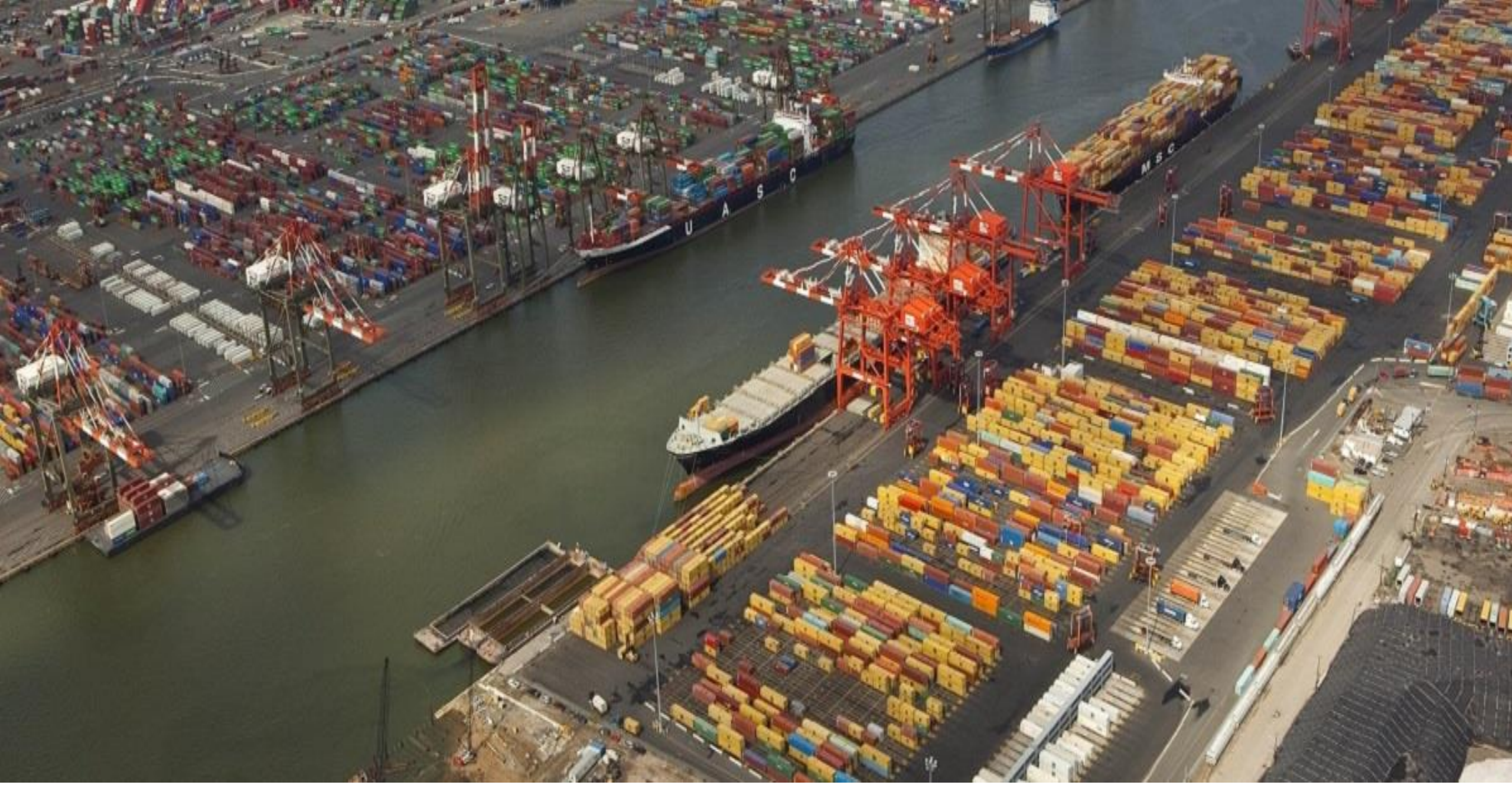
iLock

SMART, SECURE, ON TIME

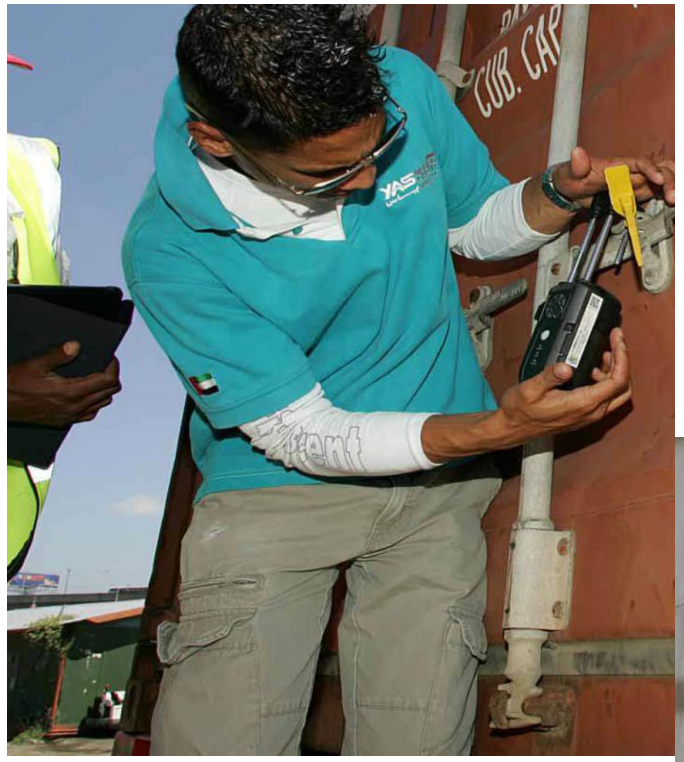

U A S C
M S C

WHAT IS iLOCK?

NFC TECHNOLOGY (Near Field Communication)

NO KEYS
NFC CARDS
ALLOCATED TO INDIVIDUALS
MORE THAN ONE CARD PER LOCK
ADMINISTRATER CARD
ACTIVATED OR DEACTIVATED
SAFER SYSTEM
EASY TO USE

ATTACHMENT



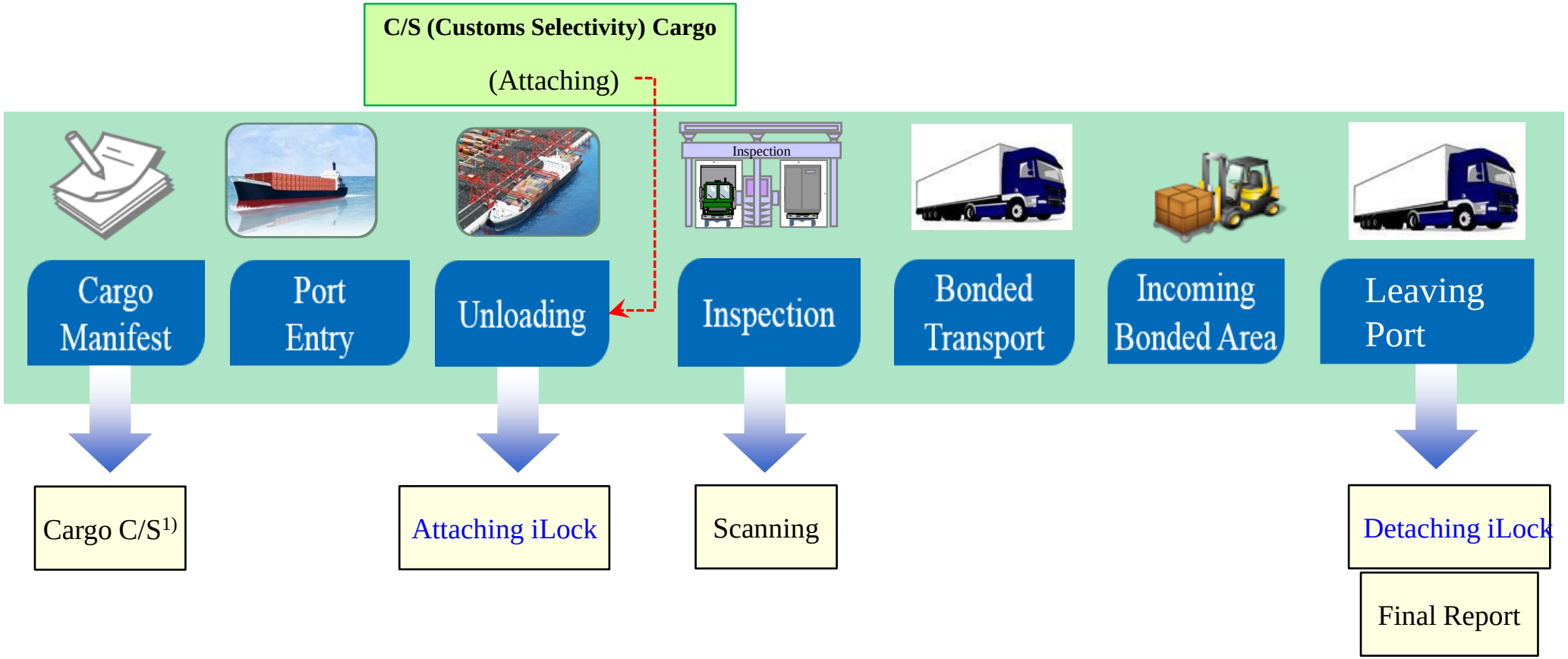
EASY TO ATTACH
ACTIVATES TRACKING
SECURES
ALARMS
CONTAINERS
REEFERS
BOX TRUCKS
DELIVERY VEHICLES

