OpenDevice

The OnGuard OAAP program allows third-party manufacturers (OAAP partners) to interface their products with the OnGuard platform. OpenDevice is one of the API groups supported by OnGuard. OpenDevice is the group name for all APIs involving non-video device integrations. OpenDevice allows manufacturers of Access Control, Fire, Intercom, Intrusion, Elevator, Point of Sale (POS), Personal Safety, and Receiver systems to communicate with OnGuard. In order to interface with OpenDevice, OAAP members need to develop a Translator DLL that implements a set of COM interfaces published by Lenel for the OAAP partners that is specific to the third-party product type.

The following device types can be integrated with OnGuard:
- Access Control – Access Control panels
- Fire – Fire panels
- Intercom – Intercom systems
- Intrusion – Fences and burglary systems
- Elevator – Elevators systems
- Point of Sale – point of sales devices
- Personal Safety – Life safety systems
- Receiver – Central station alarm receiver
Introduction

Lenel’s Open Device Protocol was developed so that additional hardware can be incorporated into the Lenel OnGuard product more easily. The basic concept is that each individual piece of hardware would have its own “Driver” that would understand how to communicate with the hardware. These “Drivers” have been named Device Translators because they translate a set of generic commands into specific device commands.

The Device Translators will be implemented as COM (Component Object Model) objects so that they can be loaded and unloaded as needed. Each Device Translator will support certain interfaces that support a specific set of commands or methods. Some examples of typical interfaces could include an Access Control Interface for access control hardware, a CCTV Interface for CCTV hardware, an Intercom Interface for intercom systems, an Input Interface to support alarm inputs, etc. A particular Device Translator can support as many interfaces as it needs.

The main application that will be used to control the various Device Translators is the Lenel Communication Server, which manages the Device Translators and sends the commands to the Device Translators. Other applications like Alarm Monitoring or System Administration communicate with the hardware devices by sending commands to the Lenel Communication Server, which then sends the commands on to the correct device(s).

Each Device Translator must support the ITranslate interface as well as the IComConfig Interface. This is the main interface to Device Translators. In addition to the ITranslate Interface, they can support device type specific interfaces. Each Device Translator will also use the IDistributeEvent interface to communicate back to the Lenel Communication Server.

The Device Translators also need a method of communicating to the hardware. Each Device Translator could have its own code to handle this, but instead Communication Transporters will be used. Communication Transporters function similar to Device Translators. They are also implemented as COM objects. All the Communication Transporters must support the ITransport interface but they can also support additional interfaces. One commonly used Communication Transporter is the one that is used for RS-232 communications. This object contains the ITransport interface that contains one method for reading and another for writing to the port. It also contains an IRs232 interface that supports additional methods that are used to open and close the port as well as perform other functions on the serial port. Since different types of hardware may use the same mode of communication, creating a common Communication Transporter saves from having to duplicate code in each Device Translator.

The diagram shown on the next page illustrates how the various objects communicate between each other. The OnGuard clients represent OnGuard applications that interact with the Lenel Communication Server. They can send commands to the Lenel Communication Server as well as receive messages. The Lenel Communication Server can communicate to more than one Device Translator and therefore more than one device, but only one has been shown to keep the diagram simple. Another commonly used communication transporter is the one that is used for TCP/IP communication. Currently we don't support communication transporter for UDP/IP communication.

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## Interfaces

The following table specifies the interfaces that should be considered by the OAAP partner to be implemented when a device is integrated to OnGuard. As mentioned previously, the ITranslate, IComConfig and IDistributeEvent must be supported by the device translator.

<table>
<thead>
<tr>
<th>API</th>
<th>Interfaces</th>
</tr>
</thead>
<tbody>
<tr>
<td>OpenDevice - AccessControl</td>
<td>ITranslate, IComConfig, IDistributeEvent, ITranslate2, IComConfig2, IAccessControl, IAccessControl2, IOutput, IInput, IInput2, IAsset, IAssetManagement, IBiometricConfig, IComManager</td>
</tr>
<tr>
<td>OpenDevice - Fire</td>
<td>ITranslate, IComConfig, IDistributeEvent</td>
</tr>
<tr>
<td>OpenDevice - Intercom</td>
<td>ITranslate, IComConfig, IDistributeEvent, IIntercom, IIntercomStation, IPBX</td>
</tr>
<tr>
<td>OpenDevice - Intrusion</td>
<td>ITranslate, IComConfig, IDistributeEvent, IIIntrusion</td>
</tr>
<tr>
<td>OpenDevice - POS</td>
<td>ITranslate, IComConfig, IDistributeEvent</td>
</tr>
<tr>
<td>OpenDevice - Receiver</td>
<td>ITranslate, IComConfig, IDistributeEvent</td>
</tr>
<tr>
<td>OpenDevice - Safety</td>
<td>ITranslate, IComConfig, IDistributeEvent, IOutput, IInput, IInput2, IPersonalSafety</td>
</tr>
<tr>
<td>OpenDevice - Elevator</td>
<td>ITranslate, IComConfig, IDistributeEvent, IElevatorDispatching</td>
</tr>
</tbody>
</table>

**Note:** The IRs232, ILan and IDialup interfaces are all related to communicating with hardware and can be used by as the ‘communication transporter’ to the device.
Documentation

The documents in this folder contain the information needed for the integration procedure. Here is a description for each of the documents:

- DeveloperGuide.pdf – This document provides information about development machine setup, translator development, and certification process. The document also provides information about the development environment setup.
- OpenDevice-InterfacesGuide.pdf – This document provides information about all the interfaces Lenel opened for partners to use. The information includes all the interfaces’ methods and structures.
- OpenDevice-EventsGuide.pdf – This document provide detailed information for the events supported by OnGuard and can be sent from the third party translator.
- OpenDevice-DeviceTranslatorTemplateGuide.pdf – This document provides information about all the methods that are implemented by the Device Translator Template project. The device translator template was created in order to make the implementation of new device translators easier.