

BLAXTAIR

User manual

BLAXTAIR ORIGIN®

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Introduction

PDF version

The PDF version of the user manual is available by clicking [here](#).

Blaxtair Origin is a **Pedestrian Proximity Detection** system for industrial vehicles.

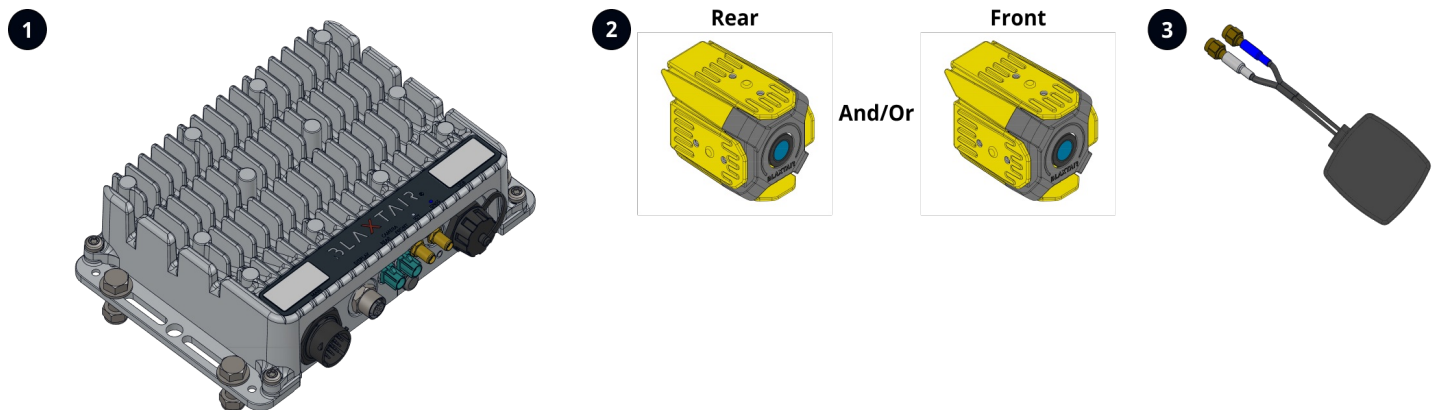
Combined with safety practices, it will help you to improve safety in the vicinity of dangerous industrial, earthmoving, or mining machines by providing relevant and reliable information to the driver.

To get the best from this high-tech equipment implementing a breakthrough technology, and before starting to use Blaxtair Origin, it is strongly recommended to read this manual. It indicates the warnings, scope of use, troubleshooting, and standard maintenance procedures of Blaxtair Origin, to maintain the equipment at its best performance.

Blaxtair Origin features

- Improves safety, working conditions, and productivity
- Detects and localizes pedestrians in real-time
- Detects any posture (i.e., standing, crouching, or in partial view) to prevent collisions with vehicles, whether driving forward or reverse.
- It avoids unnecessary alerts that tire the driver.
- Control & reduction of accident risks thanks to the integrated Blaxtair Connect
- Future-proofed: online maintenance & remote software updates
- Scalable: ready for future additional features or cloud services

System components



Main components

1

A processing unit that recognizes and localizes people in danger in real time using Artificial Intelligence algorithms.

2	One or two monoscopic cameras that capture images within its field of view
3	An antenna for analyzing your data with Blaxtair Connect, online maintenance & remote software updates



The warning device alerts the driver with a visual and audible alarm if a person is detected in the defined danger zone, at the rear and/or the front of the vehicle.

Warning devices	
4	LCD Display
5	Flash Beacon

Warning notices

A warning assistant system

Blaxtair Origin is designed to provide the Operator with additional information which could help them when driving. **It is not an alarm system, and it does not reduce the responsibility of the Operator or their manager in case of a collision.** Blaxtair Origin is designed to supplement the current safety practices already implemented. It must be integrated into a comprehensive safety policy, considering the risk factors specific to the company's activities.

Vehicle control and safety of operations remain the responsibility of the Operator and the authorities in charge.

Adapt vehicle speed to the environment

Most collisions between industrial vehicles and pedestrians occur when setting off or after a sudden change of direction. Blaxtair Origin is optimized to provide pertinent information to the driver during these critical phases.

When the vehicle is operational, the driver must adapt the speed to the environment and remains observant.

