TELIUM SDK

SDK Release Notes Archive

Ingenico - 190-192 avenue Charles de Gaulle - 92200 Neuilly-sur-Seine
Tél. 33(0)1 46 25 82 00 - Fax 33 (0)1 47 72 56 95 - ingenico@ingenico.com

Contents

SDK9.4.0 Release note

1. What's new? Why should you use this SDK?

Issues solved are detailed in paragraph 4
Here are main evolutions coming with this Telium SDK release compared to the release 9.2.0:

1.1. New features and improvement

- New GOAL fonts available (Latin (Lucida and GOAL standard), Arabic, Hebrew, Traditional Chinese,Simplified Chinese, Cyrillic and Greek)
- GOAL performance improvements
- Mifare Plus cards managed. These cards are security enhancement of Mifare Classic cards
- Remote debug is now possible on iUC150 and iUC180 (already in SDK 9.2.1)
- All iUN terminals can now switch to sleep mode
- Improvements are made in management of Bluetooth printer for iMP3

1.2. New fixes

- SSL connections to localhost are now allowed for iMP3XX
- Fix on callhost() to solve the TMS COM problem (already fixed in SDK 9.2.1)
- On iCT2xx and iWL terminals: Corrections for V34 modem (already fixed in SDK 9.2.1)
- On iSCxxx terminals: Dead zone on touch panel screen fixed (already fixed in SDK 9.2.1)
- Fixed potential crash using sprintf family function (already fixed in SDK 9.2.1)

1.3. New terminals

1.3.1. iCT220 Contactless

iCT220 Contactless supported (for development only)

1.3.2. iPP480

IPP480 is a new versatile terminal with an all in one reader (hybrid reader for swipe and chip).
Pinpad or countertop version exists. With or without printer versions exist.

2. Compatibility

2.1. Incendo

Be careful: With this SDK, Incendo is compatible with ICT250 GOAL only. Please contact Incendo support to migrate your Incendo browser to this SDK.

2.2. Generic Tool Library (GTL)

If you compile your application with GTL, be aware that with this SDK, you must use at least version 3.7.3 of Easy Path to Contactless.

2.3. List of compatible terminals

This SDK release is compatible with the following products.

2.3.1. Wireless

Telium 2:

- iWL220B, iWL220G,
- iWL250B, iWL250G ,
- iWL250 3G,
- iWL250 2SCR, 2SCR stands for 2 Smart Card Reader,
- iWL280,
- iWL350

Telium 1:

- EFT930

2.3.2. Countertop terminals

Telium 2:

- iCT220, iCT250,
- iCT220 Contactless (for development only)
- E532

Telium 1:

- EFT SMART Plus,
- EFT SMART,
- EFT30

2.3.3. Retail pinpads (Signature capture terminals)

Telium 2:

- iSC250,
- iSC350.

2.3.4. Pinpads

Telium 2:

- IPP320, iPP350,
- IPP3xx used as a smart card reader (Pinpad emulation mode).
- iPP480

Telium 1:

- ML30, ML30 color, ML30 color contactless.

'Booster only' pinpads:

- IPP220, iPP250, iPP280, P30, P30 Contactless, PP30S.

2.3.5. Unattended

Telium 2:

- iUC150, IUC180,
- iUP250
- iUR250 (you have to load the system of iUP250 provided by add-on Unattended).

Telium 1:
See the add-on Unattended package for the exhaustive list of CAD30.

Nota: For iUC180 and iUP250, it is not possible to load an SDK older than SDK 9.4.0, after loading this one.

2.3.6. Satellite terminals

Telium 2:

- iST150.

Telium 1:

- TeliumPass Plus.

2.3.7. Mobile payment

Telium 2:

- iMP320, iMP350,
- SPM (iPA280).

2.3.8. French healthcare

- TWINs.

2.4. Compatibility terminals vs SDK

2.4.1. Validation status

The following terminals are not yet validated with this SDK. You will receive a confirmation message at the end of this validation phase.

- EFT930M 1LS
- EFT930B ETH
- EFT930Wpa 1LS
- EFT930SEm
- ML30CC
- iUP250, iUR250, iUC150

2.4.2. Compatibility

In the following table, you will find the first SDK in which the terminal was managed for production purpose.
This table concerns terminals out since SDK 7.1.

Terminals	Supported since
iCT220	iCT220 Contactless : *(For development since SDK 9.4)*
iWL220	iWL220 G : SDK 7.6 iWL 220 B : SDK 8.0
iWL250	iWL250 G : SDK 7.6 iWL250 B : SDK 8.0 iWL250 2SCR : SDK 8.0 iWL250 3G : SDK 8.2
iWL280	SDK 8.1.2 GPRS only since SDK 8.0.1
iWL350	SDK9.4
iWL Bases	Base BEM : SDK 8.0 Base PEM : SDK 8.1
E532	SDK 8.2
iSC250	SDK 7.5
iSC350	SDK 7.1
iPP3XX	iPP320, iPP350 : SDK 7.1 iPP320 in pinpad emulation : SDK 7.4
iPP220	iPP220, iPP250 : SDK 7.1 iPP280 : SDK 7.5
iST150	SDK 7.5
iUC150, iUC180	SDK 9.2.0
Configuration iUP250 - iUR250	SDK 9.4
iMP320	SDK 9.2.0
iMP350	SDK 7.6
Twin31	SDK 7.6.1

iPP480	SDK 9.4

2.5. Terminals certified PCI V3

The following terminals are certified for PCI v3:

Terminal	Certified since
iWL220	Since SDK 8.0.1
iWL250	Since SDK 8.0.1
iWL280	Since SDK 8.0.1
iSC250	Since SDK 8.0.1
iPP3xx	Since SDK 8.1
iMP350	Since SDK 8.2
iCT2xx (Only iCT2xx referenced 11Txxxxx are certified PCI-V3)	Since SDK 8.2
iPP2xx	Since SDK 8.2
iWL350	Since SDK 9.2.0
Configuration iCT2xx / iPP3xx	Since SDK 9.2.0
iPP480	Since SDK 9.4.0

2.6. Public Key Infrastructure

This release supports PKI v3 infrastructure ensuring communications using IngeTrust keys with larger size, compliant with PCI v3.

3. Highlighted points

3.1. New highlighted points

3.1.1. Desfire library

"Desfire" library is renamed in "mifare" library. You have to adapt your project.

3.1.2. Contactless restriction on iWL280 and iWL350

During a transaction, on iWL280 and iWL350, when contactless field is activated, the touch screen is disabled to avoid disruption.
Instead of the direct access to functions provided on other terminals, a menu is accessible after pressing "F" key.

3.1.3. Support of functions vsnprintf, new, Reserve, printf (%f),..

It is now possible to use the functions vsnprintf, new, Reserve, printf (%f) on the Telium platform.
To use these functions in your application, you have to link it with libcpatch.o. This file is provided for GNU 3.4.3 and GNU 4.3.4 in the SDK.
If you use Ingedev,

- When you start a new project since SDK 9.4.0, you will automatically have this object in you link;

- If you migrate your application from an older SDK, you have to add this file to your link (In IngeDev, open your project properties, select Telium/Build Configuration/System Libraries, and add libcpatch for each GNU configuration). Once done, you must not remove this file from your link if these functions are used.

If you compile your application with ARM, you are not concerned by this point.

3.2. Reminder for important highlighted points

3.2.1. Numbering of Telium SDK (Stable vs. Beta releases)

For a SDK versioned V.R.S:

- If R is an odd number, the SDK is a Beta release also called odd release (Example: SDK 9.3.0);
- If R is an even number, the SDK is a stable release also called even release (Example: SDK 9.4.0)

The beta releases propose by advance the features to integrate in the next stable major release. They allow qualifying at the earliest the new features either by platform qualification team or by regions if requested.
Stable (even) releases are fully qualified.

3.2.2. Telium Manager catalogues naming rule

The integration of GOAL in the Telium SDK 9.0 had introduced changes in the Telium Manager catalogues provided.

The naming rules have been maintained for compatibility and to minimize the changes for users.

This sheet describes the application compatibility and Telium Manager MMI regarding names of catalogues.

Thunder	Catalogues names	Application compatibility	Telium Manager MMI
Thunder 1 and 2	xxx_GOAL_yyy.mZZ	GOAL and Libgr	GOAL
Thunder 1 and 2	xxx_CGUI_yyy.mZZ	CGUI, GOAL and Libgr	GOAL
Thunder 1 and 2	xxx_yyy.mZZ	Libgr	Libgr
Thunder 3	xxx_GOAL_yyy.mZZ	GOAL and Libgr	GOAL
Thunder 3	xxx_yyy.mZZ	CGUI, GOAL and Libgr	GOAL

The Telium manager displayed with CGUI interface doesn't exist anymore; it is replaced by the GOAL interface. The name xxx_CGUI_yyy.mZZ for a catalogue means that it is compatible with CGUI applications but the Manager interface is GOAL.

The Telium Manager catalogues xxx_MOCKUP.mZZ don't exist anymore. They were designed to use the Ingedev preview feature. If you want to use this feature, you have to load in your terminal, the catalogue CGUI_PREVIEW_PROXY.mZZ which is in the directory Components\CGUI_PREVIEW_PROXY, additionally to the CGUI manager catalogue.

The Telium Manager catalogues include NanoX, the plug-in Signature Capture and the plug-in Multimedia. So, the plug-ins are no more delivered in the directory \Component\plugins.

3.2.3. Restriction for iPA280 and PCI PED 2.x compliance

During the PCI PED 2.x certification of the iPA280 devices, some constraints have been put at the level of communication of sensitive data from the Secure Payment Module (SPM) to the external world. The PDA part of the product has to be considered as the external world. The reason of this restriction is that the scope of the PCI PED evaluation was the SPM, which has a secure Telium architecture, and not the iPA280 product as a whole.

The restriction forbids communicating:

- Any APDU command response;
- Any cardholder data (i.e. ISO tracks 1 & 2 and their EMV counterpart).

It is also forbidden to receive APDU command queries from the external and to relay them to the smartcard. The restriction imposed by PCI SSC is not limited to banking cards. Direct communication to other types of cards (e.g. loyalty) is not allowed.

The communication APIs to establish communication between SPM and PDA propose some interfaces. It is for sure possible to address communication by using lower level functionalities. This must not be used to circumvent the protocol restrictions for communication.

Since cardholder data must remain within the SPM, the implication of this restriction is that payment applications have to be executed in the SPM and can not be based on a split design between SPM and PDA parts of the device. The PDA can be used for merchant application only (i.e. advertising, product selection)

3.2.4. Contactless

3.2.4.1. Best practices for Contactless

3.2.4.1.1. Field on/off

The contactless field is to be activated only when a contactless card is waited by the terminal. It must be stopped when the management of the contactless card is finished.
If the contactless field is opened all the time:

- On wireless terminals, product battery autonomy is reduced a lot;
- The contactless module and antenna are highly stressed and reliability could decrease quickly with time;

Applications have to manage the opening and the closing of the field according their business logic.

3.2.4.1.2. Implicit selection

Following terminals having the contactless feature inside are concerned: iWL2xx, iCT250, iSC2xx, iSC3xx, EFT930 GCC, EFT930 BCC, iPP3XX, iPA280 (SPM), ML30C and P30C.

Implicit selection is not recommended and must be managed with caution.
Due to physical reason, implicit selection can lead to unexpected issues, for example, at the beginning of the swipe, the card would possibly enter the antenna field and contactless chip would be handled instead of magnetic track.

3.2.4.1.3. Use of PSTN modem with contactless activated

The electro-magnetic field created when the contactless is activated, on an integrated terminal, prevents the usage of the PSTN modem with contactless activated.

This is not a software issue, and no software solution exists. The contactless field shall not be activated at the same time as the modem.

Currently, the issue exists only on the iCT250, which is the only Ingenico integrated terminal with contactless and PSTN modem.
(For instance, on EFT930BCC or EFT930GCC with modem, it works, because the modem is on the cradle, and the distance between the modem and the contactless field is sufficient).

3.2.4.2. Add-on Contactless

The add-on contactless doesn't exist anymore.
All components provided previously in this package are now by default since Telium SDK 8.1. It concerns

- TPass library and component;
- Entry point component;
- GTL library (GTL stands for Generic Tool Library);
- Contactless sample.

3.2.4.3. Card supported

The list of cards supported by this SDK is given in the paragraph **Erreur ! Source du renvoi introuvable.: Erreur ! Source du renvoi introuvable.** .

Recommendation:
Even if a card is managed since an old SDK or Add-On Contactless, usage of a recent SDK is strongly recommended because bugs could have been fixed.

3.2.5. Use of printf - like functions in SDK 9.2.0

On SDK 9.2.0, the use of the functions sprintf (), printf (), fprintf (), pprintf()… can make your application crash or application becoming bigger than ones compiled with previous SDKs.
There was a regression due to the implementation of SUPTEL 3275 adding support of floats for the printf - like functions. The evolution is removed since SDK 9.2.1.

3.2.6. PCI PTS version

The function GetTerminalPCIPTSVersion() allows to know the PCI PTS version of the terminal (return is PCI_PTSV2 or PCI_PTSV3).
The function GetTerminalPKIVersion() allows to know the PKI version of the terminal (return is PKIV1 or PKIV3).

3.2.7. New software numbers for Telium Manager DLLs

3.2.7.1. Numbering rule

To conform to Ingenico numbering convention, software numbers of binaries provided by Telium Manager have been changed. The software number is the first part of the name of the binary.
As a rule, when the software number was on 4 digits until SDK 9.0.x, from SDK 9.2.0 the first digit of the prefix is replaced by 844.
There is no change in application types.
Your application should not check the presence of a binary in the terminal by testing the software number but by testing the application type.

Example: For Libgr,

- Until SDK 9.0.x, software number was 3596 and application type was 3.
- From SDK 9.2.0, software number is 844596 and application type is 3.

3.2.7.2. Specific case of Manager Pack parameter file (3778, 4778)

The Manager Pack parameter files (3778xxyy.SGN/PDF and 4778xxyy.PGN) are kept in SDK 9.2.0 only for compatibility with Ingestate.
After the application of this rule:

- The file 844778xxyy has the application type 2 (ID of the files 3778xxyy/4778xxyy previously),
- The files 3778xxyy and 4778xxyy are dummy files (they are empty) with application type 0xAEEA.

3.2.8. Family name

The binary name, defined in the descriptor used to sign the binary, must follow the pattern "<FAMILY_NAME><VV><AA>" where:

- FAMILY_NAME is the family name of the application (maximum 7 ASCII characters);
- VV is the version (2 number);
- AA is the amendment (2 number)

3.2.9. Pinpad system

To avoid problems when a non mock-up pinpad is linked to a mock-up terminal, the terminal mock-up catalogues don't include pinpad systems. So, you have to load the pinpad system (located in the directory "Component\OS") according to the pinpad you are using.

3.2.10. DIR system version downgrade

It is not possible to downgrade from a system managing directories (catalogue XXX_DIR.mYY) to a system which not manages directories (catalogue XXX.mYY).

3.2.11. Reserved numbers

Service numbers from 1 to 100 and from 0x1E00 à 0x1FFF are reserved for Ingenico internal use.
Tag numbers used by applications must be taken in the range 0x9FA000-0x9FAFFF.

3.2.12. EFT930 embedding 8MB of flash

It is possible to use this SDK on EFT930 which has only 8 MB of flash (special system catalogue is provided: EFT930_8MO_PROD.m31). This catalogue is not a DIR one. If you use Ingestate you may need some adjustments: please contact your R&D Regional Interface for more information.

For SDK 8.0.x, SDK 8.1 and SDK 8.1.1:
It is forbidden to load a catalogue designed for 8MB terminals on a terminal loaded with a generic catalogue (that is to say non-8 MB). You must contact the Ingenico support for the rules of this migration.

3.2.13. Fix in link layer

A bug has been identified in the LinkLayer component, in versions 3.22 and 3.23 (SDK 8.1.2, SDK 8.1.3, SDK 8.2 and SDK 8.2.1).
For these versions only, on Bluetooth terminals, not associated with any base, the connection (call to LL_Connect()) fails when using the physical link LL_PHYSICAL_V_DEFAULT_TCPIP, with return code -1013 (LL_ERROR_NETWORK_NOT_SUPPORTED).

This bug is now corrected in SDK 9.0 (Link Layer version 3.25)

3.2.14. IUN

3.2.14.1. Add on Unattended

You must use at least version 3.01 of add-on Unattended.

3.2.15. IMP3

3.2.15.1. Bluetooth printer for iMP3

It is possible to use a Bluetooth printer with an iMP3.
The parameters and documentation for this feature are provided via an add-on called "Bluetooth printer for iMP3". Please contact your region interface to request it.

3.2.15.2. IMP3 connected to an iPhone running on IOS 5.0

If the iPhone runs on system iOS 5.0, the iMP3 can not go to sleep mode when iPhone is in sleep mode. This case is to handle at application level.

3.2.16. Deprecation

3.2.16.1. Features from AVL

Following feature provided by AVL are deprecated since SDK 9.2.0:

- VGE_UIM. It was based on Black and White functions. To implement MMI, please use advanced graphical library GOAL or legacy libgr graphical mode;
- VGE_DBG. Use functions from GTL library (Generic Tool Library);
- VGE_DRM. Use file system functions instead (see sample in SDK/Samples/Training/Src/FFMS.c);
- VGE_TMS. Use system functions instead;
- VGE_BLM.

The deprecated functions are grouped in the library AVL_Deprecated.lib. If you want to continue to generate your application with these deprecated features, you need to add this library to your build.
You will have warnings about deprecation. To remove it, clean your code by removing calls to these deprecated functions.

3.2.16.2. Pinlib

Pinlib.lib is deprecated since SDK 9.2.0. Please use functions provided by Security DLL (See documentation in the CHM help file).
These deprecated functions are grouped in the library Pinlib_Deprecated.lib. If you want to continue to generate your application with this deprecated feature, you need to add this library to your build. Pinlib.lib doesn't exist anymore.
You will have warning about deprecation. To remove it, clean your code by removing calls to these deprecated functions.

3.2.16.3. Libgr functions

SetRegionColor(), ClearRegionColor() et GetRegionColor() are deprecated (FT12423)

4. Issues solved in this release by component

See table in chapter **Erreur ! Source du renvoi introuvable.** "Versions of components" for the list of versions of components provided in this Telium SDK.

Main points delivered in this release regarding **the last major release SDK 9.2.0** are listed below.

4.1. Telium System

Following points are delivered in this release.

4.1.1. Card management

Internal tracker	SUPTEL	Description	Nota
10515	SUPTEL-2912	ML30: Driver Mifare is now able to authenticate Mifare classic cards with 7 bytes UID.	
11544	SUPTEL-3359	iPP2xx: ISO 1.1 timeout management improved	
11658	SUPTEL-3453	Some D/F that decrease CAM baud rate were not handled correctly by CAM driver due to an hardware constraints. In these cases, if specific mode, issue a warm reset, if negotiable mode, stay at default speed (F=372 D = 1).	
11543	SUPTEL-3606	iPP2xx, SMART2, ML30: Fix Mifare RESTORE command behavior.	
11656		Manage a custom APDU to change 'D' ATR parameter without PPS.	
11657		Manage DI=7 (D=64) ATR parameter.	
11867		In ISO7816 mode, application can overwrite current card ATR by a custom ATR. That allows the application to modify all ATR parameters.	
12558		Names of the synchronous card drivers indicate now if "Thunder I & II" or "Thunder III".	
11768	SUPTEL-3693	iWL280, iWL350: Feature added on Thunder 3 terminals in SDK 9.2.1: AAMVA ISO1 cards compatibility. Maximum char count on track 1 remains unchanged (79max).	Already in SDK 9.2.1

4.1.2. Communication

Internal tracker	SUPTEL	Description	Nota
11274		Generate event with DCD reason on COMU when cable is unplugged from base (as well as when link to the base is lost) on iWL family.	
12167	SUPTEL-4109	Capability to download an iMP3 without SSL	Already in SDK 9.2.2

12176	SUPTEL-3913	Rename legacy COMH on portable side, before linking the Bluetooth version, so the latter is available when required.	Already in SDK 9.2.1
11767		On RTC, if nothing happens on TMS link during 3 minutes, an exit is done.	Already in SDK 9.2.1
11965		Hilo reset duration grows on ICT products to avoid GPRS blocking.	Already in SDK 9.2.1

4.1.3. V34 modem

Some fixes for V34 modem on iCT and iWL, including

Internal tracker	SUPTEL	Description	Nota
11447	SUPTEL-3576	[IP/PSTN] MODEM V34 is usable in remote downloading session	Already in SDK 9.2.1
11144		Added support for modem V34 on iWL smart bases	Already in SDK 9.2.1
12140		Potential problem with downloading over RTC via V34 modem fixed	Already in SDK 9.2.1

4.1.4. iSCxxx

Internal tracker	SUPTEL	Description	Nota
12170		On iSCxxx terminals, if you were using the mode of input switch many times in the application, the touch chip sometime went to the unpredictable state.	Already in SDK 9.2.1

4.1.5. iUNxxx

Internal tracker	SUPTEL	Description	Nota
12291		Add Sleep Mode management on iUC1xx products	
12050		iUR250: Reader's lever lock management added	
12136		Back screen on iUC180 now displays LLT message in LLT mode.	
12204		New debug catalogues: - CAD30UCM_DEBUG.m34 - CAD30UCM_DIR_DEBUG.m34, - CAD30UCR_DEBUG.m38 - iUC1XX_DEBUG.m50	
12267		Add Sleep mode for iUC150	
12307		iUC180 / iUP250: Restart product by pressing the rear button for more than 3s.	

4.1.6. APIs issues

Internal tracker	SUPTEL	Description	Nota
11710	SUPTEL-3752	The automatic shutdown can be disabled via hwcnf	
11684	SUPTEL-3701	Add warm reset API for smartcard (available only in ISO7816 mode).	
12072		Add an API to issue a warm reset and another to configure CAM driver with a custom ATR.	
12118	SUPTEL-4003	Add function to configure timeout for network scan or network selection.	Already in SDK 9.2.1

4.1.7. Miscellaneous

Internal tracker	SUPTEL	Description	Nota
11189	SUPTEL-3378	iPP2xx: Fixed terminal reset due to the lack of RAM memory. More precisely: When a driver for synchronous card was launched on thunder side, the OS booster allocates RAM for loading, copying and executing this driver. This RAM is kept allocated to avoid the reloading of the driver in case same driver is used. So the RAM memory available is decreased. The bug fix consists in releasing the allocated RAM in case of power-down / fclose.	
11885	SUPTEL-3689	Since SDK 9.0, a regression occurred in SEC_TAPADecryptSignInit function. It's now fixed.	
11529	SUPTEL-3713	BT printer – fix for problem of bitmap printing (defprinterpattern - shifted with spaces)	
11747	SUPTEL-3737	BT Printer: add management of Bluetooth keep alive. If enabled, the application can open and close the printer driver quickly. Use the manager menu (hardware configuration) to enable or disable it	
12172	SUPTEL-4022	iPP3xx mock-up : numeric entry no more possible	
12385	SUPTEL-4211	A message "Too Much Garbages" was added in APPTEXT.DIA 1 hour after terminal reset, even if no garbage had happened	
11937		BT printer - fix for problem of out of paper management (PRINT_ERROR not cleared)	
12517		iMP3XX: No use to redirect loopback TCP connexion through IAP	
11868/11870		Detecting a jammed down key is now possible	
12282, 12283, 12434		TSCREEN: IWL 280/350 Move to RAW config file format	
11638	SUPTEL-3457	Flush incoming data on USB device until the COMU is opened on handheld side.	Already in SDK 9.2.2
11709		Flash management improvement	Already in SDK 9.2.2
11894	SUPTEL-3765	Added new life counter: backlight ON (in seconds) 0x1F. (not supported by Twin, Ist150)	Already in SDK 9.2.1

12164	SUPTEL-3980	Change LIFECOUNTER.DIA update time (10 minutes instead of 1 minute)	Already in SDK 9.2.1
12146	SUPTEL-3889	Add multi-tasking protection on kill function	Already in SDK 9.2.1

4.1.8. Development issues

Internal tracker	SUPTEL	Description	Nota
12279	SUPTEL-4112	Management of remote debug on iPP320 using a magic box (COMSL port of ipp320 Magic Box)	
12285		Add pinpad diagnostic files (BL2_PINPAD.DIA / BL3_PINPAD.DIA) in LLT mode (through Manager LLT menu).	
11660		Added application equivalent to F1F4F2F3 on IWL350 (in directory Component\OS\ClearTerminalApplication)	
12180		Management of remote debug on iUC150 and iUC180	Already in SDK 9.2.1

4.2. Telium Manager

Following points are delivered in this release.

4.2.1. General issues

Internal tracker	SUPTEL	Description	Nota
11567	SUPTEL-3578	Support of some C functions (vsnprintf, new, Reserve, printf (%f))	
10043	SUPTEL-3712	Manage contactless and touch screen hardware incompatibility while waiting for contactless card	
12452	SUPTEL-4261	Character '*' is missing in help ticket for alphanumeric standard.	
12462	SUPTEL-4332	Use '.' and 'F' key to navigate only on terminals with no hardware functions key available	
10888 11810 11811		Management of iPP480	
11604		IWL350:Beep on key press is configurable for PIN entry	
11686		Manage new mask for EventHeader for B/W terminal with Bluetooth and GPRS technologies (iUC180 and iUP250).	
12305		Unattended catalogues renamed: iUN1XX ==> iUC1XX iUN2XX ==> iUP2XX	
12312		Put CLESS parameter to NO when a CLESS pinpad is desactived in manager parameters	
12368		Print version of SECURITY pack for each application in the terminal	
12435		Heap corruption into pack coherence control function	
12454		Amount was not displayed while executing AMOUNT_ENTRY_REQUEST IAM manager function	
12496		Create "internal" catalog for IPP480	

12497		Use '.' and 'F' key to navigate only on terminals with no hardware functions key available (GOAL interface)	
12527		PSC protocol in "internal" catalog for IWL350 added	
12536		New product managed : ICT220 CLESS	
12549		Use F4 to force authorization and F3 to change currency on iSMP product	
12572		Invalid default choice selected in PABX menu.	
11717	SUPTEL-3748	Use of GPRS Network for remote download for non-Bluetooth IWL2XX out of base	Already in SDK 9.2.2
12091	SUPTEL 3803	Test if disconnection is necessary for remote download with GPRS network	Already in SDK 9.2.1
12274		Fixed reset after several plugs of USB key	Already in SDK 9.2.2
12203		CRYPTO DLL in IUN catalog added	Already in SDK 9.2.1
12190		Local download with USB key was working only one time.	Already in SDK 9.2.1
12191		No more control coherency on DLL PPS and PPR30	Already in SDK 9.2.1
11860		There was a reset when the a terminal made a call on a Bluetooth device associated with a non-Bluetooth cradle	Already in SDK 9.2.1

4.2.2. APIs evolutions

Internal tracker	SUPTEL	Description	Nota
12021	SUPTEL-3631	Add possibility to customize application context (header, LEDS, footer) in MORE_FUNCTION entry point with SetApplicationContext API	
12338	SUPTEL-4157	Function TM_Application_GetVARID added to retrieve the VARID of an object present in active directory ('SYSTEM').	
12021	SUPTEL-3631	Add possibility to customize application context (header, LEDS, footer) in MORE_FUNCTION entry point with SetApplicationContext API	
12222	SUPTEL-4067	Behaviour deactivating “phone handset” in header with EventHeader function is now the same for all types of terminals (B&W or Color) (use _RTC_STATE_ mask)	
11862	SUPTEL-3830	Don’t start transaction if card already present before calling MESSAGE_RECEIVED entry point.	
12547	SUPTEL-4386	Two functions to manage PRINTER contrast : TM_Printer_AdjustIntensity and TM_Printer_GetIntensity	
11806		Add possibility to play Video or Animated GIF in CUSTOMIZE_CARD_ENTRY entry point.	
12332		USB_TYPE constant invalid in param.h	
12342	SUPTEL-4201	Added management of LEDS on ISC350 with SetLedEvent, SetLedBlinking, …	Already in SDK 9.2.2
12278	SUPTEL-4126	New API to customize application name in header : SetSpecificIsName()	Already in SDK 9.2.2
12321	SUPTEL-3650	sms_open regression fixed	Already in SDK 9.2.2

12326	SUPTEL-4178	New API to get plateform version (TELIUM1 or TELIUM2) int TM_Plateform_GetType(void)	Already in SDK 9.2.2
12299		Display files with TELIUM2 extension (AGN,PGN,...) in USB KEY evolution menu.	Already in SDK 9.2.2
12249	SUPTEL-4063	Calling DisplayHeader(_OFF_) when header has been previously hidden by StateHeader did not desactivate definitively header.	Already in SDK 9.2.1
12022	SUPTEL-3831	Negociate DNS2 in gprs_ppp_setup.	Already in SDK 9.2.1
11116	SUPTEL-3275	Float and double are no more used with sprintf, printf, fprintf, pprintf,… functions when application is compiled with GNU compiler	Already in SDK 9.2.1
12185	SUPTEL-4056 SUPTEL-4114	On SDK 9.2, there was a reset on iWL250 when calling the Telicapt function hmiADDisplayText()	Already in SDK 9.2.1
12139	SUPTEL-3980	Date backup only when needed	Already in SDK 9.2.1
11712	SUPTEL-3589	Fixed TRACK_STREAM entry point management	Already in SDK 9.2.1

4.2.3. Telium Manager menus

Internal tracker	SUPTEL	Description	Nota
11895		Evolution: possibility to enter the new password before presenting SIM PUK instead of "0000" by default.	
12312		Put CLESS parameter to NO when a CLESS pinpad is disabled in Telium Manager parameters.	
12319		Sometimes button into FOOTER are not displayed (only for IWL350)	
12492		PABX menu must appear when a MODEM can be connected on a serial interface.	
12320		Button in FOOTER are not correctly centered	
12100		On GOAL manager, in the configuration menus of background and text color, by default, the last values entered are displayed.	Already in SDK 9.2.1
12135		Use "F" in deletion menu on ICU180 to select software	Already in SDK 9.2.1

4.2.4. Telium Manager idle screen

Internal tracker	SUPTEL	Description	Nota
12426		Put contactless target at right position on IPP480 and IWL280	
11969		Added functions HWCNF_SetEnergySaveParameter() and HWCNF_GetEnergySaveParameter() to set and get the energy save parameters	Already in SDK 9.2.2
12311		External Bluetooth printer : menu "keep alive" added	Already in SDK 9.2.2
12126		Ethernet icon in header was not correctly managed	Already in SDK 9.2.1
12155		SIM code keying display improvement	Already in SDK 9.2.1

4.2.5. Terminal configuration

Internal tracker	SUPTEL	Description	Nota
12154	SUPTEL-4209	Bluetooth barcodes reader (profil SPP)	
12392		Bluetooth printer (SPP profile) management.	
12393		Bluetooth earphone and audio redirection management.	
12134		Ethernet choice for network was not available on iUC180	Already in SDK 9.2.1

4.2.6. For French applications

Internal tracker	SUPTEL	Description	Nota
12258 12263		DLL PSS evolutions	Already in SDK 9.2.1

4.3. Security

4.3.1. DLL Security

Internal tracker	SUPTEL	Description
12241		Adding SEC_EndStepSchemeWait, SEC_sch_end_gen_NoWait to end a scheme without waiting for the END event
12302		SEC_sch_GetPackVersion function added. It is used to get the version of the security schemes package 820365
12252		SEC_PinEntry management of scheme ending when disconnecting during the PIN entry.
12381		Generic schemes 820365v0212 embedded
12382		Improvement of concurrent schemes execution.
12383		Issue in SEC_sch_GetPackVersion() function fixed.

4.3.2. Security Extend library

Internal tracker	SUPTEL	Description	Nota
12380		SECExtDukpt was missing in library SEC_Extend for GNU4 in SDK 9.2.0 and 9.2.1	Already in SDK 9.2.2

4.3.3. DLL E2EE

Internal tracker	SUPTEL	Description
12425		Sample added in CHM

4.3.4. DLL Digest

Internal tracker	SUPTEL	Description
12211		Padding added on HMAC-224 data for compatibility with HMAC-256 format

4.3.5. Schemes

Last schemes certified are included in this SDK.

No evolution.

4.3.6. Pinlib

This module is deprecated.

4.4. Communication

4.4.1. Link Layer

Internal tracker	SUPTEL	Description
11924		Documentation: precision about DLL SSL and DLL TCP for iMP3xx
12378		Bad parameter for selectsocket(), issue using more than 16 sockets fixed.
		News catalogues added (m50, m51, m52)

4.4.2. DLL SSL

Internal tracker	SUPTEL	Description
12410		Add X509_Crl functions to parse CRL file
12292		P3XX: Allow SSL connection to localhost
12294		iMP3XX: Data no more lost at the SSL disconnection

4.4.3. FTP

Internal improvement.

4.4.4. SNMP

No evolution.

4.4.5. DLL TCP for iMP3

DLL TCP for iMP3 is provided in the directory Component\DLL_TCP_IMP3. This DLL allows TCP/IP without SSL communications on iMP3xx.
This DLL is mandatory on iMP3xx.

No evolution.

4.4.6. Pack IP

Internal tracker	SUPTEL	Description
12246	SUPTEL-4088	The disks containing the attached files remain mounted after the SMTP_SendUniqueMessage and SMTP_Send functions return.
12168	SUPTEL-3994	New option __DFL_ETH_DHCP_HOSTNAME to set the DNS name of the terminal (in DHCP only).

4.5. Display

4.5.1. GOAL

GOAL binaries are integrated in the Telium Manager catalogues as described above.

New fonts usable with GOAL are added in repository Component\Fonts\GOAL (See documentation in CHM)

- Latin (Lucida and GOAL standard)
- Arabic and Hebrew
- Traditional Chinese
- Simplified Chinese
- Cyrillic and Greek

Following other points are delivered in this release:

Internal tracker	SUPTEL	Description	Nota
12052	SUPTEL-3935	Added an API to retrieve the images used in corporate skins	
12137	SUPTEL-3975	Added ability to extend the buttons by the height	
12325	SUPTEL-4169	The entry of several identical characters moves the cursor in the input field	
12352	SUPTEL-4183 SUPTEL-4257	Fixes the impossibility to have a timeout when a virtual keyboard window is opened after the click of a edit box	
12414	SUPTEL-4268	Add smallest exif image file support	
12431	SUPTEL-4295	Bad align of text in the GL_Dialog_Message	
12479	SUPTEL-4334	Changing the charset before a GL_Dialog_Message can no longer escape with the valid key.	
11817	PE0001-45	Fixes problem of not receiving shortcuts on invisible buttons	
11818	PE0001-42	Adds the wrap of text. The wrap allows text to automatically return to the line if it does not fit in width in the space allocated to it. GL_Widget_SetWrap, GL_Widget_GetWrap	
11820	PE0001-81	Scroll text sample added	
11990	PE0001-82	Added stretch images on dialog boxes	
11991	PE0001-77	Add event handler to check after a key was pressed in edit	
11994	PE0001-30	Rename the wchar into T_GL_CHAR	
12000	PE0001-52	Export of the GL_Version.h	
11890	PE0001-44	Fixes the problem with the mask "/d/d,/d/d/D./D/D"	
11547		Improvement in Arabic fonts management	
11736		Doesn't check empty children element in XSD file	

11828		Adds functions for ingedev GL_Window_GetArea, GL_Layout_GetRect	
11829		Corrects the problem of saturation of the driver screen image cache	
12004		Replace the const char** by const char* const * in dialog	
12055		Add flush and exists function in file object GL_File_Flush, GL_File_Exists	
12058		Improve load performance by keeping DAL session opened	
12093		Adding the widget barcode QR Barcode	
12095		Correction of the repetition of images that are outside of their area	
12103		Fixed \u not supported in GML (used in the definition of virtual keyboards)	
12121		Changing the font size in GML is now possible on buttons, edit, etc. ..	
12225		Fixed the GL_Widget_SetFocus is not taken into account before a GL_Window_Dispatch	
12226		Fixed a horizontal line in the drawing is not displayed immediately	
12002		Reboot fixed when using QAtcher with SDK 9.2.0 and SDK 9.2.1	
11834		Added ability to zoom fonts with a coefficient x2 and x3	
12478		Corrects problem with a window that appears and disappears and does not give back the hand on the keyboard.	
12097		Added the ability to cut font files into several files that have the same font name	
12036		Corrects the display of stars in GL_Dialog_Scheme function	
12478		Corrects problem with a window that appears and disappears and does not give back the hand on the keyboard.	
12493		Check that widget handle is effectively a window in GL_Window_Dispatch	
12504		Corrects the problem of missing setStubVersion	
11980		Fixes collapse of mouse event	Already in SDK 9.2.2
12002		Reboot fixed when using QAtcher with SDK 9.2.0 and SDK 9.2.1	Already in SDK 9.2.2

4.5.2. CGUI / CGUI tools

Following points are delivered in this release.

Internal tracker	SUPTEL	Description	Nota
12337	SUPTEL-4204	A new option : WGUI_BROWSER_TEXTAREA_OLD_STYLE_FOCUS can be set on the browser to activate the old style textarea move	Already in SDK 9.2.2
12243	SUPTEL-4098	CGUI now handles correctly '<' character if present on a 8192 bytes boundaries	Already in SDK 9.2.2

4.5.3. Plug-ins

CGUI Plug-ins Multimedia and Signature Capture are delivered in Telium Manager catalogues as described above.

No evolution.

4.5.4. Fonts

No evolution.

4.5.5. Signature/Capture

Internal evolution.

4.5.6. DLL Image

No evolution.

4.6. Contactless

4.6.1. Driver

Internal tracker	SUPTEL	Description	Nota
9741		[CLESS] Possibility to allow driver Mifare to leave encrypted mode	
10287		iPP2XX: debug version of driver contactless (with traces) added	

4.6.2. DLL TPass

Following points are delivered in this release.

Internal tracker	SUPTEL	Description	Nota
12184		If no AID was configured, the LoA method failed with "LACK OF MEMORY"	Already in SDK 9.2.1

4.6.3. Entry Point

No evolution.

4.6.4. Telium Pass

No evolution.

4.6.5. GTL

Internal tracker	SUPTEL	Description	Nota
12475		Unused internal functions in GTL_Database.h and GTL_DataStorage.h are removed. GTL_TagsInfo.h is moved in add-on Easy Path to C'Less.	

4.6.6. DESFire cards

“Desfire” library is renamed to “mifare” library.

Internal tracker	SUPTEL	Description	Nota
	MRTSW-203	Mifare Plus cards managed	

4.7. Applications

4.7.1. Incendo Online browser

Technical documentation and the Incendo SDK are provided with Ingedev (from version 7.8.0).

4.7.1.1. Memory

Before deploying this solution, please check the memory usage of your terminals.

4.7.1.2. Migration to this version

4.7.1.2.1. Migration from a version before 3.0.4

Incendo Online smart browser was previously delivered as an independent package (up to version 3.0.3). It was designed to be signed with region security keys.
The version in this Telium SDK is signed with manufacturer key. So the application type is different between these two versions. If you have already deployed the browser, to migrate to the version included in a Telium SDK, you must manage the change of application type. For further details, please contact the Incendo support.

4.7.1.3. Compatibility

Be careful: With this SDK, Incendo is compatible with ICT250 GOAL only. Please contact Incendo support to migrate your Incendo browser to this SDK.

4.7.1.3.1. Terminals managed

Minimal hardware prerequisites are:

- Terminal is Ethernet or GPRS;
- Terminals is Ingetrust ready;
- Minimum of 16 MB of Flash is mandatory;
- 16 MB of RAM are mandatory.

Incendo Online is compatible with the following terminal:

- iCT250

You must not use it on other terminals.

4.7.1.4. Evolutions

No evolution.

4.7.2. Image Loader

At the end of the Telium SDK setup you can choose to install Image Loader on your PC. Documentation is available in this installed package.
Please read all the documentation located in the directory you had installed Image Loader.

4.7.2.1. Evolutions

No evolution.

4.8. IPP3 in Pinpad emulation mode

Please see description in the CHM help file of the Telium SDK (SDK General Documentation > How To Develop user guides > How to use iPP3xx as a smart card reader).

4.8.1.1.Evolutions

No evolution.

4.9. AVL

AVL stands for Added Value Libraries.
No evolution.

4.10. SDK features

Following points are delivered in this release.

Internal tracker	SUPTEL	Description	Nota
12413 12476	SUPTEL-4297	When installing for the first time SDK or Add-on on a 64 bits Windows PC, installation is now proposed with the default installation path without "()" characters. "C:\Program File"	
12495	SUPTEL 3213 + 1260 + 3578	Support of some C functions (fsnprintf,…)	
12280		hterm.h included by default in sdk30.h	
12491		Libraries GTL, Desfire and TPass were not taken account by default while using the Ingedev wizard to create a new project.	

4.11. Documentation

There are improvements of documentation in this release including the following

Internal tracker	SUPTEL	Description	Nota
12049	SUPTEL-3919	Documentation updated: B&W terminals does not support Footer area	
12216	SUPTEL-3723	gprs_connect documentation	
12046	SUPTEL-3670	Documentation about FS_NandRemap added	
11563	SUPTEL-3602	Add Documentation in CHM : HOW TO USE DLL NULL PROTOCOL	

12344		Documentation added: Header's signed files format description.	
12289		License files added in documentation.	
12406		Improvement of documentation of SetLedEvent and gprs_connect	
12498		Error in documentation	
11695		Documentation of functions: dec_iso1(),dec_iso2(),dec_iso3()	
11293	SUPTEL-2946	Documentation for Bluetooth limitation in mixed usage	Already in SDK 9.2.2
12171	SUPTEL-4018	Correction in documentation "How To Use iPP3xx": 020504=2; ipp3xx is in terminal mode	Already in SDK 9.2.1
12343		Some Bluetooth help was missing in SDK 9.2.1	Already in SDK 9.2.2
12245		Documentation about algorithm of SEC_RandomMACAESKeyExpRSA()	Already in SDK 9.2.2
12230		Documentation (IsUCM() function don't exist, removed)	Already in SDK 9.2.1
12063		**Documentation of PSQ_Get_product_type() improved**	Already in SDK 9.2.1
12128		Documentation of is_name_extended() improved	Already in SDK 9.2.1

4.12. Samples

There are improvements of samples in this release including the following

Internal tracker	SUPTEL	Description	Nota
12386	SUPTEL-3740	Documentation of entry samples	
12425		E2EE DLL: Sample added in CHM	
11487	SUPTEL-3624	Sample added explaining how to associate an icon to an application (sample in SDK\Samples\Manager\IconInit)	Already in SDK 9.2.1

5. Add-ons to Telium SDK

The following table presents the versions of recommended add-ons to use with this SDK.

Add on	Recommended version to use with this SDK	Comment
Easy Path To EMV	21	
Easy Path To Contactless	3.7.3	
Add On PCL for iPA280	1.19	
Add On PCL for iWP	1.15	
Add On PCL for iMP3xx	1.4	
Bluetooth printer for iMP3	1.0	
Add On Morpho	2.0	
Add On Telicapt	2.17	
Add On Unattended	3.1	Previously named Add On UCM
Add On SPDH	1.1	
Add On APACS 40 Generic	1.8	
Add On ISO8583 Generic	3.2	

SDK9.2.2 Release note

1. What's new? Why should you use this SDK?

Here are main evolutions coming with this Telium SDK release compared to the release 9.2.0:

- Reboot fixed when using QAtcher with SDK 9.2.0 and SDK 9.2.1;
- Capability to download an iSMP without SSL;
- Flash management improvement;
- CGUI now handles correctly '<' character if present on a 8192 bytes boundaries.