OTHER FEATURES

PROGRAMMABLE
REMOTE UNLOCKING
CHANGE COMMANDS ON ROUTE
THREE MOBILE NUMBER ALERTS
THREE EMAIL ALERTS
BLACKBOX TECHNOLOGY (16Kb on board memory)
USIM (MACHINE TO MACHINE TECHNOLOGY)
ANTI JAMMING DETECTION
ALARM WARNING IF NOT MOVING
LOW BATTERY ALARM
SIGNAL STRENGTH
THREE COLOUR NOTIFICATION BUTTON
GREEN – CHARGED
BLUE – WARNING
RED – RE-CHARGE
LITHIUM-ION BATTERY (9000 or 18000mAh)
GSM/WCDMA TRACKING

iLock process in Ports

- **Detailed Process of iLock operation in ports with customs**



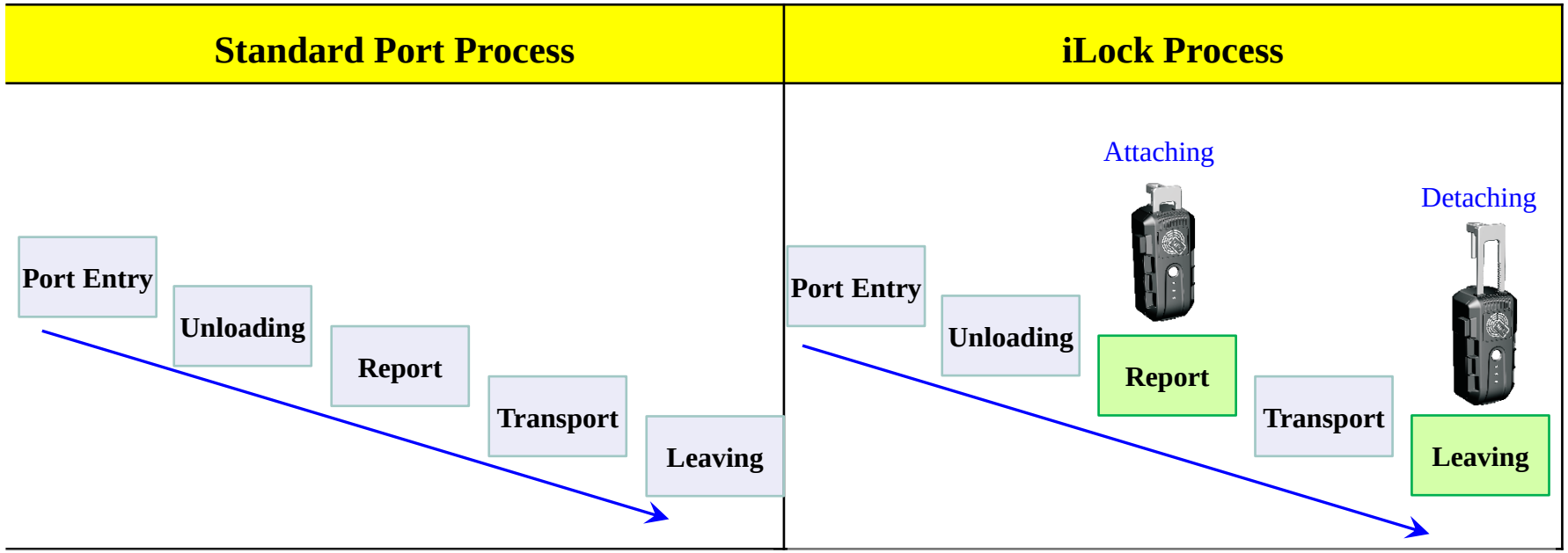
Real time tracking status of container & Taking prompt action in case of exceptional situation

1) Cargo C/S (Customs Selectivity) : Select crime-prone cargo for inspection (before port entry)

Where it is being applied

- **Korea Customs Service project to build a maritime cargo management system based on cutting-edge IT**
  - It has had an annual decrease in drug smuggling by 15% P/A (worth $267bn)
  - It has reduced container theft within the port since implementation
  - Plan for expansion business on Oct. 2014

Imported goods management process



Impossible to check **location & sealing status** of container

Real time tracking location & sealing status of container

iLock

Features

- Attaches within the container guard minimizing the risk of damage to the device
- Capable of attachment to various types of containers (dry, refrigerated, bulk)
- Made for outside attachment and is easily attached and retrieved

SPEC

Classification	Content
Operating System	Firmware
Memory	Non-volatile memory 64kbyte RAM : capable of saving 2,000 logs (providing a BlackBox function during malfunctions)
Mobile communication module	Supporting WCDMA / GSM (supporting global real time communication – some regions excluded)
Location information reception module	GPS support
Weight	631g (batteries included)
Notification	Three color LED (red, green, blue)
Battery	Lithium-Ion battery
Operating voltage	3.5V ~ 4.2V
I/O Port	USB (equipment setting and Log confirmation, F/W upgrade)
Attachment and detachment	Attaches and detaches to existing sealing clamp space outside the container
Size	158 x 65 x 57mm (length x breadth x height)
Battery charger	100 ~ 240V, Rating 5.0v

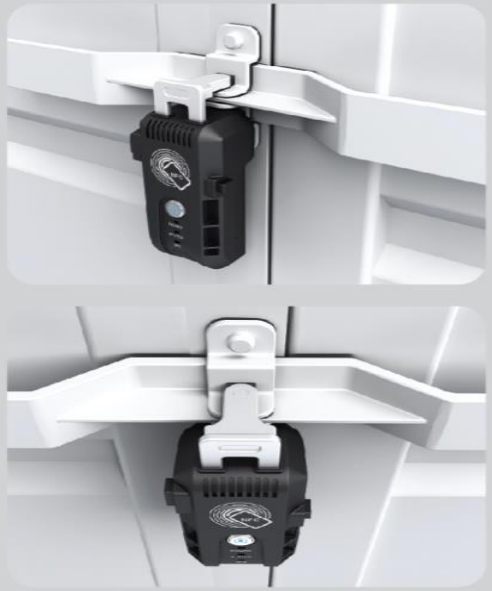


Image of the device attached on a container's exterior

Capable of clearing seal when using certified NFC

Incapable of clearing seal when using non-certified NFC

PROGRAM

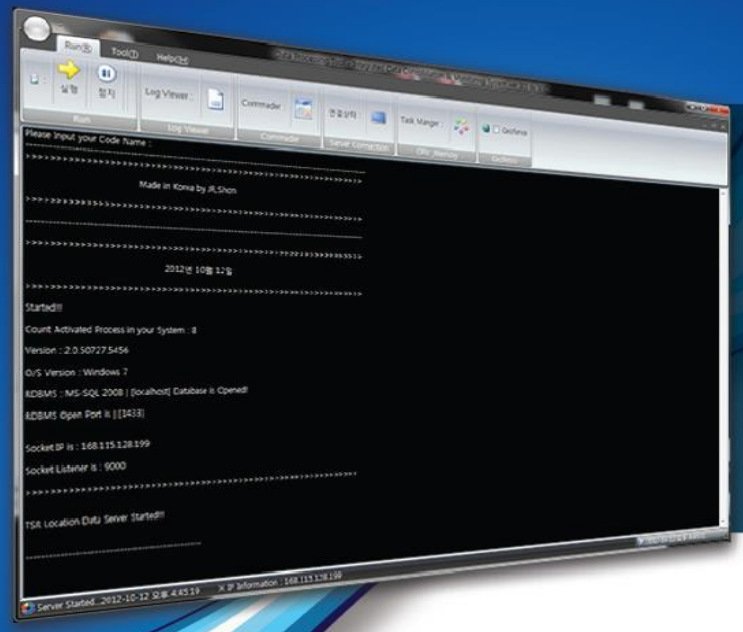
Monitoring Software Platform

Product Features

Real–time Monitoring — Monitoring real–time location information and status information(sealing, temperature, humidity, impact, and status of sealing) through GIS interconnection

Manage Operational Information — Look up routes, set the region of interest, and get operational reports and statistics

Error Reporting — Detection and notification of any breakaway from the designated operational route, and of forced removals of the container seal



Middleware

C#.net based data server

Providing SMS and email alarms for user defined items

Seed encryption and decryption based data processing

Access decision function for the user defined Geofence Zone

Reprocessing function of commands unprocessed due to power failure

Capable of transmission and retransmission of data to other connections

Equipment control(log delete, power off, transmission interval and server address change)

C/S based monitoring system

Report and chart function for temperature/humidity,impact and door status

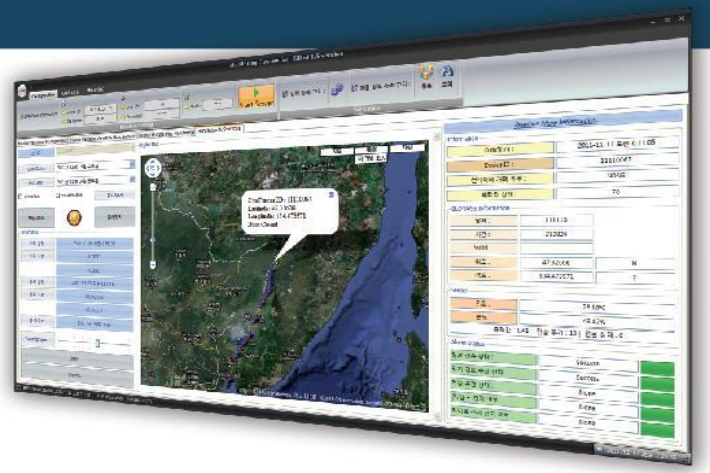
Single/multi screen based real time equipment monitoring function

Inquiry and management function for container status information

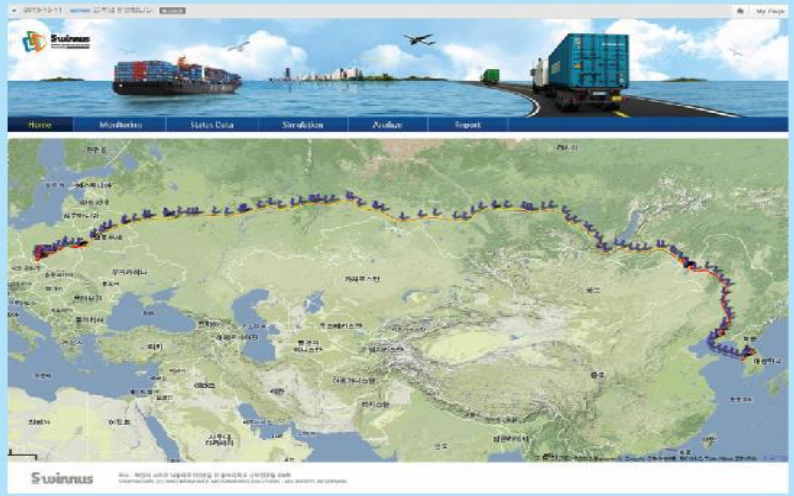
Inquiry function for prior coordinate information based on SOAP

