TELIUM SDK

SDK Release Notes Archive

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Contents

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.

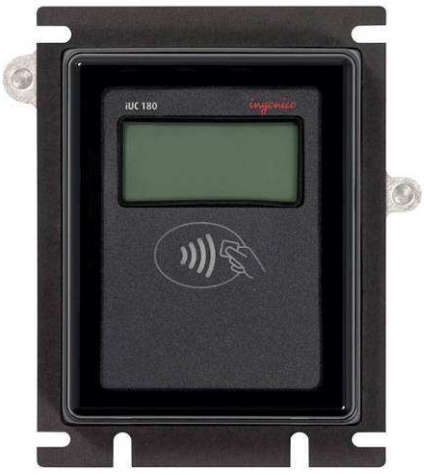
2. What's new?

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.

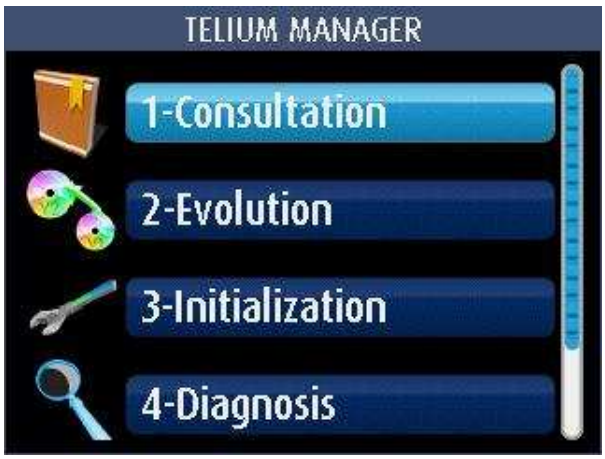
2.3.1.3. Tutorial

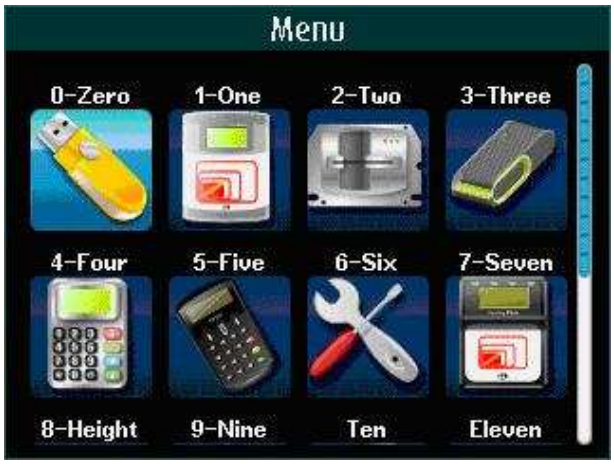
The update of the GOAL tutorials, regarding the new Ingedev interface, will be done in the next SDK release.

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 8: Supported card types .

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 7 "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	

7. Version of components

The following table compiles the versions of components provided in this version of the SDK and in the previous ones.
In this table, grey cells correspond to evolution of the component.

SDK	System	Manager	DLL Hardware	Security							Communication					Display								Contactless					Applications		AVL	iPP320 in emulation mode	
				DLL Security	DLL Security Extend	DLL E2EE	TLV Schemes	Schemes	Pinlib	IAPP	Link Layer	Pack IP	FTP	SNMP	SSL	DLL Image	Fonts	Cgui	GOAL	NanoX	Cgui tools	Signature capture	Multimedia	DLL Tpass	Entry Point	GTL	Telium Pass	Vending Pass	Online Incendo browser	Image Loader		DLL PPLoad	iPP3 conf
9.0	1102	6501	2.61	3.21	2.07	4.02	2.06	3.07	1.10	1.10	3.25	3.11	1.21	1.01	1.79	1.01	1.10	2.00	3.05	2.07	1.10	2.10	2.10	2.31	0.22	1.16	2.24	3.01	03.01.00	1.06	1.18	1.04	3.0
8.2 GOAL	1092	6598	2.60	3.21	2.04	4.02	2.06	3.07	1.10	1.10	3.22	3.10	1.21	1.01	1.69	1.01	1.10	2.00	3.03	2.04	1.10	2.10	2.10	2.30	0.22	1.16	2.23	3.01	03.01.00	1.06	1.17	1.04	NC
8.2.1	1092	6403	2.58	3.21	2.04	4.02	2.06	3.07	1.10	1.10	3.22	3.10	1.21	1.01	1.69	1.01	1.10	1.17	-	1.24	1.10	1.09	1.09	2.30	0.22	1.16	2.23	3.01	03.01.00	1.06	1.17	1.04	2.06
8.2	10.80	64.02	2.58	3.21	2.04	4.02	2.06	3.07	1.10	1.10	3.22	3.10	1.21	1.01	1.69	1.01	1.10	1.17	-	1.24	1.10	1.09	1.09	2.30	0.22	1.16	2.23	3.01	03.01.00	1.06	1.17	1.04	2.04
8.1.3	10.79 (9)	63.05	2.55	3.20	2.04	4.02	2.06	3.07	1.10	1.10	3.22	3.09	1.20	1.01	1.65	1.01	1.10	1.17	-	1.24	1.10	1.09	1.09	2.30	0.21	1.16	2.23	3.01	03.00.05	1.06	1.16	1.03	2.05
8.1.2	10.72 (8)	63.04	2.55	3.20	2.04	4.02	2.06	3.07	1.10	1.10	3.22	3.09	1.20	1.01	1.65	1.01	1.10	1.17	-	1.24	1.10	1.09	1.09	2.30	0.21	1.16	2.23	3.01	03.00.05	1.06	1.16	1.02	2.03
8.1.1	10.70 (7)	63.02	2.55	3.20	2.04	4.01	2.06	3.07	1.10	1.10	3.21	3.09	1.20	1.01	1.65	1.01	1.10	1.17	-	1.24	1.10	1.09	1.09	2.29	0.21	1.16	2.23	3.01	03.00.05	1.06	1.16	1.02	2.01
8.1	10.64	63.00	2.55	3.20	2.04	4.01	2.06	3.07	1.10	1.10	3.21	3.09	1.20	1.01	1.63	1.01	1.10	1.17	-	1.24	1.10	1.09	1.09	2.29	0.21	1.16	2.23	3.01	03.00.05	1.06	1.16	1.01	2.01
8.0.2	10.50	62.04	2.54	3.20	2.04	1.01	2.04	3.06	1.10	1.10	3.20	3.08	1.20	1.01	1.61	1.01	1.10	1.17	-	1.24	1.10	1.09	1.09						03.00.04	1.06	1.16		
8.0.1	10.46	62.03	2.53	3.20	2.04	1.01	2.04	3.06	1.10	1.10	3.20	3.08	1.20	1.01	1.61	1.01	1.10	1.17	-	1.24	1.10	1.08	1.09						03.00.04	1.06	1.15		
8.0	10.35	62.00	2.50	3.20	2.04	1.01	2.04	3.06	1.10	1.10	3.20	3.08	1.20	1.01	1.61	1.01	1.10	1.17		1.23	1.10	1.07	1,08							1.06	1.15		

(9) 10.67 for iMP3, 10.77 for iWL280, 10.79 for the other terminals
(8) 10.67 for iMP3, 10.73 for iWL280, 10.72 for the other terminals
(7) 10.67 for iMP3, 10.70 for the other terminals

8. Supported card types

This table shows the minimal version of package (add-on contactless and SDK) for the support of a type of card by a terminal.

Product	EMV 1.1	EMV 2.0	EMV 2.0.1	Mifare 1K	Mifare 4K	Mifare UltraLight	STM	Innovatron Calypso
Telium Pass+	Add-On 3.0	-	-	Add-On 3.0	Add-On 3.5	Add-On 3.5	Add-On 3.5	Add-On 3.6
Vending Pass	Add-On 3.0	-	-	Add-On 3.0	Add-On 3.6	Add-On 3.5	Add-On 3.5	Add-On 3.5
P30	SDK 5.8 Add-On 3.0	-	-	SDK 5.8 Add-On 3.0	SDK 7.2 Add-On 3.5	SDK 6.4.1 Add-On 3.5	-	-
ML30	SDK 5.8 Add-On 3.0	-	-	SDK 5.8 Add-On 3.0	SDK 6.6 Add-On 3.5	SDK 6.4.1 Add-On 3.5	-	-
CAD30UCR + EPSUM A40	SDK 5.8 Add-On 3.0	-	-	SDK 5.8 Add-On 3.0	SDK 7.1 Add-On 3.5	SDK 6.2.2 Add-On 3.5	SDK 5.8 Add-On 3.5	SDK 7.3 Add-On 3.5
EFT930CC	SDK 6.2 Add-On 3.0	-	-	SDK 6.2 Add-On 3.0	SDK 7.1 Add-On 3.5	SDK 6.4 Add-On 3.5	-	SDK 7.1 Add-On 3.5
iCT250	SDK 6.4 Add-On 3.0	-	-	SDK 6.4 Add-On 3.0	SDK 7.1 Add-On 3.5	SDK 6.4 Add-On 3.5	SDK 7.1 Add-On 3.5	SDK 7.1 Add-On 3.6
iPA280	SDK 6.4 Add-On 3.0	-	-	SDK 6.4 Add-On 3.0	SDK 7.1 Add-On 3.5	SDK 6.4 Add-On 3.5	SDK 7.1 Add-On 3.5	SDK 7.1 Add-On 3.6
iPP220 iPP250	-	SDK 7.1 Add-On 3.2	-	SDK 7.1 Add-On 3.2	SDK 7.1 Add-On 3.5	SDK 7.1 Add-On 3.5	SDK 7.1 Add-On 3.5	SDK 7.2 Add-On 3.5
iPP280	-	SDK 7.5 Add-On 3.7	-	SDK 7.5 Add-On 3.7	SDK 7.5 Add-On 3.7	SDK 7.5 Add-On 3.7	SDK 7.5 Add-On 3.7	SDK 7.5 Add-On 3.7
iPP320 iPP350	-	SDK 7.1 Add-On 3.2	-	SDK 7.1 Add-On 3.2	SDK 7.1 Add-On 3.5	SDK 7.1 Add-On 3.5	SDK 7.1 Add-On 3.5	SDK 7.1 Add-On 3.6
iSC250	-	-	SDK 7.5 Add-On 3.7	SDK 7.5 Add-On 3.7	SDK 7.5 Add-On 3.7	SDK 7.5 Add-On 3.7	SDK 7.5 Add-On 3.7	SDK 7.5 Add-On 3.7
iSC350	-	SDK 7.2 Add-On 3.2	-	SDK 7.2 Add-On 3.2	SDK 7.2 Add-On 3.5	SDK 7.2 Add-On 3.5	SDK 7.2 Add-On 3.5	SDK 7.1 Add-On 3.6
iWL220 iWL250	-	-	SDK 7.5 Add-On 3.7	SDK 7.5 Add-On 3.7	SDK 7.5 Add-On 3.7	SDK 7.5 Add-On 3.7	SDK 7.5 Add-On 3.7	SDK 7.5 Add-On 3.7
iWL280	-	-	SDK 8.0.1 Add-On 3.10	SDK 8.0.1 Add-On 3.10	SDK 8.0.1 Add-On 3.10	SDK 8.0.1 Add-On 3.10	SDK 8.0.1 Add-On 3.10	SDK 8.0.1 Add-On 3.10
iMP3xx	-	-	SDK 8.0.1 Add-On 3.10	SDK 8.0.1 Add-On 3.10	SDK 8.0.1 Add-On 3.10	SDK 8.0.1 Add-On 3.10	SDK 8.0.1 Add-On 3.10	SDK 8.0.1 Add-On 3.10
iST150 (TeliumPass emulation)	-	-	SDK 7.5 Add-On 3.7	SDK 7.5 Add-On 3.7	SDK 7.5 Add-On 3.7	SDK 7.5 Add-On 3.7	SDK 7.5 Add-On 3.7	SDK 7.5 Add-On 3.7
iST150 (Intelligent mode)	-	-	SDK 7.5 Add-On 3.9	SDK 7.5 Add-On 3.9	SDK 7.5 Add-On 3.9	SDK 7.5 Add-On 3.9	SDK 7.5 Add-On 3.9	SDK 7.5 Add-On 3.9

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 8: Supported card types .

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 8: Supported card types .

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 "Version 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
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	

6. Version of components

The following table compiles the versions of components provided in this version of the SDK and in the previous ones.

In this table, grey cells correspond to evolution of the component.

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 8: Supported card types .

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 6 "Version 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
		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 6 "Version of components" 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 6 "Version of components" 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).

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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 4.2.