Issues solved are detailed in paragraph 4.

2. Compatibility

2.1. List of compatible terminals

This SDK release is compatible with the following products.

Note: When terminals are provided for development only, not all the components are provided and qualified.

2.1.1. Wireless

Telium 2:

- iWL220B, iWL220G,
- iWL250B, iWL250G ,
- iWL250 3G,
- iWL250 2SCR, 2SCR stands for 2 Smart Card Reader,
- iWL280,
- iWL350 (for development only).

Telium 1:

- EFT930

2.1.2. Countertop terminals

Telium 2:

- iCT220, iCT250,
- E532

Telium 1:

- EFT SMART Plus,
- EFT SMART,
- EFT30

2.1.3. Retail pinpads (Signature capture terminals)

Telium 2:

- iSC250,
- iSC350.

2.1.4. Pinpads

Telium 2:

- IPP320, iPP350,
- IPP3xx used as a smart card reader (Pinpad emulation mode).

Telium 1:

- ML30, ML30 color, ML30 color contactless.

'Booster only' pinpads:

- IPP220, iPP250, iPP280, P30, P30 Contactless, PP30S.

Signature capture pinpads:

The system for iPP480 is provided in this SDK. This terminal will be available from the SDK Beta 9.3.0.and will be officially released in SDK 9.4.0. If, in the meantime, you need the software components for iPP480, please contact your Ingenico region interface.

2.1.5. Unattended

Telium 1:

See the add-on Unattended package for the exhaustive list of CAD30.

Telium 2:

- iUC150, IUC180,
- iUP250 (for development only),
- iUR250 (you have to load the system of iUR250 provided by add-on Unattended in catalogue iUP2xx_PROD.m49).

2.1.6. Satellite terminals

Telium 2:

- iST150.

Telium 1:

- TeliumPass Plus.

2.1.7. Mobile payment

Telium 2:

- iMP320, iMP350,
- SPM (iPA280).

2.1.8. French healthcare

- TWINs.

2.2. Compatibility terminals vs SDK

In the following table, you will find the first SDK in which the terminal was managed for production purpose.
This table concerns terminals out since SDK 7.1.

Terminals	Supported since
iWL220	iWL220 G : SDK 7.6 iWL 220 B : SDK 8.0
iWL250	iWL250 G : SDK 7.6 iWL250 B : SDK 8.0 iWL250 2SCR : SDK 8.0 iWL250 3G : SDK 8.2
iWL280	SDK 8.1.2 GPRS only since SDK 8.0.1
iWL350	*(For development since SDK 8.2)*
iWL Bases	Base BEM : SDK 8.0 Base PEM : SDK 8.1
E532	SDK 8.2
iSC250	SDK 7.5
iSC350	SDK 7.1
iPP3XX	iPP320, iPP350 : SDK 7.1 iPP320 in pinpad emulation : SDK 7.4
iPP220	iPP220, iPP250 : SDK 7.1 iPP280 : SDK 7.5
iST150	SDK 7.5
iUC150, iUC180	SDK 9.2.0
Configuration iUP250 - iUR250	*(For development since SDK 9.0)*
iMP320	SDK 9.2.0
iMP350	SDK 7.6
Twin31	SDK 7.6.1

2.3. Terminals certified PCI V3

The following terminals are certified for PCI v3:

Terminal	Certified since
iWL220	Since SDK 8.0.1
iWL250	Since SDK 8.0.1
iWL280	Since SDK 8.0.1
iSC250	Since SDK 8.0.1
iPP3xx	Since SDK 8.1
iMP350	Since SDK 8.2
iCT2xx (Only iCT2xx referenced 11Txxxxx are certified PCI-V3)	Since SDK 8.2
iPP2xx	Since SDK 8.2
iWL350	Since SDK 9.2.0

2.4. Public Key Infrastructure

This release supports PKI v3 infrastructure ensuring communications using IngeTrust keys with bigger size, compliant with PCI v3.

3. Highlighted points

3.1. Reminder for important highlighted points

3.1.1. Numbering of Telium SDK (Stable vs. Beta releases)

For a SDK versioned V.R.S:

- If R is an odd number, the SDK is a Beta release also called odd release (Example: SDK 9.1.0);
- If R is an even number, the SDK is a stable release also called even release (Example: SDK 9.2.0)

The beta releases propose by advance the features to integrate in the next stable major release. They allow qualifying at the earliest the new features either by platform qualification team or by regions if requested.
Stable (even) releases are fully qualified.

3.1.2. Telium Manager catalogues naming rule

The integration of GOAL in the Telium SDK 9.0 had introduced changes in the Telium Manager catalogues provided.

The naming rules have been maintained for compatibility and to minimize the changes for users.

This sheet describes the application compatibility and Telium Manager MMI regarding names of catalogues.

Thunder	Catalogues names	Application compatibility	Telium Manager MMI
Thunder 1 and 2	xxx_GOAL_yyy.mZZ	GOAL and Libgr	GOAL
Thunder 1 and 2	xxx_CGUI_yyy.mZZ	CGUI, GOAL and Libgr	GOAL
Thunder 1 and 2	xxx_yyy.mZZ	Libgr	Libgr
Thunder 3	xxx_GOAL_yyy.mZZ	GOAL and Libgr	GOAL
Thunder 3	xxx_yyy.mZZ	CGUI, GOAL and Libgr	GOAL

The Telium manager displayed with CGUI interface doesn't exist anymore; it is replaced by the GOAL interface. The name xxx_CGUI_yyy.mZZ for a catalogue means that it is compatible with CGUI applications but the Manager interface is GOAL.

The Telium Manager catalogues xxx_MOCKUP.mZZ don't exist anymore. They were designed to use the Ingedev preview feature. If you want to use this feature, you have to load in your terminal, the catalogue CGUI_PREVIEW_PROXY.mZZ which is in the directory Components\CGUI_PREVIEW_PROXY, additionally to the CGUI manager catalogue.

The Telium Manager catalogues include NanoX, the plug-in Signature Capture and the plug-in Multimedia. So, the plug-ins are no more delivered in the directory \Component\plugins.

3.1.3. Restriction for iPA280 and PCI PED 2.x compliance

During the PCI PED 2.x certification of the iPA280 devices, some constraints have been put at the level of communication of sensitive data from the Secure Payment Module (SPM) to the external world. The PDA part of the product has to be considered as the external world. The reason of this restriction is that the scope of the PCI PED evaluation was the SPM, which has a secure Telium architecture, and not the iPA280 product as a whole.

The restriction forbids communicating:

- Any APDU command response;
- Any cardholder data (i.e. ISO tracks 1 & 2 and their EMV counterpart).

It is also forbidden to receive APDU command queries from the external and to relay them to the smartcard. The restriction imposed by PCI SSC is not limited to banking cards. Direct communication to other types of cards (e.g. loyalty) is not allowed.

The communication APIs to establish communication between SPM and PDA propose some interfaces. It is for sure possible to address communication by using lower level functionalities. This must not be used to circumvent the protocol restrictions for communication.

Since cardholder data must remain within the SPM, the implication of this restriction is that payment applications have to be executed in the SPM and can not be based on a split design between SPM and PDA parts of the device. The PDA can be used for merchant application only (i.e. advertising, product selection)

3.1.4. Contactless

3.1.4.1. Best practices for Contactless

3.1.4.1.1. Field on/off

The contactless field is to be activated only when a contactless card is waited by the terminal. It must be stopped when the management of the contactless card is finished.
If the contactless field is opened all the time:

- On wireless terminals, product battery autonomy is reduced a lot;
- The contactless module and antenna are highly stressed and reliability could decrease quickly with time;

Applications have to manage the opening and the closing of the field according their business logic.

3.1.4.1.2. Implicit selection

Following terminals having the contactless feature inside are concerned: iWL2xx, iCT250, iSC2xx, iSC3xx, EFT930 GCC, EFT930 BCC, iPP3XX, iPA280 (SPM), ML30C and P30C.

Implicit selection is not recommended and must be managed with caution.
Due to physical reason, implicit selection can lead to unexpected issues, for example, at the beginning of the swipe, the card would possibly enter the antenna field and contactless chip would be handled instead of magnetic track.

3.1.4.1.3. Use of PSTN modem with contactless activated

The electro-magnetic field created when the contactless is activated, on an integrated terminal, prevents the usage of the PSTN modem with contactless activated.

This is not a software issue, and no software solution exists. The contactless field shall not be activated at the same time as the modem.

Currently, the issue exists only on the iCT250, which is the only Ingenico integrated terminal with contactless and PSTN modem.
(For instance, on EFT930BCC or EFT930GCC with modem, it works, because the modem is on the cradle, and the distance between the modem and the contactless field is sufficient).

3.1.4.2. Add-on Contactless

The add-on contactless doesn't exist anymore.
All components provided previously in this package are now by default since Telium SDK 8.1. It concerns

- TPass library and component;
- Entry point component;
- GTL library (GTL stands for Generic Tool Library);
- Contactless sample.

3.1.4.3. Card supported

The list of cards supported by this SDK is given in the paragraph **Erreur ! Source du renvoi introuvable.: Erreur ! Source du renvoi introuvable.** .

Recommendation:
Even if a card is managed since an old SDK or Add-On Contactless, usage of a recent SDK is strongly recommended because bugs could have been fixed.

3.1.5. PCI PTS version

The function GetTerminalPCIPTSVersion() allows to know the PCI PTS version of the terminal (return is PCI_PTSV2 or PCI_PTSV3).
The function GetTerminalPKIVersion() allows to know the PKI version of the terminal (return is PKIV1 or PKIV3).

3.1.6. New software numbers for Telium Manager DLLs

3.1.6.1. Numbering rule

To conform to Ingenico numbering convention, software numbers of binaries provided by Telium Manager have been changed. The software number is the first part of the name of the binary.
As a rule, when the software number was on 4 digits until SDK 9.0.x, from SDK 9.2.0 the first digit of the prefix is replaced by 844.
There is no change in application types.
Your application should not check the presence of a binary in the terminal by testing the software number but by testing the application type.

Example: For Libgr,

- Until SDK 9.0.x, software number was 3596 and application type was 3.
- From SDK 9.2.0, software number is 844596 and application type is 3.

3.1.6.2. Specific case of Manager Pack parameter file (3778, 4778)

The Manager Pack parameter files (3778xxyy.SGN/PDF and 4778xxyy.PGN) are kept in SDK 9.2.0 only for compatibility with Ingestate.

After the application of this rule:

- The file 844778xxyy has the application type 2 (ID of the files 3778xxyy/4778xxyy previously),
- The files 3778xxyy and 4778xxyy are dummy files (they are empty) with application type 0xAEEA.

3.1.7. Family name

The binary name, defined in the descriptor used to sign the binary, must follow the pattern "<FAMILY_NAME><VV><AA>" where:

- FAMILY_NAME is the family name of the application (maximum 7 ASCII characters);
- VV is the version (2 number);
- AA is the amendment (2 number)

3.1.8. Pinpad system

To avoid problems when a non mock-up pinpad is linked to a mock-up terminal, the terminal mock-up catalogues don't include pinpad systems. So, you have to load the pinpad system (located in the directory "Component\OS") according to the pinpad you are using.

3.1.9. DIR system version downgrade

It is not possible to downgrade from a system managing directories (catalogue XXX_DIR.mYY) to a system which not manages directories (catalogue XXX.mYY).

3.1.10. Reserved numbers

Service numbers from 1 to 100 and from 0x1E00 à 0x1FFF are reserved for Ingenico internal use.
Tag numbers used by applications must be taken in the range 0x9FA000-0x9FAFFF.

3.1.11. EFT930 embedding 8MB of flash

It is possible to use this SDK on EFT930 which has only 8 MB of flash (special system catalogue is provided: EFT930_8MO_PROD.m31). This catalogue is not a DIR one. If you use Ingestate you may need some adjustments: please contact your R&D Regional Interface for more information.

For SDK 8.0.x, SDK 8.1 and SDK 8.1.1:
It is forbidden to load a catalogue designed for 8MB terminals on a terminal loaded with a generic catalogue (that is to say non-8 MB). You must contact the Ingenico support for the rules of this migration.

3.1.12. Fix in link layer

A bug has been identified in the LinkLayer component, in versions 3.22 and 3.23 (SDK 8.1.2, SDK 8.1.3, SDK 8.2 and SDK 8.2.1).
For these versions only, on Bluetooth terminals, not associated with any base, the connection (call to LL_Connect()) fails when using the physical link LL_PHYSICAL_V_DEFAULT_TCPIP, with return code -1013 (LL_ERROR_NETWORK_NOT_SUPPORTED).
This bug is now corrected in SDK 9.0 (Link Layer version 3.25)

3.1.13. IUN

3.1.13.1. Sleep mode

In this SDK, iUN range of products does not support sleep mode.

3.1.13.2. Add on Unattended

You must use at least version 3.01 of add-on Unattended.

3.1.14. IMP3

3.1.14.1. Bluetooth printer for iMP3

It is possible to use a Bluetooth printer with an iMP3.
The parameters and documentation for this feature are provided via an add-on called "Bluetooth printer for iMP3". Please contact your region interface to request it.

3.1.14.2. IMP3 connected to an iPhone running on IOS 5.0

If the iPhone runs on system iOS 5.0, the iMP3 can not go to sleep mode when iPhone is in sleep mode. This case is to handle at application level.

3.1.15. Deprecation

3.1.15.1. Features from AVL

Following feature provided by AVL are deprecated since SDK 9.2.0:

- VGE_UIM. It was based on Black and White functions. To implement MMI, please use advanced graphical library GOAL or legacy libgr graphical mode;
- VGE_DBG. Use functions from GTL library (Generic Tool Library);
- VGE_DRM. Use file system functions instead (see sample in SDK/Samples/Training/Src/FFMS.c);
- VGE_TMS. Use system functions instead;
- VGE_BLM.

The deprecated functions are grouped in the library AVL_Deprecated.lib. If you want to continue to generate your application with these deprecated features, you need to add this library to your build.
You will have warnings about deprecation. To remove it, clean your code by removing calls to these deprecated functions.

3.1.15.2. Pinlib

Pinlib.lib is deprecated since SDK 9.2.0. Please use functions provided by Security DLL (See documentation in the CHM help file).
These deprecated functions are grouped in the library Pinlib_Deprecated.lib. If you want to continue to generate your application with this deprecated feature, you need to add this library to your build. Pinlib.lib doesn't exist anymore.
You will have warning about deprecation. To remove it, clean your code by removing calls to these deprecated functions.

4. Issues solved in this release by component

See table in chapter **Erreur ! Source du renvoi introuvable.** "Versions of components" for the list of versions of components provided in this Telium SDK.

Main points delivered in this release regarding **the last major release SDK 9.2.0** are listed below.

4.1. Telium System

Following points are delivered in this release.

4.1.1. Card management

Internal tracker	SUPTEL	Description	
11768	SUPTEL-3693	Feature added on Thunder 3 terminals in SDK 9.2.1: AAMVA ISO1 cards compatibility. Maximum char count on track 1 remains unchanged (79max).	Already integrated in SDK 9.2.1

4.1.2. Communication

Internal tracker	SUPTEL	Description	
12167	SUPTEL-4109	Capability to download an iSMP without SSL	New in SDK 9.2.2
11767		On RTC, if nothing happens on TMS link during 3 minutes, an exit is done. (Fix on callhost to solve the TMS COM problem)	Already integrated in SDK 9.2.1
12176	SUPTEL-3913	Rename legacy COMH on portable side, before linking the Bluetooth version, so the latter is available when required.	Already integrated in SDK 9.2.1
11965		Hilo reset duration grows on ICT products to avoid GPRS blocking.	Already integrated in SDK 9.2.1

4.1.3. V34 modem

Some fixes for V34 modem on iCT and iWL, including

Internal tracker	SUPTEL	Description	
11447	SUPTEL-3576	[IP/PSTN] MODEM V34 is usable in remote downloading session	Already integrated in SDK 9.2.1
11144		Added support for modem V34 on iWL smart bases	Already integrated in SDK 9.2.1
12218		V34 modem didn't work on iCT2xx	Already integrated in SDK 9.2.1
12140		Potential problem with downloading over RTC via V34 modem fixed	Already integrated in SDK 9.2.1

4.1.4. iSCxxx

Internal tracker	SUPTEL	Description	
12170		There was a dead zone on touch panel screen on iSCxxx terminals. If you were using the mode of input switch many times in the application, the touch chip sometime went to the unpredictable state.	Already integrated in SDK 9.2.1

4.1.5. APIs issues

Internal tracker	SUPTEL	Description	
12118	SUPTEL-4003	Add function to configure timeout for network scan or network selection.	Already integrated in SDK 9.2.1

4.1.6. Miscellaneous

Internal tracker	SUPTEL	Description	
11638	SUPTEL-3457	Flush incoming data on USB device until the COMU is opened on handheld side.	**New in SDK 9.2.2**
11709		Flash management improvement	**New in SDK 9.2.2**
11894	SUPTEL-3765	Added new life counter: backlight ON (in seconds) 0x1F. (not supported by Twin, Ist150)	Already integrated in SDK 9.2.1
12164	SUPTEL-3980	Change LIFECOUNTER.DIA update time (10 minutes instead of 1 minute)	Already integrated in SDK 9.2.1
12146	SUPTEL-3889	Add multi-tasking protection on kill function	Already integrated in SDK 9.2.1

4.1.7. Development issues

Internal tracker	SUPTEL	Description	
12180		Management of remote debug on iUC150 and iUC180	Already integrated in SDK 9.2.1

4.2. Telium Manager

Following points are delivered in this release.

4.2.1. General issues

Internal tracker	SUPTEL	Description	
12274		Fixed reset after several plugs of USB key	**New in SDK 9.2.2.**
12203		Add CRYPTO DLL in IUN catalog	Already integrated in SDK 9.2.1
12190		Local download with USB key was working only one time.	Already integrated in SDK 9.2.1
12191		No more control coherency on DLL PPS and PPR30	Already integrated in SDK 9.2.1

11860		There was a reset when the a terminal made a call on a Bluetooth device associated with a non-Bluetooth cradle	Already integrated in SDK 9.2.1
12091	SUPTEL 3803	Test if disconnection is necessary for remote download with GPRS network	Already integrated in SDK 9.2.1
11717	SUPTEL-3748	Use of GPRS Network for remote download for non-Bluetooth IWL2XX out of base	Already integrated in SDK 9.2.1

4.2.2. APIs evolutions

Internal tracker	SUPTEL	Description	
12342	SUPTEL-4201	Added management of LEDS on ISC350 with SetLedEvent, SetLedBlinking, ...	New in SDK 9.2.2
12278	SUPTEL-4126	New API to customize application name in header : SetSpecificIsName()	New in SDK 9.2.2
12326	SUPTEL-4178	New API to get plateform version (TELIUM1 or TELIUM2) int TM_Plateform_GetType(void);	New in SDK 9.2.2
12321	SUPTEL-3650	sms_open regression fixed	New in SDK 9.2.2
12249	SUPTEL-4063	Calling DisplayHeader(_OFF_) when header has been previously hidden by StateHeader did not desactivate definitively header.	Already integrated in SDK 9.2.1
12022	SUPTEL-3831	Negociate DNS2 in gprs_ppp_setup.	Already integrated in SDK 9.2.1
11116	SUPTEL-3275	Removed use of float and double with sprintf, printf, fprintf, pprintf, ... functions when application is compiled with GNU compiler	Already integrated in SDK 9.2.1
12230		isUCM() function removed	Already integrated in SDK 9.2.1
12185	SUPTEL-4056 SUPTEL-4114	On SDK 9.2, there was a reset on iWL250 when calling the Telicapt function hmiADDisplayText()	Already integrated in SDK 9.2.1
12139	SUPTEL-3980	Date backup only when needed	Already integrated in SDK 9.2.1
11712	SUPTEL-3589	Fixed TRACK_STREAM entry point management	Already integrated in SDK 9.2.1

4.2.3. Telium Manager menus

Internal tracker	SUPTEL	Description	
12299		Display files with TELIUM2 extension (AGN,PGN,...) in USB KEY evolution menu.	New in SDK 9.2.2
12100		On GOAL manager, in the configuration menus of background and text color, by default, the last value entered are displayed.	Already integrated in SDK 9.2.1
12135		Use "F" in deletion menu on ICU180 to select software	Already integrated in SDK 9.2.1

4.2.4. Telium Manager idle screen

Internal tracker	SUPTEL	Description	
11969		Added functions HWCNF_SetEnergySaveParameter() and HWCNF_GetEnergySaveParameter() to set and get the energy save parameters	New in SDK 9.2.2
12311		External Bluetooth printer : menu "keep alive" added	New in SDK 9.2.2
11717	SUPTEL-3748	Use GPRS Network for remote download for non-BlueTooth IWL2XX out of base	New in SDK 9.2.2
12126		Ethernet icon in header was not correctly managed	Already integrated in SDK 9.2.1
12155		SIM code keying display improvement	Already integrated in SDK 9.2.1

4.2.5. Terminal configuration

Internal tracker	SUPTEL	Description	
12134		Ethernet choice for network was not available on iUC180	Already integrated in SDK 9.2.1

4.2.6. For French applications

Internal tracker	SUPTEL	Description	
12258		DLL PSS evolutions	Already integrated in SDK 9.2.1
12263		DLL PSS evolutions	Already integrated in SDK 9.2.1
12017		DLL PSS evolutions	Already integrated in SDK 9.2.1
11765		Improvement of values returned by ipdu_capacite_raccordement()	Already integrated in SDK 9.2.1

4.3. Security

4.3.1. DLL Security

No evolution.

4.3.2. Security Extend library

Following points are delivered in this release.

Internal tracker	SUPTEL	Description	
12380	SUPTEL-4253	SECExtDukpt was missing in library SEC_Extend for GNU4 in SDK 9.2.0 and 9.2.1	New in SDK 9.2.2

4.3.3. DLL E2EE

No evolution.

4.3.4. DLL Digest

No evolution.

4.3.5. Schemes

Last schemes certified are included in this SDK.

No evolution.

4.3.6. Pinlib

This module is deprecated.

4.4. Communication

4.4.1. Link Layer

No evolution.

4.4.2. DLL SSL

No evolution.

4.4.3. FTP

No evolution.

4.4.4. SNMP

No evolution.

4.4.5. DLL TCP for iMP3

DLL TCP for iMP3 is provided in the directory Component\DLL_TCP_IMP3. This DLL allows TCP/IP without SSL communications on iMP3xx.
This DLL is mandatory on iMP3xx.

No evolution.

4.4.6. Pack IP

No evolution.

4.5. Display

4.5.1. GOAL

GOAL binaries are integrated in the Telium Manager catalogues as described above.

Internal tracker	SUPTEL	Description	
11980		Fixes collapse of mouse event	**New in SDK 9.2.2**

12002		Reboot fixed when using Qatcher with SDK 9.2.0 and SDK 9.2.1	New in SDK 9.2.2

4.5.2. CGUI / CGUI tools

Following points are delivered in this release.

Internal tracker	SUPTEL	Description	
12337	SUPTEL-4204	A new option : WGUI_BROWSER_TEXTAREA_OLD_STYLE_FOCUS can be set on the browser to activate the old style textarea move	New in SDK 9.2.2
12243	SUPTEL-4098	CGUI now handles correctly '<' character if present on a 8192 bytes boundaries	New in SDK 9.2.2

4.5.3. Plug-ins

CGUI Plug-ins Multimedia and Signature Capture are delivered in Telium Manager catalogues as described above.

No evolution.

4.5.4. Fonts

No evolution.

4.5.5. DLL Image

No evolution.

4.6. Contactless

4.6.1. Driver

No evolution.

4.6.2. DLL TPass

Following points are delivered in this release.

Internal tracker	SUPTEL	Description	
12184		If no AID was configured, the LoA method failed with "LACK OF MEMORY"	Already integrated in SDK 9.2.1

4.6.3. Entry Point

No evolution.

4.6.4. Telium Pass

No evolution.

4.6.5. DESFire cards

No evolution.

4.7. Applications

4.7.1. Incendo Online browser

Technical documentation and the Incendo SDK are provided with Ingedev (from version 7.8.0).

4.7.1.1. Memory

Before deploying this solution, please check the memory usage of your terminals.

4.7.1.2. Migration to this version

4.7.1.2.1. Migration from a version before 3.0.4

Incendo Online smart browser was previously delivered as an independent package (up to version 3.0.3). It was designed to be signed with region security keys.
The version in this Telium SDK is signed with manufacturer key. So the application type is different between these two versions. If you have already deployed the browser, to migrate to the version included in a Telium SDK, you must manage the change of application type. For further details, please contact the Incendo support.

4.7.1.3. Compatibility

4.7.1.3.1. Terminals managed

Minimal hardware prerequisites are:

- Terminal is Ethernet or GPRS;
- Terminals is Ingetrust ready;
- Minimum of 16 MB of Flash is mandatory;
- 16 MB of RAM are recommended but not mandatory. 8 MB is possible if terminal is Incendo Online only (no other applications).

Incendo Online is compatible with the following terminals:

- EFT930 Color (Booster 2 type),
- iCT220, iCT250,
- iWL220, iWL250

You must not use it on other terminals.

Support of iSC250, iSC350 and iWL280 will be available in a future release.

4.7.1.3.2. EMV packages compatibility

Incendo smart Browser is compatible with the following EMV packages:

- Version 19 or 20.1

4.7.1.4. Evolutions

No evolution.

4.7.2. Image Loader

At the end of the Telium SDK setup you can choose to install Image Loader on your PC. Documentation is available in this installed package.
Please read all the documentation located in the directory you had installed Image Loader.

4.7.2.1. Evolutions

No evolution.

4.8. IPP3 in Pinpad emulation mode

Please see description in the CHM help file of the Telium SDK (SDK General Documentation > How To Develop user guides > How to use iPP3xx as a smart card reader).

4.8.1.1.Evolutions

No evolution.

4.9. AVL

AVL stands for Added Value Libraries.
No evolution.

4.10. SDK features

Following points are delivered in this release.

Internal tracker	SUPTEL	Description	
12192	SUPTEL-4064	GTL_TagsInfo.h and GTL_DataStorage.h back in SDK	Already integrated in SDK 9.2.1

4.11. Documentation

There are improvements of documentation in this release including the following

Internal tracker	SUPTEL	Description	
11293	SUPTEL-2946	Documentation for Bluetooth limitation in mixed usage	**New in SDK 9.2.2**
12343		Some Bluetooth help was missing in SDK 9.2.1	**New in SDK 9.2.2**
12245		Documentation about algorithm of SEC_RandomMACAESKeyExpRSA()	**New in SDK 9.2.2**

12171	SUPTEL-4018	Correction in documentation "How To Use iPP3xx": 020504=2; ipp3xx is in terminal mode	Already integrated in SDK 9.2.1
12063		Documentation of PSQ_Get_product_type() improved	Already integrated in SDK 9.2.1
12128		Documentation of is_name_extended() improved	Already integrated in SDK 9.2.1
11877	SUPTEL-3487	Documentation on entry points SELECT_CARD_HOLDER and SELECT_MERCHANT	Already integrated in SDK 9.2.1
11936	SUPTEL-3845	ISO8859Arabic2Unicode documentation improvement	Already integrated in SDK 9.2.1

4.12. Samples

There are improvements of samples in this release including the following

Internal tracker	SUPTEL	Description	
11487	SUPTEL-3624	Sample added explaining how to associate an icon to an application (sample in SDK\Samples\Manager\IconInit)	Already integrated in SDK 9.2.1

5. Add-ons to Telium SDK

The following table presents the versions of recommended add-ons to use with this SDK.

Add on	Recommended version to use with this SDK	Comment
Easy Path To EMV	20.2	
Easy Path To Contactless	3. 07.02	
Add On PCL for iPA280	1.18	
Add On PCL for iWP	1.15	
Add On PCL for iMP3xx	1.04	
Bluetooth printer for iMP3	1.00	New add-on
Add On Morpho	2.00	
Add On Telicapt	2.17	
Add On Unattended	3.01	Previously named Add On UCM
Add On SPDH	1.01	
Add On APACS 40 Generic	1.08	
Add On ISO8583 Generic	3.02	

SDK9.2.1 Release note

1. What's new? Why should you use this SDK?

Issues solved are detailed in paragraph 4.
Here are main evolutions coming with this Telium SDK release compared to the release 9.2.0:

- On iCT2xx and iWL terminals: Corrections for V34 modem.
- On iSCxxx terminals: Dead zone on touch panel screen fixed.
- Fix on callhost() to solve the TMS COM problem.
- Fixed potential crash using sprintf family function.

2. Compatibility

2.1. List of compatible terminals

This SDK release is compatible with the following products.

Note: When terminals are provided for development only, not all the components are provided and qualified.

2.1.1. Wireless

Telium 2:

- iWL220B, iWL220G,
- iWL250B, iWL250G ,
- iWL250 3G,
- iWL250 2SCR, 2SCR stands for 2 Smart Card Reader,
- iWL280,
- iWL350 (for development only).

Telium 1:

- EFT930

2.1.2. Countertop terminals

Telium 2:

- iCT220, iCT250,
- E532

Telium 1:

- EFT SMART Plus,
- EFT SMART,
- EFT30

2.1.3. Retail pinpads (Signature capture terminals)

Telium 2:

- iSC250,
- iSC350.

2.1.4. Pinpads

Telium 2:

- IPP320, iPP350,
- IPP3xx used as a smart card reader (Pinpad emulation mode).

Telium 1:

- ML30, ML30 color, ML30 color contactless.

'Booster only' pinpads:

- IPP220, iPP250, iPP280, P30, P30 Contactless, PP30S.

Signature capture pinpads:

The system for iPP480 is provided in this SDK. This terminal will be available from the SDK Beta 9.3.0.and will be officially released in SDK 9.4.0. If, in the meantime, you need the software components for iPP480, please contact your Ingenico region interface.

2.1.5. Unattended

Telium 1:

See the add-on Unattended package for the exhaustive list of CAD30.

Telium 2:

- iUC150, IUC180,
- iUP250 (for development only),
- iUR250 (you have to load the system of iUP250 provided by add-on Unattended in catalogue iUP2xx_PROD.m49).

2.1.6. Satellite terminals

Telium 2:

- iST150.

Telium 1:

- TeliumPass Plus.

2.1.7. Mobile payment

Telium 2:

- iMP320, iMP350,
- SPM (iPA280).

2.1.8. French healthcare

- TWINs.

2.2. Compatibility terminals vs SDK

In the following table, you will find the first SDK in which the terminal was managed for production purpose.
This table concerns terminals out since SDK 7.1.

Terminals	Supported since
iWL220	iWL220 G : SDK 7.6 iWL 220 B : SDK 8.0
iWL250	iWL250 G : SDK 7.6 iWL250 B : SDK 8.0 iWL250 2SCR : SDK 8.0 iWL250 3G : SDK 8.2
iWL280	SDK 8.1.2 GPRS only since SDK 8.0.1
iWL350	*(For development since SDK 8.2)*
iWL Bases	Base BEM : SDK 8.0 Base PEM : SDK 8.1
E532	SDK 8.2
iSC250	SDK 7.5
iSC350	SDK 7.1
iPP3XX	iPP320, iPP350 : SDK 7.1 iPP320 in pinpad emulation : SDK 7.4
iPP220	iPP220, iPP250 : SDK 7.1 iPP280 : SDK 7.5
iST150	SDK 7.5
iUC150, iUC180	SDK 9.2.0
Configuration iUP250 - iUR250	*(For development since SDK 9.0)*
iMP320	SDK 9.2.0
iMP350	SDK 7.6
Twin31	SDK 7.6.1

2.3. Terminals certified PCI V3

The following terminals are certified for PCI v3:

Terminal	Certified since
iWL220	Since SDK 8.0.1
iWL250	Since SDK 8.0.1
iWL280	Since SDK 8.0.1
iSC250	Since SDK 8.0.1
iPP3xx	Since SDK 8.1
iMP350	Since SDK 8.2
iCT2xx (Only iCT2xx referenced 11Txxxxx are certified PCI-V3)	Since SDK 8.2
iPP2xx	Since SDK 8.2
iWL350	Since SDK 9.2.0

2.4. Public Key Infrastructure

This release supports PKI v3 infrastructure ensuring communications using IngeTrust keys with bigger size, compliant with PCI v3.

3. Highlighted points

3.1. New highlighted points

3.1.1. Use of printf - like functions in SDK 9.2.0

On SDK 9.2.0, the use of the functions sprintf (), printf (), fprintf (), pprintf()… can make your application crash or application becoming bigger than ones compiled with previous SDKs.
There was a regression due to the implementation of SUPTEL 3275 adding support of floats for the printf - like functions. The evolution is removed from this delivery.

3.1.2. Qualification of iUNs

Validation of iUN range of products is not completed at the date of release of this SDK. You will be informed when it will happen.

3.2. Reminder for important highlighted points

3.2.1. Numbering of Telium SDK (Stable vs. Beta releases)

For a SDK versioned V.R.S:

- If R is an odd number, the SDK is a Beta release also called odd release (Example: SDK 9.1.0);
- If R is an even number, the SDK is a stable release also called even release (Example: SDK 9.2.0)

The beta releases propose by advance the features to integrate in the next stable major release. They allow qualifying at the earliest the new features either by platform qualification team or by regions if requested.
Stable (even) releases are fully qualified.

3.2.2. Telium Manager catalogues naming rule

The integration of GOAL in the Telium SDK 9.0 had introduced changes in the Telium Manager catalogues provided.

The naming rules have been maintained for compatibility and to minimize the changes for users.

This sheet describes the application compatibility and Telium Manager MMI regarding names of catalogues.

Thunder	Catalogues names	Application compatibility	Telium Manager MMI
Thunder 1 and 2	xxx_GOAL_yyy.mZZ	GOAL and Libgr	GOAL
Thunder 1 and 2	xxx_CGUI_yyy.mZZ	CGUI, GOAL and Libgr	GOAL
Thunder 1 and 2	xxx_yyy.mZZ	Libgr	Libgr
Thunder 3	xxx_GOAL_yyy.mZZ	GOAL and Libgr	GOAL
Thunder 3	xxx_yyy.mZZ	CGUI, GOAL and Libgr	GOAL

The Telium manager displayed with CGUI interface doesn't exist anymore; it is replaced by the GOAL interface. The name xxx_CGUI_yyy.mZZ for a catalogue means that it is compatible with CGUI applications but the Manager interface is GOAL.

The Telium Manager catalogues xxx_MOCKUP.mZZ don't exist anymore. They were designed to use the Ingedev preview feature. If you want to use this feature, you have to load in your terminal, the catalogue CGUI_PREVIEW_PROXY.mZZ which is in the directory Components\CGUI_PREVIEW_PROXY, additionally to the CGUI manager catalogue.

The Telium Manager catalogues include NanoX, the plug-in Signature Capture and the plug-in Multimedia. So, the plug-ins are no more delivered in the directory \Component\plugins.

3.2.3. Restriction for iPA280 and PCI PED 2.x compliance

During the PCI PED 2.x certification of the iPA280 devices, some constraints have been put at the level of communication of sensitive data from the Secure Payment Module (SPM) to the external world. The PDA part of the product has to be considered as the external world. The reason of this restriction is that the scope of the PCI PED evaluation was the SPM, which has a secure Telium architecture, and not the iPA280 product as a whole.

The restriction forbids communicating:

- Any APDU command response;
- Any cardholder data (i.e. ISO tracks 1 & 2 and their EMV counterpart).

It is also forbidden to receive APDU command queries from the external and to relay them to the smartcard. The restriction imposed by PCI SSC is not limited to banking cards. Direct communication to other types of cards (e.g. loyalty) is not allowed.

The communication APIs to establish communication between SPM and PDA propose some interfaces. It is for sure possible to address communication by using lower level functionalities. This must not be used to circumvent the protocol restrictions for communication.

Since cardholder data must remain within the SPM, the implication of this restriction is that payment applications have to be executed in the SPM and can not be based on a split design between SPM and PDA parts of the device. The PDA can be used for merchant application only (i.e. advertising, product selection)

3.2.4. Contactless

3.2.4.1. Best practices for Contactless

3.2.4.1.1. Field on/off

The contactless field is to be activated only when a contactless card is waited by the terminal. It must be stopped when the management of the contactless card is finished.
If the contactless field is opened all the time:

- On wireless terminals, product battery autonomy is reduced a lot;
- The contactless module and antenna are highly stressed and reliability could decrease quickly with time;

Applications have to manage the opening and the closing of the field according their business logic.

3.2.4.1.2. Implicit selection

Following terminals having the contactless feature inside are concerned: iWL2xx, iCT250, iSC2xx, iSC3xx, EFT930 GCC, EFT930 BCC, iPP3XX, iPA280 (SPM), ML30C and P30C.

Implicit selection is not recommended and must be managed with caution.
Due to physical reason, implicit selection can lead to unexpected issues, for example, at the beginning of the swipe, the card would possibly enter the antenna field and contactless chip would be handled instead of magnetic track.

3.2.4.1.3. Use of PSTN modem with contactless activated

The electro-magnetic field created when the contactless is activated, on an integrated terminal, prevents the usage of the PSTN modem with contactless activated.
This is not a software issue, and no software solution exists. The contactless field shall not be activated at the same time as the modem.

Currently, the issue exists only on the iCT250, which is the only Ingenico integrated terminal with contactless and PSTN modem.
(For instance, on EFT930BCC or EFT930GCC with modem, it works, because the modem is on the cradle, and the distance between the modem and the contactless field is sufficient).

3.2.4.2. Add-on Contactless

The add-on contactless doesn't exist anymore.
All components provided previously in this package are now by default since Telium SDK 8.1. It concerns

- TPass library and component;
- Entry point component;
- GTL library (GTL stands for Generic Tool Library);
- Contactless sample.

3.2.4.3. Card supported

The list of cards supported by this SDK is given in the paragraph **Erreur ! Source du renvoi introuvable.**: **Erreur ! Source du renvoi introuvable.** .

Recommendation:
Even if a card is managed since an old SDK or Add-On Contactless, usage of a recent SDK is strongly recommended because bugs could have been fixed.

3.2.5. PCI PTS version

The function GetTerminalPCIPTSVersion() allows to know the PCI PTS version of the terminal (return is PCI_PTSV2 or PCI_PTSV3).
The function GetTerminalPKIVersion() allows to know the PKI version of the terminal (return is PKIV1 or PKIV3).

3.2.6. New software numbers for Telium Manager DLLs

3.2.6.1. Numbering rule

To conform to Ingenico numbering convention, software numbers of binaries provided by Telium Manager have been changed. The software number is the first part of the name of the binary.

As a rule, when the software number was on 4 digits until SDK 9.0.x, from SDK 9.2.0 the first digit of the prefix is replaced by 844.
There is no change in application types.
Your application should not check the presence of a binary in the terminal by testing the software number but by testing the application type.

Example: For Libgr,

- Until SDK 9.0.x, software number was 3596 and application type was 3.
- From SDK 9.2.0, software number is 844596 and application type is 3.

3.2.6.2. Specific case of Manager Pack parameter file (3778, 4778)

The Manager Pack parameter files (3778xxyy.SGN/PDF and 4778xxyy.PGN) are kept in SDK 9.2.0 only for compatibility with Ingestate.
After the application of this rule:

- The file 844778xxyy has the application type 2 (ID of the files 3778xxyy/4778xxyy previously),
- The files 3778xxyy and 4778xxyy are dummy files (they are empty) with application type 0xAEEA.

3.2.7. Family name

The binary name, defined in the descriptor used to sign the binary, must follow the pattern "<FAMILY_NAME><VV><AA>" where:

- FAMILY_NAME is the family name of the application (maximum 7 ASCII characters);
- VV is the version (2 number);
- AA is the amendment (2 number)

3.2.8. Pinpad system

To avoid problems when a non mock-up pinpad is linked to a mock-up terminal, the terminal mock-up catalogues don't include pinpad systems. So, you have to load the pinpad system (located in the directory "Component\OS") according to the pinpad you are using.

3.2.9. DIR system version downgrade

It is not possible to downgrade from a system managing directories (catalogue XXX_DIR.mYY) to a system which not manages directories (catalogue XXX.mYY).

3.2.10. Reserved numbers

Service numbers from 1 to 100 and from 0x1E00 à 0x1FFF are reserved for Ingenico internal use.
Tag numbers used by applications must be taken in the range 0x9FA000-0x9FAFFF.

3.2.11. EFT930 embedding 8MB of flash

It is possible to use this SDK on EFT930 which has only 8 MB of flash (special system catalogue is provided: EFT930_8MO_PROD.m31). This catalogue is not a DIR one. If you use Ingestate you may need some adjustments: please contact your R&D Regional Interface for more information.

For SDK 8.0.x, SDK 8.1 and SDK 8.1.1:
It is forbidden to load a catalogue designed for 8MB terminals on a terminal loaded with a generic catalogue (that is to say non-8 MB). You must contact the Ingenico support for the rules of this migration.

3.2.12. Fix in link layer

A bug has been identified in the LinkLayer component, in versions 3.22 and 3.23 (SDK 8.1.2, SDK 8.1.3, SDK 8.2 and SDK 8.2.1).
For these versions only, on Bluetooth terminals, not associated with any base, the connection (call to LL_Connect()) fails when using the physical link LL_PHYSICAL_V_DEFAULT_TCPIP, with return code -1013 (LL_ERROR_NETWORK_NOT_SUPPORTED).
This bug is now corrected in SDK 9.0 (Link Layer version 3.25)

3.2.13. IUN

3.2.13.1. Sleep mode

In this SDK, iUN range of products does not support sleep mode.

3.2.13.2. Add on Unattended

You must use at least version 3.01 of add-on Unattended.

3.2.14. IMP3

3.2.14.1. Bluetooth printer for iMP3

It is possible to use a Bluetooth printer with an iMP3.
The parameters and documentation for this feature are provided via an add-on called "Bluetooth printer for iMP3". Please contact your region interface to request it.

3.2.14.2. IMP3 connected to an iPhone running on IOS 5.0

If the iPhone runs on system iOS 5.0, the iMP3 can not go to sleep mode when iPhone is in sleep mode. This case is to handle at application level.

3.2.15. Deprecation

3.2.15.1. Features from AVL

Following feature provided by AVL are deprecated since SDK 9.2.0:

- VGE_UIM. It was based on Black and White functions. To implement MMI, please use advanced graphical library GOAL or legacy libgr graphical mode;
- VGE_DBG. Use functions from GTL library (Generic Tool Library);
- VGE_DRM. Use file system functions instead (see sample in SDK/Samples/Training/Src/FFMS.c);
- VGE_TMS. Use system functions instead;
- VGE_BLM.

The deprecated functions are grouped in the library AVL_Deprecated.lib. If you want to continue to generate your application with these deprecated features, you need to add this library to your build.
You will have warnings about deprecation. To remove it, clean your code by removing calls to these deprecated functions.

3.2.15.2. Pinlib

Pinlib.lib is deprecated since SDK 9.2.0. Please use functions provided by Security DLL (See documentation in the CHM help file).

These deprecated functions are grouped in the library Pinlib_Deprecated.lib. If you want to continue to generate your application with this deprecated feature, you need to add this library to your build. Pinlib.lib doesn't exist anymore.
You will have warning about deprecation. To remove it, clean your code by removing calls to these deprecated functions.

4. Issues solved in this release by component

See table in chapter **Erreur ! Source du renvoi introuvable.** "Versions of components" for the list of versions of components provided in this Telium SDK.

Main points delivered in this release regarding **the last major release SDK 9.2.0** are listed below.

4.1. Telium System

Following points are delivered in this release.

4.1.1. Card management

Internal tracker	SUPTEL	Description
11768	SUPTEL-3693	Feature added on Thunder 3 terminals in SDK 9.2.1: AAMVA ISO1 cards compatibility. Maximum char count on track 1 remains unchanged (79max).

