



beyond
payment

TELIUM SDK

SDK Release Notes Archive

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SDK9.6.0 Release note

1. Preamble

1.1. Version

This is the Release Candidate 1 of SDK 9.6.o. Its qualification is in progress, it is provided for test only. You are not allowed to deploy it in the field.

1.2. Reminder of the process implemented since SDK 9.2.0

For a SDK versioned V.R.S:

- If R is an odd number, the SDK is a Beta release also called odd release (Example: SDK 9.1.o);
- If R is an even number, the SDK is a stable release also called even release (Example: SDK 9.2.o)

The last beta releases will become the stable major release (Example: Releases 9.1.x is the beta release or SDK 9.2.o).

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

Stable releases are fully qualified.

1.3. Specific Note : functions deprecation for future releases of SDK

Please note that, in SDK 9.6.o and next ones, fioctl and some low level functions will be replaced by high level functions in order to facilitate future developments and to prepare the migration to our future platform.

The results of the survey to which regions answered in the past weeks, are the entry point to define the removal of old functions and the design of new ones.

There will be three steps in this deprecation process:

1. First step: The API is deprecated

The user, when compiling the function gets an error message:

- He can remove this error and continue to use temporarily the function, adding a specific define ;
- He shall work on the replacement solution.

In the specific case of fioctl (driver access functions), they will not be accessible directly as today. We will provide high level functions answering to the need of the current fioctl users.

2. Second step: Function is no more provided in the library

After migration to the SDK containing this evolution, user can't anymore compile the API. An application, using this function, continues to work if it was compiled with a previous SDK.

There will some SDKs between the first step and the second step.

3. Third step: Function is no more provided in the components (DLL, application)

The user can't compile anymore the function. An application compiled with a previous SDK providing the function, does not work anymore, even if it is compiled with a previous SDK.

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

Issues solved are detailed in paragraph "Issues solved in this release by component".

Here are main evolutions coming with this Telium SDK release compared to the release 9.4.0.

2.1. New terminals supported

2.1.1. IWB2xx for development



IWB2xx is a new wireless terminal with biometric fingerprint sensor. The Telium 2 architecture is similar to iWL220 iWL250.

This terminal is compliant with all iWL bases and iWL accessories.

All usual options are available: GPRS, Bluetooth®, contactless...

Dual SIM is available in this SDK

GPS will be available in SDK 9.8.0

2.1.2. iSMP Companion



iSMP-Companion is a Bluetooth® pinpad integrating a smart card and a swipe reader.

Versions with or without barcode reader exists."

New add-on PCL will be issued before the release of SDK 9.6.0

2.1.3. iCT220 Contactless

It is now provided for production purpose.

2.2. New features

- Security mechanism activated on Telium Manager. "Canary" feature allows buffer overflow protection.
- API deprecation: Direct access to schemes is deprecated
- An iUC150 connected by serial link to an U32 product can now be downloaded (Easy Path To Contactless 4.0 is also required).
- Support by anticipation of the development of 3G onto iWL touch
- GOAL:

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- Adding the widget barcode: Types of barcode supported are: QR, PDF417, CODE 128, CODE 25, CODE 39, EAN13, EAN 8
- For iWL touch, Support of accelerometer (For Beta development only):
 - API added,
 - Added rotation of the screen when the device changes orientation.
- The following limitations apply:
 - Accelerometer is currently too much sensible to vibrations,
 - For better user experience, only selected manager menus will rotate in the future.

2.3. New fixes

- Possibility added to use, with this SDK, versions of schemes tlvAESCiph, tlvHMac and tlvMAKeyGen provided in SDK 9.0.x or older
- It is now possible to read SMS coming from iPhone;
- Regression in SDK 9.4.0 fixed: on CUSTOMIZE_CARD_ENTRY entry point, fct_amount did not display the currency correctly (Already integrated in SDK 9.4.1).

3. Compatibility

3.1. List of compatible terminals

This SDK release is compatible with the following products.

| | |
|---|--|
| Wireless | Telium 2: <ul style="list-style-type: none"> ▪ iWL220B, iWL220G, iWL250B, iWL250G , iWL250 3G, iWL250 2SCR (2SCR stands for 2 Smart Card Reader), ▪ iWL280, ▪ iWL350, ▪ iWB2xx (Wireless biometric terminals, for development only) Telium 1: <ul style="list-style-type: none"> ▪ EFT930 |
| Countertop terminals | Telium 2: <ul style="list-style-type: none"> ▪ iCT220, iCT250, ▪ iCT220 Contactless ▪ E532 Telium 1: <ul style="list-style-type: none"> ▪ EFT SMART Plus, ▪ EFT SMART, ▪ EFT30 |
| Retail pinpads (Signature capture terminals) | Telium 2: <ul style="list-style-type: none"> ▪ iSC250, ▪ iSC350. |
| Pinpads | Telium 2: <ul style="list-style-type: none"> ▪ IPP320, IPP350, ▪ IPP3xx used as a smart card reader (Pinpad emulation mode). ▪ IPP480 Telium 1: <ul style="list-style-type: none"> ▪ ML30, ML30 color, ML30 color contactless. |

| | |
|----------------------------|---|
| | 'Booster only' pinpads: <ul style="list-style-type: none"> IPP220, iPP250, iPP280, P30, P30 Contactless, PP30S. |
| Unattended | Telium 2: <ul style="list-style-type: none"> iUC150, iUC180, iUP250 iUR250 (system of iUR250 provided in add-on Unattended). <p><u>Nota:</u> For iUC180 and iUP250, it is not possible to load an SDK older than SDK 9.4.0, after loading this one.</p> Telium 1: See the add-on Unattended package for the exhaustive list of CAD30. |
| Satellite terminals | Telium 2: iST150. Telium 1: TeliumPass Plus. |
| Mobile payment | Telium 2: iMP320, iMP350, iMP3 Companion, SPM (iPA280). |
| French healthcare | TWINs |

3.2. Compatibility terminals vs SDK

3.2.1. Compatibility

In the following table, you will find the first SDK in which the terminal was managed for production purpose.

This table concerns terminals out since SDK 7.1.

| Terminals | Supported since |
|---------------------------|--|
| iCT220 Contactless | SDK 9.6.0 |
| iWL220 | iWL220 G : SDK 7.6 iWL 220 B : SDK 8.0 |
| iWL250 | iWL250 G : SDK 7.6 iWL250 B : SDK 8.0 iWL250 2SCR : SDK 8.0 iWL250 3G : SDK 8.2 |
| iWB2xx | SDK 9.6.0 for development |
| iWL280 | SDK 8.1.2 GPRS only since SDK 8.0.1 iWL280 3G: SDK 9.6.0 |
| iWL350 | SDK 9.4.0 iWL350 3G: SDK 9.6.0 |
| iWL Bases | Base BEM : SDK 8.0 Base PEM : SDK 8.1 |
| E532 | SDK 8.2 |
| iSC250 | SDK 7.5 |
| iSC350 | SDK 7.1 |
| iPP3XX | Please use SDK 7.5 minimum |
| iPP220 | iPP220, iPP250 : SDK 7.1 iPP280 : SDK 7.5 |
| iST150 | SDK 7.5 |
| iUC150, iUC180 | SDK 9.2.0 |
| iMP320 | SDK 9.2.0 |

| | |
|-----------------------|-----------|
| iMP350 | SDK 7.6 |
| iMP3 Companion | SDK 9.6.0 |
| Twin31 | SDK 7.6.1 |
| iPP480 | SDK 9.4.0 |

3.3. Terminals certified PCI V3

The following terminals are certified for PCI v3:

| Terminal | Certified since |
|---|-----------------|
| iWL220 | Since SDK 8.0.1 |
| iWL250 | Since SDK 8.0.1 |
| iWL280 | Since SDK 8.0.1 |
| iSC250 | Since SDK 8.0.1 |
| iPP3xx | Since SDK 8.1 |
| iMP350 | Since SDK 8.2 |
| iCT2xx (Only iCT2xx referenced 11Txxxxx are certified PCI-V3) | Since SDK 8.2 |
| iPP2xx | Since SDK 8.2 |
| iWL350 | Since SDK 9.2.0 |
| iUP2xx / iUR2xx | Since SDK 9.2.0 |
| iPP480 | Since SDK 9.4.0 |

3.4. Public Key Infrastructure

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

4. Highlighted points

4.1. Security

A new security feature is integrated in this SDK: “Canary” feature allows buffer overflow protection. This mechanism is provided thanks to the compilation of Telium Manager with GNU 4.3.4. The compilation of the Telium Manager with a new compiler is an important evolution of the platform.

4.2. Telium development rules

Document "Telium development rules" is added to the Telium SDK in directory Documents\TeliumRules. Please read this document presenting the rules that you must follow to develop a Telium application.


4.3. New highlighted points

4.3.1. Use of schemes tlvAESCiph, tlvHMac and tlvMAKeyGen

If your application uses schemes tlvAESCiph, tlvHMac and tlvMAKeyGen on terminals other than iSC350, you must use version of these schemes provided in SDK 9.2.0 or newer.
On iSC350, there is no restriction; you can sign your application with version schemes provided in SDK 9.0.x or older.

4.3.2. Execution of a not compliant scheme

Since SDK 9.4.0, when an application tries to execute a scheme not compliant with security rules (for example if validity date or security profile is not correct):

- The display at the terminal start-up is: 
- An extra-delay is added to the boot sequence.

This behavior is the same for production or mockup device.
The terminal will never be locked.

4.4. Telium SDK APIs

4.4.1. sdk30.h

File sdk30.h must be added in your list of include files in your source files.
sdk30.h includes itself all include files provided by Telium System and Telium Manager.

4.4.2. Official APIs

As all non documented Ingenico APIs (= non present in Telium SDK or add-ons include files) may be modified or deleted without notice, you must not use them in applications.

4.4.3. Note for deprecation process

For all deprecated APIs, please read instruction in the CHM help files. You are invited to migrate to the new solution as soon as possible. In the meantime, you can continue to use these API by following the instructions written in the CHM help file.

4.4.4. New deprecation

This paragraph presents new deprecations for this SDK.

4.4.4.1. Direct access to schemes functions

Functions allowing direct access to the schemes are now deprecated. It concerns functions formerly declared in schgmt.h. You must use functions provided by Security DLL.

4.4.4.2. write_date()

Function write_date() from rtctime.h is deprecated. Use write_date() from oem.h.

4.4.4.3. encrit / excrit

Functions encrit and excrit are deprecated. You have to remove the call of them in your code; this function is without effect in Telium range of product.

4.4.4.4. Libraries compiled with ARM RVD/ADS

From SDK 9.14 (Q3 2013), we will provide only libraries compiled with GNU. Libraries for ARM compiler (formerly in SDK\lib_rvd) will not be provided anymore.

From SDK 9.6.0 to SDK 9.12.x, libraries compiled for ARM are declared deprecated and are provided in the directory SDK\lib_rvd_deprecated.

4.4.5. Removed functions

These functions were deprecated since SDK 7.1. As scheduled, they are removed from SDK:

4.4.5.1. Telium Manager functions

Lib open functions

Following functions are not to call. Since they were deprecated, the opening of the library is automatically done when the first function of this library is run. You have to remove the call to this function.

- emvsqllib_open
- extenslib_open
- libgrlib_open
- saisielib_open
- paramlib_open
- svlib_open
- dllpsclib_open
- pinpadlib_open
- languelib_open
- InitDLLSaisiePpad
- protocolelib_open
- cb2alib_open
- iamlib_open
- InitSysPpad
- partagelib_open
- Crypto_Dll_Open
- sdklib_open
- Crypto_Dll_Close
- hwcfnlib_open
- umslib_open
- colorlib_open
- gprslib_open

Other functions:

- PSQ_Est_doublego (this function always returned FALSE)
- PSQ_Doublego_cle (this function always returned FALSE)
- USQ_Aff_montant
- ET_Idf_seq (As an alternative, GetPackInfos() returns CRC and Telium Manager version, Get_Appli_Number(2) returns the application number of Telium Manager)
- is_loaded (its role is provided by ObjectGetInfo())
- InitModeGraphique (didn't work)

4.4.5.2. Tlv Tree functions

- TlvTree_RemoveChild : Please use TlvTree_Release instead

4.5. Reminder for important highlighted points

For readability, important points are grouped in the appendix of this release note.

5. Known issues

5.1. IST connected to an iSC 350

IST150 is now supported on iSC350. The update of the iST software via the Telium Manager menu “Evolution > CLess” on iSC350 is not possible. It will be available in a next release.

5.2. Compilation of Custom EMV with this SDK

When used with SDK 9.6 or greater, the EMV CUSTOM application from Easy Path to EMV 21 or lower, and sample Banking chip Pin form Add On Unattended 3.02 or lower, do not compile due to structure redefinition.

You can easily adapt your code by using the SHA-1 calculation proposed by the GTL library:

- Delete the cu_sha.c and cu_sha.h files.
- Replace any call to SHA1_Compute by calls to GTL_SHA_Sha1Compute. Do not forget to include the “GTL_SHA.h” header file.

5.3. Add-on PCL

If you use add-on PCL, to compile your application with SDK 9.6.0, you must use at least version of the following packs:

- Add-on PCL for iMP3: v1.05,
- Add-on PCL for iPA280: v1.20.

6. Issues solved in this release by component

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

Main points delivered in this release regarding **the last major release SDK 9.4.0** are listed below.

6.1. Telium System

Following points are delivered in this release.

6.1.1. Generic

| Internal tracker | SUPTel | Issuer | Description |
|------------------|--------|--------|---|
| 12611 | | | Proper reset if FILE handle given to CAM function (power_on, EMV_apdu...) is incorrect. |

Release Note

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|---------------|-------------|---------|---|--|
| 12624 | | | Due to touch recalibration on T_ANN key response time was perceptible. Now recalibration is performed only if touch device is opened. | |
| 11638 | SUPTEL-3457 | Italy | Flush incoming data on USB device until the COMU is opened on handheld side. | |
| 12579 | | | IMP3 Companion management: system and IAP driver updated | |
| 12859 / 12860 | | | Allow application to display a bitmap and to set backlight during low power mode on IWL280 | |
| 12629 | | | Reduce sensitive area of virtual keys during PIN entry on IWL350. | |
| 12323 | | Germany | Verification if Ingetrust keys are really present in terminal | |
| 12764 | SUPTEL-4360 | NAR | Possibility added to use, with this SDK, versions of schemes tlvAESCiph, tlvHMac and tlvMAKeyGen provided in SDK 9.0.x or older. | Already integrated in SDK 9.4.1 for iSC350 |

6.1.2. Communication

| Internal tracker | SUPTEL | Issuer | Description | |
|------------------|--------------------------|---------|--|--|
| 12518 | SUPTEL-4305 | Germany | Link IAPP2 driver on Thunder 3 product. | |
| 12053 | SUPTEL-3891 | Italy | If number of retries was set to N, then (N+1) attempts were done on DNS server 1 and (N+1) attempts on DNS server 2. | |
| 12990 | | | Ensure GPRS module is not allowed to go to sleep mode, even when external command are sent by the application while in GPRS DATA mode. | |
| 13047 | SUPTEL-4769 | | Problems of communication which sometimes happened on COM2, MDB Master, GPRS and BT are now solved. | |
| 9741 | | | For CAD30 UCR: Possibility to allow driver Mifare to leave encrypted mode | |
| 10515 | SUPTEL-2912 SUPTEL-48 | | For CAD30 UCR: Driver Mifare is now able to authenticate Mifare classic cards with 7 bytes UID. | |
| 11543 | SUPTEL-3606 | | For CAD30 UCR: Fix Mifare RESTORE command behaviour. | |
| 13098 | | | For CAD30 UCR : Integration of driver Mifare Evolution | |

6.1.3. Printer

| Internal tracker | SUPTEL | Issuer | Description | |
|------------------|--------|--------|---|--|
| 12231 | | | external printer Bluetooth® : fix issue about PRINTER_NOT_CONNECTED status -> available immediately at the driver opening | |

Release Note

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|-------|--------------|-----------|--|--|
| 12542 | | | External printer: 1) modification of the driver management to follow the telium printer behaviour -> to be printed, a line must be terminated by \n. 2) Status management: ERR_PRINTER status is set when some lines can't be printed. ERR_PRINTER is reset by close / open the driver | |
| 12362 | SUPTTEL-4152 | Australia | Fixed issue for slow paper detection on Bluetooth® printer. | |

6.1.4. Unattended

| Internal tracker | SUPTTEL | Issuer | Description | |
|------------------|---------|--------|---|---------------------------------|
| 12574 | | | An external button is now managed on iUC180. | |
| 12669 | | | Contrast of the iUC180 screen can be changed by using 'o'+*(Up) and 'o'+'. '(Down) keys. | |
| 12735 | | | The keyboard at the back of the iUC180 can only be used in maintenance mode. | |
| 12638 | | | An iUC150 connected by serial link to an U32 product can now be downloaded. It requires the use of SDDA component 1.02. SDDA is delivered in the version 4.0 of Easy Path To Contactless (in catalogue “intelligent reader”). | Already integrated in SDK 9.4.1 |

6.1.5. iST

| Internal tracker | SUPTTEL | Issuer | Description | |
|------------------|--------------|--------|--|---------------------------------|
| 12473 | SUPTTEL-4200 | EEMEA | Allow KGN file loading in iSTxx product. | |
| 12576 | | | IST150 is now supported on iSC350. The update of the iST software via the Telium Manager menu “Evolution > CLess” on iSC350 is not possible. It will be available in a next release. | Already integrated in SDK 9.4.1 |

6.1.6. API

| Internal tracker | SUPTTEL | Issuer | Description | |
|------------------|--------------|---------|--|--|
| 12686 | | | The low level functions allowing using schemes are deprecated (schmgmt.h). Use the security DLL instead. | |
| 12717 | SUPTTEL-4042 | NER | Function write_date from rtctime.h is deprecated. Use write_date from oem.h | |
| 12348 | SUPTTEL-3998 | NER | Change DGPRS_FIOCTL_SET_NETWORK documentation. | |
| 12359 | SUPTTEL-4092 | Germany | Fixed the case where function PPP_GetOption() returned a pointer to inaccessible memory | |

6.1.7. Development

| Internal tracker | SUPTTEL | Issuer | Description | |
|------------------|---------|--------|-----------------------------------|--|
| 12672 | | | Solve a LLT error on 3G terminal. | |

Release Note

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|-------|-------------|--|---|--|
| 12511 | | | Add support of iPP3xx magic box serial link on iPP480 product. | |
| 12575 | SUPTEL-4401 | | Added application which removes all DLL, applications and their parameters (equivalent to F1 F2 F3 F4). Load the application in the directory Component\OS\ClearApplications and restart the terminal As a reminder, the application which removes all components in terminal but system is here: Component\OS\ClearTerminal | |

6.2. Telium Manager

Following points are delivered in this release.