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

SDK7.6.1 Release note

1. Standard development platforms

1.1. Telium 1

This SDK release is compatible with the following terminals:

- EFT30
- EFT SMART
- TWIN
- ML30
- SMART2
- EFT930 (wireless terminal)
- EFT930 BL2 (wireless terminal)

1.2. Telium 2

This SDK release is compatible with the following terminals:

- iCT220, iCT250
- SPM (iPA280)
- iPP320, iPP350
- iSC250
- iSC350
- iWL220G, iWL250G (wireless terminals). Smart bases are not currently managed.
- iWL280 (wireless terminal, for development only)
- iMP3xx
- E532+ (for development only)

1.3. Pinpads

This SDK release is compatible with the following products:

- P30, P30 Contactless
- PP30S
- PPC30
- PPR30

- iPP220, iPP250, iPP280
- iPP320 used as a smart card reader (Pinpad emulation mode)

1.4. Contactless readers

This SDK release is compatible with the following products:

- iST150
- TeliumPass Plus

2. Main evolutions

Issues solved are detailed in paragraph 4.
Here are the main evolutions coming with this release.

2.1. New terminals

Terminal TWIN31 (*TWIN30 without RS232*) is now supported in the SDK.

2.2. Telium Manager

- For PCI+ applications: download at startup bug fix
- CAD30UCR in power off mode, card insertion is detected again
- Correction for migration of an ipp3xx in terminal mode to a Telium SDK7.6 or higher version

2.3. General points

- Many documentation improvements

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).

3.2. Migration of an iPP3xx to SDK7.6

In case of an iPP320 or an iPP350 configured as terminal and loaded with a SDK lower than version 7.6, the migration to SDK7.6 must be run with, at the same time, the update of the parameter "020504" in Manager.PAR file. If you don't do that, the VID/PID of the iPP3xx could change.
As a reminder, values of this parameter are the following:

	Before SDK .6	From SDK 7.6
iPP3 is terminal mode	020504=0;	020504=2;
iPP3 in pinpad emulation mode	020504=1;	020504=1;
Mode reserved for future use	This mode didn't exist	020504=0;

3.3. 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

3.4. Contactless

3.4.1. 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.

3.4.2. 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.

3.4.3. 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).

3.5. ISC250 and iSC350 terminals downgrades

As a general rule, it is forbidden to mix Telium Manager and Telium System from different SDKs.
Nevertheless, if it happens during the development phase, be aware that on iSC250 and iSC350, due to NanoX driver incompatibility,

- If you mix a Telium system included in a SDK greater or equal to SDK7.6, with a Telium Manager included in a SDK lower than SDK7.6 the loading will be refused by the system;
- If you mix a Telium System included in a SDK lower than SDK7.6, with a Telium Manager included in a SDK greater or equal to SDK7.6, the terminal will not be able to restart;

3.6. 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.

3.7. Functions XXX_libopen()

Due to some XXX_libopen() functions which are now deprecated, on Ingedev version lower or equal to 7.4.0.7, there are warnings when this SDK if used with a project created by a "New Telium Project". You have to add the compilation option _DEPRECATED_SDK71_ to remove the warnings.

3.8. Binaries having a size multiple of 1024 bytes (Telium 1 terminals)

With the SDKs 6.4.X, 6.5.x and 6.6, it was not possible to download binaries having a size multiple of 1024 bytes before signature. Message is "Bad signature". To avoid loading problem on these SDK, you have to check that the size of your generated application, without signature, is not a multiple of 1024 bytes. (Size of application – 676) must not be a multiple of 1024.

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

3.11. 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 Manager (New version: 61.01)

Following points are delivered in this release.

FT	SUPTEL	Description
6934		Card entry service : New point of customization See Telium Manager User Guide "How to use the Card Entry service" and sample in SDK
7857		CAD30UCR in power off mode, card insertion is detected again.
8118		iPP 3xx in pinpad mode : compatibility from SDK7.5 to SDK7.6.1 is now managed
8378		Manage QVGA screen and specific keyboard of IWL280 (like ISC250)
8954	SUPTEL-2006	"How to configure hardware": documentation updated
8956	SUPTEL-2034 (See also 2171)	"remote_download", "remote_downloading" and "remote_downloading_from_manager" functions : documentation updated
8985	SUPTEL-2026	HWCNF_SetStandbyDelay function : documentation updated
9059	SUPTEL-2067	Manager User Guide.doc (020103,020105,020111 et 020112 parameters) : documentation updated.
9228	SUPTEL-2138	Fallback management by Manager: documentation updated.
9256	SUPTEL-2145	PushCGUIContext : documentation updated
9428		New POS TWIN31 = TWIN30 with no RS232 OS_GetIdLecteur updated for Twin31
9486	SUPTEL-2264	PSQ_Get_Cless_Capabilities returns right value if Pin Pad not supporting CLESS is connected
9519		Cless Target is now at right position for ICT2XX
9525		GetManagerLanguage returns correct value for customized language
9531		Consultation of list of software "F / Manager / Consulting / State /" and Applications with no loaded applications displays "NO SEGMENTS"
9532		Unexpected blank screen has been removed

9533		Backlight management on ISC350 now possible
9537		On iSC350, available flash menu displays the right value
9538		CGUI page, disappeared references removed(French domain only)
9540		cash flow register on COM1 (IWL2XX for example) is now managed
9575		"EventHeader" function correctly implemented for color displays
9622		for PCI+ applications: download at startup bug fix

4.2. DLL Hardware (Version: 02.46)

Evolutions are reported with the Telium Manager evolutions in the paragraph 4.2

4.3. CGUI (Version: 01.15) / CGUI tools (Version 01.10)

No evolution.

4.4. NanoX (Version 01.19 for Thunder 3 terminals, 01.17 for others)

No evolution.

4.5. Plug-in Multimedia (Version: 01.07)

No evolution.

4.6. Plug-in Signature Capture (Version: 01.07)

No evolution.

4.7. DLL Security (Version: 03.19)

No evolution.

4.8. DLL E2EE (Version: 01.01)

No evolution.

4.9. Schemes (Version: 03.06)

No evolution.

4.10. TLV Schemes (Version: 01.16)

No evolution.

4.11. Pack IP (Version: 03.08)

No evolution.

4.12. Link Layer (Version: 03.19)

No evolution.

4.13. FTP (Version: 01.20)

No evolution.

4.14. SSL (Version: 01.57)

No evolution.

4.15. DLL Image (Version: 01.01)

No evolution.

4.16. AVL (Version: 01.14)

No evolution.

4.17. SDK features

Following points are delivered in this release.

9596		Sample CardEntry bug fix

4.18. Fonts (Version: 01.09)

No evolution.

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	19.1
AddOn Cless (New architecture)	3.09 is required to use the iST150 in smart mode. Otherwise, you can use 3.07.
Easy Path To CLESS	3.06 is required to use the iST150 in smart mode. Otherwise, you can use 3.04.

AddOn PCL for iPA280	1.11
AddOn PCL for iWP	1.05
PCL for iMP3xx	New package to come
AddOn Morpho	1.06
AddOn Telicapt	2.12
AddOn UCM	2.06
AddOn SPDH	1.01
AddOn APACS 40 Generic	1.08
AddOn ISO8583 Generic	3.02

SDK7.6 Release note

1. Standard development platforms

1.1. Telium 1

This SDK release is compatible with the following terminals:

- EFT30
- EFT SMART
- TWIN
- ML30
- SMART2
- EFT930 (wireless terminal)
- EFT930 BL2 (wireless terminal)

1.2. Telium 2

This SDK release is compatible with the following terminals:

- iCT220, iCT250
- SPM (iPA280)
- iPP320, iPP350
- iSC250
- iSC350
- iWL220G, iWL250G (wireless terminals). Smart bases are not currently managed.
- iWL280 (wireless terminal, for development only)
- iMP3xx
- E532+ (for development only)

1.3. Pinpads

This SDK release is compatible with the following products:

- P30, P30 Contactless
- PP30S
- PPC30
- PPR30

- iPP220, iPP250, iPP280
- iPP320 used as a smart card reader (P30 emulation mode)

1.4. Contactless readers

This SDK release is compatible with the following products:

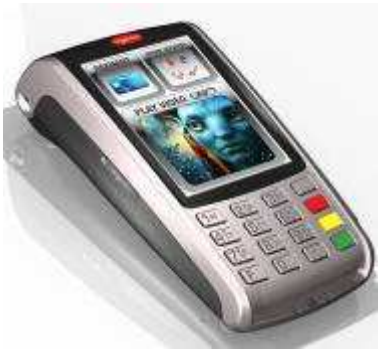
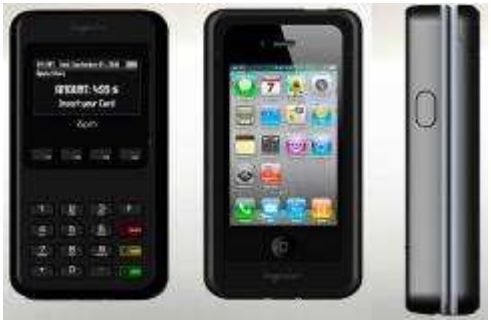
- iST150
- TeliumPass Plus

2. Main evolutions

Issues solved are detailed in paragraph 4.
Here are the main evolutions coming with this release.

2.1. New terminals

Following terminals are now supported in the SDK.

iWL280 (for development only)	iMP350
	

- New terminal for production: iMP350;
- New terminals for development only: iWL280, E532+.

2.2. Telium Manager

- Improvements of Telium Manager menus;
- Management of specific transactions via MESSAGE_RECEIVED.

2.3. Telium System

- Fixed problem of CGUI EFT930 BL2 when the terminal is associated with a smart cradle;
- Increased maximum number of applications on a terminal.

2.4. General points

- Telium simulator is no more supported and is not provided anymore;
- Libraries are compatible with compiler GNU 4.3.4;

2.5. Documentation

- Many improvements of documentation in Telium System and Telium Manager;
- "How To Develop on color terminals" provided.

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).

3.2. Libraries compatible with GCC4

3.2.1. Overview

In this release the 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.

3.2.2. Canaries

Stack buffer overflow is a well known cause of bugs in programs. It is also a way for security attacks.
The canary protection provided with GNU 4.3.4 is a mechanism detecting these buffer overflows. You can read more information about this subject in the IngeDev User Guide, in the chapter Telium Development > Stack Buffer Overflow
When a buffer overflow is detected, the application stops on OEM_Exit (9E). Additional information is available on the diagnostic ticket.

Stack protector option is activated in the library provided in the SDK.

If you don't use Ingedev, you have to add the compilation option: -fstack-protector-all to enable canaries. If you use Ingedev, canaries are activated by default when you choose the tool chain GNU ARM 4.3.4.

3.3. 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. ISC250 and iSC350 terminals downgrades

As a general rule, it is forbidden to mix Telium Manager and Telium System from different SDKs.

Nevertheless, if it happens during the development phase, be aware that on iSC250 and iSC350, due to NanoX driver incompatibility,

- If you mix a Telium system included in a SDK greater or equal to SDK7.6, with a Telium Manager included in a SDK lower than SDK7.6the loading will be refused by the system;
- If you mix a Telium System included in a SDK lower than SDK7.6, with a Telium Manager included in a SDK greater or equal to SDK7.6, the terminal will not be able to restart;

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. Functions XXX_libopen()

Due to some XXX_libopen() functions which are now deprecated, on Ingedev version lower or equal to 7.4.0.7, there are warnings when this SDK if used with a project created by a "New Telium Project". You have to add the compilation option _DEPRECATED_SDK71_ to remove the warnings.

3.7. Binaries having a size multiple of 1024 bytes (Telium 1 terminals)

With the SDKs 6.4.X, 6.5.x and 6.6, it was not possible to download binaries having a size multiple of 1024 bytes before signature. Message is "Bad signature". To avoid loading problem on these SDK, you have to check that the size of your generated application, without signature, is not a multiple of 1024 bytes. (Size of application – 676) must not be a multiple of 1024.

3.8. Function Beep()

From SDK 6.4 to 6.4.3, prototype of the function Beep() was: int Beep(int note, int octave, unsigned short duration).
Since SDK 6.5, it is: int Beep(int note, int octave, unsigned short duration, ***int Action***);
So if you have generated your application with SDK6.4.x you have to re-compile it while upgrading to a SDK 6.5 or newer.

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

3.11. 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: 10.04)

Following points are delivered in this release.