4.1.2. Communication

Internal tracker	SUPTEL	Description
11767		On RTC, if nothing happens on TMS link during 3 minutes, an exit is done. (Fix on callhost to solve the TMS COM problem)
12176	SUPTEL-3913	Rename legacy COMH on portable side, before linking the Bluetooth version, so the latter is available when required.
11965		Hilo reset duration grows on ICT products to avoid GPRS blocking.

4.1.3. V34 modem

Some fixes for V34 modem on iCT and iWL, including

Internal tracker	SUPTEL	Description
11447	SUPTEL-3576	[IP/PSTN] MODEM V34 is usable in remote downloading session
11144		Added support for modem V34 on iWL smart bases
12218		V34 modem didn't work on iCT2xx
12140		Potential problem with downloading over RTC via V34 modem fixed

4.1.4. iSCxxx

Internal tracker	SUPTEL	Description
12170		There was a dead zone on touch panel screen on iSCxxx terminals. If you were using the mode of input switch many times in the application, the touch chip sometime went to the unpredictable state.

4.1.5. APIs issues

Internal tracker	SUPTEL	Description
12118	SUPTEL-4003	Add function to configure timeout for network scan or network selection.

4.1.6. Miscellaneous

Internal tracker	SUPTEL	Description
11894	SUPTEL-3765	Added new life counter: backlight ON (in seconds) 0x1F. (not supported by Twin, Ist150)
12164	SUPTEL-3980	Change LIFECOUNTER.DIA update time (10 minutes instead of 1 minute)
12146	SUPTEL-3889	Add multi-tasking protection on kill function
11638	SUPTEL-3457	Flush incoming data on USB device until the COMU is opened on handheld side.

4.1.7. Development issues

Internal tracker	SUPTEL	Description
12180		Management of remote debug on iUC150 and iUC180

4.2. Telium Manager

Following points are delivered in this release.

4.2.1. General issues

Internal tracker	SUPTEL	Description
12203		Add CRYPTO DLL in IUN catalog
12190		Local download with USB key was working only one time.
12191		No more control coherency on DLL PPS and PPR30
11860		There was a reset when the a terminal made a call on a Bluetooth device associated with a non-Bluetooth cradle
12091	SUPTEL 3803	Test if disconnection is necessary for remote download with GPRS network
11717	SUPTEL-3748	Use of GPRS Network for remote download for non-Bluetooth IWL2XX out of base

4.2.2. APIs evolutions

Internal tracker	SUPTEL	Description
12249	SUPTEL-4063	Calling DisplayHeader(_OFF_) when header has been previously hidden by StateHeader did not desactivate definitively header.
12022	SUPTEL-3831	Negociate DNS2 in gprs_ppp_setup.
11116	SUPTEL-3275	Removed use of float and double with sprintf, printf, fprintf, pprintf, ... functions when application is compiled with GNU compiler
12230		isUCM() function removed
12185	SUPTEL-4056 SUPTEL-4114	On SDK 9.2, there was a reset on iWL250 when calling the Telicapt function hmiADDisplayText()

12139	SUPTEL-3980	Date backup only when needed
11712	SUPTEL-3589	Fixed TRACK_STREAM entry point management

4.2.3. Telium Manager menus

Internal tracker	SUPTEL	Description
12100		On GOAL manager, in the configuration menus of background and text color, by default, the last value entered are displayed.
12135		Use "F" in deletion menu on ICU180 to select software

4.2.4. Telium Manager idle screen

Internal tracker	SUPTEL	Description
12126		Ethernet icon in header was not correctly managed
12155		SIM code keying display improvement

4.2.5. Terminal configuration

Internal tracker	SUPTEL	Description
12134		Ethernet choice for network was not available on iUC180

4.2.6. For French applications

Internal tracker	SUPTEL	Description
12258		DLL PSS evolutions
12263		DLL PSS evolutions
12017		DLL PSS evolutions
11765		Improvement of values returned by ipdu_capacite_raccordement()

4.3. Security

4.3.1. DLL Security

No evolution.

4.3.2. Security Extend library

No evolution.

4.3.3. DLL E2EE

No evolution.

4.3.4. DLL Digest

No evolution.

4.3.5. Schemes

Last schemes certified are included in this SDK.

No evolution.

4.3.6. Pinlib

This module is deprecated.

4.4. Communication

4.4.1. Link Layer

No evolution.

4.4.2. DLL SSL

No evolution.

4.4.3. FTP

No evolution.

4.4.4. SNMP

No evolution.

4.4.5. DLL TCP for iMP3

DLL TCP for iMP3 is provided in the directory Component\DLL_TCP_IMP3. This DLL allows TCP/IP without SSL communications on iMP3xx.
This DLL is mandatory on iMP3xx.

No evolution.

4.4.6. Pack IP

No evolution.

4.5. Display

4.5.1. GOAL

GOAL binaries are integrated in the Telium Manager catalogues as described above.

No evolution.

4.5.2. CGUI / CGUI tools

No evolution.

4.5.3. Plug-ins

CGUI Plug-ins Multimedia and Signature Capture are delivered in Telium Manager catalogues as described above.

No evolution.

4.5.4. Fonts

No evolution.

4.5.5. DLL Image

No evolution.

4.6. Contactless

4.6.1. Driver

No evolution.

4.6.2. DLL TPass

Following points are delivered in this release.

Internal tracker	SUPTEL	Description
12184		If no AID was configured, the LoA method failed with "LACK OF MEMORY"

4.6.3. Entry Point

No evolution.

4.6.4. Telium Pass

No evolution.

4.6.5. DESFire cards

No evolution.

4.7. Applications

4.7.1. Incendo Online browser

Technical documentation and the Incendo SDK are provided with Ingedev (from version 7.8.0).

4.7.1.1. Memory

Before deploying this solution, please check the memory usage of your terminals.

4.7.1.2. Migration to this version

4.7.1.2.1. Migration from a version before 3.0.4

Incendo Online smart browser was previously delivered as an independent package (up to version 3.0.3). It was designed to be signed with region security keys.
The version in this Telium SDK is signed with manufacturer key. So the application type is different between these two versions. If you have already deployed the browser, to migrate to the version included in a Telium SDK, you must manage the change of application type. For further details, please contact the Incendo support.

4.7.1.3. Compatibility

4.7.1.3.1. Terminals managed

Minimal hardware prerequisites are:

- Terminal is Ethernet or GPRS;
- Terminals is Ingetrust ready;
- Minimum of 16 MB of Flash is mandatory;
- 16 MB of RAM are recommended but not mandatory. 8 MB is possible if terminal is Incendo Online only (no other applications).

Incendo Online is compatible with the following terminals:

- EFT930 Color (Booster 2 type),
- iCT220, iCT250,
- iWL220, iWL250

You must not use it on other terminals.

Support of iSC250, iSC350 and iWL280 will be available in a future release.

4.7.1.3.2. EMV packages compatibility

Incendo smart Browser is compatible with the following EMV packages:

- Version 19 or 20.1

4.7.1.4. Evolutions

No evolution.

4.7.2. Image Loader

At the end of the Telium SDK setup you can choose to install Image Loader on your PC. Documentation is available in this installed package.
Please read all the documentation located in the directory you had installed Image Loader.

4.7.2.1. Evolutions

No evolution.

4.8. IPP3 in Pinpad emulation mode

Please see description in the CHM help file of the Telium SDK (SDK General Documentation > How To Develop user guides > How to use iPP3xx as a smart card reader).

4.8.1.1.Evolutions

No evolution.

4.9. AVL

AVL stands for Added Value Libraries.
No evolution.

4.10. SDK features

Following points are delivered in this release.

Internal tracker	SUPTEL	Description
12192	SUPTEL-4064	GTL_TagsInfo.h and GTL_DataStorage.h back in SDK

4.11. Documentation

There are improvements of documentation in this release including the following

Internal tracker	SUPTEL	Description
12171	SUPTEL-4018	Correction in documentation "How To Use iPP3xx": 020504=2; ipp3xx is in terminal mode
12063		**Documentation of PSQ_Get_product_type() improved**
12128		Documentation of is_name_extended() improved
11877	SUPTEL-3487	Documentation on entry points SELECT_CARD_HOLDER and SELECT_MERCHANT
11936	SUPTEL-3845	ISO8859Arabic2Unicode documentation improvement

4.12. Samples

There are improvements of samples in this release including the following

Internal tracker	SUPTEL	Description
11487	SUPTEL-3624	Sample added explaining how to associate an icon to an application (sample in SDK\Samples\Manager\IconInit)

5. Add-ons to Telium SDK

The following table presents the versions of recommended add-ons to use with this SDK.

Add on	Recommended version to use with this SDK	Comment
Easy Path To EMV	20.2	
Easy Path To Contactless	3. 07.02	
Add On PCL for iPA280	1.19	
Add On PCL for iWP	1.15	
Add On PCL for iMP3xx	1.03	
Bluetooth printer for iMP3	1.00	New add-on
Add On Morpho	2.00	
Add On Telicapt	2.17	
Add On Unattended	3.01	Previously named Add On UCM
Add On SPDH	1.01	
Add On APACS 40 Generic	1.08	
Add On ISO8583 Generic	3.02	

SDK9.2.0 Release note

1. What's new? Why should you use this SDK?

Issues solved are detailed in paragraph 4.
Here are main evolutions coming with this Telium SDK release compared to the release 9.0.2.

1.1. New terminals

- IUC150 and iUC180 are delivered for production. Add-on Unattended 3.01 is needed.

iUC150
Slave Contactless Reader
(peripheral)

iUC180
Contactless Reader terminal
(autonomous)

- IMP320 is supported: it is the equivalent of an iMP350, without barcode reader.

1.2. New peripherals

- Support of Wi-Fi dongle for iSC350.

1.3. New features

- Improvements of GOAL (see below) including:
  - Compatibility of GOAL with ZKA;
  - This SDK goes back to the legacy rendering on some functions (see list below) which was changed to GOAL look and feel on SDK 9.0.x;
- Optimized power consumption when iWL is on a base;
- iPP3xx in pinpad emulation mode:
  - Optimized mode for local download;
  - Improved security of the link between ICT2xx and IPP3xx;
- Possibility added to use remote debug on iWL base COM port;
- Many improvement s of documentation.

1.4. Image Loader

- New version of Image Loader providing support of video files as IDLE Screen.

1.5. Deprecation

- Pinpad PP30 is no more supported;
- The following AVL features are deprecated: VGE_UIM, VGE_DBG, VGE_DRM, VGE_TMS and VGE_BLM;
- Pinlib module is deprecated;
- Libraries compiled with ARM SDT are no more provided.

2. Compatibility

2.1. List of compatible terminals

This SDK release is compatible with the following products.

2.1.1. Wireless

Telium 2:

- iWL220B, iWL220G,
- iWL250B, iWL250G ,
- iWL250 3G,
- iWL250 2SCR, 2SCR stands for 2 Smart Card Reader,
- iWL280,
- iWL350 (for development only).

Telium 1:

- EFT930

2.1.2. Countertop terminals

Telium 2:

- iCT220, iCT250,
- E532

Telium 1:

- EFT SMART Plus,
- EFT SMART,
- EFT30

2.1.3. Retail pinpads (Signature capture terminals)

Telium 2:

- iSC250,
- iSC350.

2.1.4. Pinpads

Telium 2:

- IPP320, iPP350,
- IPP3xx used as a smart card reader (Pinpad emulation mode).

Telium 1:
- ML30, ML30 color, ML30 color contactless.

'Booster only' pinpads:
- IPP220, iPP250, iPP280, P30, P30 Contactless, PP30S.

Signature capture pinpads:
The system for iPP480 is provided in this SDK. This terminal will be available from the SDK Beta 9.3.0.and will be officially released in SDK 9.4.0. If, in the meantime, you need the software components for iPP480, please contact your Ingenico region interface.

2.1.5. Unattended

Telium 1:
See the add-on Unattended package for the exhaustive list of CAD30.

Telium 2:
- iUC150, IUC180,
- iUP250 (for development only)

Add-on Unattended 3.01 is needed.

2.1.6. Satellite terminals

Telium 2:
- iST150.

Telium 1:
- TeliumPass Plus.

2.1.7. Mobile payment

Telium 2:
- iMP320, iMP350,
- SPM (iPA280).

2.1.8. French healthcare

- TWINs.

2.2. Compatibility terminals vs SDK

In the following table, you will find the first SDK in which the terminal was managed for production purpose.
This table concerns terminals out since SDK 7.1.

Terminals	Supported since
iWL220	iWL220 G : SDK 7.6 iWL 220 B : SDK 8.0

iWL250	iWL250 G : SDK 7.6 iWL250 B : SDK 8.0 iWL250 2SCR : SDK 8.0 iWL250 3G : SDK 8.2
iWL280	SDK 8.1.2 GPRS only since SDK 8.0.1
iWL350	*(For development since SDK 8.2)*
iWL Bases	Base BEM : SDK 8.0 Base PEM : SDK 8.1
E532	SDK 8.2
iSC250	SDK 7.5
iSC350	SDK 7.1
iPP3XX	iPP320, iPP350 : SDK 7.1 iPP320 in pinpad emulation : SDK 7.4
iPP220	iPP220, iPP250 : SDK 7.1 iPP280 : SDK 7.5
iST150	SDK 7.5
iUC150, iUC180	SDK 9.2.0
Configuration iUP250 - iUR250	*(For development since SDK 9.0)*
iMP320	SDK 9.2.0
iMP350	SDK 7.6
Twin31	SDK 7.6.1

2.3. Terminals certified PCI V3

The following terminals are certified for PCI v3:

Terminal	Certified since
iWL220	Since SDK 8.0.1
iWL250	Since SDK 8.0.1
iWL280	Since SDK 8.0.1
iSC250	Since SDK 8.0.1
iPP3xx	Since SDK 8.1
iMP350	Since SDK 8.2
iCT2xx (Only iCT2xx referenced 11Txxxxx are certified PCI-V3)	Since SDK 8.2
iPP2xx	Since SDK 8.2
iWL350	Since SDK 9.2.0
Configuration iCT2xx / iPP3xx	Since SDK 9.2.0

2.4. Public Key Infrastructure

This release supports PKI v3 infrastructure ensuring communications using IngeTrust keys with bigger size, compliant with PCI v3.

3. Highlighted points

3.1. Numbering of Telium SDK

For a SDK versioned V.R.S:

- If R is an odd number, the SDK is a Beta release also called odd release (Example: SDK 9.1.0);
- If R is an even number, the SDK is a stable release also called even release (Example: SDK 9.2.0)

The beta releases propose by advance the features to integrate in the next stable major release. They allow qualifying at the earliest the new features either by platform qualification team or by regions if requested.
Stable (even) releases are fully qualified.

3.2. Telium Manager catalogues naming rule

The integration of GOAL in the Telium SDK 9.0 had introduced changes in the Telium Manager catalogues provided.

The naming rules have been maintained for compatibility and to minimize the changes for users.

This sheet describes the application compatibility and Telium Manager MMI regarding names of catalogues.

Thunder	Catalogues names	Application compatibility	Telium Manager MMI
Thunder 1 and 2	xxx_GOAL_yyy.mZZ	GOAL and Libgr	GOAL
Thunder 1 and 2	xxx_CGUI_yyy.mZZ	CGUI, GOAL and Libgr	GOAL
Thunder 1 and 2	xxx_yyy.mZZ	Libgr	Libgr
Thunder 3	xxx_GOAL_yyy.mZZ	GOAL and Libgr	GOAL
Thunder 3	xxx_yyy.mZZ	CGUI, GOAL and Libgr	GOAL

The Telium manager displayed with CGUI interface doesn't exist anymore; it is replaced by the GOAL interface. The name xxx_CGUI_yyy.mZZ for a catalogue means that it is compatible with CGUI applications but the Manager interface is GOAL.

The Telium Manager catalogues xxx_MOCKUP.mZZ don't exist anymore. They were designed to use the Ingedev preview feature. If you want to use this feature, you have to load in your terminal, the catalogue CGUI_PREVIEW_PROXY.mZZ which is in the directory Components\CGUI_PREVIEW_PROXY, additionally to the CGUI manager catalogue.

The Telium Manager catalogues include NanoX, the plug-in Signature Capture and the plug-in Multimedia. So, the plug-ins are no more delivered in the directory \Component\plugins.

3.3. Restriction for iPA280 and PCI PED 2.x compliance

During the PCI PED 2.x certification of the iPA280 devices, some constraints have been put at the level of communication of sensitive data from the Secure Payment Module (SPM) to the external world. The PDA part of the product has to be considered as the external world. The reason of this restriction is that the scope of the PCI PED evaluation was the SPM, which has a secure Telium architecture, and not the iPA280 product as a whole.

The restriction forbids communicating:

- Any APDU command response;
- Any cardholder data (i.e. ISO tracks 1 & 2 and their EMV counterpart).

It is also forbidden to receive APDU command queries from the external and to relay them to the smartcard. The restriction imposed by PCI SSC is not limited to banking cards. Direct communication to other types of cards (e.g. loyalty) is not allowed.

The communication APIs to establish communication between SPM and PDA propose some interfaces. It is for sure possible to address communication by using lower level functionalities. This must not be used to circumvent the protocol restrictions for communication.

Since cardholder data must remain within the SPM, the implication of this restriction is that payment applications have to be executed in the SPM and can not be based on a split design between SPM and PDA parts of the device. The PDA can be used for merchant application only (i.e. advertising, product selection)

3.4. Contactless

3.4.1. Best practices for Contactless

3.4.1.1. Field on/off

The contactless field is to be activated only when a contactless card is waited by the terminal. It must be stopped when the management of the contactless card is finished.
If the contactless field is opened all the time:

- On wireless terminals, product battery autonomy is reduced a lot;
- The contactless module and antenna are highly stressed and reliability could decrease quickly with time;

Applications have to manage the opening and the closing of the field according their business logic.

3.4.1.2. Implicit selection

Following terminals having the contactless feature inside are concerned: iWL2xx, iCT250, iSC2xx, iSC3xx, EFT930 GCC, EFT930 BCC, iPP3XX, iPA280 (SPM), ML30C and P30C.

Implicit selection is not recommended and must be managed with caution.
Due to physical reason, implicit selection can lead to unexpected issues, for example, at the beginning of the swipe, the card would possibly enter the antenna field and contactless chip would be handled instead of magnetic track.

3.4.1.3. Use of PSTN modem with contactless activated

The electro-magnetic field created when the contactless is activated, on an integrated terminal, prevents the usage of the PSTN modem with contactless activated.
This is not a software issue, and no software solution exists. The contactless field shall not be activated at the same time as the modem.

Currently, the issue exists only on the iCT250, which is the only Ingenico integrated terminal with contactless and PSTN modem.
(For instance, on EFT930BCC or EFT930GCC with modem, it works, because the modem is on the cradle, and the distance between the modem and the contactless field is sufficient).

3.4.2. Add-on Contactless

The add-on contactless doesn't exist anymore.
All components provided previously in this package are now by default since Telium SDK 8.1. It concerns

- TPass library and component;
- Entry point component;
- GTL library (GTL stands for Generic Tool Library);
- Contactless sample.

3.4.3. Card supported

The list of cards supported by this SDK is given in the paragraph **Erreur ! Source du renvoi introuvable.**: **Erreur ! Source du renvoi introuvable.** .

Recommendation:
Even if a card is managed since an old SDK or Add-On Contactless, usage of a recent SDK is strongly recommended because bugs could have been fixed.

3.5. PCI PTS version

The function GetTerminalPCIPTSVersion() allows to know the PCI PTS version of the terminal (return is PCI_PTSV2 or PCI_PTSV3).
The function GetTerminalPKIVersion() allows to know the PKI version of the terminal (return is PKIV1 or PKIV3).

3.6. New software numbers for Telium Manager DLLs

3.6.1. Numbering rule

To conform to Ingenico numbering convention, software numbers of binaries provided by Telium Manager have been changed. The software number is the first part of the name of the binary.
As a rule, when the software number was on 4 digits until SDK 9.0.x, from SDK 9.2.0 the first digit of the prefix is replaced by 844.
There is no change in application types.
Your application should not check the presence of a binary in the terminal by testing the software number but by testing the application type.

Example: For Libgr,

- Until SDK 9.0.x, software number was 3596 and application type was 3.
- From SDK 9.2.0, software number is 844596 and application type is 3.

3.6.2. Specific case of Manager Pack parameter file (3778, 4778)

The Manager Pack parameter files (3778xxyy.SGN/PDF and 4778xxyy.PGN) are kept in SDK 9.2.0 only for compatibility with Ingestate.
After the application of this rule:

- The file 844778xxyy has the application type 2 (ID of the files 3778xxyy/4778xxyy previously),
- The files 3778xxyy and 4778xxyy are dummy files (they are empty) with application type 0xAEEA.

3.7. Family name

The binary name, defined in the descriptor used to sign the binary, must follow the pattern "<FAMILY_NAME><VV><AA>" where:

- FAMILY_NAME is the family name of the application (maximum 7 ASCII characters);
- VV is the version (2 number);
- AA is the amendment (2 number)

3.8. Pinpad system

To avoid problems when a non mock-up pinpad is linked to a mock-up terminal, the terminal mock-up catalogues don't include pinpad systems. So, you have to load the pinpad system (located in the directory "Component\OS") according to the pinpad you are using.

3.9. DIR system version downgrade

It is not possible to downgrade from a system managing directories (catalogue XXX_DIR.mYY) to a system which not manages directories (catalogue XXX.mYY).

3.10. Reserved numbers

Service numbers from 1 to 100 and from 0x1E00 à 0x1FFF are reserved for Ingenico internal use.
Tag numbers used by applications must be taken in the range 0x9FA000-0x9FAFFF.

3.11. EFT930 embedding 8MB of flash

It is possible to use this SDK on EFT930 which has only 8 MB of flash (special system catalogue is provided: EFT930_8MO_PROD.m31). This catalogue is not a DIR one. If you use Ingestate you may need some adjustments: please contact your R&D Regional Interface for more information.

For SDK 8.0.x, SDK 8.1 and SDK 8.1.1:
It is forbidden to load a catalogue designed for 8MB terminals on a terminal loaded with a generic catalogue (that is to say non-8 MB). You must contact the Ingenico support for the rules of this migration.

3.12. Fix in link layer

A bug has been identified in the LinkLayer component, in versions 3.22 and 3.23 (SDK 8.1.2, SDK 8.1.3, SDK 8.2 and SDK 8.2.1).
For these versions only, on Bluetooth terminals, not associated with any base, the connection (call to LL_Connect()) fails when using the physical link LL_PHYSICAL_V_DEFAULT_TCPIP, with return code -1013 (LL_ERROR_NETWORK_NOT_SUPPORTED).
This bug is now corrected in SDK 9.0 (Link Layer version 3.25)

3.13. IUN

3.13.1. Sleep mode

In this SDK, iUN range of products does not support sleep mode.

3.13.2. Add on Unattended

You must use add-on Unattended 3.01.

3.14. IMP3

3.14.1. Bluetooth printer for iMP3

It is possible to use a Bluetooth printer with an iMP3.
The parameters and documentation for this feature are provided via an add-on called "Bluetooth printer for iMP3". Please contact your region interface to request it.

3.14.2. IMP3 connected to an iPhone running on IOS 5.0

If the iPhone runs on system iOS 5.0, the iMP3 can not go to sleep mode when iPhone is in sleep mode. This case must be handled at application level.

3.15. Deprecation

3.15.1. Features from AVL

Following feature provided by AVL are now deprecated:

- VGE_UIM. It was based on Black and White functions. To implement MMI, please use advanced graphical library GOAL or legacy libgr graphical mode;
- VGE_DBG. Use functions from GTL library (Generic Tool Library);
- VGE_DRM. Use file system functions instead (see sample in SDK/Samples/Training/Src/FFMS.c);
- VGE_TMS. Use system functions instead;
- VGE_BLM.

The deprecated functions are grouped in the library AVL_Deprecated.lib. If you want to continue to generate your application with these deprecated features, you need to add this library to your build.
You will have warnings about deprecation. To remove it, clean your code by removing calls to these deprecated functions.

3.15.2. Pinlib

Pinlib.lib is deprecated. Please use functions provided by Security DLL (See documentation in the CHM help file).
These deprecated functions are grouped in the library Pinlib_Deprecated.lib. If you want to continue to generate your application with this deprecated feature, you need to add this library to your build. Pinlib.lib doesn't exist anymore.
You will have warning about deprecation. To remove it, clean your code by removing calls to these deprecated functions.

4. Issues solved in this release by component

See table in chapter **Erreur ! Source du renvoi introuvable.** "Versions of components" for the list of versions of components provided in this Telium SDK.

Main points delivered in this release regarding **the last major release SDK 9.0** are listed below. Information if the point is fixed in a minor SDK 9.0.x is given.

4.1. Telium System

Following points are delivered in this release.

4.1.1. Power consumption

Internal tracker	SUPTEL	Description
11445		ENERGYSAVE_MODE_BACKLIGHT available for iPP320, iPP350, iSC250 and iSC350. The backlight duration is set by the manager (parameter file or menu) or by the application (use of API from dll_hwcnf.h)
11485 / 11350		Possibility to enable low power state on iWL terminal that is placed onto its base or any other charger type (car charger, terminal charger)

4.1.2. Card management

11491 / 11492	SUPTEL-3604	Card encoded with more characters than ISO max allowed can reset terminal (BL3 memory fault). Fix delivered: new error code <DEF_OVR> added.	
11768 / 11626	SUPTEL-3693	AAMVA ISO1 cards compatibility. Maximum char count on track 1 remains unchanged (79 max)	
11635		When card was removed by user when it was powered, terminals cannot switch to low power any more. This issue is now fixed	
11695		Some ISO2 Magnetic cards reading failure via the Manager fixed: - If success, ISOx bits stream is now cleaned-out including headers. High level decoding is therefore simplified. - Functions added: dec_iso1(), dec_iso2(), dec_iso3()	
11670		Prevent idle mode if Thunder CAM/SAM are powered (ICT2xx with 2 CAM, IST1xx, and IUC1xx).	
11184		Corrected issue on booster reboot when previous exception on swipe management.	Also provided in SDK 9.0.1
11560	SUPTEL-3267	Improvement: reduced swipe sensitivity (only on ICT-GPRS terminal)	Also provided in SDK 9.0.1
11210	SUPTEL-3311	Fix for iPP350 sometimes rebooting when contactless transaction was started with synchronous card inserted	Also provided in SDK 9.0.1

4.1.3. Peripherals

11415 / 11838 / 11685		Support of Wi-Fi dongle on iSC350	
11534		Added external Bluetooth printer and Bluetooth driver in the iMP3xx catalogues	Also provided in SDK 9.0.1

4.1.4. Printer

10520	SUPTEL-3339	Bug in PrintPolice() API fixed Fake delay when calling printf8859() / PrintPolice() before printing through file primitives on EFT930 platform fixed
11606		On EFT930 and iWL: printing contrast correction at low temperature

4.1.5. iMP3xx

11615		With SDK9.0, if the iMP3xx is set active on its cradle, it didn't launch the charge of its battery. The battery charge ran correctly after reset.

4.1.6. Portables

11703	SUPTEL-3729	Add a fioctl to obtain information about the cradle we are docked on.
11144 / 11145	SUPTEL-3334	Added support for modem V34 on iWL smart bases
11166	SUPTEL-3351	On iwl220, improved management of the contrast by adding a minimum and a maximum (the display was not readable when 0% and 100% was selected)
11851	SUPTEL-3823	Avoid possible TCP stream corruption in case of packet drop between the portable and the cradle.

4.1.7. APIs issues

11222		When a fioctl is not implemented, return is now -1
11326		Following functions : memcpy (trap: 0x133C) memmove (0x133D) strcpy (0x133E) strncpy (0x133F) strcat (0x1340) strncat (0x1341) memcmp (0x1342) strcmp (0x1343) strcoll (0x1344) strncmp (0x1345) memset (0x1346) had been removed from trap.lib

4.1.8. Compatibility issues

11538		On ICT220 PCI V3, prevents the downgrading to a version 9.0.x or older

4.1.9. Miscellaneous

11591	SUPTEL-2603	SYS_FIOCTL_SET_CALLHOST_TCP_TIMEOUT modify now TCP connection timeout and not SSL connection timeout when callhost() is used with SSL.	
11782	SUPTEL-3775	Possibility to get the PLMN even for unknown network, to be able to patch network name at runtime (no hard-coded MCC and MNC).	
11478 / 11502	SUPTEL-2881	Add SSL key ciphering on no-booster Thunder 2 terminals	
11362		Improvement of audio on iWL	

11716		Fixed touch screen lock on IWL280 and IWL350.	
11189	SUPTEL-3378	Fixed terminal reset due to a lack of RAM memory. More precisely: When a driver for synchronous card was launched on thunder side, the OS booster allocates RAM for loading, copying and executing this driver. This RAM is kept allocated to avoid the reloading of the driver in case same driver is used. So the RAM memory available is decreased. The bug fix consists in releasing the allocated RAM in case of power_down / fclose.	Also provided in SDK 9.0.1

4.1.10. Development issues

11558	SUPTEL-3722	Since SDK 9.2 the trace using serial port on magic box is available. To use it, set TRACE=6 in SYSTEM.CFG file.	
11756		Add possibility to use remote debug on iWL base COM port	
11766		iWL280 - iWL350 - iPP4XX: Added LLT images	
11311	SUPTEL-2649	Remote debugger when terminal is in HID mode issue fixed If the terminal is forced in USB-HID mode and the connection used for the LDBG link is by default the USB port, the terminal is forced in USB-CDC mode during the debug session.	Also provided in SDK 9.0.1

4.2. Telium Manager

Following points are delivered in this release.

4.2.1. General issues

10244	SUPTEL-3174 / SUPTEL-3167	Manages correctly shutdown after wake-up	
11183	SUPTEL-3694 / SUPTEL-3650	Manages correctly SMS in SIM in function sms_open()	
11578		Telium Manager optimization regarding: ▪ Memory use, ▪ Execution time, ▪ General organization of functions in the DLL, ▪ Terminal start-up time.	
10017		Use of GOAL in Telium Manager	
11315		Managed two additional ways of "restart without contactless" (chip card only and swipe card only). This is necessary as Visa requires being able to do a "fallback" to contact interface using either chip/swipe, chip only or swipe only.	
11637		Fixed bug in manager EMV selection when there is more than 15 applications in the terminal.	
11714		Manages correctly TMS identifier if length is lower than 9 digits	
11582		With CGUI only, touch screen was not usable in the function GetAmount()	
11610		After wake up at idle state, a transaction is started if a card is present into reader.	

12062		Binaries 3778xxyy and 4778xxyy remain in the Telium Manager pack for Ingestate compatibity	
11970		Possible memory leak fixed	

11625		GetGeneralStatus() improvement:
		To start card management at start-up, to use GetGeneralStatus() function, put this code and call this function in AFTER_RESET entry point
		void ActivateCardManagement(void)
		{
		S_STATE_PARAM state_param;
		
		PSQ_read_state_param(&state_param);
		state_param.EnableCamManagement=1;
		PSQ_write_state_param(&state_param);
		}
			Also provided in SDK 9.0.1

10591	SUPTEL-2935	__LoadDefaultOptions () didn't work all the time on an iWL250 Bluetooth with Ethernet base.	Also provided in SDK 9.0.1
11622		On EFT930 Morpho: Fixed freeze when editing hardware configuration ticket	Also provided in SDK 9.0.1

4.2.2. APIs evolutions

11669	SUPTEL-3715	Function IsColorDisplay() now returns B/W display when no display is detected
11116	SUPTEL-3275	It's now possible to convert float and double with sprintf(), printf(), fprintf(), pprintf(),... functions when application is compiled with GNU compiler
11771	SUPTEL-2985	call of GET_AMOUNT_STATE_PARAMETER entry point at beginning of service call 100
11602		Added new function GetTerminalPCIPTSVersion() to get PCI_PTS version. Returns are: ▪ -1 : not implemented ▪ PCI_PTS_V2 ▪ PCI_PTS_V3
11609		New function IsTouchScreen () returning if touch screen is available.
11691		Provided SHA256 feature in Telium SDK
11707		Functions iUC150(), iUC180() and iUP250 replace functions isIUNxxx()
11585		Add new entry point (WAKE_UP) to inform applications after terminal wake up.
11641		Remove call to deprecated functions encrit() and excrit()
11566		Reset in all cases when dynamic allocation is not successful

4.2.3. Telium Manager menus

11481	SUPTEL-3505	Allows entry of the character * (star) in the PABX initialization string. Managed list of allowed characters in entry	
11486	SUPTEL-3596	Icon for 3G is now displayed correctly after a lost of connection	
11487	SUPTEL-3624	It is now possible to associate a icon to an application	

11601	SUPTEL-3662	Disabled yellow key in menus : ▪ TELIUM MANAGER->Initialization->Parameters ▪ TELIUM MANAGER->Initialization->Hardware ▪ TELIUM MANAGER->Initialization->Header ▪ TELIUM MANAGER->Initialization->Footer ▪ TELIUM MANAGER->Initialization->Beep	
11441	SUPTEL-3312	IS_NAME_EXTENDED entry point modified: Maximum number of characters for application name in now 32.	
12060	SUPTEL-3963	«Code free» was displayed twice when selection of menu: Consultation > Configuration > Software > On Printer > Application	
11718		Manage key '+ and '-' on ISC250 in Wi-Fi Hardware Configuration menu.	
11945		"." is used on IUC180 and IUP250 to navigate into extended entry function	
11568		Character '(' was twice in default table for alphanumerical entry	Also provided in SDK 9.0.1
11662		Add security information in hardware configuration menu for iUN range of product, iWL2xx and not PCI-V3 iPP3xx	Also provided in SDK 9.0.2

4.2.4. Parameterization of the terminal

Internal tracker	SUPTEL	Description	
11349		The maximum backlight duration value is now set to 1000 seconds	
11751		Possibility to switch off an iWL terminal that is placed onto its base or any other charger type (car charger, terminal charger)	
11427		On iMP3xx, add possibility to select a Bluetooth printer via the Telium Manager initialization menu and via the field EXT_PRINTER in HWCNF.PAR	
11359		Added menu for Bluetooth association between iWL and Motorola PDA	
11353		Sending of serial number over USB can be allowed via HWCNF.PAR: Parameter SET_USBDEV_SN_STATUS 0 --> SN OFF 1 --> SN ON	Also provided in SDK 9.0.2

4.2.5. Terminal configuration

9921		USB charge option is now always enabled on iWL(220-250-280)
11353		Sending of serial number over USB can be allowed via HWCNF.PAR: Parameter SET_USBDEV_SN_STATUS 0 --> SN OFF 1 --> SN ON
9564		It is now possible to configure DHCP mode thanks to HWCNF.PAR. Parameter SET_DHCP_MODE: 1 --> Force DHCP mode. After the setting, the terminal reboots.

4.2.6. Deprecation

11749		PP30 Pinpad is deprecated

4.2.7. For French applications

11946	SUPTEL-3710	Use of GOAL in French Layout	
11976		New product identification for french domain only	
11551		For French healthcare, add temporary screen for maintenance initialization in GOAL context	
12017		Improvement for DLL PSS (French domain only)	
11765		Improvement of values returned by ipdu_capacite_raccordement()	
11523		French domain only New product : IUP250 ==> ITP=200 IUC180 ==> ITP=230	
11569		Bug fixed when allocated resources using IAM	Also provided in SDK 9.0.1
11367		New catalogues for healthcare : iMP3, iWL280 Catalogues for healthcare removed : ML30	Also provided in SDK 9.0.1

4.3. Security

4.3.1. DLL Security

Following points are delivered in this release.

Internal tracker	SUPTEL	Description
11217	SUPTEL-3373	DUKPT counter is reinitialized at keys creation.
11247		Management of iUN
11489		Compatibility with standard pack schemes 02.11
11705		Added SEC_sch_error_status() for detailed errors on scheme launching.
		Use of schemes pack 2.11

4.3.2. Security Extend library

Following points are delivered in this release.

Internal tracker	SUPTEL	Description	
11506		Added functionalities of generic pack schemes 02.11 : TlvCipherDa	
9369		Fixed compilation issue with use of SEC_extend.h	Also provided in SDK 9.0.1
9491	SUPTEL-2148	Function SEC_DukptCBCCipher with algo type TLV_TYPE_TDESDUKPT froze Booster 1 terminals	Also provided in SDK 9.0.1

4.3.3. DLL E2EE

Following points are delivered in this release.

Internal tracker	SUPTEL	Description	
11836	SUPTEL-3808	E2EE_ERR_TRACK1_PARSING is now returned when 'Discretionary Data' is longer than 62 digits (previously: 30)	Also provided in SDK 9.0.2

4.3.4. DLL Digest

4.3.4.1. Scheme TlvLoadHMAC

Internal tracker	SUPTEL	Description
11722		The scheme TlvLoadHMAC is provided in this SDK to load Digest keys. To know how to use it, please read, in the SDK CHM help file, the help about the function SEC_LoadKeyHMAC().

4.3.5. Schemes

Last schemes certified are included in this SDK.

Following points are delivered in this release.

Internal tracker	SUPTEL	Description
11226	SUPTEL-3387	DUKPT_cancel_keys command now erases correctly the DUKPT key.
7746		Fixed TMA_USED_KEY_USAGE error during key creation in TlvMAKeyGen scheme.
9833		▪ Add Sch_Random to TLV generic schemes pack ▪ Add compatibility with 24 bytes TDES keys in TlvLoadKey and TlvKeyVerif schemes. ▪ ixed MAC calculation if data length is not multiple of 8 bytes.
11070		▪ Added compatibility with 24 bytes TDES keys in TlvCipherDa, TlvLoadTR31, TlvMacTDes and TlvIso9564 schemes. ▪ Removed STLCipherDa from TLV generic schemes pack.
11220		Add possibility to use the entire key with tlvHMac scheme. tlvHMac scheme verifies the key length.

4.3.6. Pinlib

Internal tracker	SUPTEL	Description
11802		Pinlib is now deprecated (see below for details)

4.4. Communication

4.4.1. Link Layer

Following points are delivered in this release.

Internal tracker	SUPTEL	Description	
11845		Improvement of status LL_STATUS_GPRS_ERROR_UNKNOWN	Also provided in SDK 9.0.2
11664		Correction on the management of a timeout error while receiving data with TCP_ISMP DLL (iMP3 product only).	Also provided in SDK 9.0.2
11789		Link layer didn't work on Wi-Fi since SDK 8.1	Also provided in SDK 9.0.2

4.4.2. DLL SSL

Following points are delivered in this release.

Internal tracker	SUPTEL	Description	
11488		Added possibility to use DLL SSL on an SSL connection not managed by DLL SSL.	
11165	SUPTEL-3354	Add support of CRL file. CRL file must be added to the SSL profile with SSL_ProfileAddCertificateCA function.	Also provided in SDK 9.0.1
11488		Possibility to use DLL SSL on an SSL connection not managed by DLL SSL.	Also provided in SDK 9.0.1
11527		There were some initialized variables used during SSL connection on iMP3xx only.	Also provided in SDK 9.0.1
11605	SUPTEL-3707	Improved reading of files by DLL SSL	Also provided in SDK 9.0.2

4.4.3. FTP

Following points are delivered in this release.

Internal tracker	SUPTEL	Description
11429	SUPTEL-3421	Add support of FTPS Explicit.

4.4.4. SNMP

No evolution.

4.4.5. DLL TCP for iMP3

DLL TCP for iMP3 is provided in the directory Component\DLL_TCP_IMP3. This DLL allows TCP/IP without SSL communications on iMP3xx.
This DLL is mandatory on iMP3xx.

4.4.6. Pack IP

Includes evolution for FTPS Explicit.

4.5. Display

4.5.1. GOAL

GOAL binaries are integrated in the Telium Manager catalogues as described above.

Following points are delivered in this release.

Internal tracker	SUPTEL	Description	
11788	SUPTEL-3802	"%s" in now supported in all dialog box	
11734	SUPTEL-3768	Now the iso8859 characters are supported in all dialog boxes.	
11761	SUPTEL-3753	Sprintf() embedded in GOAL now support utf8 string	
	PE0001-66	GL_Dialog_Date reset form even if started with navigation key	
	PE0001-88	"DARK_" vs "DARK": GL_COLOR_DARK_GRAY but GL_COLOR_DARKORANGE	
	PE0001-73	SDK Example "Sample_Dialog_Message" "Information" example text did not fit to iCT250 screen	
	PE0001-49	Resource URI and error handling	
11700	SUPTEL-3725	Compatibility of GOAL with ZKA	
11559	SUPTEL-3610	GOAL resource files can be associated with a DLL (Ingedev part of this evolution will be available in Ingedev 7.14)	
11752		Signature capture didn't work fine in Ingedev preview when present in a scroll view composite widget	
11480		Fixed mutex leak when used on PC with Ingedev	
11550		GL_Widget_GetRect() returned (0, 0,0,0) for TIMER	
		Fixed expansion of vectorized drawing mode	
		Fixed the problem when two characters were entered very close in time in the input fields	
		Allows not signed video in mock-up	
		Add the java class into GL.jar to convert a GML into json file (java.com.ingenico.gl.v3_7.GmlToJson)	
11981		Possible deadlock fixed	
		Added functions to Ingedev GL_Layout_GetRowCount, GL_Layout_GetRowCount	
11493		The progress-bar text property is not correctly managed	Also provided in SDK 9.0.1
11632	SUPTEL-3620	G_Extended_Entry : on ICT250, not possible to exit via Cancel (red button). Idem on IWL280 (OK by touchscreen but not by keyboard)	Also provided in SDK 9.0.1
11631	SUPTEL-3665	cGUI Performance - Delayed Response from scrollbar when large amount of text displayed on TextArea Control	Also provided in SDK 9.0.1
		Adds picture image cache	Also provided in SDK 9.0.1
		Adding vectorized mode in drawing widgets (@ref GL_Drawing_SetVectorized, @ref GL_Drawing_GetVectorized)	Also provided in SDK 9.0.1
		Adding draw area in drawing widgets (@ref GL_Drawing_DrawArea, @ref GL_Drawing_GetPixelType)	Also provided in SDK 9.0.1
		Changing the internal behavior of scrollbars (the min and max now shows the movement of the slider)	Also provided in SDK 9.0.1
		Added ability to scroll the view by the code C (@ref GL_ScrollView_GetVerticalRange, @ref GL_ScrollView_GetHorizontalRange, @ref GL_ScrollView_Move)	Also provided in SDK 9.0.1

		Added ability to define a mask user in an input field (@ref GL_Widget_GetUserChar, @ref GL_Widget_SetUserChar)	Also provided in SDK 9.0.1
		The cancel button will exit the dialog keyboard	Also provided in SDK 9.0.1
		Reducing the size of text on dialog boxes	Also provided in SDK 9.0.1
		Remove the image of the virtual keyboard on the function @ref GL_Dialog_Scheme	Also provided in SDK 9.0.1

The following evolutions improve the use of GOAL.

