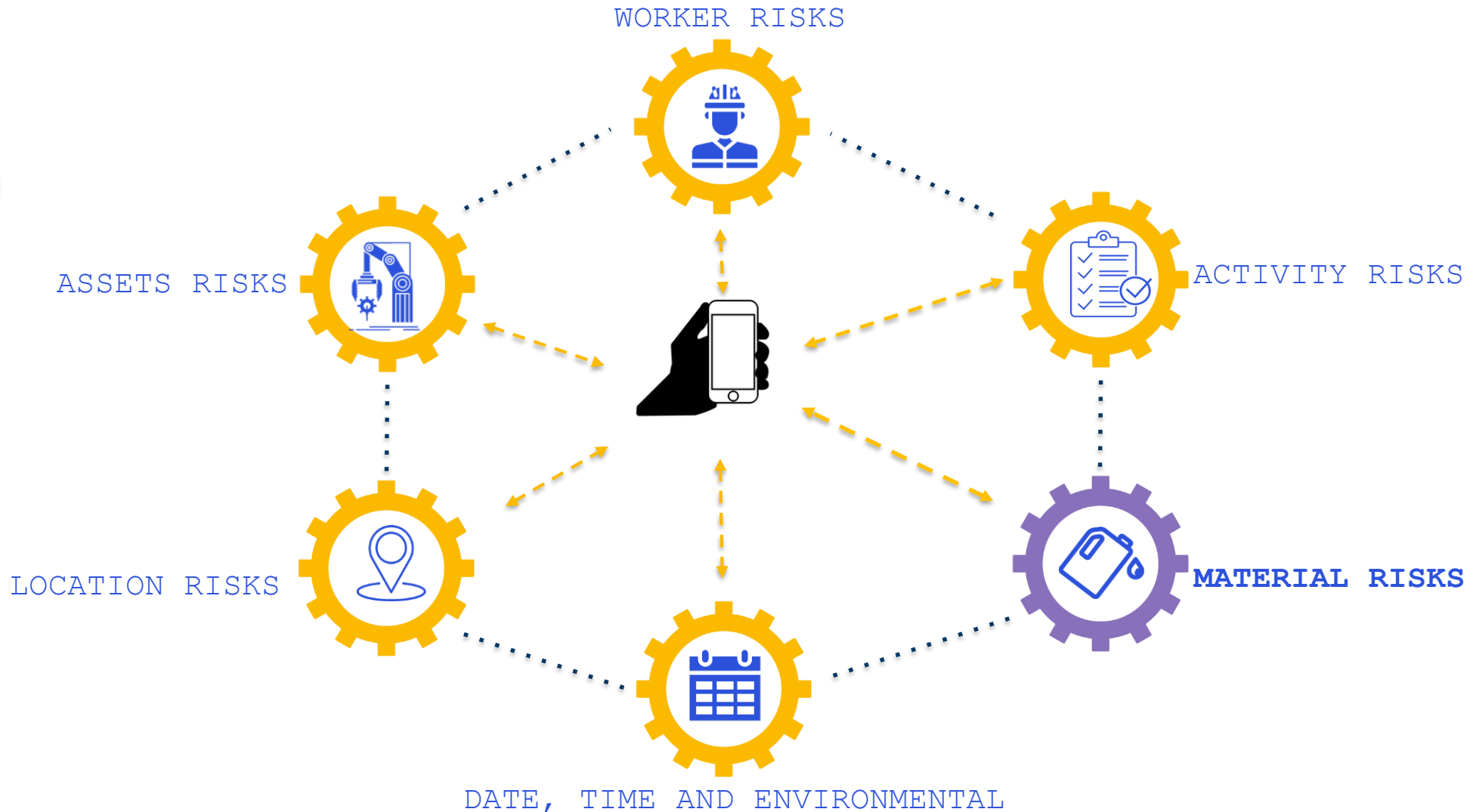
3 protecting layers for Safety and Efficiency





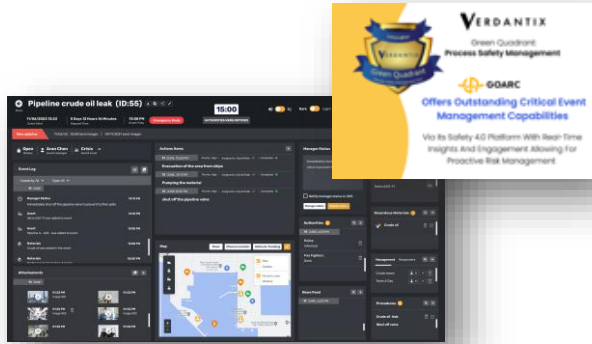
6 Elements Risk Model

Note: Process is patent pending



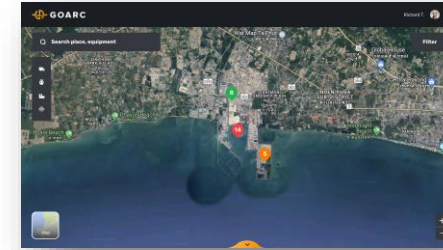


1 + 1 > 2



Emergency Center

Award-winning command & control crisis event management module



Materials Center

Command & control module for the safe transportation and storage of hazardous materials

