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Introduction

This document is dedicated to explain the existing API of GuardPointPro

It allows an **easy integration** with SENSOR ACCESS Access control and alarm monitoring software called GuardPointPro.

This means that an external application could

- receive many information from GuardPointPro such as online events of access control system's (Access granted, Access denied, Start of Alarm, ...)
- and act on Access control system's by
 - o Creating cardholders
 - Manages doors status, and relays status (Open a door for a while, open constantly, close constantly, or return to default status)
 - o Manage alarm status (disarm a zone / input group)
 - o Executing existing actions and processes of GuardPointPro
 - o Login / Logoff
 - o User interface (messages on screen)
 - Download configuration to controllers (that may be updated directly in DB by an external application)

GuardPointPro has also other integration gateway such as

- •
- OPC
- ModbusTCP
- Wizcon

The document is based on GuardPointPro Version 1.8.003 (June 2008) Most of the commands are supported in previous versions, but in order to simplify we will only work on the basis of the actual version. To get the latest version of GuardPointPro consult http://www.sensoraccess.co.uk/

The communication with GuardPointPro is done by a communication engine called "Spread". For more information about Spread, see www.spread.org

Installation

Unzip the zip file.

Install in your project folder the acAPI.dll.

Add Reference to this DLL in your project.

Sample Program

The acAPI.dll is given with a sample program, including its source code, named Test_AcAPI.exe

This project Test_AcAPI was compiled with Visual Basic 2008 (with compatibility with .NET Framework v2.0). The source code of this program is delivered in the zip file.

Have a look at the program source code to help you to fast interface with the acAPI.dll.

Properties

DestinationPCName

This property defines the PC we are sending it the commands.

Default value: < Current PC Name>

SpreadConfiguration

This property defines how to connect to Spread (Communication layer) that we use to send the commands.

Default value: 4803@localhost

Methods

ChangeUserLogin

Send a request to change the user logged in by another one with the user name and password.

Syntax:

```
Sub ChangeUserLogin(ByVal User As String, ByVal Password As String)
```

Sample:

```
acDLL.ChangeUserLogin("user", "password")
```

OpenScreen

Send a request to open a screen.

The command supports selecting

- on which record,
- on which tab
- and the screen size (Normal, minimize, or maximize).

Syntax:

```
Sub OpenScreen(ByVal Screen As String, Optional ByVal MinMax As Integer = 0, Optional ByVal ViewPhotoListReader As Long = 0, Optional ByVal onRecordID As Long = 0, Optional ByVal onTabNumber As Integer = 0)
```

Sample:

```
acDLL.OpenScreen("ID_Cardholders")
```

Cf Appendix A (Screens ID) to get all the parameter according to the screen you want to open.

PreviewVideo

Send a request to preview a camera live video with the db_CameraID (cf Appendix B).

Syntax

```
Sub PreviewVideo(ByVal db_CameraID As Long)
```

Sample:

acDLL.PreviewVideo(1)

PreviewReport

Send a request to preview an existing report with the report full name.

Syntax

Sub PreviewReport(ByVal ReportFile As String)

Sample:

 $acDLL. Preview Report ("C:\Program\ Files\Guard Point Pro\Reports\Last\ report.rpx")$

DisplayMessage

Send a request to display a message box with the text.

Syntax:

```
Sub DisplayMessage(ByVal Message As String)
```

Sample:

```
acDLL.DisplayMessage("Hi, How are you? ")
```

InsertTextinLog

Send a request to insert message in the Log windows.

Syntax:

```
Sub InsertTextinLog(ByVal Text As String)
```

Sample:

```
acDLL.InsertTextinLog("Hi, How are you? ")
```

InsertTextinStatusBar

Send a request to insert message in the status bar and set the percent of the progress bar.

Syntax:

```
Sub InsertTextinStatusBar(ByVal Text As String, ByVal Percent As Byte)
```

Sample:

```
acDLL.InsertTextinStatusBar("Downloading Cardholders", 30)
```

PlaySound

Send a request to play a sound file with the full path of the sound file.

Syntax:

```
Sub PlaySound(ByVal SoundFile As String)
```

Sample:

```
acDLL.PlaySound("C:\Windows\Media\Windows Notify.wav")
```

ExecuteAction

Send a request to execute an existing action with db_ActionID (cf Appendix B).