Internal tracker	SUPTEL	Description
11348		Optimization for GOAL terminals at system level
11578		Telium Manager optimization regarding: ▪ Memory use, ▪ Execution time, ▪ General organization of functions in the DLL, ▪ Terminal start-up time.
11841		On SDK 9.0.x, the rendering of some functions were changed to GOAL look and feel. This SDK goes back to the legacy rendering for these functions. Functions concerned are: G_List_Entry() / G_Saisie_Liste() wG_List_Entry() / wG_Saisie_Liste() G_Numerical_Entry () / G_Saisie_Numérique() wG_Numerical_Entry() / wG_Saisie_Numerique() G_Alphanumerical_Entry() / G_Saisie_Alphanumerique() wG_Saisie_Alphanumerique() G_Extended_entry() / G_Saisie_Etendue() wG_Extended_entry() / wG_Saisie_Etendue() G_List_Entry() / G_Saisie_Liste() wG_List_Entry() / wG_Saisie_Liste() G_DisplayMSGcust() / G_AfficherMSGCust() G_DisplayMSGnum() / G_AfficherMSGnum() G_Display() / G_Afficher() SLSQ_Afficher_message() GestionRetourSocle() G_DisplayMSG() / G_AfficherMSG()
11988		Fixed bad screen on Black and White terminals with GOAL on remote download
11682	SUPTEL-3710	Managed "RETURN ON BASE" screen with GOAL
11726		GOAL look for the screen requesting to choose the Wi-Fi network

4.5.2. CGUI / CGUI tools

Internal tracker	SUPTEL	Description	
11546	PE0001-48	ImageOptimizer is now delivered under the name of ImageEnhance	
11871		Scrollbar size and scrollbar button size can now be customized	
11809		Fixed the problem on SDK 9.0 and 9.0.1: When old cGUI and new GOAL fonts was present in terminal, if in a cGUI application the GOAL font was selected it had a size totally different from expected. It was the same if a GOAL application selected a cGUI font.	Also provided in SDK 9.0.2

4.5.3. Plug-ins

CGUI Plug-ins Multimedia and Signature Capture are delivered in Telium Manager catalogues as described above.

Following points are delivered in this release.

Internal tracker	SUPTEL	Description
11923	SUPTEL-3866	Videos are now correctly placed when using a cGUI canvas not positioned in upper left corner of the screen

4.5.4. Fonts

No evolution.

4.5.5. DLL Image

No evolution.

4.6. Contactless

4.6.1. Driver

Following points are delivered in this release.

Internal tracker	SUPTEL	Description
11543	SUPTEL-3606	Fix Mifare RESTORE command behavior.
11544	SUPTEL-3359	Improved ISO 1.1 timeout management.
10515	SUPTEL-2912	Driver Mifare is now able to authenticate Mifare classic cards with 7 bytes UID.
11235		On iWL and iMP3, contactless functions works only if Battery is plugged (they do nothing if battery is not plugged).
9741		Possibility to allow Mifare driver to leave encrypted mode

4.6.2. DLL TPass

Following points are delivered in this release.

Internal tracker	SUPTEL	Description	
7871	TFU 4977 SUPTEL-1464	When the selected AID is used by more than one application, the new service CLESS_SERVICE_CUST_DEBIT_SAME_AID is called to determine which application will manage the card.	Also provided in SDK 9.0.1
11786		A new option has been added in the TAG_EP_AID_OPTIONS, allowing managing the tag 9F2A, and the new Entry Point pre-processing.	Also provided in SDK 9.0.2
11376	SUPTEL-3510	Added function ClessEmv_GetSpec() to retrieve the version of the level 1 specification.	Also provided in SDK 9.0.2
11142		If an application returns an empty TLV Tree on the CLESS_GIVE_INFO service, this application will be considering as non responding to the service.	Also provided in SDK 9.0.2
11813		During the contactless List Of AID method, if the application is blocked (i.e. the card returns 6283 to the SELECT AID command), then this one will not be added to the candidate list.	Also provided in SDK 9.0.2
11873		If the PPSE application is blocked (i.e. card returns SW=6283 to the SELECT PPSE command), then the application selection will continue with the next method instead of terminating the transaction after the PPSE method.	Also provided in SDK 9.0.2
11533	SUPTEL-3278	New functions are now available and allow to retreive the PPSE card response and the list of card responses of the "List Of AID" method.	Also provided in SDK 9.0.2

4.6.3. Entry Point

No evolution.

4.6.4. Telium Pass

No evolution.

4.6.5. DESFire cards

Internal tracker	SUPTEL	Description
11575	SUPTEL-3607	Desfire library is now provided in Telium SDK instead of Easy Path To Contactless. It will be removed in the next version of Easy Path To Contactless. In SDK 9.2.0, the help about DESFire is in the file DESFire.CHM in the directory Documents.

4.7. Applications

4.7.1. Incendo Online browser

Technical documentation and the Incendo SDK are provided with Ingedev (from version 7.8.0).

4.7.1.1. Memory

Before deploying this solution, please check the memory usage of your terminals.

4.7.1.2. Migration to this version

4.7.1.2.1. Migration from a version before 3.0.4

Incendo Online smart browser was previously delivered as an independent package (up to version 3.0.3). It was designed to be signed with region security keys.
The version in this Telium SDK is signed with manufacturer key. So the application type is different between these two versions. If you have already deployed the browser, to migrate to the version included in a Telium SDK, you must manage the change of application type. For further details, please contact the Incendo support.

4.7.1.3. Compatibility

4.7.1.3.1. Terminals managed

Minimal hardware prerequisites are:

- Terminal is Ethernet or GPRS;
- Terminals is Ingetrust ready;
- Minimum of 16 MB of Flash is mandatory;
- 16 MB of RAM are recommended but not mandatory. 8 MB is possible if terminal is Incendo Online only (no other applications).

Incendo Online is compatible with the following terminals:

- EFT930 Color (Booster 2 type),
- iCT220, iCT250,
- iWL220, iWL250

You must not use it on other terminals.

Support of iSC250, iSC350 and iWL280 will be available in a future release.

4.7.1.3.2. EMV packages compatibility

Incendo smart Browser is compatible with the following EMV packages:

- Version 19 or 20.1

4.7.1.4. Evolutions

No evolution.

4.7.2. Image Loader

At the end of the Telium SDK setup you can choose to install Image Loader on your PC. Documentation is available in this installed package.
Please read all the documentation located in the directory you had installed Image Loader.

4.7.2.1. Evolutions

Following points are delivered in this release.

Internal tracker	SUPTEL	Description
		Added support of video files as IDLE Screen: ▪ MP4 file format on Multimedia terminal = IWL280, ISC350, ISC250, IWL350 ▪ IPF file format on other = ICT250, IWL250, IPP350, EFT930C

4.8. IPP3 in Pinpad emulation mode

Please see description in the CHM help file of the Telium SDK (SDK General Documentation > How To Develop user guides > How to use iPP3xx as a smart card reader).

9796 / 11721		Evolution in PPLoad DLL: Optimized mode for local download for iPP3xx in pinpad emulation mode. In the previous mode, the mechanism was based on a 2MB configuration file transferred from host terminal to the iPP3. This file does not exist anymore.
11812 / 11643		To use iPP3xx PCIV3 in pinpad emulation mode, the link between iCT2xx PCIV3 and IPP3xx must be secured. This functionality is available with SDK9.2.0.

4.9. AVL

AVL stands for Added Value Libraries.
Following points are delivered in this release.

Internal tracker	SUPTEL	Description	
11444		AVL components VGE_BLM, VGE_DRM, VGE_TMS, VGE_UIM, VGE_DBG are now deprecated (see below for details)	
11553	SUPTEL-3626	AVLcpp.lib provided for GCC4	Also provided in SDK 9.0.1

4.10. SDK features

Following points are delivered in this release.

Internal tracker	SUPTEL	Description	
11548	SUPTEL-3522	Font dPOLICE8x14 added in Telium fonts ISOx	
10355	SUPTEL-2791	Added memory usage comparative between SDKs (in the directory Document\Memory)	
11701		By default the installation directory is C:\Program Files\TeliumSDK. If a SDK has already been installed in another directory, this one is still proposed.	
11446		ARM SDT is no more used in region. Libraries compiled with ARM SDT are no more provided.	
11552	SUPTEL-3627	TLV Tree presentation documentation was missing in SDK 9.0	Also provided in SDK 9.0.1

4.11. Documentation

There are improvements of documentation in this release including the following

Internal tracker	SUPTEL	Description
11204	SUPTEL-3369	Updated DUKPT documentation
10685	SUPTEL-2897	Improvement on Bluetooth documentation
11936	SUPTEL-3845	ISO8859Arabic2Unicode documentation
11424	SUPTEL-3431	Updated documentation on DLL Security Extend (precisions about booster type on AES HMAC functions)
11424	SUPTEL-3431	Updating documentation on AES and HMAC (precisions about booster type)
11704	SUPTEL-3015	Improvement on is_delete() documentation
11877	SUPTEL-3487	Documentation on entry points SELECT_CARD_HOLDER and SELECT_MERCHANT
11975	SUPTEL-3917	Added documentation explaining how to analyze a diagnostic ticket
		Menus of the CHM have been improved
		New versions of How To Develop documents
11908		Security user Guide updated
11944		Adding a Warning in the documentation of SEC_RandomMACAESKeyExpRSA: "The application must verify the integrity and the authenticity of the RSA public Key by using the signature Telium system verification."
11713		Documentation improvement in the CHM help file for Telium Manager, Link Layer, DLL TPass and Telium sytem
12013		GTL (Generic tool library) documentation improvement

4.12. Samples

There are improvements of samples in this release including the following

Internal tracker	SUPTEL	Description
12084	SUPTEL-3616	Improvement of samples for SSL, TCPIP, GPRS and FTP

5. Evolutions in API

- Functions iUC150(), iUC180() and iUP250() replace functions isIUNxxx().

6. Add-ons to Telium SDK

The following table presents the versions of recommended add-ons to use with this SDK.

Add on	Recommended version to use with this SDK	Comment
Easy Path To EMV	20.2	
Easy Path To Contactless	3. 07.02	
Add On PCL for iPA280	1.19	
Add On PCL for iWP	1.15	
Add On PCL for iMP3xx	1.03	
Add On Morpho	2.00	
Add On Telicapt	2.17	
Add On Unattended	3.01	Previously named Add On UCM
Add On SPDH	1.01	
Add On APACS 40 Generic	1.08	
Add On ISO8583 Generic	3.02	

SDK9.0.2 Release note

1. What's new? Why should you use this SDK?

Issues solved are detailed in paragraph 4.

Here are main evolutions coming with this Telium SDK release compared to the release 9.0.1.

- Sending of serial number over USB can be allowed via HWCNF.PAR;
- Improved reading of files by DLL SSL;
- In E2EE DLL, E2EE_ERR_TRACK1_PARSING is now returned when 'Discretionary Data' is longer than 62 digits (previously: 30);
- Fix for font size when a terminal embeds both CGUI and GOAL fonts ;
- Fixes in link layer (see below);
- Fixes in contactless (see below).

2. Compatibility

2.1. List of compatible terminals

This SDK release is compatible with the following products.

2.1.1. Wireless

Telium 2:

- iWL220B, iWL220G,
- iWL250B, iWL250G ,
- iWL250 3G,
- iWL250 2SCR (2SCR stands for 2 Smart Card Reader),
- iWL280 (Signature capture),
- iWL350 (For development only)

Telium 1:

- EFT930 Color
- EFT930 Black and White

2.1.2. Countertop terminals

Telium 2:

- iCT220, iCT250,
- E532

Telium 1:

- EFT SMART Plus,
- EFT SMART,
- EFT30

2.1.3. Signature capture terminals (Retail pinpads)

Telium 2:

- iSC250,
- iSC350

2.1.4. Pinpads

Telium 2:

- iPP320, iPP350,
- iPP3xx used as a smart card reader (Pinpad emulation mode).

Telium 1:

- ML30, ML30 color, ML30 color contactless.

'Booster only' pinpads:

- iPP220, iPP250, iPP280, PPC30, PPR30, P30, P30 Contactless, PP30, PP30S.

2.1.5. Unattended

Telium 1:

- See UCM add-on package for the exhaustive list of CAD30.

Telium 2:

- iUC150, IUC180, iUP250 (for development only)

2.1.6. Satellite terminals

Telium 2:

- iST150.

Telium 1:

- TeliumPass Plus.

2.1.7. Mobile payment

Telium 2:

- iMP3xx (only hardware V4 are supported since SDK 8.0.1),
- SPM (iPA280).

2.1.8. French health care

- TWINs.

2.2. Terminals certified PCI V3

The following terminals are certified for PCI v3:

Terminal	Certified since
iWL220	Since SDK 8.0.1
iWL250	Since SDK 8.0.1
iWL280	Since SDK 8.0.1

iSC250	Since SDK 8.0.1
iPP320	Since SDK 8.1
iPP350	Since SDK 8.1
iMP350	Since SDK 8.2
iCT2xx (Only iCT2xx referenced 11Txxxxx are certified PCI-V3)	Since SDK 8.2
iPP2xx	Since SDK 8.2
iWL350	Since SDK 9.0

2.3. Public Key Infrastructure

This release supports PKI V3.

3. Highlighted points

3.1. Restriction for iPA280 and PCI PED 2.x compliance

During the PCI PED 2.x certification of the iPA280 devices, some constraints have been put at the level of communication of sensitive data from the Secure Payment Module (SPM) to the external world. The PDA part of the product has to be considered as the external world. The reason of this restriction is that the scope of the PCI PED evaluation was the SPM, which has a secure Telium architecture, and not the iPA280 product as a whole.

The restriction forbids communicating:

- Any APDU command response;
- Any cardholder data (i.e. ISO tracks 1 & 2 and their EMV counterpart).

It is also forbidden to receive APDU command queries from the external and to relay them to the smartcard. The restriction imposed by PCI SSC is not limited to banking cards. Direct communication to other types of cards (e.g. loyalty) is not allowed.

The communication APIs to establish communication between SPM and PDA propose some interfaces. It is for sure possible to address communication by using lower level functionalities. This must not be used to circumvent the protocol restrictions for communication.

Since cardholder data must remain within the SPM, the implication of this restriction is that payment applications have to be executed in the SPM and can not be based on a split design between SPM and PDA parts of the device. The PDA can be used for merchant application only (i.e. advertising, product selection)

3.2. GOAL catalogues naming rule

The integration of GOAL in the Telium SDK 9.0 had introduced changes in the Telium Manager catalogues provided.

The naming rules have been maintained for compatibility and to minimize the changes for users.

This sheet describes the application compatibility and Telium Manager MMI regarding names of catalogues.

Thunder	Catalogues names	Application compatibility	Telium Manager MMI
Thunder 1 and 2	xxx_GOAL_yyy.mZZ	GOAL and Libgr	GOAL
Thunder 1 and 2	xxx_CGUI_yyy.mZZ	CGUI, GOAL and Libgr	GOAL
Thunder 1 and 2	xxx_yyy.mZZ	Libgr	Libgr
Thunder 3	xxx_GOAL_yyy.mZZ	GOAL and Libgr	GOAL
Thunder 3	xxx_yyy.mZZ	CGUI, GOAL and Libgr	GOAL

The Telium manager displayed with CGUI interface doesn't exist anymore; it is replaced by the GOAL interface. The name xxx_CGUI_yyy.mZZ for a catalogue means that it is compatible with CGUI applications but the Manager interface is GOAL.

The Telium Manager catalogues xxx_MOCKUP.mZZ don't exist anymore. They were designed to use the Ingedev preview feature. If you want to use this feature, you have to load in your terminal, the catalogue CGUI_PREVIEW_PROXY.mZZ which is in the directory Components\CGUI_PREVIEW_PROXY, additionally to the CGUI manager catalogue.

The Telium Manager catalogues include NanoX, the plug-in Signature Capture and the plug-in Multimedia. So, the plug-ins are no more delivered in the directory \Component\plugins.

3.3. Contactless

3.3.1. Best practices for Contactless

3.3.1.1. Field on/off

The contactless field is to be activated only when a contactless card is waited by the terminal. It must be stopped when the management of the contactless card is finished.
If the contactless field is opened all the time:

- On wireless terminals, product battery autonomy is reduced a lot;
- The contactless module and antenna are highly stressed and reliability could decrease quickly with time;

Applications have to manage the opening and the closing of the field according their business logic.

3.3.1.2. Implicit selection

Following terminals having the contactless feature inside are concerned: iWL2xx, iCT250, iSC2xx, iSC3xx, EFT930 GCC, EFT930 BCC, iPP3XX, iPA280 (SPM), ML30C and P30C.

Implicit selection is not recommended and must be managed with caution.
Due to physical reason, implicit selection can lead to unexpected issues, for example, at the beginning of the swipe, the card would possibly enter the antenna field and contactless chip would be handled instead of magnetic track.

3.3.1.3. Use of PSTN modem with contactless activated

The electro-magnetic field created when the contactless is activated, on an integrated terminal, prevents the usage of the PSTN modem with contactless activated.

This is not a software issue, and no software solution exists. The contactless field shall not be activated at the same time as the modem.

Currently, the issue exists only on the iCT250, which is the only Ingenico integrated terminal with contactless and PSTN modem.
(For instance, on EFT930BCC or EFT930GCC with modem, it works, because the modem is on the cradle, and the distance between the modem and the contactless field is sufficient).

3.3.2. Add-on Contactless

The add-on contactless doesn't exist anymore.
All components provided previously in this package are now in Telium SDK since SDK 8.1. It concerns:

- TPass library and component;
- Entry point component;
- GTL library;
- Contactless sample.

3.3.3. Card supported

The list of cards supported by this SDK is given in the paragraph **Erreur ! Source du renvoi introuvable.**: **Erreur ! Source du renvoi introuvable.** .

Recommendation:
Even if a card is managed since an old SDK or Add-On Contactless, usage of a recent SDK is strongly recommend because bugs could have been fixed.

3.4. Family name

The family name, defined in the descriptor used to sign the binary, must follow the pattern "<NAME><VV><AA>" where:

- NAME is the radical of application (maximum 7 ASCII characters);
- VV is the version (2 number);
- AA is the amendment (2 number)

3.5. Pinpad system

To avoid problems when a non mock-up pinpad is linked to a mock-up terminal, the terminal mock-up catalogues don't include pinpad systems. So, you have to load the pinpad system (located in the directory "Component\OS") according to the pinpad you are using.

3.6. DIR system version downgrade

It is not possible to downgrade from a system managing directories (catalogue XXX_DIR.mYY) to a system which not manages directories (catalogue XXX.mYY).

3.7. Reserved numbers

Service numbers from 1 to 100 and from 0x1E00 à 0x1FFF are reserved for Ingenico internal use.
Tag numbers used by applications must be taken in the range 0x9FA000 - 0x9FAFFF.

3.8. EFT930 embedding 8MB of flash

It is possible to use this SDK on EFT930 which has only 8 MB of flash (special system catalogue is provided: EFT930_8MO_PROD.m31). This catalogue is not a DIR one. If you use Ingestate you may need some adjustments: please contact your R&D Regional Interface for more information.

For SDK 8.0.x, SDK 8.1 and SDK 8.1.1:
It is forbidden to load a catalogue designed for 8MB terminals on a terminal loaded with a generic catalogue (that is to say non-8 MB). You must contact the Ingenico support for the rules of this migration.

3.9. Fix in link layer

A bug has been identified in the LinkLayer component, in versions 3.22 and 3.23 (SDK 8.1.2, SDK 8.1.3, SDK 8.2 and SDK 8.2.1).
For these versions only, on Bluetooth terminals, not associated with any base, the connection (call to LL_Connect()) fails when using the physical link LL_PHYSICAL_V_DEFAULT_TCPIP, with return code -1013 (LL_ERROR_NETWORK_NOT_SUPPORTED).
This bug is now corrected since SDK 9.0 (Link Layer version 3.25)

3.10. PCI PTS version

In order to know the PCI PTS version of the product, you can use the fioctl SYS_FIOCTL_GET_PCI_PTS_VERSION returns PCI_PTS_V2 or PCI_PTS_V3 (or -1 if the fioctl is not implemented). This function is only implemented on Telium2.
The function GetTerminalPKIVersion() allows to know the PKI Version (return is PKIV1 or PKIV3).

4. Issues solved in this release by component

See table in chapter **Erreur ! Source du renvoi introuvable.** "Versions of components" for the list of versions of components provided in this Telium SDK.
Main points delivered in this release are listed below.

4.1. Telium System

No evolution.

4.2. Telium Manager

4.2.1. Evolutions

Following points are delivered in this release.

Internal tracker	SUPTEL	Description
11353		Sending of serial number over USB can be allowed via HWCNF.PAR: Parameter SET_USBDEV_SN_STATUS 0 --> SN OFF 1 --> SN ON
11662		Add security information in hardware configuration menu for iUN range of product
11481	SUPTEL-3505	Allows entry of the character * (star) in the PABX initialization string. Manages list of allowed characters in entry
11771	SUPTEL-2985	Calls GET_AMOUNT_STATE_PARAMETER entry point at beginning of ServiceCall 100
11682	SUPTEL-3710	Managed "RETURN ON BASE" screen with GOAL
11714		Manages correctly TMS identifier if length is lower than 9 digits

4.3. Security

4.3.1. DLL Security

No evolution.

4.3.2. Security Extend library

No evolution.

4.3.3. DLL E2EE

Following points are delivered in this release.

Internal tracker	SUPTEL	Description
11836	SUPTEL-3808	E2EE_ERR_TRACK1_PARSING is now returned when 'Discretionary Data' is longer than 62 digits (previously: 30)

4.3.4. DLL Digest

No evolution.

4.3.5. Schemes

Last schemes certified are included in this SDK.

4.4. Communication

4.4.1. Link Layer

No evolution.

Internal tracker	SUPTEL	Description
11845		Improvement of status LL_STATUS_GPRS_ERROR_UNKNOWN
11664		Correction on the management of a timeout error while receiving data with TCP_ISMP DLL (iMP3 product only).
11789		Link layer didn't work on Wi-Fi since SDK 8.1

4.4.2. Pack IP

No evolution.

4.4.3. DLL SSL

Following points are delivered in this release.

Internal tracker	SUPTEL	Description
11605	SUPTEL-3707	Improved reading of files by DLL SSL

4.4.4. FTP

No evolution.

4.4.5. SNMP

No evolution.

4.4.6. DLL TCP for iMP3

DLL TCP for iMP3 is provided in the directory Component\DLL_TCP_IMP3. This DLL allows TCP/IP without SSL communications on iMP3xx.
This DLL is mandatory on iMP3xx.

4.5. Display

4.5.1. GOAL / CGUI

GOAL version is 3.07. However if you read SDK ticket using Manager menu (Consultation > Configuration > Software > Telium SDK) you will have GOAL Release = 3.06.

Following points are delivered in this release.

Internal tracker	SUPTEL	Description
11809		Fixed the problem on SDK 9.0 and 9.0.1: When old cGUI and new GOAL fonts was present in terminal, if in a cGUI application the GOAL font was selected it had a size totally different from expected. It was the same if a GOAL application selected a cGUI font.

4.5.2. DLL Image

No evolution.

4.5.3. Fonts

No evolution.

4.5.4. CGUI Plug-ins (Signature capture and Multimedia)

Now delivered in Telium manager catalogues as described above.

4.6. Contactless

4.6.1. DLL TPass

Following points are delivered in this release.

Internal tracker	SUPTEL	Description
11786		A new option has been added in the TAG_EP_AID_OPTIONS, allowing managing the tag 9F2A, and the new Entry Point pre-processing.
11376	SUPTEL-3510	Added function ClessEmv_GetSpec() to retrieve the version of the level 1 specification.
11142		If an application returns an empty TLV Tree on the CLESS_GIVE_INFO service, this application will be considering as non responding to the service.
11813		During the contactless List Of AID method, if the application is blocked (i.e. the card returns 6283 to the SELECT AID command), then this one will not be added to the candidate list.
11873		If the PPSE application is blocked (i.e. card returns SW=6283 to the SELECT PPSE command), then the application selection will continue with the next method instead of terminating the transaction after the PPSE method.

11533	SUPTEL-3278	New functions are now available and allow to retreive the PPSE card response and the list of card responses of the "List Of AID" method.

4.6.2. Entry Point

No evolution.

4.6.3. Telium Pass

No evolution.

4.7. Applications

4.7.1. Incendo Online browser

Technical documentation and the Incendo SDK are provided with Ingedev (from version 7.8.0).

4.7.1.1. Memory

Before deploying this solution, please check the memory usage of your terminals.

4.7.1.2. Migration to this version

4.7.1.2.1. Migration from a version before 3.0.4

Incendo Online smart browser was previously delivered as an independent package (up to version 3.0.3). It was designed to be signed with region security keys.
The version in this Telium SDK is signed with manufacturer key. So the application type is different between these two versions. If you have already deployed the browser, to migrate to the version included in a Telium SDK, you must manage the change of application type. For further details, please contact the Incendo support.

4.7.1.3. Compatibility

4.7.1.3.1. Terminals managed

Minimal hardware prerequisites are:

- Terminal is Ethernet or GPRS;
- Terminals is Ingetrust ready;
- Minimum of 16 MB of Flash is mandatory;
- 16 MB of RAM are recommended but not mandatory. 8 MB is possible if terminal is Incendo Online only (no other applications).

Incendo Online is compatible with the following terminals:

- iCT220, iCT250,
- iWL220, iWL250

You must not use it on other terminals.

Support of EFT930 color, iSC250, iSC350 and iWL280 will be available in a future release.

4.7.1.3.2. EMV packages compatibility

Incendo smart Browser is compatible with the following EMV packages:

- Version 19 or 20.1

4.7.1.4. Evolutions

Please read the release note under \Applications\IncendoBrowser.

4.7.2. Image Loader

At the end of the Telium SDK setup you can choose to install Image Loader on your PC. Documentation is available in this installed package.

4.7.2.1. Evolutions

No evolution.

4.8. AVL

No evolution.

4.9. Full configuration for local download for iPP320 in pinpad emulation mode

A binary concatenates the Telium system (including contactless driver) and the Telium manager for an iPP3 used in pinpad emulation for local download mode. It is delivered in the directory: Component\iPP3_EmulationPinpad\Package
Please see description in the CHM help file of the Telium SDK (SDK General Documentation > HOW TO DEVELOP user guide > How to use iPP3xx as a smart card reader).

This package is not updated for SDK 9.0.2.

4.9.1. DLL PPLoad evolution

The DLL PPLoad is present in the host terminal and allows the loading of the full configuration to the iPP3.
No evolution.

4.10. SDK features

No evolution.

5. Add-ons to Telium SDK

The following table presents the versions of recommended add-ons to use with this SDK.

Add on	Recommended version to use with this SDK	Comment
Easy Path To EMV	20.2	
Add On Contactless (New architecture)	Removed	Components previously in this add-on are in the Telium SDK since 8.1

Easy Path To Contactless	3. 07.02	
Add On PCL for iPA280	1.18	
Add On PCL for iWP	1.15	
Add On PCL for iMP3xx	1.03	
Add On Morpho	2.00	
Add On Telicapt	2.17	
Add On UCM	3.00	
Add On SPDH	1.01	
Add On APACS 40 Generic	1.08	
Add On ISO8583 Generic	3.02	

SDK9.0.1 Release note

1. Standard development platforms

1.1. List of compatible terminals

This SDK release is compatible with the following products.

1.1.1. Wireless

Telium 2:

- iWL220B, iWL220G,
- iWL250B, iWL250G ,
- iWL250 3G,
- iWL250 2SCR (2SCR stands for 2 Smart Card Reader),
- iWL280 (Signature capture),
- iWL350 (For development only)

Telium 1:

- EFT930 Color
- EFT930 Black and White

1.1.2. Countertop terminals

Telium 2:

- iCT220, iCT250,
- E532

Telium 1:

- EFT SMART Plus,
- EFT SMART,
- EFT30

1.1.3. Signature capture terminals (Retail pinpads)

Telium 2:

- iSC250,
- iSC350

1.1.4. Pinpads

Telium 2:

- iPP320, iPP350,
- iPP3xx used as a smart card reader (Pinpad emulation mode).

Telium 1:

- ML30, ML30 color, ML30 color contactless.

'Booster only' pinpads:

- iPP220, iPP250, iPP280, PPC30, PPR30, P30, P30 Contactless, PP30, PP30S.

1.1.5. Unattended

Telium 1:

- See UCM add-on package for the exhaustive list of CAD30.

Telium 2:

- iUC150, IUC180, iUP250 (for development only)

1.1.6. Satellite terminals

Telium 2:

- iST150.

Telium 1:

- TeliumPass Plus.

1.1.7. Mobile payment

Telium 2:

- iMP3xx (only hardware V4 are supported since SDK 8.0.1),
- SPM (iPA280).

1.1.8. French health care

- TWINs.

1.2. Terminals certified PCI V3

The following terminals are certified for PCI v3:

iWL220	Since SDK 8.0.1
iWL250	Since SDK 8.0.1
iWL280	Since SDK 8.0.1
iSC250	Since SDK 8.0.1
iPP320	Since SDK 8.1
iPP350	Since SDK 8.1
iMP350	Since SDK 8.2
iCT2xx	Since SDK 8.2
iPP2xx	Since SDK 8.2
iWL350	Since SDK 9.0

1.3. Public Key Infrastructure

This release supports PKI V3.

2. What's new?

Issues solved are detailed in paragraph 4.

Here are main evolutions coming with this Telium SDK release compared to the release 9.0.

- Improvement on GOAL:
  - Optimization for applications developed with LibGr running on GOAL terminals,
  - Some fixes and improvements for GOAL applications.

3. Highlighted points

3.1. Restriction for iPA280 and PCI PED 2.x compliance

During the PCI PED 2.x certification of the iPA280 devices, some constraints have been put at the level of communication of sensitive data from the Secure Payment Module (SPM) to the external world. The PDA part of the product has to be considered as the external world. The reason of this restriction is that the scope of the PCI PED evaluation was the SPM, which has a secure Telium architecture, and not the iPA280 product as a whole.

The restriction forbids communicating:

- Any APDU command response;
- Any cardholder data (i.e. ISO tracks 1 & 2 and their EMV counterpart).

It is also forbidden to receive APDU command queries from the external and to relay them to the smartcard. The restriction imposed by PCI SSC is not limited to banking cards. Direct communication to other types of cards (e.g. loyalty) is not allowed.

The communication APIs to establish communication between SPM and PDA propose some interfaces. It is for sure possible to address communication by using lower level functionalities. This must not be used to circumvent the protocol restrictions for communication.

Since cardholder data must remain within the SPM, the implication of this restriction is that payment applications have to be executed in the SPM and can not be based on a split design between SPM and PDA parts of the device. The PDA can be used for merchant application only (i.e. advertising, product selection)

3.2. GOAL catalogues naming rule

The integration of GOAL in the Telium SDK 9.0 had introduced changes in the Telium Manager catalogues provided.

The naming rules have been maintained for compatibility and to minimize the changes for users.

This sheet describes the application compatibility and Telium Manager MMI regarding names of catalogues.

Thunder	Catalogues names	Application compatibility	Telium Manager MMI
Thunder 1 and 2	xxx_GOAL_yyy.mZZ	GOAL and Libgr	GOAL
Thunder 1 and 2	xxx_CGUI_yyy.mZZ	CGUI, GOAL and Libgr	GOAL
Thunder 1 and 2	xxx_yyy.mZZ	Libgr	Libgr
Thunder 3	xxx_GOAL_yyy.mZZ	GOAL and Libgr	GOAL
Thunder 3	xxx_yyy.mZZ	CGUI, GOAL and Libgr	GOAL

The Telium manager displayed with CGUI interface doesn't exist anymore; it is replaced by the GOAL interface. The name xxx_CGUI_yyy.mZZ for a catalogue means that it is compatible with CGUI applications but the Manager interface is GOAL.

The Telium Manager catalogues xxx_MOCKUP.mZZ don't exist anymore. They were designed to use the Ingedev preview feature. If you want to use this feature, you have to load in your terminal, the catalogue CGUI_PREVIEW_PROXY.mZZ which is in the directory Components\CGUI_PREVIEW_PROXY, additionally to the CGUI manager catalogue.

The Telium Manager catalogues include NanoX, the plug-in Signature Capture and the plug-in Multimedia. So, the plug-ins are no more delivered in the directory \Component\plugins.

3.3. Contactless

3.3.1. Best practices for Contactless

3.3.1.1. Field on/off

The contactless field is to be activated only when a contactless card is waited by the terminal. It must be stopped when the management of the contactless card is finished.
If the contactless field is opened all the time:

- On wireless terminals, product battery autonomy is reduced a lot;
- The contactless module and antenna are highly stressed and reliability could decrease quickly with time;

Applications have to manage the opening and the closing of the field according their business logic.

3.3.1.2. Implicit selection

Following terminals having the contactless feature inside are concerned: iWL2xx, iCT250, iSC2xx, iSC3xx, EFT930 GCC, EFT930 BCC, iPP3XX, iPA280 (SPM), ML30C and P30C.

Implicit selection is not recommended and must be managed with caution.
Due to physical reason, implicit selection can lead to unexpected issues, for example, at the beginning of the swipe, the card would possibly enter the antenna field and contactless chip would be handled instead of magnetic track.

3.3.1.3. Use of PSTN modem with contactless activated

The electro-magnetic field created when the contactless is activated, on an integrated terminal, prevents the usage of the PSTN modem with contactless activated.
This is not a software issue, and no software solution exists. The contactless field shall not be activated at the same time as the modem.

Currently, the issue exists only on the iCT250, which is the only Ingenico integrated terminal with contactless and PSTN modem.
(For instance, on EFT930BCC or EFT930GCC with modem, it works, because the modem is on the cradle, and the distance between the modem and the contactless field is sufficient).

3.3.2. Add-on Contactless

The add-on contactless doesn't exist anymore.
All components provided previously in this package are now by default since Telium SDK 8.1. It concerns

- TPass library and component;
- Entry point component;
- GTL library;
- Contactless sample.

3.3.3. Card supported

The list of cards supported by this SDK is given in the paragraph **Erreur ! Source du renvoi introuvable.**: **Erreur ! Source du renvoi introuvable.** .

Recommendation:
Even if a card is managed since an old SDK or Add-On Contactless, usage of a recent SDK is strongly recommend because bugs could have been fixed.

3.4. Family name

The family name, defined in the descriptor used to sign the binary, must follow the pattern "<NAME><VV><AA>" where:

- NAME is the radical of application (maximum 7 ASCII characters);
- VV is the version (2 number);
- AA is the amendment (2 number)

3.5. Pinpad system

To avoid problems when a non mock-up pinpad is linked to a mock-up terminal, the terminal mock-up catalogues don't include pinpad systems. So, you have to load the pinpad system (located in the directory "Component\OS") according to the pinpad you are using.

3.6. DIR system version downgrade

It is not possible to downgrade from a system managing directories (catalogue XXX_DIR.mYY) to a system which not manages directories (catalogue XXX.mYY).

3.7. Reserved numbers

Service numbers from 1 to 100 and from 0x1E00 à 0x1FFF are reserved for Ingenico internal use.
Tag numbers used by applications must be taken in the range 0x9FA000-0x9FAFFF.

3.8. EFT930 embedding 8MB of flash

It is possible to use this SDK on EFT930 which has only 8 MB of flash (special system catalogue is provided: EFT930_8MO_PROD.m31). This catalogue is not a DIR one. If you use Ingestate you may need some adjustments: please contact your R&D Regional Interface for more information.

For SDK 8.0.x, SDK 8.1 and SDK 8.1.1:
It is forbidden to load a catalogue designed for 8MB terminals on a terminal loaded with a generic catalogue (that is to say non-8 MB). You must contact the Ingenico support for the rules of this migration.

3.9. Fix in link layer

A bug has been identified in the LinkLayer component, in versions 3.22 and 3.23 (SDK 8.1.2, SDK 8.1.3, SDK 8.2 and SDK 8.2.1).
For these versions only, on Bluetooth terminals, not associated with any base, the connection (call to LL_Connect()) fails when using the physical link LL_PHYSICAL_V_DEFAULT_TCPIP, with return code -1013 (LL_ERROR_NETWORK_NOT_SUPPORTED).
This bug is now corrected in SDK 9.0 (Link Layer version 3.25)

3.10. PCI PTS version

In order to know the PCI PTS version of the product, you can use the fioctl SYS_FIOCTL_GET_PCI_PTS_VERSION returns PCI_PTS_V2 or PCI_PTS_V3 (or -1 if the fioctl is not implemented). This function is only implemented on Telium2.
The function GetTerminalPKIVersion() allows to know the PKI Version (return is PKIV1 or PKIV3).

4. Issues solved in this release by component

See table in chapter Erreur ! Source du renvoi introuvable. **"Versions of components" for the list of versions of components provided in this Telium SDK.**

Main points delivered in this release are listed below.

4.1. Telium System

Following points are delivered in this release.

Internal tracker	SUPTEL	Description
11184		Corrected issue on booster reboot when previous exception on swipe management.
11311	SUPTEL-2649	Remote debugger when terminal is in HID mode issue fixed If the terminal is forced in USB-HID mode and the connection used for the LDBG link is by default the USB port, the terminal is forced in USB-CDC mode during the debug session.
11210	SUPTEL-3311	Fix for iPP350 sometimes rebooting when contactless transaction was started with synchronous card inserted
11189	SUPTEL-3378	Fixed terminal reset due to a lack of RAM memory. More precisely: When a driver for synchronous card was launched on thunder side, the OS booster allocates RAM for loading, copying and executing this driver. This RAM is kept allocated to avoid the reloading of the driver in case same driver is used. So the RAM memory available is decreased. The bug fix consists in releasing the allocated RAM in case of power_down / fclose.
11475		Management of "GPRS only" SIMs
11534		Added external Bluetooth printer and Bluetooth driver in the iMP3xx catalogues
11560	SUPTEL-3267	Improvement: reduced swipe sensitivity (only on ICT-GPRS terminal)

4.2. Telium Manager

4.2.1. Evolutions

Following points are delivered in this release.

Internal tracker	SUPTEL	Description
10017		Use of GOAL in Manager
10591	SUPTEL-2935	__LoadDefaultOptions () didn't work all the time on an iWL250 Bluetooth with Ethernet base.

11367		New catalogues for healthcare : iMP3, iWL280 Catalogues for healthcare removed : ML30
11481	SUPTEL-3505	Allows entry of the character * (star) in the PABX initialisation string.
11568		Character '(' was twice in default table for alphanumerical entry
11569		Bug fixed when allocated resources using IAM
11622		On EFT930 Morpho: Fixed freeze when editing hardware configuration ticket

11625		GetGeneralStatus() improvement:
		To start card management at start-up, to use GetGeneralStatus() function, put this code and call this function in AFTER_RESET entry point
		void ActivateCardManagement(void)
		{
		S_STATE_PARAM state_param;
		
		PSQ_read_state_param(&state_param);
		state_param.EnableCamManagement=1;
		PSQ_write_state_param(&state_param);
		}

4.3. Security

4.3.1. DLL Security

No evolution.

4.3.2. Security Extend library

Following points are delivered in this release.

Internal tracker	SUPTEL	Description
9369		Fixed compilation issue with use of SEC_extend.h
9491	SUPTEL-2148	Function SEC_DukptCBCCipher with algo type TLV_TYPE_TDESDUKPT froze Booster 1 terminals

4.3.3. DLL E2EE

No evolution.

4.3.4. DLL Digest

No evolution.

4.3.5. Schemes

Last schemes certified are included in this SDK.

4.4. Communication

4.4.1. Link Layer

No evolution.

4.4.2. Pack IP

No evolution.

4.4.3. DLL SSL

Internal tracker	SUPTEL	Description
11165	SUPTEL-3354	Add support of CRL file. CRL file must be added to the SSL profile with SSL_ProfileAddCertificateCA function.
11488		Possibility to use DLL SSL on an SSL connexion not managed by DLL SSL.
11527		There were some unitialized variables used during SSL connection on iMP3xx only.

4.4.4. FTP

No evolution.

4.4.5. SNMP

No evolution.

4.5. Display

4.5.1. GOAL

Following points are delivered in this release.

Internal tracker	SUPTEL	Description
11493		The progress-bar text property is not correctly managed
11632	**SUPTEL-3620**	G_Extended_Entry : on ICT250, not possible to exit via Cancel (red button). Idem on IWL280 (OK by touchscreen but not by keyboard)
11631	**SUPTEL-3665**	cGUI Performance - Delayed Response from scrollbar when large amount of text displayed on TextArea Control
		Adds picture image cache
		Adding vectorized mode in drawing widgets (@ref GL_Drawing_SetVectorized, @ref GL_Drawing_GetVectorized)
		Adding draw area in drawing widgets (@ref GL_Drawing_DrawArea, @ref GL_Drawing_GetPixelType)
		Changing the internal behavior of scrollbars (the min and max now shows the movement of the slider)

		Added ability to scroll the view by the code C (@ref GL_ScrollView_GetVerticalRange, @ref GL_ScrollView_GetHorizontalRange, @ref GL_ScrollView_Move)
		Added ability to define a mask user in an input field (@ref GL_Widget_GetUserChar, @ref GL_Widget_SetUserChar)
		The cancel button will exit the dialog keyboard
		Reducing the size of text on dialog boxes
		Remove the image of the virtual keyboard on the function @ref GL_Dialog_Scheme

4.5.2. DLL Image

No evolution.

4.5.3. Fonts

No evolution.

4.5.4. CGUI / CGUI tools

Internal minor change.

4.5.5. Plug-ins

Now delivered in Telium manager catalogues as described above.

4.6. Contactless

4.6.1. DLL TPass

Following points are delivered in this release.

Internal tracker	SUPTEL	Description
7871	TFU 4977 SUPTEL-1464	When the selected AID is used by more than one application, the new service CLESS_SERVICE_CUST_DEBIT_SAME_AID is called to determine which application will manage the card.

4.6.2. Entry Point

No evolution.

4.6.3. TeliumPass

No evolution.

4.7. Applications

4.7.1. Incendo Online browser

Technical documentation and the Incendo SDK are provided with Ingedev (from version 7.8.0).

4.7.1.1. Memory

Before deploying this solution, please check the memory usage of your terminals.

4.7.1.2. Migration to this version

4.7.1.2.1. Migration from a version before 3.0.4

Incendo Online smart browser was previously delivered as an independent package (up to version 3.0.3). It was designed to be signed with region security keys.
The version in this Telium SDK is signed with manufacturer key. So the application type is different between these two versions. If you have already deployed the browser, to migrate to the version included in a Telium SDK, you must manage the change of application type. For further details, please contact the Incendo support.

4.7.1.3. Compatibility

4.7.1.3.1. Terminals managed

Minimal hardware prerequisites are:

- Terminal is Ethernet or GPRS;
- Terminals is Ingetrust ready;
- Minimum of 16 MB of Flash is mandatory;
- 16 MB of RAM are recommended but not mandatory. 8 MB is possible if terminal is Incendo Online only (no other applications).

Incendo Online is compatible with the following terminals:

- iCT220, iCT250,
- iWL220, iWL250

You must not use it on other terminals.

Support of EFT930 color, iSC250, iSC350 and iWL280 will be available in a future release.

4.7.1.3.2. EMV packages compatibility

Incendo smart Browser is compatible with the following EMV packages:

- Version 19 or 20.1

4.7.1.4. Evolutions

Please read the release note under \Applications\IncendoBrowser.

4.7.2. Image Loader

At the end of the Telium SDK setup you can choose to install Image Loader on your PC. Documentation is available in this installed package.

4.7.2.1. Evolutions

No evolution.

4.8. AVL

Following points are delivered in this release.

Internal tracker	SUPTEL	Description
11553	SUPTEL-3626	AVLcpp.lib provided for GCC4

4.9. Full configuration for local download for iPP320 in pinpad emulation mode

A binary concatenates the Telium system (including contactless driver) and the Telium manager for an iPP3 used in pinpad emulation for local download mode. It is delivered in the directory: Component\iPP3_EmulationPinpad\Package
Please see description in the CHM help file of the Telium SDK (SDK General Documentation > HOW TO DEVELOP user guide > How to use iPP3xx as a smart card reader).

This package is not updated for SDK 9.0.1.

4.9.1. DLL PPLoad evolution

The DLL PPLoad is present in the host terminal and allows the loading of the full configuration to the iPP3.
No evolution.