Tracking function for operation records for a particular period

C#.net based monitoring program



Monitoring System



Tracking operation records of freight

Web based monitoring system

Single/Multi screen based real time equipment monitoring function

Data inquiry/management function that takes into account user convenience

Tracking function for operation records for a particular period

ASP.NET MVC3 based monitoring web

Web based real time freight information monitoring

Equipment history management

Notification of freight abnormalities

Real-time location acquisition and tracking operation records

Mobile based monitoring system

Data inquiry equipped with UI suitable to mobile / management function

Tracking function for operation records for a particular period

Real-time equipment monitoring function

Android OS-based monitoring app

User login

Alarm setting function

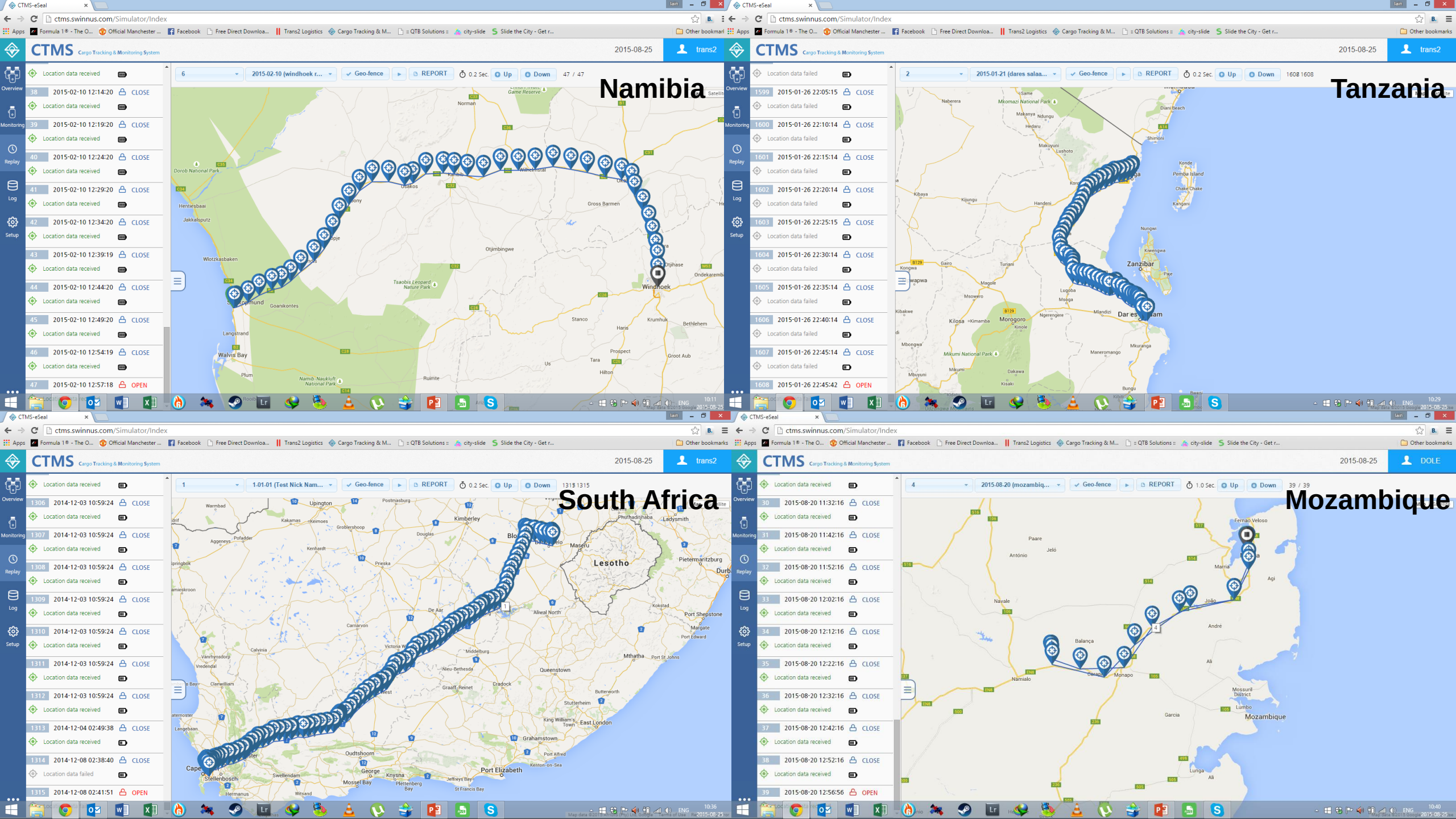
Application area

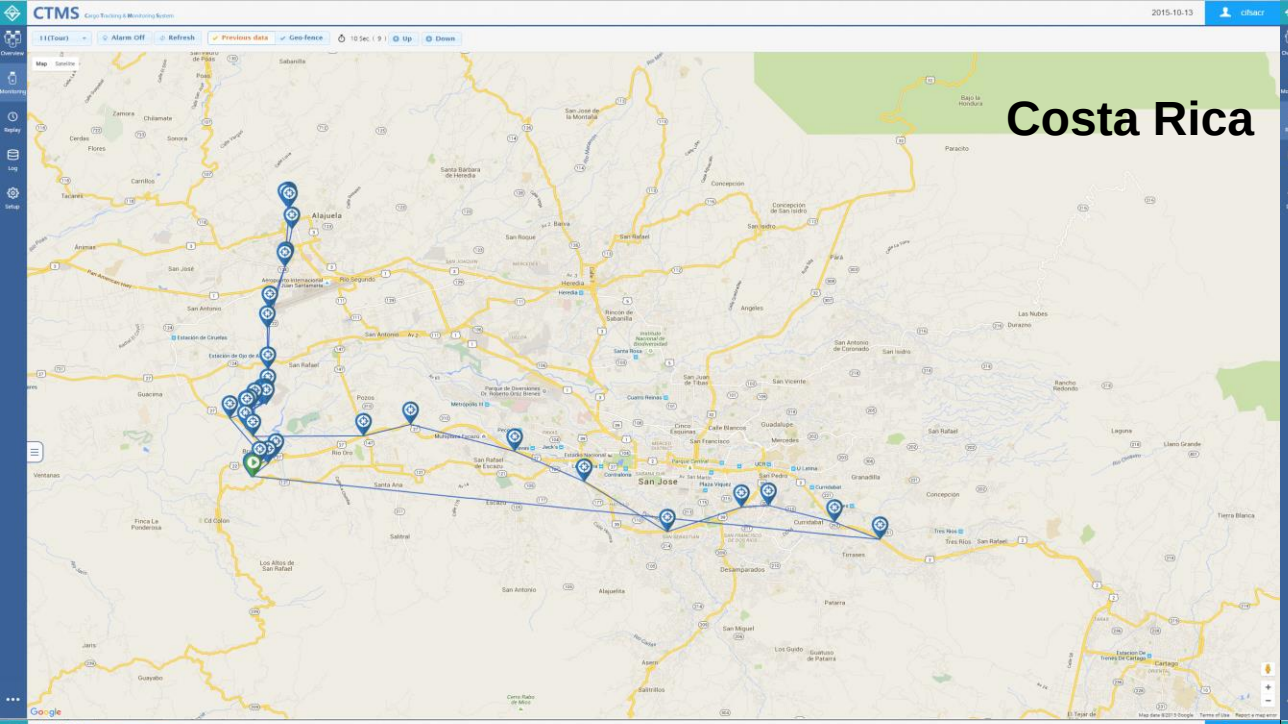
Cold chain management

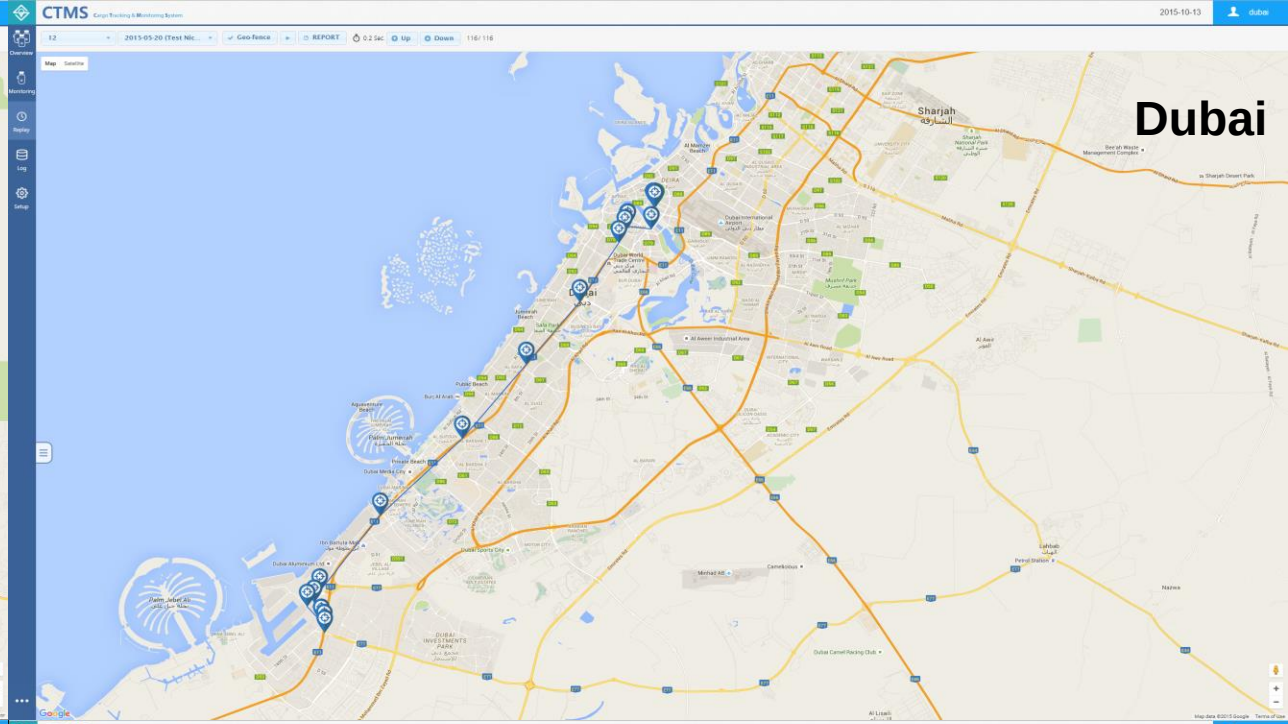
War supplies control

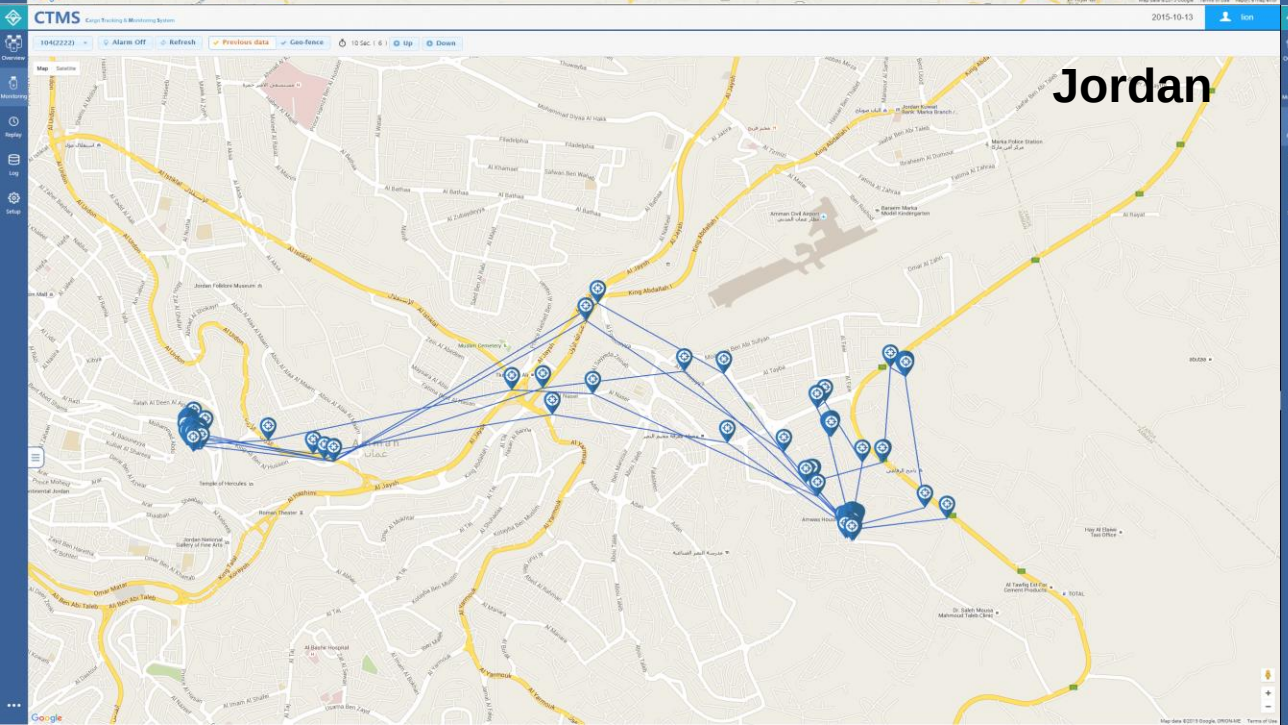
Vehicle control

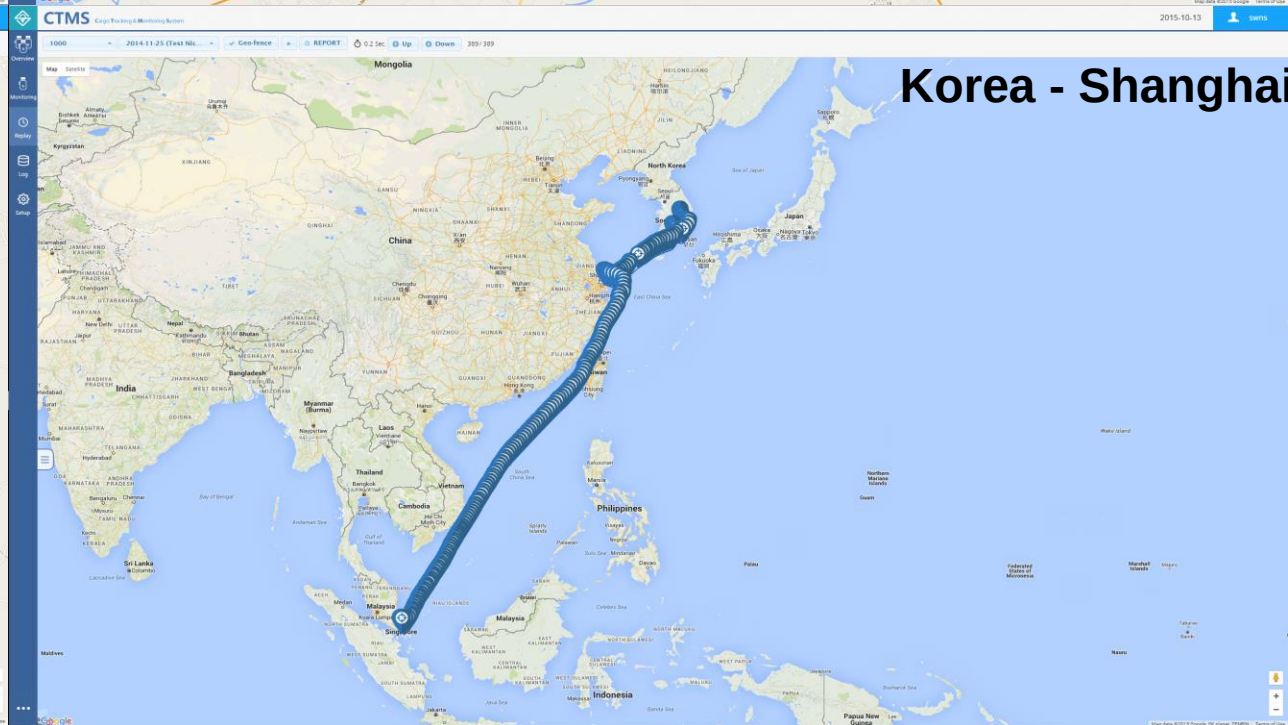
Human location tracking

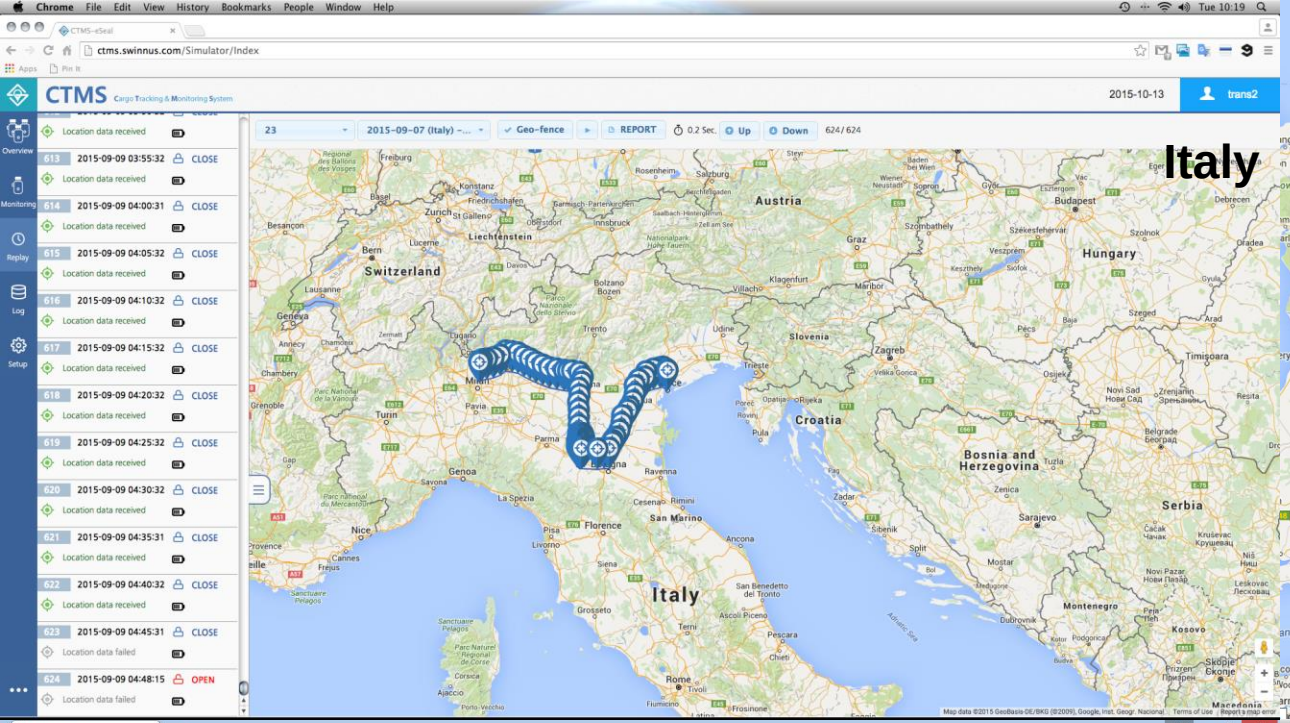

Namibia
Tanzania
South Africa
Mozambique
CTMS
Cargo Tracking & Monitoring System
2015-08-25
trans2
DOLE
Overview
Monitoring
Replay
Log
Setup
REPORT
Geo-fence
Up
Down
Windhoek
Walvis Bay
Swakopmund
Zanzibar
Dar es Salaam
Lesotho
Port Elizabeth
Cape Town
Mozambique