Syntax:

Sub ExecuteAction(ByVal db_ActionID As Long)

Sample:

acDLL.ExcecuteAction(1)

ExecuteProcess

Send a request to preview an existing process with db_ProcessID (cf Appendix B)

Syntax:

Sub ExecuteProcess(ByVal db_ProcessID As Long)

Sample:

acDLL.ExecuteProcess(1)

ExecuteApplication

Send a request to execute an application file with the full path of the application file.

Syntax:

ExecuteApplication(ByVal ApplicationPath As String)

Sample:

acDLL.ExecuteApplication("C:\Windows\Calc.exe")

InitializeController

Send a request to initialize an existing controller db_ControllerID (cf Appendix B).

Syntax:

Sub InitializeController(ByVal db_ControllerID As Long, Optional ByVal WithoutCardholder As Boolean = False, Optional ByVal EraseOption As EraseOptions = EraseOptions.AllDB_NoBuffer)

Where EraseOptions are:

- EventBufferOnly
- AllDBExceptCardholder
- CardholderOnly
- EventBuffer And AllDBExceptCardholder
- EventBuffer AndCardholder
- AllDB NoBuffer
- ALL memory

RecreateMemoryTables

Send a request to initialize an existing controller db_ControllerID (cf Appendix B) with recreation of memory tables.

Syntax:

Sub RecreateMemoryTables(ByVal db_ControllerID As Long)

SetRelayState

Send a request to modify the relay state (Activate the relay / Inhibit the relay) with the db_OutputID (cf Appendix B).

Syntax:

Sub SetRelayState(ByVal db_OutputID As Long, ByVal RelayState As RelayStates, Optional ByVal Delay As Integer = 0)

Where RelayStates are:

- Normal
- ConstantON
- ConstantOFF
- Delay

Sample: To activate the relay 1 Constant ON acDLL.SetRelayState(1, acAPI.API.RelayStates.ConstantON)

This command allows to control doors relays and other output (e.g. alarm siren)

SetInputState

Send a request to modify the Input state (Deactivate / Force activate the input) with the db InputID (cf Appendix B).

Syntax:

Sub SetInputState(ByVal db_InputID As Long, ByVal InputState As InputStates, Optional ByVal Delay As Integer = 0)

Where InputStates are:

- Normal
- ConstantActivate
- ConstantDeactivate
- Delay

Sample: to return to normal mode the input 1 acDLL.SetInputState(1,acAPI.API.InputStates.Normal)

This command allows to control alarms sensors to be arm or not.

SetInputGroupState

Send a request to modify the Input group state (Deactivate / Force activate the input group) with the db_InputGroupID (cf Appendix B).

Syntax:

Sub SetInputGroupState(ByVal InputGroupID As Long, ByVal
InputGroupState As InputGroupStates, Optional ByVal Delay As Integer =
0)

Where InputGroupStates are:

- Disarm DuringSeconds
- Disarm DuringMinutes
- Disarm Constantly
- Disarm UntilTimeZone
- Disarm NONE CancelPreviousDelay
- Arm DuringSeconds
- Arm_DuringMinutes
- Arm Constantly
- Arm UntilTimeZone
- Arm NONE CancelPreviousDelay

Sample: To disarm the input group 1 during 30 seconds

```
acDLL.SetInputGroupState(1,
acAPI.API.InputGroupStates.Disarm_DuringSeconds, 30)
```

This command allows to control alarm zones (defined as group of inputs) to be arm or not.

ActivateAllDoorRelays

Send a request to modify the Input state (Deactivate / Force activate the input) with the db_InputID (cf Appendix B).

Syntax:

Sub ActivateAllDoorRelays(ByVal db_ControllerID As Long, ByVal DoorRelayState As DoorRelayStates, Optional ByVal Delay As Integer = 0)

GetTimeDate

Send a request to get the time and date of a controller db_ControllerID (cf Appendix B).

Syntax:

Function GetTimeDate(ByVal db_ControllerID As Long) As Date

GetDigitalInputStatus

Send a request to get the input and output status of a controller db_ControllerID (cf Appendix B).

It returns the logical state of the input (physical state according to NO/NC) and the

Syntax:

Function GetDigitalInputStatus(ByVal db_ControllerID As Long) As String

The returned string is build of 0/1 in the following order

- Inputs (1-16)
- Relays (1-64)
- Inputs (17-24)

GetHardwareVersion

Send a request to get the hardware version of a controller db_ControllerID (cf Appendix B).

It returns a string. For more information, consult the TPL User Manual.