THE EFFORT TO GATHER DAILY INFORMATION BECOMES THE STARTING POINT DURING AN EMERGENCY



Joint Forces



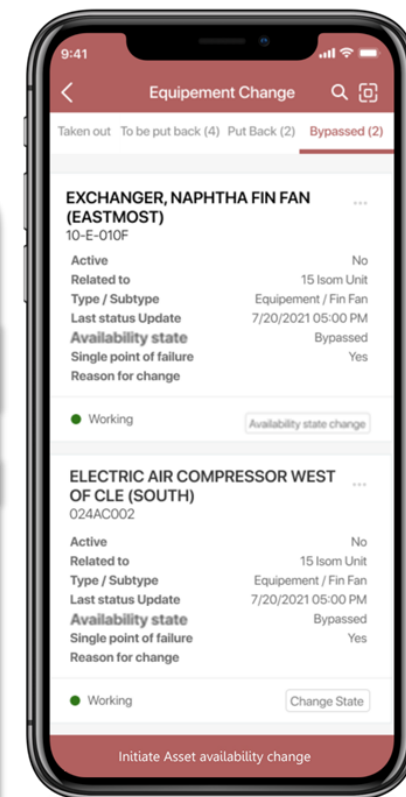
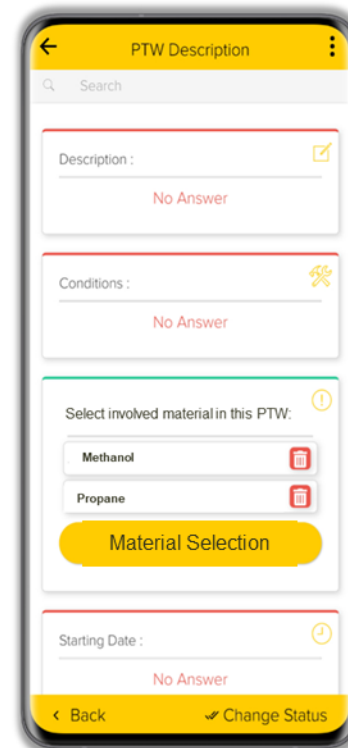
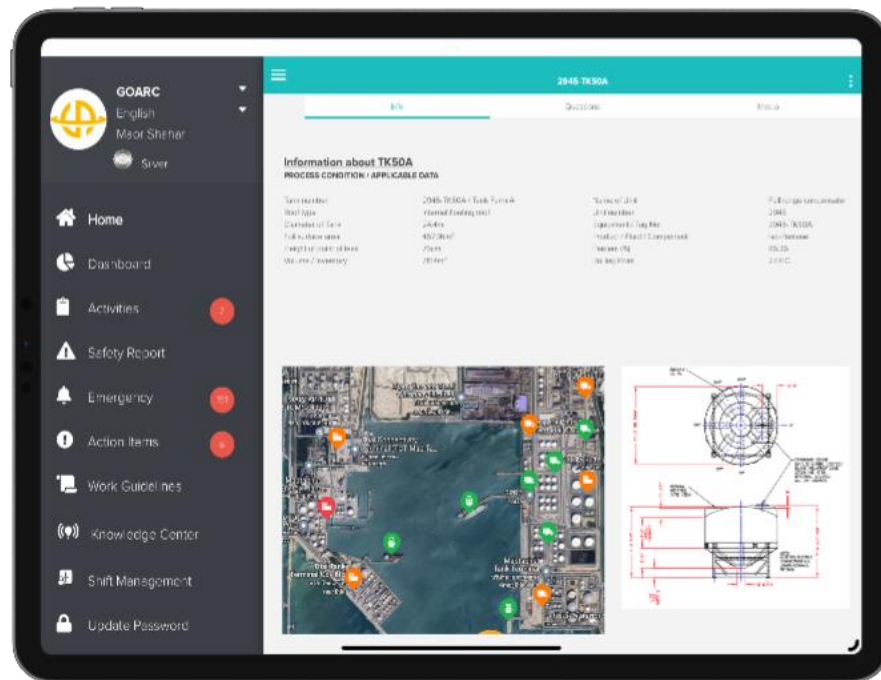
Increasing safety and efficiency in the transportation, storage and handling of hazardous materials in emergency situations

- **Fast and effective** handling of hazardous materials, in emergency situations and accidents.
- **Risk Management:** threat prevention and consequence mitigation reducing the likelihood of accidents and spills .
- **Emergency Management:** real-time data aggregation and companies' collaboration for hazardous material transportation.



Collecting field data on materials

- PTW
- Rounds
- Pre-Incident Planning
- Audits
- Hazard Recognition
- Etc.





GOARC Materials Center



Real-time command & control
visualization for the safe transportation
and storage of hazardous materials

The screenshot displays the GOARC Materials Center interface. At the top, the GOARC logo and a user profile for Richard T. are visible. A search bar labeled 'Search place, equipment' is present. The main area is a satellite map showing an industrial zone with several assets marked by colored pins: a red pin labeled '14', a green pin labeled '8', and an orange pin labeled '5'. Other locations like Phayun Beach, Phala Beach, and Wat Map Ta Phut are also labeled. A 'Filter' button is in the top right. Below the map is a table of assets.

Assets Name	ID	Location	Owner	Last Update	Materials	Actions items	Risk Level
Truck XS	T X2-22	12.675,101.137	Adil Cardenas	11/06/23 12:33	1267 Petroleum...		High Risk
Truck XS	T X2-55	12.691,101.138	Affan Aguirra	11/06/23 12:33	1971 Methane		Low Risk
Vessel BS	B 12798	12.589,101.121	Anas Bernal	11/06/23 11:27	1053 Hydrogen...	1457, 1488	Pay Attention
Vessel BS	B 476	12.285,101.194	Dot Beltran	11/06/23 12:09	1202 Diesel Fuel		Low Risk
Pipeline A	A23	12.674,101.102		11/06/23 12:21	1993 Flammable...	1338	High Risk
Truck XS3	T X3-77	12.682,101.111	Faris Herrera	11/06/23 12:27	3264 Corrosive...		Pay Attention