Blaxtair Origin is not designed to detect pedestrians when the vehicle is traveling at high speed.

Operators' training

Each year, worksite accidents result in the loss of life, significant personal injuries, and damage to products and facilities. Most are the result of driver error.

Standard operator training should be carried out before operators use any equipment installed with Blaxtair Origin systems and followed by periodic training to ensure awareness of usage and limits.

The optimal performance of Blaxtair Origin systems is subject to compliance with recommendations for use and maintenance as described in this manual.

Vehicle control interface

Arcure recommends asking the vehicle manufacturer before connecting Blaxtair Origin to the vehicle control system (e.g., brake system).

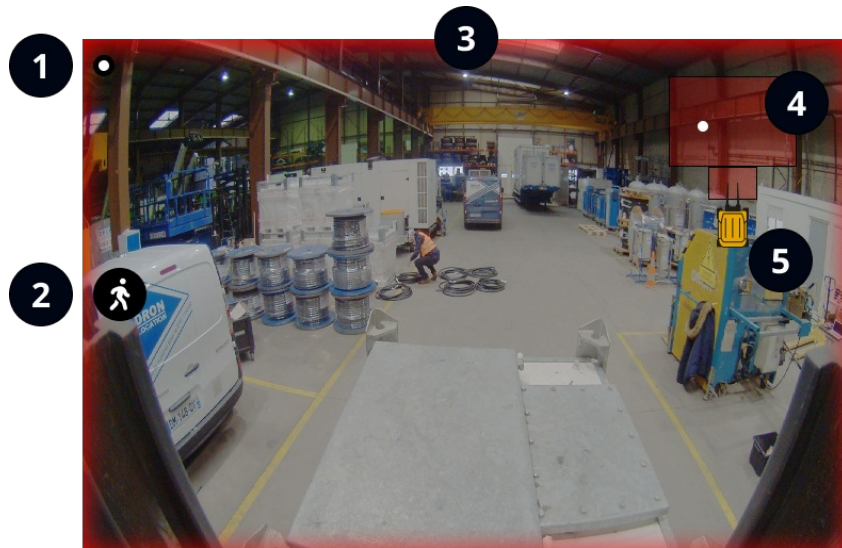
Operation



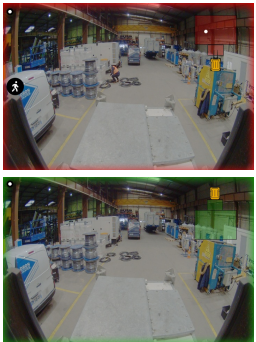
The Blaxtair Origin user interface consists of several modes:

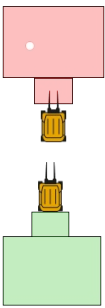

- Driver
- Backup / Update
- Configuration
- Blaxtair information

Driver

Overview






1		The heartbeat indicates that the Blaxtair Origin system is running.
2		The Blaxtair Origin system shows the alarm type (e.g. pedestrian detection) with a flashing icon.
3		The Blaxtair Origin system displays a red overlay in case of an alarm and a green overlay when there is no needs to alert the driver. The green overlay also indicates to the driver that the image analysis is running.

4		<p>The Blaxtair Origin system shows the detection areas of the displayed camera. A detection area is also named a danger area. In case of an alarm, the detection areas are red and white dots indicate the detection positions (e.g., pedestrian). When there is no alarm, the detection areas are green.</p> <p>i Detection areas The Blaxtair Origin system only shows the detection areas related to the displayed cameras.</p>
5		<p>The Blaxtair Origin system shows a vehicle visual with relative dimensions to help the driver to review all detections and their positions.</p>

i **MR120A Configuration**
Depending on the selected input management mode, the Blaxtair Origin system will change the displayed camera (e.g., change from forward to reverse gear).

Warning features

Use case	Visual warning	Audible warning	Icon
No pedestrian detection in the detection areas		None	None
Pedestrian detection in the detection areas			

i **Troubleshooting - Warning alert**
Find all information regarding the technical issues and visual alerts in [Troubleshooting](#).