Syntax:

Function GetHardwareVersion(ByVal db_ControllerID As Long) As String

GetFirmareVersion

Send a request to get the firmware version of a controller db_ControllerID (cf Appendix B).

It returns the Eprom date and checksum.

Syntax:

Function GetFirmareVersion(ByVal db_ControllerID As Long) As String

GetMemoryOccupation

Send a request to get the memory occupation of a controller db_ControllerID (cf Appendix B).

It returns the number of cardholders stored in the controller memory.

Syntax:

Function GetMemoryOccupation(ByVal db_ControllerID As Long) As Long

isPollingNow

Send a request to know if currently we are polling or not the controllers. It returns True/False.

Syntax:

Function isPollingNow() As Boolean

StartPolling

Send a request to Start Polling the controllers.

This command update the polling queues, it adds new controllers or remove controllers have been set as not active.

You can specify a specific controller or network. Without defining any controller, it stops all the communication polling with the controllers.

Syntax:

StopPolling

Send a request to Stop Polling the controllers.

You can specify a specific controller. Without defining any controller, it stops all the communication polling with the controllers.

Syntax:

Sub StopPolling(Optional ByVal db_ControllerID As Long = 0)

ImportCardholder

Send a request to import a cardholder in the database and inform the controllers. This allows adding, updating or deleting cardholders.

Syntax:

Function ImportCardHolder(ByVal a As CardholderFields) As ImportResults

Where CardholderFields contains the cardholder fields

| Properties of CardholderFields |
|---|
| Number As String |
| Last_Name As String |
| First_Name As String |
| Type As CardholderTypes |
| Visitor |
| Cardholder |
| Guard |
| DELETED |
| Badge As String |
| Technology As CardTechnologies |
| Magnetic |
| BarCode |
| Wiegand |
| Wiegand2 |
| WiegandKeypad |
| BioSmartCard |
| Touch |
| Radio |
| Photo As String |
| Department As String |
| Office_Phone As String |
| Access_Group As String |
| PIN_code As String |
| From_Date As String |
| To_Date As String |
| Validated As Boolean (Default value True) |
| Street As String |
| City As String |
| ZIP As String |
| Personal_Phone As String |
| Description As String |
| Car_Number As String |
| ID As String |

| Supervisor As Boolean | | |
|--|--|--|
| Label_1 As String | | |
| Label_2 As String | | |
| Label_3 As String | | |
| Label_4 As String | | |
| Company As String | | |
| Lift_Program As String | | |
| Parking_Users_Group As String | | |
| MultiSite_Type As MultiSite_Types | | |
| isLocal | | |
| isShared | | |
| isGlobal | | |
| Site As String | | |
| Personal_WP As String | | |
| Personal_CL As String | | |
| Keep_card_on_motorized_reader As Boolean | | |
| No_APB As Boolean | | |
| No_access_during_holidays As Boolean | | |
| Reset_APB As Boolean | | |
| Need_Escort As Boolean | | |
| Badge_Printing_Layout As String | | |
| Visited_person As String | | |
| Visited_person_location As String | | |
| Visit_purpose As String | | |
| | | |

And **ImportResults** options are:

- UpdateSuccessfully
- InsertSuccessfully
- MandatoryFieldMissing
- UpdateFailed
- InsertFailed
- AuthorisationExcedded
- CannotChangeGuard
- DuplicateName
- CardHolderDeleted
- BadgeCodeNotOK

The import creates

- the cardholder,
- the badge,
- the access group if not found,
- the department if not found,
- the lift program if not found,
- the parking user group if not found,
- the personal weekly program if not found

It supports

- Multiple Access Group (use; to separate the names of the access group)
- Dynamic Fields
- Multi site fields

| For more details about the import, consult the user manual of GuardPointPro about import profiles. |
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Events

AccessEvent

Wake up the application when an Access event arrives.

We return an object **AccessEventRecord** that contains:

| Properties of AccessEventRecord | |
|---------------------------------------|---------------|
| EventDate As Date | |
| EventType As EventTypes | |
| Access Granted | |
| Access Granted with Duress Code | |
| Access Denied | |
| Access Denied Too Much Trials | |
| Unknown Badge | |
| Unknown Badge Too Much Trials | |
| Non Allocated Badge | |
| ReaderName As String | |
| TransactionCode As Integer | |
| CardHolderName As String | Event |
| CardHolderPhotoFileName As String | 2, 411 |
| Denied_WrongFinger As Boolean | description |
| Denied_WrongKeypadCode As Boolean | |
| Denied_FullorLock As Boolean | |
| Denied_Time As Boolean | |
| Denied_APB As Boolean | |
| Denied_ReaderNotAllowed As Boolean | |
| Denied_SiteCode As Boolean | |
| Denied_InhibitedCardholder As Boolean | |
| Denied_AccessGroup As Boolean | |
| isEscort As Boolean | |
| Denied_EscortTimeout As Boolean | |
| Denied_EscortNotAuthorized As Boolean | |
| db_ReaderID As Long | |
| db_ControllerID As Long | Database |
| db_CardHolderID As Long | Fields |
| db_ReaderSocID As Long | |
| db_CardHolderSocID As Long | reference |
| db_CameraID As Long | Cf Appendix B |
| db_TableLOG_ID As Long | |

Sample:

For more code sample, see function Private Sub acDLL_AccessEvent(ByVal AccessRec As acAPI.AccessEventRecord) Handles acDLL.AccessEvent

AlarmEvent

Wake up the application when an Alarm event arrives.

We return an object **AlarmEventRecord** that contains:

| Properties of AlarmEventRecord | |
|--------------------------------|-----------------|
| EventDate As Date | |
| EventType As EventTypes | |
| StartOfAlarm_Immediate | |
| StartOfAlarm_Delayed | |
| EndOfAlarm | |
| LineShort | |
| LineCut | Event |
| Status1_AnalogInput | 2,411 |
| Status2_AnalogInput | description |
| Status3_AnalogInput | |
| Status4_AnalogInput | |
| isFromBus2 As Boolean | |
| isDoorContact As Boolean | |
| isRTX As Boolean | |
| DoorName As String | |
| db_InputID As Long | |
| db_ControllerID As Long | Database Fields |
| db_SocID As Long | reference |
| db_CameraID As Long | Cf Appendix B |
| db_TableLOG_ID As Long | |

Sample:

For more code sample, see function Private Sub acDLL_AlarmEvent(ByVal AlarmRec As acAPI.AlarmEventRecord) Handles acDLL.AlarmEvent

TechnicalEvent

Wake up the application when a technical event arrives.

We return an object **TechnicalEventRecord** that contains:

| Properties of TechnicalEventRecord | |
|------------------------------------|-------------|
| EventDate As Date | Event |
| EventType As EventTypes | description |
| TableError | description |
| LowBattery | |
| PowerDown | |

| PowerUp | |
|--------------------------|-----------------|
| 'For MEGA Only | |
| PowerSupplyFailure | |
| PowerSupplyOK | |
| BoxOpened | |
| BoxClosed | |
| ReaderDisconnected | |
| ReaderConnected | |
| ReaderName As String | |
| ControllerName As String | |
| db_ControllerID As Long | Database Fields |
| db_ReaderID As Long | _ |
| db_SocID As Long | reference |
| db_TableLOG_ID As Long | Cf Appendix B |

Sample:

For more code sample, see function Private Sub acDLL_TechnicalEvent(ByVal TechRec As acAPI.TechnicalEventRecord) Handles acDLL.TechnicalEvent

UserEvent

Wake up the application when a user event arrives.

We return an object UserEventRecord that contains:

| Properties of UserEventRecord | |
|-------------------------------|-----------------|
| EventDate As Date | |
| EventType As EventTypes | |
| NewRecord | |
| SaveRecord | |
| DeleteRecord | Event |
| Login | 2,0110 |
| Logout | description |
| UserName As String | |
| WorkStationName As String | |
| RecordScreen As String | |
| RecordDetails As String | |
| db_ UserID As Long | Database Fields |
| db_SocID As Long | reference |
| db_TableLOG_ID As Long | Cf Appendix B |

Sample:

```
Dim txt As String
txt = anUserEventRecord.EventDate & " "
Select Case anUserEventRecord.EventType
Case acAPI.UserEventRecord.EventTypes.Logout
```

For more code sample, see function Private Sub acDLL_UserEvent(ByVal anUserEventRecord As acAPI.UserEventRecord) Handles acDLL.UserEvent

ControllerCommunicationError

Wake up the application when a controller starts to be in Communication error. It returns the text to be displayed in Log windows.

ControllerCommunicationOK

Wake up the application when a controller returns to be in Communication OK

It returns the text to be displayed in Log windows.

TextForLog

Wake up the application when information to be displayed in Log windows arrives.

It returns the text to be displayed in Log windows.