11th Chemical Process Safety Sharing (CPSS)
22nd Jun. 2023, Thailand

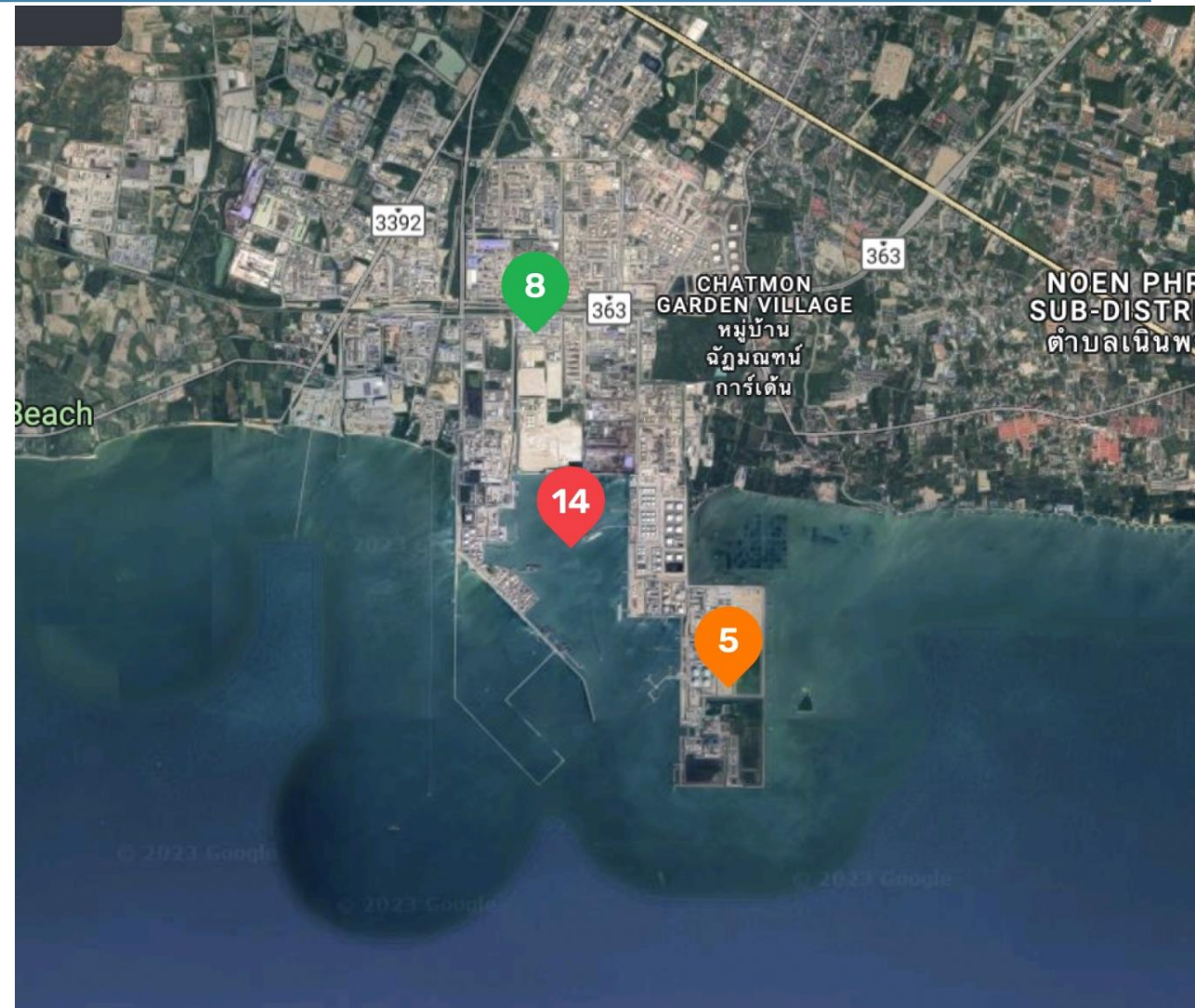




GOARC Materials Center



Focus on what really matters





GOARC Materials Center



Finding fast what you are looking for using the side advanced filter panel

The screenshot displays the GOARC Materials Center interface. At the top, the GOARC logo and a user profile for Richard T. are visible. A search bar labeled "Search place, equipment" is present. The main area features a satellite map of an industrial site with several colored markers (8, 14, 5) indicating asset locations. A "Filter" button is highlighted with a yellow arrow. Below the map is a table listing assets with their names, IDs, locations, owners, last update times, materials, actions items, and risk levels.

Assets Name	ID	Location	Owner	Last Update	Materials	Actions items	Risk Level
Truck XS	T X2-22	12.675,101.137	Adil Cardenas	11/06/23 12:33	1267 Petroleum...		High Risk
Truck XS	T X2-55	12.691,101.138	Affan Aguirra	11/06/23 12:33	1971 Methane		Low Risk
Vessel BS	B 12798	12.589,101.121	Anas Bernal	11/06/23 11:27	1053 Hydrogen...	1457, 1488	Pay Attention
Vessel BS	B 476	12.285,101.194	Dot Beltran	11/06/23 12:09	1202 Diesel Fuel		Low Risk
Pipeline A	A23	12.674,101.102		11/06/23 12:21	1993 Flammable...	1338	High Risk
Truck XS3	T X3-77	12.682,101.111	Faris Herrera	11/06/23 12:27	3264 Corrosive...		Pay Attention



11th Chemical Process Safety Sharing (CPSS)
22nd Jun. 2023, Thailand





GOARC Materials Center



Finding fast what you are looking for using the side advanced filter panel

The screenshot displays a map interface for the GOARC Materials Center. The map shows an industrial area with several risk markers: a green circle with '8', a red circle with '14', and an orange circle with '5'. The map includes labels for 'Wat Map Ta Phut', 'CHATMON GARDEN VILLAGE', and 'NOEN PHRA SUB-DISTRICT'. A filter panel is visible on the right side, showing the following options:

- Filter** (Close button)
- Location**: Mueang Rayong
- Risk Level**:
 - High Risk
 - Pay Attention
 - Low Risk
 - No Risked
- Materials**:
 - 1267 Petroleum Crude Oil
 - 1971 Methane
 - 1053 Hydrogen Sulfide
 - 1013 Carbon Dioxide
 - 1075 Propane
 - 1789 Hydrochloric Acid
 - 1791 Sulfuric Acid
 - 1660 Methanol
 - 1080 Chlorine
 - 0081 Ammonium Nitrate
 - 1479 Potassium Permanganate
- Search** button



GOARC Materials Center



Remotely track and control each material

Assets Name	ID	Location	Owner	Last Update	Materials	Actions items	Risk Level
Truck XS	T X2-22	12.675,101.137	Adil Cardenas	11/06/23 12:33	1267 Petroleum...		High Risk
Truck XS	T X2-55	12.691,101.138	Affan Aguirra	11/06/23 12:33	1971 Methane		Low Risk
Vessel BS	B 12798	12.589,101.121	Anas Bernal	11/06/23 11:27	1053 Hydrogen...	1457, 1488	Pay Attention
Vessel BS	B 476	12.285,101.194	Dot Beltran	11/06/23 12:09	1202 Diesel Fuel		Low Risk
Pipeline A	A23	12.674,101.102		11/06/23 12:21	1993 Flammable...	1338	High Risk
Truck XS3	T X3-77	12.682,101.111	Faris Herrera	11/06/23 12:27	3264 Corrosive...		Pay Attention



GOARC Materials Center



Zoom in from anywhere in the world for better understanding of the field situation

The screenshot displays the GOARC Materials Center interface. At the top, there is a search bar for "Search place, equipment" and a user profile for "Richard T.". A map shows an industrial area with several asset markers (8, 14, 5) and labels for "Phayun Beach", "Phala Beach", and "moonlight Beach". A "Filter" panel on the right allows filtering by "Location" (Mueang Rayong) and "Risk Level" (High Risk, Pay Attention, Low Risk, No Risked). A "Materials" list includes items like "1267 Petroleum Crude Oil", "1971 Methane", "1053 Hydrogen Sulfide", etc. Below the map is a table of assets:

Assets Name	ID	Location	Owner	Last Update	Materials	Actions items	Risk Level
Truck XS	T X2-22	12.675,101.137	Adil Cardenas	11/06/23 12:33	1267 Petroleum...		High Risk
Truck XS	T X2-55	12.691,101.138	Affan Aguirra	11/06/23 12:33	1971 Methane		Low Risk
Vessel BS	B 12798	12.589,101.121	Anas Bernal	11/06/23 11:27	1053 Hydrogen...	1457, 1488	Pay Attention
Vessel BS	B 476	12.285,101.194	Dot Beltran	11/06/23 12:09	1202 Diesel Fuel		Low Risk
Pipeline A	A23	12.674,101.102		11/06/23 12:21	1993 Flammable...	1338	High Risk
Truck XS3	T X3-77	12.682,101.111	Faris Herrera	11/06/23 12:27	3264 Corrosive...		Pay Attention



11th Chemical Process Safety Sharing (CPSS)
22nd Jun. 2023, Thailand





GOARC Materials Center



GOARC Richard T.