4.1.1. System Thunder

7199	TFU 4444	Documentation of function status() has been updated for CAM peripherals
8643		New limitations in the number of applications: - Now, maximum of applications with different VAR Ids is 14 (previously maximum was 14 different applications) - The sum of number of VAR applications and number of constructor applications is increased to 38 (previously it was 38)
8887		When message "bad key number" is displayed by LLT, the key number had no meaning.
8904	SUPTEL-2020 / TFU 5772	Documentation of CAM function error code has been updated: error code 1 is returned only with power_down() function. Otherwise, error code 7 is used if the card is not inserted.
8944		Update of "Telium System Reference Manual"

4.1.2. Driver Bluetooth

9187		CGUI versions didn't work on EFT930 BL2 when the terminal is associated with a smart cradle

4.1.3. Driver GPRS

8531	TFU5510	Fix buffer overflow in GPRS driver with the DGPRS_FIOCTL_GET_IMSI fioctl.

4.1.4. Driver Modem

8691	TFU5548	Now it is possible to choose fast connect (75ms) or fast connect (500ms) using v22fc_Philippines=ON;

4.1.5. System Thunder III

8991	SUPTEL-2040	Fixed problem with simultaneous functioning of the touch screen and the contactless.

4.2. Telium Manager (New version: 61.00)

Following points are delivered in this release.

9130		French health care only: Third CAM is now logged into the Hardware Configuration ticket
4047		A section was added in each header of exported functions of EFT30.LIB to specify if the function exits when it don't exist into DLL
5935		On software loading via USB or card, now, Telium Manager proposes only the catalogues corresponding to the terminal

8110		Treatment of SCREEN.INI for PINPAD IDLE bug fixed
8204	TFU 5336	CHM improvment : rename TPass with Contactless into documentation
8621		Added function to get the 2 letters of serial number
8893	TFU 5689	API added to start Telium Manager menu: extern int PSQ_Telium Manager_menu (void);
8901		For French health Care: Access to MODEM for authorisation in configuration "SANTE"
8923		For French health Care: buffer USB/serial increased
8924		For French health Care: function OS_ClkGetMilliseconds added to return the number of milliseconds since the start up of the terminal
8931	SUPTEL-2030	Documentation of Service Call 100
8954	SUPTEL-2006	"How to configure hardware" documentation improvement
8956	SUPTEL-2034 SUPTEL-2171	Updated documentation about returned values of “remote_download”, “remote_downloading” and “remote_downloading_from_Telium Manager” functions
8957	SUPTEL-1996	It is now possible to dynamically load an element in the header: API added: void SetHeaderAreaBmp(int HeaderArea,char *PtBmp);
8971		Field "display" added into S_TRANSIN structure --> 0 means that Telium Manager display default screen (default value) --> 1 means that Telium Manager does not display screen Must be activated with GET_AMOUNT_STATE_PARAMETER entry point and ACTIV_SPECIFIC_DISPLAY mask
8985	SUPTEL-2026	Improvement of help for HWCNF_SetStandbyDelay()
8997		Translation of function names
9041		PSQ_Write_money() didn't work (disk HOST was not mounted)
9053		Some functions added: Pinpad_List_Entry Pinpad_Confirm_AID Terminal_Confirm_AID Terminal_List_Entry
9059	SUPTEL-2067	Error into documentation about 020103,020105,020111 et 020112 parameters fixed
9090		Timeout to enter APN was too short
9110		Put footer key (F1, F2, F3, F4) on screen in accordance with real keyboard mapping
9114	SUPTEL-2095	French domain only: DLL CB2A: mount of the GPRS link at first connection
9115	SUPTEL-2107	Added: Call START_OF_TRANSACTION entry point before credit, cancel and pre-auto transaction. Call END_OF_TRANSACTION entry point after credit, cancel and pre-auto transaction.
9134		It is now possible for Service Call 100 to be for only one application
9141		Management of specific transaction via MESSAGE_RECEIVED
9144	SUPTEL-2118	Possibility to customize footer on non-colour device with SetFooterBmp()
9153		Chip card was not processed when inserted during Receive_message service call.
9228	SUPTEL-2138	Improvement of documentation
9251		UNKNOWN define is already use in kernel EMV. Replaced UNKNOWN by UNKNOWN_PPAD in param.h.
9256	SUPTEL-2145	PushCGUIContext problem of returning 0 as error code on iPP320 fixed
9291		Optimized disconnection process in GPRS/GSM communication
9304		Regression fixed in Telium Manager/INITIALISATION/HEADER menu
9313		Regression fixed into Telium Manager/LICENSE/ADD menu
9314		Regression fixed into Telium Manager menu.
9325	SUPTEL-2176	Function returning model equipment added
9350		For French domain: feature added to disable contactless
9362		Disable shortcut "37" and "38" if internal Cless
9378		Added new function to get BOOSTER type: int BoosterType(void);

9379		Improvement of IDLE_MESSAGE sample in Telium Manager Documentation
8743	TFU5669	Updated documentation about BMP format
8777		Added function to return terminal number as an integer
8486	SUPTEL-1760	Type of the parameter file containing the message is 5962
9403		Add supported BMP format into CHM for IDLE_SCREEN field into SCREEN.INI configuration file.
9096		Fixed error on software configuration ticket
4605	SUPTEL-2147	New functions added to calculate the Ram free size and the flash free size
8766		Optimized default parameters for backlight.
8895	TFU 5613	Updated description of HWCNF_SetBacklightDuration() function
9036	SUPTEL-2070	Improved documentation
9262	SUPTEL-2149	Improvement of ColorScreen sample
9398	SUPTEL-2182	API added to change the date format
9477	SUPTEL-2267	Function sms_get_info() returned SMS sender instead of date in timestamp field of SMS_INFO.
9486	SUPTEL-2264	PSQ_Get_Class_Capabilities() didn't return right value if connected Pin Pad does not support CLESS
9276		Fixed problem to use PP30 on SDK7.5

4.3. DLL Hardware (Version: 02.45)

Evolutions are reported with the Telium Manager evolutions in the paragraph 4.2.

4.4. CGUI (Version: 01.15) / CGUI tools (Version 01.10)

Following documentation point is delivered in this release.

8911	SUPTEL-1958	Update of CGUI documentation

4.5. NanoX (Version 01.19 for Thunder 3 terminals, 01.17 for others)

This new version only includes internal improvements.

4.6. Plug-ins Multimedia (Version: 01.07)

This new version only includes internal improvements.

4.7. Plug-ins Signature Capture (Version: 01.07)

No evolution.

4.8. DLL Security (Version: 03.19)

Following points are delivered in this release.

6306	TFU3678 SUPTEL-679	Adding treatments for SEC_ComputeMAC_AC() and SEC_VerifyMAC_AC() when uiInputDataLength is not multiple of 8

4.9. DLL E2EE (Version: 01.01)

E2EE stands for End To End Encryption.

This is a new feature. It is available only for iPA280 and must not be used on other terminals.
The scheme IngeCrypt is provided in version 1.05.

4.10. Schemes (Version: 03.06)

No evolution.

4.11. TLV Schemes (Version: 01.16)

No evolution.

4.12. Pack IP (Version: 03.08)

No evolution.

4.13. Link Layer (New version: 03.18)

Following points are delivered in this release.

9241	SUPTEL-1961	Internal improvement
9285	SUPTEL-2109	LL_GPRS_Connect() management on timeout
9296		LL_ERROR_NOT_READY becomes LL_ERROR_NETWORK_NOT_READY
9401		Application can open the driver itself

4.14. FTP (Version: 01.20)

Following points are delivered in this release.

9071		Allows LLTonEFT application to upload files directly in the /HOST disk of the remote terminal (instead of using TRANSFER.INI mechanism).

4.15. SSL (Version: 01.57)

Following points are delivered in this release.

9167		Library SSL provided in GCC4 format (canaries activated)

4.16. DLL Image (Version: 01.01)

Following documentation point is delivered in this release.

9262	SUPTEL-2149	Function ImageReadFile() has been added into ColorScreen sample

4.17. AVL (Version: 01.14)

AVL stands for Added Value Libraries.

Following points are delivered in this release.

8708	TFU4783 TFU5634	Library AVL can now be used in a C++ project
9159		Library AVL provided in GCC4 format (canaries activated)

4.18. SDK features

Following points are delivered in this release.

9178		Telium simulator is no more supported and is removed from SDK
9270		Sample are now provided by default in Telium 2 compatibility
7048		"how to develop on Colour terminal" documentation added to the SDK
7682		Provided libraries generated with compiler GNU 4.3.4
8918		Added documentation to know the first SDK of availability for trap functions
9306		Update information about Contactless in "How To Use iPP320 as a Pinpad" document
9066		CHM improvement: EAN barcodes
9070		CHM improvement : barcode 39

4.19. Fonts (Version: 01.09)

No evolution.

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	19.1
AddOn Cless (New architecture)	3.09 is required to use the iST150 in smart mode. Otherwise, you can use 3.07.
Easy Path To CLESS	3.06 is required to use the iST150 in smart mode. Otherwise, you can use 3.04.
AddOn PCL for iPA280	1.11
AddOn PCL for iWP	1.05
PCL for iMP3xx	New package to come
AddOn Morpho	1.06

AddOn Telicapt	2.12
AddOn UCM	2.06
AddOn SPDH	1.01
AddOn APACS 40 Generic	1.08
AddOn ISO8583 Generic	3.02

7. Version of components in the previous SDKs

The following table compiles the versions of modules packaged in the previous versions of the SDK.

In this table, grey cells correspond to evolution of the component.

SDK	System	Manager	DLL Hardware	DLL Security	Schemes	TLV Schemes	Link layer	Pack IP	FTP	SNMP	SSL	AVL	Image	Font	CGUI	CGUI tools	Signature capture	Multimedia	Telium Simulator	Pinlib	IAPP
6.5	08.33	54.01	2.31	3.09	3.06	1.12	3.10	3.05	1.17		1.47	1.05	1.01	1.05 (1)					2.05	1.10	1.08
7.0 Pre for ISC350	08.52	55.99		3.09			3.10	3.05					1.01		1.99		1.01				
6.5.1	08.34	54.02	2.32	3.10	3.06	1.12	3.10	3.05	1.17		1.48	1.07	1.01	1.09	1.6.1				2.05	1.10	1.08
6.5.2	08.34	54.03	2.32	3.10	3.06	1.12	3.10	3.05	1.17		1.48	1.07	1.01	1.09	1.6.1				2.05	1.10	1.08
7.0 Pre 2 for ISC350	08.54	55.98		3.09			3.10	3.05					1.01		1.99		1.02	1.02			
6.5.3	08.35	54.03	2.32	3.10	3.06	1.12	3.10	3.05	1.17		1.48	1.07	1.01	1.09	1.6.1				2.05	1.10	1.08
6.6	08.44	55.00	2.32	3.10	3.06	1.12	3.10	3.05	1.17		1.48	1.07	1.01	1.09	1.07	1.01			2.06	1.10	1.08
7.1	09.00	56.00	2.35	3.11	3.06	1.16	3.10	3.05	1.17		1.48	1.08	1.01	1.09	1.11	1.10	1.03	1.04	2.07	1.10	1.08
7.2	09.16	57.01	2.37	3.11 (2)	3.06	1.16	3.13	3.06	1.17		1.48	1.09	1.01	1.09	1.12	1.10	1.05	1.05	2.07	1.10	1.08
7.2.1	09.20	57.02	2.38	3.12	3.06	1.16	3.13	3.06	1.17		1.48	1.09	1.01	1.09	1.12	1.10	1.05	1.05	2.07	1.10	1.08
7.3	09.30	58.00	2.38	3.12	3.06	1.16	3.14	3.06	1.17	1.01	1.48	1.09	1.01	1.09	1.12	1.10	1.05	1.05	2.07	1.10	1.08
7.3.1	**09.31**	**58.01**	2.38	3.12	3.06	1.16	3.14	3.06	1.17	1.01	1.48	1.09	1.01	1.09	1.12	1.10	1.05	1.05	2.07	1.10	1.08
7.3.2	09.31	**58.04**	2.38	3.12	3.06	1.16	3.14	3.06	1.17	1.01	1.48	1.09	1.01	1.09	1.12	1.10	1.05	1.05	2.07	1.10	1.08
7.4	**09.51**	**59.03**	2.38	**3.15**	3.06	1.16	**3.16**	**3.07**	**1.19**	1.01	**1.53**	1.09	1.01	1.09	**1.14**	1.10	**1.07**	**1.06**	2.07	1.10	1.08
7.4.1	09.51	**59.04**	2.38	3.15	3.06	1.16	3.16	3.07	1.19	1.01	1.53	1.09	1.01	1.09	1.14	1.10	1.07	1.06	2.07	1.10	1.08
7.5	**09.76**	**60.00**	**2.43**	**3.17**	3.06	1.16	**3.17**	**3.08**	1.19	1.01	**1.56**	**1.10**	1.01	1.09	**1.15**	1.10	1.07	1.06	2.07	1.10	1.08
7.5.1	**09.78**	**60.01**	2.43	3.17	3.06	1.16	3.17	3.08	1.19	1.01	1.56	1.10	1.01	1.09	1.15	1.10	1.07	1.06	2.07	1.10	1.08
7.5.2 for iSC350	**09.80**	**60.02**	2.43	3.17	3.06	1.16	3.17	3.08	1.19	1.01	1.56	1.10	1.01	1.09	1.15	1.10	1.07	1.06	2.07	1.10	1.08
7.6	**10.04**	**61.00**	**2.45**	**3.19**	3.06	1.16	**3.19**	3.08	**1.20**	1.01	**1.57**	**1.14**	1.01	1.09	1.15	1.10	1.07	**1.07**	NA	1.10	**1.10**

(2): 3.12 pour CTAP
(1): 1.06 pour ISO1

SDK7.5.2 Release note

8. Standard development platforms

8.1. Telium 2

This SDK release is compatible only with iSC350.