6.2.1. General issues

| Internal tracker | SUPTEL | Issuer | Description | |
|------------------|-------------|-----------|--|--|
| 13110 | | | Display header while remote downloading and remote diagnostic | |
| 13083 | | | Display improvement on GOAL iCT220 1) In the header and when GPRS was detected, the word "GPRS" and the operator name was not well aligned below another. 2) The word "ETH" shifted 3) Gprs and Eth were too closed 4) fallback mode ISDN to Gprs, ISDN message never appeared 5) fallback mode IpGprs to RTC, RTC message never appeared | |
| 13099 | | | Add GOAL management in two screen : 1) MANAGER.PAR error screen 2) Idle screen of IPP3XX in pinpad mode | |
| 12154 | SUPTEL-4209 | Australia | Bluetooth ® barcode and Bluetooth ® streaming menu are added in Manager menu > hardware settings | |
| 12839 | SUPTEL-4513 | Italy | Displays are now customizable on pinpad | |
| 12926 | SUPTEL-4432 | NAR | Solve problem of TMS calling in IP mode when GPRS network is attached | |
| 12682 | | | Telium Manager is compiled with GNU 4.3.4 with "canary" protection mechanism activated. Canary feature is a security feature; it allows buffer overflow protection and prevents attacks to the terminal. | |
| 12626 | | | GOAL resources for HEADER,FOOTER and LEDS windows are added and managed | |
| 12765 | | | Size code optimisation for color terminal in GOAL mode | |
| 12850 | | | Adding a new parameter to inhibit the track or the chip in idle state | |
| 12909 | | | ISC250: Font display of the amount has been optimized | |
| 12758 | | | Bluetooth ® printer configuration menu is displayed on IUP250 | |

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|-------|-------------|--------|---|---------------------------------|
| 13152 | SUPTEL-4906 | France | Problem seen only in SDK Beta 9.5.1: Add HEADER DLL in all catalog to be compatible with SDK 9.4.1 | |
| 13153 | SUPTEL-4907 | France | Problem seen only in SDK Beta 9.5.1: APIs back in SDK | |
| 13191 | SUPTEL-4943 | France | Problem seen only in SDK Beta 9.5.1: Compilation of C++ projects fixed | |
| 12973 | SUPTEL-4726 | NAR | Manage UP and DOWN key of Virtual Keyboard in G_List_Entry | |
| 12949 | | | Managed minimum characters length in Num/Alpha password keyed to access the Telium Manager | |
| 13008 | SUPTEL-4712 | | Manager didn't reset fallback counter at the beginning of service Call 100 service. | |
| 12958 | | | Optimize manager size for GOAL B/W | |
| 12974 | | | Solve problem of idle state on portable with GOAL (problem was only on SDK Beta 9.5.1). | |
| 12926 | SUPTEL-4432 | NAR | Solve problem of TMS calling in IP mode when GPRS network is attached | |
| 13052 | SUPTEL-4503 | | In CTAP/ZKA environment, only the Application identified (by the SACI scheme) as a security app can perform the M2OS message customization. Service registration from any other application shall fail. | |
| 13067 | SUPIPA-1131 | | Reactivation application should be launched at startup terminal without loading other applications. Reactivation application must restart the terminal after completion | |
| 13005 | | | When the list of allowed characters is not defined, the alphanumeric entries are converted into extended input. | |
| 13130 | | | Improved synchronization between Windows. | |
| 12557 | SUPTEL-3650 | EMEA | SMS: We have not provided support for foreign characters in the Management SMS so we have corrected the problem by ignoring the header indicating that specific characters language may appear in the message | Already integrated in SDK 9.4.1 |
| 12649 | SUPTEL-4451 | France | Issue when terminal has more than seven languages fixed | Already integrated in SDK 9.4.1 |
| 12698 | SUPTEL-4484 | France | Reset with SDL (License server) activated and more than 15 applications fixed | Already integrated in SDK 9.4.1 |
| 12695 | SUPTEL-4507 | France | Regression in SDK 9.4.0 fixed: on CUSTOMIZE_CARD_ENTRY entry point, fct_amount did not display the currency correctly. | Already integrated in SDK 9.4.1 |
| 12718 | SUPTEL-4523 | France | Issue in application deletion with "07" PIN code fixed | Already integrated in SDK 9.4.1 |
| 12592 | | | Use '*' and '.' keys for navigation in delete menu on iUC180 | Already integrated in SDK 9.4.1 |
| 12606 | | | Reset when print Scheme version on iUC180 resolved Don't print Scheme version in maintenance MODE | Already integrated in SDK 9.4.1 |
| 12612 | | | IWL350 keyboard management added in maintenance menu | Already integrated in SDK 9.4.1 |

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|-------|--|--|---|---------------------------------|
| 12737 | | | Correction in DrawEntendedString8859() function for ISO6 font (Arabic) | Already integrated in SDK 9.4.1 |
| 12749 | | | iWL350: font Tiresias used for Pincode entry, font recommended for the visually impaired. | Already integrated in SDK 9.4.1 |

6.2.2. APIs evolutions

| Internal tracker | SUPTEL | Issuer | Description | |
|------------------|-------------|---------|--|---------------------------------|
| 12278 | SUPTEL-4126 | France | New API to customize application name in header : SetSpecificIsName() | |
| 12222 | SUPTEL-4067 | EEMEA | Behaviour deactivating "phone handset" in header with EventHeader function is now the same for all types of terminals (B&W or Color) (use _RTC_STATE_mask) | |
| 12774 | SUPTEL-4428 | NAR | PSQ_Init_TMS_Parameters function added (initializes TMS parameters) | |
| 12849 | SUPTEL-4462 | Germany | manual_entry_extended function added (used to manage manual entry selection) | |
| 12708 | | | Cleaning the Telium Manager library eft30.lib regarding internal / public functions | |
| 12650 | | | Deprecated functions removed (see below). | |
| 12589 | | | IsIMP3xxCompanion function added (Check if the terminal is an IMP3xx (iMP320 or iMP350 Companion) | |
| 12647 | | | gprs_select_sim_slot function added(set the current slim slot) | |
| 12715 | | | Internal include organization. No impact for applications which use sdk30.h. Applications must use sdk30.h. | |
| 12757 | | | TM_EnterPowerDownMode function added(put terminal in power down mode) | |
| 12820 | | | PSQ_update language was accepting more values than the ones defined in the documentation | |
| 13048 | | | clrscr clears the display as described in the documentation. | |
| 13114 | | | Solve double definition of wchar_t with sdk30.h | |
| 12685 | | | Change STATUS type to be conformed to status () function prototype. Changed from int to unsigned char. | |
| 12748 | SUPTEL-4493 | NAR | Remove unused define : T_E and T_D | Already integrated in SDK 9.4.1 |
| 12635 | SUPTEL-4376 | NER | Remove GetStatusCamo from public include | Already integrated in SDK 9.4.1 |
| 12597 | | | Function IsFooter () provided | Already integrated in SDK 9.4.1 |

6.2.3. Development

| Internal tracker | SUPTEL | Issuer | Description | |
|------------------|--------|--------|---|--|
| 12946 | | | Solve problem starting LLT session in GOAL mode | |

Release Note

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|-------|--|--|---|--|
| 12957 | | | Solved problem starting LLT session from manager menu in GOAL mode (problem was only on SDK Beta 9.5.1) | |
|-------|--|--|---|--|

6.3. Security

No evolutions

6.4. Communication

6.4.1. Link Layer

Following other points are delivered in this release:

| Internal tracker | SUPTEL | Issuer | Description | |
|------------------|-------------|-----------|---|--|
| 12681 | SUPTEL-4450 | SEA | Add of the configuration tag LL_PHYSICAL_T_DCD_MONITORING to allow the application to detect when the terminal, using COMo of a Bluetooth® base via the LinkLayer, is out of range (or the base is switched off). | |
| 12961 | | France | LL_TRANSPORT_T_INTERFACE_PROTOCOL and LL_TCPIP_T_SSL_TCP_CONNECT_TIMEOUT had duplicated values (problem since SDK 9.0). | |
| 12486 | SUPTEL-4019 | Australia | iMP3 serial communications via link layer to iPOD did not work properly after calling SPM_start_service() | |

6.4.2. DLL SSL

No evolution.

6.4.3. FTP

Internal evolution only.

6.4.4. SNMP

No evolution.

6.4.5. DLL TCP for iMP3

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

No evolution.

6.4.6. Pack IP

Documentation has been completed with information about Canari functionality.

6.5. Display

6.5.1. CGUI

Following other points are delivered in this release:

| Internal tracker | SUPTEL | Issuer | Description | |
|------------------|-------------|--------|--|---------------------------------|
| 12882 | SUPTEL-4652 | NAR | textarea now handle included text as text only even if tag are present | |
| 12641 | SUPTEL-4448 | NAR | cGUI now handles correctly html entities (&name;) when located on 8kbytes boundaries | Already integrated in SDK 9.4.1 |

6.5.2. GOAL

Reminder:

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

Following other points are delivered in this release:

| Internal tracker | SUPTEL | Issuer | Description | |
|------------------|-------------|---------|---|--|
| 12652 | | | For iWL touch, Support of accelerometer (For Beta development only): <ul style="list-style-type: none"> API added, Added rotation of the screen when the device changes orientation. The following limitations apply: <ul style="list-style-type: none"> Accelerometer is currently too much sensible to vibrations, For better user experience, only selected manager menus will rotate in the future. | |
| 12894 | SUPTEL-4550 | | Fixed reboot when using goal signature capture | |
| 12601 | | | The focus does not work if you play with the visible property | |
| 12986 | | | Improved ergonomics dialogs with virtual keyboard | |
| 12785 | SUPTEL-4257 | | Virtual keyboard exits with timeout even if you are still entering data | |
| 12093 | | | Adding the widget barcode. Types of barcode supported are: QR, PDF417, CODE 128, CODE 25, CODE 39, EAN13, EAN8. | |
| 11822 | PE0001-79 | Germany | Adds an arrow button in menus to indicate the availability of sub-menus | |
| 12552 | SUPTEL-4220 | NER | Adds support for creating your own widgets. | |
| 12551 | SUPTEL-4219 | NER | Adds support for templating the resulting design elements for use elsewhere. | |
| 12746 | | | Adds the font Tiresias for the visually impaired | |
| 11827 | | | Corrects some strange behaviour when you use fixed position in the layout. | |

Release Note

| | | | | |
|-------|--------------|--------|---|---------------------------------|
| 12828 | SUPTTEL-4608 | NAR | Fixes miscalculation of a timeout inter-image in gif | |
| 12819 | | | Fixes the very small valid and cancel icons on button with the iSC350 | |
| 12846 | SUPTTEL-4618 | Spain | The charset iso8859 did not work well with virtual keyboard | |
| 12370 | SUPTTEL-4228 | France | Virtual keyboard badly display in GL_Dialog_Scheme | Already integrated in SDK 9.4.1 |
| 12469 | SUPTTEL-4296 | France | Adds the valid button in GL_Dialog_Menu | Already integrated in SDK 9.4.1 |
| 12505 | | | Cannot start application named "GOAL" | Already integrated in SDK 9.4.1 |
| 12590 | | | Clicking checkbox in GL_Dialog_MultiFile enter in the directory | Already integrated in SDK 9.4.1 |
| 12595 | | | Font XXSmall not well centered on black and white terminal | Already integrated in SDK 9.4.1 |

6.6. Contactless

6.6.1. DLL TPass

Following point is delivered in this release.

| Internal tracker | SUPTTEL | Description | |
|------------------|--------------|--|---------------------------------|
| 12221 | SUPTTEL-4080 | Documentation update for functions ClessEmv_DeselectCard(), ClessEmv_DeselectCardStart(), CLESS_DeselectCard(), CLESS_DeselectCardStart() functions. | |
| 12616 | | Cards was possibly red even if contactless was not selected in Telium Manager | |
| 12997 | | LEDs didn't work on CAD30 UCR | |
| 12637 | | The ASK Smart cards CTS 256 and CTS 512 are now correctly detected | Already integrated in SDK 9.4.1 |

6.7. Applications

6.7.1. Incendo Online browser

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

6.7.1.1. Memory

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

6.7.1.2. Migration to this version

6.7.1.2.1. 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.

6.7.1.3. Compatibility

Incendo is compatible with GOAL versions only.

6.7.1.3.1. Terminals managed

Minimal hardware prerequisites are:

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

Incendo Online is compatible with the following terminal:

- iCT250;
- iWL250;
- iWL280;
- iWL350;
- iSC350.

You must not use it on other terminals.

6.7.1.4. Evolutions

No evolution.

6.7.2. Image Loader

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

Please read all the documentation located in the directory you installed Image Loader.

6.7.2.1. Evolutions

No evolution.

6.8. Tools

6.8.1. AppParser

This tool allows an API usage assessment. Functions provided by Telium SDK and its add-ons are counted by this software.

Its setup is delivered in \tools\AppParser. Please read the user's guide once this software installed.

6.9. IPP3 in Pinpad emulation mode

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

6.9.1.1. Evolutions

No evolution.

6.10. AVL

AVL stands for Added Value Libraries.

6.10.1. Tlv Tree

Following point is delivered in this release.

| Internal tracker | SUPTEL | Issuer | Description |
|------------------|--------|--------|--|
| 12667 | | | TlvTree_RemoveChild was deprecated since SDK 6.5. It is definitively removed from the Telium SDK API Please use TlvTree_Release instead |

6.10.2. Barcode QR

Following point is delivered in this release.

| Internal tracker | SUPTEL | Issuer | Description |
|------------------|-------------|--------|--|
| 12582 | SUPTEL-4315 | LAR | Regression on Print_QR_BarCode fixed (this function returned -11 even if DLL was present in the terminal). |

6.11. Miscellaneous

Following point is delivered in this release.

| Internal tracker | SUPTEL | Issuer | Description |
|------------------|-------------|----------|---|
| | | | XML_Expat.h is no more provided in this SDK. It was also in the package XML Expat. |
| 13032 | SUPTEL-4776 | _REG_NAR | Documentation about "+" and "-" keys on touch screen terminals added in "How To Develop" documents |
| 12651 | SUPTEL-4463 | France | See instructions in appendix (paragraph: Information about downward compatibility for applications compiled with SDK newer or equal to 9.2.0) |

6.12. Documentation

There are improvements of documentation in this release including the following:

Release Note

| Internal tracker | SUPTTEL | Region | Description | |
|------------------|--------------|--------|---|---------------------------------|
| 12449 | SUPTTEL-4294 | NER | Documentation improvement for BmpToScreen, _BmpToScreen, _SetScreenToScreen, SetScreenToScreen | |
| 11992 | SUPTTEL-3865 | NER | Documentation improvement on function gprs_getParam() | |
| 12223 | SUPTTEL-4046 | NAR | Documentation on system.cfg files | |
| 12717 | SUPTTEL-4042 | NER | write_date from rtctime.h is deprecated. Use write_date from oem.h | |
| 13010 | | | Documentation on FS_open modes r+ and r#. | |
| 12904 | | | Document "Telium development rules" added in directory Documents\TeliumRules. This document presents the rules that you must follow to develop a Telium application. | |
| 13010 | SUPTTEL-4789 | NER | Documentation on FS_open modes r+ and r# | |
| 13054 | | | Documentation improvement | |
| 12722 | | | Graph in contactless documentation back in SDK | Already integrated in SDK 9.4.1 |
| 12750 | | | GTL API documentation added in Release Note | Already integrated in SDK 9.4.1 |
| 13113 | SUPTTEL-4845 | | Improved documentation of EventHeader | |
| 12703 | SUPTTEL-4490 | NER | Manager documentation about GPRS settings | Already integrated in SDK 9.4.1 |

6.13. Samples

Following point is delivered in this release.

| Internal tracker | SUPTTEL | Description | |
|------------------|---------|--|---------------------------------|
| 12977 | | Sample CardEntry adaptation | |
| 12714 | | Sample for Open Bluetooth® back in SDK | Already integrated in SDK 9.4.1 |

7. Add-ons to Telium SDK

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

| Add on | Recommended version to use with this SDK | Comment |
|-----------------------------|--|---------|
| Easy Path To EMV | 21.00 | |
| Easy Path To Contactless | 4.00 | |
| Add On PCL for iPA280 | 1.20 | |
| Add On PCL for iWP | 1.15 | |
| Add On PCL for iMP3xx | 1.05 | |
| Bluetooth® printer for iMP3 | 1.01 | |
| Add On Morpho | 2.00 | |
| Add On Telicapt | 2.17 | |
| Add On Unattended | 3.02 | |
| Add On SPDH | 1.01 | |
| Add On APACS 40 Generic | 1.08 | |
| Add On ISO8583 Generic | 3.02 | |

SDK9.4.0 Release note

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

Issues solved are detailed in paragraph 4

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

1.1. New features and improvement

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

1.2. New fixes

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

1.3. New terminals

1.3.1. iCT220 Contactless

iCT220 Contactless supported (for development only)

1.3.2. iPP480

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



2. Compatibility

2.1. Incendo

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

2.2. Generic Tool Library (GTL)

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

2.3. List of compatible terminals

This SDK release is compatible with the following products.

2.3.1. Wireless

Telium 2:

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

Telium 1:

- EFT930

2.3.2. Countertop terminals

Telium 2:

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

Release Note

Telium 1:

- EFT SMART Plus,
- EFT SMART,
- EFT30

2.3.3. Retail pinpads (Signature capture terminals)

Telium 2:

- iSC250,
- iSC350.

2.3.4. Pinpads

Telium 2:

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

Telium 1:

- ML30, ML30 color, ML30 color contactless.

'Booster only' pinpads:

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

2.3.5. Unattended

Telium 2:

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

Telium 1:

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

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

2.3.6. Satellite terminals

Telium 2:

- iST150.

Telium 1:

- TeliumPass Plus.

2.3.7. Mobile payment

Telium 2:

- iMP320, iMP350,
- SPM (iPA280).

2.3.8. French healthcare

- TWINs.

2.4. Compatibility terminals vs SDK

2.4.1. Validation status

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

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

2.4.2. Compatibility

In the following table, you will find the first SDK in which the terminal was managed for production purpose.

This table concerns terminals out since SDK 7.1.

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

| | |
|--------|---------|
| iPP480 | SDK 9.4 |
|--------|---------|

2.5. Terminals certified PCI V3

The following terminals are certified for PCI v3:

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

2.6. Public Key Infrastructure

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

3. Highlighted points

3.1. New highlighted points

3.1.1. Desfire library

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

3.1.2. Contactless restriction on iWL280 and iWL350

During a transaction, on iWL280 and iWL350, when contactless field is activated, the touch screen is disabled to avoid disruption.

Instead of the direct access to functions provided on other terminals, a menu is accessible after pressing “F” key.

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

It is now possible to use the functions vsnprintf, new, Reserve, printf (%f) on the Telium platform.

To use these functions in your application, you have to link it with libcpatch.o. This file is provided for GNU 3.4.3 and GNU 4.3.4 in the SDK.

If you use Ingedev,

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

Release Note

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

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

3.2. Reminder for important highlighted points

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

For a SDK versioned V.R.S:

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

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

Stable (even) releases are fully qualified.

3.2.2. Telium Manager catalogues naming rule

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

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

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

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

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

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

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

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

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

The restriction forbids communicating:

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

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

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

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

3.2.4. Contactless

3.2.4.1. Best practices for Contactless

3.2.4.1.1. Field on/off

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

If the contactless field is opened all the time:

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

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

3.2.4.1.2. Implicit selection

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

Implicit selection is not recommended and must be managed with caution.

Due to physical reason, implicit selection can lead to unexpected issues, for example, at the beginning of the swipe, the card would possibly enter the antenna field and contactless chip would be handled instead of magnetic track.

3.2.4.1.3. Use of PSTN modem with contactless activated

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

Release Note

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

Currently, the issue exists only on the iCT250, which is the only Ingenico integrated terminal with contactless and PSTN modem.

(For instance, on EFT930BCC or EFT930GCC with modem, it works, because the modem is on the cradle, and the distance between the modem and the contactless field is sufficient).

3.2.4.2. Add-on Contactless

The add-on contactless doesn't exist anymore.

All components provided previously in this package are now by default since Telium SDK 8.1. It concerns

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

3.2.4.3. Card supported

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

Recommendation:

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

3.2.5. Use of printf - like functions in SDK 9.2.0

On SDK 9.2.0, the use of the functions `sprintf()`, `printf()`, `fprintf()`, `pprintf()`... can make your application crash or application becoming bigger than ones compiled with previous SDKs.

There was a regression due to the implementation of SUPTEL 3275 adding support of floats for the `printf` - like functions. The evolution is removed since SDK 9.2.1.

3.2.6. PCI PTS version

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

The function `GetTerminalPKIVersion()` allows to know the PKI version of the terminal (return is `PKIV1` or `PKIV3`).

3.2.7. New software numbers for Telium Manager DLLs

3.2.7.1. Numbering rule

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

As a rule, when the software number was on 4 digits until SDK 9.0.x, from SDK 9.2.0 the first digit of the prefix is replaced by 844.

There is no change in application types.