Search place, equipment

Filter

Location: Mueang Rayong

Risk Level:

- High Risk
- Pay Attention
- Low Risk
- No Risked

Materials:

- 1267 Petroleum Crude Oil
- 1971 Methane
- 1053 Hydrogen Sulfide
- 1013 Carbon Dioxide
- 1075 Propane
- 1789 Hydrochloric Acid
- 1791 Sulfuric Acid
- 1660 Methanol
- 1080 Chlorine
- 0081 Ammonium Nitrate
- 1479 Potassium Permanganate

Assets Name	ID	Location	Owner	Last Update	Materials	Actions items	Risk Level
Truck XS	T X2-22	12.675,101.137	Adil Cardenas	11/06/23 12:33	1267 Petroleum...		High Risk
Truck XS	T X2-55	12.691,101.138	Affan Aguirra	11/06/23 12:33	1971 Methane		Low Risk
Vessel BS	B 12798	12.589,101.121	Anas Bernal	11/06/23 11:27	1053 Hydrogen...	1457, 1488	Pay Attention
Vessel BS	B 476	12.285,101.194	Dot Beltran	11/06/23 12:09	1202 Diesel Fuel		Low Risk
Pipeline A	A23	12.674,101.102		11/06/23 12:21	1993 Flammable...	1338	High Risk
Truck XS3	T X3-77	12.682,101.111	Faris Herrera	11/06/23 12:27	3264 Corrosive...		Pay Attention



11th Chemical Process Safety Sharing (CPSS)
22nd Jun. 2023, Thailand





GOARC Materials Center



Assets Name	ID	Location	Owner	Last Update	Materials	Actions items	Risk Level
Truck XS	T X2-22	12.675,101.137	Adil Cardenas	11/06/23 12:33	1267 Petroleum...		High Risk
Truck XS	T X2-55	12.691,101.138	Affan Aguirra	11/06/23 12:33	1971 Methane		Low Risk
Vessel BS	B 12798	12.589,101.121	Anas Bernal	11/06/23 11:27	1053 Hydrogen...	1457, 1488	Pay Attention
Vessel BS	B 476	12.285,101.194	Dot Beltran	11/06/23 12:09	1202 Diesel Fuel		Low Risk
Pipeline A	A23	12.674,101.102		11/06/23 12:21	1993 Flammable...	1338	High Risk
Truck XS3	T X3-77	12.682,101.111	Faris Herrera	11/06/23 12:27	3264 Corrosive...		Pay Attention



11th Chemical Process Safety Sharing (CPSS)
22nd Jun. 2023, Thailand





GOARC Materials Center



Have a full GIS control:

- Satellite
- Map
- POIs
- Blueprints
- Drawings
- 3D/VR (Matterport)
- Custom layers

Assets Name	ID	Location	Owner	Last Update	Materials	Actions items	Risk Level
Truck XS	T X2-22	12.675,101.137	Adil Cardenas	11/06/23 12:33	1267 Petroleum...		High Risk
Truck XS	T X2-55	12.691,101.138	Affan Aguirra	11/06/23 12:33	1971 Methane		Low Risk
Vessel BS	B 12798	12.589,101.121	Anas Bernal	11/06/23 11:27	1053 Hydrogen...	1457, 1488	Pay Attention
Vessel BS	B 476	12.285,101.194	Dot Beltran	11/06/23 12:09	1202 Diesel Fuel		Low Risk
Pipeline A	A23	12.674,101.102		11/06/23 12:21	1993 Flammable...	1338	High Risk
Truck XS3	T X3-77	12.682,101.111	Faris Herrera	11/06/23 12:27	3264 Corrosive...		Pay Attention



GOARC Materials Center



Truck details:

- Integrations with POD, IoT sensors, MSDS and more

The screenshot shows the GOARC mobile application interface. At the top, there is a search bar labeled "Search place, equipment" and a user profile for "Richard T.". The main area is a map showing several truck locations marked with colored icons (orange, green, red). Labels on the map include "Siam Yamato Steel Company Limited", "Thai Tank Terminal Co., Ltd", "Mabthaphut Tank Terminal", and "MAP-AIR SEPARATION UNIT (ASU) PROJECT".

Below the map, a detailed view of a truck is shown:

- Truck XS3 - T X3-77** (Emergency status)
- Risk level: Pay attention
- Location: 12.682,101.111
- Destination: 12.877,112.001
- Drivers: Faris Herrera
- Materials: 1267 (Petroleum Crude Oil)
- Customer: GOARC
- Last updated: 11/06/23 12:27

Additional Information:

Engine Speed	3000 RPM	Oxygen	0.7 volts
Vehicle Speed	68 km/h	Brake Pad Wear	3mm
Fuel Level	75%	Accelerometer	0.1 g
Tire Pressure	35 psi	Ambient Light	500 lux
Coolant T°C	90°C		



11th Chemical Process Safety Sharing (CPSS)
22nd Jun. 2023, Thailand





GOARC Materials Center



Truck details:

- Integrations with POD, IoT sensors, MSDS and more

< Back

Truck XS3 - T X3-77 Emergency
Risk level: Pay attention

Location	12.682,101.111
Destination	12.877,112.001
Drivers	Faris Herrera
Materials	1267 (Petroleum Crude Oil)
Customer	GOARC
Last updated	11/06/23 12:27

Additional Information

Engine Speed	3000 RPM	Oxygen	0.7 volts
Vehicle Speed	68 km/h	Brake Pad Wear	3mm
Fuel Level	75%	Accelerometer	0.1 g
Tire Pressure	35 psi	Ambient Light	500 lux
Coolant T°C	90°C		



GOARC Materials Center



GOARC Richard T.

Search place, equipment

Siam Yamato Steel Company Limited
บริษัท เหล็กสยามยามาโตะ จำกัด

Thai Tank Terminal Co., Ltd
บจก. ไทยแท้งค์ เทอร์มินัล

Mabthaphut Tank Terminal
บริษัท ไทยแท้งค์ เทอร์มินัล จำกัด

MAP-AIR SEPARATION UNIT (ASU) PROJECT

Site office A SBL

Truck XS3 - T X3-77
Risk level: Pay attention **Emergency**

Location	12.682,101.111	Engine Speed	3000 RPM	Oxygen	0.7 volts
Destination	12.877,112.001	Vehicle Speed	68 km/h	Brake Pad Wear	3mm
Drivers	Faris Herrera	Fuel Level	75%	Accelerometer	0.1 g
Materials	1267 (Petroleum Crude Oil)	Tire Pressure	35 psi	Ambient Light	500 lux
Customer	GOARC	Coolant T°C	90°C		
Last updated	11/06/23 12:27				



11th Chemical Process Safety Sharing (CPSS)
22nd Jun. 2023, Thailand





GOARC Materials Center



GOARC Richard T.