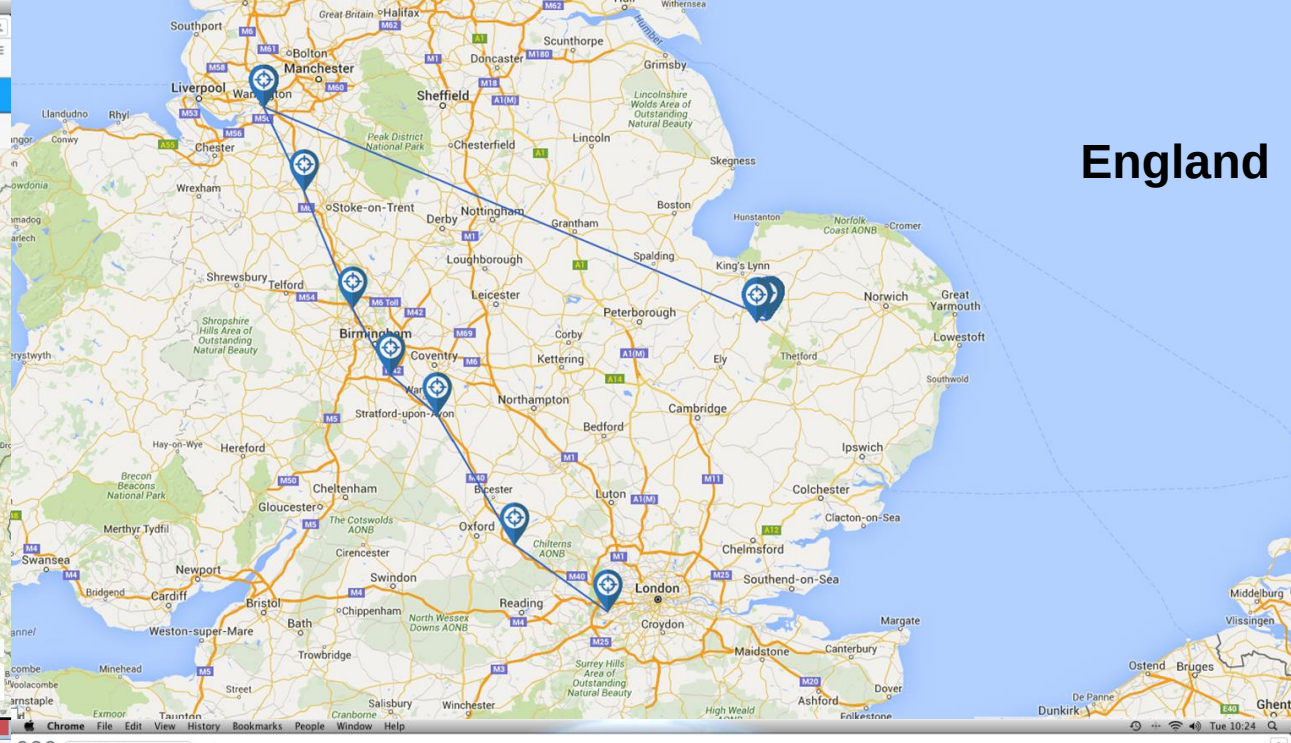

CTMS
Costa Rica

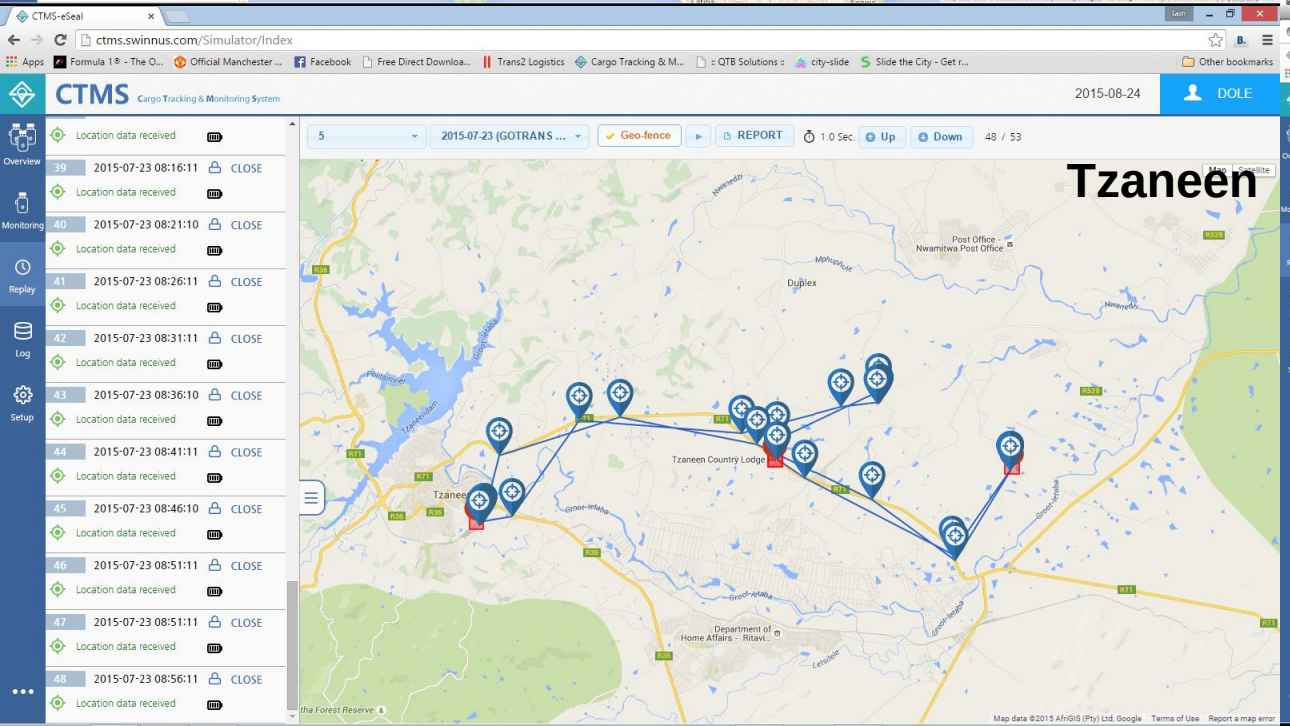

CTMS
Dubai

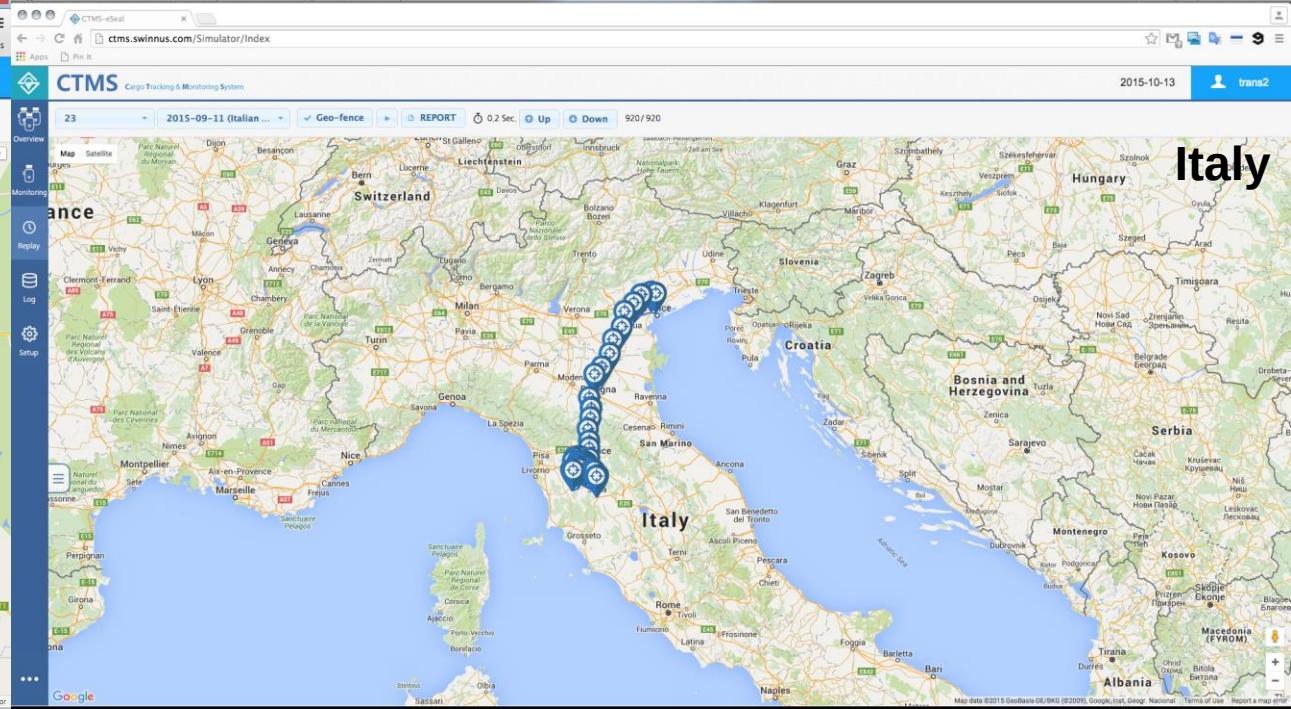

CTMS
Jordan


CTMS
Korea - Shanghai


CTMS
Cargo Tracking & Monitoring System
2015-10-13
trans2
Italy


England


CTMS
Cargo Tracking & Monitoring System
2015-08-24
DOLE
Tzaneen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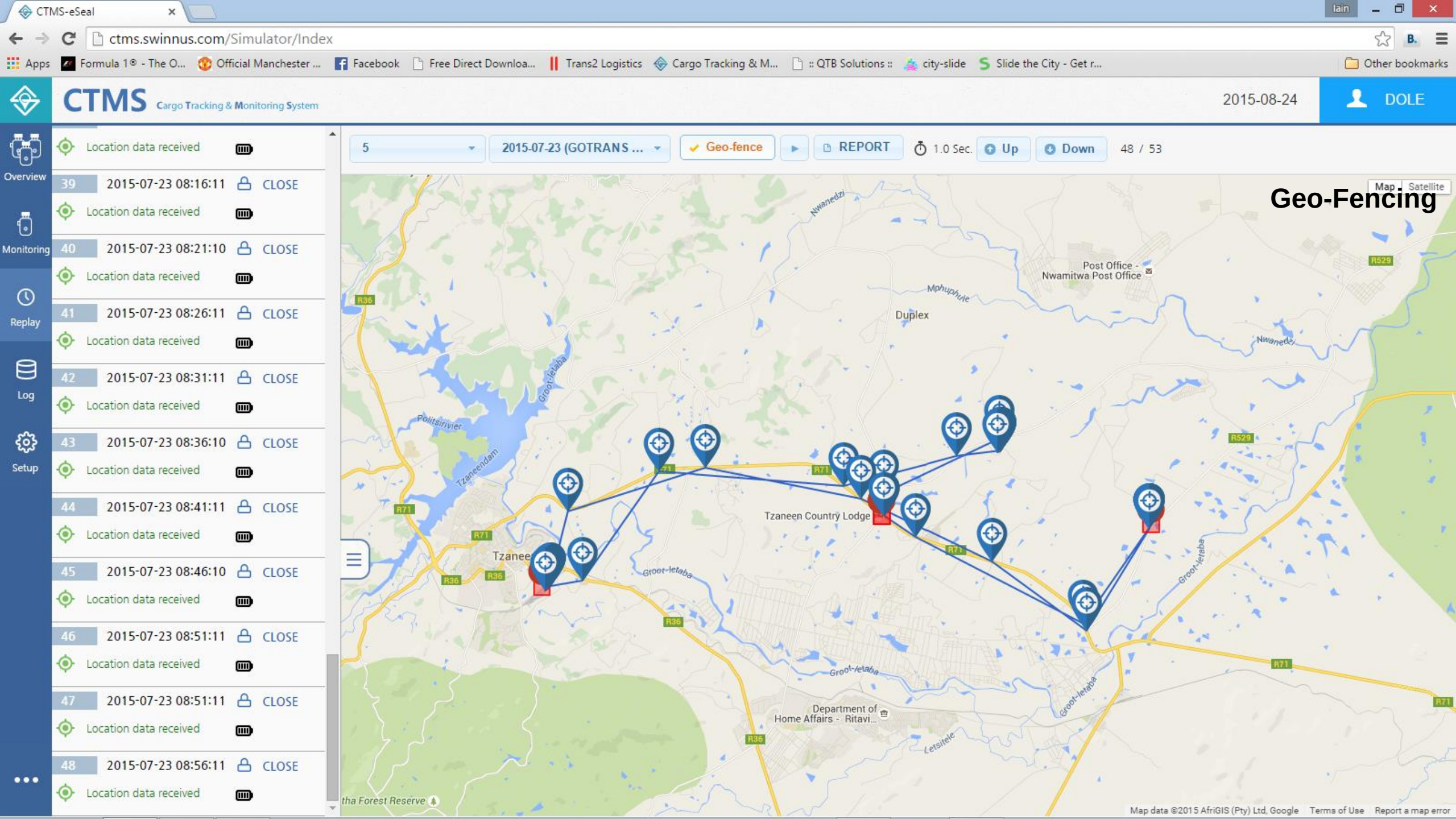
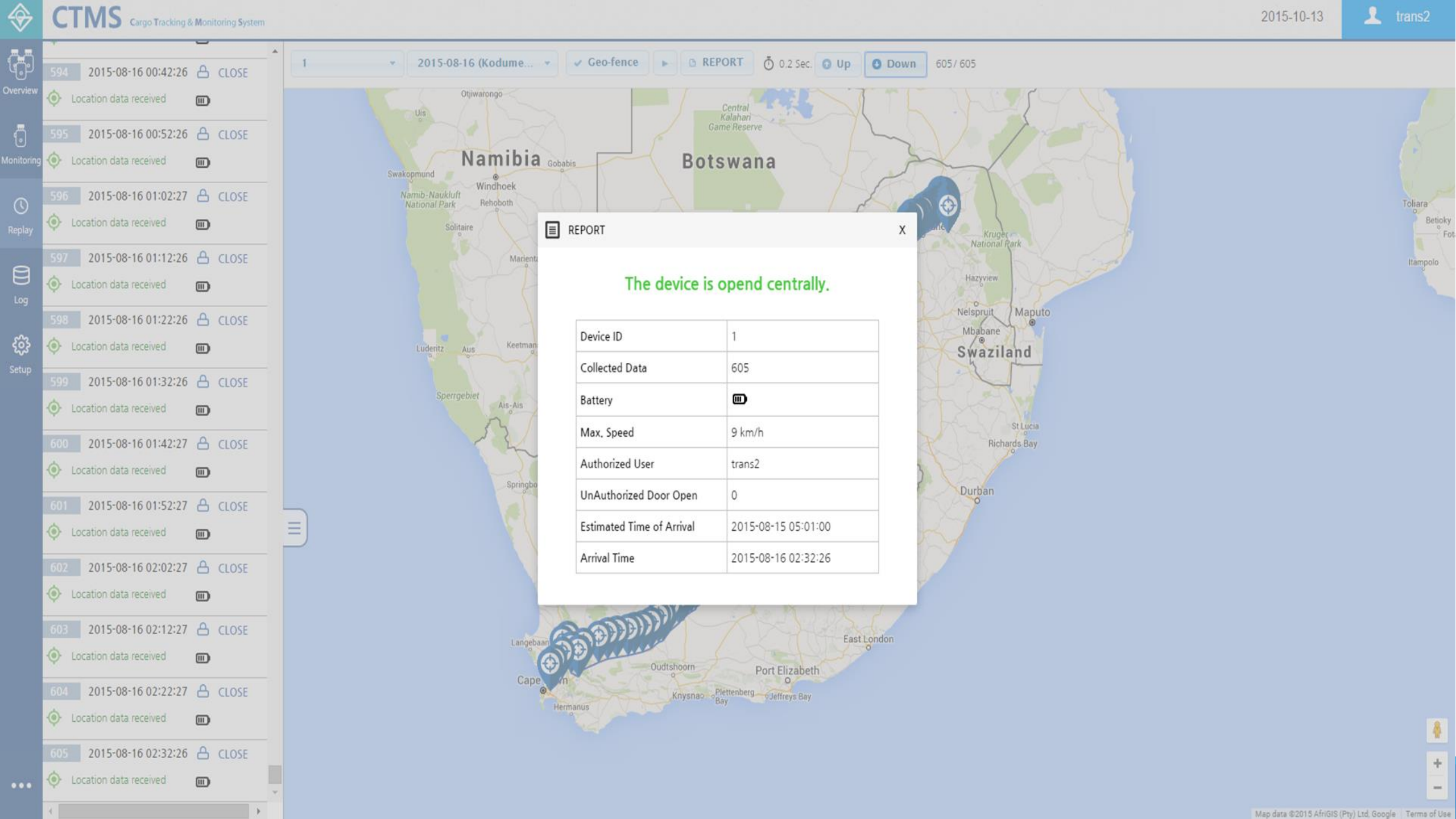
Cargo Tracking & Monitoring System
2015-10-13
trans2
Italy