Your application should not check the presence of a binary in the terminal by testing the software number but by testing the application type.

Example: For Libgr,

Release Note

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

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

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

After the application of this rule:

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

3.2.8. Family name

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

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

3.2.9. Pinpad system

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

3.2.10. DIR system version downgrade

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

3.2.11. Reserved numbers

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

3.2.12. EFT930 embedding 8MB of flash

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

For SDK 8.0.x, SDK 8.1 and SDK 8.1.1:

It is forbidden to load a catalogue designed for 8MB terminals on a terminal loaded with a generic catalogue (that is to say non-8 MB). You must contact the Ingenico support for the rules of this migration.

3.2.13. Fix in link layer

A bug has been identified in the LinkLayer component, in versions 3.22 and 3.23 (SDK 8.1.2, SDK 8.1.3, SDK 8.2 and SDK 8.2.1).

For these versions only, on Bluetooth terminals, not associated with any base, the connection (call to LL_Connect()) fails when using the physical link LL_PHYSICAL_V_DEFAULT_TCPIP, with return code -1013 (LL_ERROR_NETWORK_NOT_SUPPORTED).

Release Note

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

3.2.14. IUN

3.2.14.1. Add on Unattended

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

3.2.15. IMP3

3.2.15.1. Bluetooth printer for iMP3

It is possible to use a Bluetooth printer with an iMP3.

The parameters and documentation for this feature are provided via an add-on called “Bluetooth printer for iMP3”. Please contact your region interface to request it.

3.2.15.2. IMP3 connected to an iPhone running on IOS 5.0

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

3.2.16. Deprecation

3.2.16.1. Features from AVL

Following feature provided by AVL are deprecated since SDK 9.2.0:

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

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

3.2.16.2. Pinlib

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

These deprecated functions are grouped in the library Pinlib_Deprecated.lib. If you want to continue to generate your application with this deprecated feature, you need to add this library to your build. Pinlib.lib doesn't exist anymore.

You will have warning about deprecation. To remove it, clean your code by removing calls to these deprecated functions.

3.2.16.3. Libgr functions

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

4. Issues solved in this release by component

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

Main points delivered in this release regarding [the last major release SDK 9.2.0](#) are listed below.

4.1. Telium System

Following points are delivered in this release.

4.1.1. Card management

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

4.1.2. Communication

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

Release Note

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

4.1.3. V34 modem

Some fixes for V34 modem on iCT and iWL, including

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

4.1.4. iSCxxx

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

4.1.5. iUNxxx

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

4.1.6. APIs issues

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

4.1.7. Miscellaneous

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

Release Note

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

4.1.8. Development issues

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

4.2. Telium Manager

Following points are delivered in this release.

4.2.1. General issues

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

Release Note

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

4.2.2. APIs evolutions

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

Release Note

| | | | |
|-------|------------------------------|---|----------------------|
| 12326 | SUPTTEL-4178 | New API to get platform version (TELIUM1 or TELIUM2) int TM_Platform_GetType(void) | Already in SDK 9.2.2 |
| 12299 | | Display files with TELIUM2 extension (AGN,PGN,...) in USB KEY evolution menu. | Already in SDK 9.2.2 |
| 12249 | SUPTTEL-4063 | Calling DisplayHeader(_OFF_) when header has been previously hidden by StateHeader did not desactivate definitively header. | Already in SDK 9.2.1 |
| 12022 | SUPTTEL-3831 | Negotiate DNS2 in gprs_ppp_setup. | Already in SDK 9.2.1 |
| 11116 | SUPTTEL-3275 | Float and double are no more used with sprintf, printf, fprintf, pprintf,... functions when application is compiled with GNU compiler | Already in SDK 9.2.1 |
| 12185 | SUPTTEL-4056 SUPTTEL-4114 | On SDK 9.2, there was a reset on IWL250 when calling the Telicapt function hmiADDdisplayText() | Already in SDK 9.2.1 |
| 12139 | SUPTTEL-3980 | Date backup only when needed | Already in SDK 9.2.1 |
| 11712 | SUPTTEL-3589 | Fixed TRACK_STREAM entry point management | Already in SDK 9.2.1 |

4.2.3. Telium Manager menus

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

4.2.4. Telium Manager idle screen

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

4.2.5. Terminal configuration

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

4.2.6. For French applications

| Internal tracker | SUPTTEL | Description | Nota |
|------------------|---------|--------------------|----------------------|
| 12258 12263 | | DLL PSS evolutions | Already in SDK 9.2.1 |

4.3. Security

4.3.1. DLL Security

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

4.3.2. Security Extend library

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

4.3.3. DLL E2EE

| Internal tracker | SUPTTEL | Description |
|------------------|---------|---------------------|
| 12425 | | Sample added in CHM |

4.3.4. DLL Digest

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

4.3.5. Schemes

Last schemes certified are included in this SDK.

No evolution.

4.3.6. Pinlib

This module is deprecated.

4.4. Communication

4.4.1. Link Layer

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

4.4.2. DLL SSL

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

4.4.3. FTP

Internal improvement.

4.4.4. SNMP

No evolution.

4.4.5. DLL TCP for iMP3

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

This DLL is mandatory on iMP3xx.

No evolution.

4.4.6. Pack IP

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

4.5. Display

4.5.1. GOAL

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

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

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

Following other points are delivered in this release:

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

Release Note

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

4.5.2. CGUI / CGUI tools

Following points are delivered in this release.

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

4.5.3. Plug-ins

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

Release Note

No evolution.

4.5.4. Fonts

No evolution.

4.5.5. Signature/Capture

Internal evolution.

4.5.6. DLL Image

No evolution.

4.6. Contactless

4.6.1. Driver

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

4.6.2. DLL TPass

Following points are delivered in this release.

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

4.6.3. Entry Point

No evolution.

4.6.4. Telium Pass

No evolution.

4.6.5. GTL

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

4.6.6. DESFire cards

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

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

4.7. Applications

4.7.1. Incendo Online browser

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

4.7.1.1. Memory

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

4.7.1.2. Migration to this version

4.7.1.2.1. Migration from a version before 3.0.4

Incendo Online smart browser was previously delivered as an independent package (up to version 3.0.3). It was designed to be signed with region security keys.

The version in this Telium SDK is signed with manufacturer key. So the application type is different between these two versions. If you have already deployed the browser, to migrate to the version included in a Telium SDK, you must manage the change of application type. For further details, please contact the Incendo support.

4.7.1.3. Compatibility

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

4.7.1.3.1. Terminals managed

Minimal hardware prerequisites are:

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

Incendo Online is compatible with the following terminal:

- iCT250

You must not use it on other terminals.

4.7.1.4. Evolutions

No evolution.

4.7.2. Image Loader

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

Please read all the documentation located in the directory you had installed Image Loader.

Release Note

4.7.2.1. Evolutions

No evolution.

4.8. IPP3 in Pinpad emulation mode

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

4.8.1.1. Evolutions

No evolution.

4.9. AVL

AVL stands for Added Value Libraries.

No evolution.

4.10. SDK features

Following points are delivered in this release.

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

4.11. Documentation

There are improvements of documentation in this release including the following

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

Release Note

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

4.12. Samples

There are improvements of samples in this release including the following

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

5. Add-ons to Telium SDK

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

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

SDK9.2.2 Release note

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

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

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

Issues solved are detailed in paragraph 4.

2. Compatibility

2.1. List of compatible terminals

This SDK release is compatible with the following products.

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

2.1.1. Wireless

Telium 2:

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

Telium 1:

- EFT930

2.1.2. Countertop terminals

Telium 2:

- iCT220, iCT250,
- E532

Telium 1:

- EFT SMART Plus,
- EFT SMART,
- EFT30

2.1.3. Retail pinpads (Signature capture terminals)

Telium 2:

- iSC250,
- iSC350.

2.1.4. Pinpads

Telium 2:

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

Telium 1:

- ML30, ML30 color, ML30 color contactless.

'Booster only' pinpads:

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

Signature capture pinpads:

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

2.1.5. Unattended

Telium 1:

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

Telium 2:

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

2.1.6. Satellite terminals

Telium 2:

- iST150.

Telium 1:

- TeliumPass Plus.

2.1.7. Mobile payment

Telium 2:

- iMP320, iMP350,
- SPM (iPA280).

2.1.8. French healthcare

- TWINS.

2.2. Compatibility terminals vs SDK

In the following table, you will find the first SDK in which the terminal was managed for production purpose.

This table concerns terminals out since SDK 7.1.

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

2.3. Terminals certified PCI V3

The following terminals are certified for PCI v3:

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

2.4. Public Key Infrastructure

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

3. Highlighted points

3.1. Reminder for important highlighted points

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

For a SDK versioned V.R.S:

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

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

Stable (even) releases are fully qualified.

3.1.2. Telium Manager catalogues naming rule

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

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

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

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

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

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

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

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

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

The restriction forbids communicating:

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

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

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

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

3.1.4. Contactless

3.1.4.1. Best practices for Contactless

3.1.4.1.1. Field on/off

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

If the contactless field is opened all the time:

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

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

3.1.4.1.2. Implicit selection

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

Implicit selection is not recommended and must be managed with caution.

Due to physical reason, implicit selection can lead to unexpected issues, for example, at the beginning of the swipe, the card would possibly enter the antenna field and contactless chip would be handled instead of magnetic track.

3.1.4.1.3. Use of PSTN modem with contactless activated

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

Release Note

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

Currently, the issue exists only on the iCT250, which is the only Ingenico integrated terminal with contactless and PSTN modem.

(For instance, on EFT930BCC or EFT930GCC with modem, it works, because the modem is on the cradle, and the distance between the modem and the contactless field is sufficient).

3.1.4.2. Add-on Contactless

The add-on contactless doesn't exist anymore.

All components provided previously in this package are now by default since Telium SDK 8.1. It concerns

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

3.1.4.3. Card supported

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

Recommendation:

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

3.1.5. PCI PTS version

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

The function `GetTerminalPKIVersion()` allows to know the PKI version of the terminal (return is `PKIV1` or `PKIV3`).

3.1.6. New software numbers for Telium Manager DLLs

3.1.6.1. Numbering rule

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

As a rule, when the software number was on 4 digits until SDK 9.0.x, from SDK 9.2.0 the first digit of the prefix is replaced by 844.

There is no change in application types.

Your application should not check the presence of a binary in the terminal by testing the software number but by testing the application type.

Example: For Libgr,

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

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

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

Release Note

After the application of this rule:

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

3.1.7. Family name

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

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

3.1.8. Pinpad system

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

3.1.9. DIR system version downgrade

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

3.1.10. Reserved numbers

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

3.1.11. EFT930 embedding 8MB of flash

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

For SDK 8.0.x, SDK 8.1 and SDK 8.1.1:

It is forbidden to load a catalogue designed for 8MB terminals on a terminal loaded with a generic catalogue (that is to say non-8 MB). You must contact the Ingenico support for the rules of this migration.

3.1.12. Fix in link layer

A bug has been identified in the LinkLayer component, in versions 3.22 and 3.23 (SDK 8.1.2, SDK 8.1.3, SDK 8.2 and SDK 8.2.1).

For these versions only, on Bluetooth terminals, not associated with any base, the connection (call to LL_Connect()) fails when using the physical link LL_PHYSICAL_V_DEFAULT_TCPIP, with return code -1013 (LL_ERROR_NETWORK_NOT_SUPPORTED).

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

3.1.13. IUN

3.1.13.1. Sleep mode

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

3.1.13.2. Add on Unattended

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

3.1.14. IMP3

3.1.14.1. Bluetooth printer for iMP3

It is possible to use a Bluetooth printer with an iMP3.

The parameters and documentation for this feature are provided via an add-on called “Bluetooth printer for iMP3”. Please contact your region interface to request it.

3.1.14.2. IMP3 connected to an iPhone running on IOS 5.0

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

3.1.15. Deprecation

3.1.15.1. Features from AVL

Following feature provided by AVL are deprecated since SDK 9.2.0:

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

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

3.1.15.2. Pinlib

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

These deprecated functions are grouped in the library Pinlib_Deprecated.lib. If you want to continue to generate your application with this deprecated feature, you need to add this library to your build. Pinlib.lib doesn't exist anymore.

You will have warning about deprecation. To remove it, clean your code by removing calls to these deprecated functions.

4. Issues solved in this release by component

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

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

4.1. Telium System

Following points are delivered in this release.

4.1.1. Card management

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

4.1.2. Communication

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

4.1.3. V34 modem

Some fixes for V34 modem on iCT and iWL, including

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

Release Note

4.1.4. iSCxxx

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

4.1.5. APIs issues

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

4.1.6. Miscellaneous

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

4.1.7. Development issues

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

4.2. Telium Manager

Following points are delivered in this release.

4.2.1. General issues

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

Release Note

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

4.2.2. APIs evolutions

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

4.2.3. Telium Manager menus

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

4.2.4. Telium Manager idle screen

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

4.2.5. Terminal configuration

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

4.2.6. For French applications

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

4.3. Security

4.3.1. DLL Security

No evolution.

4.3.2. Security Extend library

Following points are delivered in this release.

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

4.3.3. DLL E2EE

No evolution.

Release Note

4.3.4. DLL Digest

No evolution.

4.3.5. Schemes

Last schemes certified are included in this SDK.

No evolution.

4.3.6. Pinlib

This module is deprecated.

4.4. Communication

4.4.1. Link Layer

No evolution.

4.4.2. DLL SSL

No evolution.

4.4.3. FTP

No evolution.

4.4.4. SNMP

No evolution.

4.4.5. DLL TCP for iMP3

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

No evolution.

4.4.6. Pack IP

No evolution.

4.5. Display

4.5.1. GOAL

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

| Internal tracker | SUPTel | Description | |
|------------------|--------|-------------------------------|------------------|
| 11980 | | Fixes collapse of mouse event | New in SDK 9.2.2 |

Release Note

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

4.5.2. CGUI / CGUI tools

Following points are delivered in this release.

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

4.5.3. Plug-ins

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

No evolution.

4.5.4. Fonts

No evolution.

4.5.5. DLL Image

No evolution.

4.6. Contactless

4.6.1. Driver

No evolution.

4.6.2. DLL TPass

Following points are delivered in this release.

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

4.6.3. Entry Point

No evolution.

4.6.4. Telium Pass

No evolution.

4.6.5. DESFire cards

No evolution.

4.7. Applications

4.7.1. Incendo Online browser

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

4.7.1.1. Memory

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

4.7.1.2. Migration to this version

4.7.1.2.1. Migration from a version before 3.0.4

Incendo Online smart browser was previously delivered as an independent package (up to version 3.0.3). It was designed to be signed with region security keys.

The version in this Telium SDK is signed with manufacturer key. So the application type is different between these two versions. If you have already deployed the browser, to migrate to the version included in a Telium SDK, you must manage the change of application type. For further details, please contact the Incendo support.

4.7.1.3. Compatibility

4.7.1.3.1. Terminals managed

Minimal hardware prerequisites are:

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

Incendo Online is compatible with the following terminals:

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

You must not use it on other terminals.

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

4.7.1.3.2. EMV packages compatibility

Incendo smart Browser is compatible with the following EMV packages:

- Version 19 or 20.1

4.7.1.4. Evolutions

No evolution.

Release Note

4.7.2. Image Loader

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

Please read all the documentation located in the directory you had installed Image Loader.

4.7.2.1. Evolutions

No evolution.

4.8. IPP3 in Pinpad emulation mode

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

4.8.1.1. Evolutions

No evolution.

4.9. AVL

AVL stands for Added Value Libraries.

No evolution.

4.10. SDK features

Following points are delivered in this release.

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

4.11. Documentation

There are improvements of documentation in this release including the following

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

Release Note

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

4.12. Samples

There are improvements of samples in this release including the following

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

5. Add-ons to Telium SDK

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

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

SDK9.2.1 Release note

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

Issues solved are detailed in paragraph 4.

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

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

2. Compatibility

2.1. List of compatible terminals

This SDK release is compatible with the following products.

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

2.1.1. Wireless

Telium 2:

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

Telium 1:

- EFT930

2.1.2. Countertop terminals

Telium 2:

- iCT220, iCT250,
- E532

Telium 1:

- EFT SMART Plus,
- EFT SMART,
- EFT30

2.1.3. Retail pinpads (Signature capture terminals)

Telium 2:

- iSC250,
- iSC350.

2.1.4. Pinpads

Telium 2:

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

Telium 1:

- ML30, ML30 color, ML30 color contactless.

'Booster only' pinpads:

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

Signature capture pinpads:

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

2.1.5. Unattended

Telium 1:

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

Telium 2:

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

2.1.6. Satellite terminals

Telium 2:

- iST150.

Telium 1:

- TeliumPass Plus.

2.1.7. Mobile payment

Telium 2:

- iMP320, iMP350,
- SPM (iPA280).

2.1.8. French healthcare

- TWINS.

2.2. Compatibility terminals vs SDK

In the following table, you will find the first SDK in which the terminal was managed for production purpose.

This table concerns terminals out since SDK 7.1.

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

2.3. Terminals certified PCI V3

The following terminals are certified for PCI v3:

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

2.4. Public Key Infrastructure

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

3. Highlighted points

3.1. New highlighted points

3.1.1. Use of printf - like functions in SDK 9.2.0

On SDK 9.2.0, the use of the functions `sprintf()`, `printf()`, `fprintf()`, `pprintf()`... can make your application crash or application becoming bigger than ones compiled with previous SDKs.

There was a regression due to the implementation of SUPTEL 3275 adding support of floats for the `printf` - like functions. The evolution is removed from this delivery.

3.1.2. Qualification of iUNs

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

3.2. Reminder for important highlighted points

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

For a SDK versioned V.R.S:

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

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

Stable (even) releases are fully qualified.

3.2.2. Telium Manager catalogues naming rule

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

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

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

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

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

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

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

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

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

The restriction forbids communicating:

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

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

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

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

3.2.4. Contactless

3.2.4.1. Best practices for Contactless

3.2.4.1.1. Field on/off

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

If the contactless field is opened all the time:

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

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

3.2.4.1.2. Implicit selection

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

Implicit selection is not recommended and must be managed with caution.

Due to physical reason, implicit selection can lead to unexpected issues, for example, at the beginning of the swipe, the card would possibly enter the antenna field and contactless chip would be handled instead of magnetic track.

3.2.4.1.3. Use of PSTN modem with contactless activated

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

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

Currently, the issue exists only on the iCT250, which is the only Ingenico integrated terminal with contactless and PSTN modem.

(For instance, on EFT930BCC or EFT930GCC with modem, it works, because the modem is on the cradle, and the distance between the modem and the contactless field is sufficient).

3.2.4.2. Add-on Contactless

The add-on contactless doesn't exist anymore.

All components provided previously in this package are now by default since Telium SDK 8.1. It concerns

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

3.2.4.3. Card supported

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

Recommendation:

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

3.2.5. PCI PTS version

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

The function GetTerminalPKIVersion() allows to know the PKI version of the terminal (return is PKIV1 or PKIV3).

3.2.6. New software numbers for Telium Manager DLLs

3.2.6.1. Numbering rule

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

Release Note

As a rule, when the software number was on 4 digits until SDK 9.0.x, from SDK 9.2.0 the first digit of the prefix is replaced by 844.

There is no change in application types.

Your application should not check the presence of a binary in the terminal by testing the software number but by testing the application type.

Example: For Libgr,

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

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

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

After the application of this rule:

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

3.2.7. Family name

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

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

3.2.8. Pinpad system

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

3.2.9. DIR system version downgrade

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

3.2.10. Reserved numbers

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

3.2.11. EFT930 embedding 8MB of flash

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

For SDK 8.0.x, SDK 8.1 and SDK 8.1.1:

It is forbidden to load a catalogue designed for 8MB terminals on a terminal loaded with a generic catalogue (that is to say non-8 MB). You must contact the Ingenico support for the rules of this migration.

3.2.12. Fix in link layer

A bug has been identified in the LinkLayer component, in versions 3.22 and 3.23 (SDK 8.1.2, SDK 8.1.3, SDK 8.2 and SDK 8.2.1).