Backup / Update

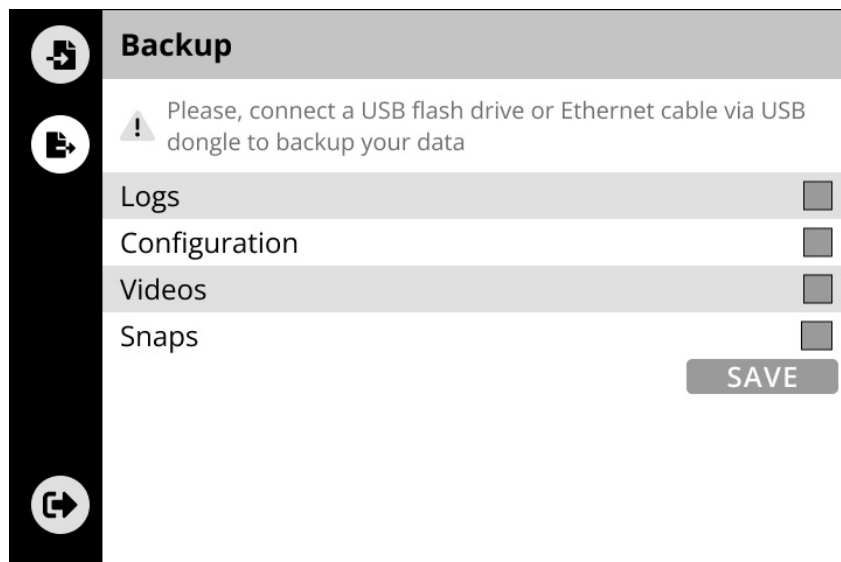
The Blaxtair Origin system allows data backup and, configuration & system updates.



- Click on  in the driver mode menu to access Backup / Update mode.


Backup

- Click on  to access the Backup menu,
- Follow the instructions to back up your data locally or online.




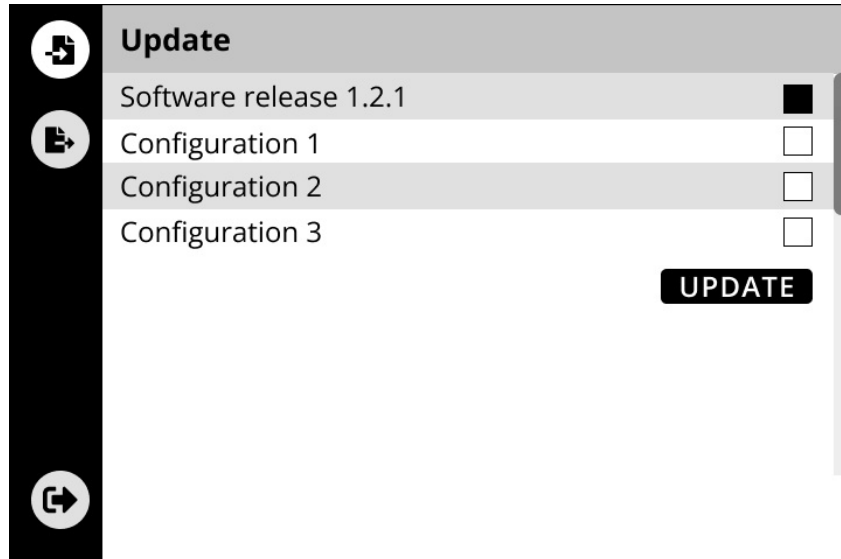
Required devices

For local backup, you need a USB flash drive and a USB dongle.
For online backup, you need a USB to Ethernet dongle

 Online backup is only used for product improvement or technical support

Update

- Click on  to access the Update menu,
- Follow the instructions to update your configuration or the system software.



Configuration

The configuration is one of the most essential steps.

System performance & user experience

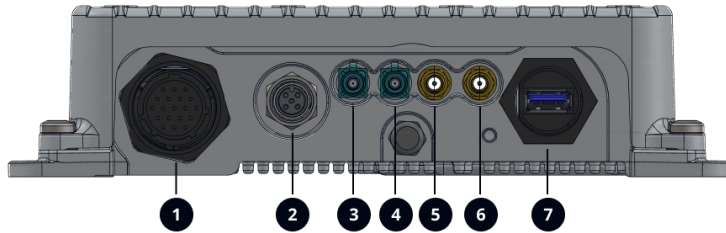
The Blaxtair Origin system's performance and usability may be affected if it is not correctly configured. You must configure your system related to your vehicle and application.




Warning

Your Blaxtair Origin should be turned on, and your screen should display a green overlay on the image or an error message if the activated camera is not the one connected (e.g., the "REAR" camera is activated and you have connected your camera on the "FRONT" port).

