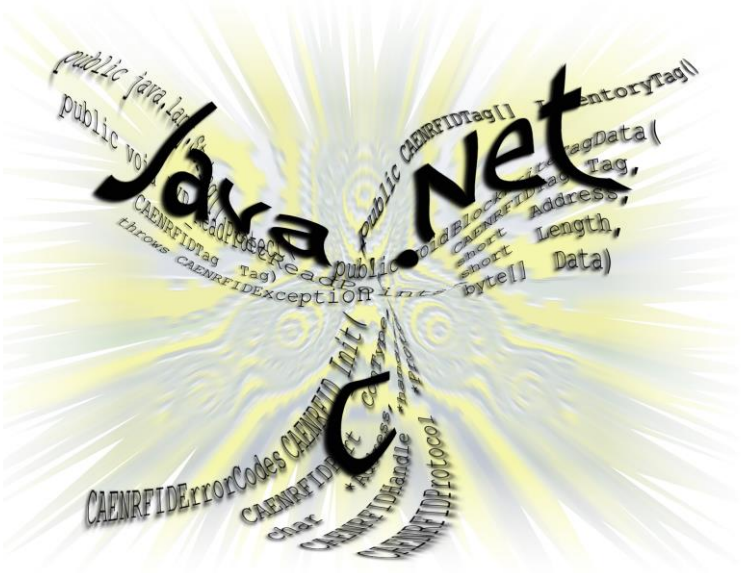
TECHNICAL INFORMATION MANUAL

Revision 12 – 14 November 2016

CAEN RFID API

Reference Manual



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Scope of Manual

This manual documents the API used by C, Java, Android and .Net programmers who want to write applications for controlling and using CAEN RFID readers.

Change Document Record

Date	Revision	Changes	Pages
29 Jun 2010	01	Initial release	-
14 Jan 2011	02	Corrected *GetTimeStamp Method*'s return value	97
		Added Federal Communications Commission (FCC) Notice	4
22 Mar 2011	03	Added R1260U Reader in the declaration of Federal Communications Commission (FCC) note	4
06 Sep 2011	04	Added XPC field information	13, 14, 31, 34, 74, 77, 74, 95, 98, 101
08 Aug 2012	05	Added R4300P reader in the Federal Communications Commission (FCC) Notice (Preliminary)	4
29 Nov 2012	06	Added bit 5 (event trigger), bit 7 (match tag) and bit 8 (PC) in the tables *Flag value meaning*	31, 34, 101
		Changed bit 1 and bit 2 description in the table *Flag value meaning* of the *InventoryTag Method* and *EventInventoryTag Method*	31, 34, 101
		Added the following members in the *CAENRFIDBitRate Enumeration: DSB_ASK_M4_TX40RX256, PR_ASK_FM0_TX40RX640, PR_ASK_M4_TX40RX256, PR_ASK_M4_TX40RX320, PR_ASK_M4_TX80RX320*	106
		Added *NXP_ChangeConfig* Method in the *LogicalSource Class*	10, 45
		Added *SL900A_EndLog Method, SL900A_GetLogState* Method, SL900A_GetMeasurementSetup Method, SL900A_GetSensorValue Method *SL900A_Initialize Method, SL900A_SetLogMode Method, SL900A_StartLog Method* in the *LogicalSource Class*	10, 60÷67
		Added methods representation in Android language	15÷121
		Removed the following methods: *Hitachi_BlockLock, Hitachi_BlockReadLock, Hitachi_GetSystemInformation, Hitachi_ReadLock, Hitachi_SetAttenuate, Hitachi_WriteMultipleWords*. See § *CAENRFID OBSOLETE METHODS* chapter	115
		Removed the following methods: *Fujitsu_BurstErase, Fujitsu_BurstWrite, Fujitsu_ChgBlockGroupPassword, Fujitsu_ChgBlockLock, Fujitsu_ChgWordLock, Fujitsu_ReadBlockLock, Fujitsu_Refresh*. See § *CAENRFID OBSOLETE METHODS* chapter	115
		Added *CAENRFIDLogicalSource.InventoryFlag Enumeration*	14, 108
		Added overloaded *Connect Method.*	78
		Added *IDSTagData Class*	10, 14, 15÷16
		Added *PC* field information	10, 31, 34, 74, 96, 101
19 Apr 2013	07	Added PC field in C representation of CAENRFIDTag Class	95
		Added *A528B Reader* in the declaration of Federal Communications Commission (FCC) note	4
11 Sep 2013	08	Added *CAENRFIDRFRegulations Enumeration*	14, 111
		Added *CAENRFIDTag.MemBanks Enumeration*	14, 114
		Added information about *SDK Web Page*	2
03 Jul 2014	09	Added *R1270 Quark Up and R1170I qIDmini Reader* in the declaration	4

		of Federal Communications Commission (FCC) note	
16 Jun 2015	10	Added *R1250I Tile* in the declaration of Federal Communications Commission (FCC) note	4
27 Jul 2015	11	Added *R4301P Ion* in the declaration of Federal Communications Commission (FCC) note	4
		Added overloaded *MatchReadPointImpedance* Method in the CAEN RFID Reader Class	87
		Added PrintScreen Method in the CAEN RFID Reader Class	88
		Added Peru and South Africa radiofrequency regulation in the *CAENRFIDRFRegulations Enumeration*	111
		Modified Address parameter description in *Connect Method* and *Init Function*	78
14 Nov 2016	12	Added CHILE radiofrequency regulation in the *CAENRFIDRFRegulations Enumeration*	111
		Added *SL900A_GetMeasurementSetup Method* and *SL900A_SetLogLimits Method* in the *CAENRFIDLogicalSource Class*	62, 65
		Added *Connect Method* in the CAENRFIDReader Class	78
		Added *DSB_ASK_M8_TX40RX256* member in the *CAENRFIDBitRate Enumeration*	106
		Added *GetBatteryLevel Method* in the *CAENRFIDReader Class*	80
		Modified *GetBufferedData Method* description.	23
		Added overloaded *GetBufferedData Method* in the CAENRFIDLogicalSource Class	23
		Added new methods in the CAENRFIDLogicalSource Class: *Authenticate_EPC_C1G2* Method*, ClearBuffer Method, GetBufferSize Method, GetInventoryCounts Method, GetInventoryDwellTime Method, GetInventoryQuietTime Method, SetInventoryCounts Method, SetInventoryDwellTime* Method*, SetInventoryQuietTime Method, Untraceable_EPC_C1G2* Method	18, 20, 24, 25, 56, 57, 68
		Added *ForceAbort* Method in Event Handling chapter	102
		Removed the GetLBTMode method. See § *CAENRFID OBSOLETE METHODS* chapter	115

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Federal Communications Commission (FCC) Notice [1]

This device was tested and found to comply with the limits set forth in Part 15 of the FCC Rules. Operation is subject to the following conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received including interference that may cause undesired operation. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment.

This device generates, uses, and can radiate radio frequency energy. If not installed and used in accordance with the instruction manual, the product may cause harmful interference to radio communications. Operation of this product in a residential area is likely to cause harmful interference, in which case, the user is required to correct the interference at their own expense. The authority to operate this product is conditioned by the requirements that no modifications be made to the equipment unless the changes or modifications are expressly approved by CAEN RFID.

[1] This declaration only applies to FCC readers A828US, A829US, A528, R1230CB, R1260I, R1260U, R4300P, A528B, R1240I, R1270, R1170I (Mod. WR1170IUAPLP and WR1170IUHIDP), R1250I (Mod. WR1250IUXAAA, WR1250IUXAFL, WR1250IUXBAA, WR1250IUXBFL), R4301P (Mod. WR4301PXAAAA, WR4301PXGPRS and WR4301PXWIFI).

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1 INTRODUCTION

Overview on SDK

CAEN RFID provides a Software Development Kit (SDK) aimed to facilitate the software developers in interfacing with its readers. The SDK provides Application Program Interfaces (API) for three programming languages: C, Java and J#/C#/Visual Basic .NET.

The functionalities and the behaviors exported by the libraries are exactly the same for all the languages but, due to the syntax differences between them, there are differences in the implementation of functions and methods. Java and .NET implementation are very similar because they are both Object Oriented environments while the C implementation differs more.

The Object Oriented implementation (Java and .NET) defines a set of classes that models the devices characteristics, the main one are the CAENRFIDReader class and the CAENRFIDLogicalSource class. The first one implements the main methods used to configure general readers' parameters like the output power, the link interface and so on, the latter provides the methods to be used in order to communicate with the RFID tags (tags detection, read and write commands and so on).

The C implementation, on the contrary, implements a set of data types (defined into the CAENRFIDTypes.h header file) and a list of functions (defined into the CAENRFIDLib.h header file) in order to obtain the same functionalities as the Java and .NET classes.

In the Object Oriented languages (C# and Java) there are some methods that return objects, these methods have no correspondent in C language.

Further details on .NET and Java APIs can be found into the CAEN RFID API User Manual.

The following paragraphs will denote the differences in functionality for the topics listed below:

- Functions and methods names
- Error Handling
- Managing connections with the readers
- Return data mechanism
- Passing parameters to methods and functions

Functions and methods names

The functions and methods with the same functionalities have the same name in all languages. The only exceptions are due to the absence of the overloading feature in the C language: methods that are overloaded in Java and .NET are translated in a corresponding set of different functions in C.

Note: some methods and functions have changed name in the last revision of the API but older names are still functional to preserve backward compatibility (see § *CAENRFID OBSOLETE METHODS* page 115).

Error Handling

Java and .NET language API handle error conditions using the exceptions mechanism: when a method encounters an error, an exception is thrown to the calling code. The API defines a proper class for the exception generated by its methods (CAENRFIDException) the origin of the error is represented inside the CAENRFIDException object as a string.

C language does not provide the exception mechanism so the errors are handled using the return value of the functions. Each C function returns a numeric error code that can be interpreted using the CAENRFIDErrorCodes enumeration. Since no exceptions are generated, the execution flow of the program is not interrupted by the errors so it is always suggested to check for error conditions in the code before to call other functions.

Managing connections with the readers

Java and .NET languages allow to initiate and terminate the communication with the reader by means of two specific methods of the CAENRFIDReader objects. So, after an object of the class CAENRFIDReader is instantiated, the Connect method permits to start the communication with a reader while the Disconnect method permits to terminate the communication.

C language is not object oriented and the handling of the communication state is implemented using two functions. CAENRFID_Init is used to start the communication with a reader and to initialize all the library's internal data structures needed in order to maintain the communication active. The function returns a "handle" (very similar to the handles used in managing files) that have to be used in any subsequent function calls relative to that reader. At the end of the operation, a call to the CAENRFID_End function permits to close the communication link and to free the internal data structures.

Return data mechanism

As seen in the Error Handling paragraph, all the C functions return a numeric error codes. Due to that reason, functions that need to return data to the caller use output parameters. Output parameters for the C functions are highlighted in this reference manual by the underlined name in the formal parameter list.

Java and .NET languages use exception for the error handling so, typically, the data is returned to the caller using the return value of the methods.

Passing parameters to methods and functions

There are differences in the parameters' lists between Java/.NET methods and C functions. Many of those differences are due to the implicit reference of the methods to their objects. This characteristic of object oriented languages is emulated in C functions using an additional explicit parameter. Methods belonging to CAENRFIDLogicalSource objects, for example, are emulated in C functions that accept SourceName parameters.

Other differences are due to the better handling of complex data types in Java and .NET languages. Arrays, for example, have implicit size in Java/.NET that permit to pass a single parameter to methods requiring this data type. In C functions, passing an array as a parameter, need to specify both the memory address of the array and its size explicitly.

2 CAEN RFID API STRUCTURE

CAENRFID Classes

In .NET (henceforth C#), Java and Android languages, CAENRFID methods are divided into the following classes:

Class	Description
CAENRFIDEventArgs2	This class defines the CAENRFID event arguments.
CAENRFIDException	This class defines the CAEN RFID exceptions.
IDSTagData	This class represents data returned by tags based on IDS Chip SL900A.
CAENRFIDLogicalSource	The CAENRFIDLogicalSource class is used to create logical source objects. Logical source objects represent an aggregation of read points (antennas). Operations on the tags are performed using the logical source methods. In addition to the methods used to operate on the tags, the logical source class exports methods to configure the anticollision algorithm and to configure the composition of the logical source itself.
CAENRFIDNotify	This class defines the structure of a notification message.
CAENRFIDReader	The CAENRFIDReader class is used to create reader objects which permit to access to CAEN RFID readers' configuration and control commands.
CAENRFIDReaderInfo	The CAENRFIDReaderInfo class is used to create reader info objects. Reader info objects represent the information about the reader device (model and serial number).
CAENRFIDTag	This class is used to define objects representing the tags. These objects are used as return value for the inventory methods and as arguments for many tag access methods.

Tab. 2.1: CAENRFID classes

Each class contains the following methods:

Methods	Description
CAENRFIDEventArgs Class	
getData	Returns the event object value.
CAENRFIDException Class	
getError	Gets the error string associated to the exception.
CAENRFID IDSTagData Class	
getADError	Gets the error status of the A/D.
getRangeLimit	Gets the range limit parameter.
getSensorValue	Gets the value obtained by the sensor.
CAENRFIDLogicalSource Class	
AddReadPoint	Adds a read point to the logical source.
Authenticate_EPC_C1G2	This method allows an interrogator to perform tag, interrogator or mutual authentication. The generic nature of the authenticate command allows it to support a variety of cryptographic suites. The number of authenticate commands required to implement an authentication depends on the authentication type and on the chosen cryptographic suite.
BlockWriteTagData	Overloaded. This method can be used to write a portion of the user memory in an ISO18000-6B tag using blocks of four bytes for each command.
ClearBuffer	This method deletes all items stored in the internal buffer.
CustomCommand_EPC_C1G2	Overloaded. This method can be used to issue a generic Custom command as defined by the EPC Class1 Gen2 protocol specification. The parameters are used to specify the type of the custom command and its parameters.
EventInventoryTag	A call to this method will start a sequence of read cycle on each read point linked to the logical source. The readings will be notified to the controller via event

[2] For the description of this class, see § *EVENT HANDLING* page 95.

Methods	Description
	generation.
GetBufferedData	Overloaded. The function returns all the Tags stored in reader's memory using all the ReadPoints belonging to the Source.
GetBufferSize	This method gets the current number of records (tags) stored in the reader's internal buffer.
GetDESB_ISO180006B	This method can be used to retrieve the Data Exchange Status Bit setting (see ISO18000-6B protocol specification) used by the anticollision algorithm when called on this logical source.
GetInventoryCounts	This method can be used to get the current setting for the number of inventory counts performed by the logical source after pressing the TRIGGER during the inventory algorithm execution.
GetInventoryDwellTime	This method can be used to get the inventory execution time (msec) used by the logical source during the inventory algorithm execution.
GetInventoryQuietTime	This method can be used to get the inventory quiet time (msec) used by the logical source during the inventory algorithm execution.
GetName	Gets a string representing the name of the logical source.
GetQ_EPC_C1G2	This method can be used to retrieve the current setting for the initial Q value (see EPC Class1 Gen2 protocol specification) used by the anticollision algorithm when called on this logical source.
GetReadCycle	Gets the current setting for the number of read cycles performed by the logical source during the inventory algorithm execution.
GetSelected_EPC_C1G2	This method can be used to retrieve the Selected flag (see EPC Class1 Gen2 protocol specification) used by the anticollision algorithm when called on this logical source.
GetSession_EPC_C1G2	This method can be used to retrieve the Session setting (see EPC Class1 Gen2 protocol specification) used by the anticollision algorithm when called on this logical source.
GetTarget_EPC_C1G2	This method can be used to retrieve the Target setting (see EPC Class1 Gen2 protocol specification) used by the anticollision algorithm when called on this logical source.
GroupSelUnsel	This method can be used to send a Group Select/Unselect command to the tag (see ISO18000-6B protocol specification).
InventoryTag	Overloaded. A call to this method will execute a read cycle on each read point linked to the logical source. Depending on the air protocol setting it will execute the appropriate anticollision algorithm.
isReadPointPresent	Checks if a read point is present in the logical source.
KillTag_EPC_C1G1	This method can be used to kill an EPC Class 1 Gen 1 tag.
KillTag_EPC_C1G2	Overloaded. This method can be used to kill an EPC of an EPC Class 1 Gen 2 tag.
LockBlockPermaLock_EPC_C1G2	This method implements the BLockPermaLock with ReadLock=1 as specified in EPCC1G2 rev. 1.2.0 protocol.
LockTag_EPC_C1G2	Overloaded. This method can be used to lock a memory bank of an EPC Class 1 Gen 2 tag.
LockTag_ISO180006B	This method can be used to lock a byte in the memory of a ISO18000-6B tag.
NXP_ChangeEAS	This method can be used to issue a ChangeEAS custom command as defined by the NXP G2XM and G2XL datasheet after having put it in Secured state using the Access command.
NXP_ChangeConfig	Overloaded. This method can be used to issue a NXP_ChangeConfig custom command as defined in the NXP UCODE G2iM and G2iM+ datasheet.
NXP_EAS_Alarm	This method can be used to issue an EAS_Alarm custom command as defined by the NXP G2XM and G2XL datasheet.
NXP_ReadProtect	Overloaded. This method can be used to issue a ReadProtect custom command as defined by the NXP G2XM and G2XL datasheet.
NXP_ResetReadProtect	This method can be used to issue a ResetReadProtect custom command as defined by the NXP G2XM and G2XL datasheet.
ProgramID_EPC_C1G1	This method can be used to write the EPC of an EPC Class 1 Gen 1 tag.
ProgramID_EPC_C1G2	Overloaded. This method can be used to write the EPC of an EPC Class 1 Gen 2 tag.
ProgramID_EPC119	This method can be used to write the UID of an EPC 1.19 tag.
Query_EPC_C1G2	This method make the reader generate an EPC Class1 Gen2 Query command.
QueryAck_EPC_C1G2	This method make the reader generate a sequence of EPC Class1 Gen2 Query and Ack commands. It can be used to read a single tag under the field. If there are more than one tag under the field the method fails.

Methods	Description
ReadBLockPermalock_EPC_C1G2	This method implements the BLockPermaLock with ReadLock=0 as specified in EPCC1G2 rev. 1.2.0 protocol.
ReadTagData	This method can be used to read a portion of the user memory in a ISO18000-6B tag.
ReadTagData_EPC_C1G2	Overloaded. This method can be used to read a portion of memory in a ISO18000-6C (EPC Class1 Gen2) tag.
RemoveReadPoint	Removes a read point from the logical source.
ResetSession_EPC_C1G2	This method can be used to reset the Session status for EPC Class1 Gen2 tags. After the execution of this method all the tags in the field of the antennas belonging to this logical source are back in the default Session.
SetDESB_ISO180006B	This method can be used to set the Data Exchange Status Bit (see ISO18000-6B protocol specification) used by the anticollision algorithm when called on this logical source.
SetInventoryCounts	This method can be used to set the current setting for the number of inventory counts performed by the logical source after pressing the TRIGGER during the inventory algorithm execution.
SetInventoryDwellTime	This method can be used to set the inventory execution time (msec) used by the logical source during the inventory algorithm execution.
SetInventoryQuietTime	This method can be used to set the inventory quiet time (msec) used by the logical source during the inventory algorithm execution.
SetQ_EPC_C1G2	This method can be used to set the initial Q value (see EPC Class1 Gen2 protocol specification) used by the anticollision algorithm when called on this logical source.
SetReadCycle	Sets the number of read cycles to be performed by the logical source during the inventory algorithm execution.
SetSelected_EPC_C1G2	This method can be used to set the Session (see EPC Class1 Gen2 protocol specification) used by the anticollision algorithm when called on this logical source.
SetSession_EPC_C1G2	This method can be used to set the Session (see EPC Class1 Gen2 protocol specification) used by the anticollision algorithm when called on this logical source.
SetTarget_EPC_C1G2	This method can be used to set the Target setting (see EPC Class1 Gen2 protocol specification) used by the anticollision algorithm when called on this logical source.
SL900A_EndLog	This method can be used to issue an IDS SL900A EndLog custom command as defined in the IDS SL900A datasheet.
SL900A_GetLogState	This method can be used to issue an IDS SL900A GetLogState custom command as defined in the IDS SL900A datasheet.
SL900A_GetMeasurementSetup	This method gets the current system setup as defined in the IDS SL900A datasheet.
SL900A_GetSensorValue	This method can be used to issue an IDS SL900A GetSensorValue custom command as defined in the IDS SL900A datasheet.
SL900A_Initialize	This method can be used to issue an IDS SL900A Initialize custom command as defined in the IDS SL900A datasheet.
SL900A_SetLogLimits	This method sets 4 limits which can be used for logging measurement data as defined in the IDS SL900A datasheet.
SL900A_SetLogMode	This method can be used to issue an IDS SL900A SetLogMode custom command as defined in the IDS SL900A datasheet.
SL900A_StartLog	This method can be used to issue an IDS_SL900A StartLog custom command as defined in the IDS SL900A datasheet.
Untraceable_EPC_C1G2	This method allows an interrogator with an asserted untraceable privilege to instruct a Tag to (a) alter the L and U bits in EPC memory,(b) hide memory from interrogators with a deasserted Untraceable privilege and/or (c) reduce its operating range for all interrogators.
WriteTagData	This method can be used to write a portion of the user memory in a ISO18000-6B tag.
WriteTagData_EPC_C1G2	Overloaded. This method can be used to write a portion of memory in a ISO18000-6C (EPC Class1 Gen2) tag.
CAENRFIDNotify Class	
getDate	Returns a timestamp representing the time at which the event was generated.
getPC	Returns the tag's PC code
getReadPoint	Returns the read point that has detected the tag.