For these versions only, on Bluetooth terminals, not associated with any base, the connection (call to LL_Connect()) fails when using the physical link LL_PHYSICAL_V_DEFAULT_TCPIP, with return code -1013 (LL_ERROR_NETWORK_NOT_SUPPORTED).

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

3.2.13. IUN

3.2.13.1. Sleep mode

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

3.2.13.2. Add on Unattended

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

3.2.14. IMP3

3.2.14.1. Bluetooth printer for iMP3

It is possible to use a Bluetooth printer with an iMP3.

The parameters and documentation for this feature are provided via an add-on called “Bluetooth printer for iMP3”. Please contact your region interface to request it.

3.2.14.2. IMP3 connected to an iPhone running on IOS 5.0

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

3.2.15. Deprecation

3.2.15.1. Features from AVL

Following feature provided by AVL are deprecated since SDK 9.2.0:

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

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

3.2.15.2. Pinlib

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

Release Note

These deprecated functions are grouped in the library `Pinlib_Deprecated.lib`. If you want to continue to generate your application with this deprecated feature, you need to add this library to your build. `Pinlib.lib` doesn't exist anymore.

You will have warning about deprecation. To remove it, clean your code by removing calls to these deprecated functions.

4. Issues solved in this release by component

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

Main points delivered in this release regarding [the last major release SDK 9.2.0](#) are listed below.

4.1. Telium System

Following points are delivered in this release.

4.1.1. Card management

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

4.1.2. Communication

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

4.1.3. V34 modem

Some fixes for V34 modem on iCT and iWL, including

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

4.1.4. iSCxxx

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

Release Note

4.1.5. APIs issues

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

4.1.6. Miscellaneous

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

4.1.7. Development issues

| Internal tracker | SUPTel | Description |
|------------------|--------|---|
| 12180 | | Management of remote debug on iUC150 and iUC180 |

4.2. Telium Manager

Following points are delivered in this release.

4.2.1. General issues

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

4.2.2. APIs evolutions

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

Release Note

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

4.2.3. Telium Manager menus

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

4.2.4. Telium Manager idle screen

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

4.2.5. Terminal configuration

| Internal tracker | SUPTTEL | Description |
|------------------|---------|---|
| 12134 | | Ethernet choice for network was not available on iUC180 |

4.2.6. For French applications

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

4.3. Security

4.3.1. DLL Security

No evolution.

4.3.2. Security Extend library

No evolution.

4.3.3. DLL E2EE

No evolution.

4.3.4. DLL Digest

No evolution.

4.3.5. Schemes

Last schemes certified are included in this SDK.

No evolution.

4.3.6. Pinlib

This module is deprecated.

4.4. Communication

4.4.1. Link Layer

No evolution.

4.4.2. DLL SSL

No evolution.

4.4.3. FTP

No evolution.

4.4.4. SNMP

No evolution.

4.4.5. DLL TCP for iMP3

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

This DLL is mandatory on iMP3xx.

No evolution.

4.4.6. Pack IP

No evolution.

4.5. Display

4.5.1. GOAL

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

No evolution.

4.5.2. CGUI / CGUI tools

No evolution.

4.5.3. Plug-ins

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

No evolution.

Release Note

4.5.4. Fonts

No evolution.

4.5.5. DLL Image

No evolution.

4.6. Contactless

4.6.1. Driver

No evolution.

4.6.2. DLL TPass

Following points are delivered in this release.

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

4.6.3. Entry Point

No evolution.

4.6.4. Telium Pass

No evolution.

4.6.5. DESFire cards

No evolution.

4.7. Applications

4.7.1. Incendo Online browser

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

4.7.1.1. Memory

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

4.7.1.2. Migration to this version

4.7.1.2.1. Migration from a version before 3.0.4

Incendo Online smart browser was previously delivered as an independent package (up to version 3.0.3). It was designed to be signed with region security keys.

The version in this Telium SDK is signed with manufacturer key. So the application type is different between these two versions. If you have already deployed the browser, to migrate to the version included in a Telium SDK, you must manage the change of application type. For further details, please contact the Incendo support.

4.7.1.3. Compatibility

4.7.1.3.1. Terminals managed

Minimal hardware prerequisites are:

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

Incendo Online is compatible with the following terminals:

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

You must not use it on other terminals.

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

4.7.1.3.2. EMV packages compatibility

Incendo smart Browser is compatible with the following EMV packages:

- Version 19 or 20.1

4.7.1.4. Evolutions

No evolution.

4.7.2. Image Loader

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

Please read all the documentation located in the directory you had installed Image Loader.

4.7.2.1. Evolutions

No evolution.

4.8. IPP3 in Pinpad emulation mode

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

4.8.1.1. Evolutions

No evolution.

4.9. AVL

AVL stands for Added Value Libraries.

No evolution.

4.10. SDK features

Following points are delivered in this release.

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

4.11. Documentation

There are improvements of documentation in this release including the following

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

4.12. Samples

There are improvements of samples in this release including the following

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

5. Add-ons to Telium SDK

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

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

SDK9.2.0 Release note

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

Issues solved are detailed in paragraph 4.

Here are main evolutions coming with this Telium SDK release compared to the release 9.0.2.

1.1. New terminals

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



iUC150
Slave Contactless Reader
(peripheral)



iUC180
Contactless Reader terminal
(autonomous)

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

1.2. New peripherals

- Support of Wi-Fi dongle for iSC350.

1.3. New features

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

1.4. Image Loader

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

1.5. Deprecation

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

2. Compatibility

2.1. List of compatible terminals

This SDK release is compatible with the following products.

2.1.1. Wireless

Telium 2:

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

Telium 1:

- EFT930

2.1.2. Countertop terminals

Telium 2:

- iCT220, iCT250,
- E532

Telium 1:

- EFT SMART Plus,
- EFT SMART,
- EFT30

2.1.3. Retail pinpads (Signature capture terminals)

Telium 2:

- iSC250,
- iSC350.

2.1.4. Pinpads

Telium 2:

Release Note

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

Telium 1:

- ML30, ML30 color, ML30 color contactless.

'Booster only' pinpads:

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

Signature capture pinpads:

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

2.1.5. Unattended

Telium 1:

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

Telium 2:

- iUC150, IUC180,
- iUP250 (for development only)

Add-on Unattended 3.01 is needed.

2.1.6. Satellite terminals

Telium 2:

- iST150.

Telium 1:

- TeliumPass Plus.

2.1.7. Mobile payment

Telium 2:

- iMP320, iMP350,
- SPM (iPA280).

2.1.8. French healthcare

- TWINS.

2.2. Compatibility terminals vs SDK

In the following table, you will find the first SDK in which the terminal was managed for production purpose.

This table concerns terminals out since SDK 7.1.

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

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

2.3. Terminals certified PCI V3

The following terminals are certified for PCI v3:

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

2.4. Public Key Infrastructure

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

3. Highlighted points

3.1. Numbering of Telium SDK

For a SDK versioned V.R.S:

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

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

Stable (even) releases are fully qualified.

3.2. Telium Manager catalogues naming rule

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

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

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

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

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

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

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

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

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

The restriction forbids communicating:

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

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

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

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

3.4. Contactless

3.4.1. Best practices for Contactless

3.4.1.1. Field on/off

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

If the contactless field is opened all the time:

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

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

3.4.1.2. Implicit selection

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

Implicit selection is not recommended and must be managed with caution.

Due to physical reason, implicit selection can lead to unexpected issues, for example, at the beginning of the swipe, the card would possibly enter the antenna field and contactless chip would be handled instead of magnetic track.

3.4.1.3. Use of PSTN modem with contactless activated

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

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

Currently, the issue exists only on the iCT250, which is the only Ingenico integrated terminal with contactless and PSTN modem.

(For instance, on EFT930BCC or EFT930GCC with modem, it works, because the modem is on the cradle, and the distance between the modem and the contactless field is sufficient).

3.4.2. Add-on Contactless

The add-on contactless doesn't exist anymore.

All components provided previously in this package are now by default since Telium SDK 8.1. It concerns

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

3.4.3. Card supported

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

Recommendation:

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

3.5. PCI PTS version

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

The function `GetTerminalPKIVersion()` allows to know the PKI version of the terminal (return is `PKIV1` or `PKIV3`).

3.6. New software numbers for Telium Manager DLLs

3.6.1. Numbering rule

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

As a rule, when the software number was on 4 digits until SDK 9.0.x, from SDK 9.2.0 the first digit of the prefix is replaced by 844.

There is no change in application types.

Your application should not check the presence of a binary in the terminal by testing the software number but by testing the application type.

Example: For Libgr,

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

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

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

After the application of this rule:

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

3.7. Family name

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

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

3.8. Pinpad system

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

3.9. DIR system version downgrade

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

3.10. Reserved numbers

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

3.11. EFT930 embedding 8MB of flash

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

For SDK 8.0.x, SDK 8.1 and SDK 8.1.1:

It is forbidden to load a catalogue designed for 8MB terminals on a terminal loaded with a generic catalogue (that is to say non-8 MB). You must contact the Ingenico support for the rules of this migration.

3.12. Fix in link layer

A bug has been identified in the LinkLayer component, in versions 3.22 and 3.23 (SDK 8.1.2, SDK 8.1.3, SDK 8.2 and SDK 8.2.1).

For these versions only, on Bluetooth terminals, not associated with any base, the connection (call to LL_Connect()) fails when using the physical link LL_PHYSICAL_V_DEFAULT_TCPIP, with return code -1013 (LL_ERROR_NETWORK_NOT_SUPPORTED).

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

3.13. IUN

3.13.1. Sleep mode

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

3.13.2. Add on Unattended

You must use add-on Unattended 3.01.

3.14. IMP3

3.14.1. Bluetooth printer for iMP3

It is possible to use a Bluetooth printer with an iMP3.

The parameters and documentation for this feature are provided via an add-on called “Bluetooth printer for iMP3”. Please contact your region interface to request it.

3.14.2. IMP3 connected to an iPhone running on IOS 5.0

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

3.15. Deprecation

3.15.1. Features from AVL

Following feature provided by AVL are now deprecated:

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

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

3.15.2. Pinlib

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

These deprecated functions are grouped in the library Pinlib_Deprecated.lib. If you want to continue to generate your application with this deprecated feature, you need to add this library to your build. Pinlib.lib doesn't exist anymore.

You will have warning about deprecation. To remove it, clean your code by removing calls to these deprecated functions.

4. Issues solved in this release by component

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

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

4.1. Telium System

Following points are delivered in this release.

4.1.1. Power consumption

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

4.1.2. Card management

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

4.1.3. Peripherals

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

4.1.4. Printer

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

4.1.5. iMP3xx

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

4.1.6. Portables

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

4.1.7. APIs issues

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

4.1.8. Compatibility issues

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

4.1.9. Miscellaneous

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

Release Note

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

4.1.10. Development issues

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

4.2. Telium Manager

Following points are delivered in this release.

4.2.1. General issues

| | | | |
|-------|---------------------------|--|--|
| 10244 | SUPTEL-3174 / SUPTEL-3167 | Manages correctly shutdown after wake-up | |
| 11183 | SUPTEL-3694 / SUPTEL-3650 | Manages correctly SMS in SIM in function sms_open() | |
| 11578 | | Telium Manager optimization regarding: <ul style="list-style-type: none"> Memory use, Execution time, General organization of functions in the DLL, Terminal start-up time. | |
| 10017 | | Use of GOAL in Telium Manager | |
| 11315 | | Managed two additional ways of "restart without contactless" (chip card only and swipe card only). This is necessary as Visa requires being able to do a "fallback" to contact interface using either chip/swipe, chip only or swipe only. | |
| 11637 | | Fixed bug in manager EMV selection when there is more than 15 applications in the terminal. | |
| 11714 | | Manages correctly TMS identifier if length is lower than 9 digits | |
| 11582 | | With CGUI only, touch screen was not usable in the function GetAmount() | |
| 11610 | | After wake up at idle state, a transaction is started if a card is present into reader. | |

Release Note

| | | | |
|-------|--------------|---|----------------------------|
| 12062 | | Binaries 3778xxyy and 4778xxyy remain in the Telium Manager pack for Ingestate compatibility | |
| 11970 | | Possible memory leak fixed | |
| 11625 | | <p>GetGeneralStatus() improvement: To start card management at start-up, to use GetGeneralStatus() function, put this code and call this function in AFTER_RESET entry point</p> <pre>void ActivateCardManagement(void) { S_STATE_PARAM state_param; PSQ_read_state_param(&state_param); state_param.EnableCamManagement=1; PSQ_write_state_param(&state_param); }</pre> | Also provided in SDK 9.0.1 |
| 10591 | SUPTTEL-2935 | __LoadDefaultOptions () didn't work all the time on an iWL250 Bluetooth with Ethernet base. | Also provided in SDK 9.0.1 |
| 11622 | | On EFT930 Morpho: Fixed freeze when editing hardware configuration ticket | Also provided in SDK 9.0.1 |

4.2.2. APIs evolutions

| | | | |
|-------|--------------|---|--|
| 11669 | SUPTTEL-3715 | Function IsColorDisplay() now returns B/W display when no display is detected | |
| 11116 | SUPTTEL-3275 | It's now possible to convert float and double with sprintf(), printf(), fprintf(), pprintf(),... functions when application is compiled with GNU compiler | |
| 11771 | SUPTTEL-2985 | call of GET_AMOUNT_STATE_PARAMETER entry point at beginning of service call 100 | |
| 11602 | | <p>Added new function GetTerminalPCIPTVersion() to get PCI_PTS version. Returns are:</p> <ul style="list-style-type: none"> ▪ -1 : not implemented ▪ PCI_PTS_V2 ▪ PCI_PTS_V3 | |
| 11609 | | New function IsTouchScreen () returning if touch screen is available. | |
| 11691 | | Provided SHA256 feature in Telium SDK | |
| 11707 | | Functions iUC150(), iUC180() and iUP250 replace functions isIUNxxx() | |
| 11585 | | Add new entry point (WAKE_UP) to inform applications after terminal wake up. | |
| 11641 | | Remove call to deprecated functions encrit() and excrit() | |
| 11566 | | Reset in all cases when dynamic allocation is not successful | |

4.2.3. Telium Manager menus

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

Release Note

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

4.2.4. Parameterization of the terminal

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

4.2.5. Terminal configuration

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

4.2.6. Deprecation

| | | |
|-------|--|---------------------------|
| 11749 | | PP30 Pinpad is deprecated |
|-------|--|---------------------------|

4.2.7. For French applications

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

4.3. Security

4.3.1. DLL Security

Following points are delivered in this release.

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

4.3.2. Security Extend library

Following points are delivered in this release.

| Internal tracker | SUPTTEL | Description |
|------------------|--------------|--|
| 11506 | | Added functionalities of generic pack schemes 02.11 : TlvCipherDa |
| 9369 | | Fixed compilation issue with use of SEC_extend.h |
| 9491 | SUPTTEL-2148 | Function SEC_DukptCBCCipher with algo type TLV_TYPE_TDESUKPT froze Booster 1 terminals |

4.3.3. DLL E2EE

Following points are delivered in this release.

Release Note

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

4.3.4. DLL Digest

4.3.4.1. Scheme TlvLoadHMAC

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

4.3.5. Schemes

Last schemes certified are included in this SDK.

Following points are delivered in this release.

| Internal tracker | SUPTel | Description |
|------------------|-------------|--|
| 11226 | SUPTel-3387 | DUKPT_cancel_keys command now erases correctly the DUKPT key. |
| 7746 | | Fixed TMA_USED_KEY_USAGE error during key creation in TlvMAKeyGen scheme. |
| 9833 | | <ul style="list-style-type: none"> Add Sch_Random to TLV generic schemes pack Add compatibility with 24 bytes TDES keys in TlvLoadKey and TlvKeyVerif schemes. Fixed MAC calculation if data length is not multiple of 8 bytes. |
| 11070 | | <ul style="list-style-type: none"> Added compatibility with 24 bytes TDES keys in TlvCipherDa, TlvLoadTR31, TlvMacTDes and TlvIso9564 schemes. Removed STLCipherDa from TLV generic schemes pack. |
| 11220 | | Add possibility to use the entire key with tlvHMac scheme. tlvHMac scheme verifies the key length. |

4.3.6. Pinlib

| Internal tracker | SUPTel | Description |
|------------------|--------|--|
| 11802 | | Pinlib is now deprecated (see below for details) |

4.4. Communication

4.4.1. Link Layer

Following points are delivered in this release.

Release Note

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

4.4.2. DLL SSL

Following points are delivered in this release.

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

4.4.3. FTP

Following points are delivered in this release.

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

4.4.4. SNMP

No evolution.

4.4.5. DLL TCP for iMP3

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

4.4.6. Pack IP

Includes evolution for FTPS Explicit.

4.5. Display

4.5.1. GOAL

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

Release Note

Following points are delivered in this release.

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

Release Note

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

The following evolutions improve the use of GOAL.

| Internal tracker | SUPTEL | Description |
|------------------|-------------|---|
| 11348 | | Optimization for GOAL terminals at system level |
| 11578 | | Telium Manager optimization regarding: <ul style="list-style-type: none"> Memory use, Execution time, General organization of functions in the DLL, Terminal start-up time. |
| 11841 | | On SDK 9.0.x, the rendering of some functions were changed to GOAL look and feel. This SDK goes back to the legacy rendering for these functions. Functions concerned are: G_List_Entry() / G_Saisie_Liste() wG_List_Entry() / wG_Saisie_Liste() G_Numerical_Entry() / G_Saisie_Numérique() wG_Numerical_Entry() / wG_Saisie_Numerique() G_Alphanumerical_Entry() / G_Saisie_Alphanumerique() wG_Saisie_Alphanumerique() G_Extended_entry() / G_Saisie_Etendue() wG_Extended_entry() / wG_Saisie_Etendue() G_List_Entry() / G_Saisie_Liste() wG_List_Entry() / wG_Saisie_Liste() G_DisplayMSGcust() / G_AfficherMSGCust() G_DisplayMSGnum() / G_AfficherMSGnum() G_Display() / G_Afficher() SLSQ_Afficher_message() GestionRetourSocle() G_DisplayMSG() / G_AfficherMSG() |
| 11988 | | Fixed bad screen on Black and White terminals with GOAL on remote download |
| 11682 | SUPTEL-3710 | Managed "RETURN ON BASE" screen with GOAL |
| 11726 | | GOAL look for the screen requesting to choose the Wi-Fi network |

Release Note

4.5.2. CGUI / CGUI tools

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

4.5.3. Plug-ins

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

Following points are delivered in this release.

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

4.5.4. Fonts

No evolution.

4.5.5. DLL Image

No evolution.

4.6. Contactless

4.6.1. Driver

Following points are delivered in this release.

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

4.6.2. DLL TPass

Following points are delivered in this release.

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

4.6.3. Entry Point

No evolution.

4.6.4. Telium Pass

No evolution.

4.6.5. DESFire cards

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

4.7. Applications

4.7.1. Incendo Online browser

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

4.7.1.1. Memory

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

4.7.1.2. Migration to this version

4.7.1.2.1. Migration from a version before 3.0.4

Incendo Online smart browser was previously delivered as an independent package (up to version 3.0.3). It was designed to be signed with region security keys.

The version in this Telium SDK is signed with manufacturer key. So the application type is different between these two versions. If you have already deployed the browser, to migrate to the version included in a Telium SDK, you must manage the change of application type. For further details, please contact the Incendo support.

4.7.1.3. Compatibility

4.7.1.3.1. Terminals managed

Minimal hardware prerequisites are:

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

Incendo Online is compatible with the following terminals:

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

You must not use it on other terminals.

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

4.7.1.3.2. EMV packages compatibility

Incendo smart Browser is compatible with the following EMV packages:

Release Note

- Version 19 or 20.1

4.7.1.4. Evolutions

No evolution.

4.7.2. Image Loader

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

Please read all the documentation located in the directory you had installed Image Loader.