Search place, equipment Filter

Siam Yamato Steel Company Limited

Thailand

Thai Tank Terminal Co., Ltd

Mabthaphut Tank Terminal

MAP-AIR SEPARATION UNIT (ASU) PROJECT

Site office A

Truck XS3 - T X3-77 **Emergency**

Risk level: Pay attention

Location	12.682,101.111	Engine Speed	3000 RPM	Oxygen	0.7 volts
Destination	12.877,112.001	Vehicle Speed	68 km/h	Brake Pad Wear	3mm
Drivers	Faris Herrera	Fuel Level	75%	Accelerometer	0.1 g
Materials	1267 (Petroleum Crude Oil)	Tire Pressure	35 psi	Ambient Light	500 lux
Customer	GOARC	Coolant T°C	90°C		
Last updated	11/06/23 12:27				



11th Chemical Process Safety Sharing (CPSS)
22nd Jun. 2023, Thailand





GOARC Materials Center



Site details:

- Integrations with Asset Management, ERP, OSIsoft PI, IoT sensors, MSDS and more

The screenshot displays the GOARC Materials Center interface. At the top, the GOARC logo and a user profile for Richard T. are visible. A search bar labeled "Search place, equipment" and a "Filter" button are present. The main area is a map showing industrial sites like Siam Yamato Steel Company Limited, Thai Tank Terminal Co., Ltd, and Mabtaphut Tank Terminal. A red pin highlights a specific location, which is detailed in a panel below. The panel shows "Pipeline A - A23" with a risk level of "Pay attention" and an "Emergency" button. It lists various attributes such as location, type, barcode, materials, customer, and last updated date. An "Additional Information" section provides technical details like diameter, wall thickness, length, pressure, and temperature, along with PTW and round information.

Pipeline A - A23		Emergency		Additional Information	
Risk level:	Pay attention			Diameter	40 Inch
Location	12.682,101.111			Wall Thickness	8 millimeters
Type	Pipeline			Length	70 km
Barcode	GOPA23			Pressure	35 psi
Materials	1267 (Petroleum Crude Oil)			Temperature	90°C
Customer	GOARC			Last PTW	08/04/23 13:12
Last updated	11/06/23 12:27			PTW Owner	Aaron Don
				Last Round	



11th Chemical Process Safety Sharing (CPSS)
22nd Jun. 2023, Thailand





GOARC Materials Center



Consequence analysis:

- Integrations with solutions for modeling discharge, dispersion, fires, explosions, and toxic effects

GOARC Richard T.

Search place, equipment Filter

Siam Yamato Steel Company Limited
บริษัท เหล็กสยามยามาโตะ จำกัด

Thai Tank Terminal Co., Ltd
บริษัท ไทยแท๊งก์ เทอร์มินัล จำกัด

Mabtaphut Tank Terminal
บริษัท มาบตาพุดแท๊งก์ เทอร์มินัล จำกัด

MAP-AIR SEPARATION UNIT (ASU) PROJECT Site office A SBI

Satellite

Back

Pipeline A - A23 Emergency
Risk level: Pay attention

Location	12.682,101.111
Type	Pipeline
Barcode	GOPA23
Materials	1267 (Petroleum Crude Oil)
Customer	GOARC
Last updated	11/06/23 12:27

Additional Information

Diameter	40 Inch	Last PTW	08/04/23 13:12
Wall Thickness	8 millimeters	PTW Owner	Aaron Don
Length	70 km	Last Round	
Pressure	35 psi		
Temperature	90°C		



GOARC Materials Center



Consequence analysis:

- Integrations with solutions for modeling discharge, dispersion, fires, explosions, and toxic effects

GOARC Richard T.

Search place, equipment Filter

Siam Yamato Steel Company Limited
บริษัท เหล็กสยามยามาโตะ จำกัด

Thai Tank Terminal Co., Ltd.
บริษัท ไทยแท๊งก์ เทอร์มินัล จำกัด

Mabtaphut Tank Terminal
บริษัท มบตพุดแท๊งก์ เทอร์มินัล จำกัด

MAP-AIR SEPARATION UNIT (ASU) PROJECT

Site office A SBI

Satellite

Back

Pipeline A - A23 Emergency
Risk level: Pay attention

Location	12.682,101.111	Last PTW	08/04/23 13:12
Type	Pipeline	PTW Owner	Aaron Don
Barcode	GOPA23	Last Round	
Materials	1267 (Petroleum Crude Oil)		
Customer	GOARC		
Last updated	11/06/23 12:27		

Diameter	40 Inch
Wall Thickness	8 millimeters
Length	70 km
Pressure	35 psi
Temperature	90°C



GOARC Materials Center



Consequence analysis:

- Integrations with weather forecasting solutions

GOARC Richard T.

Search place, equipment Filter

Siam Yamato Steel Company Limited
บริษัท เหล็กสยามยามาโตะ จำกัด

Thai Tank Terminal Co., Ltd
บริษัท ไทยแท๊งก์ เทอร์มินัล จำกัด

Mabtaphut Tank Terminal
บริษัท มาบตาพุดแท๊งก์ เทอร์มินัล จำกัด

MAP-AIR SEPARATION UNIT (ASU) PROJECT

Site office A SBI

Back

Pipeline A - A23 Emergency
Risk level: Pay attention

Location	12.682,101.111
Type	Pipeline
Barcode	GOPA23
Materials	1267 (Petroleum Crude Oil) [Icons]
Customer	GOARC
Last updated	11/06/23 12:27 [Refresh]