Methods	Description
getRSSI	Returns the RSSI value measured for the tag.
getStatus	Returns the event type associated to the tag.
getTagID	Returns the tag's ID (the EPC code in Gen2 tags).
getTagLength	Returns the tag's ID length.
getTagSource	Returns the name of the logical source that has detected the tag.
getTagType	Returns the air protocol of the tag.
getTID	Returns the TID field value in a EPC Class 1 Gen 2 Tag
getXPC	Returns the tag's XPC words.
CAENRFIDReader Class	
Connect	Overloaded. Starts the communication with the reader. It must be called before any other call to method of the CAENRFIDReader object.
Disconnect	Closes the connection with the CAEN RFID Reader releasing all the allocated resources.
GetBatteryLevel	This method gets the current battery charge.
GetBitRate	Gets the current setting of the RF bit rate.
GetFirmwareRelease	Permits to read the release of the firmware loaded into the device.
GetIO	Gets the current digital Input and Output lines status.
GetIODirection	Gets the current I/O direction setting as a bitmask. Each bit represents a I/O line, a value of 0 means that the line is configured as an input, 1 as an output. This setting has a meaning only for those readers with configurable I/O lines.
GetFHSSMode	This method gets the current Frequency Hopping status.
GetPower	Gets the current setting of the RF power expressed in mW.
GetProtocol	Gets the current air protocol of the Reader.
GetReaderInfo	Permits to read the reader information loaded into the device.
GetReadPoints	Gets the names of the read points (antennas) available in the reader.
GetReadPointStatus	Gets the CAENRFIDReadPointStatus object representing the status of a read point (antenna).
GetRFChannel	Gets the index of the RF channel currently in use. The index value meaning change for different country regulations.
GetRFRegulation	Gets the current RF regulation setting value.
GetSource	Gets a CAENRFIDLogicalSource object given its name
GetSourceNames	Gets the names of the logical sources available in the reader.
GetSources	Gets the CAENRFIDLogicalSource objects available on the reader.
InventoryAbort	Stops the EventInventoryTag execution.
MatchReadPointImpedance	Overloaded. This method matches the antenna impedance passed in ReadPoint.
PrintScreen	Print ASCII text on the reader's screen (only for readers with display, e.g. R1170I qIDmini).
RFControl Method	Permits to control the RF CW (Carrier Wave) signal generation.
SetBitRate	Sets the RF bit rate to use.
SetDateTime	Sets the Date/Time of the reader.
SetIO	Sets the Output lines value.
SetIODIRECTION	Sets the current I/O direction setting as a bitmask. Each bit represents a I/O line, a value of 0 means that the line is configured as an input, 1 as an output. This setting has a meaning only for those readers with configurable I/O lines.
SetNetwork	Permits to configure the network settings of the reader. In order to apply the changes the reader must be restarted.
SetPower	Sets the conducted RF power of the Reader.
SetProtocol	Set the air protocol of the reader.
SetRFChannel	Sets the RF channel to use. This method fixes the RF channel only when the listen before talk or the frequency hopping feature is disabled.
SetRS232	Permits to change the serial port settings. Valid settings values depend on the reader model.
CAENRFIDReaderInfo Class	
GetModel	Gets the reader's model.
GetSerialNumber	Gets the reader's serial number.
CAENRFIDTag Class	
GetId	Returns the tag's ID (the EPC code in Gen2 tags).
GetLength	Returns the tag's ID length.
GetPC	Returns the tag's PC code
GetReadPoint	Returns the read point that has detected the tag.

Methods	Description
GetRSSI	Returns the RSSI value measured for the tag.
GetSource	Returns the name of the logical source that has detected the tag.
GetTID	Returns the tag's TID (valid only for EPC Class 1 Gen 2 tags).
GetTimeStamp	Gets the Tag's TimeStamp.
GetType	Returns the air protocol of the tag.
GetXPC	Returns the tag's XPC words.

Tab. 2.2: CAENRFID methods

CAENRFID Enumerations

The following enumerations are present in C# language. They correspond to classes in Java language and to enumerations and data types in C language:

Enumerations	Description
BitRate	Gives a list of the supported radiofrequency profiles.
LogicalSourceConstants	Gives a list of constants used for the configuration of the logical sources. Detailed explanation of the settings can be found in the EPC Class 1 Gen 2 and ISO 18000-6B specification documents.
CAENRFIDLogicalSource.InventoryFlag	Gives a list of constants used for the configuration of the inventory function.
Port	Gives a list of the communication ports supported by the CAEN RFID readers.
Protocol	Gives a list of the air protocol supported by the CAEN RFID readers.
ReadPointStatus	Gives a list of the possible ReadPoint status values.
CAENRFIDRFRegulations	The CAENRFIDRFRegulations gives a list of country radiofrequency regulations.
RS232Constants	Gives a list of settings for the serial port configuration.
SelUnselOptions	Gives a list of operations supported by the Group Select/Unselect command (valid only for the ISO18000-6B air protocol).
CAENRFIDTag.MemBanks	The CAENRFIDTag.MemBanks enumerates the bank name of a generic ISO18000-6C tag.

Tab. 2.3: CAENRFID Enumerations

3 CLASSES DESCRIPTION

CAENRFIDException Class

The CAENRFIDException class defines the CAEN RFID exceptions.

getError Method

Description:
This method gets the error string associated to the exception.

Return value:
The string representing the error.

Syntax:
C# representation:

```
public string                       getError()
```

Java and Android representation:

```
public java.lang.String             getError()
```

Remarks:
This function does not exist in C language, see § *Error Handling* page 8 for more information.

IDSTagData Class

This class represents data returned by tags based on IDS Chip SL900A.

In Java, Android and C# languages this class is composed by methods while in C language is represented by a struct (for more information see § *Overview on SDK* page 8):

C representation:

```
typedef struct {
                    BOOL                ADError i;
                    unsigned int        RangeLimit_i;
                    unsigned int        SensorValue_i;
                    } CAENRFID_IDSTagData;
```

getADError Method

Description:
This method returns if an A/D error is raised.

Return value:
True if an A/D error occurs, false otherwise.

Syntax:
C# representation:

```
public bool ADError {
                    get;
                    }
```

Java and Android representation:

```
public boolean getADError()
```

getRangeLimit Method

Description:
This method returns the range limit set on sensor.

Return value:
A bitmask representing the range limit.

Syntax:
C# representation:

```
public uint RangeLimit      {
                            get;
                            }
```

Java and Android representation:

```
public int getRangeLimit()
```

getSensorValue Method

Description:
This method returns the sensor value.

Return value:
A bitmask representing the value obtained by the sensor.

Syntax:
C# representation:

```
public uint SensorValue     {
                            get;
                            }
```

Java and Android representation:

```
public int getSensorValue()
```

CAENRFIDLogicalSource Class

The CAENRFIDLogicalSource class is used to create logical source objects. Logical source objects represent an aggregation of read points (antennas). Operations on the tags are performed using methods belonging to the logical source. In addition to the methods used to operate on the tags, the logical source class exports methods to configure the anticollision algorithm and to configure the composition of the logical source itself.

AddReadPoint Method

Description:
This method adds a read point to the logical source.

Parameters:

Name	Description
ReadPoint	A string representing the name of the read point (antenna).

Syntax:
C# representation:

```
public void  AddReadPoint(
                            string                  ReadPoint)
```

Java and Android representation:

```
public void  AddReadPoint(
                            java.lang.String        ReadPoint)
                            throws CAENRFIDException
```

C representation:

```
CAENRFIDErrorCodes  CAENRFID_AddReadPoint(
                            CAENRFIDHandle          handle,
                            char                    *SourceName,
                            char                    *ReadPoint);
```

Authenticate_EPC_C1G2 Method

Description:
This method allows an interrogator to perform tag, interrogator or mutual authentication. The generic nature of the authenticate command allows it to support a variety of cryptographic suites. The number of authenticate commands required to implement an authentication depends on the authentication type and on the chosen cryptographic suite.

Parameters:

Name	Description
Tag	The CAENRFIDTag representing the tag to be authenticated.
senRep	Specifies whether a tag backscatters its response or first stores the response in its ResponseBuffer and then returns the data from there.
incRepLen	Specifies whether a tag omits or includes the response length in its reply
csi	Selects the cryptographic suite that tag and interrogator use for the authentication.
challenge	It includes parameters and data for authentication.
repLen	Specify the byte's length of the tag's response.
password	The access password

Return value:
A byte array containing the tag's response to the authenticate command.

Syntax:
C# representation:

```
public void                 Authenticate_EPC_C1G2(
                                CAENRFIDTag         Tag,
                                bool                senRep,
                                bool                incRepLen,
                                char                csi,
                                byte[]              challenge,
                                short               repLen,
                                uint                password)
```

Java and Android representation:

```
public void                 Authenticate_EPC_C1G2(
                                CAENRFIDTag         Tag,
                                boolean             senRep,
                                boolean             incRepLen,
                                char                csi,
                                byte[]              challenge,
                                short               repLen,
                                int                 password)
                            throws CAENRFIDException
```

C representation:

```
CAENRFIDErrorCodes          CAENRFID Authenticate EPC C1G2(
                                CAENRFIDHandle      handle,
                                char*               SourceName,
                                CAENRFIDTag         *Tag,
                                BOOL                senRep,
                                BOOL                incRepLen,
                                char                csi,
                                byte                *challenge,
                                short               challengeLen,
                                short               repLen,
                                int                 password,
                                byte                **authResponse);
```

BlockWriteTagData Method

BlockWriteTagData Method (CAENRFIDTag, Int16, Int16, Byte[])

Description:

This method can be used to write a portion of the user memory in a ISO18000-6B tag using blocks of four bytes for each command.

Parameters:

Name	Description
Tag	The CAENRFIDTag representing the tag to be written.
Address	The address where to start writing the data.
Length	The number of byte to be written.
Data	The data to be written into the tag's user memory.

Syntax:

C# representation:

```
public void  BlockWriteTagData(
                    CAENRFIDTag           Tag,
                    short                 Address,
                    short                 Length,
                    byte[]                Data)
```

Java and Android representation:

```
public void  BlockWriteTagData(
                    CAENRFIDTag           Tag,
                    short                 Address,
                    short                 Length,
                    byte[]                Data)
                    throws CAENRFIDException
```

C representation:

```
CAENRFIDErrorCodes  CAENRFID_BlockWriteTagData(
                    CAENRFIDHandle        handle,
                    CAENRFIDTag           *Tag,
                    int                   Address,
                    int                   Length,
                    void                  *Data);
```

BlockWriteTagData Method (CAENRFIDTag, Int16, Int16, Int16, Byte[])

Description:

This method can be used to write a portion of the user memory in a ISO18000-6B tag using blocks of four bytes for each command.

Parameters:

Name	Description
Tag	The CAENRFIDTag representing the tag to be written.
Address	The address where to start writing the data.
Mask	A bitmask that permit to select which of the four bytes have to be written (i.e. mask 0x05 write the bytes on position Address + 1 and Address + 3).
Length	The number of byte to be written.
Data	The data to be written into the tag's user memory.

Syntax:

C# representation:

```
public void  BlockWriteTagData(
                            CAENRFIDTag           Tag,
                            short                 Address,
                            short                 Mask,
                            short                 Length,
                            byte[]                Data)
```

Java and Android representation:

```
public void  BlockWriteTagData(
                            CAENRFIDTag           Tag,
                            short                 Address,
                            short                 Mask,
                            short                 Length,
                            byte[]                Data)
                            throws CAENRFIDException
```

C representation:

```
CAENRFIDErrorCodes  CAENRFID FilterBlockWriteTagData(
                            CAENRFIDHandle        handle,
                            CAENRFIDTag           *ID,
                            int                   Address,
                            short                 Mask,
                            int                   Length,
                            void                  *Data);
```

ClearBuffer Method

Description:

This method deletes all items stored in the internal buffer.

Syntax:

C# representation:

```
public int         ClearBuffer
```

Java and Android representation:

```
public int         ClearBuffer()
                   throws CAENRFIDException
```

C representation:

```
CAENRFIDErrorCodes  CAENRFID_ClearBuffer(
                            CAENRFIDHandle      handle);
```

CustomCommand_EPC_C1G2 Method

CustomCommand_EPC_C1G2 Method (CAENRFIDTag, Byte, Int16, Byte[], Int16)

Description:

This method can be used to issue a generic Custom command as defined by the EPC Class1 Gen2 protocol specification. The parameters are used to specify the type of the custom command and its parameters.

Parameters:

Name	Description
Tag	The CAENRFIDTag object representing the tag to which send the Custom command.
SubCmd	The SubCommand field of the Custom command.
TxLen	The length of the data to be sent to the tag.
Data	The data to be sent to the tag.
RxLen	The length of the data to be received by the tag.

Return value:

An array of bytes representing the reply from the tag as specified by the custom command.

Syntax:

C# representation:

```
public byte[]       CustomCommand_EPC_C1G2(
                            CAENRFIDTag           Tag,
                            byte                  SubCmd,
                            short                 TxLen,
                            byte[]                Data,
                            short                 RxLen)
```

Java and Android representation:

```
public byte[]       CustomCommand_EPC_C1G2(
                            CAENRFIDTag           Tag,
                            byte                  SubCmd,
                            short                 TxLen,
                            byte[]                Data,
                            short                 RxLen)
                            throws CAENRFIDException
```

C representation:

```
CAENRFIDErrorCodes  CAENRFID_CustomCommand_EPC_C1G2(
                            CAENRFIDHandle        handle,
                            CAENRFIDTag           *Tag,
                            unsigned char         SubCmd,
                            int                   TxLen,
                            void                  *Data,
                            int                   RxLen,
                            void                  *TRData);
```

CustomCommand_EPC_C1G2 Method (CAENRFIDTag, Byte, Int16, Byte[], Int16, Int32)

Description:

This method can be used to issue a generic Custom command as defined by the EPC Class1 Gen2 protocol specification. The parameters are used to specify the type of the custom command and its parameters. The Custom command is executed after an Access command to switch the tag in the Secured state using the provided password.

Parameters:

Name	Description
Tag	The CAENRFIDTag object representing the tag to select.
SubCmd	The SubCommand field of the Custom command.
TxLen	The length of the data to be sent to the tag.
Data	The data to be sent to the tag.
RxLen	The length of the data to be received by the tag.
AccessPassword	The access password.

Return value:

An array of bytes representing the reply from the tag as specified by the custom command.

Syntax:

C# representation:

```
public byte[]       CustomCommand EPC C1G2(
                    CAENRFIDTag           Tag,
                    byte                  SubCmd,
                    short                 TxLen,
                    byte[]                Data,
                    short                 RxLen,
                    int                   AccessPassword)
```

JAVArepresentation:

```
public byte[]       CustomCommand EPC C1G2(
                    CAENRFIDTag           Tag,
                    byte                  SubCmd,
                    short                 TxLen,
                    byte[]                Data,
                    short                 RxLen,
                    int                   AccessPassword)
                    throws CAENRFIDException
```

C representation:

```
CAENRFIDErrorCodes  CAENRFID SecureCustomCommand EPC C1G2(
                    CAENRFIDHandle        handle,
                    CAENRFIDTag           *Tag,
                    unsigned char         SubCmd,
                    int                   TxLen,
                    void                  *Data,
                    int                   RxLen,
                    int                   AccessPassword,
                    void                  *TRData);
```

EventInventoryTag Method

For the description of this method, see § *EVENT HANDLING* page 99.

GetBufferedData Method

GetBufferedData ()

Description:
This method returns all the Tags stored in reader's buffer using all the ReadPoints belonging to the Source.

Return value:
An array of CAENRFIDTag objects detected.

Syntax:
C# representation:

```
public CAENRFIDTag[]        GetBufferedData()
```

Java and Android representation:

```
public CAENRFIDTag[]        GetBufferedData()
                            throws CAENRFIDException
```

C representation:

```
CAENRFIDErrorCodes          CAENRFID GetBufferedData(
                            CAENRFIDHandle        handle,
                            char                  *source,
                            CAENRFIDTag           **Receive,
                            int                   *Size);
```

GetBufferedData (Int32, Int32)

Description:
This method returns all the Tags stored in reader's buffer using all the ReadPoints belonging to the Source.
Return value:
An array of CAENRFIDTag objects detected.

Syntax:
C# representation:

```
public CAENRFIDTag[]        GetBufferedData (
                            int                   Address,
                            int                   Length)
```

Java and Android representation:

```
public CAENRFIDTag[]        GetBufferedData (
                            int                   Address,
                            int                   Length)
                            throws CAENRFIDException
```

C representation:

```
CAENRFIDErrorCodes          CAENRFID GetBufferedDataRange(
                            CAENRFIDHandle        handle,
                            char                  *source,
                            int                   address,
                            int                   length
                            CAENRFIDTag           **Receive,
                            int                   *Size);
```

GetBufferSize Method

Description:
This method gets the current number of records (tags) stored in the reader's internal buffer.

Return value:
The current number of items stored in the internal's reader buffer.

Syntax:
C# representation:
```
public int          GetBufferSize()
```

Java and Android representation:
```
public int          GetBufferSize()
                    throws CAENRFIDException
```

C representation:
```
CAENRFIDErrorCodes  CAENRFID_GetBufferSize(
                    CAENRFIDHandle        handle,
                    unsigned int          *Size);
```

GetDESB_ISO180006B Method

Description:
This method can be used to retrieve the Data Exchange Status Bit setting (see ISO18000-6B protocol specification) used by the anticollision algorithm when called on this logical source.

Return value:
The current DESB setting value.

Syntax:
C# representation:
```
public CAENRFIDLogicalSourceConstants     GetDESB_ISO180006B()
```

Java and Android representation:
```
public CAENRFIDLogicalSourceConstants     GetDESB_ISO180006B()
                    throws CAENRFIDException
```

C representation:
```
CAENRFIDErrorCodes                        GetDESB_ISO180006B(
                                          CAENRFIDHandle        handle,
                                          unsigned short        *Status);
```

GetInventoryCounts Method

Description:
This method gets the current setting for the number of inventory counts performed by the logical source after pressing the TRIGGER during the inventory algorithm execution.

Return value:
The number of read cycles.

Syntax:
C# representation:
```
public int              GetInventoryCounts()
```

Java and Android representation:
```
public int              GetInventoryCounts()
                    throws CAENRFIDException
```

C representation:
```
CAENRFIDErrorCodes      CAENRFID_GetInventoryCounts(
                              CAENRFIDHandle      handle,
                              char                *SourceName,
                              int                 *value);
```

GetInventoryDwellTime Method

Description:
This method gets the inventory execution time (msec) used by the logical source during the inventory algorithm execution.

Return value:
The inventory exceution time (msec).

Syntax:
C# representation:
```
public int                GetInventoryDwellTime();
```

Java and Android representation:
```
public int                GetInventoryDwellTime()
                    throws CAENRFIDException
```

C representation:
```
CAENRFIDErrorCodes        CAENRFID_GetInventoryDwellTime(
                          CAENRFIDHandle              handle,
                          char                        *SourceName,
                          int                         *Value);
```

GetInventoryQuietTime Method

Description:
This method can be used to get the inventory quiet time (msec) used by the logical source during the inventory algorithm execution.

Return value:
The quite time expressed in ms.

Syntax:
C# representation:
```
public int                GetInventoryQuietTime();
```

Java and Android representation:
```
public int                GetInventoryQuietTime()
                    throws CAENRFIDException
```

C representation:
```
CAENRFIDErrorCodes        CAENRFID_GetInventoryQuietTime(
                                CAENRFIDHandle      handle,
                                char                *SourceName,
                                int                 *value);
```

GetName Method

Description:
This method gets a string representing the name of the logical source.

Return value:
A string representing the name of the logical source.

Syntax:
C# representation:
```
public string               GetName()
```

Java and Android representation:
```
public java.lang.String     GetName()
```

Remarks:
This function does not exist in C language, see § *Overview on SDK* page 8 for more information.

GetQ_EPC_C1G2 Method

Description:
This method can be used to retrieve the current setting for the initial Q value (see EPC Class1 Gen2 protocol specification) used by the anticollision algorithm when called on this logical source.

Return value:
The current initial Q value setting.

Syntax:
C# representation:
```
public int          GetQ_EPC_C1G2()
```

Java and Android representation:
```
public int          GetQ_EPC_C1G2()
            throws CAENRFIDException
```

C representation:
```
CAENRFIDErrorCodes  CAENRFID_GetQValue_EPC_C1G2(
                        CAENRFIDHandle      handle,
                        char                *SourceName,
                        int                 *Q);
```

GetReadCycle Method

Description:
This method gets the current setting for the number of read cycles performed by the logical source during the inventory algorithm execution.
ReadCycle affects only inventory performed with continuous mode (see § *EventInventoryTag Method* page 22).

Return value:
The number of read cycles.

Syntax:
C# representation:
```
public int          GetReadCycle()
```

Java and Android representation:
```
public int          GetReadCycle()
                    throws CAENRFIDException
```

C representation:
```
CAENRFIDErrorCodes  CAENRFID_GetReadCycle(
                    CAENRFIDHandle      handle,
                    char                *SourceName,
                    int                 *value);
```

GetSelected_EPC_C1G2 Method

Description:
This method can be used to retrieve the Selected flag (see EPC Class1 Gen2 protocol specification) used by the anticollision algorithm when called on this logical source.

Return value:
The current Selected value

Syntax:
C# representation:
```
public CAENRFIDLogicalSourceConstants      GetSelected_EPC_C1G2()
```

Java and Android representation:
```
public CAENRFIDLogicalSourceConstants      GetSelected_EPC_C1G2()
                                           throws CAENRFIDException
```

C representation:
```
CAENRFIDErrorCodes                         CAENRFID GetSelected EPC C1G2(
                                           CAENRFIDHandle               handle,
                                           char                         *SourceName,
                                           CAENRFIDLogicalSourceConstants       *value);
```

GetSession_EPC_C1G2 Method

Description:
This method can be used to retrieve the Session setting (see EPC Class1 Gen2 protocol specification) used by the anticollision algorithm when called on this logical source.

Return value:
The current Session value setting.

Syntax:
C# representation:
```
public CAENRFIDLogicalSourceConstants      GetSession_EPC_C1G2()
```

Java and Android representation:
```
public CAENRFIDLogicalSourceConstants      GetSession EPC C1G2()
                                           throws CAENRFIDException
```

C representation:
```
CAENRFIDErrorCodes   CAENRFID GetSession EPC C1G2(
                     CAENRFIDHandle                        handle,
                     char                                  *SourceName,
                     CAENRFIDLogicalSourceConstants        *value);
```

GetTarget_EPC_C1G2 Method

Description:
This method can be used to retrieve the Target setting (see EPC Class1 Gen2 protocol specification) used by the anticollision algorithm when called on this logical source.

Return value:
The current Target value setting.

Syntax:
C# representation:

```
public CAENRFIDLogicalSourceConstants      GetTarget_EPC_C1G2()
```

Java and Android representation:

```
public CAENRFIDLogicalSourceConstants      GetTarget_EPC_C1G2()
                                           throws CAENRFIDException
```

C representation:

```
CAENRFIDErrorCodes                 CAENRFID GetTarget EPC C1G2(
                                   CAENRFIDHandle                  handle,
                                   char                            *SourceName,
                                   CAENRFIDLogicalSourceConstants  *value);
```

GroupSelUnsel Method

Description:
This method can be used to send a Group Select/Unselect command to the tag (see ISO18000-6B protocol specification).

Parameters:

Name	Description
Code	The operation code as defined by the protocol.
Address	The Address from which start the comparison.
BitMask	The bit mask to use.
Data	The data to be compared.

Return value:
The selected tag.