4.10. SDK features

Following points are delivered in this release.

Internal tracker	SUPTEL	Description
11552	SUPTEL-3627	TLV Tree presentation documentation was missing in SDK 9.0

5. Evolutions in API

5.1. Deprecated functions

SEC_DukptComputeMAC_AC() and SEC_DukptVerifyMAC_AC are now deprecated. If you want to continue to use it until its definitive removal, you have to had to compile your application with the define _DEPRECATED_SDK90_.

6. Add-ons to Telium SDK

The following table presents the versions of recommended add-ons to use with this SDK.

Add on	Recommended version to use with this SDK	Comment
Easy Path To EMV	20.2	

Add On Contactless (New architecture)	Removed	Components previously in this add-on are in the Telium SDK since 8.1
Easy Path To Contactless	3. 07.02	
Add On PCL for iPA280	1.18	
Add On PCL for iWP	1.15	
Add On PCL for iMP3xx	1.02	
Add On Morpho	1.06	
Add On Telicapt	2.17	
Add On UCM	2.06.01	
Add On SPDH	1.01	
Add On APACS 40 Generic	1.08	
Add On ISO8583 Generic	3.02	

SDK9.0 Release note

1. Standard development platforms

1.1. List of compatible terminals

This SDK release is compatible with the following products.

1.1.1. Wireless

Telium 2:

- iWL220B, iWL220G,
- iWL250B, iWL250G ,
- iWL250 3G,
- iWL250 2SCR, 2SCR stands for 2 Smart Card Reader,
- iWL280 (signature capture),
- iWL350 (for development only)

Telium 1:

- EFT930

1.1.2. Countertop terminals

Telium 2:

- iCT220, iCT250,
- E532

Telium 1:

- EFT SMART Plus,
- EFT SMART,
- EFT30

1.1.3. Signature capture terminals (Retail pinpads)

Telium 2:

- iSC250,
- iSC350

1.1.4. Pinpads

Telium 2:

- iPP320, iPP350,
- iPP3xx used as a smart card reader (Pinpad emulation mode).

Telium 1:

- ML30, ML30 color, ML30 color contactless.

'Booster only' pinpads:

- iPP220, iPP250, iPP280, PPC30, PPR30, P30, P30 Contactless, PP30, PP30S.

1.1.5. Unattended

Telium 1:
See UCM add-on package for the exhaustive list of CAD30.

Telium 2:
- iUC150, IUC180, iUP250 (for development only)

1.1.6. Satellite terminals

Telium 2:
- iST150.

Telium 1:
- TeliumPass Plus.

1.1.7. Mobile payment

Telium 2:
- iMP3xx (only hardware V4 are supported since SDK 8.0.1),
- SPM (iPA280).

1.1.8. French health care

- TWINs.

1.2. Terminals qualification status

1.2.1. List of terminals currently fully qualified

- EFTSMART, EFTSMART2
- EFT930G, EFT930P (health excepted), EFT930B (health excepted)
- EFT930SGEm, EFT930SEm, EFT930BCC, EFT930GCC
- iCT220, iCT250
- iWL220BT, iWL250G, iWL280
- iPP320, iPP350
- iSC250, iSC350
- E532

1.2.2. List of terminals which qualification is in progress

- EFT930W
- EFT930SG
- iWL250 3G
- EFT30 health
- EFT930P health
- EFT930B health
- ML30

1.2.3. List of terminals which will be fully qualified with the SDK9.0.1

- TWIN
- CAD30

1.3. Terminals certified PCI V3

The following terminals are certified for PCI v3:

iWL220	Since SDK 8.0.1
iWL250	Since SDK 8.0.1
iWL280	Since SDK 8.0.1
iSC250	Since SDK 8.0.1
iPP320	Since SDK 8.1
iPP350	Since SDK 8.1
iMP350	Since SDK 8.2
iCT2xx	Since SDK 8.2
iPP2xx	Since SDK 8.2

1.4. Public Key Infrastructure

This release supports PKI V3.

2. What's new?

Issues solved are detailed in paragraph 4.
Here are main evolutions coming with this Telium SDK release compared to the release 8.2.1

2.1. New terminals

- iUC150, iUC180 and iUP250 (for development only)

iUC150

iUC180

iUP250

2.2. New peripherals

- Bluetooth printer for iMP3xx.

2.3. New features

2.3.1. Graphical library GOAL

GOAL is the new graphical library used on Telium to enhance User Interface. It will allow the rendering of multiple objects such as button, layout, widget, list, edit box, images and so on.

This release provides:

- The API to develop applications with GOAL library;
- Telium Manager with the MMI developed with GOAL (If the GOAL component is not loaded into the terminal, the interface uses the legacy graphical mode (libgr colour mode)).

This SDK is intended to GOAL Beta projects that must be supported by Group till application is approved by customer.

This SDK can obviously be used for any purpose in a regular manner, as long as GOAL is not used for **development.**

2.3.1.1. Training requirement

It is mandatory to follow proper training before developing with GOAL functionality. Please refer to your usual contact.

2.3.1.2. Ingedev version

For development with GOAL functionality, the version of Ingedev must be at least 7.10. For development without GOAL, there is no incompatibility with previous versions.

2.3.1.3. Tutorial

The update of the GOAL tutorials, regarding the new Ingedev interface, will be done in the next SDK release.

2.3.1.4. Presentation

This Telium SDK is provided to develop applications with the new advanced graphic library GOAL.
GOAL stands for "Graphical Objects Advanced Library". This component is described in the CHM help file.

2.3.1.5. Examples of "GOAL" screen

2.3.1.6. Terminals compatibility

GOAL is supported by the following terminals.

- Wireless: iWL220, iWL250, iWL280, iWL350, EFT930 Color
- Countertop terminals: iCT220, iCT250
- Signature capture terminals: iSC250, iSC350
- Pinpads: iPP350, iPP320

2.3.1.7.Compatibility

- MMI: The Telium Manager provided with this SDK allows running applications developed with GOAL, with CGUI mode or with the legacy graphical mode (libgr colour mode).
- Memory: 16 Mbytes of Flash and 16 Mbytes of RAM on terminal are needed for applications developed with GOAL.

2.3.1.8. Catalogues

The integration of GOAL in the Telium SDK introduces changes in the Telium Manager catalogues provided.

The naming rules have been maintained for compatibility and to minimize the changes for users.

This sheet describes the application compatibility and Telium Manager MMI regarding names of catalogues.

Thunder	Catalogues names	Application compatibility	Telium Manager MMI
Thunder 1 and 2	xxx_GOAL_yyy.mZZ	GOAL and Libgr	GOAL
Thunder 1 and 2	xxx_CGUI_yyy.mZZ	CGUI, GOAL and Libgr	GOAL
Thunder 1 and 2	xxx_yyy.mZZ	Libgr	Libgr
Thunder 3	xxx_GOAL_yyy.mZZ	GOAL and Libgr	GOAL
Thunder 3	xxx_yyy.mZZ	CGUI, GOAL and Libgr	GOAL

The Telium manager displayed with CGUI interface doesn't exist anymore; it is replaced by the GOAL interface. The name xxx_CGUI_yyy.mZZ for a catalogue means that it is compatible with CGUI applications but the Manager interface is GOAL.

The Telium Manager catalogues xxx_MOCKUP.mZZ don't exist anymore. They were designed to use the Ingedev preview feature. If you want to use this feature, you have to load in your terminal, the catalogue CGUI_PREVIEW_PROXY.mZZ which is in the directory Components\CGUI_PREVIEW_PROXY, additionally to the CGUI manager catalogue.

The Telium Manager catalogues include NanoX, Plug-in Signature Capture and Plug-in Multimedia.
As a consequence, the previous plug-ins are no more delivered in the directory \Component\plugins.

2.3.2. Digest DLL

This new feature allows you to meet the need not to allow storage of unencrypted BIN codes by the merchant.

3. Highlighted points

3.1. Restriction for iPA280 and PCI PED 2.x compliance

During the PCI PED 2.x certification of the iPA280 devices, some constraints have been put at the level of communication of sensitive data from the Secure Payment Module (SPM) to the external world. The PDA part of the product has to be considered as the external world. The reason of this restriction is that the scope of the PCI PED evaluation was the SPM, which has a secure Telium architecture, and not the iPA280 product as a whole.

The restriction forbids communicating:

- Any APDU command response;
- Any cardholder data (i.e. ISO tracks 1 & 2 and their EMV counterpart).

It is also forbidden to receive APDU command queries from the external and to relay them to the smartcard. The restriction imposed by PCI SSC is not limited to banking cards. Direct communication to other types of cards (e.g. loyalty) is not allowed.

The communication APIs to establish communication between SPM and PDA propose some interfaces. It is for sure possible to address communication by using lower level functionalities. This must not be used to circumvent the protocol restrictions for communication.

Since cardholder data must remain within the SPM, the implication of this restriction is that payment applications have to be executed in the SPM and can not be based on a split design between SPM and PDA parts of the device. The PDA can be used for merchant application only (i.e. advertising, product selection)

3.2. Contactless

3.2.1. Best practices for Contactless

3.2.1.1. Field on/off

The contactless field is to be activated only when a contactless card is waited by the terminal. It must be stopped when the management of the contactless card is finished.
If the contactless field is opened all the time:

- On wireless terminals, product battery autonomy is reduced a lot;

- The contactless module and antenna are highly stressed and reliability could decrease quickly with time;

Applications have to manage the opening and the closing of the field according their business logic.

3.2.1.2. Implicit selection

Following terminals having the contactless feature inside are concerned: iWL2xx, iCT250, iSC2xx, iSC3xx, EFT930 GCC, EFT930 BCC, iPP3XX, iPA280 (SPM), ML30C and P30C.

Implicit selection is not recommended and must be managed with caution.
Due to physical reason, implicit selection can lead to unexpected issues, for example, at the beginning of the swipe, the card would possibly enter the antenna field and contactless chip would be handled instead of magnetic track.

3.2.1.3. Use of PSTN modem with contactless activated

The electro-magnetic field created when the contactless is activated, on an integrated terminal, prevents the usage of the PSTN modem with contactless activated.
This is not a software issue, and no software solution exists. The contactless field shall not be activated at the same time as the modem.

Currently, the issue exists only on the iCT250, which is the only Ingenico integrated terminal with contactless and PSTN modem.
(For instance, on EFT930BCC or EFT930GCC with modem, it works, because the modem is on the cradle, and the distance between the modem and the contactless field is sufficient).

3.2.2. Add-on Contactless

The add-on contactless doesn't exist anymore.
All components provided previously in this package are now by default since Telium SDK 8.1. It concerns

- TPass library and component;
- Entry point component;
- GTL library;
- Contactless sample.

3.2.3. Card supported

The list of cards supported by this SDK is given in the paragraph **Erreur ! Source du renvoi introuvable.**: **Erreur ! Source du renvoi introuvable.** .

Recommendation:
Even if a card is managed since an old SDK or Add-On Contactless, usage of a recent SDK is strongly recommend because bugs could have been fixed.

3.3. Family name

The family name, defined in the descriptor used to sign the binary, must follow the pattern "<NAME><VV><AA>" where:

- NAME is the radical of application (maximum 7 ASCII characters);
- VV is the version (2 number);
- AA is the amendment (2 number)

3.4. Pinpad system

To avoid problems when a non mock-up pinpad is linked to a mock-up terminal, the terminal mock-up catalogues don't include pinpad systems. So, you have to load the pinpad system (located in the directory "Component\OS") according to the pinpad you are using.

3.5. DIR system version downgrade

It is not possible to downgrade from a system managing directories (catalogue XXX_DIR.mYY) to a system which not manages directories (catalogue XXX.mYY).

3.6. Reserved numbers

Service numbers from 1 to 100 and from 0x1E00 à 0x1FFF are reserved for Ingenico internal use.
Tag numbers used by applications must be taken in the range 0x9FA000-0x9FAFFF.

3.7. EFT930 embedding 8MB of flash

It is possible to use this SDK on EFT930 which has only 8 MB of flash (special system catalogue is provided: EFT930_8MO_PROD.m31). This catalogue is not a DIR one. If you use Ingestate you may need some adjustments: please contact your R&D Regional Interface for more information.

For SDK 8.0.x, SDK 8.1 and SDK 8.1.1:
It is forbidden to load a catalogue designed for 8MB terminals on a terminal loaded with a generic catalogue (that is to say non-8 MB). You must contact the Ingenico support for the rules of this migration.

3.8. Fix in link layer

A bug has been identified in the LinkLayer component, in versions 3.22 and 3.23 (SDK 8.1.2, SDK 8.1.3, SDK 8.2 and SDK 8.2.1).
For these versions only, on Bluetooth terminals, not associated with any base, the connection (call to LL_Connect()) fails when using the physical link LL_PHYSICAL_V_DEFAULT_TCPIP, with return code -1013 (LL_ERROR_NETWORK_NOT_SUPPORTED).
This bug is now corrected in SDK 9.0 (Link Layer version 3.25)

4. Issues solved in this release by component

This chapter will be completed in definitive version.

See table in chapter Erreur ! Source du renvoi introuvable. **"Versions of components" for the list of versions of components provided in this Telium SDK.**

4.1. Telium System

Main points delivered in this release are listed below.

4.1.1. System booster

Following points are delivered in this release.

Internal tracker	SUPTEL	Description
10747	SUPTEL-3046	Case of touch screen frozen fixed
10717		GPRS immunity improvement
11210	SUPTEL-3311	Fix for iPP350 sometimes rebooting when contactless transaction was started with synchronous card inserted
10743-10948	SUPTEL-2874	[ICT220] Improvement in MagStripe reading
11054		Add AT88SC102 smartcard synchronous driver.
11055		Add AT88SC1608 smartcard synchronous driver.
11121		Correct CBC authentication in SLE4436 driver.
11184		Corrected issue on booster reboot when previous exception on swipe management.
10785		Manages AT24C64 synchronous card in GFM32K driver.
10967	SUPTEL-3201	On SLE4428 and GFM2K cards, support of the following command added: cmdData[] = {0x00, 0xB0, 0x00, 0x00, 0x00}

4.1.2. System Thunder

Following points are delivered in this release.

Internal tracker	SUPTEL	Description
6833		French healthcare: When SYS_FIOCTL_USB_DEVICE_SERIAL_NUMBER_ENABLE is used in iWL terminal, USB serial number is also returned by Bluetooth base
8968		Now the USB (COM5) supervision process is activated on iPP3 as on ML30

9109		iWL220/iWL250: modification of the default backlight value (set to 30%) CHM help file improvement on backlight fioctl (OS API)
9480		Improvement of samples provided in Telium SDK's CHM help file
9869	SUPTEL-2431	updating of callhost documentation
10034		To save energy, the buzzer values of iPP3xx, in pinpad emulation mode, are restricted (the same restrictions as the standalone mode. cf How To Develop on iPP3xx §3.3.4)
10520	SUPTEL-3339	-1-Bug in PrintPolice API fixed -2-Fake delay when calling pprintf8859()/PrintPolice() before printing through file primitives on EFT930 platform fixed
10535	SUPTEL-2884 et 2933	On iWl 220, 250, 280, trace tool can be connected using COM0 or COM1 on the base. add "TRACE_DEV=3" or "TRACE_DEV=1" in SYSTEM.CFG
10671	SUPTEL-2070	Updating of the pprint documentation (ESC sequence)
10760		BT printer: driver can communicate with following printers: ▪ Custom - My Printer ▪ Seiko - S245 ▪ Zebra - EM220
10799		Documentation improvement for oem_sysfioctl.h
10850		[iWL350] Diagnostic touch screen panel properly activated
10877	SUPTEL-3095	On iWL280, low power procedure fixed to avoid reset when fopen ("CAM0","rw") is called just after shutdown();
10897		Counter LIFE_SWIPE_2_IS_ISO2_OK added. It saves accumulated number of ISO2 reading requests with correct ISO7811-2 decoding result.
10928		On external printer, fix for the printing of an image not occupying the full width of paper. Carriage return is now OK.
10938		On iMP3xx, TCP/IP without SSL communications is now possible
10969	SUPTEL-3107	Documentation about synchronous card update
10992		New terminals E532_V34 supported
10999	SUPTEL-2603	Add a new fioctl SYS_FIOCTL_SET_CALLHOST_TCP_TIMEOUT to configure the TCP or SSL connection timeout of callhost.
11016		modification of documentation about USB deprecated fioctl
11018	SUPTEL-3233	Clarification in pprintf and fprintf functions's documentation
11024	SUPTEL-3407	SYS_FIOCTL_GET_CLESS_LED_TYPE available for Thunder 3 terminals
11035		[iWL220] reduction of energy consumption in standby mode
11037	SUPTEL-2906	Clarification in pprintf function's documentation
11056		[iWL250] API added : plays an audio file
11063	SUPTEL-3284	When a system task is detected in infinite loop, the name of the task is logged in APPRESET.DIA with his current program counter [pc:xxxxxxxx] : "27/10/11 14:57 HISR SYSTEM H 0@00000000 SWI:0:Infinite loop detected in task DBUG [pc:2006A67E]"
11089	SUPTEL-2721	Use COM_EXT event for com COM_MGBX
11090	SUPTEL-3287	Paper feed using yellow key is disabled on iWL280. Paper feed key can be used.
11096		Improved downloading on iWL 280, when using PPP over ISDN.
11097	SUPIPA-1234	A reset at startup fixed in startup procedure on SPM.
11099		Improvement of downloading on iWL 220/250, when using PPP over ISDN.
11119		Improvement in documentation (crypto_def.h)
11154		[iCT, iSC and iWL bases] generation of BAT.DIA added

11159		[iSMP] case of issue in iPhone battery charge fixed
11161		Issue in SMS sending (since SDK8.1) fixed.
11163		oem_ext_printer.h is removed. EXT_PRINTER uses fioctl defined in oem_printer.h. The previous values are kept for compatiblity.But applications, which use oem_ext_printer.h, should rename the fioctl.
11170		Improvement of Telium bitmap files
11172		AT88SC synchronous driver is renamed to AT88SC1003.
11180		[EFT930] Reset when printing with full battery fixed
11186		Management of new AT88SC synchronous cards added
11246		On UPT, fix for reset with Manager command "F.7" (LLT) when Com5 is used
11252	SUPTEL-2475	Case of reboot during a remote_download session fixed
11425	SUPTEL-3416	[EFT930] ISO1 track not read with some cards, fixed

4.1.3. Cless driver

Following point is delivered in this release.

Internal tracker	SUPTEL	Description
11321	SUPTEL-3445/3306/3521	Improved contactless collision detection on ICT250 and IPA280

4.2. Telium Manager

4.2.1. Evolutions

Following points are delivered in this release.

Internal tracker	SUPTEL	Description
8539	SUPTEL-2210	Displays only pinpads allowed in the pinpad initialization menu.
9514	SUPTEL-2245	Gives all AID to EMVDC for application selection (no more optimization with partial AID)
9576/ 9793	SUPTEL-2326	HEADER_SERVICE is not described in the Telium manager documentation because this service has never worked. It has been removed.
9976	SUPTEL-3083	New product iWL2XX-3G
10007		Use of pointer NULL fixed
10017		Use of GOAL in Manager
10172	SUPTEL-2672	New API __pprintf8859(). See Telium SDK CHM help file
10225		License functionality with CGUI interface managed
10462	SUPTEL-2866	Documentation only (value WGUI for mask field)
10591	SUPTEL-2935	__LoadDefaultOptions ()didn't work all the time on an iWL250 Bluetooth with Ethernet base.
10642	SUPTEL-2953	New sample into CHM for _PrintBmpXY function

10745		The "plug" bitmap is displayed in header when : 1) terminal is on the base a) normal "plug" bitmap 2) USB is plugged a) normal "plug" bitmap on colour POS b) empty "plug" bitmap on B/W POS
10769	SUPTEL-3156	France: add new payment mode: contactless can be disabled
10787	SUPTEL-3041	Incendo Service name is now displayed in the terminal header
10812		Manager supports Bluetooth connection with external device
10871	SUPTEL-2970	Callhost modification to support domain name adress as well as IP connection. New TAG in MANAGER .PAR 020429 HOST NAME
10905		Added new function GetProductName() which returns the real name of the terminal
10933	SUPTEL-3134	It is possible to disable Keys F3 and F4 in G_List_Entry
10958		Functions name in French translated into English (compatibility maintained)
10983	SUPTEL-3208	Correction of a dead lock in RedrawUserArea
11005		Fixed conflict between the language DLL and the customization of messages
11027	SUPTEL-3262	IST1XX_init_color updated
11040		BACKLIGHT_FIOCTL_SET_POWER_LEVEL called to optimize low mode state
11049		Micro-line were lost when printing
11058		Now, Get_StateWGUI() returns TRUE on CGUI manager. It returns FALSE on GOAL manager.
11083		CGUI evolution, Give_Browser_HTML et Give_Canvas functions are removed
11132		Case of failure in PrintBmp fixed
11140		Displays Bluetouth identifier into header for Bluetooth external device.
11261	SUPTEL-3333	New function PSQ_GetSDKInfos which returns SDK version
11332		[iMP3XX] New API EXT_xxx : provides the ability to know the availability of an Ethernet connection
11351		"SDK Release" ticket : GOAL version added
11367		Health only: new catalogs
11386		Health only: Fix for bad status returned by OS_CamEtat
11438	SUPTEL-3554	Applications can now read/write messages received in CUSTOMIZE_MESSAGE entry point
11447	SUPTEL-3576	[IP/PSTN] MODEM V34 is usable in remote downloading session
10560		Issue into GetMacAddress on BlueTooth product. Since the SDK 8.1.2,this function is no longer in EF30.LIB but in the DLL EXTENS. When an application, using this function, is generated with the SDK 8.1.2, it will only work correctly on a terminal loaded with the components of a SDK 8.1.2 or higher

4.3. Security

4.3.1. DLL Security

No evolution.

4.3.2. Security Extend library

Following points are delivered in this release.

Internal tracker	SUPTEL	Description
8281		NULL pointer for Initial Vector fixed Adding SEC_DukptComputeMAC_AC_lg, SEC_DukptVerifyMAC_AC_lg for variable MAC length
9795		GNUARM4 libraries added

4.3.3. DLL E2EE

No evolution.

4.3.4. Schemes

Last schemes certified are included in this SDK.

4.4. Communication

4.4.1. Link Layer

Following points are delivered in this release.

Internal tracker	SUPTEL	Description
10991		Add support of the DCD signal on USB serial ports (COM5, COM6 and COMU)
11032	SUPTEL-3164	A new parameter has been added to Link Layer configuration: LL_TCPIP_T_SSL_TCP_CONNECT_TIMEOUT. This new parameter adds a specific timeout for the TCP connection embedded in a SSL connection. When this parameter is set (value different of 0) the Link Layer will manage two timeout for a SSL connection: - one for only the TCP (LL_TCPIP_T_SSL_TCP_CONNECT_TIMEOUT) - one for TCP+SLL (LL_TCPIP_T_CONNECT_TIMEOUT) (like in previous version of Link Layer).
11146		This evolution enables TCP communications on iSMP using the Link Layer. It uses the TCP_ISMP DLL which performs TCP IP communications on iMP3xx without SSL. To use this one must set the physical layer to LL_PHYSICAL_V_TCP_AIAP during the Link Layer configuration

4.4.2. Pack IP-SSL

Following points are delivered in this release.

Internal tracker	SUPTEL	Description
10996		[iMP3xx] "domain name" type adresses are now supported
11098	SUPTEL-3303	Add documentation of SSL_ProfileGetKeyFile function.
11019	SUPTEL-3224	Add X509_CheckPrivateKey function to the SSL DLL to check consistency between a certificate and a private key file.
11003	SUPTEL-2602	Division by zero fixed in Resolver SetOptiopn
10813	SUPTEL-3067	Documentation about the return value of PPP_Open corrected. Defines remain unchanged for backward compatibility reasons.
11149	SUPTEL-3241	Improvement for documentation on ResolverSetOption()
10311	SUPTEL-2723	Improvement of documentation on EthernetGetOption()
10625	SUPTEL-2900	New IP_Cpp_.lib and FTP_Cpp_.lib added for C++ compliancy.
11192	SUPTEL-2935	The option __DFL_BT_NO_REBOOT can be set to a nonzero value to avoid a reboot on a Bluetooth product not connected to its base.
10998		When checking the domain name SSL, wildcards are now supported

4.4.3. FTP

No evolution.

4.4.4. SNMP

No evolution.

4.5. Display

4.5.1. GOAL

This is a new feature.
It is integrated in the Telium Manager catalogues as described above.

4.5.2. DLL Image

No evolution.

4.5.3. Fonts

No evolution.

4.5.4. CGUI / CGUI tools

Internal tracker	SUPTEL	Description
5331		Animated GIFs are no longer slowed down when multiple browsers are displayed

5229		CGUI terminal no more sends a "Reset" frame (RST TCP / IP) to the web server after receiving an image (. GIF or. WGU)

4.5.5. Plug-ins

Now delivered in Telium manager catalogues as described above.

4.6. Contactless

4.6.1. DLL TPass

Following points are delivered in this release.

Internal tracker	SUPTEL	Description
11288		Fix a reset that occurred with SDK 8.1 and SDK 8.2 when the List of AIDs contactless application selection is used and when the API is not present.
11324		New contactless option in tag TAG_EP_AID_OPTIONS to enable the usage of Entry Point pre-processing results for List of AIDs application selection method.
11196	SUPTEL-3379	Update documentation of function Cless_ExplicitSelection_DetectionPrepareForRestart().
11245		New function Cless_ExplicitSelection_Selection_IsClessAllowed added. This function indicates, before opening the field, it at least one application selection method (i.e. APDU Before/After, PPSE or List Of AID) can be used during application selection (according to configured methods and pre processing results).

4.6.2. Entry Point

No evolution.

4.6.3. TeliumPass

No evolution.

4.7. Applications

4.7.1. Incendo Online browser

Technical documentation and the Incendo SDK are provided with Ingedev (from version 7.8.0).

4.7.1.1. Memory

Before deploying this solution, please check the memory usage of your terminals.

4.7.1.2. Migration to this version

4.7.1.2.1. Migration from a version before 3.0.4

Incendo Online smart browser was previously delivered as an independent package (up to version 3.0.3). It was designed to be signed with region security keys.
The version in this Telium SDK is signed with manufacturer key. So the application type is different between these two versions. If you have already deployed the browser, to migrate to the version included in a Telium SDK, you must manage the change of application type. For further details, please contact the Incendo support.

4.7.1.3. Compatibility

4.7.1.3.1. Terminals managed

Minimal hardware prerequisites are:

- Terminal is Ethernet or GPRS;
- Terminals is Ingetrust ready;
- Minimum of 16 MB of Flash is mandatory;
- 16 MB of RAM are recommended but not mandatory. 8 MB is possible if terminal is Incendo Online only (no other applications).

Incendo Online is compatible with the following terminals:

- EFT930 Color (Booster 2 type),
- iCT220, iCT250,
- iWL220, iWL250

You must not use it on other terminals.

Support of iSC250, iSC350 and iWL280 will be available in a future release.

4.7.1.3.2. EMV packages compatibility

Incendo smart Browser is compatible with the following EMV packages:

- Version 19 or 20.1

4.7.1.4. Evolutions

No evolution.

4.7.2. Image Loader

At the end of the Telium SDK setup you can choose to install Image Loader on your PC. Documentation is available in this installed package.

4.7.2.1. Evolutions

No evolution.

4.8. AVL

AVL stands for Added Value Libraries.
Following points are delivered in this release.

4.8.1. XML

Internal tracker	SUPTEL	Description
7370		New API functions to parse XML documents, with no restriction on attribute size (name and value). Former API functions are still available, but are deprecated.
6947		New API XMLs_ParseFile() available to parse a file stored in flash.

4.8.2. Barcode

Internal tracker	SUPTEL	Description
11181	SUPTEL-3349	Parameters inversion of nSize and nMode in Print_QR_BarCode

4.9. Full configuration for local download for iPP320 in pinpad emulation mode

A binary concatenates the Telium system (including contactless driver) and the Telium manager for an iPP3 used in pinpad emulation for local download mode. It is delivered in the directory: Component\iPP3_EmulationPinpad\Package
Please see description in the CHM help file of the Telium SDK (SDK General Documentation > HOW TO DEVELOP user guide > How to use iPP3xx as a smart card reader).

4.9.1. DLL PPLoad evolution

The DLL PPLoad is present in the host terminal and allows the loading of the full configuration to the iPP3.
No evolution.

4.10. SDK features

Following points are delivered in this release.

Internal tracker	SUPTEL	Description
11431		Sample for service call 100 added in SDK\Samples\Service100
10837	SUPTEL-3015	Some schemes were wrongly displayed in Telium Manager user's guide
10872	SUPTEL-3069	Standby mode precision added in "how to develop" for portable terminals
11303	SUPTEL-3459	UMS on iWL Bluetooth base precision added in "how to develop on iWL"

5. Evolutions in API

5.1. Deprecated functions

- New file WGUI_Deprecated.h (WGUI_ERROR WGUI_Display_Create, WGUI_Display_Resize, WGUI_ERROR WGUI_Display_Destroy)

- Xmls.h (FT 6947 7370, See AVL §4.8)

5.2. Removed functions

Bitmap.h (see FT 9576, 9793): functions EraseHeader, Refresh(xxx)Header, EraseInfoArea, RefreshInfoArea are removed

- Etat.h (see FT 9576, 9793): function header_service is removed
- Util_sq.h : SQ_Raz_montant, SQ_Maj_montant and USQ_Aff_montant have not to be public. There are removed.
- Wgui_services.h (FT 11083): CGUI evolution, Give_Browser_HTML et Give_Canvas functions are removed.

5.3. Others

- Appel.h: HeaderService field removed in structure param.h (union)
- Libgr.h: (Evolution GOAL) SaveScreenExtended returns now a pointer to internal screen
- Oem.h (FT10871): new fields in structure S_PARAM_TLCHGT, structure size increases (267 bytes)
- Param.h (FT10871): new fields in structure S_APN_PARAM, structure size doesn't change

6. Add-ons to Telium SDK

The following table presents the versions of recommended add-ons to use with this SDK.

Add on	Recommended version to use with this SDK	Comment
Easy Path To EMV	20.2	
Add On Contactless (New architecture)	Removed	Components previously in this add-on are in the Telium SDK since 8.1
Easy Path To Contactless	3. 07.02	
Add On PCL for iPA280	1.18	
Add On PCL for iWP	1.15	
Add On PCL for iMP3xx	1.02	
Add On Morpho	1.06	
Add On Telicapt	2.17	
Add On UCM	2.06.01	
Add On SPDH	1.01	
Add On APACS 40 Generic	1.08	
Add On ISO8583 Generic	3.02	

SDK8.2.1 Release note

1. Standard development platforms

This SDK release is compatible with the following products.

1.1. List of terminals

1.1.1. Wireless

Telium 2:

- iWL220B, iWL220G,
- iWL250B, iWL250G ,
- iWL250 3G,
- iWL250 2SCR, 2SCR stands for 2 Smart Card Reader,
- iWL280 (signature capture),
- iWL350 (for development only)

Telium 1:

- EFT930 colour,
- EFT930 black and white.

1.1.2. Countertop terminals

Telium 2:

- iCT220, iCT250,
- iCT2xx PCI V3
- E532

Telium 1:

- EFT SMART Plus,
- EFT SMART,
- EFT30

1.1.3. Signature capture terminals (Retail pinpads)

- iSC250,
- iSC350

1.1.4. Pinpads

Telium 2:

- iPP320, iPP350,
- iPP3xx used as a smart card reader (Pinpad emulation mode).

Telium 1:

- ML30, ML30 color, ML30 color contactless.

'Booster only' pinpads:

- iPP220, iPP250, iPP280, PPC30, PPR30, P30, P30 Contactless, PP30, PP30S.
- iPP2xx PCI V3

1.1.5. Unattended

See UCM add-on package for the exhaustive list.

1.1.6. Satellite terminals

Telium 2:

- iST150.

Telium 1:

- TeliumPass Plus.

1.1.7. Mobile payment

Telium 2:

- iMP3xx (only hardware V4 are supported since SDK 8.0.1),
- SPM (iPA280).

1.1.8. French health care

- TWINs.

1.2. Terminals certified PCI V3

The following terminals are certified for PCI V3:

iWL220	Since SDK 8.0.1
iWL250	Since SDK 8.0.1
iWL280	Since SDK 8.0.1
iSC250	Since SDK 8.0.1
iPP320	Since SDK 8.1
iPP350	Since SDK 8.1
iMP350	Since SDK 8.2
iCT2xx	Since SDK 8.2
iPP2xx	Since SDK 8.2

1.3. Public Key Infrastructure

This release supports PKI V3.

2. What's new?

Issues solved are detailed in paragraph 4.
Here are main evolutions coming with this Telium SDK release compared to the release 8.2.

2.1. Fixes

- It was not possible to use the SDK 8.2 on CAD30 range of product. During the start-up of these terminals, a reset occurred while opening of the backlight device. This issue is fixed.

- Improvements of performance in GPRS mode

3. Highlighted points

3.1. Restriction for iPA280 and PCI PED 2.x compliance

During the PCI PED 2.x certification of the iPA280 devices, some constraints have been put at the level of communication of sensitive data from the Secure Payment Module (SPM) to the external world. The PDA part of the product has to be considered as the external world. The reason of this restriction is that the scope of the PCI PED evaluation was the SPM, which has a secure Telium architecture, and not the iPA280 product as a whole.

The restriction forbids communicating:
- Any APDU command response;
- Any cardholder data (i.e. ISO tracks 1 & 2 and their EMV counterpart).

It is also forbidden to receive APDU command queries from the external and to relay them to the smartcard. The restriction imposed by PCI SSC is not limited to banking cards. Direct communication to other types of cards (e.g. loyalty) is not allowed.

The communication APIs to establish communication between SPM and PDA propose some interfaces. It is for sure possible to address communication by using lower level functionalities. This must not be used to circumvent the protocol restrictions for communication.

Since cardholder data must remain within the SPM, the implication of this restriction is that payment applications have to be executed in the SPM and can not be based on a split design between SPM and PDA parts of the device. The PDA can be used for merchant application only (i.e. advertising, product selection)

3.2. Contactless

3.2.1. Best practices for Contactless

3.2.1.1. Field on/off

The contactless field is to be activated only when a contactless card is waited by the terminal. It must be stopped when the management of the contactless card is finished.

If the contactless field is opened all the time:

- On wireless terminals, product battery autonomy is reduced a lot;
- The contactless module and antenna are highly stressed and reliability could decrease quickly with time;

Applications have to manage the opening and the closing of the field according their business logic.

3.2.1.2. Implicit selection

Following terminals having the contactless feature inside are concerned: iWL2xx, iCT250, iSC2xx, iSC3xx, EFT930 GCC, EFT930 BCC, iPP3XX, iPA280 (SPM), ML30C and P30C.

Implicit selection is not recommended and must be managed with caution.
Due to physical reason, implicit selection can lead to unexpected issues, for example, at the beginning of the swipe, the card would possibly enter the antenna field and contactless chip would be handled instead of magnetic track.

3.2.1.3. Use of PSTN modem with contactless activated

The electro-magnetic field created when the contactless is activated, on an integrated terminal, prevents the usage of the PSTN modem with contactless activated.
This is not a software issue, and no software solution exists. The contactless field shall not be activated at the same time as the modem.

Currently, the issue exists only on the iCT250, which is the only Ingenico integrated terminal with contactless and PSTN modem.
(For instance, on EFT930BCC or EFT930GCC with modem, it works, because the modem is on the cradle, and the distance between the modem and the contactless field is sufficient).

3.2.2. Add-on Contactless

The add-on contactless doesn't exist anymore.
All components provided previously in this package are now by default since Telium SDK 8.1. It concerns

- TPass library and component;
- Entry point component;
- GTL library;
- Contactless sample.

3.2.3. Card supported

The list of cards supported by this SDK is given in the paragraph **Erreur ! Source du renvoi introuvable.**: **Erreur ! Source du renvoi introuvable.** .

Recommendation:
Even if a card is managed since an old SDK or Add-On Contactless, usage of a recent SDK is strongly recommend because bugs could have been fixed.

3.3. Family name

The family name, defined in the descriptor used to sign the binary, must follow the pattern "<NAME><VV><AA>" where:

- NAME is the radical of application (maximum 7 ASCII characters);
- VV is the version (2 number);
- AA is the amendment (2 number)

3.4. Pinpad system

To avoid problems when a non mock-up pinpad is linked to a mock-up terminal, the terminal mock-up catalogues don't include pinpad systems. So, you have to load the pinpad system (located in the directory "Component\OS") according to the pinpad you are using.

3.5. DIR system version downgrade

It is not possible to downgrade from a system managing directories (catalogue XXX_DIR.mYY) to a system which not manages directories (catalogue XXX.mYY).

3.6. Reserved numbers

Service numbers from 1 to 100 and from 7680 à 8191 are reserved for Ingenico internal use.
Tag numbers used by applications must be taken in the range 9FA000-9FAFFF.

3.7. EFT930 embedding 8MB of flash

It is possible to use this SDK on EFT930 which has only 8 MB of flash (special system catalogue is provided: EFT930_8MO_PROD.m31). If you use Ingestate you may need some adjustments: please contact your R&D Regional Interface for more information.

For SDK 8.0.x, SDK 8.1 and SDK 8.1.1:
It is forbidden to load a catalogue designed for 8MB terminals on a terminal loaded with a generic catalogue (that is to say non-8 MB). You must contact the Ingenico support for the rules of this migration.

4. Issues solved in this release by component

See table in chapter 6 "Versions of components" for the list of versions of components provided in this Telium SDK.

4.1. Telium System

Main points delivered in this release are listed below.

4.1.1. System Thunder

Internal tracker	SUPTEL	Description
10866		iMP3xx: In case of low battery level (<5%), the product goes automatically in "Limited Service" as for IWL products. In this case the Telium Manager displays a pop-up information to plug the ISMP to a power Supply
11182 11191 11197		GPRS functionality improved

4.2. Telium Manager

4.2.1. Evolutions

Following points are delivered in this release.

Internal tracker	SUPTEL	Description
10418		It was not possible to use the SDK 8.2 on CAD30 range of product. During the start-up of these terminals, a reset occurred while opening of the backlight device. This issue is fixed.
10830	SUPTEL-2922	GPRS dysfunction in Georgia with iCT220 fixed : time out value adapted to new SIM cards
11156	SUPTEL-3305	No more reboot on iWL 3G if 3G connection not established

4.3. Security

4.3.1. DLL Security

No evolution.

4.3.2. Security Extend library

No evolution.

4.3.3. DLL E2EE

4.3.3.1. Overview

Binary is included in the Telium Manager catalogue.

It is provided for the following terminals:

- iWL220, iWL250, iWL280,
- iSC250, iSC350,
- iMP350,
- iPP320, iPP350,
- iCT220, iCT250,
- SPM.

4.3.3.2. Evolutions

No evolution.

4.3.4. Schemes

Last schemes certified are included in this SDK.

4.4. Communication

4.4.1. Link Layer

No evolution.

4.4.2. Pack IP

No evolution.

4.4.3. FTP

No evolution.

4.4.4. SNMP

No evolution.

4.4.5. SSL

No evolution.

4.5. Display

4.5.1. DLL Image

No evolution.

4.5.2. Fonts

No evolution.

4.5.3. CGUI / CGUI tools

No evolution.

4.5.4. Plug-in Signature Capture

No evolution.

4.5.5. Plug-in Multimedia

No evolution.

4.6. Contactless

4.6.1. DLL TPass

No evolution.

4.6.2. Entry Point

No evolution.

4.6.3. TeliumPass

No evolution.

4.7. Applications

4.7.1. Incendo Online browser

Technical documentation and the Incendo SDK are provided with Ingedev (from version 7.8.0).

4.7.1.1. Memory

Before deploying this solution, please check the memory usage of your terminals.

4.7.1.2. Migration to this version

4.7.1.2.1. Migration from a version before 3.0.4

Incendo Online smart browser was previously delivered as an independent package (up to version 3.0.3). It was designed to be signed with region security keys.
The version in this Telium SDK is signed with manufacturer key. So the application type is different between these two versions. If you have already deployed the browser, to migrate to the version included in a Telium SDK, you must manage the change of application type. For further details, please contact the Incendo support.

4.7.1.3. Compatibility

4.7.1.3.1. Terminals managed

Minimal hardware prerequisites are:

- Terminal is Ethernet or GPRS;
- Terminals is Ingetrust ready;
- Minimum of 16 MB of Flash is mandatory;
- 16 MB of RAM are recommended but not mandatory. 8 MB is possible if terminal is Incendo Online only (no other applications).

Incendo Online is compatible with the following terminals:

- EFT930 Color (Booster 2 type),
- iCT220, iCT250,
- iWL220, iWL250

You must not use it on other terminals.

Support of iSC250 and iSC350 will be available in a future release.

4.7.1.3.2. EMV packages compatibility

Incendo smart Browser is compatible with the following EMV packages:

- Version 19 or 20.1

4.7.1.4. Evolutions

No evolution.

4.7.2. Image Loader

At the end of the Telium SDK setup you can choose to install Image Loader on your PC. Documentation is available in this installed package.

4.7.2.1. Evolutions

No evolution.

4.8. AVL

AVL stands for Added Value Libraries.
No evolution.

4.9. Full configuration for local download for iPP320 in pinpad emulation mode

A binary concatenates the Telium system (including contactless driver) and the Telium manager for an iPP3 used in pinpad emulation for local download mode. It is delivered in the directory: Component\iPP3_EmulationPinpad\Package
Please see description in the CHM help file of the Telium SDK (SDK General Documentation > HOW TO DEVELOP user guide > How to use iPP3xx as a smart card reader).

4.9.1. DLL PPLoad evolution

The DLL PPLoad is present in the host terminal and allows the loading of the full configuration to the iPP3.
No evolution.

4.10. SDK features

Following points are delivered in this release.

Internal tracker	SUPTEL	Description
11092		In the CHM help file provided in SDK 8.2, the search by index didn't work for some functions.

5. Add-ons to Telium SDK

The following table presents the versions of recommended add-ons to use with this SDK.

Add on	Recommended version to use with this SDK	Comment
Easy Path To EMV	20.1	
Add On Contactless (New architecture)	Removed	Components previously in this add-on are in the Telium SDK since 8.1
Easy Path To Contactless	3. 07	
Add On PCL for iPA280	1.17	
Add On PCL for iWP	1.15	
Add On PCL for iMP3xx	1.01	
Add On Morpho	1.06	
Add On Telicapt	2.17	
Add On UCM	2.06.01	
Add On SPDH	1.01	
Add On APACS 40 Generic	1.08	
Add On ISO8583 Generic	3.02	

SDK8.2 Release note

1. Standard development platforms

This SDK release is compatible with the following products.

1.1. List of terminals

1.1.1. Wireless

Telium 2:

- iWL220B, iWL220G,
- iWL250B, iWL250G ,
- iWL250 3G (for production),
- iWL250 2SCR, 2SCR stands for 2 Smart Card Reader,
- iWL280 (signature capture),
- iWL350 (for development only)

Telium 1:

- EFT930 colour,
- EFT930 black and white.

1.1.2. Countertop terminals

Telium 2:

- iCT220, iCT250,
- iCT2xx PCI V3
- E532 (for production)

Telium 1:

- EFT SMART Plus,
- EFT SMART,
- EFT30

1.1.3. Signature capture terminals (Retail pinpads)

- iSC250,
- iSC350

1.1.4. Pinpads

Telium 2:

- iPP320, iPP350,
- iPP3xx used as a smart card reader (Pinpad emulation mode).

Telium 1:

- ML30, ML30 color, ML30 color contactless.