CTMS-eSeal
ctms.swinnus.com/Simulator/Index
CTMS
Cargo Tracking & Monitoring System
2015-08-24
DOLE
Overview
Monitoring
Replay
Log
Setup
Location data received
39 2015-07-23 08:16:11 CLOSE
40 2015-07-23 08:21:10 CLOSE
41 2015-07-23 08:26:11 CLOSE
42 2015-07-23 08:31:11 CLOSE
43 2015-07-23 08:36:10 CLOSE
44 2015-07-23 08:41:11 CLOSE
45 2015-07-23 08:46:10 CLOSE
46 2015-07-23 08:51:11 CLOSE
47 2015-07-23 08:51:11 CLOSE
48 2015-07-23 08:56:11 CLOSE
5
2015-07-23 (GOTRANS ...
Geo-fence
REPORT
1.0 Sec.
Up
Down
48 / 53
Map
Satellite
Geo-Fencing
Duplex
Post Office - Nwamitwa Post Office
Tzaneen Country Lodge
Department of Home Affairs - Ritavi...
Groot-letaba
Nwanedzi
Mphuphule
Politsinvier
Tzaneendam
Letsitele
R36
R71
R529
Map data ©2015 AfriGIS (Pty) Ltd, Google
Terms of Use
Report a map error


CTMS
Cargo Tracking & Monitoring System
2015-10-13
trans2
Overview
Monitoring
Replay
Log
Setup
1
2015-08-16 (Kodume...
Geo-fence
REPORT
0.2 Sec.
Up
Down
605 / 605
594 2015-08-16 00:42:26 CLOSE
Location data received
595 2015-08-16 00:52:26 CLOSE
Location data received
596 2015-08-16 01:02:27 CLOSE
Location data received
597 2015-08-16 01:12:26 CLOSE
Location data received
598 2015-08-16 01:22:26 CLOSE
Location data received
599 2015-08-16 01:32:26 CLOSE
Location data received
600 2015-08-16 01:42:27 CLOSE
Location data received
601 2015-08-16 01:52:27 CLOSE
Location data received
602 2015-08-16 02:02:27 CLOSE
Location data received
603 2015-08-16 02:12:27 CLOSE
Location data received
604 2015-08-16 02:22:27 CLOSE
Location data received
605 2015-08-16 02:32:26 CLOSE
Location data received
Namibia
Botswana
Swaziland
Windhoek
Maputo
Durban
Port Elizabeth
East London
REPORT
X
The device is opend centrally.
Device ID 1
Collected Data 605
Battery
Max. Speed 9 km/h
Authorized User trans2
UnAuthorized Door Open 0
Estimated Time of Arrival 2015-08-15 05:01:00
Arrival Time 2015-08-16 02:32:26
Map data ©2015 AfriGIS (Pty) Ltd, Google
Terms of Use

CTMS-eSeal

ctms.swinnus.com/Log/Complete

Apps | Formula 1® - The O... | Official Manchester ... | Facebook | Free Direct Downloa... | Trans2 Logistics | Cargo Tracking & M... | :: QTB Solutions :: | city-slide | Slide the City - Get r... | Other bookmarks

CTMS Cargo Tracking & Monitoring System

2015-08-25 | DOLE

Overview | Monitoring | Replay | Log | Setup

Activated Device

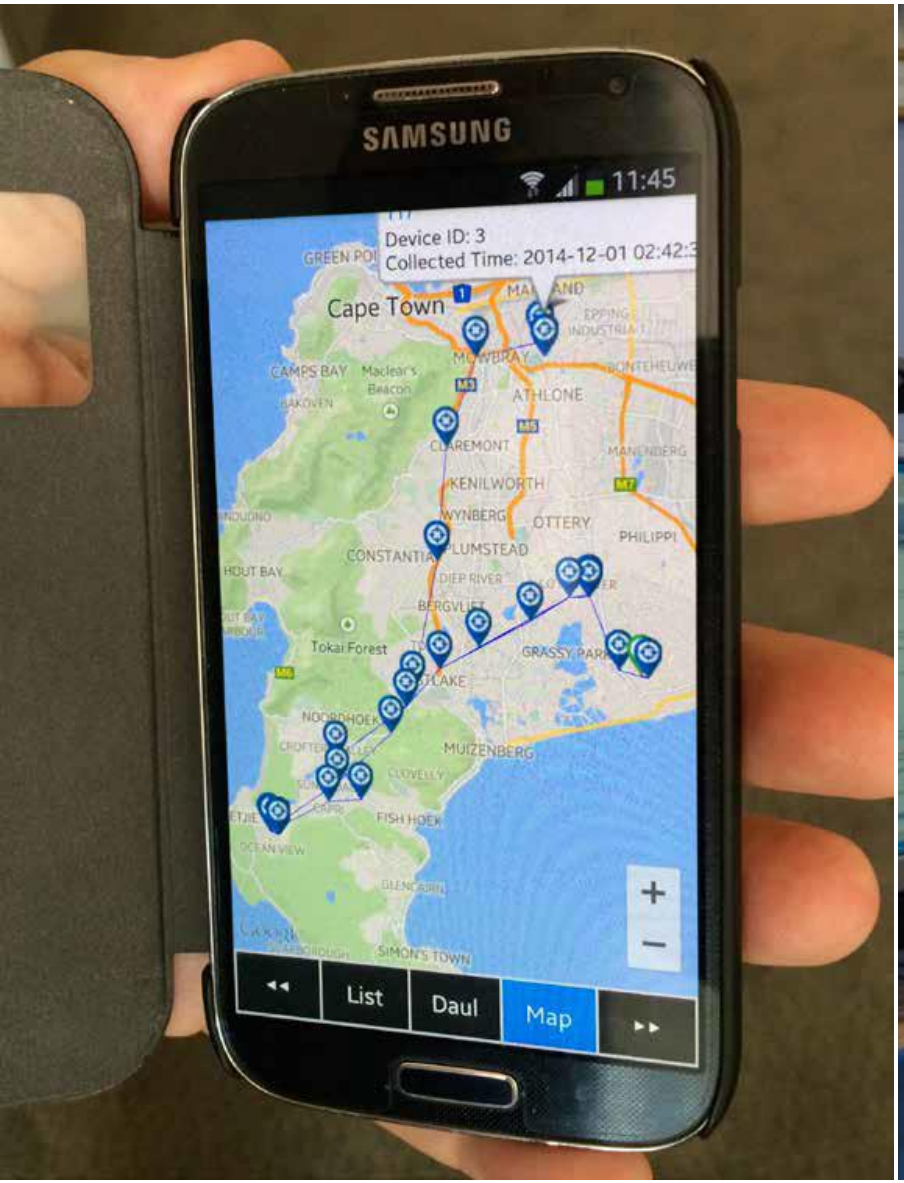
Deactivated Device

4 | 2015-08-20 (mozambique si...