Syntax:
C# representation:

```
public CAENRFIDTag          GroupSelUnsel(
                            CAENRFIDSelUnselOptions      Code,
                            short                        Address,
                            short                        BitMask,
                            byte[]                       Data)
```

Java and Android representation:

```
public CAENRFIDTag          GroupSelUnsel(
                            CAENRFIDSelUnselOptions      Code,
                            short                        Address,
                            short                        BitMask,
                            byte[]                       Data)
                            throws CAENRFIDException
```

C representation:

```
CAENRFIDErrorCodes          CAENRFID_GroupSelUnsel(
                            CAENRFIDHandle handle,
                            char                         *SourceName,
                            CAENRFID SelUnsel Op         Code,
                            int                          Address,
                            int                          BitMask,
                            void                         *Data,
                            CAENRFIDTag                  *Tag);
```

InventoryTag Method

InventoryTag Method ()

Description:
A call to this method will execute a read cycle on each read point linked to the logical source. Depending on the air protocol setting it will execute the appropriate anticollision algorithm.

Return value:
An array containing the CAENRFIDTag objects representing the tags read from the read points.

Syntax:
C# representation:

```
public CAENRFIDTag[]        InventoryTag()
```

Java and Android representation:

```
public CAENRFIDTag[]        InventoryTag()
                            throws CAENRFIDException
```

C representation:

```
CAENRFIDErrorCodes          CAENRFID_InventoryTag (
                            CAENRFIDHandle        handle,
                            char                  *SourceName,
                            CAENRFIDTag           **Receive,
                            int                   *Size);
```

InventoryTag Method (Byte[], Int16, Int16)

Description:
A call to this method will execute a read cycle on each read point linked to the logical source.

Parameters:

Name	Description
Mask	A byte array representing the bitmask to apply.
MaskLength	A value representing the bit-oriented length of the bitmask.
Position	A value representing the first bit of ID where the match will start.

Return value:
An array containing the CAENRFIDTag objects representing the tags read from the read points.

Syntax:
C# representation:

```
public CAENRFIDTag[]        InventoryTag(
                            byte[]                Mask,
                            short                 MaskLength,
                            short                 Position)
```

Java and Android representation:

```
public CAENRFIDTag[]        InventoryTag(
                            byte[]                Mask,
                            short                 MaskLength,
                            short                 Position)
                            throws CAENRFIDException
```

C representation:

```
CAENRFIDErrorCodes  CAENRFID_FilteredInventoryTag(
                            CAENRFIDHandle        handle,
                            char                  *SourceName,
                            char                  *Mask,
                            unsigned char         MaskLength,
                            unsigned char         Position,
                            CAENRFIDTag           **Receive,
                            int                   *Size);
```

Remarks:
Depending on the air protocol setting it will execute the appropriate anticollision algorithm. This version of the method permits to specify a bitmask for filtering tag's populations as described by the EPC Class1 Gen2 (ISO18000-6C) air protocol. The filtering will be performed on the memory bank specified by bank parameter, starting at the bit indicated by the Position index and for a MaskLength length. The method will return only the tags that match the given Mask. Passing a zero value for MaskLength it performs as the non-filtering InventoryTag method.

InventoryTag Method (Byte[], Int16, Int16, Int16)

Description:

A call to this method will execute a read cycle on each read point linked to the logical source.

Parameters:

Name	Description
Mask	A byte array representing the bitmask to apply.
MaskLength	A value representing the bit-oriented length of the bitmask.
Position	A value representing the first bit of ID where the match will start.
Flag	A bitmask representing the InventoryTag options.

Return value:

An array containing the CAENRFIDTag objects representing the tags read from the read points.

Syntax:

C# representation:

```
public CAENRFIDTag[]        InventoryTag(
                            byte[]                Mask,
                            short                 MaskLength,
                            short                 Position,
                            short                 Flag)
```

Java and Android representation:

```
public CAENRFIDTag[]        InventoryTag(
                            byte[]                Mask,
                            short                 MaskLength,
                            short                 Position,
                            short                 Flag)
                            throws CAENRFIDException
```

C representation:

```
CAENRFIDErrorCodes  CAENRFID_FlagInventoryTag (
                            CAENRFIDHandle        handle,
                            char                  *SourceName,
                            char                  *Mask,
                            unsigned char         MaskLength,
                            unsigned char         Position,
                            unsigned char         Flag,
                            CAENRFIDTag           **Receive,
                            int                   *Size);
```

Remarks:
Depending on the air protocol setting it will execute the appropriate anticollision algorithm. This version of the method permits to specify a bitmask for filtering tag's populations as described by the EPC Class1 Gen2 (ISO18000-6C) air protocol. The filtering will be performed on the memory bank specified by bank parameter, starting at the bit indicated by the Position index and for a MaskLength length. The method will return only the tags that match the given Mask. Passing a zero value for MaskLength it performs as the non-filtering InventoryTag method. The Flags parameter permits to set InventoryTag method's options.In this case bit 1 and 2 of the flag (continuous and framed mode) are ignored.

Flag value meaning	
Bit 0	RSSI: a 1 value indicates that the reader will transmit the RSSI (Return Signal Strength Indicator) in the response.
Bit 1	Framed data: a 1 value indicates that the tag's data will be transmitted by the reader to the PC as soon as the tag is detected, a 0 value means that all the tags detected are buffered in the reader and trasmitted all together at the end of the inventory cycle.
Bit 2	Continuous acquisition: a 1 value indicates that the inventory cycle is repeated by the reader depending on the SetReadCycle setting value, a 0 value means that only one inventory cycle will be performed. If the continuous mode is selected a 0 value in the ReadCycle setting will instruct the reader to repeat the inventory cycle until an InventoryAbort method is invoked, a value X different from 0 means that the inventory cycle will be performed X times by the reader.
Bit 3	Compact data: a 1 value indicates that only the EPC of the tag will be returned by the reader, a 0 value indicates that the complete data will be returned. In case that the compact option is enabled all the other data will be populated by this library with fakes values.
Bit 4	TID reading: a 1 value indicates that also the TID of the tag will be returned by the reader together with the other information.
Bit 5	Event trigger: when this flag is set together with the continuous acquisition flag, the inventory cycle is performed in the same way of the continuous mode with the only difference that the inventory command is sent only by pressing the left key of the A828BT reader.
Bit 6	XPC: a 1 value allows the reader to get the XPC word if backscattered by a tag.Tags that do not backscatter the XPC words will return an XPC array with all the 4 bytes set to 0
Bit 7	Match tag: a 1 value enables the matching of read tags with a tag present in the memory (A828BT reader only).
Bit 8	PC: a 1 value allows the reader to return the PC of a Gen2 tag in addition to the ID (A828BT reader only).

InventoryTag Method (Int16, Byte[], Int16, Int16)

Description:
A call to this method will execute a read cycle on each read point linked to the logical source.

Parameters:

Name	Description
bank	A value representing the memory bank where apply the filter.
Mask	A byte array representing the bitmask to apply.
MaskLength	A value representing the bit-oriented length of the bitmask.
Position	A value representing the first bit of ID where the match will start.

Return value:
An array containing the CAENRFIDTag objects representing the tags read from the read points.

Syntax:
C# representation:

```
public CAENRFIDTag[]        InventoryTag(
                            short                bank,
                            byte[]               Mask,
                            short                MaskLength,
                            short                Position)
```

Java and Android representation:

```
public CAENRFIDTag[]        InventoryTag(
                            short                bank,
                            byte[]               Mask,
                            short                MaskLength,
                            short                Position)
                            throws CAENRFIDException
```

C representation:

```
CAENRFIDErrorCodes  CAENRFID_BankFilteredInventoryTag (
                            CAENRFIDHandle       handle,
                            char                 *SourceName,
                            short                bank,
                            short                Position,
                            short                MaskLength,
                            char                 *Mask,
                            CAENRFIDTag          **Receive,
                            int                  *Size);
```

Remarks:
Depending on the air protocol setting it will execute the appropriate anticollision algorithm. This version of the method permits to specify a bitmask for filtering tag's populations as described by the EPC Class1 Gen2 (ISO18000-6C) air protocol. The filtering will be performed on the memory bank specified by bank parameter, starting at the bit indicated by the Position index and for a MaskLength length. The method will return only the tags that match the given Mask. Passing a zero value for MaskLength it performs as the non-filtering InventoryTag method.

InventoryTag Method (Int16, Byte[], Int16, Int16, Int16)

Description:

A call to this method will execute a read cycle on each read point linked to the logical source.

Parameters:

Name	Description
bank	A value representing the memory bank where apply the filter.
Mask	A byte array representing the bitmask to apply.
MaskLength	A value representing the bit-oriented length of the bitmask.
Position	A value representing the first bit of ID where the match will start.
Flag	A bitmask representing the InventoryTag options.

Return value:

An array containing the CAENRFIDTag objects representing the tags read from the read points.

Syntax:

C# representation:

```
public CAENRFIDTag[]        InventoryTag(
                            short                bank,
                            byte[]               Mask,
                            short                MaskLength,
                            short                Position,
                            short                Flag)
```

Java and Android representation:

```
public CAENRFIDTag[]        InventoryTag(
                            short                bank,
                            byte[]               Mask,
                            short                MaskLength,
                            short                Position,
                            short                Flag)
                            throws CAENRFIDException
```

C representation:

```
CAENRFIDErrorCodes  CAENRFID_BankFilteredFlagInventoryTag (
                            CAENRFIDHandle       handle,
                            char                 *SourceName,
                            short                bank,
                            short                Position,
                            short                MaskLength,
                            char                 *Mask,
                            unsigned char        Flag,
                            CAENRFIDTag          **Receive,
                            int                  *Size);
```

Remarks:
Depending on the air protocol setting it will execute the appropriate anticollision algorithm. This version of the method permits to specify a bitmask for filtering tag's populations as described by the EPC Class1 Gen2 (ISO18000-6C) air protocol. The filtering will be performed on the memory bank specified by bank parameter, starting at the bit indicated by the Position index and for a MaskLength length. The method will return only the tags that match the given Mask. Passing a zero value for MaskLength it performs as the non-filtering InventoryTag method. The Flags parameter permits to set InventoryTag method's options. In this case bit 1 and 2 of the flag (continuous and framed mode) are ignored.

Flag value meaning	
Bit 0	RSSI: a 1 value indicates that the reader will transmit the RSSI (Return Signal Strength Indicator) in the response.
Bit 1	Framed data: a 1 value indicates that the tag's data will be transmitted by the reader to the PC as soon as the tag is detected, a 0 value means that all the tags detected are buffered in the reader and transmitted all together at the end of the inventory cycle.
Bit 2	Continuous acquisition: a 1 value indicates that the inventory cycle is repeated by the reader depending on the SetReadCycle setting value, a 0 value means that only one inventory cycle will be performed. If the continuous mode is selected a 0 value in the ReadCycle setting will instruct the reader to repeat the inventory cycle until an InventoryAbort method is invoked, a value X different from 0 means that the inventory cycle will be performed X times by the reader.
Bit 3	Compact data: a 1 value indicates that only the EPC of the tag will be returned by the reader, a 0 value indicates that the complete data will be returned. In case that the compact option is enabled all the other data will be populated by this library with fakes values.
Bit 4	TID reading: a 1 value indicates that also the TID of the tag will be returned by the reader together with the other information.
Bit 5	Event trigger: when this flag is set together with the continuous acquisition flag, the inventory cycle is performed in the same way of the continuous mode with the only difference that the inventory command is sent only by pressing the left key of the A828BT reader.
Bit 6	XPC: a 1 value allows the reader to get the XPC word if backscattered by a tag.Tags that do not backscatter the XPC words will return an XPC array with all the 4 bytes set to 0
Bit 7	Match tag: a 1 value enables the matching of read tags with a tag present in the memory (A828BT reader only).
Bit 8	PC: a 1 value allows the reader to return the PC of a Gen2 tag in addition to the ID (A828BT reader only).

FreeTagsMemory

Description:
The function permits to free the allocated memory by CAENRFID_InventoryTag.
Unlike the C#/Java languages where objects are automatically destroyed by the Runtime Environment, in C language it is necessary to explicitly deallocate the memory allocated by the identified tags. To do that, the FreeTagsMemory function is available, passing the pointer to the identified tags list.

Parameters:

Name	Description
Tags	tags array returned by one of the inventory family function.

Syntax:
C representation:

```
void         CAENRFID_FreeTagsMemory(
                                     CAENRFIDTag           **Tags);
```

isReadPointPresent Method

Description:
This method checks if a read point is present in the logical source.

Parameters:

Name	Description
ReadPoint	A string representing the name of the read point (antenna).

Return value:
A boolean value representing the presence of a read point in the logical source (true means that it is present, false if it is not present).

Syntax:
C# representation:

```
public bool         isReadPointPresent(
                            string              ReadPoint)
```

Java and Android representation:

```
public boolean      isReadPointPresent(
                            java.lang.String    ReadPoint)
                            throws CAENRFIDException
```

C representation:

```
CAENRFIDErrorCodes  CAENRFID_isReadPointPresent(
                            CAENRFIDHandle      handle,
                            char                *ReadPoint,
                            char                *SourceName,
                            short               *isPresent);
```

KillTag_EPC_C1G1 Method

Description:
This method can be used to kill a EPC Class 1 Gen 1 tag.

Parameters:

Name	Description
Tag	The CAENRFIDTag representing the tag to be killed.
Password	The tag's kill password.

Syntax:
C# representation:

```
public void         KillTag_EPC_C1G1(
                            CAENRFIDTag         Tag,
                            short               Password)
```

Java and Android representation:

```
public void         KillTag_EPC_C1G1(
                            CAENRFIDTag         Tag,
                            short               Password)
                            throws CAENRFIDException
```

C representation:

```
CAENRFIDErrorCodes  CAENRFID_KillTag_EPC_C1G1(
                            CAENRFIDHandle      handle,
                            CAENRFIDTag         *Tag,
                            char                Password);
```

KillTag_EPC_C1G2 Method

KillTag_EPC_C1G2 Method (CAENRFIDTag, Int32)

Description:

This method can be used to kill a EPC Class 1 Gen 2 tag.

Parameters:

Name	Description
Tag	The CAENRFIDTag representing the tag to be killed.
Password	The tag's kill password.

Syntax:

C# representation:

```
public void         KillTag_EPC_C1G2(
                        CAENRFIDTag         Tag,
                        int                 Password)
```

Java and Android representation:

```
public void         KillTag EPC C1G2(
                        CAENRFIDTag         Tag,
                        int                 Password)
                        throws CAENRFIDException
```

C representation:

```
CAENRFIDErrorCodes  CAENRFID KillTag EPC C1G2(
                        CAENRFIDHandle      handle,
                        CAENRFIDTag         *Tag,
                        int                 Password);
```

KillTag_EPC_C1G2 Method (Int16, Int16, Int16, Byte[], Int32)

Description:

This method can be used to kill a EPC Class 1 Gen 2 tag.

Parameters:

Name	Description
BankMask	Memory bank for tag identification.
PositionMask	Bit position (from the start of the selected bank) where apply the mask to match.
LengthMask	Length of the mask.
Mask	Mask of byte.
Password	The tag's kill password.

Syntax:

C# representation:

```
public void         KillTag EPC C1G2(
                        short               BankMask,
                        short               PositionMask,
                        short               LengthMask,
                        byte[]              Mask,
                        int                 Password)
```

Java and Android representation:

```
public void         KillTag EPC C1G2(
                        short               BankMask,
                        short               PositionMask,
                        short               LengthMask,
                        byte[]              Mask,
                        int                 Password)
                        throws CAENRFIDException
```

C representation:

```
CAENRFIDErrorCodes  CAENRFID BankFilteredKillTag EPC C1G2(
                        CAENRFIDHandle      handle,
                        char                *SourceName,
                        short               BankMask,
                        short               PositionMask,
                        short               LengthMask,
                        char                *Mask,
                        int                 Password);
```

LockBlockPermaLock_EPC_C1G2 Method

Description:
This method implements the BLockPermaLock with ReadLock=1 as specified in EPC C1G2 rev. 1.2.0 protocol.

Parameters:

Name	Description
Tag	The CAENRFIDTag representing the tag to be written.
MemBank	The memory bank where to write the data.
BlockPtr	The address where to start writing the data.
BlockRange	The number of word of the mask.
Mask	A bitmask that permit to select which of the four bytes have to be locked (i.e. mask 0x05 write the bytes on position Address + 1 and Address + 3).
AccessPassword	The access password.

Syntax:
C# representation:

```
public void         LockBlockPermaLock_EPC_C1G2(
                        CAENRFIDTag           Tag,
                        short                 MemBank,
                        short                 BlockPtr,
                        short                 BlockRange,
                        byte[]                Mask,
                        int                   AccessPassword)
```

Java and Android representation:

```
public void         LockBlockPermaLock_EPC_C1G2(
                        CAENRFIDTag           Tag,
                        short                 MemBank,
                        short                 BlockPtr,
                        short                 BlockRange,
                        byte[]                Mask,
                        int                   AccessPassword)
                        throws CAENRFIDException
```

C representation:

```
CAENRFIDErrorCodes  CAENRFID_LockBlockPermaLock_EPC_C1G2(
                        CAENRFIDHandle        handle,
                        CAENRFIDTag           *Tag,
                        short                 MemBank,
                        short                 BlockPtr,
                        short                 BlockRange,
                        byte[]                Mask,
                        int                   AccessPassword);
```

LockTag_EPC_C1G2 Method

LockTag_EPC_C1G2 Method (CAENRFIDTag, Int32)

Description:

This method can be used to lock a memory bank of a EPC Class 1 Gen 2 tag.

Parameters:

Name	Description
Tag	The CAENRFIDTag representing the tag to be locked.
Payload	The Payload parameter for the lock command as defined by the EPC Class 1 Gen 2 protocol specification.

Syntax:

C# representation:

```
public void         LockTag_EPC_C1G2(
                        CAENRFIDTag         Tag,
                        int                 Payload)
```

Java and Android representation:

```
public void         LockTag EPC C1G2(
                        CAENRFIDTag         Tag,
                        int                 Payload)
                        throws CAENRFIDException
```

C representation:

```
CAENRFIDErrorCodes  CAENRFID LockTag EPC C1G2(
                        CAENRFIDHandle      handle,
                        CAENRFIDTag         *Tag,
                        int                 Payload);
```

LockTag_EPC_C1G2 Method (CAENRFIDTag, Int32, Int32)

Description:

This method can be used to lock a memory bank of a EPC Class 1 Gen 2 tag after having put it in Secured state using the Access command.

Parameters:

Name	Description
Tag	The CAENRFIDTag representing the tag to be locked.
Payload	The Payload parameter for the lock command as defined by the EPC Class 1 Gen 2 protocol specification.
AccessPassword	The access password.

Syntax:

C# representation:

```
public void         LockTag EPC C1G2(
                        CAENRFIDTag         Tag,
                        int                 Payload,
                        int                 AccessPassword)
```

Java and Android representation:

```
public void         LockTag_EPC_C1G2(
                        CAENRFIDTag         Tag,
                        int                 Payload,
                        int                 AccessPassword)
                        throws CAENRFIDException
```

C representation:

```
CAENRFIDErrorCodes  CAENRFID SecureLockTag EPC C1G2(
                        CAENRFIDHandle      handle,
                        CAENRFIDTag         *Tag,
                        int                 Payload,
                        int                 AccessPassword);
```

LockTag_EPC_C1G2 Method (Int16, Int16, Int16, Byte[], Int32)

Description:

This method can be used to lock a memory bank of a EPC Class 1 Gen 2 tag.

Parameters:

Name	Description
BankMask	Memory bank for tag identification.
PositionMask	Bit position (from the start of the selected bank) where apply the mask to match.
LengthMask	Length of the mask.
Mask	Mask of byte.
Payload	The Payload parameter for the lock command as defined by the EPC Class 1 Gen 2 protocol specification.

Syntax:

C# representation:

```
public void         LockTag EPC C1G2(
                            short                BankMask,
                            short                PositionMask,
                            short                LengthMask,
                            byte[]               Mask,
                            int                  Payload)
```

Java and Android representation:

```
public void  LockTag_EPC_C1G2(
                            short                BankMask,
                            short                PositionMask,
                            short                LengthMask,
                            byte[]               Mask,
                            int                  Payload)
                            throws CAENRFIDException
```

C representation:

```
CAENRFIDErrorCodes  CAENRFID_BankFilteredLockTag_EPC_C1G2(
                            CAENRFIDHandle       handle,
                            char                 *SourceName,
                            short                BankMask,
                            short                PositionMask,
                            short                LengthMask,
                            char                 *Mask,
                            int                  Payload);
```

LockTag_EPC_C1G2 Method (Int16, Int16, Int16, Byte[], Int32, Int32)

Description:

This method can be used to lock a memory bank of a EPC Class 1 Gen 2 tag after having put it in Secured state using the Access command.

Parameters:

Name	Description
BankMask	Memory bank for tag identification.
PositionMask	Bit position (from the start of the selected bank) where apply the mask to match.
LengthMask	Length of the mask.
Mask	Mask of byte.
Payload	The Payload parameter for the lock command as defined by the EPC Class 1 Gen 2 protocol specification.
AccessPassword	Access password.

Syntax:

C# representation:

```
public void         LockTag EPC C1G2(
                            short                   BankMask,
                            short                   PositionMask,
                            short                   LengthMask,
                            byte[]                  Mask,
                            int                     Payload,
                            int                     AccessPassword)
```

Java and Android representation:

```
public void         LockTag EPC C1G2(
                            short                   BankMask,
                            short                   PositionMask,
                            short                   LengthMask,
                            byte[]                  Mask,
                            int                     Payload,
                            int                     AccessPassword)
                            throws CAENRFIDException
```

C representation:

```
CAENRFIDErrorCodes  CAENRFID SecureBankFilteredLockTag EPC C1G2(
                            CAENRFIDHandle          handle,
                            char                    *SourceName,
                            short                   BankMask,
                            short                   PositionMask,
                            short                   LengthMask,
                            char                    *Mask,
                            int                     Payload,
                            int                     AccessPassword);
```

LockTag_ISO180006B Method

Description:
This method can be used to lock a byte in the memory of a ISO18000-6B tag.

Parameters:

Name	Description
Tag	The CAENRFIDTag representing the tag to be locked.
Address	The byte's address to lock.

Syntax:
C# representation:

```
public void         LockTag_ISO180006B(
                            CAENRFIDTag             Tag,
                            short                   Address)
```

Java and Android representation:

```
public void         LockTag ISO180006B(
                            CAENRFIDTag             Tag,
                            short                   Address)
                            throws CAENRFIDException
```

C representation:

```
CAENRFIDErrorCodes  CAENRFID LockTag ISO180006B(
                            CAENRFIDHandle          handle,
                            CAENRFIDTag             *Tag,
                            short                   Address);
```

NXP_ChangeEAS Method

Description:
This method can be used to issue a ChangeEAS custom command as defined by the NXP G2XM and G2XL datasheet after having put it in Secured state using the Access command.