- Connect a computer mouse to the processing unit (7)



Once you connect the computer mouse, you will see a moving pointer on the Blaxtair display. Click on the "settings" icon  at the bottom left of the screen to access the configuration menu.

i Configuration - Step-by-step instructions





Follow the step-by-step instructions to configure your Blaxtair Origin System available in [the Installation Manual](#).

Blaxtair information

The Blaxtair information menu allows a user to access the product, HDD & IoT information.

System information

- Click on  to access the Update menu,

	System information	
	Overview	
	Software version:	v1.0
	Hardware release:	v1.0
	Part number:	200-023-001
	Serial number:	0-07XX-XXXX-XXXX
	Uptime:	10:24
	HDD	
	Available:	Yes
	Capacity:	128 GB
	Usage:	75%

This menu presents an overview of the system information.

- Software version
- Hardware release
- Part number of the processing unit
- Serial number of the processing unit
- Uptime since the last start of the processing unit

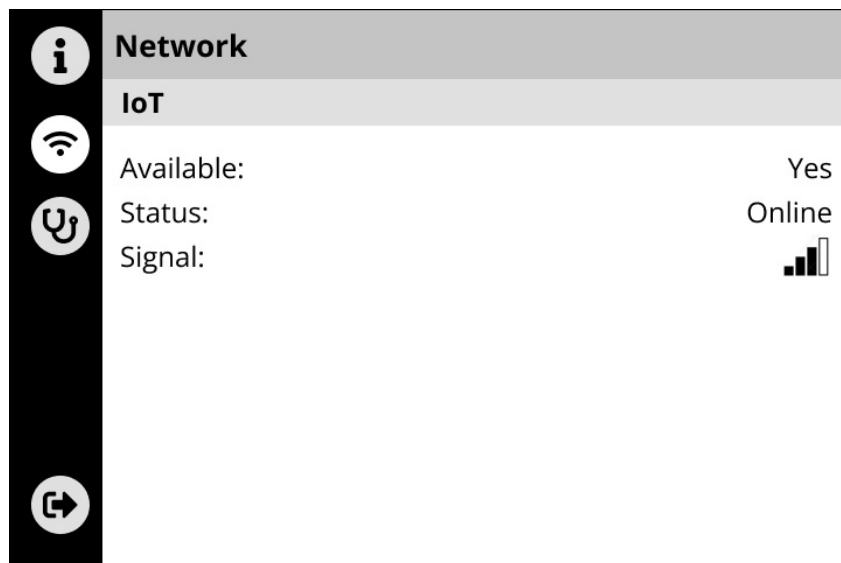
Customer service

When you contact our customer service, please, provide this information with your request. it will help to answer it.

- HDD information
 - Availability - it indicates if the HDD is activated or deactivated.
 - Capacity
 - Usage

Network

- Click on  to access the Network menu,





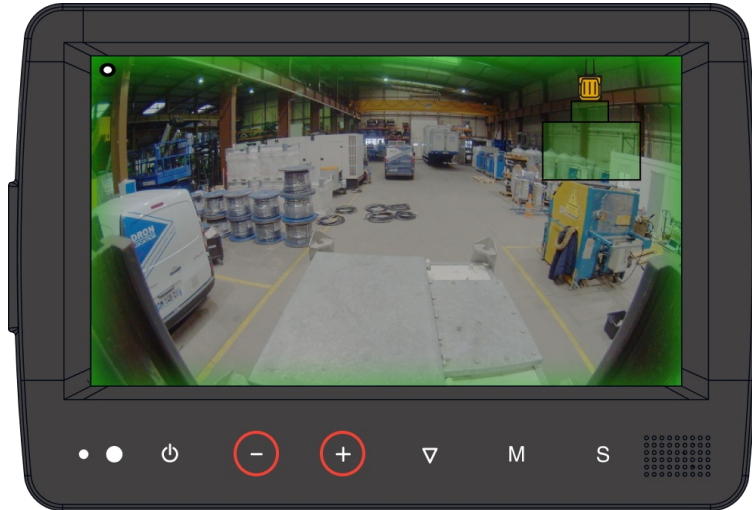
This menu presents an overview of the network information.

- Availability - it indicates if the IoT module is activated or deactivated.
- Status of the communication between the processing unit and our cloud server
- The signal power

Display - Sound

Adjust the display sound

You can adjust the sound between a minimum level defined by the installer or site manager and a maximum level by using the volume button on the screen ( or ).