4.7.2.1. Evolutions

Following points are delivered in this release.

| Internal tracker | SUPTTEL | Description |
|------------------|---------|--|
| | | Added support of video files as IDLE Screen: <ul style="list-style-type: none"> MP4 file format on Multimedia terminal = IWL280, ISC350, ISC250, IWL350 IPF file format on other = ICT250, IWL250, IPP350, EFT930C |

4.8. IPP3 in Pinpad emulation mode

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

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

4.9. AVL

AVL stands for Added Value Libraries.

Following points are delivered in this release.

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

4.10. SDK features

Following points are delivered in this release.

Release Note

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

4.11. Documentation

There are improvements of documentation in this release including the following

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

4.12. Samples

There are improvements of samples in this release including the following

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

5. Evolutions in API

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

6. Add-ons to Telium SDK

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

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

SDK9.0.2 Release note

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

Issues solved are detailed in paragraph 4.

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

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

2. Compatibility

2.1. List of compatible terminals

This SDK release is compatible with the following products.

2.1.1. Wireless

Telium 2:

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

Telium 1:

- EFT930 Color
- EFT930 Black and White

2.1.2. Countertop terminals

Telium 2:

- iCT220, iCT250,
- E532

Telium 1:

- EFT SMART Plus,
- EFT SMART,
- EFT30

2.1.3. Signature capture terminals (Retail pinpads)

Telium 2:

- iSC250,
- iSC350

2.1.4. Pinpads

Telium 2:

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

Telium 1:

- ML30, ML30 color, ML30 color contactless.

'Booster only' pinpads:

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

2.1.5. Unattended

Telium 1:

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

Telium 2:

- iUC150, iUC180, iUP250 (for development only)

2.1.6. Satellite terminals

Telium 2:

- iST150.

Telium 1:

- TeliumPass Plus.

2.1.7. Mobile payment

Telium 2:

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

2.1.8. French health care

- TWINs.

2.2. Terminals certified PCI V3

The following terminals are certified for PCI v3:

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

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

2.3. Public Key Infrastructure

This release supports PKI V3.

3. Highlighted points

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

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

The restriction forbids communicating:

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

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

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

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

3.2. GOAL catalogues naming rule

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

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

Release Note

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

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

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

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

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

3.3. Contactless

3.3.1. Best practices for Contactless

3.3.1.1. Field on/off

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

If the contactless field is opened all the time:

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

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

3.3.1.2. Implicit selection

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

Implicit selection is not recommended and must be managed with caution.

Due to physical reason, implicit selection can lead to unexpected issues, for example, at the beginning of the swipe, the card would possibly enter the antenna field and contactless chip would be handled instead of magnetic track.

3.3.1.3. Use of PSTN modem with contactless activated

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

Release Note

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

Currently, the issue exists only on the iCT250, which is the only Ingenico integrated terminal with contactless and PSTN modem.

(For instance, on EFT930BCC or EFT930GCC with modem, it works, because the modem is on the cradle, and the distance between the modem and the contactless field is sufficient).

3.3.2. Add-on Contactless

The add-on contactless doesn't exist anymore.

All components provided previously in this package are now in Telium SDK since SDK 8.1. It concerns:

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

3.3.3. Card supported

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

Recommendation:

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

3.4. Family name

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

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

3.5. Pinpad system

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

3.6. DIR system version downgrade

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

3.7. Reserved numbers

Service numbers from 1 to 100 and from 0x1E00 à 0x1FFF are reserved for Ingenico internal use.

Tag numbers used by applications must be taken in the range 0x9FA000 - 0x9FAFFF.

3.8. EFT930 embedding 8MB of flash

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

For SDK 8.0.x, SDK 8.1 and SDK 8.1.1:

It is forbidden to load a catalogue designed for 8MB terminals on a terminal loaded with a generic catalogue (that is to say non-8 MB). You must contact the Ingenico support for the rules of this migration.

3.9. Fix in link layer

A bug has been identified in the LinkLayer component, in versions 3.22 and 3.23 (SDK 8.1.2, SDK 8.1.3, SDK 8.2 and SDK 8.2.1).

For these versions only, on Bluetooth terminals, not associated with any base, the connection (call to LL_Connect()) fails when using the physical link LL_PHYSICAL_V_DEFAULT_TCPIP, with return code -1013 (LL_ERROR_NETWORK_NOT_SUPPORTED).

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

3.10. PCI PTS version

In order to know the PCI PTS version of the product, you can use the `fiocctl`

`SYS_IOCTL_GET_PCI_PTS_VERSION` returns `PCI_PTS_V2` or `PCI_PTS_V3` (or -1 if the `fiocctl` is not implemented). This function is only implemented on Telium2.

The function `GetTerminalPKIVersion()` allows to know the PKI Version (return is `PKIV1` or `PKIV3`).

4. Issues solved in this release by component

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

Main points delivered in this release are listed below.

4.1. Telium System

No evolution.

4.2. Telium Manager

4.2.1. Evolutions

Following points are delivered in this release.

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

4.3. Security

4.3.1. DLL Security

No evolution.

4.3.2. Security Extend library

No evolution.

4.3.3. DLL E2EE

Following points are delivered in this release.

Release Note

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

4.3.4. DLL Digest

No evolution.

4.3.5. Schemes

Last schemes certified are included in this SDK.

4.4. Communication

4.4.1. Link Layer

No evolution.

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

4.4.2. Pack IP

No evolution.

4.4.3. DLL SSL

Following points are delivered in this release.

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

4.4.4. FTP

No evolution.

4.4.5. SNMP

No evolution.

4.4.6. DLL TCP for iMP3

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

This DLL is mandatory on iMP3xx.

Release Note

4.5. Display

4.5.1. GOAL / CGUI

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

Following points are delivered in this release.

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

4.5.2. DLL Image

No evolution.

4.5.3. Fonts

No evolution.

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

Now delivered in Telium manager catalogues as described above.

4.6. Contactless

4.6.1. DLL TPass

Following points are delivered in this release.

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

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

4.6.2. Entry Point

No evolution.

4.6.3. Telium Pass

No evolution.

4.7. Applications

4.7.1. Incendo Online browser

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

4.7.1.1. Memory

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

4.7.1.2. Migration to this version

4.7.1.2.1. Migration from a version before 3.0.4

Incendo Online smart browser was previously delivered as an independent package (up to version 3.0.3). It was designed to be signed with region security keys.

The version in this Telium SDK is signed with manufacturer key. So the application type is different between these two versions. If you have already deployed the browser, to migrate to the version included in a Telium SDK, you must manage the change of application type. For further details, please contact the Incendo support.

4.7.1.3. Compatibility

4.7.1.3.1. Terminals managed

Minimal hardware prerequisites are:

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

Incendo Online is compatible with the following terminals:

- iCT220, iCT250,
- iWL220, iWL250

You must not use it on other terminals.

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

4.7.1.3.2. EMV packages compatibility

Incendo smart Browser is compatible with the following EMV packages:

Release Note

- Version 19 or 20.1

4.7.1.4. Evolutions

Please read the release note under \Applications\IncendoBrowser.

4.7.2. Image Loader

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

4.7.2.1. Evolutions

No evolution.

4.8. AVL

No evolution.

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

A binary concatenates the Telium system (including contactless driver) and the Telium manager for an iPP3 used in pinpad emulation for local download mode. It is delivered in the directory: Component\iPP3_EmulationPinpad\Package

Please see description in the CHM help file of the Telium SDK (SDK General Documentation > HOW TO DEVELOP user guide > How to use iPP3xx as a smart card reader).

This package is not updated for SDK 9.0.2.

4.9.1. DLL PPLoad evolution

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

No evolution.

4.10. SDK features

No evolution.

5. Add-ons to Telium SDK

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

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

Release Note

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

SDK9.0.1 Release note

1. Standard development platforms

1.1. List of compatible terminals

This SDK release is compatible with the following products.

1.1.1. Wireless

Telium 2:

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

Telium 1:

- EFT930 Color
- EFT930 Black and White

1.1.2. Countertop terminals

Telium 2:

- iCT220, iCT250,
- E532

Telium 1:

- EFT SMART Plus,
- EFT SMART,
- EFT30

1.1.3. Signature capture terminals (Retail pinpads)

Telium 2:

- iSC250,
- iSC350

1.1.4. Pinpads

Telium 2:

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

Telium 1:

- ML30, ML30 color, ML30 color contactless.

'Booster only' pinpads:

Release Note

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

1.1.5. Unattended

Telium 1:

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

Telium 2:

- iUC150, IUC180, iUP250 (for development only)

1.1.6. Satellite terminals

Telium 2:

- iST150.

Telium 1:

- TeliumPass Plus.

1.1.7. Mobile payment

Telium 2:

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

1.1.8. French health care

- TWINs.

1.2. Terminals certified PCI V3

The following terminals are certified for PCI v3:

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

1.3. Public Key Infrastructure

This release supports PKI V3.

2. What's new?

Issues solved are detailed in paragraph 4.

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

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

3. Highlighted points

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

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

The restriction forbids communicating:

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

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

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

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

3.2. GOAL catalogues naming rule

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

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

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| Thunder 1 and 2 | xxx_yyy.mZZ | Libgr | Libgr |
| Thunder 3 | xxx_GOAL_yyy.mZZ | GOAL and Libgr | GOAL |
| Thunder 3 | xxx_yyy.mZZ | CGUI, GOAL and Libgr | GOAL |

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

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

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

3.3. Contactless

3.3.1. Best practices for Contactless

3.3.1.1. Field on/off

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

If the contactless field is opened all the time:

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

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

3.3.1.2. Implicit selection

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

Implicit selection is not recommended and must be managed with caution.

Due to physical reason, implicit selection can lead to unexpected issues, for example, at the beginning of the swipe, the card would possibly enter the antenna field and contactless chip would be handled instead of magnetic track.

3.3.1.3. Use of PSTN modem with contactless activated

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

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

Release Note

Currently, the issue exists only on the iCT250, which is the only Ingenico integrated terminal with contactless and PSTN modem.

(For instance, on EFT930BCC or EFT930GCC with modem, it works, because the modem is on the cradle, and the distance between the modem and the contactless field is sufficient).

3.3.2. Add-on Contactless

The add-on contactless doesn't exist anymore.

All components provided previously in this package are now by default since Telium SDK 8.1. It concerns

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

3.3.3. Card supported

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

Recommendation:

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

3.4. Family name

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

- NAME is the radical of application (maximum 7 ASCII characters);
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3.5. Pinpad system

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

3.6. DIR system version downgrade

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

3.7. Reserved numbers

Service numbers from 1 to 100 and from 0x1E00 à 0x1FFF are reserved for Ingenico internal use.

Tag numbers used by applications must be taken in the range 0x9FA000-0x9FAFFF.

3.8. EFT930 embedding 8MB of flash

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

For SDK 8.0.x, SDK 8.1 and SDK 8.1.1:

It is forbidden to load a catalogue designed for 8MB terminals on a terminal loaded with a generic catalogue (that is to say non-8 MB). You must contact the Ingenico support for the rules of this migration.

3.9. Fix in link layer

A bug has been identified in the LinkLayer component, in versions 3.22 and 3.23 (SDK 8.1.2, SDK 8.1.3, SDK 8.2 and SDK 8.2.1).

For these versions only, on Bluetooth terminals, not associated with any base, the connection (call to LL_Connect()) fails when using the physical link LL_PHYSICAL_V_DEFAULT_TCPIP, with return code -1013 (LL_ERROR_NETWORK_NOT_SUPPORTED).

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

3.10. PCI PTS version

In order to know the PCI PTS version of the product, you can use the `fiocctl`

`SYS_IOCTL_GET_PCI_PTS_VERSION` returns `PCI_PTS_V2` or `PCI_PTS_V3` (or -1 if the `fiocctl` is not implemented). This function is only implemented on Telium2.

The function `GetTerminalPKIVersion()` allows to know the PKI Version (return is `PKIV1` or `PKIV3`).

4. Issues solved in this release by component

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

Main points delivered in this release are listed below.

4.1. Telium System

Following points are delivered in this release.

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

4.2. Telium Manager

4.2.1. Evolutions

Following points are delivered in this release.

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

Release Note

| | | |
|-------|--------------|---|
| 11367 | | New catalogues for healthcare : iMP3, iWL280 Catalogues for healthcare removed : ML30 |
| 11481 | SUPTTEL-3505 | Allows entry of the character * (star) in the PABX initialisation string. |
| 11568 | | Character '(' was twice in default table for alphanumerical entry |
| 11569 | | Bug fixed when allocated resources using IAM |
| 11622 | | On EFT930 Morpho: Fixed freeze when editing hardware configuration ticket |
| 11625 | | <p>GetGeneralStatus() improvement: To start card management at start-up, to use GetGeneralStatus() function, put this code and call this function in AFTER_RESET entry point</p> <pre>void ActivateCardManagement(void) { S_STATE_PARAM state_param; PSQ_read_state_param(&state_param); state_param.EnableCamManagement=1; PSQ_write_state_param(&state_param); }</pre> |

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 | SUPTTEL | Description |
|------------------|--------------|--|
| 9369 | | Fixed compilation issue with use of SEC_extend.h |
| 9491 | SUPTTEL-2148 | Function SEC_DukptCBCCipher with algo type TLV_TYPE_TDESUKPT froze Booster 1 terminals |

4.3.3. DLL E2EE

No evolution.

4.3.4. DLL Digest

No evolution.

4.3.5. Schemes

Last schemes certified are included in this SDK.

Release Note

4.4. Communication

4.4.1. Link Layer

No evolution.

4.4.2. Pack IP

No evolution.

4.4.3. DLL SSL

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

4.4.4. FTP

No evolution.

4.4.5. SNMP

No evolution.

4.5. Display

4.5.1. GOAL

Following points are delivered in this release.

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

Release Note

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

4.5.2. DLL Image

No evolution.

4.5.3. Fonts

No evolution.

4.5.4. CGUI / CGUI tools

Internal minor change.

4.5.5. Plug-ins

Now delivered in Telium manager catalogues as described above.

4.6. Contactless

4.6.1. DLL TPass

Following points are delivered in this release.

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

4.6.2. Entry Point

No evolution.

4.6.3. TeliumPass

No evolution.

4.7. Applications

4.7.1. Incendo Online browser

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

4.7.1.1. Memory

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

4.7.1.2. Migration to this version

4.7.1.2.1. Migration from a version before 3.0.4

Incendo Online smart browser was previously delivered as an independent package (up to version 3.0.3). It was designed to be signed with region security keys.

The version in this Telium SDK is signed with manufacturer key. So the application type is different between these two versions. If you have already deployed the browser, to migrate to the version included in a Telium SDK, you must manage the change of application type. For further details, please contact the Incendo support.

4.7.1.3. Compatibility

4.7.1.3.1. Terminals managed

Minimal hardware prerequisites are:

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

Incendo Online is compatible with the following terminals:

- iCT220, iCT250,
- iWL220, iWL250

You must not use it on other terminals.

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

4.7.1.3.2. EMV packages compatibility

Incendo smart Browser is compatible with the following EMV packages:

- Version 19 or 20.1

4.7.1.4. Evolutions

Please read the release note under \Applications\IncendoBrowser.

4.7.2. Image Loader

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

4.7.2.1. Evolutions

No evolution.

4.8. AVL

Following points are delivered in this release.

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

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

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

This package is not updated for SDK 9.0.1.

4.9.1. DLL PPLoad evolution

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

4.10. SDK features

Following points are delivered in this release.

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

5. Evolutions in API

5.1. Deprecated functions

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

6. Add-ons to Telium SDK

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

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

Release Note

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

SDK9.0 Release note

1. Standard development platforms

1.1. List of compatible terminals

This SDK release is compatible with the following products.

1.1.1. Wireless

Telium 2:

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

Telium 1:

- EFT930

1.1.2. Countertop terminals

Telium 2:

- iCT220, iCT250,
- E532

Telium 1:

- EFT SMART Plus,
- EFT SMART,
- EFT30

1.1.3. Signature capture terminals (Retail pinpads)

Telium 2:

- iSC250,
- iSC350

1.1.4. Pinpads

Telium 2:

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

Telium 1:

- ML30, ML30 color, ML30 color contactless.

'Booster only' pinpads:

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

Release Note

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

Release Note

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.

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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;

Release Note

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

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

3.2.1.2. Implicit selection

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

Implicit selection is not recommended and must be managed with caution.

Due to physical reason, implicit selection can lead to unexpected issues, for example, at the beginning of the swipe, the card would possibly enter the antenna field and contactless chip would be handled instead of magnetic track.

3.2.1.3. Use of PSTN modem with contactless activated

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

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

Currently, the issue exists only on the iCT250, which is the only Ingenico integrated terminal with contactless and PSTN modem.

(For instance, on EFT930BCC or EFT930GCC with modem, it works, because the modem is on the cradle, and the distance between the modem and the contactless field is sufficient).

3.2.2. Add-on Contactless

The add-on contactless doesn't exist anymore.

All components provided previously in this package are now by default since Telium SDK 8.1. It concerns

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

3.2.3. Card supported

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

Recommendation:

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

3.3. Family name

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

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

3.4. Pinpad system

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

3.5. DIR system version downgrade

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

3.6. Reserved numbers

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

3.7. EFT930 embedding 8MB of flash

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

For SDK 8.0.x, SDK 8.1 and SDK 8.1.1:

It is forbidden to load a catalogue designed for 8MB terminals on a terminal loaded with a generic catalogue (that is to say non-8 MB). You must contact the Ingenico support for the rules of this migration.

3.8. Fix in link layer

A bug has been identified in the LinkLayer component, in versions 3.22 and 3.23 (SDK 8.1.2, SDK 8.1.3, SDK 8.2 and SDK 8.2.1).

For these versions only, on Bluetooth terminals, not associated with any base, the connection (call to LL_Connect()) fails when using the physical link LL_PHYSICAL_V_DEFAULT_TCPIP, with return code -1013 (LL_ERROR_NETWORK_NOT_SUPPORTED).

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

4. Issues solved in this release by component

This chapter will be completed in definitive version.

See table in chapter [Erreur ! Source du renvoi introuvable. “Versions of components” for the list of versions of components provided in this Telium SDK.](#)

4.1. Telium System

Main points delivered in this release are listed below.