Parameters:

Name	Description
Tag	The CAENRFIDTag object representing the tag to select.
EAS	A boolean representing the EAS state to set.
AccessPassword	The access password.

Syntax:
C# representation:

```
public void         NXP ChangeEAS(
                            CAENRFIDTag             Tag,
                            bool                    EAS,
                            int                     AccessPassword)
```

Java and Android representation:

```
public void         NXP_ChangeEAS(
                            CAENRFIDTag             Tag,
                            boolean                 EAS,
                            int                     AccessPassword)
                            throws CAENRFIDException
```

C representation:

```
CAENRFIDErrorCodes  CAENRFID NXP SecureChangeEAS(
                            CAENRFIDHandle          handle,
                            CAENRFIDTag             *Tag,
                            char                    EAS,
                            int                     AccessPassword);
```

NXP_ChangeConfig Method

NXP_ChangeConfig Method (CAENRFIDTag, UInt16)

Description:

This method can be used to issue a NXP_ChangeConfig custom command as defined in the NXP UCODE G2iM and G2iM+ datasheet.

Parameters:

Name	Description
Tag	The CAENRFIDTag object representing the tag to select.
ConfigWord	The configuration word.

Syntax:

C# representation:

```
public void         NXP_ChangeConfig(
                        CAENRFIDTag         Tag,
                        ushort              ConfigWord)
```

Java and Android representation:

```
public void         NXP ChangeConfig(
                        CAENRFIDTag         Tag,
                        short               ConfigWord)
                        throws CAENRFIDException
```

C representation:

```
CAENRFIDErrorCodes  CAENRFID NXP ChangeConfig(
                        CAENRFIDHandle      handle,
                        CAENRFIDTag         *Tag,
                        short               ConfigWord,
                        char                *TRData);
```

NXP_ChangeConfig Method (CAENRFIDTag, UInt16, Int32)

Description:

This method can be used to issue a NXP_ChangeConfig custom command as defined in the NXP UCODE G2iM and G2iM+ datasheet after having put it in Secured state using the Access Password.

Parameters:

Name	Description
Tag	The CAENRFIDTag object representing the tag to select.
ConfigWord	The configuration word.
Password	The access password.

Syntax:

C# representation:

```
public void         NXP_ChangeConfig(
                        CAENRFIDTag         Tag,
                        ushort              ConfigWord,
                        int                 Password)
```

Java and Android representation:

```
public void         NXP ChangeConfig(
                        CAENRFIDTag         Tag,
                        short               ConfigWord,
                        int                 Password)
                        throws CAENRFIDException
```

C representation:

```
CAENRFIDErrorCodes  CAENRFID_NXP_SecureChangeConfig(
                        CAENRFIDHandle      handle,
                        CAENRFIDTag         *Tag,
                        short               ConfigWord,
                        char                *TRData,
                        int                 SecurePassword);
```

NXP_EAS_Alarm Method

Description:
This method can be used to issue a EAS_Alarm custom command as defined by the NXP G2XM and G2XL datasheet.

Return value:
An array of bytes representing the EAS Code.

Syntax:
C# representation:
```
public byte[]               NXP_EAS_Alarm()
```

Java and Android representation:
```
public byte[]               NXP_EAS_Alarm()
                                   throws CAENRFIDException
```

C representation:
```
CAENRFIDErrorCodes          CAENRFID_NXP_EAS_Alarm(
                                   CAENRFIDHandle        handle,
                                   char                  *TRData);
```

NXP_ReadProtect Method

NXP_ReadProtect Method (CAENRFIDTag)

Description:
This method can be used to issue a ReadProtect custom command as defined by the NXP G2XM and G2XL datasheet.

Parameters:

Name	Description
Tag	The CAENRFIDTag object representing the tag to select.

Syntax:
C# representation:
```
public void         NXP_ReadProtect(
                           CAENRFIDTag           Tag)
```

Java and Android representation:
```
public void         NXP_ReadProtect(
                           CAENRFIDTag           Tag)
                           throws CAENRFIDException
```

C representation:
```
CAENRFIDErrorCodes  CAENRFID_NXP_ReadProtect(
                           CAENRFIDHandle        handle,
                           CAENRFIDTag           *Tag);
```

NXP_ReadProtect Method (CAENRFIDTag, Int32)

Description:

This method can be used to issue a ReadProtect custom command as defined by the NXP G2XM and G2XL datasheet after having put it in Secured state using the Access command.

Parameters:

Name	Description
Tag	The CAENRFIDTag object representing the tag to select.
AccessPassword	The access password.

Syntax:

C# representation:

```
public void         NXP ReadProtect(
                            CAENRFIDTag           Tag,
                            int                   AccessPassword)
```

Java and Android representation:

```
public void         NXP_ReadProtect(
                            CAENRFIDTag           Tag,
                            int                   AccessPassword)
                            throws CAENRFIDException
```

C representation:

```
CAENRFIDErrorCodes  CAENRFID_NXP_SecureReadProtect(
                            CAENRFIDHandle        handle,
                            CAENRFIDTag           *Tag,
                            int                   AccessPassword);
```

NXP_ResetReadProtect Method

Description:

This method can be used to issue a ResetReadProtect custom command as defined by the NXP G2XM and G2XL datasheet.

Parameters:

Name	Description
Tag	The CAENRFIDTag object representing the tag to reset the read protection.
Password	The ReadProtect password.

Syntax:

C# representation:

```
public void         NXP ResetReadProtect(
                            CAENRFIDTag           Tag,
                            int                   Password)
```

Java and Android representation:

```
public void         NXP ResetReadProtect(
                            CAENRFIDTag           Tag,
                            int                   Password)
                            throws CAENRFIDException
```

C representation:

```
CAENRFIDErrorCodes  CAENRFID_NXP_ResetReadProtect(
                            CAENRFIDHandle        handle,
                            CAENRFIDTag           *Tag,
                            int                   Password);
```

NXP_ChangeConfig Method

NXP_ChangeConfig Method (CAENRFIDTag, UInt16)

Description:

This method can be used to issue a NXP_ChangeConfig custom command as defined in the NXP UCODE G2iM and G2iM+ datasheet.

Parameters:

Name	Description
Tag	The CAENRFIDTag object representing the tag to select.
ConfigWord	The Configuration word.

Syntax:

C# representation:

```
public void         NXP_ChangeConfig(
                        CAENRFIDTag         Tag,
                        ushort ConfigWord)
```

Java and Android representation:

```
public void         NXP ChangeConfig(
                        CAENRFIDTag         Tag,
                        short               ConfigWord)
                        throws CAENRFIDException
```

C representation:

```
CAENRFIDErrorCodes  CAENRFID NXP ChangeConfig(
                        CAENRFIDHandle      handle,
                        CAENRFIDTag         *Tag,
                        short               ConfigWord,
                        char                *TRData);
```

NXP_ChangeConfig Method (CAENRFIDTag, UInt16, Int32)

Description:

This method can be used to issue a NXP_ChangeConfig custom command as defined in the NXP UCODE G2iM and G2iM+ datasheet after having put it in Secured state using the Access Password.

Parameters:

Name	Description
Tag	The CAENRFIDTag object representing the tag to select.
ConfigWord	The Configuration word.
Password	The access password.

Syntax:

C# representation:

```
public void         NXP_ChangeConfig(
                        CAENRFIDTag         Tag,
                        ushort              ConfigWord,
                        int                 Password)
```

Java and Android representation:

```
public void         NXP ChangeConfig(
                        CAENRFIDTag         Tag,
                        short               ConfigWord,
                        int                 Password)
                        throws CAENRFIDException
```

C representation:

```
CAENRFIDErrorCodes  CAENRFID_NXP_SecureChangeConfig(
                        CAENRFIDHandle      handle,
                        CAENRFIDTag         *Tag,
                        short               ConfigWord,
                        char                *TRData)
                        int                 SecurePassword);
```

ProgramID_EPC_C1G1 Method

Description:
This method can be used to write the EPC of a EPC Class 1 Gen 1 tag.

Parameters:

Name	Description
Tag	The CAENRFIDTag representing the tag to be programmed, the ID contained in this object will be programmed into the tag.
Password	The password needed in order to write into the tag.
Lock	A flag used to lock the EPC in the tag (1 if the EPC have to be locked).

Syntax:
C# representation:

```
public void         ProgramID_EPC_C1G1(
                        CAENRFIDTag         Tag,
                        short               Password,
                        bool                Lock)
```

Java and Android representation:

```
public void         ProgramID_EPC_C1G1(
                        CAENRFIDTag         Tag,
                        short               Password,
                        boolean             Lock)
                        throws CAENRFIDException
```

C representation:

```
CAENRFIDErrorCodes  CAENRFID_ProgramID_EPC_C1G1(
                        CAENRFIDHandle      handle,
                        CAENRFIDTag         *Tag,
                        char                Password,
                        unsigned short      Lock);
```

ProgramID_EPC_C1G2 Method

ProgramID_EPC_C1G2 Method (CAENRFIDTag, Int16)

Description:
This method can be used to write the EPC of a EPC Class 1 Gen 2 tag.

Parameters:

Name	Description
Tag	The CAENRFIDTag representing the tag to be programmed, the ID contained in this object will be programmed into the tag.
NSI	The Numbering System Identifier as defined in EPC Class 1 Gen 2 protocol specifications.

Syntax:
C# representation:

```
public void         ProgramID_EPC_C1G2(
                        CAENRFIDTag         Tag,
                        short               NSI)
```

Java and Android representation:

```
public void         ProgramID_EPC_C1G2(
                        CAENRFIDTag         Tag,
                        short               NSI)
                        throws CAENRFIDException
```

C representation:

```
CAENRFIDErrorCodes  CAENRFID_ProgramID_EPC_C1G2(
                        CAENRFIDHandle      handle,
                        CAENRFIDTag         *Tag,
                        unsigned short      NSI);
```

ProgramID_EPC_C1G2 Method (CAENRFIDTag, Int16, Int32)

Description:
This method can be used to write the EPC of a EPC Class 1 Gen 2 tag after having put it in Secured state using the Access command.

Parameters:

Name	Description
Tag	The CAENRFIDTag representing the tag to be programmed, the ID contained in this object will be programmed into the tag.
NSI	The Numbering System Identifier as defined in EPC Class 1 Gen 2 protocol specifications.
AccessPassword	The access password.

Syntax:
C# representation:

```
public void         ProgramID_EPC_C1G2(
                    CAENRFIDTag           Tag,
                    short                 NSI,
                    int                   AccessPassword)
```

Java and Android representation:

```
public void         ProgramID_EPC_C1G2(
                    CAENRFIDTag           Tag,
                    short                 NSI,
                    int                   AccessPassword)
                    throws CAENRFIDException
```

C representation:

```
CAENRFIDErrorCodes  CAENRFID_SecureProgramID_EPC_C1G2(
                    CAENRFIDHandle        handle,
                    CAENRFIDTag           *Tag,
                    unsigned short        NSI,
                    int                   AccessPassword);
```

ProgramID_EPC119 Method

Description:
This method can be used to write the UID of a EPC 1.19 tag.

Parameters:

Name	Description
Tag	The CAENRFIDTag representing the tag to be programmed.
NewID	An array of bytes representing the new UID for the tag.

Syntax:
C# representation:

```
public void         ProgramID_EPC119(
                           CAENRFIDTag           Tag,
                           byte[]                NewID)
```

Java and Android representation:

```
public void         ProgramID_EPC119(
                           CAENRFIDTag           Tag,
                           byte[]                NewID)
```

C representation:

```
CAENRFIDErrorCodes  CAENRFID_ProgramID_EPC119(
                           CAENRFIDHandle        handle,
                           CAENRFIDTag           *Tag,
                           char                  *NewID);
```

Query_EPC_C1G2 Method

Description:
This method makes the reader generate a EPC Class1 Gen2 Query command.

Return value:
True on successfull completion.

Syntax:
C# representation:

```
public bool          Query_EPC_C1G2()
```

Java and Android representation:

```
public boolean       Query_EPC_C1G2()
                            throws CAENRFIDException
```

C representation:

```
CAENRFIDErrorCodes   CAENRFID_Query_EPC_C1G2(
                            CAENRFIDHandle        handle,
                            char                  *SourceName,
                            short                 *isPresent);
```

QueryAck_EPC_C1G2 Method

Description:
This method make the reader generate a sequence of EPC Class1 Gen2 Query and Ack commands. It can be used to read a single tag under the field. If there are more than one tag under the field the method fails.

Return value:
An array of bytes representing the EPC of the tag

Syntax:
C# representation:

```
public byte[]        QueryAck_EPC_C1G2()
```

Java and Android representation:

```
public byte[]        QueryAck EPC C1G2()
                            throws CAENRFIDException
```

C representation:

```
CAENRFIDErrorCodes   QueryAck_EPC_C1G2(
                            CAENRFIDHandle        handle,
                            char                  *SourceName,
                            byte                  *Tag);
```

ReadBLockPermalock_EPC_C1G2 Method

Description:
This method implements the BLockPermaLock with ReadLock=0 as specified in EPCC1G2 rev. 1.2.0 protocol.

Parameters:

Name	Description
Tag	The CAENRFIDTag representing the tag to be read.
MemBank	The memory bank where to read the data.
Blockptr	The address where to start reading the data.
BlockRange	The number of word to be read.
AccessPassword	The access password.

Return value:
An array of bytes representing the data read from the tag.

Syntax:
C# representation:

```
public byte[]       ReadBLockPermalock_EPC_C1G2(
                            CAENRFIDTag           Tag,
                            short                 MemBank,
                            short                 Blockptr,
                            short                 BlockRange,
                            int                   AccessPassword)
```

Java and Android representation:

```
public byte[]       ReadBLockPermalock EPC C1G2(
                            CAENRFIDTag           Tag,
                            short                 MemBank,
                            short                 Blockptr,
                            short                 BlockRange,
                            int                   AccessPassword)
                            throws CAENRFIDException
```

C representation:

```
CAENRFIDErrorCodes  CAENRFID ReadBLockPermalock EPC C1G2(
                            CAENRFIDHandle        handle,
                            CAENRFIDTag           *Tag,
                            short                 MemBank,
                            short                 Blockptr,
                            short                 BlockRange,
                            int                   AccessPassword)
```

ReadTagData Method

Description:
This method can be used to read a portion of the user memory in a ISO18000-6B tag.

Parameters:

Name	Description
Tag	The CAENRFIDTag representing the tag to be read.
Address	The address where to start reading the data.
Length	The number of byte to be read.

Return value:
An array of bytes representing the data read from the tag.

Syntax:
C# representation:

```
public byte[]       ReadTagData(
                        CAENRFIDTag         Tag,
                        short               Address,
                        short               Length)
```

Java and Android representation:

```
public byte[]       ReadTagData(
                        CAENRFIDTag         Tag,
                        short               Address,
                        short               Length)
                        throws CAENRFIDException
```

C representation:

```
CAENRFIDErrorCodes  CAENRFID_ReadTagData(
                        CAENRFIDHandle      handle,
                        CAENRFIDTag         *Tag,
                        int                 Address,
                        int                 Length,
                        void                *Data);
```

ReadTagData_EPC_C1G2 Method

ReadTagData_EPC_C1G2 Method (CAENRFIDTag, Int16, Int16, Int16)

Description:

This method can be used to read a portion of memory in an ISO18000-6C (EPC Class1 Gen2) tag.

Parameters:

Name	Description
Tag	The CAENRFIDTag representing the tag to be read.
MemBank	The memory bank where to read the data.
Address	The address where to start reading the data.
Length	The number of byte to be read.

Return value:

An array of bytes representing the data read from the tag.

Syntax:

C# representation:

```
public byte[]       ReadTagData_EPC_C1G2(
                            CAENRFIDTag           Tag,
                            short                 MemBank,
                            short                 Address,
                            short                 Length)
```

Java and Android representation:

```
public byte[]       ReadTagData_EPC_C1G2(
                            CAENRFIDTag           Tag,
                            short                 MemBank,
                            short                 Address,
                            short                 Length)
                            throws CAENRFIDException
```

C representation:

```
CAENRFIDErrorCodes  CAENRFID_ReadTagData_EPC_C1G2(
                            CAENRFIDHandle        handle,
                            CAENRFIDTag           *Tag,
                            short                 MemBank,
                            int                   Address,
                            int                   Length,
                            void                  *Data);
```

ReadTagData_EPC_C1G2 Method (CAENRFIDTag, Int16, Int16, Int16, Int32)

Description:

This method can be used to read a portion of memory in an ISO18000-6C (EPC Class1 Gen2) tag after having put the tag in Secured state using the Access command.

Parameters:

Name	Description
Tag	The CAENRFIDTag representing the tag to be read.
MemBank	The memory bank where to read the data.
Address	The address where to start reading the data.
Length	The number of byte to be read.
AccessPassword	The access password.

Return value:

An array of bytes representing the data read from the tag.

Syntax:

C# representation:

```
public byte[]       ReadTagData_EPC_C1G2(
                            CAENRFIDTag           Tag,
                            short                 MemBank,
                            short                 Address,
                            short                 Length,
                            int                   AccessPassword)
```

Java and Android representation:

```
public byte[]       ReadTagData_EPC_C1G2(
                            CAENRFIDTag           Tag,
                            short                 MemBank,
                            short                 Address,
                            short                 Length,
                            int                   AccessPassword)
                            throws CAENRFIDException
```

C representation:

```
CAENRFIDErrorCodes  CAENRFID_SecureReadTagData_EPC_C1G2 (
                            CAENRFIDHandle        handle,
                            CAENRFIDTag           *Tag,
                            short                 MemBank,
                            int                   Address,
                            int                   Length,
                            int                   AccessPassword,
                            void                  *Data);
```

ReadTagData_EPC_C1G2 Method (Int16, Int16, Int16, Byte[], Int16, Int16, Int16)

Description:

This method can be used to read a portion of memory in an ISO18000-6C (EPC Class1 Gen2) tag. In this case the target tag is identified by 'LenghtMask' bytes of passed mask placed in a memory bank 'BankMask' at 'PositionMask' byte from bank starting address byte.

Parameters:

Name	Description
BankMask	Memory bank for tag identificantion.
PositionMask	Bit position (from the start of the selected bank) where apply the mask to match.
LengthMask	Length of the mask.
Mask	Mask of byte.
MemBank	Memory bank where read.
Address	Address where starts reading.
Length	Number of byte to read.

Return value:

An array of bytes representing the data read from the tag.

Syntax:

C# representation:

```
public byte[]        ReadTagData_EPC_C1G2(
                            short                   BankMask,
                            short                   PositionMask,
                            short                   LengthMask,
                            byte[]                  Mask,
                            short                   MemBank,
                            short                   Address,
                            short                   Length)
```

Java and Android representation:

```
public byte[]        ReadTagData_EPC_C1G2(
                            short                   BankMask,
                            short                   PositionMask,
                            short                   LengthMask,
                            byte[]                  Mask,
                            short                   MemBank,
                            short                   Address,
                            short                   Length)
                            throws CAENRFIDException
```

C representation:

```
CAENRFIDErrorCodes   CAENRFID BankFilteredReadTagData EPC C1G2(
                            CAENRFIDHandle          handle,
                            char                    *SourceName,
                            short                   BankMask,
                            short                   PositionMask,
                            short                   LengthMask,
                            char                    *Mask,
                            short                   MemBank,
                            int                     Address,
                            int                     Length,
                            void                    *Data);
```

ReadTagData_EPC_C1G2 Method (Int16, Int16, Int16, Byte[], Int16, Int16, Int16, Int32)

Description:

This method can be used to read a portion of memory in an ISO18000-6C (EPC Class1 Gen2) tag. In this case the target tag is identified by 'LenghtMask' bytes of passed mask placed in a memory bank 'BankMask' at 'PositionMask' byte from bank starting address byte. This is the secure version using the Access command.

Parameters:

Name	Description
BankMask	Memory bank for tag identificantion.
PositionMask	Bit position (from the start of the selected bank) where apply the mask to match.
LengthMask	Length of the mask.
Mask	Mask of byte.
MemBank	Memory bank where read.
Address	Address where starts reading.
Length	Number of byte to read.
AccessPassword	Access Password.

Return value:

An array of bytes representing the data read from the tag.

Syntax:

C# representation:

```
public byte[]       ReadTagData_EPC_C1G2(
                            short                   BankMask,
                            short                   PositionMask,
                            short                   LengthMask,
                            byte[]                  Mask,
                            short                   MemBank,
                            short                   Address,
                            short                   Length,
                            int                     AccessPassword)
```

Java and Android representation:

```
public byte[]       ReadTagData_EPC_C1G2(
                            short                   BankMask,
                            short                   PositionMask,
                            short                   LengthMask,
                            byte[]                  Mask,
                            short                   MemBank,
                            short                   Address,
                            short                   Length,
                            int                     AccessPassword)
                            throws CAENRFIDException
```

C representation:

```
CAENRFIDErrorCodes  CAENRFID SecureBankFilteredReadTagData EPC C1G2 (
                            CAENRFIDHandle          handle,
                            char                    *SourceName,
                            short                   BankMask,
                            short                   PositionMask,
                            short                   LengthMask,
                            byte[]                  Mask,
                            short                   MemBank,
                            int                     Address,
                            int                     Length,
                            void                    *Data,
                            int                     AccessPassword);
```

RemoveReadPoint Method

Description:
This method removes a read point from the logical source.

Parameters:

Name	Description
ReadPoint	A string representing the name of the read point (antenna).

Syntax:
C# representation:

```
public void         RemoveReadPoint(
                        string              ReadPoint)
```

Java and Android representation:

```
public void         RemoveReadPoint(
                        java.lang.String    ReadPoint)
                        throws CAENRFIDException
```

C representation:

```
CAENRFIDErrorCodes  CAENRFID_RemoveReadPoint(
                        CAENRFIDHandle      handle,
                        char                *SourceName,
                        char                *ReadPoint);
```

ResetSession_EPC_C1G2 Method

Description:
This method can be used to reset the Session status for EPC Class1 Gen2 tags. After the execution of this method all the tags in the field of the antennas belonging to this logical source are back in the default Session.

Syntax:
C# representation:

```
public void         ResetSession_EPC_C1G2()
```

Java and Android representation:

```
public void         ResetSession_EPC_C1G2()
                        throws CAENRFIDException
```

C representation:

```
CAENRFIDErrorCodes  CAENRFID_ResetSession_EPC_C1G2(
                        CAENRFIDHandle      handle,
                        char                *SourceName);
```

SetDESB_ISO180006B Method

Description:
This method can be used to set the Data Exchange Status Bit (see ISO18000-6B protocol specification) used by the anticollision algorithm when called on this logical source.

Parameters:

Name	Description
Value	The DESB setting value.