'Booster only' pinpads:

- iPP220, iPP250, iPP280, PPC30, PPR30, P30, P30 Contactless, PP30, PP30S.
- iPP2xx PCI V3

1.1.5. Unattended

See UCM add-on package for the exhaustive list.

1.1.6. Satellite terminals

Telium 2:

- iST150.

Telium 1:

- TeliumPass Plus.

1.1.7. Mobile payment

Telium 2:

- iMP3xx (only hardware V4 are supported since SDK 8.0.1),
- SPM (iPA280).

1.1.8. French health care

- TWINs.

1.2. Terminals certified PCI V3

The following terminals are certified for PCI V3:

iWL220	Since SDK 8.0.1
iWL250	Since SDK 8.0.1
iWL280	Since SDK 8.0.1
iSC250	Since SDK 8.0.1
iPP320	Since SDK 8.1
iPP350	Since SDK 8.1
iMP350	Since SDK 8.2

1.3. Public Key Infrastructure

This release supports PKI V3.

2. What's new?

Issues solved are detailed in paragraph 4.
Here are main evolutions coming with this Telium SDK release compared to the release 8.1.2.

2.1. New terminals

- IWL350 (for development only)
- IWL 250 3G is now delivered for production

2.2. Main evolutions

- New PID/VID managed,
- Improvements for iMP3xx,
- Swipe improvement on booster 3 terminals.

3. Highlighted points

3.1. Restriction for iPA280 and PCI PED 2.x compliance

During the PCI PED 2.x certification of the iPA280 devices, some constraints have been put at the level of communication of sensitive data from the Secure Payment Module (SPM) to the external world. The PDA part of the product has to be considered as the external world. The reason of this restriction is that the scope of the PCI PED evaluation was the SPM, which has a secure Telium architecture, and not the iPA280 product as a whole.

The restriction forbids communicating:

- Any APDU command response;
- Any cardholder data (i.e. ISO tracks 1 & 2 and their EMV counterpart).

It is also forbidden to receive APDU command queries from the external and to relay them to the smartcard. The restriction imposed by PCI SSC is not limited to banking cards. Direct communication to other types of cards (e.g. loyalty) is not allowed.

The communication APIs to establish communication between SPM and PDA propose some interfaces. It is for sure possible to address communication by using lower level functionalities. This must not be used to circumvent the protocol restrictions for communication.

Since cardholder data must remain within the SPM, the implication of this restriction is that payment applications have to be executed in the SPM and can not be based on a split design between SPM and PDA parts of the device. The PDA can be used for merchant application only (i.e. advertising, product selection)

3.2. Contactless

3.2.1. Best practices for Contactless

3.2.1.1. Field on/off

The contactless field is to be activated only when a contactless card is waited by the terminal. It must be stopped when the management of the contactless card is finished.
If the contactless field is opened all the time:

- On wireless terminals, product battery autonomy is reduced a lot;
- The contactless module and antenna are highly stressed and reliability could decrease quickly with time;

Applications have to manage the opening and the closing of the field according their business logic.

3.2.1.2. Implicit selection

Following terminals having the contactless feature inside are concerned: iWL2xx, iCT250, iSC2xx, iSC3xx, EFT930 GCC, EFT930 BCC, iPP3XX, iPA280 (SPM), ML30C and P30C.

Implicit selection is not recommended and must be managed with caution.
Due to physical reason, implicit selection can lead to unexpected issues, for example, at the beginning of the swipe, the card would possibly enter the antenna field and contactless chip would be handled instead of magnetic track.

3.2.1.3. Use of PSTN modem with contactless activated

The electro-magnetic field created when the contactless is activated, on an integrated terminal, prevents the usage of the PSTN modem with contactless activated.
This is not a software issue, and no software solution exists. The contactless field shall not be activated at the same time as the modem.

Currently, the issue exists only on the iCT250, which is the only Ingenico integrated terminal with contactless and PSTN modem.
(For instance, on EFT930BCC or EFT930GCC with modem, it works, because the modem is on the cradle, and the distance between the modem and the contactless field is sufficient).

3.2.2. Add-on Contactless

The add-on contactless doesn't exist anymore.
All components provided previously in this package are now by default since Telium SDK 8.1. It concerns

- TPass library and component;
- Entry point component;
- GTL library;
- Contactless sample.

3.2.3. Card supported

The list of cards supported by this SDK is given in the paragraph **Erreur ! Source du renvoi introuvable.**: **Erreur ! Source du renvoi introuvable.** .

Recommendation:
Even if a card is managed since an old SDK or Add-On Contactless, usage of a recent SDK is strongly recommend because bugs could have been fixed.

3.3. Family name

The family name, defined in the descriptor used to sign the binary, must follow the pattern "<NAME><VV><AA>" where:

- NAME is the radical of application (maximum 7 ASCII characters);
- VV is the version (2 number);
- AA is the amendment (2 number)

3.4. Pinpad system

To avoid problems when a non mock-up pinpad is linked to a mock-up terminal, the terminal mock-up catalogues don't include pinpad systems. So, you have to load the pinpad system (located in the directory "Component\OS") according to the pinpad you are using.

3.5. DIR system version downgrade

It is not possible to downgrade from a system managing directories (catalogue XXX_DIR.mYY) to a system which not manages directories (catalogue XXX.mYY).

3.6. Reserved numbers

Service numbers from 1 to 100 and from 7680 à 8191 are reserved for Ingenico internal use.
Tag numbers used by applications must be taken in the range 9FA000-9FAFFF.

3.7. EFT930 embedding 8MB of flash

It is possible to use this SDK on EFT930 which has only 8 MB of flash (special system catalogue is provided: EFT930_8MO_PROD.m31). If you use Ingestate you may need some adjustments: please contact your R&D Regional Interface for more information.

For SDK 8.0.x, SDK 8.1 and SDK 8.1.1:
It is forbidden to load a catalogue designed for 8MB terminals on a terminal loaded with a generic catalogue (that is to say non-8 MB). You must contact the Ingenico support for the rules of this migration.

4. Issues solved in this release by component

See table in chapter 0 "

" for the list of versions of components provided in this Telium SDK.

4.1. Telium System

Main points delivered in this release are listed below.

4.1.1. System Thunder

Internal tracker	SUPTEL	Description
9741		[CLESS] Possibiliy to allow driver Mifare to leave encrypted mode
9948		[CLESS] New cless driver for ASK cards. support CTS 512 and CTS 256 cards
10515	SUPTEL-2912	[CLESS] Driver Mifare is now able to authenticate Mifare classic cards with 7 bytes UID

10605	SUPTEL-2955	[CLESS] global Mifare Classic authentication timeout is now 4 ms.
10526		add enhanced GPRS filtering GPRS fake reading detected even with magnetic head suitly connected to main board GND
10717		Delivery = GPRS immunity improvement
10338	SUPTEL-2775	Fixes terminal reset when SWP:ERC[FFFFFFF7] diagnostic found in BOOSTER.DIA file Fixes some randoms ghost swipe card issues
10602	SUPTEL-2874	Swipe software improvement.
10743	SUPTEL-2874	[ICT220] Improvement in MagStripe reading
7752		Speed-up non-responding GPRS modem detection
9452/10409	SUPTEL-2194 et SUPTEL-2649	USBDEV_FIOCTL_START_HID and USBDEV_FIOCTL_STOP_HID are deprecated. Use USBDEV_FIOCTL_SET_MODE to define the usb device mode
9510	SUPTEL-2269	Adding SWI int PppSetDefaultOptions(struct PPP_IF *interface); that can be used for reseting PPP parameters
9748		[GPRS] Integration of the new module Hilo 3G
9915		Added image file for product ISCxxx to display in LLT mode
9996		LIFECOUNTER.DIA : SystemFioctl SYS_FIOCTL_RESET_LIFE_COUNTER added
10263		corrections in the documentation
10282		Add possibility to load not signed video files and play it during the idle state to GROUP signed applications
10362		Functions added:SysParamIsString, SysParamGetString and SysParamSetString
10368	SUPTEL-2823	Between 60 and 70 seconds, the standby delay didn't work properly (-> no standby).
10370		SWI Functions added: Reader_Mount and Pinpad_Mount
10390		Fix for issue with TMA application (manufacturer software) and wireless terminal.
10402		[iWL220][BlueTooth]:SET/CLEAR DTR managed, Modem ISDN TA is now supported
10419	SUPTEL-2812	Added SystemFioctl SYS_FIOCTL_FTPS_DISABLE = 0x810F Fioctl used to disable FTP server. This SystemFioctl must be called each time terminal reboots, for example in after_reset function
10464	SUPTEL-2870	Bug fix when updating fonts (old naming fonts to STANDARD new naming fonts): ISO1 to 844216vvrr ISO2 to 844216vvrr ISO3 to 844218vvrr ISO5 to 844219vvrr ISO6 to 844213vvrr ISO7 to 844220vvrr ISO15 to 844221vvrr
10506		New SystemFioctl : SYS_FIOCTL_GET_PRODUCT_FULL_REFERENCE Used to read product ref (Level 3) string (for ex ICT220-01T1076C, Telium II and III only)
10524	SUPTEL-2738	[GPRS] switch back to automatic mode
10529		Documentation only
10632	SUPTEL-2995	Unwanted characters removed from the start of IMSI (\r\nOK...) ; side effect on SDK 8.1 and SDK 8.1.x.
10679		[iWL220] Too dark printing if battery connected in running state fixed
10691	SUPTEL-3037	[GPRS] Clamp the radio level to 5, no matter what
10728	SUPTEL-3063	Api added : SYS_FIOCTL_GET_PRODUCT_FULL_SERIAL_NUMBER to get the long serial number
10754	SUPTEL-3064 + 2943	Improvement in checking base status
10808		Improvement in PPP connection time

10877	SUPTEL-3095	[iWL280] Low power procedure fixed to avoid reset when fopen ("CAM0","rw") is called just after shutdown();

Nota: FT 6833 (French healthcare: when SYS_FIOCTL_USB_DEVICE_SERIAL_NUMBER_ENABLE is used in iWL terminal, USB serial number is also returned by blue tooth base) is fixed in SDK 8.1.3 but not in SDK 8.2.

4.2. Telium Manager

4.2.1. Evolutions

Following points are delivered in this release.

Internal tracker	SUPTEL	Description
10831		[IWL280] behaviour of Manager menu improved
3702	2835 + 3094	Fix for entry point GIVE_YOUR_SPECIFIC_CONTEXT while there is more than 15 applications
6928		The terminal can perform an auto detection of pinpad in the menu pinpad type or when the terminal is started if the parameter pinpad is set to yes
6990		Documentation improvement for entry functions
7549	TFU4699 SBU / TFU4793 FR	French domain only. Doesn't format anymore TMS identifier with space
8379		New product IWL350 screen and keyboard management
8539	SUPTEL-2210	Displays only pinpads allowed in the pinpad initialization menu.
9136	SUPTEL-1537	USBDEV_FIOCTL_SET_VID and USBDEV_FIOCTL_SET_PID are deprecated. Use USBDEV_FIOCTL_SET_MODE to define the usb device mode. See HWCNF.PAR in CHM
10010		[IWL280] Restores user screen after SIM code entry
10026/10027		New menu to print/display current SDK in the terminal. Message can be: - "SDK x.x.x" when the terminal is loaded with Telium System and Telium Manager coming from a SDK. - "SDK unknown" when the terminal is not loaded with a SDK (independant components). - "SDK x.x.x Customized" when Telium System or Telium Manager had been customized after the loading of a SDK
10108		New product iWL350 management
10127		Use "SEPA technology selection" into EMV selection.
10208	SUPTEL-2653	On STATE ticket (via F > CONSULTATION / State). Replace "Flash Free" by "Code Free"
10328	SUPTEL-2818	Improvement for contactless documentation
10343	SUPTEL-2752	Improved documentation for SLC_Ecart_heure() and USQ_Enlevermnsec()
10367		[iWL280] Hide mouse cursor at startup (default value).
10443	SUPTEL-2865	Function ConnectedToPower() added. It returns the charger state

10450	SUPTEL-2871	Complex key sequence to activate maintenance menu
10462	SUPTEL-2866	Documentation only
10492	SUPTEL-2182	SLSQ_GetSupportedLanguages function returns right value
10508		Menu to enter "SIM CODE" is now available when both GSM and GPRS function are enabled
10510	SUPTEL-2836	Documentation for TAB_ENTRY_STRING added
10520		Bug in PrintPolice API fixed
10528		Documentation only
10553		Change header look for IWL280. Date field is bigger and centered.
10590		Add confirmation for pinpad emulation menu
10599		USB enum in mode "Terminal Ingenico" right
10626		GetPackInfos is now reentrant
10640	SUPTEL-3000	Use "file_name" field of object_info_t structure instead of "name" field to manage licence. !!! File name format must be : <NAME><VV><AA> : 1) NAME : radical of application (max 6 ASCII characters). 2) VV : amendment (2 number) 3) AA : version (2 number)
10642	SUPTEL-2953	New sample into CHM for _PrintBmpXY function
10649		all G_Affiche_XXX functions have been translated in english. #define G_DisplayMSGcust G_AfficherMSGcust #define G_DisplayMSG G_AfficherMSG #define G_DisplayMSGnum G_AfficherMSGnum #define G_DisplayPprMSG G_AfficherPprMSG #define G_DisplayPprMSGnum G_AfficherPprMSGnum #define G_DisplayC30MSG G_AfficherC30MSG #define G_DisplayC30MSGnum G_AfficherC30MSGnum #define G_Display G_Afficher #define G_DisplayPpr G_AfficherPpr #define G_DisplayC30 G_AfficherC30e_XXX
10657	SUPTEL-3018	New menu to disable Footer.
10658	SUPTEL-3011	SendToAllApplication,SendToApplication,SendToTask must return FALSE when mailbox is full.
10659	SUPTEL-2947	New menu to change PUK code of SIM. Only available when GPRS driver return DGPRS_SIM_PUK_REQUIRED at startup. !!! New sim code will be "0000"
10830	SUPTEL-2922	Automatic connexion to GPRS : time out value adapted to new SIM cards
10880	SUPTEL-2952	Improvement in displaying the software configuration application : nameNumber of responses to IS_NAME is checked
10884	SUPTEL-3113	[iWL250] In the Header the bitmap 3G replace the bitmap GPRS
10885	SUPTEL-3154	Sample dll 4595xxyy.LGN or 3595xxyy.SGN is no longer delivered as unnecessary

4.3. Security

4.3.1. DLL Security

Following point is delivered in this release.

Internal tracker	SUPTEL	Description
10107/10416		New product iWL management

4.3.2. Security Extend library

No evolution.

4.3.3. DLL E2EE

4.3.3.1. Overview

Binary is included in the Telium Manager catalogue.

It is provided for the following terminals:

- iWL220, iWL250, iWL280,
- iSC250, iSC350,
- iMP350,
- iPP320, iPP350,
- iCT220, iCT250,
- SPM.

4.3.3.2. Evolutions

No evolution.

4.3.4. Schemes

Last schemes certified are included in this SDK.

4.4. Communication

4.4.1. Link Layer

No evolution.

4.4.2. Pack IP

Following points are delivered in this release.

Internal tracker	SUPTEL	Description
10661		New api : PPPSetDefaultOptions function exported

4.4.3. FTP

Internal evolution only

4.4.4. SNMP

No evolution.

4.4.5. SSL

Following points are delivered in this release.

Internal tracker	SUPTEL	Description
10647	SUPTEL-3009	CHM documentation
10773	SUPTEL-3047	Improvement in SSL DLL when low memory size available in terminal
10835	SUPTEL-3047	Correct memory leak when SSL connection failed with an error of DNS
10874		Add verification of the server name and the CommonName in server certificate

4.5. Display

4.5.1. DLL Image

No evolution.

4.5.2. Fonts

No evolution.

4.5.3. CGUI / CGUI tools

No evolution.

4.5.4. Plug-in Signature Capture

No evolution.

4.5.5. Plug-in Multimedia

No evolution.

4.6. Contactless

4.6.1. DLL TPass

No evolution.

4.6.2. Entry Point

Following point is delivered in this release.

Internal tracker	SUPTEL	Description
10374		[CLESS] Buffer overflow during random number generation on products without Booster (iST150 in intelligent mode or CAD30 without a pinpad or chip reader connected)

4.6.3. TeliumPass

No evolution.

4.7. Applications

4.7.1. Incendo Online browser

Technical documentation and the Incendo SDK are provided with Ingedev (from version 7.8.0).

4.7.1.1. Memory

Before deploying this solution, please check the memory usage of your terminals.

4.7.1.2. Migration to this version

4.7.1.2.1. Migration from a version before 3.0.4

Incendo Online smart browser was previously delivered as an independent package (up to version 3.0.3). It was designed to be signed with region security keys.
The version in this Telium SDK is signed with manufacturer key. So the application type is different between these two versions. If you have already deployed the browser, to migrate to the version included in a Telium SDK, you must manage the change of application type. For further details, please contact the Incendo support.

4.7.1.3. Compatibility

4.7.1.3.1. Terminals managed

Minimal hardware prerequisites are:

- Terminal is Ethernet or GPRS;
- Terminals is Ingetrust ready;
- Minimum of 16 MB of Flash is mandatory;
- 16 MB of RAM are recommended but not mandatory. 8 MB is possible if terminal is Incendo Online only (no other applications).

Incendo Online is compatible with the following terminals:

- EFT930 Color (Booster 2 type),
- iCT220, iCT250,
- iWL220, iWL250

You must not use it on other terminals.

Support of iSC250 and iSC350 will be available in a future release.

4.7.1.3.2. EMV packages compatibility

Incendo smart Browser is compatible with the following EMV packages:

- Version 19 or 20.1

4.7.1.4. Evolutions

This release includes the following main points:

- Simplification of TML language: Incendo Online 3.1 proposes a couple of enhancements in the TML syntax to simplify operations on strings and lists.
- Improvement of user-interface: "full-color" and transparency modes are now supported, resulting in brighter and colourful background and user-interface.
- Other new functionalities extending Incendo Online capabilities, such as the ability to send batches of HTTP Get requests in order to increase overall speed of service.

See details in document provided with the application IncendoBrowser.

4.7.2. Image Loader

At the end of the Telium SDK setup you can choose to install Image Loader on your PC. Documentation is available in this installed package.

4.7.2.1. Evolutions

No evolution.

4.8. AVL

AVL stands for Added Value Libraries.
No comment: only internal change

4.9. Full configuration for local download for iPP320 in pinpad emulation mode

A binary concatenates the Telium system (including contactless driver) and the Telium manager for an iPP3 used in pinpad emulation for local download mode. It is delivered in the directory: Component\iPP3_EmulationPinpad\Package
Please see description in the CHM help file of the Telium SDK (SDK General Documentation > HOW TO DEVELOP user guide > How to use iPP3xx as a smart card reader).

4.9.1. DLL PPLoad evolution

The DLL PPLoad is present in the host terminal and allows the loading of the full configuration to the iPP3.

4.10. SDK features

Following points are delivered in this release.

Internal tracker	SUPTEL	Description
8918		Added information about SWIs in the Telium SDK help file
10456	SUPTEL-2870	Fonts provided with this SDK are compatible with ZKA terminals
10027		SDK release available in Software Configuration menu

5. Add-ons to Telium SDK

The following table presents the versions of recommended add-ons to use with this SDK.

Add on	Recommended version to use with this SDK	Comment
Easy Path To EMV	20.1	
Add On Contactless (New architecture)	Removed	Components previously in this add-on are in the Telium SDK since 8.1
Easy Path To Contactless	3. 07	
Add On PCL for iPA280	1.17	
Add On PCL for iWP	1.15	
Add On PCL for iMP3xx	1.01	
Add On Morpho	1.06	
Add On Telicapt	2.16	
Add On UCM	2.06.01	
Add On SPDH	1.01	
Add On APACS 40 Generic	1.08	
Add On ISO8583 Generic	3.02	

SDK8.1.4 Release note

1. Standard development platforms

This SDK release is compatible with the following products.

1.1. List of terminals

1.1.1. Wireless

Telium 2:

- iWL220B, iWL220G,
- iWL250B, iWL250G ,
- iWL250 3G (for development only),
- iWL250 2SCR, 2SCR stands for 2 Smart Card Reader,
- IWL280 (signature capture).

Telium 1:

- EFT930 colour,
- EFT930 black and white.

1.1.2. Countertop terminals

Telium 2:

- iCT220, iCT250,
- E532 (for development only)

Telium 1:

- EFT SMART Plus,
- EFT SMART,
- EFT30

1.1.3. Signature capture terminals (Retail pinpads)

- iSC250,
- iSC350

1.1.4. Pinpads

Telium 2:

- iPP320, iPP350,
- iPP3xx used as a smart card reader (Pinpad emulation mode).

Telium 1:

- ML30, ML30 color, ML30 color contactless.

'Booster only' pinpads:

- iPP280, iPP250, iPP220, PPC30, PPR30, P30, P30 Contactless, PP30, PP30S.

1.1.5. Unattended

See UCM add-on package for the exhaustive list.

1.1.6. Satellite terminals

Telium 2:

- iST150.

Telium 1:

- TeliumPass Plus.

1.1.7. Mobile payment

Telium 2:

- iMP3xx (only hardware V4 are supported since SDK 8.0.1),
- SPM (iPA280).

1.1.8. French health care

- TWINs.

1.2. Terminals certified PCI V3

The following terminals are certified for PCI V3:

iWL220	Since SDK 8.0.1
iWL250	Since SDK 8.0.1
iWL280	Since SDK 8.0.1
iSC250	Since SDK 8.0.1
iPP320	Since SDK 8.1
iPP350	Since SDK 8.1

1.3. Public Key Infrastructure

This release supports PKI V3.

1.4. Location for system components

System for iMP3xx is located in Component\OS_iMP350
System for iWL280 is located in Component\OS_iWL280

2. What's new?

Issues solved are detailed in paragraph 4.
Here are main evolutions coming with this Telium SDK release compared to the release 8.1.3.

2.1. Fixes

- Improvement in Link Layer
- For French healthcare: Issue about Cam status is fixed

3. Highlighted points

3.1. Restriction for iPA280 and PCI PED 2.x compliance

During the PCI PED 2.x certification of the iPA280 devices, some constraints have been put at the level of communication of sensitive data from the Secure Payment Module (SPM) to the external world. The PDA part of the product has to be considered as the external world. The reason of this restriction is that the scope of the PCI PED evaluation was the SPM, which has a secure Telium architecture, and not the iPA280 product as a whole.

The restriction forbids communicating:

- Any APDU command response;
- Any cardholder data (i.e. ISO tracks 1 & 2 and their EMV counterpart).

It is also forbidden to receive APDU command queries from the external and to relay them to the smartcard. The restriction imposed by PCI SSC is not limited to banking cards. Direct communication to other types of cards (e.g. loyalty) is not allowed.

The communication APIs to establish communication between SPM and PDA propose some interfaces. It is for sure possible to address communication by using lower level functionalities. This must not be used to circumvent the protocol restrictions for communication.

Since cardholder data must remain within the SPM, the implication of this restriction is that payment applications have to be executed in the SPM and can not be based on a split design between SPM and PDA parts of the device. The PDA can be used for merchant application only (i.e. advertising, product selection)

3.2. Contactless

3.2.1. Best practices for Contactless

3.2.1.1. Field on/off

The contactless field is to be activated only when a contactless card is waited by the terminal. It must be stopped when the management of the contactless card is finished.
If the contactless field is opened all the time:

- On wireless terminals, product battery autonomy is reduced a lot;
- The contactless module and antenna are highly stressed and reliability could decrease quickly with time;

Applications have to manage the opening and the closing of the field according their business logic.

3.2.1.2. Implicit selection

Following terminals having the contactless feature inside are concerned: iWL2xx, iCT250, iSC2xx, iSC3xx, EFT930 GCC, EFT930 BCC, iPP3XX, iPA280 (SPM), ML30C and P30C.

Implicit selection is not recommended and must be managed with caution.
Due to physical reason, implicit selection can lead to unexpected issues, for example, at the beginning of the swipe, the card would possibly enter the antenna field and contactless chip would be handled instead of magnetic track.

3.2.1.3.Use of PSTN modem with contactless activated

The electro-magnetic field created when the contactless is activated, on an integrated terminal, prevents the usage of the PSTN modem with contactless activated.
This is not a software issue, and no software solution exists. The contactless field shall not be activated at the same time as the modem.

Currently, the issue exists only on the iCT250, which is the only Ingenico integrated terminal with contactless and PSTN modem.
(For instance, on EFT930BCC or EFT930GCC with modem, it works, because the modem is on the cradle, and the distance between the modem and the contactless field is sufficient).

3.2.2. Add-on Contactless

The add-on contactless doesn't exist anymore.
All components provided previously in this package are now by default since Telium SDK 8.1. It concerns

- TPass library and component;
- Entry point component;
- GTL library;
- Contactless sample.

3.2.3. Card supported

The list of cards supported by this SDK is given in the paragraph **Erreur ! Source du renvoi introuvable.**: **Erreur ! Source du renvoi introuvable.** .

Recommendation:
Even if a card is managed since an old SDK or Add-On Contactless, usage of a recent SDK is strongly recommend because bugs could have been fixed.

3.3. Family name

The family name, defined in the descriptor used to sign the binary, must follow the pattern "<NAME><VV><AA>" where:

- NAME is the radical of application (maximum 7 ASCII characters);
- VV is the version (2 number);
- AA is the amendment (2 number)

3.4. Pinpad system

To avoid problems when a non mock-up pinpad is linked to a mock-up terminal, the terminal mock-up catalogues don't include pinpad systems. So, you have to load the pinpad system (located in the directory "Component\OS") according to the pinpad you are using.

3.5. DIR system version downgrade

It is not possible to downgrade from a system managing directories (catalogue XXX_DIR.mYY) to a system which not manages directories (catalogue XXX.mYY).

3.6. Reserved numbers

Service numbers from 1 to 100 and from 7680 à 8191 are reserved for Ingenico internal use.
Tag numbers used by applications must be taken in the range 9FA000-9FAFFF.

3.7. EFT930 embedding 8MB of flash

It is possible to use this SDK on EFT930 which has only 8 MB of flash (special system catalogue is provided: EFT930_8MO_PROD.m31). If you use Ingestate you may need some adjustments: please contact your R&D Regional Interface for more information.

For SDK 8.0.x, SDK 8.1 and SDK 8.1.1:
It is forbidden to load a catalogue designed for 8MB terminals on a terminal loaded with a generic catalogue (that is to say non-8 MB). You must contact the Ingenico support for the rules of this migration.

4. Issues solved in this release by component

See table in chapter 0 "

" for the list of versions of components provided in this Telium SDK.

4.1. Telium System Thunder

Following point is delivered in this release.

Internal tracker	SUPTEL	Description
11635		When card is removed by user when it is powered, terminals can not switch to low power any more. This issue is now fixed
11670		Prevent idle mode if Thunder CAM/SAM are powered (ICT2xx with 2 CAM, IST1xx, IUC1xx)

4.2. Telium Manager

Following points is delivered in this release.

Internal tracker	SUPTEL	Description

11610		After wake up at idle state, if a card is present into reader then a transaction is started.

4.3. Security

4.3.1. DLL Security

No evolution.

4.3.2. Security Extend library

No evolution.

4.3.3. DLL E2EE

4.3.3.1. Overview

Binary is included in the Telium Manager catalogue.

It is provided for the following terminals:

- iWL220, iWL250, iWL280,
- iSC250, iSC350,
- iMP350,
- iPP320, iPP350,
- iCT220, iCT250,
- SPM.

4.3.3.2. Evolutions

No evolution.

4.3.4. Schemes

Last schemes certified are included in this SDK.

4.4. Communication

4.4.1. Link Layer

Following points are delivered in this release.

Internal tracker	SUPTEL	Description
10991		Add support of the DCD signal on USB serial ports (COM5, COM6 and COMU).

11032	3164	A new parameter has been added to LinkLayer configuration: LL_TCPIP_T_SSL_TCP_CONNECT_TIMEOUT. This new parameter adds a specific timeout for the tcp connection embedded in a SSL connection. When this parameter is set (value different of 0) the LinkLayer will manage two timeout for a SSL connection: - one for only the TCP (LL_TCPIP_T_SSL_TCP_CONNECT_TIMEOUT) - one for TCP+SLL (LL_TCPIP_T_CONNECT_TIMEOUT) (like in previous version of LinkLayer).
11146		This evolution enables TCP communications on iSMP using the LinkLayer. It uses the TCP_ISMP DLL which performs TCP IP communications on iMP3 without SSL. To use this one must set the physical layer to LL_PHYSICAL_V_TCP_AIAP during the LinkLayer configuration.

4.4.2. Pack IP

No evolution.

4.4.3. FTP

No evolution.

4.4.4. SNMP

No evolution.

4.4.5. SSL

No evolution.

4.5. Display

4.5.1. DLL Image

No evolution.

4.5.2. Fonts

No evolution.

4.5.3. CGUI / CGUI tools

No evolution.

4.5.4. Plug-in Signature Capture

No evolution.

4.5.5. Plug-in Multimedia

No evolution.

4.6. Contactless

4.6.1. DLL TPASS

No evolution.

4.7. Applications

4.7.1. Incendo Online browser

Technical documentation and the Incendo SDK are provided with Ingedev (from version 7.8.0).

4.7.1.1. Memory

Before deploying this solution, please check the memory usage of your terminals.

4.7.1.2. Migration to this version

4.7.1.2.1. Restriction

If you migrate from a previous version to this one, the Incendo parameters will be lost.

4.7.1.2.2. Migration from a version before 3.0.4

Incendo Online smart browser was previously delivered as an independent package (up to version 3.0.3). It was designed to be signed with region security keys.
The version in this Telium SDK is signed with manufacturer key. So the application type is different between these two versions. If you have already deployed the browser, to migrate to the version included in a Telium SDK, you must manage the change of application type. For further details, please contact the Incendo support.

4.7.1.3. Compatibility

4.7.1.3.1. Terminals managed

Minimal hardware prerequisites are:

- Terminal is Ethernet or GPRS;
- Terminals is Ingetrust ready;
- Minimum of 16 MB of Flash is mandatory;
- 16 MB of RAM are recommended but not mandatory. 8 MB is possible if terminal is Incendo Online only (no other applications).

Incendo Online is compatible with the following terminals:

- EFT930 Color (Booster 2 type),
- iCT220, iCT250,
- iWL220, iWL250

You must not use it on other terminals.

Support of iSC250 and iSC350 will be available in a future release.

4.7.1.3.2. EMV packages compatibility

Incendo smart Browser is compatible with the following EMV packages:

- Version 18
- Version 19

4.7.1.4. Evolutions

No evolution.

4.7.2. Image Loader

At the end of the Telium SDK setup you can choose to install Image Loader on your PC. Documentation is available in this installed package.

4.7.2.1. Evolutions

No evolution.

4.8. AVL

AVL stands for Added Value Libraries.
No evolution.

4.9. Full configuration for local download for iPP320 in pinpad emulation mode

A binary concatenates the Telium system (including contactless driver) and the Telium manager for an iPP3 used in pinpad emulation for local download mode. It is delivered in the directory: Component\iPP3_EmulationPinpad\Package
Please see description in the CHM help file of the Telium SDK (SDK General Documentation > HOW TO DEVELOP user guide > How to use iPP3xx as a smart card reader).

4.9.1. Evolution

No evolution.

4.10. SDK features

No evolution.

5. Add-ons to Telium SDK

The following table presents the versions of recommended add-ons to use with this SDK.

Add on	Recommended version to use with this SDK	Comment
Easy Path To EMV	20.1	
Add On Contactless (New architecture)	Removed	Components previously in this add-on are in the Telium SDK since 8.1

Easy Path To Contactless	3. 07	
Add On PCL for iPA280	1.17	
Add On PCL for iWP	1.15	
Add On PCL for iMP3xx	1.01	
Add On Morpho	1.06	
Add On Telicapt	2.15	
Add On UCM	2.06.01	
Add On SPDH	1.01	
Add On APACS 40 Generic	1.08	
Add On ISO8583 Generic	3.02	

SDK8.1.3 Release note

1. Standard development platforms

This SDK release is compatible with the following products.

1.1. List of terminals

1.1.1. Wireless

Telium 2:

- iWL220B, iWL220G,
- iWL250B, iWL250G ,
- iWL250 3G (for development only),
- iWL250 2SCR, 2SCR stands for 2 Smart Card Reader,
- IWL280 (signature capture).

Telium 1:

- EFT930 colour,
- EFT930 black and white.

1.1.2. Countertop terminals

Telium 2:

- iCT220, iCT250,
- E532 (for development only)

Telium 1:

- EFT SMART Plus,
- EFT SMART,
- EFT30

1.1.3. Signature capture terminals (Retail pinpads)

- iSC250,
- iSC350

1.1.4. Pinpads

Telium 2:

- iPP320, iPP350,
- iPP3xx used as a smart card reader (Pinpad emulation mode).

Telium 1:

- ML30, ML30 color, ML30 color contactless.

'Booster only' pinpads:

- iPP280, iPP250, iPP220, PPC30, PPR30, P30, P30 Contactless, PP30, PP30S.

1.1.5. Unattended

See UCM add-on package for the exhaustive list.

1.1.6. Satellite terminals

Telium 2:

- iST150.

Telium 1:

- TeliumPass Plus.

1.1.7. Mobile payment

Telium 2:

- iMP3xx (only hardware V4 are supported since SDK 8.0.1),
- SPM (iPA280).

1.1.8. French health care

- TWINs.

1.2. Terminals certified PCI V3

The following terminals are certified for PCI V3:

iWL220	Since SDK 8.0.1
iWL250	Since SDK 8.0.1
iWL280	Since SDK 8.0.1
iSC250	Since SDK 8.0.1
iPP320	Since SDK 8.1
iPP350	Since SDK 8.1

1.3. Public Key Infrastructure

This release supports PKI V3.

1.4. Location for system components

System for iMP3xx is located in Component\OS_iMP350
System for iWL280 is located in Component\OS_iWL280

2. What's new?

Issues solved are detailed in paragraph 4.
Here are main evolutions coming with this Telium SDK release compared to the release 8.1.2.

2.1. Fixes

- Ethernet improvement for PEM base
- For French healthcare: USB serial number returned by Bluetooth base

3. Highlighted points

3.1. Restriction for iPA280 and PCI PED 2.x compliance

During the PCI PED 2.x certification of the iPA280 devices, some constraints have been put at the level of communication of sensitive data from the Secure Payment Module (SPM) to the external world. The PDA part of the product has to be considered as the external world. The reason of this restriction is that the scope of the PCI PED evaluation was the SPM, which has a secure Telium architecture, and not the iPA280 product as a whole.

The restriction forbids communicating:

- Any APDU command response;
- Any cardholder data (i.e. ISO tracks 1 & 2 and their EMV counterpart).

It is also forbidden to receive APDU command queries from the external and to relay them to the smartcard. The restriction imposed by PCI SSC is not limited to banking cards. Direct communication to other types of cards (e.g. loyalty) is not allowed.

The communication APIs to establish communication between SPM and PDA propose some interfaces. It is for sure possible to address communication by using lower level functionalities. This must not be used to circumvent the protocol restrictions for communication.

Since cardholder data must remain within the SPM, the implication of this restriction is that payment applications have to be executed in the SPM and can not be based on a split design between SPM and PDA parts of the device. The PDA can be used for merchant application only (i.e. advertising, product selection)

3.2. Contactless

3.2.1. Best practices for Contactless

3.2.1.1. Field on/off

The contactless field is to be activated only when a contactless card is waited by the terminal. It must be stopped when the management of the contactless card is finished.
If the contactless field is opened all the time:

- On wireless terminals, product battery autonomy is reduced a lot;
- The contactless module and antenna are highly stressed and reliability could decrease quickly with time;

Applications have to manage the opening and the closing of the field according their business logic.

3.2.1.2. Implicit selection

Following terminals having the contactless feature inside are concerned: iWL2xx, iCT250, iSC2xx, iSC3xx, EFT930 GCC, EFT930 BCC, iPP3XX, iPA280 (SPM), ML30C and P30C.

Implicit selection is not recommended and must be managed with caution.
Due to physical reason, implicit selection can lead to unexpected issues, for example, at the beginning of the swipe, the card would possibly enter the antenna field and contactless chip would be handled instead of magnetic track.

3.2.1.3.Use of PSTN modem with contactless activated

The electro-magnetic field created when the contactless is activated, on an integrated terminal, prevents the usage of the PSTN modem with contactless activated.
This is not a software issue, and no software solution exists. The contactless field shall not be activated at the same time as the modem.

Currently, the issue exists only on the iCT250, which is the only Ingenico integrated terminal with contactless and PSTN modem.
(For instance, on EFT930BCC or EFT930GCC with modem, it works, because the modem is on the cradle, and the distance between the modem and the contactless field is sufficient).

3.2.2. Add-on Contactless

The add-on contactless doesn't exist anymore.
All components provided previously in this package are now by default since Telium SDK 8.1. It concerns

- TPass library and component;
- Entry point component;
- GTL library;
- Contactless sample.

3.2.3. Card supported

The list of cards supported by this SDK is given in the paragraph **Erreur ! Source du renvoi introuvable.**: **Erreur ! Source du renvoi introuvable.** .

Recommendation:
Even if a card is managed since an old SDK or Add-On Contactless, usage of a recent SDK is strongly recommend because bugs could have been fixed.

3.3. Family name

The family name, defined in the descriptor used to sign the binary, must follow the pattern "<NAME><VV><AA>" where:

- NAME is the radical of application (maximum 7 ASCII characters);
- VV is the version (2 number);
- AA is the amendment (2 number)

3.4. Pinpad system

To avoid problems when a non mock-up pinpad is linked to a mock-up terminal, the terminal mock-up catalogues don't include pinpad systems. So, you have to load the pinpad system (located in the directory "Component\OS") according to the pinpad you are using.

3.5. DIR system version downgrade

It is not possible to downgrade from a system managing directories (catalogue XXX_DIR.mYY) to a system which not manages directories (catalogue XXX.mYY).

3.6. Reserved numbers

Service numbers from 1 to 100 and from 7680 à 8191 are reserved for Ingenico internal use.
Tag numbers used by applications must be taken in the range 9FA000-9FAFFF.

3.7. EFT930 embedding 8MB of flash

It is possible to use this SDK on EFT930 which has only 8 MB of flash (special system catalogue is provided: EFT930_8MO_PROD.m31). If you use Ingestate you may need some adjustments: please contact your R&D Regional Interface for more information.

For SDK 8.0.x, SDK 8.1 and SDK 8.1.1:
It is forbidden to load a catalogue designed for 8MB terminals on a terminal loaded with a generic catalogue (that is to say non-8 MB). You must contact the Ingenico support for the rules of this migration.

4. Issues solved in this release by component

See table in chapter 0 "

" for the list of versions of components provided in this Telium SDK.

4.1. Telium System

Main points delivered in this release are listed below.

4.1.1. System Thunder

4.1.1.1. iCT2xx

Internal tracker	SUPTEL	Description
10338		▪ Fixes terminal reset when SWP:ERC[FFFFFFF7] diagnostic found in BOOSTER.DIA file ▪ Improves swipe
10428 / 10465	2769	Specific for RATP project

4.1.1.2. iWL220/250

Internal tracker	SUPTEL	Description
		Ethernet improvement on PEM base
10402		SET/CLEAR DTR managed, Modem ISDN TA is now supported
10754	3064 and 2943	Improvement in checking base status
6833		French healthcare: When SYS_FIOCTL_USB_DEVICE_SERIAL_NUMBER_ENABLE is used in iWL terminal, USB serial number is also returned by Bluetooth base
10567		No Ethernet base status through USB on iWL

4.1.1.3. iWL280

Internal tracker	SUPTEL	Description
10877	3095	Low power procedure fixed to avoid reset when fopen ("CAM0","rw") is called just after shutdown();
10970	3222	Improvement of touch-screen after using contactless

4.2. Telium Manager

4.2.1. Evolutions

Following points are delivered in this release.

Internal tracker	SUPTEL	Description
10429		Specific for RATP project

4.3. Security

4.3.1. DLL Security

No evolution.

4.3.2. Security Extend library

No evolution.

4.3.3. DLL E2EE

4.3.3.1. Overview

Binary is included in the Telium Manager catalogue.

It is provided for the following terminals:

- iWL220, iWL250, iWL280,
- iSC250, iSC350,
- iMP350,
- iPP320, iPP350,

- iCT220, iCT250,
- SPM.

4.3.3.2. Evolutions

No evolution.

4.3.4. Schemes

Last schemes certified are included in this SDK.

4.4. Communication

4.4.1. Link Layer

No evolution.

4.4.2. Pack IP

No evolution.

4.4.3. FTP

No evolution.

4.4.4. SNMP

No evolution.

4.4.5. SSL

No evolution.

4.5. Display

4.5.1. DLL Image

No evolution.

4.5.2. Fonts

No evolution.

4.5.3. CGUI / CGUI tools

No evolution.

4.5.4. Plug-in Signature Capture

No evolution.

4.5.5. Plug-in Multimedia

No evolution.

4.6. Contactless

4.6.1. DLL TPASS

No evolution.

4.7. Applications

4.7.1. Incendo Online browser

Technical documentation and the Incendo SDK are provided with Ingedev (from version 7.8.0).

4.7.1.1. Memory

Before deploying this solution, please check the memory usage of your terminals.

4.7.1.2. Migration to this version

4.7.1.2.1. Restriction

If you migrate a previous version to this one, the Incendo parameters will be lost.

4.7.1.2.2. Migration from a version before 3.0.4

Incendo Online smart browser was previously delivered as an independent package (up to version 3.0.3). It was designed to be signed with region security keys.
The version in this Telium SDK is signed with manufacturer key. So the application type is different between these two versions. If you have already deployed the browser, to migrate to the version included in a Telium SDK, you must manage the change of application type. For further details, please contact the Incendo support.

4.7.1.3. Compatibility

4.7.1.3.1. Terminals managed

Minimal hardware prerequisites are:

- Terminal is Ethernet or GPRS;
- Terminals is Ingetrust ready;
- Minimum of 16 MB of Flash is mandatory;
- 16 MB of RAM are recommended but not mandatory. 8 MB is possible if terminal is Incendo Online only (no other applications).

Incendo Online is compatible with the following terminals:

- EFT930 Color (Booster 2 type),
- iCT220, iCT250,
- iWL220, iWL250

You must not use it on other terminals.

Support of iSC250 and iSC350 will be available in a future release.

4.7.1.3.2. EMV packages compatibility

Incendo smart Browser is compatible with the following EMV packages:

- Version 18
- Version 19

4.7.1.4. Evolutions

No evolution.

4.7.2. Image Loader

At the end of the Telium SDK setup you can choose to install Image Loader on your PC. Documentation is available in this installed package.

4.7.2.1. Evolutions

No evolution.

4.8. AVL

AVL stands for Added Value Libraries.
No evolution.

4.9. Full configuration for local download for iPP320 in pinpad emulation mode

A binary concatenates the Telium system (including contactless driver) and the Telium manager for an iPP3 used in pinpad emulation for local download mode. It is delivered in the directory: Component\iPP3_EmulationPinpad\Package
Please see description in the CHM help file of the Telium SDK (SDK General Documentation > HOW TO DEVELOP user guide > How to use iPP3xx as a smart card reader).

4.9.1. Evolution

Internal tracker	SUPTEL	Description
11006		PNG files taken account in the iPP3 configuration file

4.10. SDK features

No evolution.

5. Add-ons to Telium SDK

The following table presents the versions of recommended add-ons to use with this SDK.