No.	Status	Device ID	Index	Collected Time	Received Time	Interval (Min.)	GPS DATA	Lati.	Longi.	Door	Sp
39	End	4	39	2015-08-20 12:56:56	2015-08-20 12:57:37	10	OK	-14.546943 S	40.674893 E	OPEN	1 k
38	Normal	4	38	2015-08-20 12:52:16	2015-08-20 12:57:34	10	OK	-14.546911 S	40.674863 E	CLOSE	1 k
37	Normal	4	37	2015-08-20 12:42:16	2015-08-20 12:57:31	10	OK	-14.543615 S	40.677831 E	CLOSE	0 k
36	Normal	4	36	2015-08-20 12:32:16	2015-08-20 12:32:51	10	OK	-14.543555 S	40.677783 E	CLOSE	0 k
35	Normal	4	35	2015-08-20 12:22:16	2015-08-20 12:22:52	10	OK	-14.543571 S	40.677866 E	CLOSE	0 k
34	Normal	4	34	2015-08-20 12:12:16	2015-08-20 12:12:59	10	OK	-14.543573 S	40.677856 E	CLOSE	0 k
33	Normal	4	33	2015-08-20 12:02:16	2015-08-20 12:12:56	10	OK	-14.543596 S	40.677833 E	CLOSE	0 k
32	Normal	4	32	2015-08-20 11:52:16	2015-08-20 12:12:53	10	OK	-14.543608 S	40.677790 E	CLOSE	0 k
31	Normal	4	31	2015-08-20 11:42:16	2015-08-20 12:12:50	10	OK	-14.543563 S	40.677860 E	CLOSE	0 k
30	Normal	4	30	2015-08-20 11:32:16	2015-08-20 11:33:05	10	OK	-14.543615 S	40.677896 E	CLOSE	0 k
29	Normal	4	29	2015-08-20 11:22:16	2015-08-20 11:33:02	10	OK	-14.544398 S	40.672870 E	CLOSE	28
28	Normal	4	28	2015-08-20 11:12:16	2015-08-20 11:32:59	10	OK	-14.610229 S	40.681641 E	CLOSE	65
27	Normal	4	27	2015-08-20 11:02:16	2015-08-20 11:32:56	10	OK	-14.695921 S	40.637428 E	CLOSE	92
26	N...	4		2015-08-20 10:52:16			OK	-14.717535 S	40.504528 E	CLOSE	

ENG 10:42 2015-08-25

DEVICES


SAMSUNG
11:45
Device ID: 3
Collected Time: 2014-12-01 02:42:3
Cape Town
CAMPS BAY
ATHLONE
CLAREMONT
KENILWORTH
WYNBERG
OTTERY
PHILIPPI
CONSTANTIA
BERGVLIET
Tokai Forest
GRASSY PARK
MUIZENBERG
FISH HOEK
SIMON'S TOWN
List
Daul
Map

OPERATING TEMPRATURE HOT WEATHER

TESTING CERTIFICATE

Busan Techno-park
#1276, jisa-dong, Gangseo-Gu, Busan, KOREA
Tel : 81-51-974-9091
Fax : 81-51-974-9099

Certificate No.: BTP-2014-0449-2/2
Page(1)/(3)Pages

1. Client
   - Name : SWINNUS Co., Ltd.
   - Address : CVD bldg.3F 306, 41, Centum dong-ro, Heaundae-Gu, Busan, Republic of Korea.
   - Date of Receipt : 08. 25. 2014.

2. Use of Report : For Submission

3. Test Sample : Container Outer Logistics Tracking Device(e-Seal)

4. Date of Test : 08. 25. 2014. ~ 08. 26. 2014.

5. Test method used : IEC 60068-2-2:2007 Environmental testing - part 2-2:Tests - Test B: Dry heat
(Test Bb: Dry heat for non heat-dissipating specimens with gradual change of temperature)

6. Testing Environment
   - Temperature : (25.0 ± 5.0) ℃ , Humidity : (40 ± 10) % R.H.

7. Test Results
   After test, specimen works normally.

* The results shown in this test report refer only to the sample(s) tested unless otherwise stated.
* This Test Report cannot be reproduced, except in full.

Affirmation	Tested by Name : Sang-Soo Park (Signature)	Technical Manager Name : Jin-Ki Jang (Signature)

The above testing certificate is the accredited test result by Korea Laboratory Accreditation Scheme, which signed the ILAC-MRA.

2014. 08. 27.

Busan Techno-Park Testing Laboratory
Accredited by KOLAS, Republic of KOREA

TESTING CERTIFICATE

Busan Techno-park
#1276, jisa-dong, Gangseo-Gu, Busan, KOREA
Tel : 81-51-974-9091
Fax : 81-51-974-9099

Certificate No.: BTP-2014-0449-2/2
Page(2)/(3)Pages

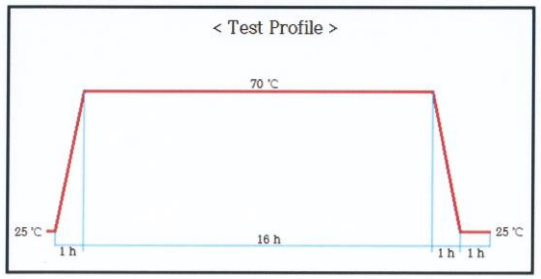
1. Test Method

1.1 List of used equipment

Description	Manufacturer & Model name	Serial Number	The due date of next calibration	Calibraion Lab
Temperature Chamber	Terchy MCT-408CN	1011030	2015.08.06	NANO HITECH

1.2 Specimen Information
- 1.2.1 Specimen Name : Container Outer Logistics Tracking Device(e-Seal)
- 1.2.2 Specimen Type : RFID/USN equipment
- 1.2.3 Serial Number : No Serial
- 1.2.4 Manufacturer : SWINNUS Co., Ltd.
- 1.2.5 Quantity of Specimen : 1 EA

1.3 Test Condition
- 1.3.1 Test Temperature : 70 ℃
- 1.3.2 Setting Temperature : 69.4 ℃
- 1.3.3 Test Time : 16 h
- 1.3.4 Specimen Check : LED ON/OFF
- 1.3.5 Test Profile



TESTING CERTIFICATE

Busan Techno-park
#1276, jisa-dong, Gangseo-Gu, Busan, KOREA
Tel : 81-51-974-9091
Fax : 81-51-974-9099

Certificate No.: BTP-2014-0449-2/2
Page(3)/(3)Pages

2. Test Photographs


Specimen check before test 1

Specimen check before test 2

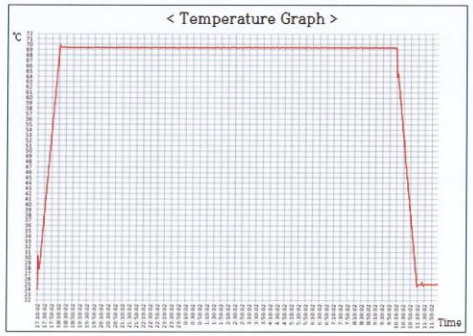
Test in progress 1


Test in progress 2


Specimen check after test 1


Specimen check after test 2

3. Temperature Graph



End.

OPERATING TEMPRATURE COLD WEATHER

TESTING CERTIFICATE

Busan Techno-park
#1276, jisa-dong, Gangseo-Gu, Busan, KOREA
Tel : 81-51-974-9091
Fax : 81-51-974-9099

Certificate No.: BTP-2014-0450-2/2
Page(1)/(3)Pages

1. Client
   - Name : SWINNUS Co., Ltd.
   - Address : CVD bldg.3F 306, 41, Centum dong-ro, Heaundae-Gu, Busan, Republic of Korea.
   - Date of Receipt : 08. 25. 2014.

2. Use of Report : For Submission

3. Test Sample : Container Outer Logistics Tracking Device(e-Seal)

4. Date of Test : 08. 26. 2014. ~ 08. 27. 2014.

5. Test method used : IEC 60068-2-1:2007 Environmental testing - Part 2-1:Tests - Test A: Cold
(Test Ab: Cold for non heat-dissipating specimens with gradual change of temperature)

6. Testing Environment
   - Temperature : (25.0 ± 5.0) ℃ , Humidity : (40 ± 10) % R.H.

7. Test Results
   After test, specimen works normally.

* The results shown in this test report refer only to the sample(s) tested unless otherwise stated.
* This Test Report cannot be reproduced, except in full.

Affirmation	Tested by Name : Sang-Soo Park (Signature)	Technical Manager Name : Jin-Ki Jang (Signature)

The above testing certificate is the accredited test result by Korea Laboratory Accreditation Scheme, which signed the ILAC-MRA.

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Tel : 81-51-974-9091
Fax : 81-51-974-9099

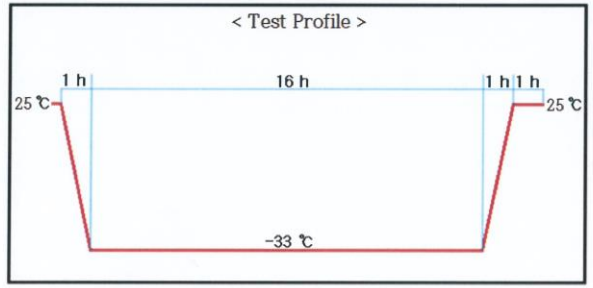
Certificate No.: BTP-2014-0450-2/2
Page(2)/(3)Pages

1. Test Method
   1.1 List of used equipment

Description	Manufacturer & Model name	Serial Number	The due date of next calibration	Calibraion Lab
Temperature Chamber	Terchy MCT-408CN	1011030	2015.08.06	NANO HITECH

   1.2 Specimen Information
      1.2.1 Specimen Name : Container Outer Logistics Tracking Device(e-Seal)
      1.2.2 Specimen Type : RFID/USN equipment
      1.2.3 Serial Number : No Serial
      1.2.4 Manufacturer : SWINNUS Co., Ltd.
      1.2.5 Quantity of Specimen : 1 EA

   1.3 Test Condition
      1.3.1 Test Temperature : -33 ℃
      1.3.2 Setting Temperature : -33.4 ℃
      1.3.3 Test Time : 16 h
      1.3.4 Specimen Check : LED ON/OFF
      1.3.5 Test Profile



TESTING CERTIFICATE

Busan Techno-park
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Tel : 81-51-974-9091
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Certificate No.: BTP-2014-0450-2/2
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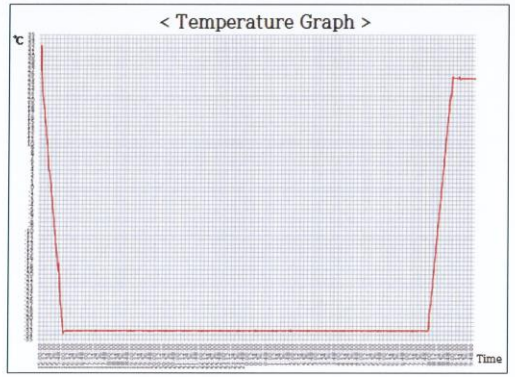
2. Test Photographs

3. Temperature Graph



End.

DUSTPROOF AND WATERPROOF

Test Report

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Tel : 81-51-974-9091
Fax : 81-51-974-9099

Certificate No.: BTP-2014-0488-2/2
Page(1)/(3)Pages

1. Client
   - Name : SWINNUS Co.,Ltd
   - Address : CVT blog. 3F 306, 41, Centum Dong-ro, Haeundae-Gu, Busan
   - Date of Receipt : 2014. 09. 11

2. Use of Report : Environmental reliability test

3. Test Sample
   - Name : Container Outer Logistics Tracking Device
   - Model : SWINNUS e-Seal

4. Date of Test : 2014. 09. 11 ~ 2014. 09. 11

5. Test method used : Refer to "IEC 60529 : Degrees of protection provided by enclosures(IP Code)"

6. Testing Environment
   - Temperature : (25.0 ± 5.0) ℃ , Humidity : (50 ± 10) % R.H.

7. Test Results : Tested the received specimen by the above method, nothing abnormal to report by visual examination. Electric characteristic is tested by the client.