Syntax:
C# representation:

```
public void         SetDESB_ISO180006B(
                            CAENRFIDLogicalSourceConstants      Value)
```

Java and Android representation:

```
public void         SetDESB_ISO180006B(
                            CAENRFIDLogicalSourceConstants      Value)
                            throws CAENRFIDException
```

C representation:

```
CAENRFIDErrorCodes  CAENRFID_SetDESB_ISO180006B(
                            CAENRFIDHandle                      handle,
                            unsigned int                        Value);
```

SetInventoryCounts Method

Description:
This method can be used to set the current setting for the number of inventory counts performed by the logical source after pressing the TRIGGER during the inventory algorithm execution.

Parameters:

Name	Description
Value	The number of read cycles.

Syntax:
C# representation:

```
public void             SetInventoryCounts(
                                int                 value);
```

Java and Android representation:

```
public void             SetInventoryCounts(
                                int                 value)
                        throws CAENRFIDException
```

C representation:

```
CAENRFIDErrorCodes      CAENRFID_SetInventoryCounts(
                                CAENRFIDHandle      handle,
                                char                *SourceName,
                                int                 *value);
```

SetInventoryDwellTime Method

Description:
This method can be used to sets the inventory execution time (msec) used by the logical source during the inventory algorithm execution.

Parameters:

Name	Description
Value	The execution time in ms

Syntax:
C# representation:

```
public int              SetInventoryDwellTime(
                               int              value);
```

Java and Android representation:

```
public int              SetInventoryDwellTime(
                               int              value)
                        throws CAENRFIDException
```

C representation:

```
CAENRFIDErrorCodes      CAENRFID_SetInventoryDwellTime(
                               CAENRFIDHandle   handle,
                               char             *SourceName,
                               int              value);
```

SetInventoryQuietTime Method

Description:
This method can be used to sets the inventory quiet time (msec) used by the logical source during the inventory algorithm execution.

Parameters:

Name	Description
Value	The quiet time in ms

Syntax:
C# representation:

```
public int              SetInventoryQuietTime(
                               int              value);
```

Java and Android representation:

```
public int              SetInventoryQuietTime(
                               int              value)
                        throws CAENRFIDException
```

C representation:

```
CAENRFIDErrorCodes      CAENRFID_SetInventoryQuietTime(
                               CAENRFIDHandle   handle,
                               char             *SourceName,
                               int              value);
```

SetQ_EPC_C1G2 Method

Description:
This method can be used to set the initial Q value (see EPC Class1 Gen2 protocol specification) used by the anticollision algorithm when called on this logical source.

Parameters:

Name	Description
Value	The initial Q value setting.

Syntax:
C# representation:

```
public void         SetQ_EPC_C1G2(
                            int                     Value)
```

Java and Android representation:

```
public void         SetQ_EPC_C1G2(
                            int                     Value)
                            throws CAENRFIDException
```

C representation:

```
CAENRFIDErrorCodes  CAENRFID_SetQValue_EPC_C1G2(
                            CAENRFIDHandle          handle,
                            char                    *SourceName,
                            int                     Value);
```

SetReadCycle Method

Description:
This method sets the number of read cycles to be performed by the logical source during the inventory algorithm execution.

Parameters:

Name	Description
value	The number of read cycles.

Syntax:
C# representation:

```
public void         SetReadCycle(
                            int                     value)
```

Java and Android representation:

```
public void         SetReadCycle(
                            int                     value)
                            throws CAENRFIDException
```

C representation:

```
CAENRFIDErrorCodes  CAENRFID_SetReadCycle(
                            CAENRFIDHandle          handle,
                            char                    *SourceName,
                            int                     value);
```

SetSelected_EPC_C1G2 Method

Description:
This method can be used to set the Selected flag (see EPC Class1 Gen2 protocol specification) used by the anticollision algorithm when called on this logical source.

Parameters:

Name	Description
Value	The Selected flag value.

Syntax:
C# representation:

```
public void         SetSelected_EPC_C1G2(
                        CAENRFIDLogicalSourceConstants      Value)
```

Java and Android representation:

```
public void         SetSelected_EPC_C1G2(
                        CAENRFIDLogicalSourceConstants      Value)
                        throws CAENRFIDException
```

C representation:

```
CAENRFIDErrorCodes  CAENRFID_SetSelected_EPC_C1G2(
                        CAENRFIDHandle                      handle,
                        char                                *SourceName,
                        CAENRFIDLogicalSourceConstants      Value);
```

SetSession_EPC_C1G2 Method

Description:
This method can be used to set the Session (see EPC Class1 Gen2 protocol specification) used by the anticollision algorithm when called on this logical source.

Parameters:

Name	Description
Value	The Session value.

Syntax:
C# representation:

```
public void         SetSession_EPC_C1G2(
                        CAENRFIDLogicalSourceConstants      Value)
```

Java and Android representation:

```
public void         SetSession_EPC_C1G2(
                        CAENRFIDLogicalSourceConstants      Value)
                        throws CAENRFIDException
```

C representation:

```
CAENRFIDErrorCodes  CAENRFID_SetSession_EPC_C1G2(
                        CAENRFIDHandle                      handle,
                        char                                *SourceName,
                        CAENRFIDLogicalSourceConstants      Value);
```

SetTarget_EPC_C1G2 Method

Description:
This method can be used to set the Target setting (see EPC Class1 Gen2 protocol specification) used by the anticollision algorithm when called on this logical source.

Parameters:

Name	Description
Value	The Target value.

Syntax:
C# representation:

```
public void         SetTarget_EPC_C1G2(
                        CAENRFIDLogicalSourceConstants      Value)
```

Java and Android representation:

```
public void         SetTarget_EPC_C1G2(
                        CAENRFIDLogicalSourceConstants      Value)
                        throws CAENRFIDException
```

C representation:

```
CAENRFIDErrorCodes  CAENRFID_SetTarget_EPC_C1G2(
                        CAENRFIDHandle                      handle,
                        char                                *SourceName,
                        CAENRFIDLogicalSourceConstants      Value);
```

SL900A_EndLog Method

Description:
This method can be used to issue an IDS SL900A EndLog custom command as defined in the IDS SL900A datasheet.

Parameters:

Name	Description
Tag	The tag where stop the log

Syntax:
C# representation:

```
public void         SL900A_EndLog(
                        CAENRFIDTag             Tag)
```

Java and Android representation:

```
public void         SL900A_EndLog(
                        CAENRFIDTag             Tag)
                        throws CAENRFIDException
```

C representation:

```
CAENRFIDErrorCodes  CAENRFID_IDS_SL900A_EndLog(
                        CAENRFIDHandle          handle,
                        CAENRFIDTag             *Tag);
```

SL900A_GetLogState Method

Description:
This method can be used to issue an IDS SL900A Get Log State custom command as defined in the IDS SL900A datasheet.

Parameters:

Name	Description
Tag	The tag selected
ShelfLife	This parameter is used to inform the reader if the shelf life flag is set in the tag's EEPROM

Return Value:
This method returns the status of the logging process. The structure of the byte array is the following:
byte[0]÷byte[1] : Limite Counter.
byte[2]÷byte[3] : System status.
byte[4]÷byte[11] : Shelf Life Block (only if the ShelfLife parameter is true).
byte[12]÷byte[14] : Current Shelf Life (only if the ShelfLife parameter is true).
byte[15] : Status Flags (if ShelfLife parameter is false this byte follows immediately the System status word).

Syntax:
C# representation:

```
public byte[]        SL900A GetLogState(
                            CAENRFIDTag          Tag,
                            bool                 ShelfLife)
```

Java and Android representation:

```
public byte[]        SL900A GetLogState(
                            CAENRFIDTag          Tag,
                            boolean              ShelfLife)
                            throws CAENRFIDException
```

C representation:

```
CAENRFIDErrorCodes   IDS_SL900A_GetLogState(
                            CAENRFIDHandle       handle,
                            CAENRFIDTag          *Tag,
                            BOOL                 ShelfLife,
                            char                 *TRData);
```

SL900A_GetMeasurementSetup Method

Description:
This method gets the current system setup as defined in the IDS SL900A datasheet.

Parameters:

Name	Description
Tag	The target tag from which read the current setup.

Syntax:
C# representation:

```
public byte[]        SL900A_GetMeasurementSetup(
                            CAENRFIDTag           Tag)
```

Java and Android representation:

```
public byte[]        SL900A_GetMeasurementSetup(
                            CAENRFIDTag           Tag)
                            throws CAENRFIDException
```

C representation:

```
CAENRFIDErrorCodes   CAENRFID_IDS_SL900A_GetMeasurementSetup(
                            CAENRFIDHandle        handle,
                            CAENRFIDTag           *Tag,
                            byte                  **SetupData,
                            int                   *SetupDataLength);
```

Remarks:
According to the IDS SL900A datasheet, the current setup is returned as:

byte[0]÷byte[3] :StartTime
byte[4]÷byte[8] :LogLimits
byte[9] :LogMode
byte[10]÷byte[11] :LogInterval
byte[12]÷byte[13] :DelayTime
byte[14]÷byte[15] :ApplicationData

SL900A_GetSensorValue Method

Description:
This method can be used to issue an IDS SL900A Get Sensor Value custom command as defined in the IDS SL900A datasheet.

Parameters:

Name	Description
Tag	The tag to extract sensor data.
SensorType	Describes which sensor to choose.(see remark)

Return Value:
Returns an IDSTagData object containing all the data read from the tag's selected sensor.

Syntax:
C# representation:

```
public IDSTagData    SL900A GetSensorValue(
                            CAENRFIDTag                 Tag,
                            byte                        SensorType)
```

Java and Android representation:

```
public IDSTagData    SL900A GetSensorValue(
                            CAENRFIDTag                 Tag,
                            byte                        SensorType)
                            throws CAENRFIDException
```

C representation:

```
CAENRFIDErrorCodes   CAENRFID_IDS_SL900A_GetSensorValue(
                            CAENRFIDHandle              handle,
                            CAENRFIDTag                 *Tag,
                            byte                        SensorType,
                            CAENRFID_IDSTagData         *IDSTagData);
```

Remarks:
According to the IDS SL900A datasheet, the Sensor Type byte is composed as:
bit 07..02: Extreme Lower
bit 01..00: Sensor Type.
Sensor type bits can be:
00: Temperature sensor
01: External sensor 1.
10: External sensor 2.
11: Battery Voltage.

SL900A_Initialize Method

Description:
This method can be used to issue an IDS SL900A Initialize custom command as defined in the IDS SL900A datasheet.

Parameters:

Name	Description
Tag	The tag to initialize
DelayTime	The DelayTime parameter. See the IDS SL900A datasheet for further details.
ApplicationData	The Application data. See the IDS SL900A datasheet for further details.

Syntax:
C# representation:

```
public void         SL900A_Initialize(
                            CAENRFIDTag         Tag,
                            ushort              DelayTime,
                            ushort              ApplicationData)
```

Java and Android representation:

```
public void         SL900A_Initialize(
                            CAENRFIDTag         Tag,
                            short               DelayTime,
                            short               ApplicationData)
                            throws CAENRFIDException
```

C representation:

```
CAENRFIDErrorCodes  CAENRFID_IDS_SL900A_Initialize(
                            CAENRFIDHandle      handle,
                            CAENRFIDTag         *Tag,
                            unsigned short      DelayTime,
                            unsigned short      ApplicationData);
```

Remarks:
According to the IDS SL900A datasheet, the DelayTime parameter is composed as:
bit 15..4: Delay time (expressed in seconds)
bit 3..2: RFU
bit 1: Delay mode (0 : Internal timer, 1 : External switch)
bit 0: IRQ + Timer Enable
According to the IDS SL900A datasheet, the Application Data parameter is composed as:
bit 15..7: Application Area size (in words)
bit 6..3: RFU bit 2..0 : Broken word pointer

SL900A_SetLogLimits Method

Description:
This method sets 4 limits which can be used for logging measurement data as defined in the IDS SL900A datasheet.

Parameters:

Name	Description
Tag	The target tag where apply the limits.
LogLimits	An array of 4 bytes containing the fourty bits representing limit values. See the IDS SL900A datasheet for further details.

Syntax:
C# representation:

```
public void         SL900A SetLogLimits(
                           CAENRFIDTag          Tag,
                           byte[]               LogLimit)
```

Java and Android representation:

```
public void         SL900A SetLogLimits(
                           CAENRFIDTag          Tag,
                           byte[]               LogLimits)
                           throws CAENRFIDException
```

C representation:

```
CAENRFIDErrorCodes  CAENRFID_IDS_SL900A_SetLogLimits(
                           CAENRFIDHandle       handle,
                           CAENRFIDTag          *Tag,
                           byte                 *LogLimits,
                           int                  LogLimitsLength);
```

Remarks:
According to the IDS SL900A datasheet, each of the 4 limits is 10 bit long. The LogLimits parameter is composed as:
bits 39..30: Extreme Lower
bits 29..20: Lower
bits 19..10: Upper
bits 9.. 0 Extreme Upper

SL900A_SetLogMode Method

Description:
This method can be used to issue an IDS SL900A Set Log Mode custom command as defined in the IDS SL900A datasheet.

Parameters:

Name	Description
Tag	The tag to set log mode on.
LogMode	The LogMode parameter. See the IDS SL900A datasheet for further details.

Syntax:
C# representation:

```
public void         SL900A SetLogMode(
                           CAENRFIDTag          Tag,
                           uint                 LogMode)
```

Java and Android representation:

```
public void         SL900A SetLogMode(
                           CAENRFIDTag          Tag,
                           int                  LogMode)
                           throws CAENRFIDException
```

C representation:

```
CAENRFIDErrorCodes  CAENRFID_IDS_SL900A_SetLog(
                           CAENRFIDHandle       handle,
                           CAENRFIDTag          *Tag,
                           unsigned int         LogMode);
```

Remarks:
According to the IDS SL900A datasheet, the DelayTime parameter is composed as:
bit 31..24: RFU.
bit 23..21: Logging Form.
bit 20: Storage Rule.
bit 19: Ext1 sensor enable.
bit 18: Ext2 sensor enable.
bit 17: Temperature sensor enable.
bit 16: Battery Check enable.
bit 15..0: Log Interval.
bit 0: RFU.

SL900A_StartLog Method

Description:
This method can be used to issue an IDS SL900A Start Log custom command as defined in the IDS SL900A datasheet.

Parameters:

Name	Description
Tag	The Tag where start logging.
StartTime	The start time. See remark for structures.

Syntax:
C# representation:

```
public void         SL900A_StartLog(
                            CAENRFIDTag         Tag,
                            uint                StartTime)
```

Java and Android representation:

```
public void         SL900A StartLog(
                            CAENRFIDTag         Tag,
                            int                 StartTime)
                            throws CAENRFIDException
```

C representation:

```
CAENRFIDErrorCodes  CAENRFID IDS SL900A StartLog(
                            CAENRFIDHandle      handle,
                            CAENRFIDTag         *Tag,
                            unsigned int        StartTime);
```

Remarks:
According to the IDS SL900A datasheet, the StartTime parameter is composed as:
bit 31..26: Year
bit 25..21: Month
bit 15..11: Hour
bit 10.. 6: Minute
bit 5.. 0: Second.

Untraceable_EPC_C1G2 Method

Description:
This method allows an interrogator with an asserted Untraceable privilege to instruct a Tag to (a) alter the L and U bits in EPC memory,(b) hide memory from interrogators with a deasserted Untraceable privilege and/or (c) reduce its operating range for all interrogators.

Parameters:

Name	Description
Tag	The CAENRFIDTag representing the tag to be untraced
u	A boolean value for the U bit in XPC_W1 word.
hideEPC	Specify whether a Tag untraceably hides part of EPC memory
hideTID	Specify whether a Tag untraceably hides part of TID memory (Allowed values: 0,1,2)
hideUSER	Specify whether a Tag untraceably hides part of USER memory
range	A value specifying a tag's operating range in terms of reading distance (allowed values: 0,1,2).
newEPCLen	A value specifying a new EPC length field
password	The access password

Syntax:
C# representation:

```
public void                 Untraceable_EPC_C1G2(
                                CAENRFIDTag         Tag,
                                bool                u,
                                bool                hideEPC,
                                byte                hideTID,
                                bool                hideUser,
                                ushort              range,
                                ushort              newEPCLen,
                                uint                password )
```

Java and Android representation:

```
public void                 Untraceable_EPC_C1G2(
                                CAENRFIDTag         Tag,
                                bool                u,
                                bool                hideEPC,
                                bool                hideTID,
                                byte                hideUser,
                                ushort              range,
                                ushort              newEPCLen,
                                uint                password )
                            throws CAENRFIDException
```

C representation:

```
CAENRFIDErrorCodes          CAENRFID_Untraceable_EPC_C1G2(
                                CAENRFIDHandle      handle,
                                char*               SourceName,
                                CAENRFIDTag         *Tag,
                                BOOL                u,
                                BOOL                hideEPC,
                                byte                hideTID,
                                BOOL                hideUser,
                                unsigned short      range,
                                unsigned short      newEPCLen,
                                int                 password);
```

WriteTagData Method

Description:
This method can be used to write a portion of the user memory in an ISO18000-6B tag.

Parameters:

Name	Description
Tag	The CAENRFIDTag representing the tag to be written.
Address	The address where to start writing the data.
Length	The number of byte to be written.
Data	The data to be written into the tag's user memory.

Syntax:
C# representation:

```
public void         WriteTagData(
                        CAENRFIDTag         Tag,
                        short               Address,
                        short               Length,
                        byte[]              Data)
```

Java and Android representation:

```
public void         WriteTagData(
                        CAENRFIDTag         Tag,
                        short               Address,
                        short               Length,
                        byte[]              Data)
                        throws CAENRFIDException
```

C representation:

```
CAENRFIDErrorCodes  CAENRFID WriteTagData(
                        CAENRFIDHandle      handle,
                        CAENRFIDTag         *Tag,
                        int                 Address,
                        int                 Length,
                        void                *Data);
```

WriteTagData_EPC_C1G2 Method

WriteTagData_EPC_C1G2 Method (CAENRFIDTag, Int16, Int16, Int16, Byte[])

Description:

This method can be used to write a portion of memory in an ISO18000-6C (EPC Class1 Gen2) tag.

Parameters:

Name	Description
Tag	The CAENRFIDTag representing the tag to be written.
MemBank	The memory bank where to write the data.
Address	The address where to start writing the data.
Length	The number of byte to be written.
Data	An array of bytes representing the data to be written into the tag.

Syntax:

C# representation:

```
public void         WriteTagData_EPC_C1G2(
                        CAENRFIDTag         Tag,
                        short               MemBank,
                        short               Address,
                        short               Length,
                        byte[]              Data)
```

Java and Android representation:

```
public void         WriteTagData_EPC_C1G2(
                        CAENRFIDTag         Tag,
                        short               MemBank,
                        short               Address,
                        short               Length,
                        byte[]              Data)
                        throws CAENRFIDException
```

C representation:

```
CAENRFIDErrorCodes  CAENRFID_WriteTagData_EPC_C1G2(
                        CAENRFIDHandle      handle,
                        CAENRFIDTag         *Tag,
                        short               MemBank,
                        int                 Address,
                        int                 Length,
                        void                *Data);
```

WriteTagData_EPC_C1G2 Method (CAENRFIDTag, Int16, Int16, Int16, Byte[], Int32)

Description:

This method can be used to write a portion of memory in an ISO18000-6C (EPC Class1 Gen2) tag after having put the tag in Secured state using the Access command.

Parameters:

Name	Description
Tag	The CAENRFIDTag representing the tag to be written.
MemBank	The memory bank where to write the data.
Address	The address where to start writing the data.
Length	The number of byte to be written.
Data	An array of bytes representing the data to be written into the tag.
AccessPassword	The access password.

Syntax:

C# representation:

```
public void         WriteTagData_EPC_C1G2(
                            CAENRFIDTag           Tag,
                            short                 MemBank,
                            short                 Address,
                            short                 Length,
                            byte[]                Data,
                            int                   AccessPassword)
```

Java and Android representation:

```
public void         WriteTagData_EPC_C1G2(
                            CAENRFIDTag           Tag,
                            short                 MemBank,
                            short                 Address,
                            short                 Length,
                            byte[]                Data,
                            int                   AccessPassword)
                            throws CAENRFIDException
```

C representation:

```
CAENRFIDErrorCodes  CAENRFID_SecureWriteTagData_EPC_C1G2(
                            CAENRFIDHandle        handle,
                            CAENRFIDTag           *Tag,
                            short                 MemBank,
                            int                   Address,
                            int                   Length,
                            void                  *Data,
                            int                   AccessPassword);
```

WriteTagData_EPC_C1G2 Method (Int16, Int16, Int16, Byte[], Int16, Int16, Int16, Byte[])

Description:

This method can be used to write a portion of memory in an ISO18000-6C (EPC Class1 Gen2) tag.

Parameters:

Name	Description
BankMask	Memory bank for tag identification.
PositionMask	Bit position (from the start of the selected bank) where apply the mask to match.
LengthMask	Length of the mask.
Mask	Mask of byte.
MemBank	The memory bank where to write the data.
Address	The address where to start writing the data.
Length	The number of byte to be written.
Data	An array of bytes representing the data to be written into the tag.

Syntax:

C# representation:

```
public void         WriteTagData EPC C1G2(
                           short                BankMask,
                           short                PositionMask,
                           short                LengthMask,
                           byte[]               Mask,
                           short                MemBank,
                           short                Address,
                           short                Length,
                           byte[]               Data)
```

Java and Android representation:

```
public void         WriteTagData EPC C1G2(
                           short                BankMask,
                           short                PositionMask,
                           short                LengthMask,
                           byte[]               Mask,
                           short                MemBank,
                           short                Address,
                           short                Length,
                           byte[]               Data)
                           throws CAENRFIDException
```

C representation:

```
CAENRFIDErrorCodes  CAENRFID_BankFilteredWriteTagData_EPC_C1G2(
                           CAENRFIDHandle       handle,
                           char                 *SourceName,
                           short                BankMask,
                           short                PositionMask,
                           short                LengthMask,
                           char                 *Mask,
                           short                MemBank,
                           int                  Address,
                           int                  Length,
                           void                 *Data);
```

WriteTagData_EPC_C1G2 Method (Int16, Int16, Int16, Byte[], Int16, Int16, Int16, Byte[], Int32)

Description:

This method can be used to write a portion of memory in an ISO18000-6C (EPC Class1 Gen2) tag after having put the tag in Secured state using the Access command.

Parameters:

Name	Description
BankMask	Memory bank for tag identification.
PositionMask	Bit position (from the start of the selected bank) where apply the mask to match.
LengthMask	Length of the mask.
Mask	Mask of byte.
MemBank	The memory bank where to write the data.
Address	The address where to start writing the data.
Length	The number of byte to be written.
Data	An array of bytes representing the data to be written into the tag.
AccessPassword	The access password.