Add on	Recommended version to use with this SDK	Comment

Easy Path To EMV	20.1	
Add On Contactless (New architecture)	Removed	Components previously in this add-on are in the Telium SDK since 8.1
Easy Path To Contactless	3. 07	
Add On PCL for iPA280	1.17	
Add On PCL for iWP	1.15	
Add On PCL for iMP3xx	1.01	
Add On Morpho	1.06	
Add On Telicapt	2.15	
Add On UCM	2.06.01	
Add On SPDH	1.01	
Add On APACS 40 Generic	1.08	
Add On ISO8583 Generic	3.02	

SDK8.1.2 Release note

1. Standard development platforms

This SDK release is compatible with the following products.

1.1. List of terminals

1.1.1. Wireless

Telium 2:

- iWL220B, iWL220G,
- iWL250B, iWL250G ,
- iWL250 3G (for development only),
- iWL250 2SCR, 2SCR stands for 2 Smart Card Reader,
- IWL280 (signature capture).

Telium 1:

- EFT930 colour,
- EFT930 black and white.

1.1.2. Countertop terminals

Telium 2:

- iCT220, iCT250,
- E532 (for development only)

Telium 1:

- EFT SMART Plus,
- EFT SMART,
- EFT30

1.1.3. Signature capture terminals (Retail pinpads)

- iSC250,
- iSC350

1.1.4. Pinpads

Telium 2:

- iPP320, iPP350,
- iPP3xx used as a smart card reader (Pinpad emulation mode).

Telium 1:

- ML30, ML30 color, ML30 color contactless.

'Booster only' pinpads:

- iPP280, iPP250, iPP220, PPC30, PPR30, P30, P30 Contactless, PP30, PP30S.

1.1.5. Unattended

See UCM add-on package for the exhaustive list.

1.1.6. Satellite terminals

Telium 2:

- iST150.

Telium 1:

- TeliumPass Plus.

1.1.7. Mobile payment

Telium 2:

- iMP3xx (only hardware V4 are supported since SDK 8.0.1),
- SPM (iPA280).

1.1.8. French health care

- TWINs.

1.2. Terminals certified PCI V3

The following terminals are certified for PCI V3:

iWL220	Since SDK 8.0.1
iWL250	Since SDK 8.0.1
iWL280	Since SDK 8.0.1
iSC250	Since SDK 8.0.1
iPP320	Since SDK 8.1
iPP350	Since SDK 8.1

1.3. Public Key Infrastructure

This release supports PKI V3.

1.4. Location for system components

System for iMP3xx is located in Component\OS_iMP3xx
System for iWL280 is located in Component\OS_iWL280

2. What's new?

Issues solved are detailed in paragraph 4.
Here are main evolutions coming with this Telium SDK release compared to the release 8.1.1.

2.1. Terminals

- This release is compatible with IWL280. It was not compatible with the SDK 8.1.1.

2.2. Fixes

- API returning VID is fixed
- G_List_Entry() now uses Telium Manager fonts (_SMALL_,_MEDIUM_,...)
- DLL CB2A: new rule for IPDU LONGUE
- MAC address returned was wrong on iWL 250 Bluetooth associated with an Ethernet base

3. Highlighted points

3.1. Restriction for iPA280 and PCI PED 2.x compliance

During the PCI PED 2.x certification of the iPA280 devices, some constraints have been put at the level of communication of sensitive data from the Secure Payment Module (SPM) to the external world. The PDA part of the product has to be considered as the external world. The reason of this restriction is that the scope of the PCI PED evaluation was the SPM, which has a secure Telium architecture, and not the iPA280 product as a whole.

The restriction forbids communicating:
- Any APDU command response;
- Any cardholder data (i.e. ISO tracks 1 & 2 and their EMV counterpart).

It is also forbidden to receive APDU command queries from the external and to relay them to the smartcard. The restriction imposed by PCI SSC is not limited to banking cards. Direct communication to other types of cards (e.g. loyalty) is not allowed.

The communication APIs to establish communication between SPM and PDA propose some interfaces. It is for sure possible to address communication by using lower level functionalities. This must not be used to circumvent the protocol restrictions for communication.

Since cardholder data must remain within the SPM, the implication of this restriction is that payment applications have to be executed in the SPM and can not be based on a split design between SPM and PDA parts of the device. The PDA can be used for merchant application only (i.e. advertising, product selection)

3.2. Contactless

3.2.1. Best practices for Contactless

3.2.1.1. Field on/off

The contactless field is to be activated only when a contactless card is waited by the terminal. It must be stopped when the management of the contactless card is finished.
If the contactless field is opened all the time:
- On wireless terminals, product battery autonomy is reduced a lot;
- The contactless module and antenna are highly stressed and reliability could decrease quickly with time;

Applications have to manage the opening and the closing of the field according their business logic.

3.2.1.2. Implicit selection

Following terminals having the contactless feature inside are concerned: iWL2xx, iCT250, iSC2xx, iSC3xx, EFT930 GCC, EFT930 BCC, iPP3XX, iPA280 (SPM), ML30C and P30C.

Implicit selection is not recommended and must be managed with caution.
Due to physical reason, implicit selection can lead to unexpected issues, for example, at the beginning of the swipe, the card would possibly enter the antenna field and contactless chip would be handled instead of magnetic track.

3.2.1.3.Use of PSTN modem with contactless activated

The electro-magnetic field created when the contactless is activated, on an integrated terminal, prevents the usage of the PSTN modem with contactless activated.
This is not a software issue, and no software solution exists. The contactless field shall not be activated at the same time as the modem.

Currently, the issue exists only on the iCT250, which is the only Ingenico integrated terminal with contactless and PSTN modem.
(For instance, on EFT930BCC or EFT930GCC with modem, it works, because the modem is on the cradle, and the distance between the modem and the contactless field is sufficient).

3.2.2. Add-on Contactless

The add-on contactless doesn't exist anymore.
All components provided previously in this package are now by default since Telium SDK 8.1. It concerns

- TPass library and component;
- Entry point component;
- GTL library;
- Contactless sample.

3.2.3. Card supported

The list of cards supported by this SDK is given in the paragraph **Erreur ! Source du renvoi introuvable.**: **Erreur ! Source du renvoi introuvable.** .

Recommendation:
Even if a card is managed since an old SDK or Add-On Contactless, usage of a recent SDK is strongly recommend because bugs could have been fixed.

3.3. Family name

The family name, defined in the descriptor used to sign the binary, must follow the pattern "<NAME><VV><AA>" where:

- NAME is the radical of application (maximum 6 ASCII characters);
- VV is the version (2 number);
- AA is the amendment (2 number)

3.4. Pinpad system

To avoid problems when a non mock-up pinpad is linked to a mock-up terminal, the terminal mock-up catalogues don't include pinpad systems. So, you have to load the pinpad system (located in the directory "Component\OS") according to the pinpad you are using.

3.5. DIR system version downgrade

It is not possible to downgrade from a system managing directories (catalogue XXX_DIR.mYY) to a system which not manages directories (catalogue XXX.mYY).

3.6. Reserved numbers

Service numbers from 1 to 100 and from 7680 à 8191 are reserved for Ingenico internal use.
Tag numbers used by applications must be taken in the range 9FA000-9FAFFF.

3.7. EFT930 embedding 8MB of flash

It is possible to use this SDK on EFT930 which has only 8 MB of flash (special system catalogue is provided: EFT930_8MO_PROD.m31). If you use Ingestate you may need some adjustments: please contact your R&D Regional Interface for more information.

For SDK 8.0.x, SDK 8.1 and SDK 8.1.1:
It is forbidden to load a catalogue designed for 8MB terminals on a terminal loaded with a generic catalogue (that is to say non-8 MB). You must contact the Ingenico support for the rules of this migration.

4. Issues solved in this release by component

See table in chapter 0 "

" for the list of versions of components provided in this Telium SDK.

4.1. Telium System

Main points delivered in this release are listed below.

4.1.1. System Thunder

Internal tracker	SUPTEL	Description
		Management of iWL280 : ▪ Touch screen improvement; ▪ Swipe improvement.
10699	SUPTEL-3014	For ISC250 and ISC350 on SDK8.1.1 , issue about USBDEV_FIOCTL_SET_VID fixed

4.2. Telium Manager

4.2.1. Evolutions

Following points are delivered in this release.

Internal tracker	SUPTEL	Description
6934	SUPTEL-3024	Improvement of the delay between amount entry and message requesting card when using "card entry" customization.
10527	SUPTEL-2837	Standby Delay was 1 minute maximum on iWL when contactless was activated
10560		MAC address returned was wrong on iWL 250 Bluetooth associated with an Ethernet base
10586		For development only: it is possible to use the DLL SDI with this Manager. DLL SDI allows the intelligent update of an iST150 via the host terminal. This feature will be officially released in the SDK 8.2
9976	SUPTEL-3083	IsRadio3G() function added to know if a terminal is 3G compatible
10639		DLL CB2A: new rule for IPDU LONGUE
10635	SUPTEL-2977	G_List_Entry() now uses Telium Manager fonts (_SMALL_,_MEDIUM_,...)
9440	SUPTEL-2253	Fix for the MMI allowing to know if IP address has been obtained

4.3. Security

4.3.1. DLL Security

No evolution.

4.3.2. Security Extend library

No evolution.

4.3.3. DLL E2EE

4.3.3.1. Overview

Version 4.0.1 of DLL E2EE, which is included in this SDK, is certified PCI-V3.
Binary is included in the Telium Manager catalogue.

It is provided for the following terminals:

- iWL220, iWL250, iWL280,
- iSC250, iSC350,
- iMP350,
- iPP320, iPP350,
- iCT220, iCT250,
- SPM.

4.3.3.2. Evolutions

Internal tracker	SUPTEL	Description
10802	SUPTEL-3099	When function E2EE_Format_And_Cipher() was called, if the CVV was not provided with the PAN, there was a terminal reset.

4.3.4. Schemes

Last schemes certified are included in this SDK.

4.4. Communication

4.4.1. Link Layer

Following points are delivered in this release.

Internal tracker	SUPTEL	Description
10512	SUPTEL-2900	LL_Network_GetStatus() returned a wrong value when an Ethernet cable was connected
10135	SUPTEL-2639	Synchro frames were sent after a timeout on an SSL session
10641	SUPTEL-3008	Mistake fixed in the sample "Ethernet configuration with SSL" of the CHM help file
10357	SUPTEL-2721	New driver taken into account for iSC250 when le tag LL_PHYSICAL_V_CONVERTER_USB_RS232 is used

4.4.2. Pack IP

No evolution.

4.4.3. FTP

No evolution.

4.4.4. SNMP

No evolution.

4.4.5. SSL

No evolution.

4.5. Display

4.5.1. DLL Image

No evolution.

4.5.2. Fonts

No evolution.

4.5.3. CGUI / CGUI tools

No evolution.

4.5.4. Plug-in Signature Capture

No evolution.

4.5.5. Plug-in Multimedia

No evolution.

4.6. Contactless

4.6.1. DLL TPASS

Internal tracker	SUPTEL	Description
8338 / 9749		Fix for compatibility between DLL Tpass and previous version of Telium Manager

4.7. Applications

4.7.1. Incendo Online browser

Technical documentation and the Incendo SDK are provided with Ingedev (from version 7.8.0).

4.7.1.1. Memory

Before deploying this solution, please check the memory usage of your terminals.

4.7.1.2. Migration to this version

4.7.1.2.1. Restriction

If you migrate a previous version to this one, the Incendo parameters will be lost.

4.7.1.2.2. Migration from a version before 3.0.4

Incendo Online smart browser was previously delivered as an independent package (up to version 3.0.3). It was designed to be signed with region security keys.
The version in this Telium SDK is signed with manufacturer key. So the application type is different between these two versions. If you have already deployed the browser, to migrate to the version included in a Telium SDK, you must manage the change of application type. For further details, please contact the Incendo support.

4.7.1.3. Compatibility

4.7.1.3.1. Terminals managed

Minimal hardware prerequisites are:

- Terminal is Ethernet or GPRS;
- Terminals is Ingetrust ready;
- Minimum of 16 MB of Flash is mandatory;
- 16 MB of RAM are recommended but not mandatory. 8 MB is possible if terminal is Incendo Online only (no other applications).

Incendo Online is compatible with the following terminals:

- EFT930 Color (Booster 2 type),
- iCT220, iCT250,
- iWL220, iWL250

You must not use it on other terminals.

Support of iSC250 and iSC350 will be available in a future release.

4.7.1.3.2. EMV packages compatibility

Incendo smart Browser is compatible with the following EMV packages:

- Version 18
- Version 19

4.7.1.4. Evolutions

No evolution.

4.7.2. Image Loader

At the end of the Telium SDK setup you can choose to install Image Loader on your PC. Documentation is available in this installed package.

4.7.2.1. Evolutions

No evolution.

4.8. AVL

AVL stands for Added Value Libraries.
No evolution.

4.9. Full configuration for local download for iPP320 in pinpad emulation mode

A binary concatenates the Telium system (including contactless driver) and the Telium manager for an iPP3 used in pinpad emulation for local download mode. It is delivered in the directory: Component\iPP3_EmulationPinpad\Package
Please see description in the CHM help file of the Telium SDK (SDK General Documentation > HOW TO DEVELOP user guide > How to use iPP3xx as a smart card reader).

4.9.1. DLL PPLoad evolution

The DLL PPLoad is present in the host terminal and allows the loading of the full configuration to the iPP3.

4.10. SDK features

No evolution.

5. Change of API

5.1. Fct_Cless()

There is a change of API between this SDK and the previous one.

Due to parameters not used in the function:

- Before SDK 8.1.2 prototype was typedef int (*Fct_Cless)(int x,int y);
- Since SDK 8.1.2 prototype is typedef int (*Fct_Cless)(void);

This API exists since SDK 8.0.

6. Add-ons to Telium SDK

The following table presents the versions of recommended add-ons to use with this SDK.

Add on	Recommended version to use with this SDK	Comment
Easy Path To EMV	20.1	
Add On Contactless (New architecture)	Removed	Components previously in this add-on are in the Telium SDK since 8.1
Easy Path To Contactless	3. 07	
Add On PCL for iPA280	1.17	
Add On PCL for iWP	1.15	
Add On PCL for iMP3xx	1.01	
Add On Morpho	1.06	
Add On Telicapt	2.15	
Add On UCM	2.06.01	
Add On SPDH	1.01	
Add On APACS 40 Generic	1.08	
Add On ISO8583 Generic	3.02	

SDK8.1.1 Release note

1. Standard development platforms

Terminals based on Thunder 3 (iSC250, iSC350 and iWL280) are not supported by this SDK.
The Telium SDK 8.1.1 will support them.

This SDK release is compatible with the following products.

1.1. List of terminals

1.1.1. Wireless

Telium 2:

- iWL220B, iWL220G,
- iWL250B, iWL250G , iWL250 3G,
- iWL250 2SCR, 2SCR stands for 2 Smart Card Reader,

IWL280 is not supported by this SDK.

Telium 1:

- EFT930 color,
- EFT930 black and white.

1.1.2. Countertop terminals

Telium 2:

- iCT220, iCT250,
- E532 (for development only)

Telium 1:

- EFT SMART Plus,
- EFT SMART,
- EFT30

1.1.3. Signature capture terminals (Retail pinpads)

They are not supported by this release.

1.1.4. Pinpads

Telium 2:

- iPP320, iPP350,
- iPP320 used as a smart card reader (Pinpad emulation mode).

Telium 1:

- ML30, ML30 color, ML30 color contactless.

'Booster only' pinpads:

- iPP280, iPP250, iPP220, PPC30, PPR30, P30, P30 Contactless, PP30, PP30S.

1.1.5. Unattended

See UCM add-on package for the exhaustive list.

1.1.6. Satellite terminals

Telium 2:

- iST150.

Telium 1:

- TeliumPass Plus.

1.1.7. Mobile payment

Telium 2:

- iMP3xx (only hardware V4 are supported since SDK 8.0.1),
- SPM (iPA280).

1.1.8. French health care

- TWINs.

1.2. Terminals certified PCI V3

The following terminals are certified for PCI V3:

iWL220	Since SDK 8.0.1
iWL250	Since SDK 8.0.1
iWL280	Since SDK 8.0.1
iSC250	Since SDK 8.0.1
iPP320	New in SDK 8.1
iPP350	New in SDK 8.1

1.3. Public Key Infrastructure

This release supports PKI V3.

2. What's new?

Issues solved are detailed in paragraph 4.
Here are main evolutions coming with this Telium SDK release compared to the release 8.1.

2.1. New terminals

Following terminals are now supported in the SDK:

- ✓ iWL250 3G (for development only),
- ✓ iWL250 2SCR, 2SCR stands for 2 Smart Card Reader,
- ✓ iPP3xx are certified PCI PTS V3.

2.2. New features

- ✓ New version of DLL E2EE PCI V3 (list of terminal supported is in the paragraph 4.3.3: DLL E2EE),
- ✓ Local download mode is now available for iPP3 in pinpad emulation,
- ✓ Maximum number of AID managed by one application is increased to 100.

2.3. General points

- ✓ Integration of driver Contactless in the Telium SDK (Add-on contactless will be no more provided, see below for details),
- ✓ Many improvements of documentation.

3. Highlighted points

3.1. Restriction for iPA280 and PCI PED 2.x compliance

During the PCI PED 2.x certification of the iPA280 devices, some constraints have been put at the level of communication of sensitive data from the Secure Payment Module (SPM) to the external world. The PDA part of the product has to be considered as the external world. The reason of this restriction is that the scope of the PCI PED evaluation was the SPM, which has a secure Telium architecture, and not the iPA280 product as a whole.

The restriction forbids communicating:

- Any APDU command response;
- Any cardholder data (i.e. ISO tracks 1 & 2 and their EMV counterpart).

It is also forbidden to receive APDU command queries from the external and to relay them to the smartcard. The restriction imposed by PCI SSC is not limited to banking cards. Direct communication to other types of cards (e.g. loyalty) is not allowed.

The communication APIs to establish communication between SPM and PDA propose some interfaces. It is for sure possible to address communication by using lower level functionalities. This must not be used to circumvent the protocol restrictions for communication.

Since cardholder data must remain within the SPM, the implication of this restriction is that payment applications have to be executed in the SPM and can not be based on a split design between SPM and PDA parts of the device. The PDA can be used for merchant application only (i.e. advertising, product selection)

3.2. Best practices for Contactless

3.2.1. Field on/off

The contactless field is to be activated only when a contactless card is waited by the terminal. It must be stopped when the management of the contactless card is finished.
If the contactless field is opened all the time:

- On wireless terminals, product battery autonomy is reduced a lot;
- The contactless module and antenna are highly stressed and reliability could decrease quickly with time;

Applications have to manage the opening and the closing of the field according their business logic.

3.2.2. Implicit selection

Following terminals having the contactless feature inside are concerned: iWL2xx, iCT250, iSC2xx, iSC3xx, EFT930 GCC, EFT930 BCC, iPP3XX, iPA280 (SPM), ML30C and P30C.

Implicit selection is not recommended and must be managed with caution.
Due to physical reason, implicit selection can lead to unexpected issues, for example, at the beginning of the swipe, the card would possibly enter the antenna field and contactless chip would be handled instead of magnetic track.

3.2.3. Use of PSTN modem with contactless activated

The electro-magnetic field created when the contactless is activated, on an integrated terminal, prevents the usage of the PSTN modem with contactless activated.
This is not a software issue, and no software solution exists. The contactless field shall not be activated at the same time as the modem.

Currently, the issue exists only on the iCT250, which is the only Ingenico integrated terminal with contactless and PSTN modem.
(For instance, on EFT930BCC or EFT930GCC with modem, it works, because the modem is on the cradle, and the distance between the modem and the contactless field is sufficient).

3.3. Add-on Contactless

The add-on contactless doesn't exist anymore.
All components provided previously in this package are now by default in the Telium SDK. It concerns

- TPass library and component;
- Entry point component;
- GTL library;
- Contactless sample.

3.4. Pinpad system

To avoid problems when a non mock-up pinpad is linked to a mock-up terminal, the terminal mock-up catalogues don't include pinpad systems. So, you have to load the pinpad system (located in the directory "Component\OS") according to the pinpad you are using.

3.5. DIR system version downgrade

It is not possible to downgrade from a system managing directories (catalogue XXX_DIR.mYY) to a system which not manages directories (catalogue XXX.mYY).

3.6. Reserved numbers

Service numbers from 1 to 100 and from 7680 à 8191 are reserved for Ingenico internal use.
Tag numbers used by applications must be taken in the range 9FA000-9FAFFF.

3.7. EFT930 embedding 8Mo of flash

It is possible to use this SDK on EFT930 which has only 8 Mo of flash (special system catalogue is provided: EFT930_8MO_PROD.m31). If you use Ingestate you may need some adjustments: please contact your R&D Regional Interface for more information.

4. Issues solved in this release by component

See table in chapter 0 "

" for the list of versions of components provided in this Telium SDK.

4.1. Telium System

Following main points are delivered in this release.

4.1.1. System Thunder

Internal tracker	SUPTEL	Description
10072	SUPTEL-2128	On IWL2XX, SWIPE detection improved when GPRS emitter operates.
10091		On IWL2XX, SWIPE detection improved when noisy device operates (PRINTER and GPRS).
9696	SUPTEL-2362	It is now possible to display 8 Cyrillic characters.
10097		Change of coupler frequency from 3,57MhZ to 4,76MHz is now possible
10104	SUPTEL-2646	Update help concerning __inet_addr
10154	SUPTEL-2615	Adding synchronous shutdown function
10157	SUPTEL-2690	COM_SEND_EMPTY empty event was not fired on COM0
10158	SUPTEL-2631	Disable SET_DTR and CLEAR_DTR on Bluetooth remote modem.
10233	SUPTEL-2739	Added "#define ftruncate eft_ftruncate" in "cpp_e.h" file
10236	SUPTEL-2726	Removed FS_dskdelete function (it was not possible to use it by application)
7996	TFU 5088	Improved error codes set during LLT connexion when trying to load 2 applications with the same application type
8288		USB_PRESENT is now right returned by status() function for MOUSE and KEYBUSB.
8567		Add management of CAM and SWIPE Leds for iPP3 in pinpad emulation (The module 8201030205 must be loaded on the host terminal (iCT...))
8669	TFU 5597 SUPTEL-1884	Const added before const string parameters of the FFMS functions
9373	SUPTEL-2154	Increase SWAP size from 8 to 16 MB (if enough memory is available)
9494		Interface with link layer
9666		Now maximum of threads managed is 150 (80 threads for an application) Now maximum of mailboxes managed is 150.
9748		Hilo 3G is now managed
9753		Twin 33 connected only over USB now works with LLT 4.4.4
9792		Improved connexion of iWL to TMS
9868		Exit 134 (TOO_MANY_FILE) fixed for CAD30 UPT with SDK 7.6.1
9913		New USB identification for E532 (LLT>=4.4 must be used)
9960		Thunder system version added in APPRESET.DIA
9985		It is now possible to display a picture in LLT mode started from Telium Manager

10338	SUPTEL-2775	It fixes iWL250B resets when SWP:ERC[FFFFFFF7] It improves swipe detection
10339	SUPTEL-2815	It is now possible to call fioctl(PRINTER_PRINT_ULIGNE,...) while there is no paper

4.2. Telium Manager

4.2.1. Start-up address

To simplify the diagnostic for forbidden memory access, the start-up address of the Telium Manager is now 0x1000 instead of 0x00.

4.2.2. Evolutions

Following points are delivered in this release.

3241		The GPRS configuration for TMS is updated as soon as an application modify GPRS parameters
10155		The manager will call SELECT_AID_EXTENDED even when there is only one AID in the Candidate List.

10168	SUPTEL-2530	New APIs are provided :
		DisplayFooter (int state) // state _ON_ ou _OFF_
		DisplayHeader (int state) // state _ON_ ou _OFF_
		DisplayLeds (int state) // state _ON_ ou _OFF_

10223	SUPTEL-2520	Empty lines in MANAGER.PAR file are now allowed
10245		Conflict between PrintBMPxy() and pprintf8859() solved
10249		Ignored non significant 0 when keying amount in GetAmount() function
10298		Improvement for PushCGUIContext() and PopCGUIContext()
10334		New APIs are provided : StopBacklightManagment() to disable BACKLIGHT management RestartBacklightManagment() to restore old value
10337		Possibility added to force refresh with PushCGUIContext
8651		Display improvement for QVGA screen in portrait mode
9454		Improvements for G_List_Entry,G_Numerical_Entry,G_Alphanumerical_Entry
9760	SUPTEL-2430	Implementation of the mechanism allowing to update the link APPLI<----->"mode".
9814	SUPTEL-2397	Improvement of function _pprintf8859XY()
9822	SUPTEL-2449	Use Manager current language in the configuration menus hardware
9853		Fonts _PoliceX_Y_ are now usable by all functions
9857		To simplify the diagnostic for forbidden memory access, the start-up address of the Telium Manager is now 0x1000 instead of 0x00
9892		Maximum number of AID managed by one application is increased to 100.
9144	SUPTEL-2118	Improvement fot SUPTEL-2118 (Possibility to customize footer on non-color device with SetFooterBmp())
9381	SUPTEL-2166	Improvement fot SUPTEL-2166 (Manager display message "WELCOME" on PP30S when it waits for card after amount entry)
9440	SUPTEL-2253	Improvement for SUPTEL-2253 (USQ_EthernetConfig() returns the last "REAL" address negotiated)

4.3. Security

4.3.1. DLL Security

No evolution.

4.3.2. Security Extend library

No evolution.

4.3.3. DLL E2EE

Version 4.0.1 is certified PCI-V3.
Binary is included in the Telium Manager catalogue.

It is provided for the following terminals:

- iWL220, iWL250, iWL280,
- iSC250, iSC350,
- iMP350,
- iPP320, iPP350,
- iCT220, iCT250

SPM is not supported by the DLL E2EE PCI-V3.

4.3.4. Schemes

Last schemes certified are included in this SDK.

4.4. Communication

4.4.1. Link Layer

Following points are delivered in this release.

8055	SUPTEL-1593	Tailgate cash register protocol managed
9724		Several radio types managed in the same terminal
9751		Management by Link Layer of iWL 3G
10162		Management by Link Layer of Bluetooth terminals without base

4.4.2. Pack IP

Following points are delivered in this release.

9636		Updated documentation for PCI V3

4.4.3. FTP

No evolution.

4.4.4. SNMP

No evolution.

4.4.5. SSL

Following points are delivered in this release.

9847	SUPTEL-2114	Add SSL_GetAlertError() function to get SSL alert error.
9962	SUPTEL-2513	Add compatibility with certificate without carriage return at the end of the file.
10237	SUPTEL-2684	Add compatibility with X509 certificate using UTF8Strings elements in distinguish name.

4.5. Display

4.5.1. DLL Image

No evolution.

4.5.2. Fonts

No evolution.

4.5.3. CGUI / CGUI tools

No evolution.

4.5.4. Plug-in Signature Capture

No evolution.

4.5.5. Plug-in Multimedia

No evolution.

4.6. Applications

4.6.1. Incendo Online browser

Technical documentation and the Incendo SDK are provided with Ingedev (from version 7.8.0).

Following point is delivered in this release.

10377	OE-1576	Support of several gateways IP addresses and port numbers

Warning: Migration from a previous version to this one result in parameters lost.

4.6.1.1. Memory

Before deploying this solution, please check the memory usage of your terminals.

4.6.1.2. Migration to this version

Incendo Online smart browser was previously delivered as an independent package. It was designed to be signed with region security keys.

The version in this Telium SDK is signed with manufacturer key. So the application type is different between these two versions. If you have already deployed the browser, to migrate to the version included in this SDK, you must manage the change of application type. For further details, please contact the Incendo support.

4.6.1.3. Compatibility

4.6.1.3.1. Terminals managed

Minimal hardware prerequisites are:

- Terminal is Ethernet or GPRS;
- Terminals is Ingetrust ready;
- Minimum of 16 MB of Flash is mandatory;
- 16 MB of RAM are recommended but not mandatory. 8 MB is possible if terminal is Incendo Online only (no other applications).

Incendo Online is compatible with the following terminals:

- EFT930 Color (Booster 2 type),
- iCT220, iCT250,
- iWL220, iWL250

You must not use it on other terminals.

Support of iSC250 and iSC350 will be available in the future.

4.6.1.3.2. EMV packages compatibility

Incendo smart Browser is compatible with the following EMV packages:

- Version 18
- Version 19

4.6.1.4. Evolutions

No evolution.

4.6.2. Image Loader

No evolution.

4.7. AVL

No evolution.

4.8. Full configuration for local download for iPP320 in pinpad emulation mode

This is a new component.
This binary concatenates the Telium system (including contactless driver) and the Telium manager for an iPP3 used in pinpad emulation for local download mode. Please see description in the CHM help file of the Telium SDK (SDK General Documentation > HOW TO DEVELOP user guide > How to use iPP320 as a smart card reader).

4.9. SDK features

Following points are delivered in this release.

		Update of the "How To use iPP3 as a Smart Card Reader" documents

5. Add-ons to Telium SDK

The following table presents the versions of recommended add-ons to use with this SDK.

Add on	Recommended version to use with this SDK	Comment
Easy Path To EMV	20.1	New version
Add On Contactless (New architecture)	Removed	Components previously in this add-on are now in the Telium SDK
Easy Path To Contactless	3. 07	New version
Add On PCL for iPA280	1.15	
Add On PCL for iWP	1.15	
Add On PCL for iMP3xx	1.00	
Add On Morpho	1.06	
Add On Telicapt	2.14	
Add On UCM	2.06.01	New version
Add On SPDH	1.01	
Add On APACS 40 Generic	1.08	
Add On ISO8583 Generic	3.02	

SDK8.1 Release note

1. Standard development platforms

Terminals based on Thunder 3 (iSC250, iSC350 and iWL280) are not supported by this SDK.
The Telium SDK 8.1.1 will support them.

This SDK release is compatible with the following products.

1.1. List of terminals

1.1.1. Wireless

Telium 2:

- iWL220B, iWL220G,
- iWL250B, iWL250G , iWL250 3G,
- iWL250 2SCR, 2SCR stands for 2 Smart Card Reader,

IWL280 is not supported by this SDK.

Telium 1:

- EFT930 color,
- EFT930 black and white.

1.1.2. Countertop terminals

Telium 2:

- iCT220, iCT250,
- E532 (for development only)

Telium 1:

- EFT SMART Plus,
- EFT SMART,
- EFT30

1.1.3. Signature capture terminals (Retail pinpads)

They are not supported by this release.

1.1.4. Pinpads

Telium 2:

- iPP320, iPP350,
- iPP320 used as a smart card reader (Pinpad emulation mode).

Telium 1:

- ML30, ML30 color, ML30 color contactless.

'Booster only' pinpads:

- iPP280, iPP250, iPP220, PPC30, PPR30, P30, P30 Contactless, PP30, PP30S.

1.1.5. Unattended

See UCM add-on package for the exhaustive list.

1.1.6. Satellite terminals

Telium 2:

- iST150.

Telium 1:

- TeliumPass Plus.

1.1.7. Mobile payment

Telium 2:

- iMP3xx (only hardware V4 are supported since SDK 8.0.1),
- SPM (iPA280).

1.1.8. French health care

- TWINs.

1.2. Terminals certified PCI V3

The following terminals are certified for PCI V3:

iWL220	Since SDK 8.0.1
iWL250	Since SDK 8.0.1
iWL280	Since SDK 8.0.1
iSC250	Since SDK 8.0.1
iPP320	New in SDK 8.1
iPP350	New in SDK 8.1

1.3. Public Key Infrastructure

This release supports PKI V3.

2. What's new?

Issues solved are detailed in paragraph 4.
Here are main evolutions coming with this Telium SDK release compared to the release 8.1.

2.1. New terminals

Following terminals are now supported in the SDK:

- ✓ iWL250 3G (for development only),
- ✓ iWL250 2SCR, 2SCR stands for 2 Smart Card Reader,
- ✓ iPP3xx are certified PCI PTS V3.

2.2. New features

- ✓ New version of DLL E2EE PCI V3 (list of terminal supported is in the paragraph 4.3.3: DLL E2EE),
- ✓ Local download mode is now available for iPP3 in pinpad emulation,
- ✓ Maximum number of AID managed by one application is increased to 100.

2.3. General points

- ✓ Integration of driver Contactless in the Telium SDK (Add-on contactless will be no more provided, see below for details),
- ✓ Many improvements of documentation.

3. Highlighted points

3.1. Restriction for iPA280 and PCI PED 2.x compliance

During the PCI PED 2.x certification of the iPA280 devices, some constraints have been put at the level of communication of sensitive data from the Secure Payment Module (SPM) to the external world. The PDA part of the product has to be considered as the external world. The reason of this restriction is that the scope of the PCI PED evaluation was the SPM, which has a secure Telium architecture, and not the iPA280 product as a whole.

The restriction forbids communicating:

- Any APDU command response;
- Any cardholder data (i.e. ISO tracks 1 & 2 and their EMV counterpart).

It is also forbidden to receive APDU command queries from the external and to relay them to the smartcard. The restriction imposed by PCI SSC is not limited to banking cards. Direct communication to other types of cards (e.g. loyalty) is not allowed.

The communication APIs to establish communication between SPM and PDA propose some interfaces. It is for sure possible to address communication by using lower level functionalities. This must not be used to circumvent the protocol restrictions for communication.

Since cardholder data must remain within the SPM, the implication of this restriction is that payment applications have to be executed in the SPM and can not be based on a split design between SPM and PDA parts of the device. The PDA can be used for merchant application only (i.e. advertising, product selection)

3.2. Best practices for Contactless

3.2.1. Field on/off

The contactless field is to be activated only when a contactless card is waited by the terminal. It must be stopped when the management of the contactless card is finished.
If the contactless field is opened all the time:

- On wireless terminals, product battery autonomy is reduced a lot;
- The contactless module and antenna are highly stressed and reliability could decrease quickly with time;

Applications have to manage the opening and the closing of the field according their business logic.

3.2.2. Implicit selection

Following terminals having the contactless feature inside are concerned: iWL2xx, iCT250, iSC2xx, iSC3xx, EFT930 GCC, EFT930 BCC, iPP3XX, iPA280 (SPM), ML30C and P30C.

Implicit selection is not recommended and must be managed with caution.
Due to physical reason, implicit selection can lead to unexpected issues, for example, at the beginning of the swipe, the card would possibly enter the antenna field and contactless chip would be handled instead of magnetic track.

3.2.3. Use of PSTN modem with contactless activated

The electro-magnetic field created when the contactless is activated, on an integrated terminal, prevents the usage of the PSTN modem with contactless activated.
This is not a software issue, and no software solution exists. The contactless field shall not be activated at the same time as the modem.

Currently, the issue exists only on the iCT250, which is the only Ingenico integrated terminal with contactless and PSTN modem.
(For instance, on EFT930BCC or EFT930GCC with modem, it works, because the modem is on the cradle, and the distance between the modem and the contactless field is sufficient).

3.3. Add-on Contactless

The add-on contactless doesn't exist anymore.
All components provided previously in this package are now by default in the Telium SDK. It concerns

- TPass library and component;
- Entry point component;
- GTL library;
- Contactless sample.

3.4. Pinpad system

To avoid problems when a non mock-up pinpad is linked to a mock-up terminal, the terminal mock-up catalogues don't include pinpad systems. So, you have to load the pinpad system (located in the directory "Component\OS") according to the pinpad you are using.

3.5. DIR system version downgrade

It is not possible to downgrade from a system managing directories (catalogue XXX_DIR.mYY) to a system which not manages directories (catalogue XXX.mYY).

3.6. Reserved numbers

Service numbers from 1 to 100 and from 7680 à 8191 are reserved for Ingenico internal use.
Tag numbers used by applications must be taken in the range 9FA000-9FAFFF.

3.7. EFT930 embedding 8Mo of flash

It is possible to use this SDK on EFT930 which has only 8 Mo of flash (special system catalogue is provided: EFT930_8MO_PROD.m31). If you use Ingestate you may need some adjustments: please contact your R&D Regional Interface for more information.

4. Issues solved in this release by component

See table in chapter 0 “

” for the list of versions of components provided in this Telium SDK.

4.1. Telium System

Following main points are delivered in this release.

4.1.1. System Thunder

Internal tracker	SUPTEL	Description
10072	SUPTEL-2128	On IWL2XX, SWIPE detection improved when GPRS emitter operates.
10091		On IWL2XX, SWIPE detection improved when noisy device operates (PRINTER and GPRS).
9696	SUPTEL-2362	It is now possible to display 8 Cyrillic characters.
10097		Change of coupler frequency from 3,57MhZ to 4,76MHz is now possible
10104	SUPTEL-2646	Update help concerning __inet_addr
10154	SUPTEL-2615	Adding synchronous shutdown function
10157	SUPTEL-2690	COM_SEND_EMPTY empty event was not fired on COM0
10158	SUPTEL-2631	Disable SET_DTR and CLEAR_DTR on Bluetooth remote modem.
10233	SUPTEL-2739	Added "#define ftruncate eft_ftruncate" in "cpp_e.h" file
10236	SUPTEL-2726	Removed FS_dskdelete function (it was not possible to use it by application)
7996	TFU 5088	Improved error codes set during LLT connexion when trying to load 2 applications with the same application type
8288		USB_PRESENT is now right returned by status() function for MOUSE and KEYBUSB.
8567		Add management of CAM and SWIPE Leds for iPP3 in pinpad emulation (The module 8201030205 must be loaded on the host terminal (iCT...))
8669	TFU 5597 SUPTEL-1884	Const added before const string parameters of the FFMS functions
9373	SUPTEL-2154	Increase SWAP size from 8 to 16 MB (if enough memory is available)
9494		Interface with link layer
9666		Now maximum of threads managed is 150 (80 threads for an application) Now maximum of mailboxes managed is 150.
9748		Hilo 3G is now managed
9753		Twin 33 connected only over USB now works with LLT 4.4.4
9792		Improved connexion of iWL to TMS
9868		Exit 134 (TOO_MANY_FILE) fixed for CAD30 UPT with SDK 7.6.1
9913		New USB identification for E532 (LLT>=4.4 must be used)
9960		Thunder system version added in APPRESET.DIA
9985		It is now possible to display a picture in LLT mode started from Telium Manager

10338	SUPTEL-2775	It fixes iWL250B resets when SWP:ERC[FFFFFFF7] It improves swipe detection
10339	SUPTEL-2815	It is now possible to call fioctl(PRINTER_PRINT_ULIGNE,…) while there is no paper

4.2. Telium Manager

4.2.1. Start-up address

To simplify the diagnostic for forbidden memory access, the start-up address of the Telium Manager is now 0x1000 instead of 0x00.

4.2.2. Evolutions

Following points are delivered in this release.

3241		The GPRS configuration for TMS is updated as soon as an application modify GPRS parameters
10155		The manager will call SELECT_AID_EXTENDED even when there is only one AID in the Candidate List.

10168	SUPTEL-2530	New APIs are provided :
		DisplayFooter (int state) // state _ON_ ou _OFF_
		DisplayHeader (int state) // state _ON_ ou _OFF_
		DisplayLeds (int state) // state _ON_ ou _OFF_

10223	SUPTEL-2520	Empty lines in MANAGER.PAR file are now allowed
10245		Conflict between PrintBMPxy() and pprintf8859() solved
10249		Ignored non significant 0 when keying amount in GetAmount() function
10298		Improvement for PushCGUIContext() and PopCGUIContext()
10334		New APIs are provided : StopBacklightManagment() to disable BACKLIGHT management RestartBacklightManagment() to restore old value
10337		Possibility added to force refresh with PushCGUIContext
8651		Display improvement for QVGA screen in portrait mode
9454		Improvements for G_List_Entry,G_Numerical_Entry,G_Alphanumerical_Entry
9760	SUPTEL-2430	Implementation of the mechanism allowing to update the link APPLI<----->"mode".
9814	SUPTEL-2397	Improvement of function _pprintf8859XY()
9822	SUPTEL-2449	Use Manager current language in the configuration menus hardware
9853		Fonts _PoliceX_Y_ are now usable by all functions
9857		To simplify the diagnostic for forbidden memory access, the start-up address of the Telium Manager is now 0x1000 instead of 0x00
9892		Maximum number of AID managed by one application is increased to 100.
9144	SUPTEL-2118	Improvement fot SUPTEL-2118 (Possibility to customize footer on non-color device with SetFooterBmp())
9381	SUPTEL-2166	Improvement fot SUPTEL-2166 (Manager display message "WELCOME" on PP30S when it waits for card after amount entry)
9440	SUPTEL-2253	Improvement for SUPTEL-2253 (USQ_EthernetConfig() returns the last "REAL" address negotiated)

4.3. Security

4.3.1. DLL Security

No evolution.

4.3.2. Security Extend library

No evolution.

4.3.3. DLL E2EE

Version 4.0.1 is certified PCI-V3.
Binary is included in the Telium Manager catalogue.

It is provided for the following terminals:

- iWL220, iWL250, iWL280,
- iSC250, iSC350,
- iMP350,
- iPP320, iPP350,
- iCT220, iCT250

SPM is not supported by the DLL E2EE PCI-V3.

4.3.4. Schemes

Last schemes certified are included in this SDK.

4.4. Communication

4.4.1. Link Layer

Following points are delivered in this release.

8055	SUPTEL-1593	Tailgate cash register protocol managed
9724		Several radio types managed in the same terminal
9751		Management by Link Layer of iWL 3G
10162		Management by Link Layer of Bluetooth terminals without base

4.4.2. Pack IP

Following points are delivered in this release.

9636		Updated documentation for PCI V3

4.4.3. FTP

No evolution.

4.4.4. SNMP

No evolution.

4.4.5. SSL

Following points are delivered in this release.

9847	SUPTEL-2114	Add SSL_GetAlertError() function to get SSL alert error.
9962	SUPTEL-2513	Add compatibility with certificate without carriage return at the end of the file.
10237	SUPTEL-2684	Add compatibility with X509 certificate using UTF8Strings elements in distinguish name.

4.5. Display

4.5.1. DLL Image

No evolution.

4.5.2. Fonts

No evolution.

4.5.3. CGUI / CGUI tools

No evolution.

4.5.4. Plug-in Signature Capture

No evolution.

4.5.5. Plug-in Multimedia

No evolution.

4.6. Applications

4.6.1. Incendo Online browser

Technical documentation and the Incendo SDK are provided with Ingedev (from version 7.8.0).

Following point is delivered in this release.

10377	OE-1576	Support of several gateways IP addresses and port numbers

Warning: Migration from a previous version to this one result in parameters lost.

4.6.1.1. Memory

Before deploying this solution, please check the memory usage of your terminals.

4.6.1.2. Migration to this version

Incendo Online smart browser was previously delivered as an independent package. It was designed to be signed with region security keys.

The version in this Telium SDK is signed with manufacturer key. So the application type is different between these two versions. If you have already deployed the browser, to migrate to the version included in this SDK, you must manage the change of application type. For further details, please contact the Incendo support.

4.6.1.3. Compatibility

4.6.1.3.1. Terminals managed

Minimal hardware prerequisites are:

- Terminal is Ethernet or GPRS;
- Terminals is Ingetrust ready;
- Minimum of 16 MB of Flash is mandatory;
- 16 MB of RAM are recommended but not mandatory. 8 MB is possible if terminal is Incendo Online only (no other applications).

Incendo Online is compatible with the following terminals:

- EFT930 Color (Booster 2 type),
- iCT220, iCT250,
- iWL220, iWL250

You must not use it on other terminals.

Support of iSC250 and iSC350 will be available in the future.

4.6.1.3.2. EMV packages compatibility

Incendo smart Browser is compatible with the following EMV packages:

- Version 18
- Version 19

4.6.1.4. Evolutions

No evolution.

4.6.2. Image Loader

No evolution.

