TELIUM SDK 9.8.0 RELEASE NOTE

Reference: ICO-OPE-00394

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Contents

1. Preamble

1.1. 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 9.1.0);
- If R is an even number, the SDK is a stable release also called even release (Example: SDK 9.2.0)

The last beta releases will become the stable major release (Example: Releases 9.1.x is the beta release or 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 releases are fully qualified.

1.2. Future Telium+ framework

1.2.1. Presentation

Telium+ will be the future software framework.

Telium+ Framework is derived from Telium 2 framework but some functions will not be maintained. The list of APIs removed from the Telium 2 Framework has been established based on feedback collected from regions during survey. Following criteria have been applied:

- API is old, non-well documented, unused or rarely used.
- API is redundant with another API, functionally richer.
- API presents potential issues against new security requirements.
- API is a "fioctl" command which is old, non-well-documented, unused, rarely used or redundant with a higher level platform API.

An application developed for Telium2 framework will be source code compatible with future framework if:

- It only uses functions and modules provided in Telium + framework,
- It complies with Telium design rules (see document in Documents\TeliumRules\ ICO-OPE-00156Telium development rules.pdf).

1.2.2. Information on deprecated APIs

To inform developers, and enable them to anticipate and prepare future developments, this SDK (which is a Telium2 framework SDK) already contains information on what will be no more supported neither on Telium+ framework.

1.2.3. Compiling your application

There are 3 different ways to identify these APIs that are meant to be removed.

If an application uses APIs that are not supported on Telium+, following behaviour will be observed.

On Telium 2 SDKs (from 9.8.0 version onwards, these SDKs will continue to support these functions)

- A compilation error is generated that can be handled by developer on 2 different ways:

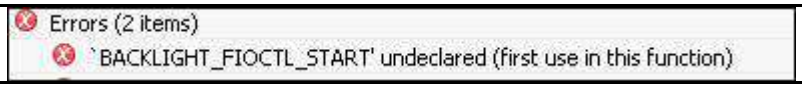
1. He keeps using the deprecated APIs by adding a specific define in the compilation options:
   - If the API is a function, the error will be changed into a warning (to make communication about deprecation persistent).
   - There is no impact on the binary behaviour.
   - Application cannot be migrated "as is" on Telium+.
2. He replaces the deprecated API and prepares the migration to Telium+ framework.

On future Telium+ SDKs,

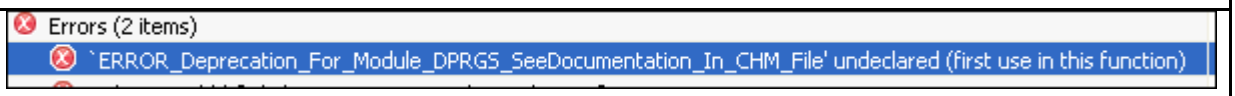
- This function will not be provided anymore (and simply cannot be used anymore).

1.2.4. Examples of compilation

1.2.4.1. Example if the API is a "fioctl" command:

If your code is :	nRet=fioctl(BACKLIGHT_FIOCTL_START,&stParam,handle_g);
The error is :	
The action is :	In this example, you have to check what to do by reading help on BACKLIGHT_FIOCTL_START in CHM help file. The 2 solutions (keep the code or implement the replacement solution) are explained

1.2.4.2. Example if the API is a function:

If your code is :	Cr = GPRS_Mount ("COMo") ;
The error is:	
The action is:	In this example, the function from the module GPRS is deprecated, and you are invited to check what to do in CHM file The 2 solutions (keep the code or implement the replacement solution) are explained
After the action done is add the define:	

1.2.4.3. Using AppParser

As an alternate to compilation, developer can use an updated version of the AppParser tool (provided in the directory tools\AppParser) to identify deprecated API used in an application: after parsing the application source code, the tool will indicate which deprecated APIs are called and in which files.
For all details, see User's guide once this tool is installed.

1.2.4.4. Using CHM help file

The list of deprecated functions is provided in the CHM help file (Module\ List of functions not supported on Telium+).

1.2.5. Scope of deprecation in SDK 9.8.0

1.2.5.1. SDK

In SDK 9.8.0, deprecation for Telium+ process will not be fully complete: some functions will also be deprecated later in SDK 9.10.0.

In SDK 9.8.0, the deprecation process applies to:
“fioctl” commands (which template name follows <driver>_DEPRECATED_<function>) provided by the module System;

- Functions provided by all modules except System.