9. Highlighted points

9.1. Contactless

9.1.1. 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 low quickly with time;

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

9.1.2. Implicit selection

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.

9.2. Functions XXX_libopen()

Due to some XXX_libopen() functions which are now deprecated, on Ingedev version lower or equal to 7.4.0.7, there are warnings when this SDK if used with a project created by a "New Telium Project". You have to add the compilation option _DEPRECATED_SDK71_ to remove the warnings.

9.3. Service numbers

Service numbers from 1 to 100 and from 7680 à 8191 are reserved for Ingenico internal use.

10. Issues solved in this release by component

10.1. Telium System (New version: 9.80_iSC350)

10.1.1. System Booster 3 (0219)

Internal improvements.

10.1.2. System Thunder 3 (0019)

Internal improvements.

10.2. Telium Manager (New version: 60.02)

Internal improvements.

10.3. CGUI (Version: 01.15) / CGUI tools (Version 01.10)

No evolution.

10.4. NanoX (Version 01.19)

Evolutions are included with the Telium Manager evolutions in the paragraph 4.2.

10.5. Plug-ins Multimedia (Version: 01.06)

No evolution.

10.6. Plug-ins Signature Capture (Version: 01.07)

No evolution.

10.7. DLL Security (Version: 03.17)

No evolution.

10.8. DLL Hardware (Version: 02.43)

No evolution.

10.9. Schemes (Version: 03.06)

No evolution.

10.10. TLV Schemes (Version: 01.16)

No evolution.

10.11. Pack IP (Version: 03.08)

No evolution.

10.12. Link Layer (New version: 03.17)

No evolution.

10.13. FTP (Version: 01.19)

No evolution.

10.14. SSL (Version: 01.56)

No evolution.

10.15. AVL (Version: 01.10)

AVL stands for Added Value Libraries.

No evolution.

10.16. SDK functionalities

No evolution.

10.17. Fonts (Version: 01.09)

No evolution.

11. 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 follow that, there will be a warning during the compilation.

11.1. Changes since SDK 7.5

No evolution.

11.2. Changes between SDK7.4.1 and SDK7.5

Following functions become deprecated:

- gprslib_open
- colorlib_open
- umslib_open

11.3. Changes between SDK7.2 and SDK7.4.1

No external function or structure becomes obsolete.

11.4. 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);

SDK7.5.1 Release note

1. Standard development platforms

1.1. Telium 1

This SDK release is compatible with the following terminals:

- EFT30
- EFT SMART
- TWIN
- ML30
- SMART2
- EFT930 (wireless terminal)
- EFT930 BL2 (wireless terminal)

1.2. Telium 2

This SDK release is compatible with the following terminals:

- iCT220, iCT250
- SPM (iPA280)
- iPP320, iPP350
- iSC250
- iSC350
- iWL220, iWL250

1.3. Pinpads

This SDK release is compatible with the following products:

- P30, P30 Contactless
- PP30S
- PPC30
- PPR30
- iPP220, iPP250, iPP280
- iPP320 in emulation mode

1.4. Contactless readers

This SDK release is compatible with iST150.

2. Highlighted points

2.1. 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).

2.2. Contactless

2.2.1. iPPx

IPP2XX and IPP3XX are supported since the version 3.4 of the add-on contactless for new architecture. These terminals are not supported by old architecture (add-on 2.x).

2.2.2. 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 low quickly with time;

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

2.2.3. 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.

2.3. 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.

2.4. Functions XXX_libopen()

Due to some XXX_libopen() functions which are now deprecated, on Ingedev version lower or equal to 7.4.0.7, there are warnings when this SDK if used with a project created by a "New Telium Project". You have to add the compilation option _DEPRECATED_SDK71_ to remove the warnings.

2.5. Binaries having a size multiple of 1024 bytes (Telium 1 terminals)

With the SDKs 6.4.X, 6.5.x and 6.6, it was not possible to download binaries having a size multiple of 1024 bytes before signature. Message is "Bad signature". To avoid loading problem on these SDK, you have to check that the size of your generated application, without signature, is not a multiple of 1024 bytes. (Size of application – 676) must not be a multiple of 1024.

2.6. Function Beep()

From SDK 6.4 to 6.4.3, prototype of the function Beep() was: int Beep(int note, int octave, unsigned short duration).
Since SDK 6.5, it is: int Beep(int note, int octave, unsigned short duration***, int Action***);
So if you have generated your application with SDK6.4.x you have to re-compile it while upgrading to a SDK 6.5 or newer.

2.7. 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).

2.8. Service numbers

Service numbers from 1 to 100 and from 7680 à 8191 are reserved for Ingenico internal use.

2.9. 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.

3. Issues solved in this release by component

3.1. Telium System (New version: 9.78)

Following points are delivered in this release.

3.1.1. System Thunder 1 & 2

9001		Fixed the problem when an iWL is put on the base when it is in sleep mode

3.2. Telium Manager (New version: 60.01)

Following points are delivered in this release.

8878		Software configuration ticket taken into account for iPP320 in emulation mode

3.3. CGUI (Version: 01.15) / CGUI tools (Version 01.10)

No evolution.

3.4. NanoX (Version 01.17)

No evolution.

3.5. Plug-ins Multimedia (Version: 01.06)

No evolution.

3.6. Plug-ins Signature Capture (Version: 01.07)

No evolution.

3.7. DLL Security (Version: 03.17)

No evolution.

3.8. DLL Hardware (Version: 02.43)

Evolutions are included with the Telium Manager evolutions in the paragraph 4.2.

3.9. Schemes (Version: 03.06)

No evolution.

3.10. TLV Schemes (Version: 01.16)

No evolution.

3.11. Pack IP (Version: 03.08)

No evolution.

3.12. Link Layer (New version: 03.17)

No evolution.

3.13. FTP (Version: 01.19)

No evolution.

3.14. SSL (Version: 01.56)

No evolution.

3.15. AVL (Version: 01.10)

AVL stands for Added Value Libraries.

No evolution.

3.16. SDK functionalities

No evolution.

3.17. Fonts (Version: 01.09)

No evolution.

4. 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 follow that, there will be a warning during the compilation.

4.1. Changes between SDK7.4.1 and SDK7.5

Following functions become deprecated:

- gprslib_open
- colorlib_open
- umslib_open

4.2. Changes between SDK7.2 and SDK7.4.1

No external function or structure becomes obsolete.

4.3. 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);

SDK7.5 Release note

1. Standard development platforms

1.1. Telium 1

This SDK release is compatible with the following terminals:

- EFT30
- EFT SMART
- TWIN
- ML30
- SMART2
- EFT930 (wireless terminal)
- EFT930 BL2 (wireless terminal)

1.2. Telium 2

This SDK release is compatible with the following terminals:

- iCT220, iCT250
- SPM (iPA280)
- iPP320, iPP350
- iSC250
- iSC350
- iWL220, iWL250

1.3. Pinpads

This SDK release is compatible with the following products:

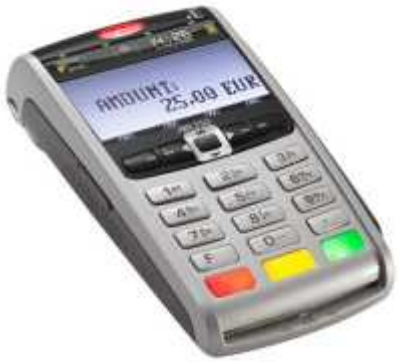
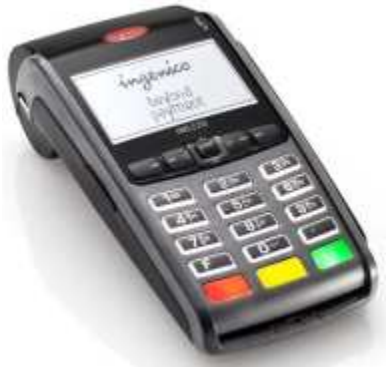
- P30, P30 Contactless
- PP30S
- PPC30
- PPR30
- iPP220, iPP250, iPP280
- iPP320 in emulation mode

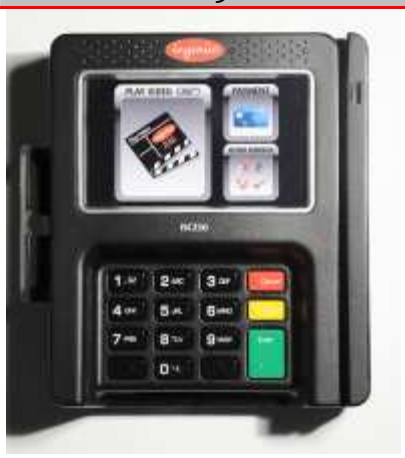
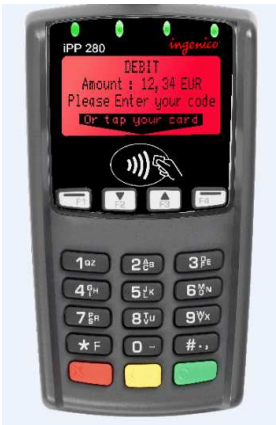
1.4. Contactless

This SDK release is compatible with iST150.

2. New terminals

Following terminals are now supported in the SDK.

iWL250	iWL220
	

iST150	iSC250	iPP280
		

It is also now possible to use iPP320 in pinpad emulation 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 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).

3.2. Contactless

3.2.1. iPPx

IPP2XX and IPP3XX are supported since the version 3.4 of the add-on contactless for new architecture. These terminals are not supported by old architecture (add-on 2.x).

3.2.2. 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 low quickly with time;

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

3.2.3. 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. QR Barcode

AVL library included in this release manages QR Barcode. To use this functionality, the DLL 844096xxx must be loaded in the terminal.
This DLL is provided in the SDK in the directory component\AVL\Barcode\QR.

3.4. Functions XXX_libopen()

Due to some XXX_libopen() functions which are now deprecated, on Ingedev version lower or equal to 7.4.0.7, there are warnings when this SDK if used with a project created by a "New Telium Project". You have to add the compilation option _DEPRECATED_SDK71_ to remove the warnings.

3.5. Binaries having a size multiple of 1024 bytes (Telium 1 terminals)

With the SDKs 6.4.X, 6.5.x and 6.6, it was not possible to download binaries having a size multiple of 1024 bytes before signature. Message is "Bad signature". To avoid loading problem on these SDK, you have to check that the size of your generated application, without signature, is not a multiple of 1024 bytes. (Size of application – 676) must not be a multiple of 1024.

3.6. Function Beep()

From SDK 6.4 to 6.4.3, prototype of the function Beep() was: int Beep(int note, int octave, unsigned short duration).
Since SDK 6.5, it is: int Beep(int note, int octave, unsigned short duration, ***int Action***);
So if you have generated your application with SDK6.4.x you have to re-compile it while upgrading to a SDK 6.5 or newer.

3.7. 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).

3.8. Service numbers

Service numbers from 1 to 100 and from 7680 à 8191 are reserved for Ingenico internal use.

3.9. 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: 9.76)

Following points are delivered in this release.

4.1.1. System Thunder 1 & 2

4513		Improved CDC device compatibility (COM5)
7192		Send DCD event to application task when device is removed. USB_PRESENT is sent.

7711	TFU 4821	Improvement of documentation for is_iso1() and is_iso3() functions
8031		The number of semaphore is increased from 70 to 150.
8534		Added definition for COMH event number and event mask, E_COMH and COMH
8607		New values returned by SystemFioctl(SYS_FIOCTL_GET_DISPLAY_TYPE). Old ones are still supported
8611		Added SystemFioctl SYS_FIOCTL_GET_VIDEO_CAPABILITY to know if video is supported by the terminal
8648	TFU 4993	Add definition for COMH event number and event mask, E_COMH and COMH
8669	TFU 5597	Const added before const string parameters of the following functions : FS_dskkill(), FS_dskdelete(), FS_mount(), FS_unmount(), FS_format(), FS_readmode(), FS_chgmode (), FS_dsksize (), FS_dskfree (), FS_opendir (), FS_rename(), FS_unlink (), FS_exist (), FS_open(), FS_write (),FS_mkdir(), FS_rmdir()
7867	TFU 4811	Documentation had been updated concerning ttestall(): only bits 15 and 31 are reserved for application.
8720	TFU 5613	Add a comment to the description of the StartRetroEclairage and StopRetroEclairage functions. StartRetroEclairage and StopRetroEclairage are for system usage. The application must use HWCNF_SetBacklightIntensity and HWCNF_SetBacklightDuration functions for backlight management

4.1.2. Driver USB CDC

7192		Send DCD event to application task when device is removed. USB_PRESENT is sent.
7810		Added driver serial signals for COM_SL : DCD, RTS, DTR, CTS. Hardware flow control can be activated using format()

4.1.3. Booster III ISC

8256	TFU 5017	Touch screen: Alternative combined mode

4.2. Telium Manager (New version: 60.00)

Following points are delivered in this release.