Troubleshooting

The Blaxtair Origin system has a self-diagnosis feature that will identify and alert if necessary during a technical issue. Each type of technical issue is identified through a fault code (Diagnostic Trouble Code).

System behavior

During a technical issue, several cases may occur:

Use case	Visual warning	Audible warning	Icon
<p>It is impossible to detect a pedestrian; in this case, the Blaxtair Origin system (OSD - On Screen Display) will display a red overlay and play a short audible alert.</p> <p>i The Diagnostic Trouble Code and associated text will be displayed on the screen.</p>			<p>Technical issue category icon</p>
<p>A technical issue impacts the system operation, but detection is still possible and may be degraded in performance. In this case, the Blaxtair Origin system (OSD - On Screen Display) will display a purple overlay if there is no pedestrian detected.</p> <p>i The Diagnostic Trouble Code and associated text will be displayed on the screen.</p>			<p>Technical issue category icon</p>
<p>If the technical issue does not directly impact the system operation (e.g., IoT issue), then the Blaxtair Origin system (OSD -On Screen Display) will not display any specific information. The issue report will be visible via the data reported by the IoT.</p>	<p>None</p>	<p>None</p>	<p>None</p>

i Some technical issues can be rehabilitated when the issue disappears. Others may require a system reboot.













Technical issue categories















The following table presents the main categories of technical issues.







Category	Description
Camera & processing unit link (no video stream)	Technical Issue between the processing unit and camera
Processing unit - System failure	Technical Issue with the processing unit ⚠ It is recommended to ensure that the technical issue is permanent before replacing the processing unit
IoT & GPS	Technical Issue with the IoT features - Variable causes, signal quality, network issue, GPS, technical issue with the antenna
Electrical	Technical Issue with power supply
Temperature	Temperature issue - The Blaxtair Origin system provides a specific Diagnostic Trouble Code for the processing unit, camera, or SSD.
Processing unit sealing	Humidity issue in the processing unit
Processing unit performance	Processing unit performance degraded
SSD (Processing unit)	Technical Issue with SSD

Data Troubleshooting Code list

The following table presents the Data Troubleshooting Code list and the associated message to alert you in case of a technical issue.

Data Trouble Code	Message	Icon	Overlay color
U2312	Configuration is not available. Please, check your configuration.		
U1225	Warning, System temperature is too hot. It could degrade system performance.		
U1226	System is stopped due to a temperature too high.		
U1227	Warning, system performances are degraded. If persistent, please, contact the hotline.		
U1228	Warning, system is stopped. If persistent, please, contact the hotline.		
U1230	HDD is not available. If persistent, please, contact the hotline.		

<p>U1310</p>	<p>Camera is not available. Please, reboot the system.</p>		
<p>U1311</p>	<p>Rear camera is not available. Please, check the camera connector and the cable, and reboot the system.</p>		
<p>U1312</p>	<p>Rear camera is not available. Please, check the camera and reboot the system.</p>		
<p>U1314</p>	<p>Front camera is not available. Please, check camera and reboot the system.</p>		
<p>U1316</p>	<p>Front camera is not available. Please, check the camera connector and the cable, and reboot the system.</p>		
<p>U2125</p>	<p>Detection is not available. Please, check the camera connector and the cable, and reboot the system.</p>		
<p>U2131</p>	<p>Detection is not available. Please, check the camera and reboot the system.</p>		

<p>U2221</p>	<p>System is not available. Please, check the configuration and reboot the system.</p>		
<p>U2222</p>	<p>System is not available. Please, check the configuration and reboot the system.</p>		
<p>U2225</p>	<p>Detection is not available. Please, check the camera and reboot the system.</p>		

⚠ DTC analysis

The embedded diagnostic is an assistance to the Blaxtair Origin system user. Please, contact customer service for an issue analysis before requesting a product exchange.