Syntax:

C# representation:

```
public void         WriteTagData_EPC_C1G2(
                            short                   BankMask,
                            short                   PositionMask,
                            short                   LengthMask,
                            byte[]                  Mask,
                            short                   MemBank,
                            short                   Address,
                            short                   Length,
                            byte[]                  Data,
                            int                     AccessPassword)
```

Java and Android representation:

```
public void         WriteTagData EPC C1G2(
                            short                   BankMask,
                            short                   PositionMask,
                            short                   LengthMask,
                            byte[]                  Mask,
                            short                   MemBank,
                            short                   Address,
                            short                   Length,
                            byte[]                  Data,
                            int                     AccessPassword)
                            throws CAENRFIDException
```

C representation:

```
CAENRFIDErrorCodes  CAENRFID_SecureBankFilteredWriteTagData_EPC_C1G2(
                            CAENRFIDHandle          handle,
                            char                    *SourceName,
                            short                   BankMask,
                            short                   PositionMask,
                            short                   LengthMask,
                            char                    *Mask,
                            short                   MemBank,
                            int                     Address,
                            int                     Length,
                            void                    *Data,
                            int                     AccessPassword);
```

CAENRFIDNotify Class

The CAENRFIDNotify class defines the structure of a notification message.

In Java, Android and C# languages this class is composed by methods while in C language is present as a struct (for more information see § *Overview on SDK* page 8):

C representation:

```
typedef struct {
                            byte                    ID[MAX_ID_LENGTH];
                            short                   Length;
                            char                    LogicalSource[MAX_LOGICAL_SOURCE_NAME];
                            char                    ReadPoint[MAX_READPOINT_NAME];
                            CAENRFIDProtocol        Type;
                            short                   RSSI;
                            byte                    TID[MAX_TID_SIZE];
                            short                   TIDLen;
                            byte                    XPC[XPC_LENGTH];
                            byte                    PC[PC_LENGTH];
            } CAENRFIDNotify;
```

getDate Method

Description:
This method returns a timestamp representing the time at which the event was generated.

Return value:
The timestamp value.

Syntax:
C# representation:

```
public DateTime                     getDate()
```

Java and Android representation:

```
public java.util.Date               getDate()
```

getPC Method

Description:
This method represents the PC code in the tag.

Return value:
The tag's Protocol Control code.

Syntax:
C# representation:

```
public byte[]               getPC()
```

Java and Android representation:

```
public byte[]               getPC()
```

getReadPoint Method

Description:
This method returns the read point that has detected the tag.

Return value:
The name of the read point that has detected the Tag.

Syntax:
C# representation:
```
public string                   getReadPoint()
```

Java and Android representation:
```
public java.lang.String         getReadPoint()
```

getRSSI Method

Description:
This method returns the RSSI value measured for the tag.

Return value:
The tag's RSSI.

Syntax:
C# representation:
```
public short                    getRSSI()
```

Java and Android representation:
```
public short                    getRSSI()
```

getStatus Method

Description:
This method returns the event type associated to the tag.

Return value:
The event type associated to the Tag.

Syntax:
C# representation:
```
public CAENRFIDTagEventType     getStatus()
```

Java and Android representation:
```
public CAENRFIDTagEventType     getStatus()
```

getTagID Method

Description:
This method returns the tag's ID (the EPC code in Gen2 tags).

Return value:
An array of bytes representing the tag's ID (the EPC code in EPC Class 1 Gen 2 tags).

Syntax:
C# representation:
```
public byte[]                   getTagID()
```

Java and Android representation:
```
public byte[]                   getTagID()
```

getTagLength Method

Description:
This method returns the tag's ID length.

Return value:
The tag's length.

Syntax:
C# representation:
```
public short                    getTagLength()
```

Java and Android representation:
```
public short                    getTagLength()
```

getTagSource Method

Description:
This method returns the name of the logical source that has detected the tag.

Return value:
The name of the logical source that has detected the tag.

Syntax:
C# representation:
```
public string                   getTagSource()
```

Java and Android representation:
```
public java.lang.String         getTagSource()
```

getTagType Method

Description:
This method returns the air protocol of the tag.

Return value:
The air protocol of the tag.

Syntax:
C# representation:
```
public short                    getTagType()
```

Java and Android representation:
```
public CAENRFIDProtocol         getTagType()
```

getTID Method

Description:
This method returns the TID field value in a EPC Class 1 Gen 2 Tag

Return value:
The bytes of the TID field.

Syntax:
C# representation:
```
public byte[]                   getTID()
```

Java and Android representation:
```
public java.lang.String         getAntenna()
```

getXPC Method

Description:
This method returns the tag's XPC words.

Return value:
The tag's XPC words.

Syntax:
C# representation:

```
public byte[]                getXPC()
```

Java and Android representation:

```
public byte[]                getXPC()
```

CAENRFIDReader Class

The CAENRFIDReader class is used to create reader objects which permit to access to CAEN RFID readers' configuration and control commands.

Connect Method

Connect Method (CAENRFIDPort, string)

Description:

In C# and Java languages, this method starts the communication with the reader. It must be called before any other call to method of the CAENRFIDReader object. See § *Managing connections with the readers* page 9 for more information. For android Bluetooth connection see below § *Connect Method (BluetoothSocket)*

Parameters:

Name	Description
ConType	The communication link to use for the connection.
Address	Depending on ConType parameter: IP address for TCP/IP communications ("xxx.xxx.xxx.xxx"), COM port for RS232 communications ("COMx"), an index for USB communications (not yet supported). To specify a TCP port separate address and port by a semi-colon (ex: "192.168.0.1:2300").

Syntax:

C# representation:

```
public void         Connect(
                        CAENRFIDPort          ConType,
                        string                Address)
```

Java and Android representation:

```
public void         Connect(
                        CAENRFIDPort          ConType,
                        java.lang.String      Address)
                        throws CAENRFIDException
```

Connect Method (BluetoothSocket)

Description:

Start the android SPP bluetooth communication with the CAEN RFID Reader. This method must be called before any other methods of the Reader object.

Parameters:

Name	Description
BTSock	The BluetoothSocket to read/write data.

Syntax:

Android representation:

```
public void         Connect(
                        BluetoothSocket       BTSock)
                        throws CAENRFIDException
```

Remarks

The BTSock parameter must be obtained trought a *createRfcommSocketToServiceRecord*(UUID uuid) call.
The standard UUID for the Serial Port Profile is 00001101-0000-1000-8000-00805F9B34FB.

Connect Method (VCPSerialPort)

Description:

Start the android VCP communication with the CAEN RFID Reader. This method must be called before any other methods of the Reader object.

Parameters:

Name	Description
port	The vcp port used to communicate with reader.

Syntax:

Android representation:

```
public void         Connect(
                        VCPSerialPort         port)
                        throws CAENRFIDException
```

Remarks

To find the VCP Port of the CAENRFID USB readers attached to the Android device, use the *VCPSerialPort.findVCPDevice*(Context) class method where the Context parameter is an UsbManager object, and pick the one (usually the first) related to the usb port of the reader.

To use a VCPSerialPort and get an UsbManager objects, the user application should obtain the permission to use the USB System Service of the Android OS.

See the Android USB topics on the developer.android.com site for further details.

Init Function

Description:

In C language, this function generates an opaque handle to identify a module attached to the PC. See § *Managing connections with the readers* page 9 for more information.

Parameters:

Name	Description
ConType	The communication link to use for the connection.
Address	Depending on ConType parameter: IP address for TCP/IP communications ("xxx.xxx.xxx.xxx"), COM port for RS232 communications ("COMx"), an index for USB communications (not yet supported). To specify a TCP port separate address and port by a semi-colon (ex: "192.168.0.1:2300").
handle	The handle that identifies the device.

Syntax:

C representation:

```
CAENRFIDErrorCodes  CAENRFID_Init(
                        CAENRFIDPort          ConType,
                        char                  *Address,
                        CAENRFIDHandle        *handle,
                        CAENRFIDProtocol      *Protocol);
```

Disconnect Method

Description:

In C# and Java languages, this method closes the connection with the CAEN RFID Reader releasing all the allocated resources. See § *Managing connections with the readers* page 9 for more information.

Syntax:

C# representation:

```
public void         Disconnect()
```

Java and Android representation:

```
public void         Disconnect()
                        throws CAENRFIDException
```

End Function

Description:

In C language, this function closes the connection with the CAEN RFID Reader releasing all the allocated resources. See § *Managing connections with the readers* page 9 for more information.

Parameters:

Name	Description
handle	The handle that identifies the device.

Syntax:
C representation:

```
CAENRFIDErrorCodes  CAENRFID_End(
                            CAENRFIDHandle        handle);
```

GetBatteryLevel Method

Description:
This method gets the current battery charge.

Return value:
The current charge level expressed in %.

Syntax:
C# representation:

```
public int GetBatteryLevel()
```

Java and Android representation:

```
public int   GetBatteryLevel()
                                  throws CAENRFIDException
```

C representation:

```
CAENRFIDErrorCodes          CAENRFID GetBatteryLevel (
                                  CAENRFIDHandle        handle,
                                  unsigned int          *Charge);
```

GetBitRate Method

Description:
This method gets the current setting of the RF bit rate.

Return value:
The current RF bit rate value.

Syntax:
C# representation:

```
public CAENRFIDBitRate      GetBitRate()
```

Java and Android representation:

```
public CAENRFIDBitRate      GetBitRate()
                                  throws CAENRFIDException
```

C representation:

```
CAENRFIDErrorCodes          CAENRFID_GetBitrate(
                                  CAENRFIDHandle        handle,
                                  CAENRFID_Bitrate      *Bitrate);
```

GetFirmwareRelease Method

Description:
This method permits to read the release of the firmware loaded into the device.

Return value:
A string representing the firmware release of the device.

Syntax:
C# representation:
```
public string               GetFirmwareRelease()
```

Java and Android representation:
```
public java.lang.String     GetFirmwareRelease()
                                    throws CAENRFIDException
```

C representation:
```
CAENRFIDErrorCodes          CAENRFID_GetFirmwareRelease(
                                    CAENRFIDHandle      handle,
                                    char                *FWRel);
```

GetIO Method

Description:
This method gets the current digital Input and Output lines status.

Return value:
A bitmask representing the I/O lines status. The format and the meaning of the bits depend on the Reader's model. Please refer to the corresponding user manual available at www.caenrfid.com.

Syntax:
C# representation:
```
public int          GetIO()
```

Java and Android representation:
```
public int          GetIO()
                            throws CAENRFIDException
```

C representation:
```
CAENRFIDErrorCodes  CAENRFID_GetIO(
                            CAENRFIDHandle      handle,
                            unsigned int        *IORegister);
```

GetIODirection Method

Description:
This method gets the current I/O direction setting as a bitmask. Each bit represents a I/O line, a value of 0 means that the line is configured as an input, 1 as an output. This setting has a meaning only for those readers with configurable I/O lines.

Return value:
A bitmask representing the I/O setting.

Syntax:
C# representation:
```
public int          GetIODirection()
```

Java and Android representation:
```
public int          GetIODirection()
                            throws CAENRFIDException
```

C representation:
```
CAENRFIDErrorCodes  CAENRFID GetIODirection(
                            CAENRFIDHandle      handle,
                            unsigned int        *IODirection);
```

GetFHSSMode Method

Description:
This method gets the current Frequency Hopping status.

Return value:
A zero value if the FHSS is disabled, non-zero value if it is enabled.

Syntax:
C# representation:

```
public short         GetFHSSMode()
```

Java and Android representation:

```
public short         GetFHSSMode()
                            throws CAENRFIDException
```

C representation:

```
CAENRFIDErrorCodes   CAENRFID_GetFHSSMode(
                            CAENRFIDHandle        handle,
                            unsigned short        *FHSSMode);
```

GetPower Method

Description:
This method gets the current setting of the RF power expressed in mW.

Return value:
The current conducted RF power expressed in mW.

Syntax:
C# representation:

```
public int           GetPower()
```

Java and Android representation:

```
public int           GetPower()
                            throws CAENRFIDException
```

C representation:

```
CAENRFIDErrorCodes   CAENRFID_GetPower(
                            CAENRFIDHandle        handle,
                            unsigned int          *Power);
```

GetProtocol Method

Description:
This method gets the current air protocol of the Reader.

Return value:
A CAENRFIDProtocol representing the current air protocol set on the reader.

Syntax:
C# representation:
```
public CAENRFIDProtocol     GetProtocol()
```

Java and Android representation:
```
public CAENRFIDProtocol     GetProtocol()
                                    throws CAENRFIDException
```

C representation:
```
CAENRFIDErrorCodes          CAENRFID_GetProtocol(
                                    CAENRFIDHandle        handle,
                                    CAENRFIDProtocol      *Protocol);
```

GetReaderInfo Method

Description:
This method permits to read the reader information loaded into the device.

Return value:
The reader information of the device.

Syntax:
C# representation:
```
public CAENRFIDReaderInfo           GetReaderInfo()
```

Java and Android representation:
```
public CAENRFIDReaderInfo           GetReaderInfo()
                                            throws CAENRFIDException
```

C representation:
```
CAENRFIDErrorCodes                  CAENRFID_GetReaderInfo(
                                            CAENRFIDHandle        handle,
                                            char                  *Model,
                                            char                  *SerialNum);
```

GetReadPoints Method

Description:
This method gets the names of the read points (antennas) available in the reader.

Return value:
An array containing the read points (antennas) names available in the reader.

Syntax:
C# representation:
```
public string[]             GetReadPoints()
```

Java and Android representation:
```
public java.lang.String[]   GetReadPoints()
```

C representation:
```
CAENRFIDErrorCodes          CAENRFID_GetReadPoints(
                                    CAENRFIDHandle        handle,
                                    char                  **AntNames_[],
                                    int                   *AntNumber);
```

GetReadPointStatus Method

Description:
This method gets the CAENRFIDReadPointStatus object representing the status of a read point (antenna).

Parameters:

Name	Description
ReadPoint	The name of the read point to check.

Return value:
The CAENRFIDReadPointStatus object representing the current status of the read point.

Syntax:
C# representation:

```
public CAENRFIDReadPointStatus     GetReadPointStatus(
                                          string                        ReadPoint)
```

Java and Android representation:

```
public CAENRFIDReadPointStatus     GetReadPointStatus(
                                          java.lang.String              ReadPoint)
                                          throws CAENRFIDException
```

C representation:

```
CAENRFIDErrorCodes                 CAENRFID_GetReadPointStatus(
                                          CAENRFIDHandle                handle,
                                          char                          *ReadPoint,
                                          CAENRFIDReadPointStatus       *Status);
```

GetRFChannel Method

Description:
This method gets the index of the RF channel currently in use. The index value meaning changes for different country regulations.

Return value:
The RF channel index.

Syntax:
C# representation:

```
public short         GetRFChannel()
```

Java and Android representation:

```
public short         GetRFChannel()
                            throws CAENRFIDException
```

C representation:

```
CAENRFIDErrorCodes   CAENRFID_GetRFChannel(
                            CAENRFIDHandle          handle,
                            unsigned short          *RFChannel);
```

Remarks
This method is only used for testing applications.

GetRFRegulation Method

Description:
This method gets the current RF regulation setting value.

Return value:
The RF regulation value.

Syntax:
C# representation:

```
public CAENRFIDRFRegulations        GetRFRegulation()
```

Java and Android representation:

```
public CAENRFIDRFRegulations        GetRFRegulation()
                                    throws CAENRFIDException
```

C representation:

```
CAENRFIDErrorCodes                  CAENRFID_GetRFRegulation(
                                            CAENRFIDHandle              handle,
                                            CAENRFIDRFRegulations       *RFRegulation);
```

GetSource Method

Description:
This method gets a CAENRFIDLogicalSource object given its name.

Parameters:

Name	Description
Source	The name of the logical source.

Return value:
The CAENRFIDLogicalSource object corresponding to the requested name.

Syntax:
C# representation:

```
public CAENRFIDLogicalSource        GetSource(
                                            string              Source)
```

Java and Android representation:

```
public CAENRFIDLogicalSource        GetSource(
                                            java.lang.String    Source)
                                            throws CAENRFIDException
```

Remarks:
This function does not exist in C language, see § *Overview on SDK* page 8 for more information.

GetSourceNames Method

Description:
This method gets the names of the logical sources available in the reader.

Return value:
An array containing the logical source names available in the reader.

Syntax:
C# representation:

```
public static string[]              GetSourceNames()
```

Java and Android representation:

```
public static java.lang.String[]    GetSourceNames()
```

C representation:

```
CAENRFIDErrorCodes                  CAENRFID_GetSourceNames(
                                            CAENRFIDHandle      handle,
                                            char                **SrcNames[],
                                            int                 *SrcNumber);
```

GetSources Method

Description:
This method gets the CAENRFIDLogicalSource objects available on the reader.

Return value:
An array of the logical source objects available in the Reader.

Syntax:
C# representation:

```
public CAENRFIDLogicalSource[]      GetSources()
```

Java and Android representation:

```
public CAENRFIDLogicalSource[]      GetSources()
```

Remarks:
This function does not exist in C language, see § *Overview on SDK* page 8 for more information.

InventoryAbort Method

For the description of this method, see § *EVENT HANDLING* page 99.

MatchReadPointImpedance Method

MatchReadPointImpedance (String)

Description:

MatchReadPointImpedance matches the antenna impedance passed in ReadPoint.

Parameters:

Name	Description
ReadPoint	The antenna to be matched

Return value:

A real number greater than one, that represents the return status of the matching operation.

Syntax:

C# representation:

```
public float        MatchReadPointImpedance(
                        string              ReadPoint)
```

Java and Android representation:

```
public float        MatchReadPointImpedance(
                        String              ReadPoint)
                        throws CAENRFIDException
```

C representation:

```
CAENRFIDErrorCodes  CAENRFID  MatchReadPointImpedance (
                        CAENRFIDHandle      handle,
                        char                *ReadPoint,
                        float               *Value);
```

MatchReadPointImpedance (String, CAENRFIDMatchingParams, Int16)

Description:

MatchReadPointImpedance matches the antenna impedance passed in ReadPoint.

Parameters:

Name	Description
ReadPoint	The antenna to be matched
MatchParam	A CAENRFIDMatchingParams parameters for matching operation
MatchParamValue	The value of the MatchParam

Return value:

A real number greater than one, that represents the return status of the matching operation.

Syntax:

C# representation:

```
public float        MatchReadPointImpedance (
                        string                  ReadPoint,
                        CAENRFIDMatchingParams  MatchParam,
                        short                   MatchParamValue)
```

Java and Android representation:

```
public float        MatchReadPointImpedance(
                        String                  ReadPoint,
                        CAENRFIDMatchingParams  MatchParam,
                        short                   MatchParamValue)
                        throws CAENRFIDException
```

C representation:

```
CAENRFIDErrorCodes  CAENRFID  MatchReadPointImpedance (
                        CAENRFIDHandle          handle,
                        char                    *ReadPoint,
                        CAENRFIDMatchingParams  MatchParam,
                        int                     MatchParamValue,
                        float                   *Value);
```

PrintScreen Method

Description:
Print ASCII text on the reader's screen (only for readers with display, e.g. R1170I qIDmini).

Parameters:

Name	Description
Text	An arbitrary ASCII string.
TerminalType	RFU parameter, default is 0 (VT100).

Syntax:
C# representation:

```
public void         PrintScreen(
                            string              Text,
                            short               TerminalType)
```

Java and Android representation:

```
public void         PrintScreen(
                            string              Text,
                            int                 TerminalType)
                            throws CAENRFIDException
```

C representation:

```
CAENRFIDErrorCodes  CAENRFID_PrintScreen(
                            CAENRFIDHandle      handle,
                            char                *Text,
                            unsigned short      TerminalType);
```

RFControl Method

Description:
Permits to control the RF CW (Carrier Wave) signal generation.

Parameters:

Name	Description
OnOff	The value to set. 1 generates the CW , 0: stops the CW generation.

Syntax:
C# representation:

```
public void         RFControl(
                            int                 OnOff)
```

Java and Android representation:

```
public void         RFControl(
                            int                 OnOff)
                            throws CAENRFIDException
```

C representation:

```
CAENRFIDErrorCodes  CAENRFID_RFControl(
                            CAENRFIDHandle      handle,
                            int                 OnOff);
```

Remarks
This method is only used for testing applications.

SetBitRate Method

Description:
This method sets the RF bit rate to use.

Parameters:

Name	Description
BitRate	The RF bit rate value to be set.

Syntax:
C# representation:

```
public void         SetBitRate(
                        CAENRFIDBitRate       BitRate)
```

Java and Android representation:

```
public void         SetBitRate(
                        CAENRFIDBitRate       BitRate)
                        throws CAENRFIDException
```

C representation:

```
CAENRFIDErrorCodes  CAENRFID_SetBitRate(
                        CAENRFIDHandle        handle,
                        CAENRFID_Bitrate      BitRate);
```

SetDateTime Method

Description:
This method sets the Date/Time of the reader.

Parameters:

Name	Description
DateTime	The Date/Time to be set on the reader as a string in the format: "yyyy-mm-dd hh:mm:ss".

Syntax:
C# representation:

```
public void         SetDateTime(
                        string                DateTime)
```

Java and Android representation:

```
public void         SetDateTime(
                        java.lang.String      DateTime)
                        throws CAENRFIDException
```

C representation:

```
CAENRFIDErrorCodes  CAENRFID_SetDateTime(
                        CAENRFIDHandle        handle,
                        char                  *DateTime);
```

SetIO Method

Description:
This method sets the Output lines value.

Parameters:

Name	Description
IOValue	A bitmask representing the I/O lines value. The format and the meaning of the bits depend on the reader's model. Please refer to the corresponding user manual available on www.caenrfid.com

Syntax:
C# representation:

```
public void         SetIO(
                            int                     IOValue)
```

Java and Android representation:

```
public void         SetIO(
                            int                     IOValue)
                            throws CAENRFIDException
```

C representation:

```
CAENRFIDErrorCodes  CAENRFID_SetIO(
                            CAENRFIDHandle          handle,
                            unsigned int            IOValue);
```

SetIODIRECTION Method

Description:
This method sets the current I/O direction setting as a bitmask. Each bit represents a I/O line, a value of 0 means that the line is configured as an input, 1 as an output. This setting has a meaning only for those readers with configurable I/O lines.

Parameters:

Name	Description
IODirection	The IODirection value to set.

Syntax:
C# representation:

```
public void         SetIODIRECTION(
                            int                     IODirection)
```

Java and Android representation:

```
public void         SetIODIRECTION(
                            int                     IODirection)
                            throws CAENRFIDException
```

C representation:

```
CAENRFIDErrorCodes  CAENRFID_SetIODirection(
                            CAENRFIDHandle          handle,
                            unsigned int            IODirection);
```

SetNetwork Method

Description:
This method permits to configure the network settings of the reader. In order to apply the changes the reader must be restarted.