4605		New function used to calculate the free size Ram and the free size flash
4894		Backlight has now a minimum value on color display.
5935		USB or flash loading via the Telium Manager is now possible by selecting the catalogue
6211		the terminal type is not checked if the tag 020501 or the tag 020502 is present in the file manager.par
6920		New parameter in MANAGER.PAR. TAG 020629 0 = Display Provider Name if known into header (default) 1 = Force Display Network Name into header
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.

7008	TFU 4264	Come back of InitVar() prototype in services.h
7743	TFU 4482, 5659	Documentation improvement for Telium manager menus
8147		France only: message 'INTRODUIRE CARTE' is replaced by 'INSEREZ CARTE'
8204	TFU 5336	Updated documentation about contactless in manager.PAR
8271		Cleaned Telium manager menus about deep discharge
8353		GPRS information added in the Telium Manager ticket
8359		Timeout added when the terminal is waiting for the Telium Manager password in CGUI mode
8360		Detailed list of libraries is increased to 99 in CGUI mode (like it was in non CGUI mode)
8402		Backlight on portables now remains activated when an application is running
8409	TFU 5435	Added documentation for Priority management of Manager Entry Points
8433		It is now possible to enter IP address on 7 digits (previously minimum was 8)
8455		GPRS automatic start-up problem fixed
8467		Memory optimization when displaying the header
8486	TFU 5438	Telium Manager messages names with version and amendment are now supported. Type of the parameter file containing the message is AC36
8491	TFU 5449	France only: taken into account of the field Auto in cash register protocol
8637	TFU 5555	Improvement of documentation on Telium Manager General Parameter
8675		Fonction PSQ_Is_Pinpad_Contactless() added to know if a pinpad is contacless or not
6913		CDMA managed by Telium Manager
8520		Display improvement when display is done by booster and then by Thunder
8785		Telium manager now refreshes the screen after keyboard_event() returning 0 (= no key pressed)
8818		Opening of DLL Crypto() added for CADTOOL
8856	TFU 5716	SQ_Treat_Message() removed from include file because it is a private function
8861		Improved font DAX

4.3. CGUI (Version: 01.15) / CGUI tools (Version 01.10)

The Mock-up manager catalogue has to be loaded only to use the Ingedev CGUI Preview tool.

Following points are delivered in this release.

7060	5641	The monospace font has been regenerated and all characters have the same width. Overlapping characters are not supported by font drawing engine, all characters must be verified by hand to have the same width

4.4. NanoX (Version 01.17)

Following points are delivered in this release.

8275	TFU 5363	Signature Capture file has last 8 bytes repeated twice

4.5. Plug-ins Multimedia (Version: 01.06)

No evolution.

4.6. Plug-ins Signature Capture (Version: 01.07)

No evolution.

4.7. DLL Security (Version: 03.17)

Following points are delivered in this release.

8586		Management of DLL Security when loaded on product without Booster

4.8. DLL Hardware (Version: 02.43)

Evolutions are included with the Telium Manager evolutions in the paragraph 4.2.

4.9. Schemes (Version: 03.06)

No evolution.

4.10. TLV Schemes (Version: 01.16)

No evolution.

4.11. Pack IP (Version: 03.08)

Following points are delivered in this release.

7059		Added protocoles to reach proxy servers: SOCKS4a, SOCKS5 et HTTP-CONNECT tunnel
2229/8732		Default parameters for Wi-Fi interface
8817	TFU5728	Added functions to manage IP routing table
8654	TFU 5586	Improved documentation SSL for update information about PKCS files

4.12. Link Layer (New version: 03.17)

Following points are delivered in this release.

5510		In audit mode, ATZ sent after receiving No Carrier
8258		Add scripting capability to the Link Layer

4.13. FTP (Version: 01.19)

No evolution.

4.14. SSL (Version: 01.56)

Following points are delivered in this release.

8142	TFU 5660	Fixed problem with SSL_New() with invalid files as parameter
8725		Improved return codes of SSL_Connect()
7936	TFU 5045	Some functions don't reset anymore if DLL is not present. List of function is: SSL_New(), SSL_NewProfile(), SSL_LoadProfile(), SSL_DeleteProfile(), (), SSL_GetProfile(), SSL_GetProfileCount(), X509_Load(), PKCS12_GetPrivateKey(), PKCS12_GetCertificate(), PKCS12_GetCA(), SSL_Server_Open()

4.15. AVL (Version: 01.10)

AVL stands for Added Value Libraries.

Following points are delivered in this release.

8601	TFU 5530	Management of barcodes QR
8914		Printing of AVL ASM module is now optional
8598	TFU 5492	CRC of ASM component was equal to 0

4.16. SDK functionalities

Following points are delivered in this release.

8346		Last directory where the Telium SDK is installed becomes the default installation directory
8580		Following functions become deprecated: gprslib_open() colorlib_open() umslib_open()
8744	TFU 5665	CHM improvement

4.17. Fonts (Version: 01.09)

No evolution.

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 follow that, there will be a warning during the compilation.

5.1. Changes between SDK7.4.1 and SDK7.5

Following functions become deprecated:

- gprslib_open
- colorlib_open
- umslib_open

5.2. Changes between SDK7.2 and SDK7.4.1

No external function or structure becomes obsolete.

5.3. 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);

SDK7.4.2 Release note

6. Standard development platforms

6.1. Telium 1

This SDK release is compatible with the following terminals:

- EFT30
- EFT SMART
- TWIN
- ML30
- SMART2
- EFT930 (wireless terminal)
- EFT930 BL2 (wireless terminal)

6.2. Telium 2

This SDK release is compatible with the following terminals:

- iCT220, iCT250
- SPM (iPA280)
- iPP320, iPP350
- iSC350

ISC250 is provided in this release for development only.

Applications written with this SDK are compatible with the wireless terminals iWL220 and iWL250 (development purpose only).

6.3. Pinpads

This SDK release is compatible with the following products:

- P30, P30 Contactless
- PP30S
- PPC30
- PPR30
- iPP220, iPP250

7. Highlighted points

7.1. Fix for iPP3XX

Ethernet communication now works when using magic box with IPP3xx.

7.2. 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).

7.3. Contactless

For the contactless functionality, you must use at least the Add-on "Contactless" version 3.2 (new architecture) and 2.12 (old architecture).
For IPP2XX and IPP3XX, use version equal or upper to 3.4 for new architecture. These terminals are not supported by old architecture (add-on 2.x).

7.4. IWL

Applications written with this SDK are compatible with the wireless terminals iWL220 and iWL250 (development purpose only).

7.5. Functions XXX_libopen()

Due to the XXX_libopen() functions which are now deprecated, on Ingedev version lower or equal to 7.4.0.7, there are warnings when this SDK if used with a project created by a "New Telium Project". You have to add the compilation option _DEPRECATED_SDK71_ to remove the warnings.

7.6. Binaries having a size multiple of 1024 bytes (Telium 1 terminals)

With the SDKs 6.4.X, 6.5.x and 6.6, it was not possible to download binaries having a size multiple of 1024 bytes before signature. Message is "Bad signature". To avoid loading problem on these SDK, you have to check that the size of your generated application, without signature, is not a multiple of 1024 bytes. (Size of application – 676) must not be a multiple of 1024.

7.7. Function Beep()

From SDK 6.4 to 6.4.3, prototype of the function Beep() was: int Beep(int note, int octave, unsigned short duration).
Since SDK 6.5, it is: int Beep(int note, int octave, unsigned short duration, ***int Action***);
So if you have generated your application with SDK6.4.x you have to re-compile it while upgrading to a SDK 6.5 or newer.

7.8. 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).

7.9. Service numbers

Service numbers from 1 to 100 and from 7680 à 8191 are reserved for Ingenico internal use.

7.10. 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.

8. Issues solved in this release by component

8.1. Telium System (New version: 9.57 for iPP3XX only, remains 9.51 for other terminals)

Following point is delivered in this release.

10420/9468	SUPTEL 2844	Ethernet detection timeout value increased from 3sec to 30sec to be able to detect 10Mbit ethernet connection (For IPP3XX only)

8.2. Telium Manager (Version: 59.04)

No evolution.

8.3. CGUI (Version: 01.14) / CGUI tools (Version 01.10)

No evolution.

8.4. Plug-ins Multimedia (Version: 01.06)

No evolution.

8.5. Plug-ins Signature Capture (Version: 01.07)

No evolution.

8.6. DLL Security (Version: 03.15)

No evolution.

8.7. DLL Hardware (Version: 02.38)

No evolution.

8.8. Schemes

No evolution of schemes: version is **03.06**.
No evolution of TLV schemes: version is **01.16**.

8.9. Pack IP (Version: 03.07)

No evolution.

8.10. Link Layer (New version: 03.16)

No evolution.

8.11. FTP (Version: 01.19)

No evolution.

8.12. SSL (Version: 01.53)

Following points are delivered in this release.

8.13. AVL (Version: 01.09)

AVL stands for Added Value Libraries.
No evolution.

8.14. SDK functionalities

No evolution.

8.15. Fonts (Version: 01.09)

No evolution.

9. 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 follow that, there will be a warning during the compilation.

9.1. Changes between SDK7.2 and SDK7.4

No external function or structure becomes obsolete.

9.2. Changes before SDK7.2

Here is the list of functions which have been declared obsolete before this SDK and added to deprecated.h:

```
InitModeGraphic();
All Telium Manager functions of type void XXXlib_open (void);
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 );
```

SDK7.4.1 Release note

1. Standard development platforms

1.1. Telium 1

This SDK release is compatible with the following terminals:

- EFT30
- EFT SMART
- TWIN
- ML30
- SMART2
- EFT930 (wireless terminal)
- EFT930 BL2 (wireless terminal)

1.2. Telium 2

This SDK release is compatible with the following terminals:

- iCT220, iCT250
- SPM (iPA280)
- iPP320, iPP350
- iSC350

ISC250 is provided in this release for development only.

Applications written with this SDK are compatible with the wireless terminals iWL220 and iWL250 (development purpose only).

1.3. Pinpads

This SDK release is compatible with the following products:

- P30, P30 Contactless
- PP30S
- PPC30
- PPR30
- iPP220, iPP250

2. Highlighted points

2.1. 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).

2.2. Contactless

For the contactless functionality, you must use at least the Add-on "Contactless" version 3.2 (new architecture) and 2.12 (old architecture).
For IPP2XX and IPP3XX, use version equal or upper to 3.4 for new architecture. These terminals are not supported by old architecture (add-on 2.x).

2.3. IWL

Applications written with this SDK are compatible with the wireless terminals iWL220 and iWL250 (development purpose only).

2.4. Functions XXX_libopen()

Due to the XXX_libopen() functions which are now deprecated, on Ingedev version lower or equal to 7.4.0.7, there are warnings when this SDK if used with a project created by a "New Telium Project". You have to add the compilation option _DEPRECATED_SDK71_ to remove the warnings.

2.5. Binaries having a size multiple of 1024 bytes (Telium 1 terminals)

With the SDKs 6.4.X, 6.5.x and 6.6, it was not possible to download binaries having a size multiple of 1024 bytes before signature. Message is "Bad signature". To avoid loading problem on these SDK, you

have to check that the size of your generated application, without signature, is not a multiple of 1024 bytes. (Size of application – 676) must not be a multiple of 1024.

2.6. Function Beep()

From SDK 6.4 to 6.4.3, prototype of the function Beep() was: int Beep(int note, int octave, unsigned short duration).
Since SDK 6.5, it is: int Beep(int note, int octave, unsigned short duration, ***int Action***);
So if you have generated your application with SDK6.4.x you have to re-compile it while upgrading to a SDK 6.5 or newer.

2.7. 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).

2.8. Service numbers

Service numbers from 1 to 100 and from 7680 à 8191 are reserved for Ingenico internal use.

2.9. 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.

3. Issues solved in this release by component

3.1. Telium System (New version: 9.51)

No evolution.

3.2. Telium Manager (New version: 59.04)

Following points are delivered in this release.

8647		For French application: SPM come back to base managed in Telium Manager
8740		Fixed French health care CAM1 problem

3.3. CGUI (Version: 01.14) / CGUI tools (Version 01.10)

No evolution.

3.4. Plug-ins Multimedia (Version: 01.06)

No evolution.

3.5. Plug-ins Signature Capture (Version: 01.07)

No evolution.