Additional Information

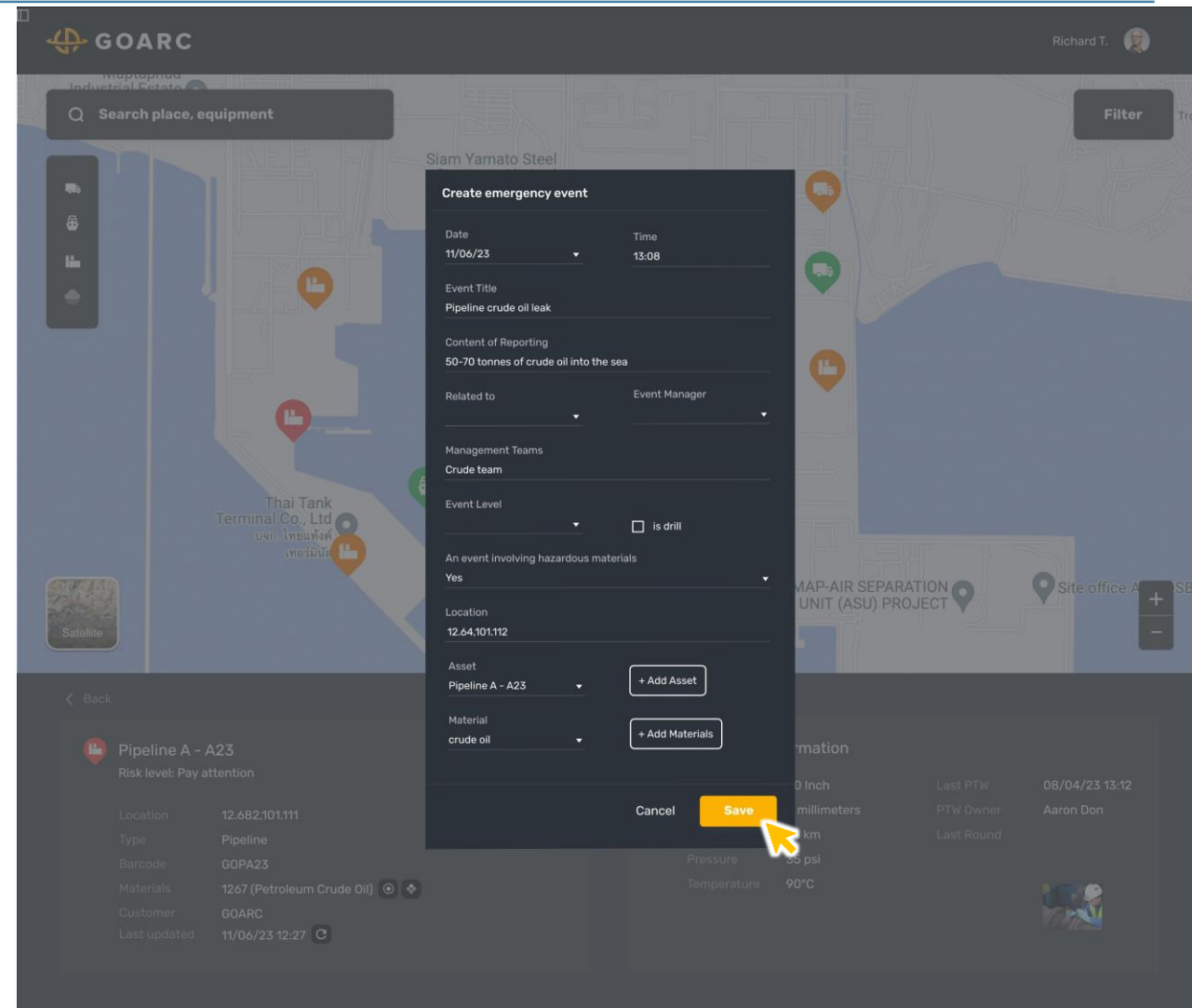
Diameter	40 Inch	Last PTW	08/04/23 13:12
Wall Thickness	8 millimeters	PTW Owner	Aaron Don
Length	70 km	Last Round	10/06/23 08:05
Pressure	35 psi	Round Operator	Eric Hana
Temperature	90°C	Attachments	10/06/23 14:12 [Image]
Coating	PE		
Flow rate	2000 BPH		



GOARC Materials Center



Minimize the damage by quickly and effectively managing an emergency incident involving hazardous materials





GOARC Emergency Event Center



Pipeline crude oil leak (ID:55) 15:00 Dark Light Aran Chen (Aran.Chen@go-arc.com)

11/06/2023 13:23 0 Days 12 Hours 16 Minutes 13:08 PM Emergency Mode AUTHORITIES WERE NOTIFIED

New updates 11/06/23, 13:08 Send Images | 09/11/2021 send images

Open Status Aran Chen Event manager Crisis Event Level

Event Log

- Created by: All Types: All
- 11 JUNE
- Manager Status** 13:15 PM: Immediately shut off the pipeline valve to prevent further spills
- Asset** 13:10 PM: Valve A23-11 was added to event
- Asset** 13:08 PM: Pipeline A - A23 was added to event
- Materials** 13:08 PM: Crude oil was added to the event
- Materials** 02:50 PM: Northern Industrial Zone Ashdod

Attachments

- 11 JUNE
- 01:32 PM Image 001
- 01:32 PM Image 002
- 01:32 PM Image 002
- 01:32 PM Image 002
- 01:32 PM Image 002
- 01:32 PM Image 002

Actions Items

- 11 JUNE, 13:50 PM Priority: High Assigned to: David Robb Completed: Evacuation of the area from ships
- 11 JUNE, 13:11 PM Priority: High Assigned to: David Robb Completed: Pumping the material
- 11 JUNE, 13:09 PM Priority: High Assigned to: David Robb Completed: shut off the pipeline valve

Manager Status

Immediately shut off the pipeline valve to prevent further spills

Notify manager status in SMS

Manager status Regular status

Authorities

- 11 JUNE, 6:50 PM
- Police Informed
- Fire Fighters Done

Map

Draw Choose location Vehicle Tracking

Map Satellite Permit to work Weather

Siam Yamato Steel Company Limited

Thal Tank Terminal Ltd

Mahabaghat Tank Terminal

MAP-AIR SEPARATION UNIT (ASU) PROJECT

Assets

- 3 Injured | 7 Evacuated
- Pipeline A - A23
- Valve A23-11

Hazardous Materials

- Crude oil

Management

- Responders
- Crude team 8
- Team A Day 8

News Feed

- 11 JUNE, 6:50 PM

Procedures

- Crude oil leak
- Shut off valve



11th Chemical Process Safety Sharing (CPSS)
22nd Jun. 2023, Thailand





GOARC Emergency Event Center



Back

Pipeline crude oil leak (ID:55)



11/06/2023 13:23

Event Start

0 Days 12 Hours 16 Minutes

Elapsed Time

13:08 PM

Event Time

Emergency Mode

New updates

11/06/23 , 13:08 Send images | 09/11/2021 send images



Open

Status



Aran Chen

Event manager



Crisis

Event Level



Actions Items

11 JUNE, 13:50 P

Evacuation o

11 JUNE, 13:11 P

Pumping the

11 JUNE, 13:09 P

Event Log



Created by: All



Types: All



11 JUNE

11th Chemical Process Safety Sharing (CPSS)
22nd Jun. 2023, Thailand





GOARC Emergency Event Center



Event Log [Filter] [Image]

Created by: All ▾ Types: All ▾

11 JUNE

- Manager Status** 13:15 PM
Immediately shut off the pipeline valve to prevent further spills
- Asset** 13:10 PM
Valve A23-11 was added to event
- Asset** 13:08 PM
Pipeline A - A23 was added to event
- Materials** 13:08 PM
Crude oil was added to the event
- Materials** 02:50 PM
Northern Industrial Zone Added