Customer support

If you need support (installation or maintenance) or have any questions about our Blaxtair® products, please, contact us by email at:

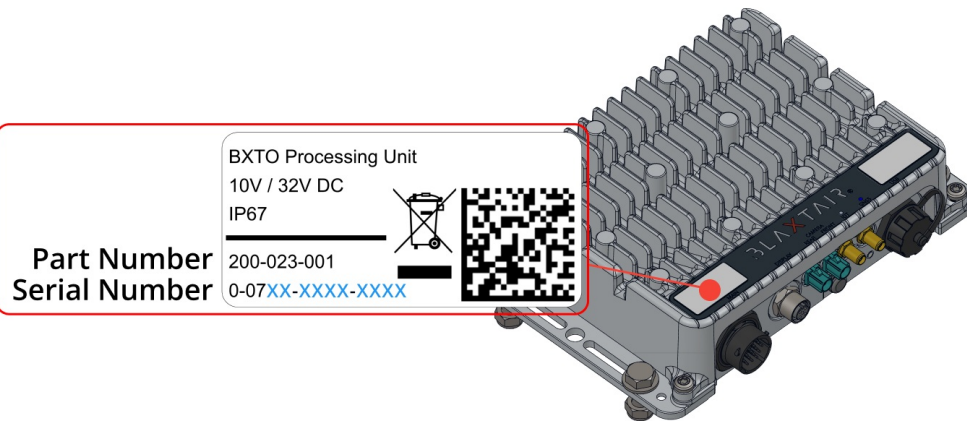
✉ hotline@blaxtair.com

or see our web page

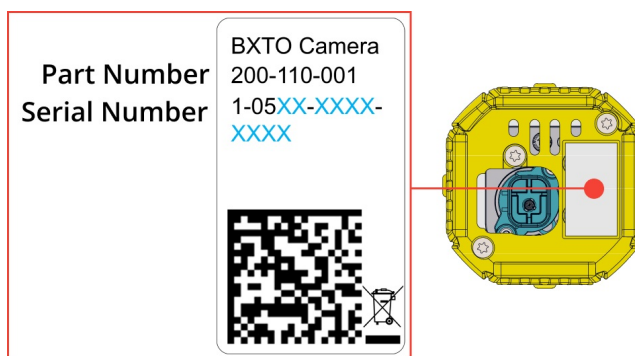
📺 [Customer Support - How can we help you?](#)

Arcure's technical team will ask you for a product part number and serial number for any support request.

Processing unit



Camera



i Additional information

To enrich your request, you can provide the following information and describe how the context of the issue

- The Data Troubleshooting Code and its message, if any
- The color of the led status on your processing unit
- The status/color of the visual alarm on the display

Annex - Certifications and approvals

Standards	Type
Water/dust protection	
Camera	ISO 20653 - IP6K9K* i * IP67 for the connector
Processing Unit	IEC 60529 - IP67
Climatic test	
Processing Unit	ISO 16750-4 IEC 60068-2-14
Vibrations & Shocks	
Camera	ISO 16750-3 IEC 60068-2-64 - Random vibration IEC 60068-2-27 - Shocks / Bumps
Processing unit	ISO 16750-3* IEC 60068-2-64 - Random vibration IEC 60068-2-27 - Shocks / Bumps i * PU connectors - SAE/USCAR-2 Rev.6 5.4.6.3 V1
Electromagnetic Compatibility (EMC/EMV)	
Camera	CISPR 25 ISO 10605 ISO 11452-2 ISO 11452-4 EN 12895 ISO 13766-1 ISO 14892
Processing unit	Directive 2014/30/UE EN 12895 ISO 13766-1 ISO 14982-1 ICES-003 Issue 05 FCC Title 47 Part 15
Electrical loads	
Processing unit	ISO 7637-2 ISO 16750-2
Radio frequency	
Processing unit	RED - Radio Equipment Directive 2014/53/EU UKSI 2017 N°2016 FCC
Object detection systems assistance	
Earth-moving machinery	ISO 16001
Industrial truck	VDI 4482
Marks	
Blaxtair Origin system	CE, FCC, Reach, RoHS
Region	Regulatory compliance/quality marks
Europe	CE
Great Britain	UKCA

IoT Country Approval

Region	Countries
Europe	France, Germany, Austria, Spain, Poland, United Kingdom, Czech Republic, Italy, Belgium, Switzerland, Romania, Denmark, Portugal, Ireland, Indonesia, Ukraine, Slovak Republic, Hungary, Norway, Luxembourg, Sweden, Greece, Netherlands, Finland, Slovenia, Latvia, Estonia, Serbia, Monaco, Lituanie
Middle East & Africa	La Réunion
North America	United States of America, Canada,
Latin America	Mexico, Uruguay, Martinique, Guadeloupe
Asia-Pacific	Australia, Nouvelle-Caledonie, Tahiti