4.1.1. System booster

Following points are delivered in this release.

| Internal tracker | SUPTTEL | Description |
|------------------|--------------|--|
| 10747 | SUPTTEL-3046 | Case of touch screen frozen fixed |
| 10717 | | GPRS immunity improvement |
| 11210 | SUPTTEL-3311 | Fix for iPP350 sometimes rebooting when contactless transaction was started with synchronous card inserted |
| 10743-10948 | SUPTTEL-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 | SUPTTEL-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 | SUPTTEL | Description |
|------------------|---------|---|
| 6833 | | French healthcare: When SYS_IOCTL_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 |

Release Note

| | | |
|-------|---------------------|---|
| 9109 | | iWL220/iWL250: modification of the default backlight value (set to 30%) CHM help file improvement on backlight fiocli (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: <ul style="list-style-type: none"> ▪ Custom - My Printer ▪ Seiko - S245 ▪ Zebra - EM220 |
| 10799 | | Documentation improvement for oem_sysfiocli.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 fiocli SYS_FIOCTL_SET_CALLHOST_TCP_TIMEOUT to configure the TCP or SSL connection timeout of callhost. |
| 11016 | | modification of documentation about USB deprecated fiocli |
| 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 |

Release Note

| | | |
|-------|--------------|--|
| 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 fioclt defined in oem_printer.h. The previous values are kept for compatibility. But applications, which use oem_ext_printer.h, should rename the fioclt. |
| 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 | SUPTTEL-2475 | Case of reboot during a remote_download session fixed |
| 11425 | SUPTTEL-3416 | [EFT930] ISO1 track not read with some cards, fixed |

4.1.3. Cless driver

Following point is delivered in this release.

| Internal tracker | SUPTTEL | Description |
|------------------|------------------------|---|
| 11321 | SUPTTEL-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 | SUPTTEL | Description |
|------------------|--------------|---|
| 8539 | SUPTTEL-2210 | Displays only pinpads allowed in the pinpad initialization menu. |
| 9514 | SUPTTEL-2245 | Gives all AID to EMVDC for application selection (no more optimization with partial AID) |
| 9576/ 9793 | SUPTTEL-2326 | HEADER_SERVICE is not described in the Telium manager documentation because this service has never worked. It has been removed. |
| 9976 | SUPTTEL-3083 | New product iWL2XX-3G |
| 10007 | | Use of pointer NULL fixed |
| 10017 | | Use of GOAL in Manager |
| 10172 | SUPTTEL-2672 | New API __pprintf8859(). See Telium SDK CHM help file |
| 10225 | | License functionality with CGUI interface managed |
| 10462 | SUPTTEL-2866 | Documentation only (value WGUI for mask field) |
| 10591 | SUPTTEL-2935 | __LoadDefaultOptions ()didn't work all the time on an iWL250 Bluetooth with Ethernet base. |
| 10642 | SUPTTEL-2953 | New sample into CHM for _PrintBmpXY function |

Release Note

| | | |
|-------|-------------|--|
| 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 Bluetooth 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 |

Release Note

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 | SUPTTEL | Description |
|------------------|---------|---|
| 8281 | | NULL pointer for Initial Vector fixed Adding SEC_DukptComputeMAC_AC_Ig, SEC_DukptVerifyMAC_AC_Ig 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 | SUPTTEL | Description |
|------------------|--------------|--|
| 10991 | | Add support of the DCD signal on USB serial ports (COM5, COM6 and COMU) |
| 11032 | SUPTTEL-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+SSL (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 |

Release Note

4.4.2. Pack IP-SSL

Following points are delivered in this release.

| Internal tracker | SUPTTEL | Description |
|------------------|--------------|---|
| 10996 | | [iMP3xx] "domain name" type addresses are now supported |
| 11098 | SUPTTEL-3303 | Add documentation of SSL_ProfileGetKeyFile function. |
| 11019 | SUPTTEL-3224 | Add X509_CheckPrivateKey function to the SSL DLL to check consistency between a certificate and a private key file. |
| 11003 | SUPTTEL-2602 | Division by zero fixed in Resolver SetOptiopn |
| 10813 | SUPTTEL-3067 | Documentation about the return value of PPP_Open corrected. Defines remain unchanged for backward compatibility reasons. |
| 11149 | SUPTTEL-3241 | Improvement for documentation on ResolverSetOption() |
| 10311 | SUPTTEL-2723 | Improvement of documentation on EthernetGetOption() |
| 10625 | SUPTTEL-2900 | New IP_Cpp_.lib and FTP_Cpp_.lib added for C++ compliancy. |
| 11192 | SUPTTEL-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 | SUPTTEL | Description |
|------------------|---------|--|
| 5331 | | Animated GIFs are no longer slowed down when multiple browsers are displayed |

Release Note

| | | |
|------|--|---|
| 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.

Release Note

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)

Release Note

- 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 | |

Release Note

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:

Release Note

- 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.

Release Note

If the contactless field is opened all the time:

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

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

3.2.1.2. Implicit selection

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

Implicit selection is not recommended and must be managed with caution.

Due to physical reason, implicit selection can lead to unexpected issues, for example, at the beginning of the swipe, the card would possibly enter the antenna field and contactless chip would be handled instead of magnetic track.

3.2.1.3. Use of PSTN modem with contactless activated

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

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

Currently, the issue exists only on the iCT250, which is the only Ingenico integrated terminal with contactless and PSTN modem.

(For instance, on EFT930BCC or EFT930GCC with modem, it works, because the modem is on the cradle, and the distance between the modem and the contactless field is sufficient).

3.2.2. Add-on Contactless

The add-on contactless doesn't exist anymore.

All components provided previously in this package are now by default since Telium SDK 8.1. It concerns

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

3.2.3. Card supported

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

Recommendation:

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

3.3. Family name

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

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

3.4. Pinpad system

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

3.5. DIR system version downgrade

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

3.6. Reserved numbers

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

3.7. EFT930 embedding 8MB of flash

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

For SDK 8.0.x, SDK 8.1 and SDK 8.1.1:

It is forbidden to load a catalogue designed for 8MB terminals on a terminal loaded with a generic catalogue (that is to say non-8 MB). You must contact the Ingenico support for the rules of this migration.

4. Issues solved in this release by component

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

4.1. Telium System

Main points delivered in this release are listed below.

4.1.1. System Thunder

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

4.2. Telium Manager

4.2.1. Evolutions

Following points are delivered in this release.

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

4.3. Security

4.3.1. DLL Security

No evolution.

Release Note

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.

Release Note

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).

Release Note

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 | SUPTTEL | 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.

Release Note

‘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;

Release Note

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

3.2.1.2. Implicit selection

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

Implicit selection is not recommended and must be managed with caution.

Due to physical reason, implicit selection can lead to unexpected issues, for example, at the beginning of the swipe, the card would possibly enter the antenna field and contactless chip would be handled instead of magnetic track.

3.2.1.3. Use of PSTN modem with contactless activated

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

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

Currently, the issue exists only on the iCT250, which is the only Ingenico integrated terminal with contactless and PSTN modem.

(For instance, on EFT930BCC or EFT930GCC with modem, it works, because the modem is on the cradle, and the distance between the modem and the contactless field is sufficient).

3.2.2. Add-on Contactless

The add-on contactless doesn't exist anymore.

All components provided previously in this package are now by default since Telium SDK 8.1. It concerns

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

3.2.3. Card supported

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

Recommendation:

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

3.3. Family name

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

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

Release Note

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 o “

” 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 | SUPTTEL | 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 | SUPTTEL-2912 | [CLESS] Driver Mifare is now able to authenticate Mifare classic cards with 7 bytes UID |

Release Note

| | | |
|------------|---------------------------------|---|
| 10605 | SUPTTEL-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 | SUPTTEL-2775 | Fixes terminal reset when SWP:ERC[FFFFFFF7] diagnostic found in BOOSTER.DIA file Fixes some randoms ghost swipe card issues |
| 10602 | SUPTTEL-2874 | Swipe software improvement. |
| 10743 | SUPTTEL-2874 | [ICT220] Improvement in MagStripe reading |
| 7752 | | Speed-up non-responding GPRS modem detection |
| 9452/10409 | SUPTTEL-2194 et SUPTTEL-2649 | USBDEV_FIOCTL_START_HID and USBDEV_FIOCTL_STOP_HID are deprecated. Use USBDEV_FIOCTL_SET_MODE to define the usb device mode |
| 9510 | SUPTTEL-2269 | Adding SWI int PppSetDefaultOptions(struct PPP_IF *interface); that can be used for resetting 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 | SUPTTEL-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 | SUPTTEL-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 | SUPTTEL-2870 | Bug fix when updating fonts (old naming fonts to STANDARD new naming fonts): ISO1 to 844216vrr ISO2 to 844216vrr ISO3 to 844218vrr ISO5 to 844219vrr ISO6 to 844213vrr ISO7 to 844220vrr ISO15 to 844221vrr |
| 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 | SUPTTEL-2738 | [GPRS] switch back to automatic mode |
| 10529 | | Documentation only |
| 10632 | SUPTTEL-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 | SUPTTEL-3037 | [GPRS] Clamp the radio level to 5, no matter what |
| 10728 | SUPTTEL-3063 | Api added : SYS_FIOCTL_GET_PRODUCT_FULL_SERIAL_NUMBER to get the long serial number |
| 10754 | SUPTTEL-3064 + 2943 | Improvement in checking base status |
| 10808 | | Improvement in PPP connection time |

Release Note

| | | |
|-------|--------------|---|
| 10877 | SUPTTEL-3095 | [iWL280] Low power procedure fixed to avoid reset when fopen ("CAMo","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 | SUPTTEL | 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 | SUPTTEL-2210 | Displays only pinpads allowed in the pinpad initialization menu. |
| 9136 | SUPTTEL-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 (independent 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 | SUPTTEL-2653 | On STATE ticket (via F > CONSULTATION / State). Replace "Flash Free" by "Code Free" |
| 10328 | SUPTTEL-2818 | Improvement for contactless documentation |
| 10343 | SUPTTEL-2752 | Improved documentation for SLC_Ecart_heure() and USQ_Enlevermnsec() |
| 10367 | | [iWL280] Hide mouse cursor at startup (default value). |
| 10443 | SUPTTEL-2865 | Function ConnectedToPower() added. It returns the charger state |

Release Note

| | | |
|-------|-------------|---|
| 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_DisplayC3oMSG G_AfficherC3oMSG #define G_DisplayC3oMSGnum G_AfficherC3oMSGnum #define G_Display G_Afficher #define G_DisplayPpr G_AfficherPpr #define G_DisplayC3o G_AfficherC3oe_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 4595xyyy.LGN or 3595xyyy.SGN is no longer delivered as unnecessary |

4.3. Security

4.3.1. DLL Security

Following point is delivered in this release.

Release Note

| 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

Release Note

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:

Release Note

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

See details in document provided with the application IncendoBrowser.

4.7.2. Image Loader

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

4.7.2.1. Evolutions

No evolution.

4.8. AVL

AVL stands for Added Value Libraries.

No comment: only internal change

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

A binary concatenates the Telium system (including contactless driver) and the Telium manager for an iPP3 used in pinpad emulation for local download mode. It is delivered in the directory: Component\iPP3_EmulationPinpad\Package

Please see description in the CHM help file of the Telium SDK (SDK General Documentation > HOW TO DEVELOP user guide > How to use iPP3xx as a smart card reader).

4.9.1. DLL PPLoad evolution

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

4.10. SDK features

Following points are delivered in this release.

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

5. Add-ons to Telium SDK

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

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

SDK8.1.4 Release note

1. Standard development platforms

This SDK release is compatible with the following products.

1.1. List of terminals

1.1.1. Wireless

Telium 2:

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

Telium 1:

- EFT930 colour,
- EFT930 black and white.

1.1.2. Countertop terminals

Telium 2:

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

Telium 1:

- EFT SMART Plus,
- EFT SMART,
- EFT30

1.1.3. Signature capture terminals (Retail pinpads)

- iSC250,
- iSC350

1.1.4. Pinpads

Telium 2:

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

Telium 1:

- ML30, ML30 color, ML30 color contactless.

Release Note

'Booster only' pinpads:

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

1.1.5. Unattended

See UCM add-on package for the exhaustive list.

1.1.6. Satellite terminals

Telium 2:

- iST150.

Telium 1:

- TeliumPass Plus.

1.1.7. Mobile payment

Telium 2:

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

1.1.8. French health care

- TWINS.

1.2. Terminals certified PCI V3

The following terminals are certified for PCI V3:

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

1.3. Public Key Infrastructure

This release supports PKI V3.

1.4. Location for system components

System for iMP3xx is located in Component\OS_iMP350

System for iWL280 is located in Component\OS_iWL280

2. What's new?

Issues solved are detailed in paragraph 4.

Here are main evolutions coming with this Telium SDK release compared to the release 8.1.3.

2.1. Fixes

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

3. Highlighted points

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

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

The restriction forbids communicating:

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

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

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

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

3.2. Contactless

3.2.1. Best practices for Contactless

3.2.1.1. Field on/off

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

If the contactless field is opened all the time:

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

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

3.2.1.2. Implicit selection

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

Implicit selection is not recommended and must be managed with caution.

Due to physical reason, implicit selection can lead to unexpected issues, for example, at the beginning of the swipe, the card would possibly enter the antenna field and contactless chip would be handled instead of magnetic track.

3.2.1.3. Use of PSTN modem with contactless activated

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

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

Currently, the issue exists only on the iCT250, which is the only Ingenico integrated terminal with contactless and PSTN modem.

(For instance, on EFT930BCC or EFT930GCC with modem, it works, because the modem is on the cradle, and the distance between the modem and the contactless field is sufficient).

3.2.2. Add-on Contactless

The add-on contactless doesn't exist anymore.

All components provided previously in this package are now by default since Telium SDK 8.1. It concerns

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

3.2.3. Card supported

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

Recommendation:

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

3.3. Family name

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

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

3.4. Pinpad system

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

3.5. DIR system version downgrade

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

3.6. Reserved numbers

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

3.7. EFT930 embedding 8MB of flash

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

For SDK 8.0.x, SDK 8.1 and SDK 8.1.1:

It is forbidden to load a catalogue designed for 8MB terminals on a terminal loaded with a generic catalogue (that is to say non-8 MB). You must contact the Ingenico support for the rules of this migration.

4. Issues solved in this release by component

See table in chapter o “

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

4.1. Telium System Thunder

Following point is delivered in this release.

| Internal tracker | SUPTL | Description |
|------------------|-------|--|
| 11635 | | When card is removed by user when it is powered, terminals can not switch to low power any more. This issue is now fixed |
| 11670 | | Prevent idle mode if Thunder CAM/SAM are powered (ICT2xx with 2 CAM, IST1xx, IUC1xx) |

4.2. Telium Manager

Following points is delivered in this release.

| Internal tracker | SUPTL | Description |
|------------------|-------|-------------|
|------------------|-------|-------------|

Release Note

| | | |
|-------|--|--|
| 11610 | | After wake up at idle state, if a card is present into reader then a transaction is started. |
|-------|--|--|

4.3. Security

4.3.1. DLL Security

No evolution.

4.3.2. Security Extend library

No evolution.

4.3.3. DLL E2EE

4.3.3.1. Overview

Binary is included in the Telium Manager catalogue.

It is provided for the following terminals:

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

4.3.3.2. Evolutions

No evolution.

4.3.4. Schemes

Last schemes certified are included in this SDK.

4.4. Communication

4.4.1. Link Layer

Following points are delivered in this release.

| Internal tracker | SUPTL | Description |
|------------------|-------|--|
| 10991 | | Add support of the DCD signal on USB serial ports (COM5, COM6 and COMU). |

Release Note

| | | |
|-------|------|--|
| 11032 | 3164 | A new parameter has been added to LinkLayer configuration: LL_TCPIP_T_SSL_TCP_CONNECT_TIMEOUT. This new parameter adds a specific timeout for the tcp connection embedded in a SSL connection. When this parameter is set (value different of 0) the LinkLayer will manage two timeout for a SSL connection: - one for only the TCP (LL_TCPIP_T_SSL_TCP_CONNECT_TIMEOUT) - one for TCP+SLL (LL_TCPIP_T_CONNECT_TIMEOUT) (like in previous version of LinkLayer). |
| 11146 | | This evolution enables TCP communications on iSMP using the LinkLayer. It uses the TCP_ISMP DLL which performs TCP IP communications on iMP3 without SSL. To use this one must set the physical layer to LL_PHYSICAL_V_TCP_AIAP during the LinkLayer configuration. |

4.4.2. Pack IP

No evolution.

4.4.3. FTP

No evolution.

4.4.4. SNMP

No evolution.

4.4.5. SSL

No evolution.

4.5. Display

4.5.1. DLL Image

No evolution.

4.5.2. Fonts

No evolution.

4.5.3. CGUI / CGUI tools

No evolution.

4.5.4. Plug-in Signature Capture

No evolution.

4.5.5. Plug-in Multimedia

No evolution.

4.6. Contactless

4.6.1. DLL TPASS

No evolution.

4.7. Applications

4.7.1. Incendo Online browser

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

4.7.1.1. Memory

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

4.7.1.2. Migration to this version

4.7.1.2.1. Restriction

If you migrate from a previous version to this one, the Incendo parameters will be lost.

4.7.1.2.2. Migration from a version before 3.0.4

Incendo Online smart browser was previously delivered as an independent package (up to version 3.0.3). It was designed to be signed with region security keys.

The version in this Telium SDK is signed with manufacturer key. So the application type is different between these two versions. If you have already deployed the browser, to migrate to the version included in a Telium SDK, you must manage the change of application type. For further details, please contact the Incendo support.

4.7.1.3. Compatibility

4.7.1.3.1. Terminals managed

Minimal hardware prerequisites are:

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

Incendo Online is compatible with the following terminals:

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

You must not use it on other terminals.

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

4.7.1.3.2. EMV packages compatibility

Incendo smart Browser is compatible with the following EMV packages:

Release Note

- Version 18
- Version 19

4.7.1.4. Evolutions

No evolution.

4.7.2. Image Loader

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

4.7.2.1. Evolutions

No evolution.

4.8. AVL

AVL stands for Added Value Libraries.

No evolution.

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

A binary concatenates the Telium system (including contactless driver) and the Telium manager for an iPP3 used in pinpad emulation for local download mode. It is delivered in the directory: Component\iPP3_EmulationPinpad\Package

Please see description in the CHM help file of the Telium SDK (SDK General Documentation > HOW TO DEVELOP user guide > How to use iPP3xx as a smart card reader).

4.9.1. Evolution

No evolution.

4.10. SDK features

No evolution.

5. Add-ons to Telium SDK

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

| Add on | Recommended version to use with this SDK | Comment |
|---------------------------------------|--|--|
| Easy Path To EMV | 20.1 | |
| Add On Contactless (New architecture) | Removed | Components previously in this add-on are in the Telium SDK since 8.1 |

Release Note

| | | |
|--------------------------|----------------|--|
| Easy Path To Contactless | 3. 07 | |
| Add On PCL for iPA280 | 1.17 | |
| Add On PCL for iWP | 1.15 | |
| Add On PCL for iMP3xx | 1.01 | |
| Add On Morpho | 1.06 | |
| Add On Telicapt | 2.15 | |
| Add On UCM | 2.06.01 | |
| Add On SPDH | 1.01 | |
| Add On APACS 40 Generic | 1.08 | |
| Add On ISO8583 Generic | 3.02 | |

SDK8.1.3 Release note

1. Standard development platforms

This SDK release is compatible with the following products.

1.1. List of terminals

1.1.1. Wireless

Telium 2:

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

Telium 1:

- EFT930 colour,
- EFT930 black and white.

1.1.2. Countertop terminals

Telium 2:

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

Telium 1:

- EFT SMART Plus,
- EFT SMART,
- EFT30

1.1.3. Signature capture terminals (Retail pinpads)

- iSC250,
- iSC350

1.1.4. Pinpads

Telium 2:

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

Telium 1:

- ML30, ML30 color, ML30 color contactless.

'Booster only' pinpads:

Release Note

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

1.1.5. Unattended

See UCM add-on package for the exhaustive list.

1.1.6. Satellite terminals

Telium 2:

- iST150.

Telium 1:

- TeliumPass Plus.

1.1.7. Mobile payment

Telium 2:

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

1.1.8. French health care

- TWINs.

1.2. Terminals certified PCI V3

The following terminals are certified for PCI V3:

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

1.3. Public Key Infrastructure

This release supports PKI V3.

1.4. Location for system components

System for iMP3xx is located in Component\OS_iMP350

System for iWL280 is located in Component\OS_iWL280

2. What's new?

Issues solved are detailed in paragraph 4.

Here are main evolutions coming with this Telium SDK release compared to the release 8.1.2.

2.1. Fixes

- Ethernet improvement for PEM base
- For French healthcare: USB serial number returned by Bluetooth base

3. Highlighted points

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

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

The restriction forbids communicating:

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

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

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

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

3.2. Contactless

3.2.1. Best practices for Contactless

3.2.1.1. Field on/off

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

If the contactless field is opened all the time:

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

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

3.2.1.2. Implicit selection

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

Implicit selection is not recommended and must be managed with caution.

Due to physical reason, implicit selection can lead to unexpected issues, for example, at the beginning of the swipe, the card would possibly enter the antenna field and contactless chip would be handled instead of magnetic track.

3.2.1.3. Use of PSTN modem with contactless activated

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

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

Currently, the issue exists only on the iCT250, which is the only Ingenico integrated terminal with contactless and PSTN modem.

(For instance, on EFT930BCC or EFT930GCC with modem, it works, because the modem is on the cradle, and the distance between the modem and the contactless field is sufficient).

3.2.2. Add-on Contactless

The add-on contactless doesn't exist anymore.