4.7. AVL

No evolution.

4.8. Full configuration for local download for iPP320 in pinpad emulation mode

This is a new component.
This binary concatenates the Telium system (including contactless driver) and the Telium manager for an iPP3 used in pinpad emulation for local download mode. Please see description in the CHM help file of the Telium SDK (SDK General Documentation > HOW TO DEVELOP user guide > How to use iPP320 as a smart card reader).

4.9. SDK features

Following points are delivered in this release.

		Update of the "How To use iPP3 as a Smart Card Reader" documents

5. Add-ons to Telium SDK

The following table presents the versions of recommended add-ons to use with this SDK.

Add on	Recommended version to use with this SDK	Comment
Easy Path To EMV	20.1	New version
Add On Contactless (New architecture)	Removed	Components previously in this add-on are now in the Telium SDK
Easy Path To Contactless	3. 07	New version
Add On PCL for iPA280	1.15	
Add On PCL for iWP	1.15	
Add On PCL for iMP3xx	1.00	
Add On Morpho	1.06	
Add On Telicapt	2.14	
Add On UCM	2.06.01	New version
Add On SPDH	1.01	
Add On APACS 40 Generic	1.08	
Add On ISO8583 Generic	3.02	

SDK8.0.2 Release note

1. Standard development platforms

This SDK release is compatible with the following products.

1.1. Wireless

Telium2:
- iWL220B, iWL220G,
- iWL250B, iWL250G ,
- iWL280.

Telium1:
- EFT930 color,
- EFT930 black and white.

1.2. Countertop terminals

Telium2:
- iCT220, iCT250,
- E532 (for development only)

Telium1:
- EFT SMART Plus,
- EFT SMART,
- EFT30

1.3. Signature capture terminals

Telium2:
- iSC250,
- iSC350.

1.4. Pinpads

Telium 2:
- iPP320, iPP350,
- iPP320 used as a smart card reader (Pinpad emulation mode).

Telium 1:
- ML30, ML30 color, ML30 color contactless.

'Booster only' pinpads:
- iPP280, iPP250, iPP220, PPC30, PPR30, P30, P30 Contactless, PP30, PP30S.

1.5. Unattended

See UCM add-on package for the exhaustive list.

1.6. Satellite terminals

Telium2:
- iST150.

Telium1:
- TeliumPass Plus.

1.7. Mobile payment

Telium2:
- iMP3xx (only hardware V4 are supported from this release),
- SPM (iPA280).

1.8. French health care

- TWINs.

2. What's new?

Issues solved are detailed in paragraph 4.
Here are main evolutions coming with this Telium SDK release compared to the release 8.0.1

2.1. TIB warning

TIB warning (low battery) declared with SDK 8.0.1 is now closed.

2.2. Terminals compatibility

In Telium SDK 8.0:
- **iWL 220 and iWL250 were delivered for production: applications developed with this SDK can be deployed in the field;**
- **Other products were delivered for development only: applications must not be deployed in the field. These products were not full validated.**

Telium SDK 8.0.1 and SDK8.0.2 are on the same base and provides software for production for the terminals listed above.

2.3. Add-On compatibility

This package needs to be associated with add-on Cless 3.10.1, simultaneously delivered, to guarantee cohabitation between Touch Screen and Contact Less.

3. Highlighted points

3.1. Restriction for iPA280 and PCI PED 2.x compliance

During the PCI PED 2.x certification of the iPA280 devices, some constraints have been put at the level of communication of sensitive data from the Secure Payment Module (SPM) to the external world. The

PDA part of the product has to be considered as the external world. The reason of this restriction is that the scope of the PCI PED evaluation was the SPM, which has a secure Telium architecture, and not the iPA280 product as a whole.

The restriction forbids communicating:

- Any APDU command response;
- Any cardholder data (i.e. ISO tracks 1 & 2 and their EMV counterpart).

It is also forbidden to receive APDU command queries from the external and to relay them to the smartcard. The restriction imposed by PCI SSC is not limited to banking cards. Direct communication to other types of cards (e.g. loyalty) is not allowed.

The communication APIs to establish communication between SPM and PDA propose some interfaces. It is for sure possible to address communication by using lower level functionalities. This must not be used to circumvent the protocol restrictions for communication.

Since cardholder data must remain within the SPM, the implication of this restriction is that payment applications have to be executed in the SPM and can not be based on a split design between SPM and PDA parts of the device. The PDA can be used for merchant application only (i.e. advertising, product selection)

An evolution of the certification of the device proposes an alternative solution, which consists in using the End-to-End Encryption DLL. The DLL allows two additional use-cases:

- Communication in clear text form of card data to the external world (including PDA) for cards whose BIN is within a range specified as a white list. The idea is to free the usage of private and loyalty cards
- Communication of encrypted cardholder data for banking cards.

The E2EE DLL usable for iPA280 is provided within SDK (versions 7.6 and above).

One must keep in mind that direct (i.e. using APDU commands) communication with the smart card from the PDA remains unauthorized. The only E2EE method covered by the certification is the one that has been certified and bespoke encryption solutions are not allowed.

3.2. Incendo Online smart browser

3.2.1. Presentation

Incendo Online is a hosted service offer that bridges customer touch points with value-added service providers.

Incendo Online provides:

- A flexible development framework based on internet-like technology for a quick and easy service development, deployment, follow-up;
- Back-office tools for customer to monitor service success, administrate service portfolio, and to promote services to customers;
- A partnership program for partner support and go to market definition (tools, business model…).

You can find complete presentation under the directory /Application/Incendo in the directory you installed the Telium SDK.
All technical documentation is provided with Ingedev.

3.2.2. Components of the Incendo solutions

The Incendo Online smart browser, which is now part of the Telium SDK, is the software embedded in the Telium terminals that interpret TML type files developed for services.
The Incendo SDK (simulator, gateway…) will be provided in the next version of Ingedev (v7.8.0).

3.2.3. Reservations on this version

If you want to deploy Incendo Online solution, please contact the Incendo support.
You can deploy this version but Ingenico can oblige you to migrate to a newer version.

3.2.4. Memory

Before deploying this solution, please check the memory usage of your terminals.

3.2.5. Migration to this version

Incendo Online smart browser was previously delivered as an independent package. It was designed to be signed with region security keys.
The version in this Telium SDK is signed with manufacturer key. So the application type is different between these two versions. If you have already deployed the browser, to migrate to the version included in this SDK, you must manage the change of application type. For further details, please contact the Incendo support.

3.2.6. Compatibility

3.2.6.1. Terminals managed

Minimal hardware prerequisites are:

- Terminal is Ethernet or GPRS;
- Terminals is Ingetrust ready;
- Minimum of 16 MB of Flash is mandatory;
- 16 MB of RAM are recommended but not mandatory. 8 MB is possible if terminal is Incendo Online only (no other applications).

This release of Incendo Online browser is compatible with the following terminals:

- EFT930 Color (Booster 2 type),
- iCT220, iCT250,
- iWL220, iWL250

You must not use it on other terminals.

3.2.6.2. EMV packages compatibility

Incendo smart Browser is compatible with the following EMV packages:

- Version 18
- Version 19

3.3. Best practices for Contactless

3.3.1. Field on/off

The contactless field is to be activated only when a contactless card is waited by the terminal. It must be stopped when the management of the contactless card is finished.
If the contactless field is opened all the time:

- On wireless terminals, product battery autonomy is reduced a lot;

- The contactless module and antenna are highly stressed and reliability could decrease quickly with time;

Applications have to manage the opening and the closing of the field according their business logic.

3.3.2. Implicit selection

Following terminals having the contactless feature inside are concerned: iWL2xx, iCT250, iSC2xx, iSC3xx, EFT930 GCC, EFT930 BCC, iPP3XX, iPA280 (SPM), ML30C and P30C.

Implicit selection is not recommended and must be managed with caution.
Due to physical reason, implicit selection can lead to unexpected issues, for example, at the beginning of the swipe, the card would possibly enter the antenna field and contactless chip would be handled instead of magnetic track.

3.3.3. Use of PSTN modem with contactless activated

The electro-magnetic field created when the contactless is activated, on an integrated terminal, prevents the usage of the PSTN modem with contactless activated.
This is not a software issue, and no software solution exists. The contactless field shall not be activated at the same time as the modem.

Currently, the issue exists only on the iCT250, which is the only Ingenico integrated terminal with contactless and PSTN modem.
(For instance, on EFT930BCC or EFT930GCC with modem, it works, because the modem is on the cradle, and the distance between the modem and the contactless field is sufficient).

3.4. Pinpad system

To avoid problems when a non mock-up pinpad is linked to a mock-up terminal, the terminal mock-up catalogues don't include pinpad systems. So, you have to load the pinpad system (located in the directory "Component\OS") according to the pinpad you are using.

3.5. DIR system version downgrade

It is not possible to downgrade from a system managing directories (catalogue XXX_DIR.mYY) to a system which not manages directories (catalogue XXX.mYY).

3.6. Reserved numbers

Service numbers from 1 to 100 and from 7680 à 8191 are reserved for Ingenico internal use.
Tag numbers used by applications must be taken in the range 9FA000-9FAFFF.

3.7. EFT930 embedding 8Mo of flash

It is possible to use this SDK on EFT930 which has only 8 Mo of flash (special system catalogue is provided: EFT930_8MO_PROD.m31). If you use Ingestate you may need some adjustments: please contact your R&D Regional Interface for more information.

4. Issues solved in this release by component

4.1. Telium System (New version: 10.50)

Following main points are delivered in this release.

4.1.1. System Thunder

Following points are delivered in this release.

Internal tracker	SUPTEL	Description
10173		SDK 8.0.2 : No more SDK 8.0 warning for EFT930 (low battery)
10224		Fix for missing draw of single touch dot

4.2. Telium Manager (New version: 62.04)

Following points are delivered in this release.

9946		Improvement for swap between WGUI screen and standard screen
10039	SUPTEL-2555	iPP280 display : Use POLICE8x12 to display AID selection menu on IPP280
10134	SUPTEL-2666	IWL280: PaintFilm( ) – BmpToScreen function works with BMP files of 1,8 and 24 bits resolution
10148	SUPTEL-2253	USQ_EthernetConfig return the last “REAL” address negociated
10177		Documentation only
10182		Base Status : Bad information no more indicated

4.3. Security

4.3.1. DLL Security (Version: 03.20)

No evolution.

4.3.2. Security Extend library (Version: 02.04)

No evolution.

4.3.3. DLL E2EE (Version: 01.01)

No evolution.

4.3.4. TLV Schemes (Version: 02.04)

No evolution.

4.3.5. Non-TLV Schemes (Version: 03.06)

No evolution.

4.4. Communication

4.4.1. Link Layer (Version: 03.20)

No evolution.

4.4.2. Pack IP (Version: 03.08)

No evolution.

4.4.3. FTP (Version: 01.20)

No evolution.

4.4.4. SNMP (Version: 01.01)

No evolution.

4.4.5. SSL (Version: 01.61)

No evolution.

4.5. Display

4.5.1. DLL Image (Version: 01.01)

No evolution.

4.5.2. Fonts (Version: 01.10)

No evolution.

4.5.3. CGUI (Version : 01.17) / CGUI tools (Version 01.10)

No evolution.

4.5.4. Plug-in Signature Capture (Version: 01.09)

Following point is delivered in this release.

10224		Fix for missing draw of single touch dot

4.5.5. Plug-in Multimedia (Version: 01.09)

No evolution.

4.6. Applications

4.6.1. Incendo Online browser (Version 3.0.4)

No evolution.

4.6.2. Image Loader (01.06)

No evolution.

4.7. AVL (Version: 01.16)

Documentation only.

4.8. SDK features

Following points are delivered in this release.

10201		Cgui documentation re-established in SDK's CHM
10220		Compilation warning messages deleted

5. Add-ons to Telium SDK

The following table presents the versions of recommended add-ons to use with this SDK.

Add on	Recommended version to use with this SDK
Easy Path To EMV	20.1
Add On Cless (New architecture)	3.10.1(New version)
Easy Path To CLESS	3.06
Add On PCL for iPA280	1.15
Add On PCL for iWP	1.15
PCL for iMP3xx	1.00 (New version)
Add On Morpho	1.06
Add On Telicapt	2.14
Add On UCM	2.06
Add On SPDH	1.01
Add On APACS 40 Generic	1.08
Add On ISO8583 Generic	3.02

SDK8.0.1 Release note

1. Standard development platforms

This SDK release is compatible with the following products.

1.1. Wireless

Telium2:
- iWL220B, iWL220G,
- iWL250B, iWL250G ,
- iWL280.

Telium1:
- EFT930 color,
- EFT930 black and white.

1.2. Countertop terminals

Telium2:
- iCT220, iCT250,
- E532 (for development only)

Telium1:
- EFT SMART Plus,
- EFT SMART,
- EFT30

1.3. Signature capture terminals

Telium2:
- iSC250,
- iSC350.

1.4. Pinpads

Telium 2:
- iPP320, iPP350,
- iPP320 used as a smart card reader (Pinpad emulation mode).

Telium 1:
- ML30, ML30 color, ML30 color contactless.

'Booster only' pinpads:
- iPP280, iPP250, iPP220, PPC30, PPR30, P30, P30 Contactless, PP30, PP30S.

1.5. Unattended

See UCM add-on package for the exhaustive list.

1.6. Satellite terminals

Telium2:
- iST150.

Telium1:
- TeliumPass Plus.

1.7. Mobile payment

Telium2:
- iMP3xx (only hardware V4 are supported from this release),
- SPM (iPA280).

1.8. French health care

- TWINs.

2. What's new?

Issues solved are detailed in paragraph 4.
Here are main evolutions coming with this Telium SDK release compared to the release 8.0.

2.1. Terminals compatibility

In Telium SDK 8.0:
- **iWL 220 and iWL250 were delivered for production: applications developed with this SDK can be deployed in the field;**
- **Other products were delivered for development only: applications must not be deployed in the field. These products were not full validated.**

Telium SDK 8.0.1 is on the same base and provides software for production for the terminals listed above.

2.2. Applications

✓ The application Incendo Online Browser is now provided in the Telium SDK. See dedicated chapter.

2.3. General points

✓ "How To" documentations updated.

3. Highlighted points

3.1. Restriction for iPA280 and PCI PED 2.x compliance

During the PCI PED 2.x certification of the iPA280 devices, some constraints have been put at the level of communication of sensitive data from the Secure Payment Module (SPM) to the external world. The

PDA part of the product has to be considered as the external world. The reason of this restriction is that the scope of the PCI PED evaluation was the SPM, which has a secure Telium architecture, and not the iPA280 product as a whole.

The restriction forbids communicating:

- Any APDU command response;
- Any cardholder data (i.e. ISO tracks 1 & 2 and their EMV counterpart).

It is also forbidden to receive APDU command queries from the external and to relay them to the smartcard. The restriction imposed by PCI SSC is not limited to banking cards. Direct communication to other types of cards (e.g. loyalty) is not allowed.

The communication APIs to establish communication between SPM and PDA propose some interfaces. It is for sure possible to address communication by using lower level functionalities. This must not be used to circumvent the protocol restrictions for communication.

Since cardholder data must remain within the SPM, the implication of this restriction is that payment applications have to be executed in the SPM and can not be based on a split design between SPM and PDA parts of the device. The PDA can be used for merchant application only (i.e. advertising, product selection)

An evolution of the certification of the device proposes an alternative solution, which consists in using the End-to-End Encryption DLL. The DLL allows two additional use-cases:

- Communication in clear text form of card data to the external world (including PDA) for cards whose BIN is within a range specified as a white list. The idea is to free the usage of private and loyalty cards
- Communication of encrypted cardholder data for banking cards.

The E2EE DLL usable for iPA280 is provided within SDK (versions 7.6 and above).

One must keep in mind that direct (i.e. using APDU commands) communication with the smart card from the PDA remains unauthorized. The only E2EE method covered by the certification is the one that has been certified and bespoke encryption solutions are not allowed.

3.2. Incendo Online smart browser

3.2.1. Presentation

Incendo Online is a hosted service offer that bridges customer touch points with value-added service providers.

Incendo Online provides:

- A flexible development framework based on internet-like technology for a quick and easy service development, deployment, follow-up;
- Back-office tools for customer to monitor service success, administrate service portfolio, and to promote services to customers;
- A partnership program for partner support and go to market definition (tools, business model…).

You can find complete presentation under the directory /Application/Incendo in the directory you installed the Telium SDK.
All technical documentation is provided with Ingedev.

3.2.2. Components of the Incendo solutions

The Incendo Online smart browser, which is now part of the Telium SDK, is the software embedded in the Telium terminals that interpret TML type files developed for services.
The Incendo SDK (simulator, gateway…) will be provided in the next version of Ingedev (v7.8.0).

3.2.3. Reservations on this version

If you want to deploy Incendo Online solution, please contact the Incendo support.
You can deploy this version but Ingenico can oblige you to migrate to a newer version.

3.2.4. Memory

Before deploying this solution, please check the memory usage of your terminals.

3.2.5. Migration to this version

Incendo Online smart browser was previously delivered as an independent package. It was designed to be signed with region security keys.
The version in this Telium SDK is signed with manufacturer key. So the application type is different between these two versions. If you have already deployed the browser, to migrate to the version included in this SDK, you must manage the change of application type. For further details, please contact the Incendo support.

3.2.6. Compatibility

3.2.6.1. Terminals managed

Minimal hardware prerequisites are:

- Terminal is Ethernet or GPRS;
- Terminals is Ingetrust ready;
- Minimum of 16 MB of Flash is mandatory;
- 16 MB of RAM are recommended but not mandatory. 8 MB is possible if terminal is Incendo Online only (no other applications).

Incendo Online is compatible with the following terminals:

- EFT930 Color (Booster 2 type),
- iCT220, iCT250,
- iWL220, iWL250

You must not use it on other terminals.

3.2.6.2. EMV packages compatibility

Incendo smart Browser is compatible with the following EMV packages:

- Version 18
- Version 19

3.3. Best practices for Contactless

3.3.1. Field on/off

The contactless field is to be activated only when a contactless card is waited by the terminal. It must be stopped when the management of the contactless card is finished.
If the contactless field is opened all the time:

- On wireless terminals, product battery autonomy is reduced a lot;

- The contactless module and antenna are highly stressed and reliability could decrease quickly with time;

Applications have to manage the opening and the closing of the field according their business logic.

3.3.2. Implicit selection

Following terminals having the contactless feature inside are concerned: iWL2xx, iCT250, iSC2xx, iSC3xx, EFT930 GCC, EFT930 BCC, iPP3XX, iPA280 (SPM), ML30C and P30C.

Implicit selection is not recommended and must be managed with caution.
Due to physical reason, implicit selection can lead to unexpected issues, for example, at the beginning of the swipe, the card would possibly enter the antenna field and contactless chip would be handled instead of magnetic track.

3.3.3. Use of PSTN modem with contactless activated

The electro-magnetic field created when the contactless is activated, on an integrated terminal, prevents the usage of the PSTN modem with contactless activated.
This is not a software issue, and no software solution exists. The contactless field shall not be activated at the same time as the modem.

Currently, the issue exists only on the iCT250, which is the only Ingenico integrated terminal with contactless and PSTN modem.
(For instance, on EFT930BCC or EFT930GCC with modem, it works, because the modem is on the cradle, and the distance between the modem and the contactless field is sufficient).

3.4. Pinpad system

To avoid problems when a non mock-up pinpad is linked to a mock-up terminal, the terminal mock-up catalogues don't include pinpad systems. So, you have to load the pinpad system (located in the directory "Component\OS") according to the pinpad you are using.

3.5. DIR system version downgrade

It is not possible to downgrade from a system managing directories (catalogue XXX_DIR.mYY) to a system which not manages directories (catalogue XXX.mYY).

3.6. Reserved numbers

Service numbers from 1 to 100 and from 7680 à 8191 are reserved for Ingenico internal use.
Tag numbers used by applications must be taken in the range 9FA000-9FAFFF.

3.7. EFT930 embedding 8Mo of flash

It is possible to use this SDK on EFT930 which has only 8 Mo of flash (special system catalogue is provided: EFT930_8MO_PROD.m31). If you use Ingestate you may need some adjustments: please contact your R&D Regional Interface for more information.

4. Issues solved in this release by component

4.1. Telium System (New version: 10.46)

Following main points are delivered in this release.

4.1.1. System Thunder

Internal tracker	SUPTEL	Description
9539	SUPTEL-2290	Pinpad auto-detection at start-up: complement for this issue. The pinpad must be off before the auto-detection. Put "pinpad_unknown" in 020132 parameter of MANAGER.PAR. Here is a sample for MANAGER.PAR: 020101=1; 020131=1; 020132=255;

4.2. Telium Manager (New version: 62.03)

Following points are delivered in this release.

7809		French health care : CARD_INSIDE entry point is now available on CAM1
9437	SUPTEL-2249	Polling mode for SELECT_AID_EXTENDED added
9555	SUPTEL-2312	Function PSQ_update_ClessReader() added to configure the contactless reader
9582		Documentation update
9606	SUPTEL-2330	“Pinpad Out Of Order” message can be customized by application
9856		On IPP3XX in emulation mode, contactless target display size fixed
9977		iST150 download report ticket now correctly printed
10037	SUPTEL-2610	Wrong return of HWCNF_SetStandbyDelay() fixed on iWL220 and iWL250
10038	SUPTEL-2610	On iST150, message 'PRESENTER MOBILE' was truncated
10039	SUPTEL-2555	Improvement of IPP280 display
10049		Bad return fixed on ipdu_etab_ligne()
10073	SUPTEL-2614	Improvement on stand by delay on iWL220/250
10113	SUPTEL-2570	Improvement of help for functions PushCGUIContext() and PopCGUIContext()
10124	SUPTEL-2660	_clrscr does not work in SDK 8.0

4.3. Security

4.3.1. DLL Security (Version: 03.20)

No evolution.

4.3.2. Security Extend library (Version: 02.04)

No evolution.

4.3.3. DLL E2EE (Version: 01.01)

No evolution.

4.3.4. TLV Schemes (Version: 02.04)

No evolution.

4.3.5. Non-TLV Schemes (Version: 03.06)

No evolution.

4.4. Communication

4.4.1. Link Layer (Version: 03.20)

No evolution.

4.4.2. Pack IP (Version: 03.08)

No evolution.

4.4.3. FTP (Version: 01.20)

No evolution.

4.4.4. SNMP (Version: 01.01)

No evolution.

4.4.5. SSL (Version: 01.61)

No evolution.

4.5. Display

4.5.1. DLL Image (Version: 01.01)

No evolution.

4.5.2. Fonts (Version: 01.10)

No evolution.

4.5.3. CGUI (Version: 01.17) / CGUI tools (Version 01.10)

No evolution.

4.5.4. Plug-in Signature Capture (Version: 01.08)

Following points are delivered in this release.

9998		Compatibility with CGUI for version upper or equal to SDK 8.0

4.5.5. Plug-in Multimedia (Version: 01.09)

Following points are delivered in this release.

10030		Compatibility with CGUI for version upper or equal to SDK 8.0

4.6. Applications

4.6.1. Incendo Online browser (Version 3.0.4)

This is a new component of the Telium SDK.

4.6.2. Image Loader (01.06)

No evolution.

4.7. AVL (Version: 01.15)

No evolution.

4.8. SDK features

Following points are delivered in this release.

10029	SUPTEL-2562	Update of buzzer section in "How To Develop on iPP3xx"
		Update of the "How To " documents
10036		Double definition of TAG_EMV_INT_TRANSACTION_TYPE removed. Define in EMV is renamed by TAG_INT_TRANSACTION_TYPE. Use Easy Path EMV 20.01

5. Add-ons to Telium SDK

The following table presents the versions of recommended add-ons to use with this SDK.

Add on	Recommended version to use with this SDK
Easy Path To EMV	20.1 (New version)
Add On Cless (New architecture)	3.10
Easy Path To CLESS	3.06
Add On PCL for iPA280	1.15
Add On PCL for iWP	1.15
PCL for iMP3xx	Available beginning of June
Add On Morpho	1.06
Add On Telicapt	2.14

Add On UCM	2.06
Add On SPDH	1.01
Add On APACS 40 Generic	1.08
Add On ISO8583 Generic	3.02

SDK8.0 Release note

Only iWL220 and iWL250 are supported for production purpose (without CGUI), other terminals are for development only.

1. Standard development platforms

1.1. Supported terminals for production

The following terminals are managed in this SDK for production:

- iWL220 and iWL250 GPRS;
- iWL220 and iWL250 Bluetooth.

You can deploy applications based on this SDK for these terminals only.

Nota: CGUI applications are not yet guaranteed.

1.2. Supported terminals for development only

The other terminals are provided for application development only. The qualification of this Telium SDK on these terminals is currently in progress:

- Telium1: EFT30, EFT SMART, TWIN, ML30, SMART2, EFT930 (wireless terminal), EFT930 BL2 (wireless terminal).
- Telium2: iCT220, iCT250 , ,SPM (iPA280) , iPP320, iPP350, iSC250, iSC350, iMP350, E532, iWL280 GPRS;
- Pinpad: P30, P30 Contactless, PP30S, PPC30, PPR30, iPP220, iPP250, iPP280, iPP320 used as a smart card reader (Pinpad emulation mode), iST150, TeliumPass Plus.

You are not allowed to deploy in the field, applications based on this SDK for these terminals.

You will be informed about the delivery of the "full terminals compatible" version of this SDK.

2. What's new?

Issues solved are detailed in paragraph 4.
Here are the main evolutions coming with this Telium SDK release.

2.1. New terminals

- ✓ IWL220 and iWL250 Bluetooth : they are provided for production;
- ✓ Smart bases BEM (Bluetooth Ethernet Modem) for iWL220 and iWL250 are now managed.

2.2. Features

- ✓ Energy save mode for ICT220 and iCT250.

2.3. Security

- ✓ This SDK is software PCI V3 ready;
- ✓ New TLV scheme pack version 2.04 is provided.

2.4. Applications

- ✓ The application Image Loader is now provided in the Telium SDK.

2.5. General points

- ✓ Many documentation improvements
- ✓ "Frequently Asked Questions" section in the CHM help file now informs you of important points to know about Telium SDK.

3. Highlighted points

3.1. Restriction for iPA280 and PCI PED 2.x compliance

During the PCI PED 2.x certification of the iPA280 devices, some constraints have been put at the level of communication of sensitive data from the Secure Payment Module (SPM) to the external world. The PDA part of the product has to be considered as the external world. The reason of this restriction is that the scope of the PCI PED evaluation was the SPM, which has a secure Telium architecture, and not the iPA280 product as a whole.

The restriction forbids communicating:

- Any APDU command response;
- Any cardholder data (i.e. ISO tracks 1 & 2 and their EMV counterpart).

It is also forbidden to receive APDU command queries from the external and to relay them to the smartcard. The restriction imposed by PCI SSC does is not limited to banking cards. Direct communication to other types of cards (e.g. loyalty) is not allowed.

The communication APIs to establish communication between SPM and PDA propose some interfaces. It is for sure possible to address communication by using lower level functionalities. This must not be used to circumvent the protocol restrictions for communication.

Since cardholder data must remain within the SPM, the implication of this restriction is that payment applications have to be executed in the SPM and can not be based on a split design between SPM and PDA parts of the device. The PDA can be used for merchant application only (i.e. advertising, product selection)

An evolution of the certification of the device proposes an alternative solution, which consists in using the End-to-End Encryption DLL. The DLL allows two additional use-cases:

- Communication in clear text form of card data to the external world (including PDA) for cards whose BIN is within a range specified as a white list. The idea is to free the usage of private and loyalty cards
- Communication of encrypted cardholder data for banking cards.

The E2EE DLL usable for iPA280 is provided within SDK (versions 7.6 and above).

One must keep in mind that direct (i.e. using APDU commands) communication with the smart card from the PDA remains unauthorized. The only E2EE method covered by the certification is the one that has been certified and bespoke encryption solutions are not allowed.

3.2. Image Loader

Image Loader is a terminal application managing idle screen, dedicated to Telium colour terminals. Thanks to an easy handling menu, it manages fixed images display and slide shows (animations).
BMP, JPG and PNG Images and animations can be loaded from USB key, SD card or via TMS.

The installation of this application is optional: you are asked at the end of Telium SDK installation if you want to install it.
All documentation is in the directory where Image Loader is installed.

Image Loader is compatible with the following terminals:

- EFT930 Color Contactless
- ML30 Color Contactless
- iCT250
- iWL250,
- iSC250,
- iSC350
- iPP350.

Image Loader is particularly suitable with images generated with Image Optimizer (PC editor).

3.3. Security components

3.3.1. Schemes Pack

The Schemes Pack version 2.04 is integrated in this version of Telium SDK. It is compatible with PCI V3 requirements.

3.3.2. Security Extend library

The Security Extend library (SEC_extend.lib) is an extension of the DLL security (high level functions).

In the CHM help file in the security DLL page, you can find the list of schemes functions managed by the Security Extend library.

If you need to use the schemes functions managed by the Security Extend library, you have to:

- Include the file SEC_extend.h in your source code (SEC_extend.h includes itself the file SEC_interface.h);
- Link with SEC_extend.lib (if you use Ingedev, this library is automatically used for the link).

The Security Extend library version will change independently of the Security DLL version. Its version is linked to the Schemes Pack version.

3.4. Libraries compatible with GCC4

From SDK 7.6, libraries are provided in the GNU4 format (compiled with GNU ARM 4.3.4). Main benefits to migrate to this compiler are:

- The use of a buffer overflow protection mechanism called canary;
- The best support for C++.

These libraries are provided in the directory SDK\lib_gnu_434.
On the Ingedev side, this feature is available since the version 7.6.0.6.

You can read more information about this subject in the IngeDev User Guide, in the chapter Telium Development > Stack Buffer Overflow.

3.5. Telium fonts

Fonts were previously named ISO1.xGN, ISO2.xGN…. To allow the downloading from the TMS, their names now follows the same rule than other files. They are named 844nnnAABB.xGN where 844nnn is the Ingenico software number, AA is the major version of the file and BB is the minor version).
The link between the names ISO and 844nnn is given in the file readme.txt in the directory ($YourInstallPath)\component\Fonts.
This change is compatible with the existing applications: for example you can continue to use LoadFont(/SYSTEM/ISO1.SGN). You can also use: LoadFont(/SYSTEM/8442160101.SGN).

In the directory "Standard" (previously in directory "New"), are provided fonts managing fixed width (excepted font ISO6 which is not available for fixed width due to large characters included in this alphabet). They must be used for new development.
Fonts provided in the directory "Deprecated" (previously "Old") embeds some characters which don't respect the fixed width. They are kept for compatibility with some old applications. In existing applications, you can use the standard fonts if you don't need the fixed width characters.

3.6. Best practices for Contactless

3.6.1. Field on/off

The contactless field is to be activated only when a contactless card is waited by the terminal. It must be stopped when the management of the contactless card is finished.
If the contactless field is opened all the time:

- On wireless terminals, product battery autonomy is reduced a lot;
- The contactless module and antenna are highly stressed and reliability could decrease quickly with time;

Applications have to manage the opening and the closing of the field according their business logic.

3.6.2. Implicit selection

Following terminals having the contactless feature inside are concerned: iWL2xx, iCT250, iSC2xx, iSC3xx, EFT930 GCC, EFT930 BCC, iPP3XX, iPA280 (SPM), ML30C and P30C.

Implicit selection is not recommended and must be managed with caution.
Due to physical reason, implicit selection can lead to unexpected issues, for example, at the beginning of the swipe, the card would possibly enter the antenna field and contactless chip would be handled instead of magnetic track.

3.6.3. Use of PSTN modem with contactless activated

The electro-magnetic field created when the contactless is activated, on an integrated terminal, prevents the usage of the PSTN modem with contactless activated.
This is not a software issue, and no software solution exists. The contactless field shall not be activated at the same time as the modem.

Currently, the issue exists only on the iCT250, which is the only Ingenico integrated terminal with contactless and PSTN modem.
(For instance, on EFT930BCC or EFT930GCC with modem, it works, because the modem is on the cradle, and the distance between the modem and the contactless field is sufficient).

3.7. Pinpad system

To avoid problems when a non mock-up pinpad is linked to a mock-up terminal, the terminal mock-up catalogues don't include pinpad systems. So, you have to load the pinpad system (located in the directory "Component\OS") according to the pinpad you are using.

3.8. DIR system version downgrade

It is not possible to downgrade from a system managing directories (catalogue XXX_DIR.mYY) to a system which not manages directories (catalogue XXX.mYY).

3.9. Reserved numbers

Service numbers from 1 to 100 and from 7680 à 8191 are reserved for Ingenico internal use.
Tag numbers used by applications must be taken in the range 9FA000-9FAFFF.

3.10. EFT930 embedding 8Mo of flash

It is possible to use this SDK on EFT930 which has only 8 Mo of flash (special system catalogue is provided: EFT930_8MO_PROD.m31). If you use Ingestate you may need some adjustments: please contact your R&D Regional Interface for more information.

4. Issues solved in this release by component

4.1. Telium System (New version: 10.35)

Following main points are delivered in this release.

4.1.1. System Thunder

9468	SUPTEL 2236	IPP3xx was unable to detect Ethernet on a 10Mbit hub
9002	SUPTEL-2038	CHM improvement on RegisterPowerFailure() function
9353	SUPTEL-2184	Improvement for HID USB, when used in combination with the Link Layer.
9367	SUPTEL-2333	Now, backlight display / keyboard / pinpad is managed independently
9845	SUPTEL-2383	A lot of traces in CDC driver had been removed to avoid trace_tool freeze
		Evolutions for PKI V3
9427		Mock-up for MA500 et MA2G products

9457		Energy save mode for ICT220 and iCT250
9589		Improvement of Telium System documentation
9837		Contactless LED Asia managed on iST1xx
9843		PatchDriver optimisation

4.1.2. System Thunder III

9298	SUPTEL-2165	Multimedia: allow secured application to disable certificate check (aka .MGN files)

4.1.3. Remote debugger

9155	SUPTEL-1284	When using the remote debugger with Ingedev, the limit of 16 simultaneous breakpoints has been increased to be 50.

4.1.4. Signature

8649	TFU 5518	On Telium II, when a component is updated with LLT or TMS, now, if is signed with only one signature, the download is aborted with message : "Signature 1 not found:<filename>"

4.1.5. Swipe generic

9243	SUPTEL-2128	Improvement of swipe card detection when terminal exit from idle state (swipe already opened)

4.2. Telium Manager (New version: 62.00)

Following points are delivered in this release.

8954	SUPTEL-2006	"How to configure hardware" documentation added
9257	SUPTEL-2077	Added IS_NAME_EXTENDED entry point managing 38 applications (IS_NAME manages 15 applications)
9144	SUPTEL-2118	Function SetFooterBmp() added to setup the bitmap displayed in the footer
9381	SUPTEL-2166	Now, Telium Manager displays message "WELCOME" on PP30S when it waits for card after amount entry
9539	SUPTEL-2290	Pinpad auto-detection at start-up
9911	SUPTEL-2516	Improvement when re-reading a magnetic stripe card (when the terminal is not parameterized as ISO2 only and if service call mechanism 100 is used)

9440	SUPTEL-2253	Added information to know if IP address has been obtained with manager Header. On Black and White terminals: - Not connected = nothing written on top of handset - Connected with no IP = "Eth" written on top of handset - Connected with IP = "ETH" written on top of handset On Colour terminals: - Not connected = Gray bitmap representing "Ethernet" - Connected with no IP = Red bitmap representing "Ethernet" - Connected with IP = Green bitmap representing "Ethernet"
9855	SUPTEL-2327	When header is activated/deactivated from KEYBOARD_EVENT entry point, the screen is now instantly refreshed
9674	SUPTEL-2377	The maximum value of IAM task is now the maximum number of mailboxes allowed by the system
9760	SUPTEL-2430	French domain only: In protocol CONCERT, CUP_BPOP application managed
9822	SUPTEL-2449	Use of English messages by default in the hardware configuration menus
9487		New management for WakeUp of POS to be sure that the POS wake up at good hour.
8570		Removed controls on Bluetooth hardware configuration in the analysis of MANAGER.PAR file
9582		Improvement of Telium Manager documentation
9675		Display of header is now correctly managed during network fallback
9680		Added new function to display the contactless logo on B&W terminals: extern int DisplayTargetCless(int periph)
9730		Add new function to get pinpad serial number for IPP3XX used in pinpad emulation mode: PPS_GetSoftwareConfig()
9762		Large size data supported on DLL PSC
9806		Management of Telium fonts new names (including version and amendment)
9856		Contactless target correctly displayed on IPP3XX used in pinpad emulation mode
9375		Function PPS_GetConnectedPinpad() added to know the type of pinpad connected
9946		Improvement for swap between CGUI screen and standard (non CGUI) screen
9539	SUPTEL-2290	Added pin pad auto-detect via MANAGER.PAR
9578		**Add three new functions to manage display with CGUI** **CGUI_Display ();** **CGUI_DisplayMSG();** **CGUI_DisplayMSGnum();**
9902		**It is now possible to enter an empty string with CGUI interface.**
9930		**Added ITP for ISC250 and ISC350**

4.3. DLL Hardware (Version: 02.50)

Evolutions are reported with the Telium Manager evolutions in the paragraph 4.1.

4.4. Security

4.4.1. DLL Security (Version: 03.20)

Following points are delivered in this release.

9832		Update to be compliant with Scheme Pack 2.04
9842		Update to be compliant with Scheme Pack 2.04
9608		TlvFirstKey managed in mock-up

4.4.2. Security Extend library (Version: 02.04)

This is a new component.

4.4.3. DLL E2EE (Version: 01.01)

No evolution.

4.4.4. TLV Schemes (Version: 02.04)

This is a new version of TLV schemes.

4.4.5. Non-TLV Schemes (Version: 03.06)

No evolution.

4.5. Communication

4.5.1. Link Layer (Version: 03.20)

Following points are delivered in this release.

9485	SUPTEL-1951	Improvement of 300ms in certain conditions when testing the availability of the driver (both MODEM and MODEM_V34 loaded)..
9475	SUPTEL-2212	Add of the configuration tag LL_PPP_T_TERMINATION_DELAY for PPP layer
9545	SUPTEL-2282	Added 2 specific statuses LL_STATUS_PERIPHERAL_OUT_OF_BASE for USB, and LL_STATUS_ETHERNET_OUT_OF_BASE for Ethernet.

4.5.2. Pack IP (Version: 03.08)

No evolution.

4.5.3. FTP (Version: 01.20)

No evolution.

4.5.4. SNMP (Version: 01.01)

No evolution.

4.5.5. SSL (Version: 01.61)

Following points are delivered in this release.

		Compatibility with PKI V3

9521		DLL SSL error codes improvement

4.6. Display

4.6.1. DLL Image (Version: 01.01)

No evolution.

4.6.2. Fonts (Version: 01.10)

Following points are delivered in this release.

9594		To allow update with TMS, new name has been given to Telium font files, including version and amendment: 844216=FONT ISO1 STANDARD 844217=FONT ISO2 STANDARD 844218=FONT ISO3 STANDARD 844219=FONT ISO5 STANDARD 844220=FONT ISO7 STANDARD 844221=FONT ISO15 STANDARD 844209=FONT ISO1 DEPRECATED 844210=FONT ISO2 DEPRECATED 844211=FONT ISO3 DEPRECATED 844212=FONT ISO5 DEPRECATED 844213=FONT ISO6 DEPRECATED 844214=FONT ISO7 DEPRECATED 844215=FONT ISO15 DEPRECATED The fonts are now double signed for Telium2

4.6.3. CGUI (Version: 01.17) / CGUI tools (Version 01.10)

Following points are delivered in this release.

8911	SUPTEL-1958	Documentation updated for fonts CGUICURSIVE et CGUIFANTASY
9138	SUPTEL-2110	Before any loadurl we ensure that there are no remaining events in the browser
9273	SUPTEL-2145	WGUI_DISPLAY_BLACK_WHITE and WGUI_DISPLAY_COLORS are now deprecated WGUI_DISPLAY_HARDWARE is used to create the display in terminal native mode
9645	SUPTEL-2354	Improvement when image is enlarged
9729	SUPTEL-2410	Some explicit not needed refreshes of the browser were identified and removed
5593		Now, loading url of type javascript:"some javascript" execute "some javascript" in the browser. Previously it wrote "some javascript" on the page
8778		Now, touchscreen samples are groupped together before being sent to plugin
9442		The file is now correctly closed when a resource is missing in a tar cabinet
9790		Changing src of an iframe with javascript is now correctly handled using iframe parent document as current url

9729	SUPTEL-2410	Some explicit not needed refresh of the browser were identified and removed

4.6.4. NanoX (Version 01.23)

This is a new version of NanoX.

4.6.5. Plug-in Signature Capture (Version: 01.07)

No evolution.

4.6.6. Plug-in Multimedia (Version: 01.08)

This is a new version of this component.

4.7. Applications

4.7.1. Incendo Online browser

This component will be delivered in the next version of the Telium SDK (version with all terminals supported).

4.7.2. Image Loader (01.06)

This is a new component of the Telium SDK.

4.8. AVL (Version: 01.15)

Following points are delivered in this release.

9688	SUPTEL-2227	Function TlvTree_RemoveChild() is now deprecated.

4.9. SDK features

Following points are delivered in this release.

9702		Add a "FAQ" section in the SDK CHM help file

5. Deprecated APIs

Due to evolution of product ranges or software, some functions become sometimes obsolete.
The deprecated functions are now grouped in the file deprecated.h. They will be removed from the SDK in the future.
We deeply advise you to clean your code by applying the new way described in the help file as soon as functions become obsoletes.
Nevertheless, if you want to continue to use these functions, it is possible by adding deprecated.h and, according the information in the help file, add a compilation option. If you don't do that, there will be a warning during the compilation.

5.1. Changes between SDK7.5 and SDK7.6

- The variable UNKNOWN, defined in param.h in the SDK7.5.x, is replaced by UNKNOWN_PPAD because UNKNOWN is a name too common and could be used elsewhere in client applications.
- The function ColorScreenSaver() changes of prototype.

5.2. Changes between SDK7.4.1 and SDK7.5

Following functions become deprecated:

- gprslib_open()
- colorlib_open()
- umslib_open()

5.3. Changes between SDK7.2 and SDK7.4.1

No external function or structure becomes obsolete.

5.4. Changes before SDK7.2

Here is the list of functions which have been declared obsolete before this SDK and added to deprecated.h:

InitModeGraphic();
Telium Manager functions of type void XXXlib_open (void); Check the CHM help file to have the exhaustive list (functions of type XXXlib_open, not belonging to the Telium Manager can be not concerned).
int InitSysPpad (int);
int InitDLLSaisiePpad (void);
int is_loaded(NO_SEGMENT i);
void ET_Idf_seq (T_VERSION version,NO_SEGMENT *noseg,CHECKSUM *nochecksum);
void ET_Identifier_seq (int noappli);
void USQ_Aff_montant (unsigned long * montant ,S_MONEY * devise);
int PPS_SendClearKeyCommand (unsigned char *Domain);
unsigned char PSQ_Double90_cle (void);

6. Add-ons to Telium SDK

The following table presents the versions of recommended add-ons to use with this SDK.

Add on	Recommended version to use with this SDK
Easy Path To EMV	20 (New version)
Add On Cless (New architecture)	3.10 (New version)
Easy Path To CLESS	3.06
Add On PCL for iPA280	1.15 (New version)
Add On PCL for iWP	1.15 (New version)
PCL for iMP3xx	New package to come

Add On Morpho	1.06
Add On Telicapt	2.14 (New version)
Add On UCM	2.06
Add On SPDH	1.01
Add On APACS 40 Generic	1.08
Add On ISO8583 Generic	3.02