Evacuation of the area
11 JUNE, 13:11 PM

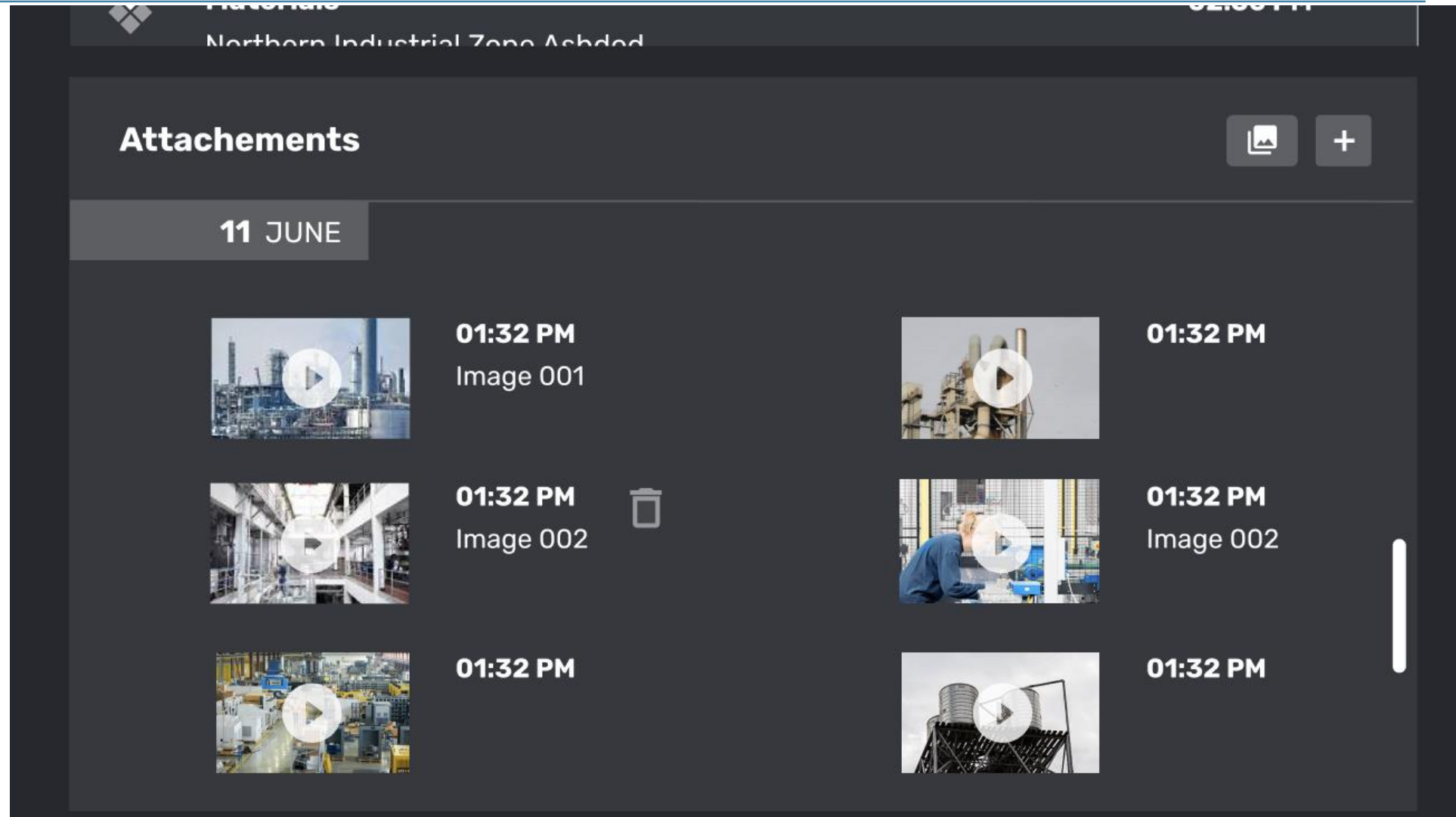
Pumping the material
11 JUNE, 13:09 PM

shut off the pipeline

Map



GOARC Emergency Event Center





GOARC Emergency Event Center



Actions Items +

11 JUNE, 13:50 PM

Priority: High | Assigned to: David Robb ✓✓ | Completed ●

Evacuation of the area from ships

11 JUNE, 13:11 PM

Priority: High | Assigned to: David Robb ✓✓ | Completed ●

Pumping the material

11 JUNE, 13:09 PM

Priority: High | Assigned to: David Robb ✓✓ | Completed ●

shut off the pipeline valve



GOARC Emergency Event Center



PM

PM

Map

Draw Choose location Vehicle Tracking

Map
 Satellite
 Permit to work
 Weather

Siam Yamato Steel Company Limited
บริษัท เหล็กสยาม
ยามาโตะ จำกัด...

Thai Tank Terminal Co., Ltd
บจก. ไทยแท้งค์
เทอร์มินัล

Mabtaphut Tank Terminal
บริษัท มาบตาพุดแท้งค์
เทอร์มินัล จำกัด

MAP-AIR SEPARATION UNIT (ASU) PROJECT

Police Informed

Fire Fighting Done

News Feed

11 JUNE, 6



GOARC Emergency Event Center





GOARC Emergency Event Center



Manager Status

Immediately shut off the pipeline valve to prevent further spills

Notify manager status in SMS

Manager status Regular status

3 Injured | 7 Evacuated

Assets 2

Pipeline A - A23

Valve A23-11

Hazardous Materials 1

Crude oil

Authorities 2



GOARC Emergency Event Center



Pipeline crude oil leak (ID:55) 15:00

11/06/2023 13:23 0 Days 12 Hours 16 Minutes 13:08 PM Emergency Mode AUTHORITIES WERE NOTIFIED

New updates 11/06/23, 13:08 Send images | 09/11/2021 send images

Open Status Aran Chen Event manager Crisis Event Level

Event Log

- 11 JUNE
- 13:15 PM Manager Status: Immediately shut off the pipeline valve to prevent further spills
- 13:10 PM Asset: Valve A23-11 was added to event
- 13:08 PM Asset: Pipeline A - A23 was added to event
- 13:08 PM Materials: Crude oil was added to the event
- 02:50 PM Materials: [blurred]

Attachments

11 JUNE

- 01:32 PM Image 001
- 01:32 PM Image 002
- 01:32 PM Image 002
- 01:32 PM
- 01:32 PM

Asset details

Pipeline A-A23

Material	Crude oil	Mass Inventory	200000 Kg
Pressure (gauge)	10 bar	Temperature	62 degC
Hole Size	100 mm	Fluid State	Liquid
Phase to be released	Liquid	Release elevation	1 m
Release angle (from horizontal)	0 deg	Weather Category	Day

Cancel Save

Assets 2

Pipeline A - A23

Valve A23-11



GOARC Emergency Event Center



Evacuation of the area from ships

11 JUNE, 13:15 PM

13:15 PM

13:10 PM

13:08 PM

13:08 PM

02:50 PM

01:32 PM

Asset details
Pipeline A-A23

Material	Crude oil	Mass Inventory	200000	Kg
Pressure (gauge)	10	Temperature	62	degC
Hole Size	100	Fluid State	Liquid	
Phase to be released	Liquid	Release elevation	1	m
Release angle (from horizontal)	0	Weather Category	Day	