3.6. DLL Security (Version: 03.15)

No evolution.

3.7. DLL Hardware (Version: 02.38)

No evolution.

3.8. Schemes

No evolution of schemes: version is **03.06**.
No evolution of TLV schemes: version is **01.16**.

3.9. Pack IP (Version: 03.07)

No evolution.

3.10. Link Layer (New version: 03.16)

No evolution.

3.11. FTP (Version: 01.19)

No evolution.

3.12. SSL (Version: 01.53)

Following points are delivered in this release.

3.13. AVL (Version: 01.09)

AVL stands for Added Value Libraries.
No evolution.

3.14. SDK functionalities

No evolution.

3.15. Fonts (Version: 01.09)

No evolution.

4. 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 follow that, there will be a warning during the compilation.

4.1. Changes between SDK7.2 and SDK7.4

No external function or structure becomes obsolete.

4.2. Changes before SDK7.2

Here is the list of functions which have been declared obsolete before this SDK and added to deprecated.h:

```
InitModeGraphic();
All Telium Manager functions of type void XXXlib_open (void);
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 );
```

5. Version of components in the previous SDKs

The following table compiles the versions of modules packaged in the previous versions of the SDK.

SDK7.4 Release note

1. Standard development platforms

1.1. Telium 1

This SDK release is compatible with the following terminals:

- EFT30
- EFT SMART
- ML30
- SMART2
- EFT930 (wireless terminal)
- EFT930 BL2 (wireless terminal)

1.2. Telium 2

This SDK release is compatible with the following terminals:

- iCT220, iCT250
- SPM (iPA280)
- iPP320, iPP350
- iSC350

ISC250 is provided in this release for development only.

Applications written with this SDK are compatible with the wireless terminals iWL220 and iWL250 (development purpose only).

1.3. Pinpads

This SDK release is compatible with the following products:

- P30, P30 Contactless
- PP30S
- PPC30
- PPR30
- iPP220, iPP250

2. Highlighted points

2.1. 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).

2.2. Contactless

For the contactless functionality, you must use at least the Add-on "Contactless" version 3.2 (new architecture) and 2.12 (old architecture).
For IPP2XX and IPP3XX, use version equal or upper to 3.4 for new architecture. These terminals are not supported by old architecture (add-on 2.x).

2.3. UCM

You have to use at least add-on UCM version 2.5.

2.4. IWL

Applications written with this SDK are compatible with the wireless terminals iWL220 and iWL250 (development purpose only).

2.5. TWIN

This SDK is not compatible with TWIN range of terminals.

2.6. Functions XXX_libopen()

Due to the XXX_libopen() functions which are now deprecated, on Ingedev version lower or equal to 7.4.0.7, there are warnings when this SDK if used with a project created by a "New Telium Project". You have to add the compilation option _DEPRECATED_SDK71_ to remove the warnings.

2.7. Binaries having a size multiple of 1024 bytes (Telium 1 terminals)

With the SDKs 6.4.X, 6.5.x and 6.6, it was not possible to download binaries having a size multiple of 1024 bytes before signature. Message is "Bad signature". To avoid loading problem on these SDK, you have to check that the size of your generated application, without signature, is not a multiple of 1024 bytes. (Size of application – 676) must not be a multiple of 1024.

2.8. Function Beep()

From SDK 6.4 to 6.4.3, prototype of the function Beep() was: int Beep(int note, int octave, unsigned short duration).
Since SDK 6.5, it is: int Beep(int note, int octave, unsigned short duration, ***int Action***);
So if you have generated your application with SDK6.4.x you have to re-compile it while upgrading to a SDK 6.5 or newer.

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).

2.10. Service numbers

Service numbers from 1 to 100 and from 7680 à 8191 are reserved for Ingenico internal use.

2.11. 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.

3. Issues solved in this release by component

3.1. Telium System (New version: 9.51)

Following points are delivered in this release.

3.1.1. System Thunder

3920		EthernetSetOption() now allow to change Ethernet interface parameters (ETH_IFO_GATEWAY, ETH_IFO_DNS1 et ETH_IFO_DNS2)

6252	TFU3783 and TFU4810	Unplugging of Ethernet wire was not detected during a download by TMS
7617		Application types range added for Manufacturer applications: 44000-44999
7654		Inter UC evolution
7753		Rewriting in a disk in RAM improved
7764	TFU4917	Change backlight frequency for IPP320/IPP350
7793		USB traces transfer improved
7819		Battery management improved when temperature rises up
8031		Number of semaphores managed is now 150 (70 before)
8115		Function SYS_FIOCTL_GET_PINPAD_INFORMATIONS() returned wrong number on iPP3XX
8162		Inter UC evolution

3.1.2. System Thunder (IPP3XX)

6738	TFU4841 and TFU4955	Update of the issue Limit energy consumed by buzzer on IPP3xx. To be able to play different frequencies on buzzer we define two mode: 1) power full mode (100dcb), you need to use the parameters: div:0x00 dutycycle=0x2300 and period= 0x2800 (dutycycle from 0x2300 to 0x2800) 2) standard mode, you are able to play all frequencies but for energy reason, the operating system limits the duty cycle from 95% to 100% of the period.

3.1.3. System Thunder III (ISC)

7637		On iSC350, there was a transfer problem with LLT (blank screen)
7733	TFU 4833	Correction of ISC350 crashes while running video
7826		Driver Printer SPM now managed on ISC
7839		Modification of audio initialisation on iSC250
7881		1. If the replaced panel type is different, then the driver will delete current calibration matrix file. 2. The same problem can occur if we replace panel even with the same type. For this purpose the new IOCTL function is implemented: SystemFioctl(SYS_FIOCTL_CALIBRATION_MATRIX_ERASE, NULL); NOTE: This function can be called only when the touch screen peripheral is closed.
7896		Now, reset is not necessary after the initialisation and activation of an iSC250
7897		Sometimes iSC250 didn't reboot at reset
7898		There was sometimes a problem to save data in flash in PowerDown mode
8154	TFU5273	LLT didn't work once USB was switched to HID

3.1.4. System Thunder (930GCC)

6383	TFU3619	Update of the issue Colour screen saver on EFT930 now fully functional: In SCREEN.INI: [ID_SCREEN] COLOR_SAVER=/HOST/IMAGE.BMP" Manager manages BMP, JPG and PNG extension For PNG and JPG extension, you need to load Images DLL into the terminal.

3.1.5. System IPP2XX

7582	TFU4933	Contactless LEDs are now switched off at start-up
7707		Now, on pinpad not displaying smiley at start up, the messages mock-up, unauthorised or alert irruption are displayed as soon as the pinpad is starting

3.1.6. System P30

6992		Application can change the number of retransmission of ISO driver, and can accept card response that are received before minimum delay.
7184		Modification to support EZlink cards
7582	TFU4933	Contactless LEDs are now switched off at startup

3.1.7. System Booster 2 (ML30 / SMART2)

8322		Correction for ETEC8 card on ML30 colour

3.1.8. System Booster 3 (ICT2XX, IPP3XX, iPA2XX)

6992		Application can change the number of retransmission of ISO driver, and can accept card response that is received before minimum delay.
7184		Modification to support EZlink cards
7582	TFU4933	Contactless LEDs are now switched off at start-up
7582	TFU4933	Contactless LEDs are now switched off at start-up
7724		Now Swipe can read 240bpi cards
7750	TFU4898	Correction for simultaneous activation of LED CAM and SWIPE
8016	TFU5241	The ICT220 had a high failure rate when the card was swiped slow

3.1.9. system Booster 3 (ISC)

7949		If the touch screen driver was opened in "catch press only" mode then the first sample can be lost for the second and following "opens".

3.1.10. Driver USB CDC

7192		Now DCD event is sent to application task when USB device is removed. Today, USB_PRESENT is already sent.
7656		Inter UC evolution
7810		Added drives serial signals for COM_SL : DCD, RTS, DTR, CTS. Hardware flow control can be activated using format()

3.1.11. Driver VFS

7515		Management of file systems without partition table

3.1.12. 930B Driver Bluetooth BC02

7729		There was an erratic behaviour of Ethernet connectivity with multiple handsets on one base (old BC02 model).
7923		Since SDK7.2, it was impossible to download with an intelligent Ethernet modem.

3.1.13. 930B Driver Bluetooth BC06

7730		There were connection failures in mixed BC02 / BC06 handset configurations.
7923		Since SDK7.2, it was impossible to download with an intelligent Ethernet modem.

3.1.14. GPRS

7752		Speed-up non-responding GPRS modem detection.
7766		USSD works again as expected.

3.1.15. TS2 LDBG

6594		During remote debugging when there is OEM_exit, now the terminal reboots

3.2. Telium Manager (New version: 59.03)

Following points are delivered in this release.

5701		Information added to know if a terminal was ingetrusted or not (information in the hardware configuration ticket and padlock displayed by the terminal)
7090		French health domain only : ""Fréquence coupleur externe"" menu added
7443		Information displayed on screen for non printer terminals are now the same than in the configuration ticket
7559		Adaptation for ISC250
7805		Change of screen saver without reset
7809		Entry point CARD_INSIDE is supported on CAM1 as it is for CAM0
7857		Management of peripherals if there is a KEYBOARD_EVENT and a card is present
7908	TFU4953	Optimization of function Read_Message()
7917		Printing of shortcuts defined by applications
8036		Booster type printed in the hardware configuration ticket
8056		PPP configuration for CDMA was wrong
8080	TFU 5207	_DrawWindow() now supports ISO8859 fonts
8110		Pinpad idle screen was not taken account after adding a pinpad to a terminal
8323		On non contactless terminals in the terminal configuration ticket, the field for contactless hardware LEDS was "yes"
8409	TFU 5435	Improved documentation for Priority management of Manager Entry Points
8455		Fix automatic start of GPRS problems

3.3. CGUI (Version: 01.14) / CGUI tools (Version 01.10)

The Mock-up manager catalogue has to be loaded only to use the Ingedev CGUI Preview tool.

Following points are delivered in this release.

6810	TFU 4168	"Select" tag now displays scrollbar when too much options are present
7044	TFU 4336	A new option has been set on the browser : WGUI_BROWSER_TEXT_CURSOR_WIDTH : a cursor of 1, 2 or 3px width can be chosen
7060	TFU 4346	The monospace font has been regenerated and all characters have the same width
7117		The colour name "grey" has been added. It is the same as the "gray" color.
7174		The monospace font has been regenerated and all characters have the same width
7309		ARM SDT now supported (previously link problem)
7343		UTF-8 BOM are now correctly handled when present at the beginning of the file
7600		A new action on binding has been added : WGUI_KEY_IGNORE. When a key is bind with this action no more characters or action are done by the browser
7601		The insertion mode in a text is now correctly handled
7739		Now the object tag is an inline element as the image, was block before, and % can be used on it
8004	TFU 4672	JavaScript documents included in buffer sent via writehtml are now loaded. The problem was about charset, with writehtml the expected charset is Unicode and if no known charset is in the file it assumes a unicode charset too.
8018	TFU 5149	Stream was not destroyed in this case and the maximum number of stream is 10. Now XHR stream are destroyed even when using writehtml
8248		Affecting background colour of a row element with JavaScript now works
5964, 7245		JavaScript alert is not supported
8103	TFU5146	cGUI support for applications for monochrome devices

3.4. Plug-ins Multimedia (Version: 01.06)

Following points are delivered in this release.

7717		MMPlayer: add support for USB CAM

3.5. Plug-ins Signature Capture (Version: 01.07)

Following points are delivered in this release.

7557		The signature data file can not be accessed until the terminal is rebooted in a particular scenario.
7846		Correction to avoid the memory overlaps with DLL AXIS for RPO1.

3.6. DLL Security (Version: 03.15)

Following points are delivered in this release.

7445		Added SEC_LoadKey for TLV_TYPE_KTDES_24
7446		Added KCV TDES Key 24 bytes
7972		Added TDES Dukpt light in the scheme TLV TDES DUKPT standard

3.7. DLL Hardware (Version: 02.38)

No evolution.

3.8. Schemes

No evolution of schemes: version is **03.06**.
No evolution of TLV schemes: version is **01.16**.

3.9. Pack IP (Version: 03.07)

Following points are delivered in this release.

7503	TFU4732	SSL documentation
7540	TFU4737	SSL documentation
7202	TFU4510	Added standard socket defines

3.10. Link Layer (New version: 03.16)

Following points are delivered in this release.

7817		Printing of the version on the ticket is now optional (see FT7475 = TFU3970 and TFU4729)
6433	TFU3349	Fix problem of temporary state (400ms) while connecting using an unknown APN
4237		BT Terminal on non-BT base: association to use the modem through IR
8181		Management of CDMA
8383	TFU5428	Added documentation for IP and GPRS error code of the link layer

3.11. FTP (Version: 01.19)

Following points are delivered in this release.