Complementary information will be provided in SDK 9.10.0 for System functions (which are not “fioctl” which template name follows <driver>_DEPRECATED_<function>).

1.2.5.2. Add-ons to SDK

Easy Path to Contactless and Easy Path to EMV are also concerned by deprecation. Functions provided in these packages follows the compilation process defined in §1.2.1.

1.2.5.3.U32 migration add-ons

Telicapt and Migration Layer add-ons will be going in end of life. They will be maintained in Telium2 framework and for corrective maintenance purpose only. There will be no evolution.

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 9.6.0.

2.1. New terminals

2.1.1. iWL280 3G for development

2.1.2. iSC250 optimized contactless for production

2.1.3. iWB220 for production

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...
This SDK is compatible with iWB220 (black and white).
GPS will be available in the future.

2.1.4. iPP310 for development

IPP310 is an iPP320 limited to pinpad banking emulation mode and can only be connected to an iCT2xx.

The Telium 2 architecture is identical to iPP320.

This terminal is only compliant with USB to iCT cable.

Contactless option is available and can be upgradable in the field as for a classic iPP320.

2.1.5. iPP285 for development

IPP285 is a new pinpad dedicated for French train company with contactless capability. The Telium 2 architecture is similar to IPP280 terminal.

The connection with ICT250 is done through USB only. No option available

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2.1.6. iSC480 for development

The iSC480 is a high-end Telium2-based Signature Capture terminal with a large 7" 16/9 touch screen (resolution is 800*480).
The iSC480 is available in 2 contactless configurations: external target at the back of the terminal or internal reader located left of the keypad.
The iSC480 retains the same iSC250 functional features and connectivity and is compatible with iSC250 stands.

2.2. New peripherals

- Support of the biometric stylus on iSC350

2.3. New features

- Security feature "Canary" allowing buffer overflow protection is implemented for the following components:
  - Link layer
  - DLL TPass
  - DLL Security
  - DLL E2EE
  - DLL Digest
- Preparation of Telium+ framework (see first paragraph of this release note)
- Dual SIM managed on iWB
- NDEF DLL added:

NDEF (NFC Data Exchange Format) is a data format specified by the NFC Forum. NDEF is a lightweight, binary message format that can be used to encapsulate one or more application-defined payloads of arbitrary type and size into a single message construct. Each payload is described by a type, a length, and an optional identifier.

3. Compatibility

3.1. Qualification

At the date of the release, the validation of the following is in progress: iPP480, iPP3x0 and iCT250. You will be informed when this qualification will be finished.

3.2. List of compatible terminals

This SDK is not compatible with EFT930S family. These terminals will be supported on SDK 9.8.1.
This SDK is not compatible with CAD UCR. This terminal will be supported on SDK 9.8.1.

This SDK release is compatible with the following products.

Wireless	Telium 2: ▪ iWL220B, iWL220G, iWL250B, iWL250G , iWL250 3G, iWL250 2SCR (2SCR stands for 2 Smart Card Reader), ▪ iWL280, ▪ iWL350, ▪ iWB220 Telium 1: ▪ EFT930
Countertop terminals	**Telium 2:** ▪ iCT220, iCT250, ▪ iCT220 Contactless ▪ E532 **Telium 1:** ▪ EFT SMART Plus, ▪ EFT SMART, ▪ EFT30
Retail pinpads (Signature capture terminals)	**Telium 2:** ▪ iSC250, ▪ iSC350. ▪ iSC480 (for development only)
Pinpads	**Telium 2:** ▪ iPP310 (for development only), 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, iPP285 (for development only), P30, P30 Contactless, PP30S.
Unattended	**Telium 2:**

	▪ iUC150, IUC180, ▪ iUP250 ▪ iUR250 (system of iUR250 provided in add-on Unattended). Nota: For iUC180 and iUP250, it is not possible to load an SDK older than SDK 9.4.0, after loading this one. **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

3.3. Compatibility terminals vs SDK

3.3.1. 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
iWB220	SDK 9.8.0
iWL280	SDK 8.1.2 GPRS only since SDK 8.0.1
iWL350	SDK9.4.0
iWL Bases	Base BEM : SDK 8.0 Base PEM : SDK 8.1
E532	SDK 8.2
iSC250	SDK 7.5
iSC250 optimized Contactless (from product reference ISC250-01P2183A)	SDK 9.8.0
iSC350	SDK 7.1
iPP320, iPP350	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

3.4. 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
iWB220	Since SDK 9.8.0

3.5. Public Key Infrastructure

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

3.6. iSC250 optimized Contactless

This SDK manages iSC250 optimized Contactless (from product reference ISC250-01P2183A).