TextForStatusBar

Wake up the application when information to be displayed in Status bar arrives

It returns the text to be displayed in the Status bar and the percent of the progress bar.

This is useful to get the feedback of the progress of the initialization of a controller.

APInotDocumented

Wake up the application when a message arrives that has not been documented in the current API.

For specific integration request that has not been documented here, please contact us.

SpreadPollingError

Wake up the application when the communication layer Spread returns an error code.

The error codes are:

- -1 ILLEGAL_SPREAD
- -2 COULD_NOT_CONNECT
- -3 REJECT_QUOTA
- -4 REJECT_NO_NAME
- -5 REJECT_ILLEGAL_NAME
- -6 REJECT_NOT_UNIQUE
- -7 REJECT_VERSION
- -8 CONNECTION_CLOSED
- -9 REJECT_AUTH
- -11 ILLEGAL_SESSION
- -12 ILLEGAL_SERVICE
- -13 ILLEGAL_MESSAGE
- -14 ILLEGAL_GROUP
- -15 BUFFER_TOO_SHORT
- -16 GROUPS_TOO_SHORT
- -17 MESSAGE_TOO_LONG

The more frequents error codes are -8 and -11 and happens when the spread process is not running (most of the time due to a wrong configuration file spread.conf). Check the Computers definition in GuardPointPro.

ExceptionHappen

Wake up the application when an exception happens in the DLL code.

It returns the Function Name and the exception object.

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|--|------------|
| | |
| | |

Appendix A: Screens ID

| Screens ID | Description |
|----------------------------|--|
| ID APBLevel | Anti Pass Back Level |
| ID Area | Area |
| ID Departement | Department |
| ID Diagnostic | Diagnose |
| ID Visitor | Visitor |
| ID AccessGroup | Access Group |
| ID Actions | Action |
| ID Badge | Badge |
| ID Cardholders | All Cardholders |
| ID Computer | Computer |
| ID Configuration | Customized Label |
| ID Controllers | Controller |
| ID Counters | Counter |
| ID DailyProgram | Daily Program |
| ID EventHandlingProgram | Event Handling Program |
| ID GlobalReflex | Global Reflex |
| ID InputGroup | Input Group |
| ID OutputGroup | Output Group |
| ID Holiday | Holiday |
| ID Log | Active Alarms |
| ID Network | Network |
| ID Process | Process |
| ID_WeeklyProgram | Weekly Program |
| ID ParkingDefinition | Parking Lot |
| ID Company | Company / Site |
| ID ZoneID | Parking User Group |
| ID User | Users |
| ID AuthorisationsLevels | Authorisation Levels |
| ID Icons | Icons / Symbols |
| ID Maps | Maps |
| ID Positions | Position |
| ID_LiftAuthorisationGroups | Lift Authorisation group (only when Lift per |
| | Reader) |
| ID LiftProgram | Lift program |
| ID TimeAttendance | Roll Call |
| ID CrisisLevel | Send a Crisis Level |
| ID ExecuteProcess | Execute Process |
| ID GuardDefinition | Guard Definition |
| ID ViewPhoto | View Photo |
| ID PatrolTour | Patrol Tour |
| ID CheckPoint | Checkpoints |
| ID PatrolStatus | Patrol status |
| ID DisplayJournalSmall | Report wizard |
| ID CreateagroupofBadges | Group of Badge |
| ID ImportProfile | Import profiles |
| ID CustomizedFields | Customized fields |
| ID Camera | Camera |
| ID Matrix | Matrix |
| ID LocationStatus | Location Status |

Appendix B: Database Fields

The database fields

| db_ControllerID | Select ID, Name from Controller |
|--------------------|---|
| db_ReaderID | Select ID, Name from Reader |
| db_InputID | Select ID, Name from [Input] |
| db_OuputID | Select ID, Name from [Output] |
| db_NetworkID | Select ID, Name from Network |
| | |
| db_SocID | Select ID, Name from SOC |
| db_ReaderSocID | |
| db_CardHolderSocID | |
| | |
| db_TableLOG_ID | Select ID from LOG |
| | |
| db_CardHolderID | Select ID, Last_Name & ' ' & First_Name as Name |
| | from CRDHLD |
| db_CameraID | Select ID, Name from Camera |
| db_InputGroupID | Select ID, Name from IGrp |
| db_ActionID | Select ID, Name from [Action] |
| db ProcessID | Select ID, Name from Process |

We plan to improve the API to allow access to Database tables and records.

Appendix C: Sample application print screen