8213		Increasing the timeout at the signature verification stage (120 seconds instead of 30 seconds).

8366		Management of connexion with COM_EXT

3.12. SSL (Version: 01.53)

Following points are delivered in this release.

6655		It is now possible to manage a SSL communication via a memory area
7936	TFU5045	Added management when calls to DLL functions if DLL is not loaded
8005	TFU5132	OID managed by DLL SLL instead of NID
8142	TFU5246	SSL_New() now returns SSL_ENOENT when file names are invalid

3.13. AVL (Version: 01.09)

AVL stands for Added Value Libraries.
No evolution.

3.14. SDK functionalities

Following points are delivered in this release.

8296		SDK_TELIUM.chm compatibility with IngeDev
8148		Link to elements in the .CHM file are now to the function (previously at the beginning of the page)

3.15. Fonts (Version: 01.09)

No evolution.

4. 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 follow that, there will be a warning during the compilation.

4.1. Changes between SDK7.2 and SDK7.4

No external function or structure becomes obsolete.

4.2. Changes before SDK7.2

Here is the list of functions which have been declared obsolete before this SDK and added to deprecated.h:

```
InitModeGraphic();
All Telium Manager functions of type void XXXlib_open (void);
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 );
```

5. Version of components in the previous SDKs

The following table compiles the versions of modules packaged in the previous versions of the SDK.

SDK	Telium Manager	Telium System	DLL Security	DLL Hardware	Schemes	TLV Schemes	Link layer	Pack IP	DLL FTP	DLL SSL	AVL	Font	cGUI	cGUI tools	Plug-in Signature Capture	Plug-in Multimedia	Simulator
6.5	54.01	08.33	3.09	2.31	3.06	1.12	3.10	3.05	1.17	1.47	1.05	1.05 (2)					2.05
6.5.1	54.02	08.34	3.10	2.32	3.06	1.12	3.10	3.05	1.17	1.48	1.07	1.09	1.6.1				2.05
6.5.2	54.03	08.34	3.10	2.32	3.06	1.12	3.10	3.05	1.17	1.48	1.07	1.09	1.6.1				2.05
6.5.3	54.03	08.35	3.10	2.32	3.06	1.12	3.10	3.05	1.17	1.48	1.07	1.09	1.6.1				2.05
6.6	55.00	08.44	3.10	2.32	3.06	1.12	3.10	3.05	1.17	1.48	1.07	1.09	1.07	1.01			2.06
7.1	56.00	09.00	3.11	2.35	3.06	1.16	3.10	3.05	1.17	1.48	1.08	1.09	1.11	1.10	1.03	1.04	2.07
7.2	57.01	09.16	3.11 (1)	2.37	3.06	1.16	3.13	3.06	1.17	1.48	1.09	1.09	1.12	1.10	1.05	1.05	2.07
7.2.1	57.02	09.20	3.12	2.38	3.06	1.16	3.13	3.06	1.17	1.48	1.09	1.09	1.12	1.10	1.05	1.05	2.07
7.3	58.00	09.30	3.12	2.38	3.06	1.16	3.14	3.06	1.17	1.48	1.09	1.09	1.12	1.10	1.05	1.05	2.07
7.3.1	58.01	09.31	3.12	2.38	3.06	1.16	3.14	3.06	1.17	1.48	1.09	1.09	1.12	1.10	1.05	1.05	2.07
7.3.2	58.04	09.31	3.12	2.38	3.06	1.16	3.14	3.06	1.17	1.48	1.09	1.09	1.12	1.10	1.05	1.05	2.07

(1): Version 3.12 for CTAP configuration

(2): Version 1.06 for ISO1 fonts

SDK7.3.2 RELEASE NOTE

1. Standard development platforms

1.1. Telium 1

The following terminals are compatible with this SDK release:

- EFT30
- EFT SMART
- TWIN
- ML30
- SMART2
- EFT930 (wireless terminal)
- EFT930 BL2 (wireless terminal)

1.2. Telium 2

The following terminals are compatible with this SDK release:

- iCT220, iCT250
- SPM (iPA280)
- iPP320, iPP350
- iSC350

iSC250 is provided in this release for development only.

1.3. Pinpads

This SDK is compatible with these products:

- P30, P30 Contactless
- PP30S
- PPC30
- PPR30
- iPP220, iPP250

iPP3XX as emulation of a P30 is provided in this release for development purpose only (function download is not available).

2. Main evolutions from SDK 7.3.1 Version

All issues solved are in paragraph 2.11 : 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.
Issues solved in this release.

2.1. Telium Manager

- Now, CAM0 is opened at startup of manager only:
  1) on UCM (UCM_Behaviour),
  2) On Health POS (SECUR application present).
- New function: clrscr() to clear display and force refresh on Color Screen.
  Screen will be updated after call of PaintGraphics() function.
- Reset of the pinpad solved.

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).

3.2. Contactless

For the contactless functionality, you must use at least the Add-on "Contactless" version 3.2 (new architecture) and 2.12 (old architecture).
For IPP2XX and IPP3XX, use version equal or upper to 3.4 for new architecture. These terminals are not supported by old architecture (add-on 2.x).

3.3. UCM

You have to use at least add-on UCM version 2.5.

3.4. Functions XXX_libopen()

Due to the XXX_libopen() functions which are now deprecated, on Ingedev version lower or equal to 7.4.0.7, there are warnings when this SDK if used with a project created by a "New Telium Project". You have to add the compilation option _DEPRECATED_SDK71_ to remove the warnings.

3.5. Binaries having a size multiple of 1024 bytes (Telium 1 terminals)

With the SDKs 6.4.X, 6.5.x and 6.6, it was not possible to download binaries having a size multiple of 1024 bytes before signature. Message is "Bad signature". To avoid loading problem on these SDK, you have to check that the size of your generated application, without signature, is not a multiple of 1024 bytes. (Size of application – 676) must not be a multiple of 1024.

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. Service numbers

Service numbers from 1 to 100 and from 7680 à 8191 are reserved for Ingenico internal use.

3.8. EFT930 embedding 8Mo of flash

It is possible to use this SDK on EFT930 which has only 8 Mo of flash but 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: 9.31)

No evolution.

4.2. Pack Manager (New version: 58.04)

Following points are delivered in this release.

7855	TFU4996	Now, CAMo is opened at startup of manager only: 1) on UCM (UCM_Behaviour) 2) On Health POS (SECUR application present)
7937		New function: clrscr() to clear display and force refresh on Color Screen. Screen will be updated after call of PaintGraphics() function
8007		Reset during the association of an Ingetrusted pinpad with an Ingetrusted terminal solved Reset when calling to function TransferToBooster() with empty Pin zone solved
8032	TFU5145	There was a reset after a call to InitContexteGraphique ()

4.3. CGUI (Version: 01.12) / CGUI tools (Version 01.10)

No evolution.
The Mock-up manager catalogue has to be loaded only to use the Ingedev CGUI Preview tool.

4.4. Plug-ins Multimedia (Version: 01.05)

No evolution.

4.5. Plug-ins Signature Capture (Version: 01.05)

No evolution.

4.6. DLL Security (Version: 03.12)

No evolution.

4.7. DLL Hardware (Version: 02.38)

No evolution.

4.8. DLL Pinpad (New version: 05.00)

No evolution.

4.9. Schemes

No evolution of schemes: version is **03.06**.
No evolution of TLV schemes: version is **01.16**.

4.10. Pack IP (Version: 03.06)

No evolution.

4.11. Link Layer (New version: 03.14)

No evolution.

4.12. FTP (Version: 01.17)

No evolution.

4.13. SSL (Version: 01.48)

No evolution.

4.14. AVL (Version: 01.09)

AVL stands for Added Value Libraries.

No evolution.

4.15. SDK functionalities

No evolution.

4.16. Fonts (Version: 01.09)

No evolution.

4.17. Simulator (Version: 02.07)

No evolution.

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 follow that, there will be a warning during the compilation.

5.1. Changes between SDK7.2 and SDK7.3.2

No external function or structure becomes obsolete.

5.2. Changes before SDK7.2

Here is the list of functions which have been declared obsolete before this SDK and added to deprecated.h:

```
InitModeGraphic();
All Telium Manager functions of type void XXXlib_open (void);
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. Version of modules in the previous SDK

This table compiles the versions of modules packaged in the previous versions of the SDK.

SDK	Manager	System	DLL Security	DLL Hardware	Schemes	TLV Schemes	Link layer	Pack IP	DLL FTP	DLL SSL	AVL	Font	cGUI	cGUI tools	Plug-in Signature Capture	Plug-in Multimedia	Simulator
6.5	54.01	08.33	3.09	2.31	3.06	1.12	3.10	3.05	1.17	1.47	1.05	1.05 (2)					2.05
6.5.1	54.02	08.34	3.10	2.32	3.06	1.12	3.10	3.05	1.17	1.48	1.07	1.09	1.6.1				2.05
6.5.2	54.03	08.34	3.10	2.32	3.06	1.12	3.10	3.05	1.17	1.48	1.07	1.09	1.6.1				2.05
6.5.3	54.03	08.35	3.10	2.32	3.06	1.12	3.10	3.05	1.17	1.48	1.07	1.09	1.6.1				2.05
6.6	55.00	08.44	3.10	2.32	3.06	1.12	3.10	3.05	1.17	1.48	1.07	1.09	1.07	1.01			2.06
7.1	56.00	09.00	3.11	2.35	3.06	1.16	3.10	3.05	1.17	1.48	1.08	1.09	1.11	1.10	1.03	1.04	2.07
7.2	57.01	09.16	3.11 (1)	2.37	3.06	1.16	3.13	3.06	1.17	1.48	1.09	1.09	1.12	1.10	1.05	1.05	2.07
7.2.1	57.02	09.20	3.12	2.38	3.06	1.16	3.13	3.06	1.17	1.48	1.09	1.09	1.12	1.10	1.05	1.05	2.07
7.3	58.00	09.30	3.12	2.38	3.06	1.16	3.14	3.06	1.17	1.48	1.09	1.09	1.12	1.10	1.05	1.05	2.07
7.3.1	58.01	09.31	3.12	2.38	3.06	1.16	3.14	3.06	1.17	1.48	1.09	1.09	1.12	1.10	1.05	1.05	2.07
7.3.2	58.04	09.31	3.12	2.38	3.06	1.16	3.14	3.06	1.17	1.48	1.09	1.09	1.12	1.10	1.05	1.05	2.07

(1) : Version 3.12 for CTAP configuration

(2) : Version 1.06 for ISO1 fonts

SDK7.3.1 RELEASE NOTE

1. Standard development platforms

1.1. Telium 1

The following terminals are compatible with this SDK release:

- EFT30
- EFT SMART
- TWIN
- ML30
- SMART2
- EFT930 (wireless terminal)
- EFT930 BL2 (wireless terminal)

1.2. Telium 2

The following terminals are compatible with this SDK release:

- iCT220, iCT250
- SPM (iPA280)
- iPP320, iPP350
- iSC350

iSC250 is provided in this release for development only.

1.3. Pinpads

This SDK is compatible with these products:

- P30, P30 Contactless
- PP30S
- PPC30
- PPR30
- iPP220, iPP250
- iPP3XX as a pinpad (emulation of a P30). Function download is not available.

2. Main evolutions from SDK 7.3 Version

All issues solved are in paragraph 2.11 : 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.
Issues solved in this release.

2.1. Telium System

- PP30 back in the release: it was not working on SDK 7.3

2.2. Telium Manager

- In some conditions (see below): in case of a wrong track reading, the contactless field is cut for the second try. A parameter allows to not cut the field,
- For French domain only : ITP is now correct for IPP3XX,
- PSQ_Get_Class_Capabilities() returns 0 if function doesn't exist.

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).

3.2. Contactless

For the contactless functionality, you must use at least the Add-on "Contactless" version 3.2 (new architecture) and 2.12 (old architecture).
For IPP2XX and IPP3XX, use version equal or upper to 3.4 for new architecture. These terminals are not supported by old architecture (add-on 2.x).

3.3. UCM

You have to use at least add-on UCM version 2.5.

3.4. Functions XXX_libopen()

Due to the XXX_libopen() functions which are now deprecated, on Ingedev version lower or equal to 7.4.0.7, there are warnings when this SDK if used with a project created by a "New Telium Project". You have to add the compilation option _DEPRECATED_SDK71_ to remove the warnings.

3.5. Binaries having a size multiple of 1024 bytes (Telium 1 terminals)

With the SDKs 6.4.X, 6.5.x and 6.6, it was not possible to download binaries having a size multiple of 1024 bytes before signature. Message is "Bad signature". To avoid loading problem on these SDK, you have to check that the size of your generated application, without signature, is not a multiple of 1024 bytes. (Size of application – 676) must not be a multiple of 1024.

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. Service numbers

Service numbers from 1 to 100 and from 7680 à 8191 are reserved for Ingenico internal use.

3.8. EFT930 embedding 8Mo of flash

It is possible to use this SDK on EFT930 which has only 8 Mo of flash but 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: 9.31)

Following points are delivered in this release.

7448	PP30 was not working on SDK 7.3

4.2. Pack Manager (New version: 58.01)

Following points are delivered in this release.

6819	French domain only: PSQ_Get_Cless_Capabilities() returns 0 if function doesn't exist to avoid reset
7678 (TFU4916)	Now, in the following conditions : - Implicit selection - Proceed entry before presentation of card - Contactless is an internal module of the terminal Then: - By default, in case of a wrong track reading, the contactless field is cut for the second try - A parameter allows to not cut the field
7889	ISDN was not in English in the Telium Manager menu
7934	For French domain only : ITP was not correct on IPP3XX
7891 (TFU5021)	PSQ_Donner_format_date( ) documentation improvement
6598, 7918	Miscellaneous documentation improvements

4.3. CGUI (Version: 01.12) / CGUI tools (Version 01.10)

No evolution.
The Mock-up manager catalogue has to be loaded only to use the Ingedev CGUI Preview tool.

4.4. Plug-ins Multimedia (Version: 01.05)

No evolution.

4.5. Plug-ins Signature Capture (Version: 01.05)

No evolution.

4.6. DLL Security (Version: 03.12)

No evolution.

4.7. DLL Hardware (Version: 02.38)

No evolution.

4.8. DLL Pinpad (New version: 05.00)

No evolution.

4.9. Schemes

No evolution of schemes: version is **03.06**.
No evolution of TLV schemes: version is **01.16**.

4.10. Pack IP (Version: 03.06)

No evolution.

4.11. Link Layer (New version: 03.14)

No evolution.

4.12. FTP (Version: 01.17)

No evolution.

4.13. SSL (Version: 01.48)

No evolution.

4.14. AVL (Version: 01.09)

AVL stands for Added Value Libraries.
No evolution.

4.15. SDK

No evolution.

4.16. Fonts (Version: 01.09)

No evolution.

4.17. Simulator (Version: 02.07)

No evolution.

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 follow that, there will be a warning during the compilation.

5.1. Changes between SDK7.2 and SDK7.3.1

No external function or structure becomes obsolete.

5.2. Changes before SDK7.2

Here is the list of functions which have been declared obsolete before this SDK and added to deprecated.h:

```
InitModeGraphic();
All Telium Manager functions of type void XXXlib_open (void);
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 );
```

SDK7.3 RELEASE NOTE

1. Standard development platforms

1.1. Telium 1

The following terminals are compatible with this SDK release:

- EFT30
- EFT SMART
- TWIN
- ML30
- SMART2
- EFT930 (wireless terminal)
- EFT930 BL2 (wireless terminal)

1.2. Telium 2

The following terminals are compatible with this SDK release:

- iCT220, iCT250
- SPM (iPA280)
- iPP320, iPP350
- iSC350

iSC250 is provided in this release for development only.

1.3. Pinpads

This SDK is compatible with these products:

- P30, P30 Contactless
- PP30S
- PPC30
- PPR30
- iPP220, iPP250
- iPP3XX as a pinpad (emulation of a P30). Function download is not available.

PP30 is not managed by this release.

2. Main evolutions from SDK 7.2.1 Version

All issues solved are in paragraph 2.11 : 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.
Issues solved in this release.

2.1. New terminals

- iSC250 is provided in this package for development purpose only;
- iPP3XX can be used as a pinpad (emulation of a P30). However, function download is not available in this package.

2.2. Telium System

- Add HID protocol for USB Device;
- Energy saving features for iPP3XX;
- The information on type of contactless configuration works for all terminals;
- HISR modem reset solved;
- Stack overflow fixed in archiver_diagnostic();
- Reading of serial number over USB for French Health Care applications;
- Improvement for iSC350.

2.3. Telium Manager

- New parameter in MANAGER.PAR for real and virtual operator name;
- When ISO1 or ISO3 track was not valid, Telium Manager didn't return the error to the application;
- During the opening of an Ingestate session, it is now possible to enter the TMS ID in BCD.

2.4. Link layer

- Link layer not defined as a banking application.

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).

3.2. Contactless

For the contactless functionality, you must use at least the Add-on "Contactless" version 3.2 (new architecture) and 2.12 (old architecture).
For IPP2XX and IPP3XX, use version equal or upper to 3.4 for new architecture. These terminals are not supported by old architecture (add-on 2.x).

3.3. PP30

PP30 is not managed by this release.

3.4. UCM

You have to use at least add-on UCM version 2.5.

3.5. Functions XXX_libopen()

Due to the XXX_libopen() functions which are now deprecated, on Ingedev version lower or equal to 7.4.0.7, there are warnings when this SDK if used with a project created by a "New Telium Project". You have to add the compilation option _DEPRECATED_SDK71_ to remove the warnings.

3.6. Binaries having a size multiple of 1024 bytes (Telium 1 terminals)

With the SDKs 6.4.X, 6.5.x and 6.6, it was not possible to download binaries having a size multiple of 1024 bytes before signature. Message is "Bad signature". To avoid loading problem on these SDK, you have to check that the size of your generated application, without signature, is not a multiple of 1024 bytes. (Size of application – 676) must not be a multiple of 1024.

3.7. 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).

3.8. Service numbers

Service numbers from 1 to 100 and from 7680 à 8191 are reserved for Ingenico internal use.

3.9. EFT930 embedding 8Mo of flash

It is not possible to use this SDK on EFT930 which has only 8 Mo of flash.

4. Issues solved in this release by component

4.1. Telium System (New version: 9.30)

Following points are delivered in this release.

Thunder 1 and 2

5244	Twin 30 didn't work with LLT 4.2.3
6833	Serial number read on USB for French Health Care applications
6969	Added information "configuration Class present or not" (modification for IPP3XX on which Class is an pluggable module)
7024	It is now possible to replace a file in the disk Host with LLT in command mode
7168	dllmalloc improved for big buffers
7246	HISR modem reset solved
7250	Stack overflow fixed in archiver_diagnostic
7271	Add HID protocol for USB Device
7425 (TFU4658)	COM2 management of flow control added
7448 (TFU4634)	COM ttestall or status didn't work correctly at 19200
7542	Optimization of IAPP transfer delay

System P30

6778	There were reset of CAD30 Tool or CAD30 UPP when connected with a pinpad on USB

7079	Booster only terminal are now supported on Linux

System PP30S

6573	To save memory system fonts (displayng Mock-up, unauthorized, ...) are now only in ROM
6778	There were reset of CAD30 Tool or CAD30 UPP when connected with a pinpad on USB
7079	Booster only terminal are now supported on Linux

System IPP2XX

6778	There were reset of CAD30 Tool or CAD30 UPP when connected with a pinpad on USB
7079	Booster only terminal are now supported on Linux
7114	Optimisations of Mifare driver
7116	Optimisations of Calypso driver
7128	Signature Check From Scheme and Shared Area Managed in the Booster
7308	Optimisations of Calypso driver
7333	At startup, press key F1 to display an IHM that allows setting IUC link (USB or RS232). USB IUC link is selected by default.
7341	Menu added to erase trace files on 2 lines display pinpads
7550	IPP2XX backlight color bug fixed

Booster 2 930 BL2

6525	LLT connexion impossible fixed
7114	Optimisations of Mifare driver

930 Wireless: Driver BT BC06 Portable and base

5304	Support of OPEN_BT

SMART2 / ML30

6272 (TFU3596)	Possibility added to do an automatic IFS request in ISO7816 mode

Booster III ICT2XX /iPP3XX/ IPA280

6272 (TFU3596)	Possibility added to do an automatic IFS request in ISO7816 mode
7128	Signature Check From Scheme and Shared Area Managed in the Booster
7341	Menu added to erase trace files on 2 lines display pinpads

Driver Modem 930

7298	V22FC connexion delay improved
7082 / 7376 / 4977	Authorization call failure on RTC lines fixed

French healthcare

6833	Reading of serial number over USB for French Health Care applications

IPP3XX

6565	Backlights of keyboard and displayed are now independent on IPP3XX for energy savings purpose
6738	Limit energy used by buzzer on IPP3xx

P30 emulation of IPP3XX

7337 / 7338 / 7339 / 7340 / 7353 / 7364	Added inter-UC link : it will allows to connect a "Thunder" pinpad with a Telium product

CAD30 CBS and CAD30 CBS VM

6784	Reset in a very specific context, fixed

CAD30-UCR (MR40)

7767	Driver Cless B' added in MR40 system
6578	Improve robustness of CLESS driver by checking RC531 state if there is no interruption.
6778	Pinpad resets on USB pinpad connected to UCM or UCR fixed

iSC350 / iSC250 Booster 3

7685	Touch Screen Driver: implementation for RP01
7736	New command for Touch Screen: set sensitivity

iSC350 / iSC250 Thunder 3

7270	Add HID protocol for USB Device
7434	Stereo reading improvement
7546	Change configuration backlight from 25% to 100% by default
7661	USB Host: add WIFI & improve CAM.
7686	Touch Screen Driver: implementation for RP01
7717	MMPlayer: add support for usb CAM
7735	Touch Screen: New IOCTL commands: Sensitivity Adjustment

4.2. Pack Manager (New version: 58.00)

Following points are delivered in this release.

5942 (TFU3573)	Download time gauge removed
6920	New parameter in MANAGER.PAR for real and virtual operator name. TAG 020629 0 = Display Provider Name if known into header (default) 1 = Force Display Network Name into header
7091	Health domain only: Update of the names of products returned by OS_GetIdLecteur()
7530	In hardware configuration menu name of twin32 was wrong
7549	During the opening of an Ingestate session, it is now possible to enter the TMS ID in BCD
7559	Adaptation for ISC250 product regarding: - Colour compatible mode - Header - Foot - CGUI
7560 (TFU4660)	PSQ_lire_param() et PSQ_ecrire_param() evolutions
7577	It was not possible to remove software which have a 9 digits name
7618 (TFU4394)	When ISO1 or ISO3 track was not valid, Telium Manager didn't return the error to the application.
7633	Menu Pinpad removed from ISC350
7635	Key '-' is now managed in the maintenance menu of the iSC350
7559	ISC250 evolutions in Telium Manager
7665 (TFU4884)	Add Yellow Func Key (Corr Key) support in PPS_Fct_Entry()
6383 (TFU3619)	Colour screen saver on EFT930 (Telium manager part of the correction only, fully functional in the next SDK)
6940 (TFU4210)	wG_List_Entry title was displayed incorrectly in extended graphical display
7666 (TFU4812)	Stop_Entry didn't stop wG_List_Entry on ML30CC
7673	On a configuration "ICT220 + P30 Cless", the message inviting to insert the card was not displayed
7678 (TFU4916)	When contactless is activated, if the magnetic card reading is wrong, the contactless module is cut for the second try
7757	Priority levels added in screen.ini

4.3. CGUI (Version: 01.12) / CGUI tools (Version 01.10)

No evolution.

The Mock-up manager catalogue has to be loaded only to use the Ingedev CGUI Preview tool.

4.4. Plug-ins Multimedia (Version: 01.05)

No evolution.

4.5. Plug-ins Signature Capture (Version: 01.05)

No evolution.

4.6. DLL Security (Version: 03.12)

No evolution.

4.7. DLL Hardware (Version: 02.38)

No evolution.

4.8. DLL Pinpad (New version: 05.00)

7334	DLL pinpad can now manage IPP3XX as a pinpad (P30 emulation)

4.9. Schemes

No evolution of schemes: version is **03.06**.
No evolution of TLV schemes: version is **01.16**.

4.10. Pack IP (Version: 03.06)

No evolution.

4.11. Link Layer (New version: 03.14)

7372 (TFU4667)	Link layer not defined as a banking application (use of entry point GIVE_YOUR_SPECIFIC_CONTEXT)

4.12. FTP (Version: 01.17)

No evolution.

4.13. SSL (Version: 01.48)

7419	It was not possible to include "SSL_.h" in a C++ source file

4.14. AVL (Version: 01.09)

AVL stands for Added Value Libraries.
No evolution.

4.15. SDK

7517	Warning is now popping up at the beginning of the setup if the package is already installed. User can stop or continue the installation.
7811	List of USB peripherals managed on Telium, added in the documentation

4.16. Fonts (Version: 01.09)

No evolution.

4.17. Simulator (Version: 02.07)

No evolution.

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 follow that, there will be a warning during the compilation.

5.1. Changes between SDK7.2 and SDK7.3

No external function or structure becomes obsolete.

5.2. Changes before this SDK

Here is the list of functions which have been declared obsolete before this SDK and added to deprecated.h:

```
InitModeGraphic();
All Telium Manager functions of type void XXXlib_open (void);
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 );
```