All components provided previously in this package are now by default since Telium SDK 8.1. It concerns

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

3.2.3. Card supported

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

Recommendation:

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

3.3. Family name

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

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

3.4. Pinpad system

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

3.5. DIR system version downgrade

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

3.6. Reserved numbers

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

3.7. EFT930 embedding 8MB of flash

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

For SDK 8.0.x, SDK 8.1 and SDK 8.1.1:

It is forbidden to load a catalogue designed for 8MB terminals on a terminal loaded with a generic catalogue (that is to say non-8 MB). You must contact the Ingenico support for the rules of this migration.

4. Issues solved in this release by component

See table in chapter 0 “

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

4.1. Telium System

Main points delivered in this release are listed below.

4.1.1. System Thunder

4.1.1.1. iCT2xx

| Internal tracker | SUPTel | Description |
|------------------|--------|--|
| 10338 | | <ul style="list-style-type: none"> Fixes terminal reset when SWP:ERC[FFFFFFF7] diagnostic found in BOOSTER.DIA file Improves swipe |
| 10428 / 10465 | 2769 | Specific for RATP project |

4.1.1.2. iWL220/250

Release Note

| Internal tracker | SUPTTEL | Description |
|------------------|---------------|---|
| | | Ethernet improvement on PEM base |
| 10402 | | SET/CLEAR DTR managed, Modem ISDN TA is now supported |
| 10754 | 3064 and 2943 | Improvement in checking base status |
| 6833 | | French healthcare: When SYS_FIOCTL_USB_DEVICE_SERIAL_NUMBER_ENABLE is used in iWL terminal, USB serial number is also returned by Bluetooth base |
| 10567 | | No Ethernet base status through USB on iWL |

4.1.1.3. iWL280

| Internal tracker | SUPTTEL | Description |
|------------------|---------|---|
| 10877 | 3095 | Low power procedure fixed to avoid reset when fopen ("CAMo", "rw") is called just after shutdown(); |
| 10970 | 3222 | Improvement of touch-screen after using contactless |

4.2. Telium Manager

4.2.1. Evolutions

Following points are delivered in this release.

| Internal tracker | SUPTTEL | Description |
|------------------|---------|---------------------------|
| 10429 | | Specific for RATP project |

4.3. Security

4.3.1. DLL Security

No evolution.

4.3.2. Security Extend library

No evolution.

4.3.3. DLL E2EE

4.3.3.1. Overview

Binary is included in the Telium Manager catalogue.

It is provided for the following terminals:

- iWL220, iWL250, iWL280,
- iSC250, iSC350,
- iMP350,
- iPP320, iPP350,

Release Note

- iCT220, iCT250,
- SPM.

4.3.3.2. Evolutions

No evolution.

4.3.4. Schemes

Last schemes certified are included in this SDK.

4.4. Communication

4.4.1. Link Layer

No evolution.

4.4.2. Pack IP

No evolution.

4.4.3. FTP

No evolution.

4.4.4. SNMP

No evolution.

4.4.5. SSL

No evolution.

4.5. Display

4.5.1. DLL Image

No evolution.

4.5.2. Fonts

No evolution.

4.5.3. CGUI / CGUI tools

No evolution.

4.5.4. Plug-in Signature Capture

No evolution.

4.5.5. Plug-in Multimedia

No evolution.

4.6. Contactless

4.6.1. DLL TPASS

No evolution.

4.7. Applications

4.7.1. Incendo Online browser

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

4.7.1.1. Memory

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

4.7.1.2. Migration to this version

4.7.1.2.1. Restriction

If you migrate a previous version to this one, the Incendo parameters will be lost.

4.7.1.2.2. Migration from a version before 3.0.4

Incendo Online smart browser was previously delivered as an independent package (up to version 3.0.3). It was designed to be signed with region security keys.

The version in this Telium SDK is signed with manufacturer key. So the application type is different between these two versions. If you have already deployed the browser, to migrate to the version included in a Telium SDK, you must manage the change of application type. For further details, please contact the Incendo support.

4.7.1.3. Compatibility

4.7.1.3.1. Terminals managed

Minimal hardware prerequisites are:

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

Incendo Online is compatible with the following terminals:

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

You must not use it on other terminals.

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

Release Note

4.7.1.3.2. EMV packages compatibility

Incendo smart Browser is compatible with the following EMV packages:

- Version 18
- Version 19

4.7.1.4. Evolutions

No evolution.

4.7.2. Image Loader

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

4.7.2.1. Evolutions

No evolution.

4.8. AVL

AVL stands for Added Value Libraries.

No evolution.

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

A binary concatenates the Telium system (including contactless driver) and the Telium manager for an iPP3 used in pinpad emulation for local download mode. It is delivered in the directory: Component\iPP3_EmulationPinpad\Package

Please see description in the CHM help file of the Telium SDK (SDK General Documentation > HOW TO DEVELOP user guide > How to use iPP3xx as a smart card reader).

4.9.1. Evolution

| Internal tracker | SUPTEL | Description |
|------------------|--------|--|
| 11006 | | PNG files taken account in the iPP3 configuration file |

4.10. SDK features

No evolution.

5. Add-ons to Telium SDK

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

| Add on | Recommended version to use with this SDK | Comment |
|--------|--|---------|
|--------|--|---------|

Release Note

| | | |
|---------------------------------------|---------|--|
| Easy Path To EMV | 20.1 | |
| Add On Contactless (New architecture) | Removed | Components previously in this add-on are in the Telium SDK since 8.1 |
| Easy Path To Contactless | 3. 07 | |
| Add On PCL for iPA280 | 1.17 | |
| Add On PCL for iWP | 1.15 | |
| Add On PCL for iMP3xx | 1.01 | |
| Add On Morpho | 1.06 | |
| Add On Telicapt | 2.15 | |
| Add On UCM | 2.06.01 | |
| Add On SPDH | 1.01 | |
| Add On APACS 40 Generic | 1.08 | |
| Add On ISO8583 Generic | 3.02 | |

SDK8.1.2 Release note

1. Standard development platforms

This SDK release is compatible with the following products.

1.1. List of terminals

1.1.1. Wireless

Telium 2:

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

Telium 1:

- EFT930 colour,
- EFT930 black and white.

1.1.2. Countertop terminals

Telium 2:

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

Telium 1:

- EFT SMART Plus,
- EFT SMART,
- EFT30

1.1.3. Signature capture terminals (Retail pinpads)

- iSC250,
- iSC350

1.1.4. Pinpads

Telium 2:

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

Telium 1:

- ML30, ML30 color, ML30 color contactless.

'Booster only' pinpads:

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

1.1.5. Unattended

See UCM add-on package for the exhaustive list.

1.1.6. Satellite terminals

Telium 2:

- iST150.

Telium 1:

- TeliumPass Plus.

1.1.7. Mobile payment

Telium 2:

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

1.1.8. French health care

- TWINS.

1.2. Terminals certified PCI V3

The following terminals are certified for PCI V3:

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

1.3. Public Key Infrastructure

This release supports PKI V3.

1.4. Location for system components

System for iMP3xx is located in Component\OS_iMP3xx

System for iWL280 is located in Component\OS_iWL280

2. What's new?

Issues solved are detailed in paragraph 4.

Here are main evolutions coming with this Telium SDK release compared to the release 8.1.1.

2.1. Terminals

- This release is compatible with IWL280. It was not compatible with the SDK 8.1.1.

2.2. Fixes

- API returning VID is fixed
- G_List_Entry() now uses Telium Manager fonts (_SMALL_, _MEDIUM_,...)
- DLL CB2A: new rule for IPDU LONGUE
- MAC address returned was wrong on iWL 250 Bluetooth associated with an Ethernet base

3. Highlighted points

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

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

The restriction forbids communicating:

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

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

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

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

3.2. Contactless

3.2.1. Best practices for Contactless

3.2.1.1. Field on/off

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

If the contactless field is opened all the time:

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

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

3.2.1.2. Implicit selection

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

Implicit selection is not recommended and must be managed with caution.

Due to physical reason, implicit selection can lead to unexpected issues, for example, at the beginning of the swipe, the card would possibly enter the antenna field and contactless chip would be handled instead of magnetic track.

3.2.1.3. Use of PSTN modem with contactless activated

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

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

Currently, the issue exists only on the iCT250, which is the only Ingenico integrated terminal with contactless and PSTN modem.

(For instance, on EFT930BCC or EFT930GCC with modem, it works, because the modem is on the cradle, and the distance between the modem and the contactless field is sufficient).

3.2.2. Add-on Contactless

The add-on contactless doesn't exist anymore.

All components provided previously in this package are now by default since Telium SDK 8.1. It concerns

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

3.2.3. Card supported

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

Recommendation:

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

3.3. Family name

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

- NAME is the radical of application (maximum 6 ASCII characters);
- VV is the version (2 number);
- AA is the amendment (2 number)

3.4. Pinpad system

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

3.5. DIR system version downgrade

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

3.6. Reserved numbers

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

3.7. EFT930 embedding 8MB of flash

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

For SDK 8.0.x, SDK 8.1 and SDK 8.1.1:

It is forbidden to load a catalogue designed for 8MB terminals on a terminal loaded with a generic catalogue (that is to say non-8 MB). You must contact the Ingenico support for the rules of this migration.

4. Issues solved in this release by component

See table in chapter o “

” 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 : <ul style="list-style-type: none"> ▪ 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 | SUPTTEL | Description |
|------------------|--------------|--|
| 6934 | SUPTTEL-3024 | Improvement of the delay between amount entry and message requesting card when using "card entry" customization. |
| 10527 | SUPTTEL-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 | SUPTTEL-3083 | IsRadio3G() function added to know if a terminal is 3G compatible |
| 10639 | | DLL CB2A: new rule for IPDU LONGUE |
| 10635 | SUPTTEL-2977 | G_List_Entry() now uses Telium Manager fonts (_SMALL_, _MEDIUM_,...) |
| 9440 | SUPTTEL-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 | SUPTTEL | Description |
|------------------|--------------|--|
| 10802 | SUPTTEL-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 | SUPTTEL | Description |
|------------------|--------------|--|
| 10512 | SUPTTEL-2900 | LL_Network_GetStatus() returned a wrong value when an Ethernet cable was connected |
| 10135 | SUPTTEL-2639 | Synchro frames were sent after a timeout on an SSL session |
| 10641 | SUPTTEL-3008 | Mistake fixed in the sample "Ethernet configuration with SSL" of the CHM help file |
| 10357 | SUPTTEL-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 | SUPTTEL | Description |
|------------------|---------|--|
| 8338 / 9749 | | Fix for compatibility between DLL Tpass and previous version of Telium Manager |

4.7. Applications

4.7.1. Incendo Online browser

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

4.7.1.1. Memory

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

4.7.1.2. Migration to this version

4.7.1.2.1. Restriction

If you migrate a previous version to this one, the Incendo parameters will be lost.

4.7.1.2.2. Migration from a version before 3.0.4

Incendo Online smart browser was previously delivered as an independent package (up to version 3.0.3). It was designed to be signed with region security keys.

The version in this Telium SDK is signed with manufacturer key. So the application type is different between these two versions. If you have already deployed the browser, to migrate to the version included in a Telium SDK, you must manage the change of application type. For further details, please contact the Incendo support.

4.7.1.3. Compatibility

4.7.1.3.1. Terminals managed

Minimal hardware prerequisites are:

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

Incendo Online is compatible with the following terminals:

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

You must not use it on other terminals.

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

4.7.1.3.2. EMV packages compatibility

Incendo smart Browser is compatible with the following EMV packages:

- Version 18
- Version 19

4.7.1.4. Evolutions

No evolution.

4.7.2. Image Loader

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

4.7.2.1. Evolutions

No evolution.

4.8. AVL

AVL stands for Added Value Libraries.

No evolution.

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

A binary concatenates the Telium system (including contactless driver) and the Telium manager for an iPP3 used in pinpad emulation for local download mode. It is delivered in the directory: Component\iPP3_EmulationPinpad\Package

Please see description in the CHM help file of the Telium SDK (SDK General Documentation > HOW TO DEVELOP user guide > How to use iPP3xx as a smart card reader).

4.9.1. DLL PPLoad evolution

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

4.10. SDK features

No evolution.

5. Change of API

5.1. Fct_Cless()

There is a change of API between this SDK and the previous one.

Due to parameters not used in the function:

- Before SDK 8.1.2 prototype was typedef int (*Fct_Cless)(int x,int y);
- Since SDK 8.1.2 prototype is typedef int (*Fct_Cless)(void);

This API exists since SDK 8.0.

6. Add-ons to Telium SDK

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

| Add on | Recommended version to use with this SDK | Comment |
|---------------------------------------|--|--|
| Easy Path To EMV | 20.1 | |
| Add On Contactless (New architecture) | Removed | Components previously in this add-on are in the Telium SDK since 8.1 |
| Easy Path To Contactless | 3. 07 | |
| Add On PCL for iPA280 | 1.17 | |
| Add On PCL for iWP | 1.15 | |
| Add On PCL for iMP3xx | 1.01 | |
| Add On Morpho | 1.06 | |
| Add On Telicapt | 2.15 | |
| Add On UCM | 2.06.01 | |
| Add On SPDH | 1.01 | |
| Add On APACS 40 Generic | 1.08 | |
| Add On ISO8583 Generic | 3.02 | |

SDK8.1.1 Release note

1. Standard development platforms

Terminals based on Thunder 3 (iSC250, iSC350 and iWL280) are not supported by this SDK.
The Telium SDK 8.1.1 will support them.

This SDK release is compatible with the following products.

1.1. List of terminals

1.1.1. Wireless

Telium 2:

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

IWL280 is not supported by this SDK.

Telium 1:

- EFT930 color,
- EFT930 black and white.

1.1.2. Countertop terminals

Telium 2:

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

Telium 1:

- EFT SMART Plus,
- EFT SMART,
- EFT30

1.1.3. Signature capture terminals (Retail pinpads)

They are not supported by this release.

1.1.4. Pinpads

Telium 2:

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

Telium 1:

- ML30, ML30 color, ML30 color contactless.

'Booster only' pinpads:

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

1.1.5. Unattended

See UCM add-on package for the exhaustive list.

1.1.6. Satellite terminals

Telium 2:

- iST150.

Telium 1:

- TeliumPass Plus.

1.1.7. Mobile payment

Telium 2:

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

1.1.8. French health care

- TWINS.

1.2. Terminals certified PCI V3

The following terminals are certified for PCI V3:

| | |
|---------------|-----------------|
| iWL220 | Since SDK 8.0.1 |
| iWL250 | Since SDK 8.0.1 |
| iWL280 | Since SDK 8.0.1 |
| iSC250 | Since SDK 8.0.1 |
| iPP320 | New in SDK 8.1 |
| iPP350 | New in SDK 8.1 |

1.3. Public Key Infrastructure

This release supports PKI V3.

2. What's new?

Issues solved are detailed in paragraph 4.

Here are main evolutions coming with this Telium SDK release compared to the release 8.1.

2.1. New terminals

Following terminals are now supported in the SDK:

- ✓ iWL250 3G (for development only),
- ✓ iWL250 2SCR, 2SCR stands for 2 Smart Card Reader,
- ✓ iPP3xx are certified PCI PTS V3.

2.2. New features

- ✓ New version of DLL E2EE PCI V3 (list of terminal supported is in the paragraph 4.3.3: DLL E2EE),
- ✓ Local download mode is now available for iPP3 in pinpad emulation,
- ✓ Maximum number of AID managed by one application is increased to 100.

2.3. General points

- ✓ Integration of driver Contactless in the Telium SDK (Add-on contactless will be no more provided, see below for details),
- ✓ Many improvements of documentation.

3. Highlighted points

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

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

The restriction forbids communicating:

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

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

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

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

3.2. Best practices for Contactless

3.2.1. Field on/off

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

If the contactless field is opened all the time:

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

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

3.2.2. Implicit selection

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

Implicit selection is not recommended and must be managed with caution.

Due to physical reason, implicit selection can lead to unexpected issues, for example, at the beginning of the swipe, the card would possibly enter the antenna field and contactless chip would be handled instead of magnetic track.

3.2.3. Use of PSTN modem with contactless activated

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

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

Currently, the issue exists only on the iCT250, which is the only Ingenico integrated terminal with contactless and PSTN modem.

(For instance, on EFT930BCC or EFT930GCC with modem, it works, because the modem is on the cradle, and the distance between the modem and the contactless field is sufficient).

3.3. Add-on Contactless

The add-on contactless doesn't exist anymore.

All components provided previously in this package are now by default in the Telium SDK. It concerns

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

3.4. Pinpad system

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

3.5. DIR system version downgrade

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

3.6. Reserved numbers

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

Tag numbers used by applications must be taken in the range 9FA000-9FAFFF.

3.7. EFT930 embedding 8Mo of flash

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

4. Issues solved in this release by component

See table in chapter 0 “

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

4.1. Telium System

Following main points are delivered in this release.

4.1.1. System Thunder

| Internal tracker | SUPTEL | Description |
|------------------|-------------------------|--|
| 10072 | SUPTEL-2128 | On IWL2XX, SWIPE detection improved when GPRS emitter operates. |
| 10091 | | On IWL2XX, SWIPE detection improved when noisy device operates (PRINTER and GPRS). |
| 9696 | SUPTEL-2362 | It is now possible to display 8 Cyrillic characters. |
| 10097 | | Change of coupler frequency from 3,57MhZ to 4,76MHz is now possible |
| 10104 | SUPTEL-2646 | Update help concerning __inet_addr |
| 10154 | SUPTEL-2615 | Adding synchronous shutdown function |
| 10157 | SUPTEL-2690 | COM_SEND_EMPTY empty event was not fired on COMo |
| 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 | SUPTTEL-2775 | It fixes iWL250B resets when SWP:ERC[FFFFFFFF7] It improves swipe detection |
| 10339 | SUPTTEL-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 | SUPTTEL-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 | SUPTTEL-2520 | Empty lines in MANAGER.PAR file are now allowed |
| 10245 | | Conflict between PrintBMPxy() and pprintf8859() solved |
| 10249 | | Ignored non significant o 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 | SUPTTEL-2430 | Implementation of the mechanism allowing to update the link APPLI<---->"mode". |
| 9814 | SUPTTEL-2397 | Improvement of function _pprintf8859XY() |
| 9822 | SUPTTEL-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 | SUPTTEL-2118 | Improvement fot SUPTTEL-2118 (Possibility to customize footer on non-color device with SetFooterBmp()) |
| 9381 | SUPTTEL-2166 | Improvement fot SUPTTEL-2166 (Manager display message "WELCOME" on PP3oS when it waits for card after amount entry) |
| 9440 | SUPTTEL-2253 | Improvement for SUPTTEL-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 | SUPTTEL-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 | SUPTTEL-2114 | Add SSL_GetAlertError() function to get SSL alert error. |
| 9962 | SUPTTEL-2513 | Add compatibility with certificate without carriage return at the end of the file. |
| 10237 | SUPTTEL-2684 | Add compatibility with X509 certificate using UTF8Strings elements in distinguish name. |

4.5. Display

4.5.1. DLL Image

No evolution.

4.5.2. Fonts

No evolution.

4.5.3. CGUI / CGUI tools

No evolution.

4.5.4. Plug-in Signature Capture

No evolution.

4.5.5. Plug-in Multimedia

No evolution.

4.6. Applications

4.6.1. Incendo Online browser

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

Following point is delivered in this release.

| | | |
|-------|---------|---|
| 10377 | OE-1576 | Support of several gateways IP addresses and port numbers |
|-------|---------|---|

Warning: Migration from a previous version to this one result in parameters lost.

4.6.1.1. Memory

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

4.6.1.2. Migration to this version

Incendo Online smart browser was previously delivered as an independent package. It was designed to be signed with region security keys.

The version in this Telium SDK is signed with manufacturer key. So the application type is different between these two versions. If you have already deployed the browser, to migrate to the version included in this SDK, you must manage the change of application type. For further details, please contact the Incendo support.