Parameters:

Name	Description
IPAddress	The IP address to set on the reader network interface.
NetMask	The netmask to set on the reader network interface.
Gateway	The gateway to set on the reader network interface.

Syntax:
C# representation:

```
public void         SetNetwork(
                            string              IPAddress,
                            string              NetMask,
                            string              Gateway)
```

Java and Android representation:

```
public void         SetNetwork(
                            java.lang.String    IPAddress,
                            java.lang.String    NetMask,
                            java.lang.String    Gateway)
                            throws CAENRFIDException
```

C representation:

```
CAENRFIDErrorCodes  CAENRFID_SetNetwork(
                            CAENRFIDHandle      handle,
                            char                *IPAddress,
                            char                *NetMask,
                            char                *Gateway);
```

SetPower Method

Description:
This method sets the conducted RF power of the Reader.

Parameters:

Name	Description
power	The conducted RF power value expressed in mW.

Syntax:
C# representation:

```
public void         SetPower(
                            int                 power)
```

Java and Android representation:

```
public void         SetPower(
                            int                 power)
                            throws CAENRFIDException
```

C representation:

```
CAENRFIDErrorCodes  CAENRFID_SetPower(
                            CAENRFIDHandle      handle,
                            unsigned int        Power);
```

SetProtocol Method

Description:
This method sets the air protocol of the reader.

Parameters:

Name	Description
Protocol	The CAENRFIDProtocol representing the air protocol to be set.

Syntax:
C# representation:

```
public void         SetProtocol(
                        CAENRFIDProtocol      Protocol)
```

Java and Android representation:

```
public void         SetProtocol(
                        CAENRFIDProtocol      Protocol)
                        throws CAENRFIDException
```

C representation:

```
CAENRFIDErrorCodes  CAENRFID_SetProtocol(
                        CAENRFIDHandle        handle,
                        CAENRFIDProtocol      Protocol);
```

SetRFChannel Method

Description:
This method sets the RF channel to use. This method fixes the RF channel only when the listen before talk or the frequency hopping feature is disabled.

Parameters:

Name	Description
Channel	The RF channel index to be set.

Syntax:
C# representation:

```
public void         SetRFChannel(
                        short                 Channel)
```

Java and Android representation:

```
public void         SetRFChannel(
                        short                 Channel)
                        throws CAENRFIDException
```

C representation:

```
CAENRFIDErrorCodes  CAENRFID_SetRFChannel(
                        CAENRFIDHandle        handle,
                        unsigned short        Channel);
```

Remarks
This method is only used for testing applications.

SetRS232 Method

Description:
This method permits to change the serial port settings. Valid settings values depend on the reader model.

Parameters:

Name	Description
baud	The baud rate value to set.
datab	The number of data bits to set.
stopb	The number of stop bits to set.
parity	The parity value to set.
flowc	The flow control value to set.

Syntax:
C# representation:

```
public void         SetRS232(
                            int                         baud,
                            int                         datab,
                            int                         stopb,
                            CAENRFIDRS232Constants      parity,
                            CAENRFIDRS232Constants      flowc)
```

Java and Android representation:

```
public void         SetRS232(
                            int                         baud,
                            int                         datab,
                            int                         stopb,
                            CAENRFIDRS232Constants      parity,
                            CAENRFIDRS232Constants      flowc)
                            throws CAENRFIDException
```

C representation:

```
CAENRFIDErrorCodes  CAENRFID SetRS232(
                            CAENRFIDHandle              handle,
                            unsigned long               baud,
                            unsigned long               datab,
                            unsigned long               stopb,
                            CAENRFID RS232 Parity       parity,
                            CAENRFID_RS232_FlowControl flowc);
```

CAENRFIDReaderInfo Class

The CAENRFIDReaderInfo class is used to create reader info objects. Reader info objects represent the information about the reader device (model and serial number).

GetModel Method

Description:
This method gets the reader's model.

Return value:
The reader's model.

Syntax:
C# representation:
```
public string                   GetModel()
```

Java and Android representation:
```
public java.lang.String         GetModel()
```

Remarks:
This method does not exist in C language. It is possible to use the *GetReaderInfo Method* page 83 instead. In fact *GetReaderInfo Method* (in the C language) returns the reader's model and the serial number.

GetSerialNumber Method

Description:
This method gets the reader's serial number.

Return value:
The reader's serial number.

Syntax:
C# representation:
```
public string                   GetSerialNumber()
```

Java and Android representation:
```
public java.lang.String         GetSerialNumber()
```

Remarks:
This method does not exist in C language. It is possible to use the *GetReaderInfo Method* page 83 instead. In fact *GetReaderInfo Method* (in the C language) returns the reader's model and the serial number.

CAENRFIDTag Class

The CAENRFIDTag class is used to define objects representing the tags. These objects are used as return values for the inventory methods and as arguments for many tag access methods.

In both Java and C# language this class is composed by methods while in C language the following struct is present (for more information see § *Overview on SDK* page 8):

C representation:

```
typedef struct {
                    byte                ID[MAX_ID_LENGTH];
                    short               Length;
                    char                LogicalSource[MAX_LOGICAL_SOURCE_NAME];
                    char                ReadPoint[MAX_READPOINT_NAME];
                    CAENRFIDProtocol    Type;
                    short               RSSI;
                    byte                TID[MAX_TID_SIZE];
                    short               TIDLen;
                    byte                XPC[XPC_LENGTH];
                    byte                PC[PC_LENGTH];
            } CAENRFIDTag;
```

GetId Method

Description:
This method returns the tag's ID (the EPC code in Gen2 tags).

Return value:
An array of bytes representing the tag's ID (the EPC code in EPC Class 1 Gen 2 tags).

Syntax:
C# representation:

```
public byte[]               GetId()
```

Java and Android representation:

```
public byte[]               GetId()
```

GetLength Method

Description:
This method returns the tag's ID length.

Return value:
The tag's length.

Syntax:
C# representation:

```
public short                GetLength()
```

Java and Android representation:

```
public short                GetLength()
```

GetPC Method

Description:
This method returns the Protocol Control(PC) word code of the tag.

Return value:
The tag's Protocol Control code.

Syntax:
C# representation:
```
public byte[]               GetPC()
```

Java and Android representation:
```
public byte[]               GetPC()
```

GetReadPoint Method

Description:
This method returns the read point that has detected the tag.

Return value:
The name of the read point that has detected the Tag

Syntax:
C# representation:
```
public string                       GetReadPoint()
```

Java and Android representation:
```
public java.lang.String             GetReadPoint()
                                    throws CAENRFIDException
```

GetRSSI Method

Description:
This method returns the RSSI value measured for the tag.

Return value:
The tag's RSSI.

Syntax:
C# representation:
```
public short                        GetRSSI()
```

Java and Android representation:
```
public short                        GetRSSI()
```

GetSource Method

Description:
This method returns the name of the logical source that has detected the tag.

Return value:
The name of the logical source that has detected the tag.

Syntax:
C# representation:
```
public CAENRFIDLogicalSource       GetSource()
```

Java and Android representation:
```
public CAENRFIDLogicalSource       GetSource()
```

GetTID Method

Description:
This method returns the tag's TID (valid only for EPC Class 1 Gen 2 tags).

Return value:
An array of bytes representing the tag's TID.

Syntax:
C# representation:
```
public byte[]              GetTID()
```

Java and Android representation:
```
public byte[]              GetTID()
```

GetTimeStamp Method

Description:
This method gets the Tag's TimeStamp.

Return value:
The Tags's Unix TimeStamp.

Syntax:
C# representation:
```
public DateTime                    GetTimeStamp()
```

Java and Android representation:
```
public java.util.Date              GetTimeStamp()
```

GetType Method

Description:
This method returns the air protocol of the tag.

Return value:
The air protocol of the tag.

Syntax:
C# representation:
```
public new CAENRFIDProtocol        GetType()
```

Java and Android representation:
```
public CAENRFIDProtocol            GetType()
```

GetXPC Method

Description:
This method returns the tag's XPC words.

Return value:
The tag's XPC words.

Syntax:
C# representation:

```
public byte[]                GetXPC()
```

Java and Android representation:

```
public byte[]                GetXPC()
```

4 EVENT HANDLING

Event Handling

Standard tag's detection method (InventoryTag) is based on a polling mechanism: a call to the InventoryTag method/function results in a single read cycle and the detected tags in that cycle are returned.

An useful variant ("continuous mode") uses an event mechanism to notify detected tags: a call to the EventInventoryTag method/function starts a continuous tags' detection algorithm (multiple read cycles) and an event is generated for each read cycle to notify the detected tags (see the CAEN RFID API User Manual for further information).

The user of the library can define an event handler method/function that is called automatically when the event raises; the data related to the event is passed to the handler as a parameter.

The user can define the number of read cycles that the EventInventoryTag have to perform using the ReadCycle parameter of the relevant LogicalSource. If ReadCycle is equal to 0 the EventInventoryTag method loops indefinitely.

The continuous mode is obtained by setting to 1 both *framed* (bit 1) and *continuous* (bit 2) flags.

The "continuous mode" can be interrupted using the InventoryAbort method function.

In readers equipped with button (like the gID R1240IE/IU and gIDmini R1170I readers), if the *event trigger* flag (bit 5) is enabled and the continuous mode is enabled (bit 1 and bit 2), the event handler is recalled every time the button is pressed.

The event handling is implemented using the standard event handling mechanism in .NET and Java/Android while in C it is simulated using the callback mechanism.

No other methods can be invoked on logical source and reader, during the continuous mode, nor inside the event handler. The only operation allowed is an inventory abort, that must be used to stop a reader which is working in continuous mode.

For further information on the use of the EventInventoryTag, please refer to the CAEN RFID API User Manual.

EventInventoryTag Method

Description:
A call to this method will start a sequence of read cycle on each read point linked to the logical source. The readings will be notified to the controller via event generation.

Parameters:

Name	Description
Mask	A byte array representing the bitmask to apply.
MaskLength	A value representing the bit-oriented length of the bitmask.
Position	A value representing the first bit where the match will start.
Flag	A bitmask representing the InventoryTag options.
pCallBack	The user defined handler called by EventInventoryTag (only in C language).

Return value:
A boolean value that represents the status of the command: true if the reader has accepted the command; false otherwise.

Syntax:
C# representation:

```
public bool  EventInventoryTag(
                          byte[]                        Mask,
                          short                         MaskLength,
                          short                         Position,
                          short                         Flag)
```

Java and Android representation:

```
public boolean      EventInventoryTag(
                          byte[]                        Mask,
                          short                         MaskLength,
                          short                         Position,
                          short                         Flag)
                          throws CAENRFIDException
```

C representation:

```
typedef struct {
                    char                                *SourceName;
                    char                                *Mask;
                    unsigned char                       MaskLength;
                    unsigned char                       Position;
                    CAENRFID_INVENTORY_CALLBACK         pCallBack;
                    short                               flag;}
                    CAENRFID_EventInventoryParams;

CAENRFIDErrorCodes  CAENRFID EventInventoryTag (
                    CAENRFIDHandle                      handle,
                    CAENRFID_EventInventoryParams       InvParams);
```

Remarks:
Depending on the air protocol setting it will execute the appropriate anticollision algorithm. This version of the method permits to specify a bitmask for filtering tag's populations as described by the EPC Class1 Gen2 (ISO18000-6C) air protocol. The filtering will be performed on the memory bank specified by bank parameter, starting at the bit indicated by the Position index and for a MaskLength length. The method will return only the tags that match the given Mask. Passing a zero value for MaskLength it performs as the non-filtering InventoryTag method. The Flags parameter permits to set InventoryTag method's options.

Flag value meaning	
Bit 0	RSSI: a 1 value indicates the reader will transmit the RSSI (Return Signal Strength Indicator) in the response.
Bit 1	Framed data: a 1 value indicates that the tag's data will be transmitted by the reader to the PC as soon as the tag is detected, a 0 value means that all the tags detected are buffered in the reader and trasmitted all together at the end of the inventory cycle. Bit1 and bit 2 work in conjunction and must have the same value (00 or 11).
Bit 2	Continuous acquisition: a 1 value indicates that the inventory cycle is repeated by the reader depending on the SetReadCycle setting value, a 0 value means that only one inventory cycle will be performed. If the continuous mode is selected a 0 value in the ReadCycle setting will instruct the reader to repeat the inventory cycle until an InventoryAbort method is invoked, a value X different from 0 means that the inventory cycle will be performed X times by the reader. Bit1 and bit 2 work in conjunction and must have the same value (00 or 11).
Bit 3	Compact data: a 1 value indicates that only the EPC of the tag will be returned by the reader, a 0 value indicates that the complete data will be returned. In case that the compact option is enabled all the other data will be populated by this library with fakes values.
Bit 4	TID reading: a 1 value indicates that also the TID of the tag will be returned by the reader together with the other information.
Bit 5	Event trigger: when this flag is set together with the continuous mode (continuous acquisition flag + framed data flag), the inventory cycle is performed in the same way of the continuous mode with the only difference that the inventory command is performed only by pressing the button of the gID R1240I and gIDmini R1170I readers.
Bit 6	XPC: a 1 value allows the reader to get the XPC word if backscattered by a tag.Tags that do not backscatter the XPC words will return an XPC array with all the 4 bytes set to 0
Bit 7	Match tag: a 1 value enables the matching of read tags with a tag present in the memory (A828BT reader only).
Bit 8	PC: a 1 value allows the reader to return the PC of a Gen2 tag in addition to the ID (A828BT reader only).

InventoryAbort Method

Description:
This method stops the EventInventoryTag execution.

Syntax:
C# representation:
```
public void                 InventoryAbort()
```

Java and Android representation:
```
public void                 InventoryAbort()
                            throws CAENRFIDException
```

C representation:
```
CAENRFIDErrorCodes          CAENRFID_InventoryAbort(
                                    CAENRFIDHandle        handle);
```

ForceAbort Method

Description:
This method tries to stop a pending continuos inventory (see *EventInventoryTag Method*) that has not been stopped correclty by an InventoryAbort or Disconnect call. Choose the timeout value based on the expected reader's load (large value if in presence of a large population of tags, small value if only few tags/seconds must be read).

Parameters:

Name	Description
timeout	The time (in ms) to wait for the end of the continuous inventory data.

Return value:
True if a continuos inventory end has been detected, false otherwise.

Syntax:
C# representation:

```
public bool             ForceAbort(
                               long                 timeout );
```

Java and Android representation:

```
public boolean          ForceAbort(
                               long                 timeout)
                        throws CAENRFIDException
```

C representation:

```
CAENRFIDErrorCodes      CAENRFID ForceAbort(
                               CAENRFIDHandle       handle,
                               int                  timeout,
                               BOOL                 *endOfStreamMatched);
```

Remarks:
If continuos data stream is detected, the ForceAbort waits for its end even if the necessary amount of time exceedes the timeout parameter value.

C# Event Handling

CAENRFIDEventArgs Class

The CAENRFIDEventArgs class defines the CAENRFID event arguments.

getData Method

Description:
This method returns the event object value.

Return value:
The value of the event object.

Syntax:
C# representation:

```
public CAENRFIDNotify[]            getData()
```

CAENRFIDEventHandler Delegate

CAENRFIDEventHandler delegate declaration.

Parameters:

Name	Description
Event	the Data Event.

Syntax:
C# representation:

```
public delegate void       CAENRFIDEventHandler(
                                  object               Sender,
                                  CAENRFIDEventArgs    Event)
```

CAENRFIDEvent Event

The CAEN RFID event is generated by the library each time tag data arrives from the reader. The event is generated only when the EventInventoryTag method is used. It is an event of the Reader Class.

Syntax:
C# representation:

```
public event CAENRFIDEventHandler          CAENRFIDEvent
```

Event Data

The event handler receives an argument of type CAENRFIDEventArgs containing data related to this event. The following CAENRFIDEventArgs property provides information specific to this event.

Property	Description
Data	Represents the event object value.

Java and Android Event Handling

CAENRFIDEvent Class

The CAENRFIDEvent class defines the CAENRFID event arguments.

getData Method

Description:
This method returns the event object value.

Return value:
The value of the event object.

Syntax:
Java and Android representation:

```
public java.util.ArrayList          getData()
```

CAENRFIDEventListener Interface

The listener interface for receiving CAEN RFID events.

CAENRFIDTagNotify

Description:
This method is invoked when an action occurs.

Parameters:

Name	Description
evt	The CAENRFIDEvent contains the Data Event.

Syntax:
Java and Android representation:

```
void          CAENRFIDTagNotify(
                      CAENRFIDEvent          evt)
```

addCAENRFIDEventListener

This is a Reader Class method. It adds the specified CAENRFIDEvent listener to receive CAENRFIDEvent events from this CAENRIFDReader.

Parameters:

Name	Description
listener	listener - the CAENRFIDEvent listener.

Syntax:
Java and Android representation:

```
public void          addCAENRFIDEventListener(
                             CAENRFIDEventListener         listener)
```

removeCAENRFIDEventListener

This is a Reader Class method. It Removes the specified CAENRFIDEvent listener so that it no longer receives CAENRFID events from this CAENRIFDReader.

Parameters:

Name	Description
listener	listener - the CAENRFIDEvent listener.

Syntax:
Java and Android representation:

```
public void          removeCAENRFIDEventListener(
                             CAENRFIDEventListener         listener)
```

C Event Handling

CAENRFID_INVENTORY_CALLBACK

This function prototype defines the type of the user defined event handler (see the CAEN RFID API User Manual. for further information)

Syntax:
C representation:

```
typedef CAENRFIDErrorCodes (__stdcall *CAENRFID_INVENTORY_CALLBACK)
                           (const CAENRFIDNotify* Tags, const int Size);
```

5 ENUMERATIONS DESCRIPTION

CAENRFIDBitRate Enumeration

The CAENRFIDBitRate Enumeration gives a list of the supported radiofrequency profiles.

Syntax:
C# representation:
```
public enum                 CAENRFIDBitRate
```

Java and Android representation:
```
public final class          CAENRFIDBitRate
```

C representation:
```
typedef enum                CAENRFID_Bitrate;
```

In the following table, the CAENRFIDBitRate Enumeration members are listed:

Member	Description
DSB_ASK_FM0_TX10RX40	DSB-ASK transmission modulation, FM0 return link encoding, 10 Kbit in transmission, 40 Kbit in reception.
DSB_ASK_FM0_TX40RX40	DSB-ASK transmission modulation, FM0 return link encoding, 40 Kbit in transmission, 40 Kbit in reception.
DSB_ASK_FM0_TX40RX160	DSB-ASK transmission modulation, FM0 return link encoding, 40 Kbit in transmission, 160 Kbit in reception.
DSB_ASK_FM0_TX160RX400	DSB-ASK transmission modulation, FM0 return link encoding, 160 Kbit in transmission, 400 Kbit in reception.
DSB_ASK_M2_TX40RX160	DSB-ASK transmission modulation, Miller (M=2) return link encoding, 40 Kbit in transmission, 160 Kbit in reception.
DSB_ASK_M4_TX40RX256	DSB-ASK transmission modulation, Miller (M=4) return link encoding, 40 Kbit in transmission, 256 Kbit in reception.
PR_ASK_FM0_TX40RX640	PR-ASK transmission modulation, FM0 return link encoding, 40 Kbit in transmission, 640 Kbit in reception.
PR_ASK_M2_TX40RX250	PR-ASK transmission modulation, Miller (M=2) return link encoding, 40 Kbit in transmission, 250 Kbit in reception.
PR_ASK_M4_TX40RX250	PR-ASK transmission modulation, Miller (M=4) return link encoding, 40 Kbit in transmission, 250 Kbit in reception.
PR_ASK_M4_TX40RX256	PR-ASK transmission modulation, Miller (M=4) return link encoding, 40 Kbit in transmission, 256 Kbit in reception.
PR_ASK_M4_TX40RX300	PR-ASK transmission modulation, Miller (M=4) return link encoding, 40 Kbit in transmission, 300 Kbit in reception.
PR_ASK_M4_TX40RX320	DSB-ASK transmission modulation, Miller (M=4) return link encoding, 40 Kbit in transmission, 320 Kbit in reception.
PR_ASK_M4_TX80RX320	PR-ASK transmission modulation, Miller (M=4) return link encoding, 80 Kbit in transmission, 320 Kbit in reception.
DSB_ASK_M8_TX40RX256	PR-ASK transmission modulation, Miller (M=4) return link encoding, 80 Kbit in transmission, 320 Kbit in reception.

CAENRFIDLogicalSourceConstants Enumeration

The CAENRFIDLogicalSourceConstants Enumeration gives a list of constants used for the configuration of the logical sources. Detailed explanation of the settings can be found in the EPC Class 1 Gen 2 and ISO 18000-6B specification documents.

Syntax:
C# representation:

```
public enum                 CAENRFIDLogicalSourceConstants
```

Java and Android representation:

```
public final class          CAENRFIDLogicalSourceConstants
```

C representation:

```
typedef enum                CAENRFIDLogicalSourceConstants;
```

In the following table, the CAENRFIDLogicalSourceConstants Enumeration members are listed:

Member	Description
EPC_C1G2_SESSION_S0	Session 0 is selected for the anticollision algorithm execution on the logical source (valid only for the EPC Class1 Gen2 air protocol).
EPC_C1G2_SESSION_S1	Session 1 is selected for the anticollision algorithm execution on the logical source (valid only for the EPC Class1 Gen2 air protocol).
EPC_C1G2_SESSION_S2	Session 2 is selected for the anticollision algorithm execution on the logical source (valid only for the EPC Class1 Gen2 air protocol).
EPC_C1G2_SESSION_S3	Session 3 is selected for the anticollision algorithm execution on the logical source (valid only for the EPC Class1 Gen2 air protocol).
EPC_C1G2_TARGET_A	Target A is selected for the anticollision algorithm execution on the logical source (valid only for the EPC Class1 Gen2 air protocol).
EPC_C1G2_TARGET_B	Target B is selected for the anticollision algorithm execution on the logical source (valid only for the EPC Class1 Gen2 air protocol).
EPC_C1G2_SELECTED_YES	Only the tags with the SL flag set to true are considered in the anticollision algorithm execution on the logical source (valid only for the EPC Class1 Gen2 air protocol).
EPC_C1G2_SELECTED_NO	Only the tags with the SL flag set to false are considered in the anticollision algorithm execution on the logical source (valid only for the EPC Class1 Gen2 air protocol).
EPC_C1G2_ALL_SELECTED	All the tags are considered in the anticollision algorithm execution on the logical source (valid only for the EPC Class1 Gen2 air protocol).
ISO18006B_DESB_ON	The Data Exchange Status Bit feature is used for the anticollision algorithm execution on the logical source (valid only for the ISO18000-6B air protocol).
ISO18006B_DESB_OFF	The Data Exchange Status Bit feature is not used for the anticollision algorithm execution on the logical source (valid only for the ISO18000-6B air protocol).