* The results shown in this test report refer only to the sample(s) tested unless otherwise stated.
* This Test Report cannot be reproduced, except in full.

Affirmation	Tested by Name : Jang Min-Gun (Signature)	Technical Manager Name : Jang Jin-Ki (Signature)

2014. 9. 19.

Busan Techno-Park

Test Report

Busan Techno-park
#1276, jisa-dong, Gangseo-Gu, Busan, KOREA
Tel : 81-51-974-9091
Fax : 81-51-974-9099

Certificate No.: BTP-2014-0488-2/2
Page(2)/(3)Pages

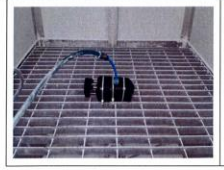
1. Test Equipment

Description	Manufacturer	Model	Serial Number
Dust Tester	WEISS	ST-1000U	59226125340010
Rain Tester	WEISS	SWT-200	59226125330010
Rain Spray Tester	JFM Engineering	JI-NM1/X5&X6	13011101

2. Specimen
   2.1 Name : Container Outer Logistics Tracking Device
   2.2 Model : SWINNUS e-Seal
   2.3 Specimen number : -
   2.4 Manufacturer : SWINNUS Co., Ltd
   2.5 Count : 1 EA

3. Test Method : IP66
   3.1 IP6X
      3.1.1 Dust : Talcum powder (IEC 60529), 2 kg
      3.1.2 Depression : (-19.0 ± 0.5) mbar
      3.1.3 Extraction volume : (2 ~ 3) ㎥
      3.1.4 Test duration : 8 h
   3.2 IPX6
      3.2.1 Nozzle diameter : 12.5 mm
      3.2.2 Distance : (2.8 ~ 2.9) m
      3.2.3 Water flow rate : (100 ± 3) L/min
      3.2.4 Test duration : (3.0 ~ 3.2) min

4. Test Progress Pictures
   4.1 IP6X

Before	Testing	After
		

Test Report

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Certificate No.: BTP-2014-0488-2/2
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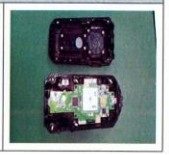
4.2 IPX6

Before	Testing	After
		

5. Specimen verification

IP6X		IPX6	
			

SHOCK TEST

Test Report

Busan Techno-park
#1276, jisa-dong, Gangseo-Gu, Busan, KOREA
Tel : 81-51-974-9091
Fax : 81-51-974-9099

Certificate No.: BTP-2014-0490-2/2
Page(1)/(2)Pages

1. Client
   - Name : SWINNUS Co.,Ltd
   - Address : CVT blog. 3F 306, 41, Centum Dong-ro, Haeundae-Gu, Busan
   - Date of Receipt : 2014. 09. 11

2. Use of Report : Environmental reliability test

3. Test Sample
   - Name : Container Outer Logistics Tracking Device
   - Model : SWINNUS e-Seal

4. Date of Test : 2014. 09. 16 ~ 2014. 09. 16

5. Test method used : Client's optional method (Refer to "KS C IEC 60068-2-27:2010")

6. Testing Environment
   - Temperature : (25.0 ± 5.0) ℃ , Humidity : (50 ± 10) % R.H.

7. Test Results : Tested the received specimen by the above method, nothing abnormal to report by visual examination. Electric characteristic is tested by the client.

* The results shown in this test report refer only to the sample(s) tested unless otherwise stated.
* This Test Report cannot be reproduced, except in full.

Affirmation	Tested by Name : Jang Min-Gun (Signature)	Technical Manager Name : Jang Jin-Ki (Signature)

2014. 9. 19.

Busan Techno-Park

Test Report

Busan Techno-park
#1276, jisa-dong, Gangseo-Gu, Busan, KOREA
Tel : 81-51-974-9091
Fax : 81-51-974-9099

Certificate No.: BTP-2014-0490-2/2
Page(2)/(2)Pages

1. Test Equipment

Description	Manufacturer	Model	Serial Number
Vibration Testing System	SHINKEN	G-0220N	SG-5036

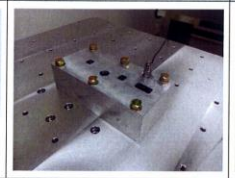
2. Specimen
   2.1 Name : Container Outer Logistics Tracking Device
   2.2 Model : SWINNUS e-Seal
   2.3 Specimen number : -
   2.4 Manufacturer : SWINNUS Co.,Ltd
   2.5 Count : 1 EA

3. Test Method
   3.1 Test condition

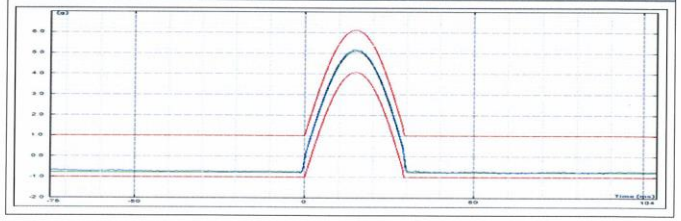
Peak Value	Pulse duration
50 m/s^2 (about 5 g)	30 ms

   3.2 Shock count : 3 times
   3.3 Test Method : one-sided direction, up-down shock test by the above condition

4. Test Progress Pictures

Before	Testing	After
		

Graph



VIBRATION TEST

Test Report

Busan Techno-park
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Tel : 81-51-974-9091
Fax : 81-51-974-9099

Certificate No.: BTP-2014-0490-2/2
Page(1)/(2)Pages

1. Client
   - Name : SWINNUS Co.,Ltd
   - Address : CVT blog. 3F 306, 41, Centum Dong-ro, Haeundae-Gu, Busan
   - Date of Receipt : 2014. 09. 11

2. Use of Report : Environmental reliability test

3. Test Sample
   - Name : Container Outer Logistics Tracking Device
   - Model : SWINNUS e-Seal

4. Date of Test : 2014. 09. 16 ~ 2014. 09. 16

5. Test method used : Client's optional method (Refer to "KS C IEC 60068-2-27:2010")

6. Testing Environment
   - Temperature : (25.0 ± 5.0) ℃ , Humidity : (50 ± 10) % R.H.

7. Test Results : Tested the received specimen by the above method, nothing abnormal to report by visual examination. Electric characteristic is tested by the client.

* The results shown in this test report refer only to the sample(s) tested unless otherwise stated.
* This Test Report cannot be reproduced, except in full.

Affirmation	Tested by Name : Jang Min-Gun (Signature)	Technical Manager Name : Jang Jin-Ki (Signature)

2014. 9. 19.

Busan Techno-Park

Test Report

Busan Techno-park
#1276, jisa-dong, Gangseo-Gu, Busan, KOREA
Tel : 81-51-974-9091
Fax : 81-51-974-9099

Certificate No.: BTP-2014-0489-2/2
Page(2)/(2)Pages

1. Test Equipment

Description	Manufacturer	Model	Serial Number
Vibration Testing System	SHINKEN	G-0220N	SG-5036

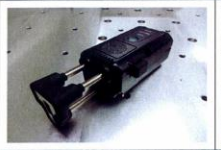
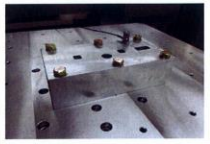
2. Specimen
   2.1 Name : Container Outer Logistics Tracking Device
   2.2 Model : SWINNUS e-Seal
   2.3 Specimen number : -
   2.4 Manufacturer : SWINNUS Co.,Ltd
   2.5 Count : 1 EA

3. Test Method
   3.1 Test condition : 10 ~ 55 Hz

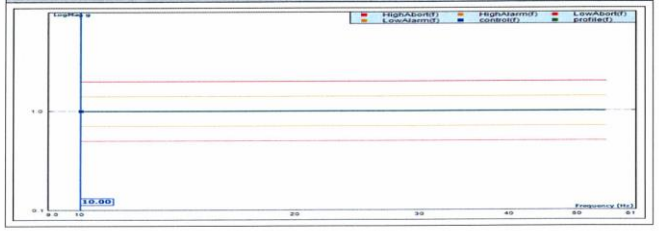
Frequency (Hz)	Acceleration (g)	Velocity (m/s)	Displacement (mm)
10	1 (9.8 m/s²)	0.156	4.968
55	1 (9.8 m/s²)	0.028	0.164

   3.2 Sweeps : 20 sweeps
   3.3 Sweep rate : 1 oct/min (±10 %)
   3.4 Test duration : 1 h 40 m (±5 min)
   3.5 Test Method : one-sided direction, up-down vibration test by the above condition

4. Test Progress Pictures

Before	Testing	After
		

Graph



MILITARY GRADE COMPOSITE

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Test Results

1. Test Sample

1.1 Name : ConTracer-D
1.2 Model : SWNS_eSea1-v10
1.3 Specification

Enclosure	Thickness (mm)	Material	Dimensions (mm)
Cover	2	Polycarbonate	78.8 × 200 × 64.2 (W × D × H)

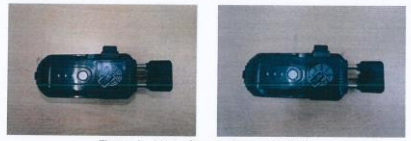

Figure 1. Article (Test before and after)

2. Test Specifications

2.1 Test equipment : Vertical hammer type impact tester (IEC 60068-2-75:1997)
2.2 Impact energy : 10 J
2.3 Total number of impacts : 5 times
2.4 Operating mode : Power OFF
2.5 Impact positions : Refer to the figure 3.
2.6 Preconditioning
: 16 hours at (-33) ℃ (KS C IEC 60068-2-1:2010)
2.7 Criteria after impact test
- Visual inspection :
Check if breakage, crack, and separation occur.
- Performance evaluation :
Before and after the impact test, carry out the performance test of NFC.

Figure 2. Test setup

FP202-04-02

[redacted]

보위 마크는 추후 전자확인증 대조 프로그램에서 원본대조시 사용되는 2D코드입니다.

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3. Result

Test Items	Criteria	Result
Visual inspection	Check if breakage, crack, and separation occur.	Intact
Performance evaluation	Before and after the test, carry out the performance test of NFC.	Good

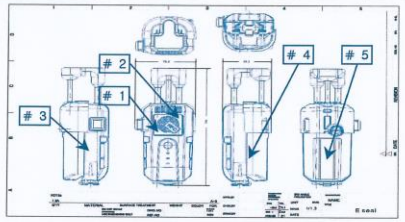

Figure 3. Drawing and impact positions

3.1 Performance evaluation

	Impact Test	
	Before	After
Result		
	Operate normally	Operate normally

-END-

FP202-04-02

[redacted]

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