4.6.1.3. Compatibility

4.6.1.3.1. Terminals managed

Minimal hardware prerequisites are:

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

Incendo Online is compatible with the following terminals:

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

You must not use it on other terminals.

Support of iSC250 and iSC350 will be available in the future.

4.6.1.3.2. EMV packages compatibility

Incendo smart Browser is compatible with the following EMV packages:

- Version 18
- Version 19

4.6.1.4. Evolutions

No evolution.

4.6.2. Image Loader

No evolution.

4.7. AVL

No evolution.

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

This is a new component.

This binary concatenates the Telium system (including contactless driver) and the Telium manager for an iPP3 used in pinpad emulation for local download mode. Please see description in the CHM help file of the Telium SDK (SDK General Documentation > HOW TO DEVELOP user guide > How to use iPP320 as a smart card reader).

4.9. SDK features

Following points are delivered in this release.

| | |
|--|--|
| | Update of the "How To use iPP3 as a Smart Card Reader" documents |
|--|--|

5. Add-ons to Telium SDK

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

| Add on | Recommended version to use with this SDK | Comment |
|---------------------------------------|--|--|
| Easy Path To EMV | 20.1 | New version |
| Add On Contactless (New architecture) | Removed | Components previously in this add-on are now in the Telium SDK |
| Easy Path To Contactless | 3. 07 | New version |
| Add On PCL for iPA280 | 1.15 | |
| Add On PCL for iWP | 1.15 | |
| Add On PCL for iMP3xx | 1.00 | |
| Add On Morpho | 1.06 | |
| Add On Telicapt | 2.14 | |
| Add On UCM | 2.06.01 | New version |
| Add On SPDH | 1.01 | |
| Add On APACS 40 Generic | 1.08 | |
| Add On ISO8583 Generic | 3.02 | |

SDK8.1 Release note

1. Standard development platforms

Terminals based on Thunder 3 (iSC250, iSC350 and iWL280) are not supported by this SDK.
The Telium SDK 8.1.1 will support them.

This SDK release is compatible with the following products.

1.1. List of terminals

1.1.1. Wireless

Telium 2:

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

IWL280 is not supported by this SDK.

Telium 1:

- EFT930 color,
- EFT930 black and white.

1.1.2. Countertop terminals

Telium 2:

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

Telium 1:

- EFT SMART Plus,
- EFT SMART,
- EFT30

1.1.3. Signature capture terminals (Retail pinpads)

They are not supported by this release.

1.1.4. Pinpads

Telium 2:

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

Telium 1:

- ML30, ML30 color, ML30 color contactless.

'Booster only' pinpads:

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

1.1.5. Unattended

See UCM add-on package for the exhaustive list.

1.1.6. Satellite terminals

Telium 2:

- iST150.

Telium 1:

- TeliumPass Plus.

1.1.7. Mobile payment

Telium 2:

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

1.1.8. French health care

- TWINS.

1.2. Terminals certified PCI V3

The following terminals are certified for PCI V3:

| | |
|---------------|-----------------|
| iWL220 | Since SDK 8.0.1 |
| iWL250 | Since SDK 8.0.1 |
| iWL280 | Since SDK 8.0.1 |
| iSC250 | Since SDK 8.0.1 |
| iPP320 | New in SDK 8.1 |
| iPP350 | New in SDK 8.1 |

1.3. Public Key Infrastructure

This release supports PKI V3.

2. What's new?

Issues solved are detailed in paragraph 4.

Here are main evolutions coming with this Telium SDK release compared to the release 8.1.

2.1. New terminals

Following terminals are now supported in the SDK:

- ✓ iWL250 3G (for development only),
- ✓ iWL250 2SCR, 2SCR stands for 2 Smart Card Reader,
- ✓ iPP3xx are certified PCI PTS V3.

2.2. New features

- ✓ New version of DLL E2EE PCI V3 (list of terminal supported is in the paragraph 4.3.3: DLL E2EE),
- ✓ Local download mode is now available for iPP3 in pinpad emulation,
- ✓ Maximum number of AID managed by one application is increased to 100.

2.3. General points

- ✓ Integration of driver Contactless in the Telium SDK (Add-on contactless will be no more provided, see below for details),
- ✓ Many improvements of documentation.

3. Highlighted points

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

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

The restriction forbids communicating:

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

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

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

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

3.2. Best practices for Contactless

3.2.1. Field on/off

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

If the contactless field is opened all the time:

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

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

3.2.2. Implicit selection

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

Implicit selection is not recommended and must be managed with caution.

Due to physical reason, implicit selection can lead to unexpected issues, for example, at the beginning of the swipe, the card would possibly enter the antenna field and contactless chip would be handled instead of magnetic track.

3.2.3. Use of PSTN modem with contactless activated

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

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

Currently, the issue exists only on the iCT250, which is the only Ingenico integrated terminal with contactless and PSTN modem.

(For instance, on EFT930BCC or EFT930GCC with modem, it works, because the modem is on the cradle, and the distance between the modem and the contactless field is sufficient).

3.3. Add-on Contactless

The add-on contactless doesn't exist anymore.

All components provided previously in this package are now by default in the Telium SDK. It concerns

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

3.4. Pinpad system

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

3.5. DIR system version downgrade

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

3.6. Reserved numbers

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

Tag numbers used by applications must be taken in the range 9FA000-9FAFFF.

3.7. EFT930 embedding 8Mo of flash

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

4. Issues solved in this release by component

See table in chapter 0 “

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

4.1. Telium System

Following main points are delivered in this release.

4.1.1. System Thunder

| Internal tracker | SUPTEL | Description |
|------------------|-------------------------|--|
| 10072 | SUPTEL-2128 | On IWL2XX, SWIPE detection improved when GPRS emitter operates. |
| 10091 | | On IWL2XX, SWIPE detection improved when noisy device operates (PRINTER and GPRS). |
| 9696 | SUPTEL-2362 | It is now possible to display 8 Cyrillic characters. |
| 10097 | | Change of coupler frequency from 3,57MhZ to 4,76MHz is now possible |
| 10104 | SUPTEL-2646 | Update help concerning __inet_addr |
| 10154 | SUPTEL-2615 | Adding synchronous shutdown function |
| 10157 | SUPTEL-2690 | COM_SEND_EMPTY empty event was not fired on COMo |
| 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 | SUPTTEL-2775 | It fixes iWL250B resets when SWP:ERC[FFFFFFFF7] It improves swipe detection |
| 10339 | SUPTTEL-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 | SUPTTEL-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 | SUPTTEL-2520 | Empty lines in MANAGER.PAR file are now allowed |
| 10245 | | Conflict between PrintBMPxy() and pprintf8859() solved |
| 10249 | | Ignored non significant o 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 | SUPTTEL-2430 | Implementation of the mechanism allowing to update the link APPLI<---->"mode". |
| 9814 | SUPTTEL-2397 | Improvement of function _pprintf8859XY() |
| 9822 | SUPTTEL-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 | SUPTTEL-2118 | Improvement fot SUPTTEL-2118 (Possibility to customize footer on non-color device with SetFooterBmp()) |
| 9381 | SUPTTEL-2166 | Improvement fot SUPTTEL-2166 (Manager display message "WELCOME" on PP3oS when it waits for card after amount entry) |
| 9440 | SUPTTEL-2253 | Improvement for SUPTTEL-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 | SUPTTEL-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 | SUPTTEL-2114 | Add SSL_GetAlertError() function to get SSL alert error. |
| 9962 | SUPTTEL-2513 | Add compatibility with certificate without carriage return at the end of the file. |
| 10237 | SUPTTEL-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 negotiated |
| 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 | <p>Pinpad auto-detection at start-up: complement for this issue.</p> <p>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:</p> <pre>020101=1; 020131=1; 020132=255;</pre> |

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 | SUPT-2562 | Update of buzzer section in "How To Develop on iPP3xx" |
| | | Update of the "How To " documents |
| 10036 | | Double definition of TAG_EMV_INT_TRANSACTION_TYPE removed. Define in EMV is renamed by TAG_INT_TRANSACTION_TYPE. Use Easy Path EMV 20.01 |

5. Add-ons to Telium SDK

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

| Add on | Recommended version to use with this SDK |
|---------------------------------|--|
| Easy Path To EMV | 20.1 (New version) |
| Add On Cless (New architecture) | 3.10 |
| Easy Path To CLESS | 3.06 |
| Add On PCL for iPA280 | 1.15 |
| Add On PCL for iWP | 1.15 |
| PCL for iMP3xx | Available beginning of June |
| Add On Morpho | 1.06 |
| Add On Telicapt | 2.14 |

| | |
|-------------------------|-------------|
| Add On UCM | 2.06 |
| Add On SPDH | 1.01 |
| Add On APACS 40 Generic | 1.08 |
| Add On ISO8583 Generic | 3.02 |

SDK8.0 Release note

Only iWL220 and iWL250 are supported for production purpose (without CGUI), other terminals are for development only.

1. Standard development platforms

1.1. Supported terminals for production

The following terminals are managed in this SDK for production:

- iWL220 and iWL250 GPRS;
- iWL220 and iWL250 Bluetooth.

You can deploy applications based on this SDK for these terminals only.

Nota: CGUI applications are not yet guaranteed.

1.2. Supported terminals for development only

The other terminals are provided for application development only. The qualification of this Telium SDK on these terminals is currently in progress:

- Telium1: EFT30, EFT SMART, TWIN, ML30, SMART2, EFT930 (wireless terminal), EFT930 BL2 (wireless terminal).
- Telium2: iCT220, iCT250, ,SPM (iPA280), iPP320, iPP350, iSC250, iSC350, iMP350, E532, iWL280 GPRS;
- Pinpad: P30, P30 Contactless, PP30S, PPC30, PPR30, iPP220, iPP250, iPP280, iPP320 used as a smart card reader (Pinpad emulation mode), iST150, TeliumPass Plus.

You are not allowed to deploy in the field, applications based on this SDK for these terminals.

You will be informed about the delivery of the “full terminals compatible” version of this SDK.

2. What's new?

Issues solved are detailed in paragraph 4.

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

2.1. New terminals

- ✓ IWL220 and iWL250 Bluetooth : they are provided for production;
- ✓ Smart bases BEM (Bluetooth Ethernet Modem) for iWL220 and iWL250 are now managed.

2.2. Features

- ✓ Energy save mode for ICT220 and iCT250.

2.3. Security

- ✓ This SDK is software PCI V3 ready;
- ✓ New TLV scheme pack version 2.04 is provided.

2.4. Applications

- ✓ The application Image Loader is now provided in the Telium SDK.

2.5. General points

- ✓ Many documentation improvements
- ✓ “Frequently Asked Questions” section in the CHM help file now informs you of important points to know about Telium SDK.

3. Highlighted points

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

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

The restriction forbids communicating:

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

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

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

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

An evolution of the certification of the device proposes an alternative solution, which consists in using the End-to-End Encryption DLL. The DLL allows two additional use-cases:

- Communication in clear text form of card data to the external world (including PDA) for cards whose BIN is within a range specified as a white list. The idea is to free the usage of private and loyalty cards
- Communication of encrypted cardholder data for banking cards.

The E2EE DLL usable for iPA280 is provided within SDK (versions 7.6 and above).

One must keep in mind that direct (i.e. using APDU commands) communication with the smart card from the PDA remains unauthorized. The only E2EE method covered by the certification is the one that has been certified and bespoke encryption solutions are not allowed.

3.2. Image Loader

Image Loader is a terminal application managing idle screen, dedicated to Telium colour terminals. Thanks to an easy handling menu, it manages fixed images display and slide shows (animations). BMP, JPG and PNG Images and animations can be loaded from USB key, SD card or via TMS.

The installation of this application is optional: you are asked at the end of Telium SDK installation if you want to install it.

All documentation is in the directory where Image Loader is installed.

Image Loader is compatible with the following terminals:

- EFT930 Color Contactless
- ML30 Color Contactless
- iCT250
- iWL250,
- iSC250,
- iSC350
- iPP350.

Image Loader is particularly suitable with images generated with Image Optimizer (PC editor).

3.3. Security components

3.3.1. Schemes Pack

The Schemes Pack version 2.04 is integrated in this version of Telium SDK. It is compatible with PCI V3 requirements.

3.3.2. Security Extend library

The Security Extend library (SEC_extend.lib) is an extension of the DLL security (high level functions).

In the CHM help file in the security DLL page, you can find the list of schemes functions managed by the Security Extend library.

If you need to use the schemes functions managed by the Security Extend library, you have to:

- Include the file SEC_extend.h in your source code (SEC_extend.h includes itself the file SEC_interface.h);
- Link with SEC_extend.lib (if you use Ingedev, this library is automatically used for the link).

The Security Extend library version will change independently of the Security DLL version. Its version is linked to the Schemes Pack version.

3.4. Libraries compatible with GCC4

From SDK 7.6, libraries are provided in the GNU4 format (compiled with GNU ARM 4.3.4). Main benefits to migrate to this compiler are:

- The use of a buffer overflow protection mechanism called canary;
- The best support for C++.

These libraries are provided in the directory SDK\lib_gnu_434.

On the Ingedev side, this feature is available since the version 7.6.0.6.

You can read more information about this subject in the IngeDev User Guide, in the chapter Telium Development > Stack Buffer Overflow.

3.5. Telium fonts

Fonts were previously named ISO1.xGN, ISO2.xGN.... To allow the downloading from the TMS, their names now follows the same rule than other files. They are named 844nnnAABB.xGN where 844nnn is the Ingenico software number, AA is the major version of the file and BB is the minor version).

The link between the names ISO and 844nnn is given in the file readme.txt in the directory (\$YourInstallPath)\component\Fonts.

This change is compatible with the existing applications: for example you can continue to use LoadFont(/SYSTEM/ISO1.SGN). You can also use: LoadFont(/SYSTEM/8442160101.SGN).

In the directory “Standard” (previously in directory “New”), are provided fonts managing fixed width (excepted font ISO6 which is not available for fixed width due to large characters included in this alphabet). They must be used for new development.

Fonts provided in the directory “Deprecated” (previously “Old”) embeds some characters which don’t respect the fixed width. They are kept for compatibility with some old applications. In existing applications, you can use the standard fonts if you don’t need the fixed width characters.

3.6. Best practices for Contactless

3.6.1. Field on/off

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

If the contactless field is opened all the time:

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

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

3.6.2. Implicit selection

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

Implicit selection is not recommended and must be managed with caution.

Due to physical reason, implicit selection can lead to unexpected issues, for example, at the beginning of the swipe, the card would possibly enter the antenna field and contactless chip would be handled instead of magnetic track.

3.6.3. Use of PSTN modem with contactless activated

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

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

Currently, the issue exists only on the iCT250, which is the only Ingenico integrated terminal with contactless and PSTN modem.

(For instance, on EFT930BCC or EFT930GCC with modem, it works, because the modem is on the cradle, and the distance between the modem and the contactless field is sufficient).

3.7. Pinpad system

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

3.8. DIR system version downgrade

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

3.9. Reserved numbers

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

3.10. EFT930 embedding 8Mo of flash

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

4. Issues solved in this release by component

4.1. Telium System (New version: 10.35)

Following main points are delivered in this release.

4.1.1. System Thunder

| | | |
|------|--------------|---|
| 9468 | SUPTTEL 2236 | IPP3xx was unable to detect Ethernet on a 10Mbit hub |
| 9002 | SUPTTEL-2038 | CHM improvement on RegisterPowerFailure() function |
| 9353 | SUPTTEL-2184 | Improvement for HID USB, when used in combination with the Link Layer. |
| 9367 | SUPTTEL-2333 | Now, backlight display / keyboard / pinpad is managed independently |
| 9845 | SUPTTEL-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 | SUPTTEL-2165 | Multimedia: allow secured application to disable certificate check (aka .MGN files) |
|------|--------------|---|

4.1.3. Remote debugger

| | | |
|------|--------------|--|
| 9155 | SUPTTEL-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 | SUPTTEL-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 | SUPTTEL-2006 | "How to configure hardware" documentation added |
| 9257 | SUPTTEL-2077 | Added IS_NAME_EXTENDED entry point managing 38 applications (IS_NAME manages 15 applications) |
| 9144 | SUPTTEL-2118 | Function SetFooterBmp() added to setup the bitmap displayed in the footer |
| 9381 | SUPTTEL-2166 | Now, Telium Manager displays message "WELCOME" on PP3oS when it waits for card after amount entry |
| 9539 | SUPTTEL-2290 | Pinpad auto-detection at start-up |
| 9911 | SUPTTEL-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 | SUPTTEL-2253 | <p>Added information to know if IP address has been obtained with manager Header.</p> <p>On Black and White terminals:</p> <ul style="list-style-type: none"> - 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 <p>On Colour terminals:</p> <ul style="list-style-type: none"> - Not connected = Gray bitmap representing “Ethernet” - Connected with no IP = Red bitmap representing “Ethernet” - Connected with IP = Green bitmap representing “Ethernet” |
| 9855 | SUPTTEL-2327 | When header is activated/deactivated from KEYBOARD_EVENT entry point, the screen is now instantly refreshed |
| 9674 | SUPTTEL-2377 | The maximum value of IAM task is now the maximum number of mailboxes allowed by the system |
| 9760 | SUPTTEL-2430 | French domain only: In protocol CONCERT, CUP_BPOP application managed |
| 9822 | SUPTTEL-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 | SUPTTEL-2290 | Added pin pad auto-detect via MANAGER.PAR |
| 9578 | | Add three new functions to manage display with CGUI CGUI_Display (); CGUI_DisplayMSG(); CGUI_DisplayMSGnum(); |
| 9902 | | It is now possible to enter an empty string with CGUI interface. |
| 9930 | | Added ITP for ISC250 and ISC350 |

4.3. DLL Hardware (Version: 02.50)

Evolutions are reported with the Telium Manager evolutions in the paragraph 4.1.

4.4. Security

4.4.1. DLL Security (Version: 03.20)

Following points are delivered in this release.

| | | |
|------|--|--|
| 9832 | | Update to be compliant with Scheme Pack 2.04 |
| 9842 | | Update to be compliant with Scheme Pack 2.04 |
| 9608 | | TlvFirstKey managed in mock-up |

4.4.2. Security Extend library (Version: 02.04)

This is a new component.

4.4.3. DLL E2EE (Version: 01.01)

No evolution.

4.4.4. TLV Schemes (Version: 02.04)

This is a new version of TLV schemes.

4.4.5. Non-TLV Schemes (Version: 03.06)

No evolution.

4.5. Communication

4.5.1. Link Layer (Version: 03.20)

Following points are delivered in this release.

| | | |
|------|--------------|--|
| 9485 | SUPTTEL-1951 | Improvement of 3ooms in certain conditions when testing the availability of the driver (both MODEM and MODEM_V34 loaded).. |
| 9475 | SUPTTEL-2212 | Add of the configuration tag LL_PPP_T_TERMINATION_DELAY for PPP layer |
| 9545 | SUPTTEL-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 |
|--|--|---------------------------|

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 | | <p>To allow update with TMS, new name has been given to Telium font files, including version and amendment:</p> <p>844216=FONT ISO1 STANDARD 844217=FONT ISO2 STANDARD 844218=FONT ISO3 STANDARD 844219=FONT ISO5 STANDARD 844220=FONT ISO7 STANDARD 844221=FONT ISO15 STANDARD</p> <p>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</p> <p>The fonts are now double signed for Telium2</p> |
|------|--|---|

4.6.3. CGUI (Version: 01.17) / CGUI tools (Version 01.10)

Following points are delivered in this release.

| | | |
|------|--------------|---|
| 8911 | SUPTTEL-1958 | Documentation updated for fonts CGUICURSIVE et CGUIFANTASY |
| 9138 | SUPTTEL-2110 | Before any loadurl we ensure that there are no remaining events in the browser |
| 9273 | SUPTTEL-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 | SUPTTEL-2354 | Improvement when image is enlarged |
| 9729 | SUPTTEL-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 grouped 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 | SUPTTEL-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 | SUPTTEL-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_Doublego_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 |