CAENRFIDLogicalSource.InventoryFlag Enumeration

The CAENRFIDLogicalSource.InventoryFlag Enumeration gives a list of constants used for the configuration of the inventory function that comes with Flag parameter.

Syntax:
C# representation:

```
public enum                 CAENRFIDLogicalSource.InventoryFlag
```

Java and Android representation:

```
public final class          CAENRFIDLogicalSource.InventoryFlag
```

C representation:

```
typedef enum                CAENRFIDLogicalSource.InventoryFlag;
```

In the following table, the CAENRFIDLogicalSource.InventoryFlag Enumeration members are listed:

Member	Description
RSSI	When enabled, the RSSI value representing the backscattered RF field strenght is returned by the reader for each tag read. Some reader cannot have this feature.
FRAMED	Tags found in an inventory cycle are not buffered in reader and sent all together, but sent one by one as soon as a tag is detected. It Is used in conjunction with the continuous flag.
CONTINUOUS	Enables the continuous mode acquisition. Logical source must have ReadCycle parameter set to 0.
COMPACT	Instruct the reader to not return any other information than the ID. Other values are fake and filled by the library.
TID_READING	Instruct the reader to return the TID memory. On some reader it must be used in conjunction with SetTIDLength to work more efficiently.
EVENT_TRIGGER	Work only in combination with continuous mode. In reader provided with identification button, it instructs the reader to do an inventory cycle only when the button is pressed.
XPC	It instructs the reader to return XPC. If no XPC is present on the tag, the XPC field of a tag is filled up with zero values.
PC	Instruct the reader to return the PC of the EPC bank for each inventoried tag.

CAENRFIDPort Enumeration

The CAENRFIDPort Enumeration gives a list of the communication ports supported by the CAEN RFID readers.

Syntax:
C# representation:
```
public enum                 CAENRFIDPort
```

Java and Android representation:
```
public final class          CAENRFIDPort
```

C representation:
```
typedef enum                CAENRFIDPort;
```

Remarks:
In order to align the three libraries, the members name in C language have changed, now reporting the CAENRFID_ suffix, but the value of the members is the same of the previous library version.

In the following table, the CAENRFIDPort Enumeration members are listed:

Member	Description
CAENRFID_RS232	Serial port communication link.
CAENRFID_TCP	TCP/IP network communication link.
CAENRFID_USB	USB communication link.

CAENRFIDProtocol Enumeration

The CAENRFIDProtocol Enumeration gives a list of the air protocol supported by the CAEN RFID readers.

Syntax:
C# representation:
```
public enum                 CAENRFIDProtocol
```

Java and Android representation:
```
public final class          CAENRFIDProtocol
```

C representation:
```
typedef enum                CAENRFIDProtocol;
```

Remarks:
In order to align the three libraries, the members name in C language have changed, now reporting the CAENRFID_ suffix, but the value of the members is the same of the previous library version.

In the following table, the CAENRFIDProtocol Enumeration members are listed:

Member	Description
CAENRFID_ISO18000_6b	ISO18000-6B air protocol.
CAENRFID_EPC119	EPC 1.19 air protocol.
CAENRFID_EPC_C1G1	EPCGlobal Class1 Gen1 air protocol.
CAENRFID_ISO18000_6a	ISO18000-6A air protocol.
CAENRFID_EPC_C1G2	EPCGlobal Class1 Gen2 (aka ISO18000-6C) air protocol.
CAENRFID_MULTIPROTOCOL	This value permits to use all the supported air protocol at the same time. Suggested setting only for demo purposes.

CAENRFIDReadPointStatus Enumeration

The CAENRFIDReadPointStatus gives a list of the possible ReadPoint status values.

Syntax:
C# representation:

```
public enum                CAENRFIDReadPointStatus
```

Java and Android representation:

```
public final class         CAENRFIDReadPointStatus
```

C representation:

```
typedef enum               CAENRFIDReadPointStatus;
```

Remarks:
In order to align the three libraries, the members name in C language have changed, now reporting the STATUS_ suffix, but the value of the members is the same of the previous library version.

In the following table, the CAENRFIDReadPointStatus Enumeration members are listed:

Member	Description
STATUS_BAD	Bad antenna connection.
STATUS_GOOD	Good antenna connection.
STATUS_POOR	Poor antenna connection.

CAENRFIDRFRegulations Enumeration

The CAENRFIDRFRegulations gives a list of country radiofrequency regulations.

Syntax:
C# representation:

```
public enum                 CAENRFIDRFRegulations
```

Java and Android representation:

```
public final class          CAENRFIDRFRegulations
```

C representation:

```
typedef enum                CAENRFIDRFRegulations;
```

Remarks:
In order to align the three libraries, the regulations, previously declared as #define, are now members of an enumeration, but the value of the members is the same of the previous library version.

In the following table, the CAENRFIDRFRegulations Enumeration members are listed:

Member	Description
ETSI_302208	ETSI_302208 radiofrequency regulation.
ETSI_300220	ETSI_300220 radiofrequency regulation.
FCC_US	FCC_US radiofrequency regulation.
MALAYSIA	MALAYSIA radiofrequency regulation.
JAPAN	JAPAN radiofrequency regulation.
KOREA	KOREA radiofrequency regulation.
AUSTRALIA	AUSTRALIA radiofrequency regulation.
CHINA	CHINA radiofrequency regulation.
TAIWAN	TAIWAN radiofrequency regulation.
SINGAPORE	SINGAPORE radiofrequency regulation.
BRAZIL	BRAZIL radiofrequency regulation.
JAPAN_STD_T106 11	JAPAN radiofrequency regulation (ARIB STD-T106 Premises radio station (1W) - LBT free)
JAPAN_STD_T107 12	JAPAN radiofrequency regulation (ARIB STD-T107 Specified low power radio station (250mW) - with LBT)
PERU	PERU radiofrequency regulation.
SOUTH_AFRICA	SOUTH AFRICA radiofrequency regulation.
CHILE	CHILE radiofrequency regulation

CAENRFIDRS232Constants Enumeration

The CAENRFIDRS232Constants gives a list of settings for the serial port configuration.

Syntax:
C# representation:

```
public enum                 CAENRFIDRS232Constants
```

Java and Android representation:

```
public final class          CAENRFIDRS232Constants
```

C representation:

```
typedef enum                CAENRFID_RS232_Parity;
typedef enum                CAENRFID_RS232_FlowControl;
```

In the following table, the CAENRFIDRS232Constants Enumeration members are listed:

Member	Description
CAENRS232_Parity_None	No parity bit is sent at all.
CAENRS232_Parity_Odd	Odd parity.
CAENRS232_Parity_Even	Even parity.
CAENRFID_RS232_FlowControl_XonXoff	Software flow control.
CAENRFID_RS232_FlowControl_Hardware	Hardware flow control.
CAENRFID_RS232_FlowControl_None	No flow control.

CAENRFIDSelUnselOptions Enumeration

The CAENRFIDSelUnselOptions gives a list of operations supported by the Group Select/Unselect command (valid only for the ISO18000-6B air protocol).

Syntax:
C# representation:

```
public enum                 CAENRFIDSelUnselOptions
```

Java and Android representation:

```
public final class          CAENRFIDSelUnselOptions
```

C representation:

```
typedef enum                CAENRFID_SelUnsel_Op;
```

In the following table, the CAENRFIDSelUnselOptions Enumeration members are listed:

Member	Description
SEL_EQUAL	select equal to.
SEL_NOT_EQUAL	select not equal to.
SEL_GREATER_THAN	select greater than.
SEL_LOWER_THAN	select lower than.
UNS_EQUAL	unselect equal to.
UNS_NOT_EQUAL	unselect not equal to.
UNS_GREATER_THAN	unselect greater than.
UNS_LOWER_THAN	unselect lower than.

CAENRFIDTag.MemBanks Enumeration

The CAENRFIDTag.MemBanks enumerates the bank name of a generic ISO18000-6C tag.

Syntax:
C# representation:

```
public enum          MemBanks {
                             RESERVED = 0,
                             EPC = 1,
                             TID = 2,
                             USER = 3
                             }
```

Java and Android representation:

```
public enum          MemBanks {
                             RESERVED(0), EPC(1), TID(2), USER(3);
                             private int code;
                             private MemBanks(int c) {
                             code = c;
                             }
                             public int getBankNum() {
                             return code;
                             }
                             }
```

C representation:

```
typedef enum         {
                             RESERVED   = 0,
                             EPC        = 1,
                             TID        = 2,
                             USER       = 3
                             } CAENRFIDMemBanks;
```

In the following table, the CAENRFIDTag.MemBanks Enumeration members are listed:

Member	Description
RESERVED	Indicates the reserved bank
EPC	Indicates the EPC bank
TID	Indicates the TID bank
USER	Indicates the USER bank

6 CAENRFID OBSOLETE METHODS

Below it is available a list of obsolete methods, functions, members and data types for the three different program languages.
It is recommended not to use these methods since they will not be available in new reader's firmware release.
Some of these obsolete methods have been replaced by new ones as specified in the table below.

C# Obsolete Methods

Method	Description
Channel Class	
AddSource	This method is now obsolete.
AddTrigger	This method is now obsolete.
GetChannelStatus	This method is now obsolete.
GetChannelType	This method is now obsolete.
GetName	This method is now obsolete.
IsSourcePresent	This method is now obsolete.
IsTriggerPresent	This method is now obsolete.
RemoveSource	This method is now obsolete.
RemoveTrigger	This method is now obsolete.
LogicalSource Class	
AddTrigger	This method is now obsolete.
Fujitsu_BurstErase	This method is now obsolete.
Fujitsu_BurstWrite	This method is now obsolete.
Fujitsu_ChgBlockGroupPassword	This method is now obsolete.
Fujitsu_ChgBlockLock	This method is now obsolete.
Fujitsu_ChgWordLock	This method is now obsolete.
Fujitsu_ReadBlockLock	This method is now obsolete.
Fujitsu_Refresh	This method is now obsolete.
GetLostThreshold	This method is now obsolete.
GetObservedThreshold	This method is now obsolete.
Hitachi_BlockLock	This method is now obsolete.
Hitachi_BlockReadLock	This method is now obsolete.
Hitachi_GetSystemInformation	This method is now obsolete.
Hitachi_ReadLock	This method is now obsolete.
Hitachi_SetAttenuate	This method is now obsolete.
Hitachi_WriteMultipleWords	This method is now obsolete.
Inventory	This method is now obsolete.
KillTag	This method is now obsolete.
LockTag	This method is now obsolete.
NXP_Calibrate	This method is now obsolete.
ProgramID	This method is now obsolete.
RemoveTrigger	This method is now obsolete.
SetLostThreshold	This method is now obsolete.
SetObservedThreshold	This method is now obsolete.
Reader Class	
ConnectRS232	This method is now obsolete.
CreateChannel	This method is now obsolete.
CreateTrigger	This method is now obsolete.
FWUpgradeTFTP	This method is now obsolete.
GetAllocatedChannels	This method is now obsolete.
GetAllocatedTriggers	This method is now obsolete.

GetChannelData	This method is now obsolete.
GetDESB	This method is now obsolete.
GetEventMode	This method is now obsolete.
GetLBTMode	This method is now obsolete.
RemoveChannel	This method is now obsolete.
RemoveTrigger	This method is now obsolete.
SetDESB	This method is now obsolete.
SetEventMode	This method is now obsolete.
SetReaderOPtions	This method is now obsolete.
Receiver Class	
KillServer	This method is now obsolete.
Trigger Class	
GetIOLineValue	This method is now obsolete.
GetName	This method is now obsolete.
GetTimerValue	This method is now obsolete.
IsLinkedToChannel	This method is now obsolete.
IsLinkedToSource	This method is now obsolete.

Tab. 6.1: C# Obsolete Methods

C# Obsolete Members

Member	Description
BitRate Enumeration	
TX10RX40	This member is now obsolete.
TX40RX40	This member is now obsolete.
TX40RX160	This member is now obsolete.
EventMode Enumeration	
READCYCLE_MODE	This member is now obsolete.
TIME_MODE	This member is now obsolete.
NOEVENT_MODE	This member is now obsolete.
TagEventType Enumeration	
TAG_GLIMPSED	This member is now obsolete.
TAG_LOST	This member is now obsolete.
TAG_OBSERVED	This member is now obsolete.
TAG_UNKNOWN	This member is now obsolete.

Tab. 6.2: C# Obsolete Members

Java and Android Obsolete Methods

Method	Description
BitRate Class	
TX10RX40	This method is now obsolete.
TX40RX40	This method is now obsolete.
TX40RX160	This method is now obsolete.
Channel Class	
AddSource	This method is now obsolete.
AddTrigger	This method is now obsolete.
GetChannelStatus	This method is now obsolete.
GetChannelType	This method is now obsolete.
GetName	This method is now obsolete.
IsSourcePresent	This method is now obsolete.
IsTriggerPresent	This method is now obsolete.
RemoveSource	This method is now obsolete.
RemoveTrigger	This method is now obsolete.
Event Class	
Data	This method is now obsolete. Use getData instead.
EventMode Class	
READCYCLE_MODE	This method is now obsolete.
TIME_MODE	This method is now obsolete.

Method	Description
NOEVENT_MODE	This method is now obsolete.
LogicalSource Class	
AddTrigger	This method is now obsolete.
Fujitsu_BurstErase	This method is now obsolete.
Fujitsu_BurstWrite	This method is now obsolete.
Fujitsu_ChgBlockGroupPassword	This method is now obsolete.
Fujitsu_ChgBlockLock	This method is now obsolete.
Fujitsu_ChgWordLock	This method is now obsolete.
Fujitsu_ReadBlockLock	This method is now obsolete.
Fujitsu_Refresh	This method is now obsolete.
GetLostThreshold	This method is now obsolete.
GetObservedThreshold	This method is now obsolete.
Hitachi_GetSystemInfo	This method is now obsolete.
Hitachi_BlockLock	This method is now obsolete.
Hitachi_BlockReadLock	This method is now obsolete.
Hitachi_GetSystemInformation	This method is now obsolete.
Hitachi_ReadLock	This method is now obsolete.
Hitachi_SetAttenuate	This method is now obsolete.
Hitachi_WriteMultipleWords	This method is now obsolete.
Inventory	This method is now obsolete.
NXP_Calibrate	This method is now obsolete.
NXP_ChangeEAS (only non secure version)	This method is now obsolete.
NXP_EAS_Alarm (only secure version)	This method is now obsolete.
NXP_ResetReadProtect (only secure version)	This method is now obsolete.
RemoveTrigger	This method is now obsolete.
SetLostThreshold	This method is now obsolete.
SetObservedThreshold	This method is now obsolete.
Notify Class	
getAntenna	This method is now obsolete. Use getReadPoint instead.
Reader Class	
CreateChannel	This method is now obsolete.
CreateTrigger	This method is now obsolete.
FWUpgradeTFTP	This method is now obsolete.
GetAllocatedChannels	This method is now obsolete.
GetAllocatedTriggers	This method is now obsolete.
GetChannelData	This method is now obsolete.
GetEventMode	This method is now obsolete.
GetLBTMode	This method is now obsolete.
RemoveChannel	This method is now obsolete.
RemoveTrigger	This method is now obsolete.
SetEventMode	This method is now obsolete.
SetReaderOPtions	This method is now obsolete.
Receiver Class	
KillServer	This method is now obsolete.
TagEventType Class	
TAG_GLIMPSED	This method is now obsolete.
TAG_LOST	This method is now obsolete.
TAG_OBSERVED	This method is now obsolete.
TAG_UNKNOWN	This method is now obsolete.
Trigger Class	
GetIOLineValue	This method is now obsolete.
GetName	This method is now obsolete.
GetTimerValue	This method is now obsolete.
IsLinkedToChannel	This method is now obsolete.
IsLinkedToSource	This method is now obsolete.
HitachiSysInfo	
GetBankLock	This method is now obsolete.
GetBlockReadLock	This method is now obsolete.
GetBlockReadWriteLock	This method is now obsolete.
GetBlockWriteLock	This method is now obsolete.
GetInfoFlag	This method is now obsolete.

Method	Description
getReserved	This method is now obsolete.
getSetAttenuateLevel	This method is now obsolete.
getTID	This method is now obsolete.
getUII	This method is now obsolete.
getUser	This method is now obsolete.

Tab. 6.3: Java and Android Obsolete Methods

C Obsolete Functions

Function	Description
AddNotifyTrigger	This function is now obsolete.
AddReadTrigger	This function is now obsolete.
AddSourceToChannel	This function is now obsolete.
AllocateChannel	This function is now obsolete.
AllocateTrigger	This function is now obsolete.
CustomCmd_C1G2	This function is now obsolete. Use CustomCommand_EPC_C1G2 instead.
DeallocateChannel	This function is now obsolete.
DeallocateTrigger	This function is now obsolete.
ExtendedInventoryTag	This function is now obsolete.
FirmwareUpgrade	This function is now obsolete.
FreeNotifyMemory	This function is now obsolete.
Fujitsu_BurstErase	This function is now obsolete.
Fujitsu_BurstWrite	This function is now obsolete.
Fujitsu_ChgBlockGroupPassword	This function is now obsolete.
Fujitsu_ChgBlockLock	This function is now obsolete.
Fujitsu_ChgWordLock	This function is now obsolete.
Fujitsu_ReadBlockLock	This function is now obsolete.
Fujitsu_Refresh	This function is now obsolete.
GetAllocatedChannels	This function is now obsolete.
GetAllocatedTriggers	This function is now obsolete.
GetChannelData	This function is now obsolete.
GetChannelInTrigger	This function is now obsolete.
GetChannelStatus	This function is now obsolete.
GetDE_SB	This function is now obsolete. Use GetDESB_ISO180006B instead.
GetEventMode	This function is now obsolete.
GetFWRelease	This function is now obsolete. Use GetFirmwareRelease instead.
GetLBTMode	This function is now obsolete.
GetModulation	This function is now obsolete.
GetNotification	This function is now obsolete.
GetQ_C1G2	This function is now obsolete. Use GetQValue_EPC_C1G2 instead.
GetQ_EPC_C1G2	This function is now obsolete. Use GetQValue_EPC_C1G2 instead.
GetReadPointInSource	This function is now obsolete. Use isReadPointPresent instead.
GetSourceConfiguration	This function is now obsolete.
GetSourceInChannel	This function is now obsolete.
GetSourceInTrigger	This function is now obsolete.
GetSWRelease	This function is now obsolete.
GetTriggerInChannel	This function is now obsolete.
Hitachi_BlockLock	This function is now obsolete.
Hitachi_BlockReadLock	This function is now obsolete.
Hitachi_GetSystemInformation	This function is now obsolete.
Hitachi_ReadLock	This function is now obsolete.
Hitachi_SetAttenuate	This function is now obsolete.
Hitachi_WriteMultipleWords	This function is now obsolete.
Inventory	This function is now obsolete.
KillTag	This function is now obsolete. Use KillTag_EPC_C1G1 instead.
KillTag_C1G2	This function is now obsolete. Use KillTag_EPC_C1G2 instead.
Lock	This function is now obsolete. Use LockTag_ISO180006B instead.
Lock_C1G2	This function is now obsolete. Use LockTag_EPC_C1G2 instead.
NXP_Calibrate	This function is now obsolete.
NXP_ChangeEAS	This function is now obsolete.
NXP_SecureCalibrate	This function is now obsolete.
NXP_SecureEAS_Alarm	This function is now obsolete.
NXP_SecureResetReadProtect	This function is now obsolete.

Function	Description
ProgramID	This function is now obsolete. Use ProgramID_EPC_C1G1 instead.
ProgramID_C1G2	This function is now obsolete. Use ProgramID_EPC_C1G2 instead.
QueryAck_C1G2	This function is now obsolete. Use QueryAck_EPC_C1G2 instead.
QueryTag_C1G2	This function is now obsolete. Use Query_EPC_C1G2 instead.
Read	This function is now obsolete. Use ReadTagData instead.
Read_C1G2	This function is now obsolete. Use ReadTagData_EPC_C1G2 instead.
RemoveNotifyTrigger	This function is now obsolete.
RemoveReadTrigger	This function is now obsolete.
RemoveSourceFromChannel	This function is now obsolete.
SecureCustomCmd_C1G2	This function is now obsolete. Use SecureCustomCommand_EPC_C1G2 instead.
SecureLock_C1G2	This function is now obsolete. Use SecureLockTag_EPC_C1G2 instead.
SecureProgramID_C1G2	This function is now obsolete. Use SecureProgramID_EPC_C1G2 instead.
SecureRead_C1G2	This function is now obsolete. Use SecureReadTagData_EPC_C1G2 instead.
SecureWrite_C1G2	This function is now obsolete. Use SecureWriteTagData_EPC_C1G2 instead.
SetBitrate	This function is now obsolete. Use CAENRFID_SetBitRate instead.
SetDE_SB	This function is now obsolete. Use SetDESB_ISO180006B instead.
SetEventMode	This function is now obsolete.
SetModulation	This function is now obsolete.
SetQ_C1G2	This function is now obsolete. Use SetQValue_EPC_C1G2 instead.
SetQ_EPC_C1G2	This function is now obsolete. Use SetQValue_EPC_C1G2 instead.
SetSourceConfiguration	This function is now obsolete.
Write	This function is now obsolete. Use WriteTagData instead.
Write_C1G2	This function is now obsolete. Use WriteTagData_EPC_C1G2 instead.

Tab. 6.4: C Obsolete Functions

C Obsolete Data Types

Data Type	Description
CAENRFID_SOURCE_Parameter	
CONFIG_READCYCLE	This data type is now obsolete. Use Get/SetReadCycle Method instead.
CONFIG_OBSERVEDTHRESHOLD	This data type is now obsolete.
CONFIG_LOSTTHRESHOLD	This data type is now obsolete.
CONFIG_G2_Q_VALUE	This data type is now obsolete. Use Get/SetQ_EPC_C1G2 Method instead.
CONFIG_G2_SESSION	This data type is now obsolete. Use Get/SetSession_EPC_C1G2 Method instead.
CONFIG_G2_TARGET	This data type is now obsolete. Use Get/SetTarget_EPC_C1G2 Method instead.
CONFIG_G2_SELECTED	This data type is now obsolete. Use Get/SetSelected_EPC_C1G2 Method instead.
CONFIG_ISO18006B_DESB	This data type is now obsolete. Use Get/SetDESB_ISO180006B Method instead.
CAENRFID_EventMode	
READCYCLE_MODE	This data type is now obsolete.
TIME_MODE	This data type is now obsolete.
NOEVENT_MODE	This data type is now obsolete.
CAENRFID_FWUpgradeType	
RFID_TFTP	This data type is now obsolete.
CAENRFID_ExtendedInventoryParams	This data type is now obsolete.

Tab. 6.5: C Obsolete Data Types