Cancel Save

Assets 2

Pipeline A - A23

Valve A23-11



GOARC Emergency Event Center



Manager status Regular status

Authorities 2

11 JUNE, 6:50 PM

Police Informed

Fire Fighters Done

Hazardous Materials 1

Crude oil

Management Responders

Crude team 8

Team A Day 8

News Feed



GOARC Emergency Event Center

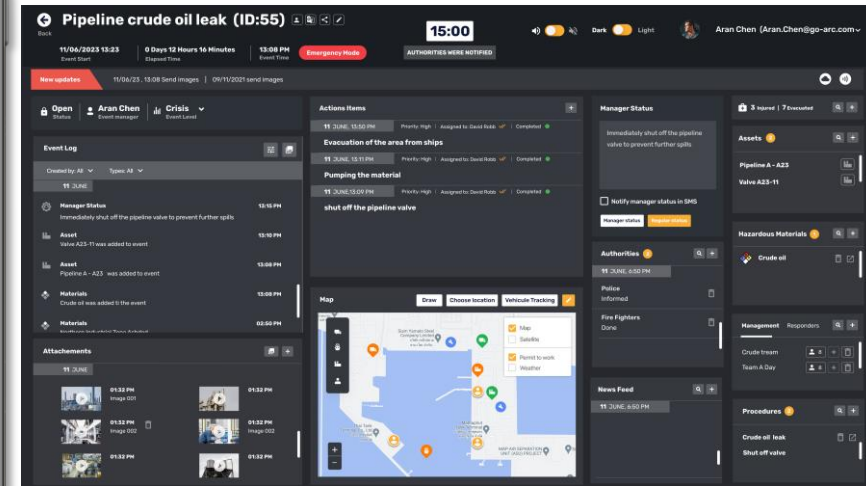
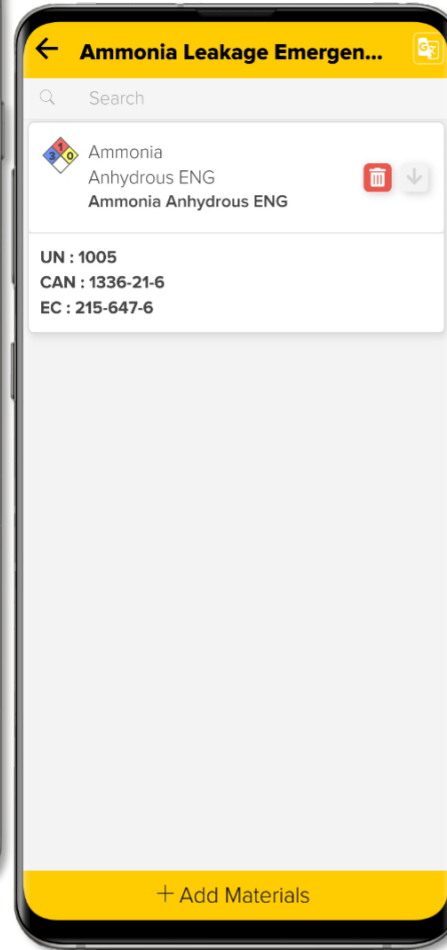
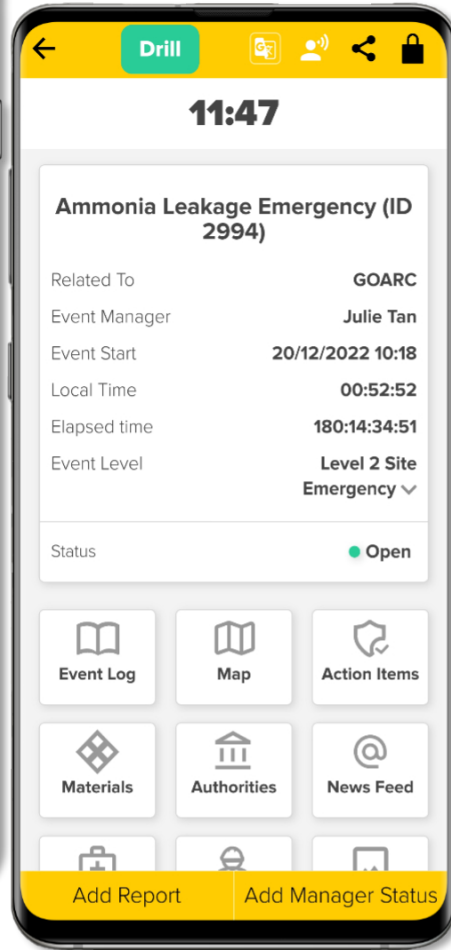
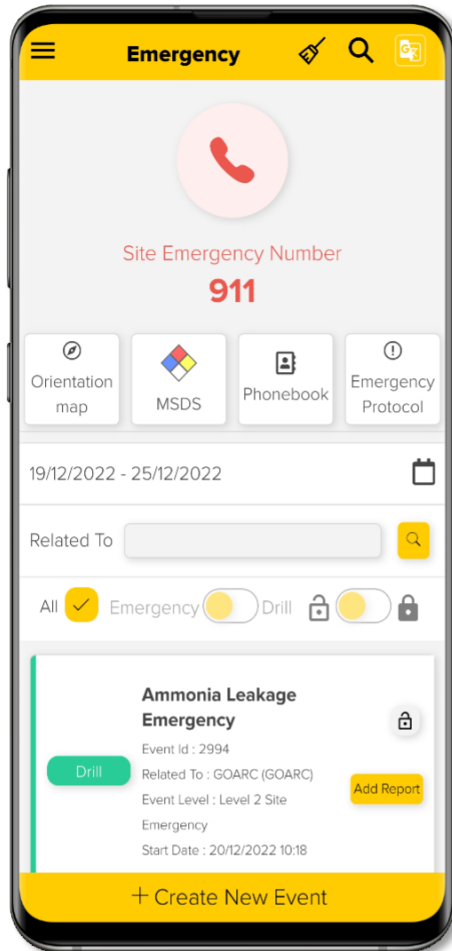


The screenshot displays a mobile application interface for emergency management. It features a dark theme and is divided into several sections:

- Top Section:** A header with "Management" and "Responders" tabs, a search icon, and a plus sign. Below this, there are two entries: "Crude team" and "Team A Day", each with a person icon, the number "8", a plus sign, and a trash icon.
- News Feed Section:** A section titled "News Feed" with a search icon and a plus sign. Below the title, there is a date and time separator: "11 JUNE, 6:50 PM".
- Procedures Section:** A section titled "Procedures" with a notification badge showing the number "2", a search icon, and a plus sign. Below this, there are two entries: "Crude oil leak" and "Shut off valve", each with a trash icon and a share icon.



GOARC **Mobile** Emergency Center





We make your industry
safer and smarter

Thank you for your attention



11th Chemical Process Safety Sharing (CPSS)
22nd Jun. 2023, Thailand