4. Highlighted points

4.1. Warning for partition greater than 32 Mb on Thunder III products

For iSCxxx, iPP480, iWL280 and iWL350 embedding more than 32 Mbytes of Flash:
From SDK 9.8.0, you can configure a size of partition "SYSTEM" larger than 32 Mbytes. On previous versions, you must not do that. If so, Bootram could not find the system if it is not in the first physical 32 Mbytes of Flash: consequence is freeze at the start-up of the terminal.

4.2. GPRS reconnection on SDK from 9.2.1 to 9.6.1

You are concerned by this information if your application communicates via GPRS or 3G networks and using SDKs from versions SDK 9.2.1 to SDK 9.6.1 included.

4.2.1. Description

When there is no activity on GPRS/3G network, some networks may send a disconnection command to the terminal.

- Delay before sending a disconnection command depends on the operator.
- Delay before sending a disconnection command could also vary with time for a given operator.

At reconnection, if the application doesn't call gprs_ppp_disconnect() before calling gprs_connect(), reconnection is not done and there is potential terminal freeze or reset.
Applications using Link Layer are also concerned.
Applications with parameter "State GPRS" set to "Auto connection" in the Manager configuration are also concerned.

4.2.2. Solution

You have to do the following sequence for the reconnection:
gprs_ppp_disconnect ();
gprs_connect();

A call to gprs_ppp_disconnect() at reconnection is implemented by default from SDK 9.6.2.

4.3. Reminder for important highlighted points

For readability, important points are grouped in the appendix 10 of this release note.

5. Known issues

5.1. EFT930S family

This SDK is not compatible with EFT930S family. These terminals will be supported on SDK 9.8.1.

5.2. CAD30 UCR

This SDK is not compatible with CAD UCR. This terminal will be supported on SDK 9.8.1.

5.3. 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.

6. Issues solved in this release by component

See table in chapter 8 "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 9.6.0** are listed below.

6.1. Telium System

6.1.1. CAM driver for 930 color, MR40 Booster2 and P30

Following points are delivered in this release.

Internal tracker	SUPTEL	Issuer	Description	
11656			CAM driver: Manage a custom APDU to change 'D' ATR parameter without PPS.	
11657			CAM driver for 930 Color, MR40 Booster2 and P30: Manage DI=7 (D=64) ATR parameter.	
11658	SUPTEL-3453	Germany	Some D/F that decrease CAM baudrate are not handled correctly by CAM driver due to an hardware constraint. In these cases, if specific mode, issue a warm reset, if negotiable mode, stay at default speed (F=372 D = 1).	
11684	SUPTEL-3701	Italy	Add warm reset API for smartcard (available only in ISO7816 mode).	
11867			CAM driver for 930 Color, MR40 Booster2 and P30: In ISO7816 mode, application can overwrite current card ATR by a custom ATR. That allows the application to modify all ATR parameters.	

6.1.2. Other system components

Following points are delivered in this release.

Internal tracker	SUPTEL	Issuer	Description	
13496 / 13497/ 13564	SUPTEL-5146	LAR	Correct wrong "BOOSTER_IS_NOT_ACTIVATED" state.	
13498	SUPTEL-5200	Germany	The defines of the deprecated functions are modified to avoid some conflicts with var names	
13865			ISC XXX, IPP4XX, IWL280, IWL350: File "SYSTEM" Telium larger than 32MB is now supported. With a precedent SDK, the change of the file system could cause a lock of the terminal, which would then require re-activation.	Already integrated in SDK 9.6.3
13617			Some fioctl functions are deprecated: See SDK documentation for the exhaustive list. - Fioctls not used (according to the results of the API assessment done in regions) are deprecated; - Fioctls encapsulated by high level function are deprecated; - Others are kept in the SDK API.	

13641			Fix lost of memory using API iLIBUCM_Display_Graphic_Start() from Add On Unattended	
13679			Taking into account the modified "friendly name" doesn't require a restart any more.	
12833	INGEDEV-1585		Return 0 when loading a DLL for the first time, even if DLL had been loaded previously by LDBG	
13131	SUPTEL-4139		Prevent deadlock when two process close and open the same peripheral with "-" option.	Already integrated in SDK 9.6.3
13135	SUPTEL-4176		Ability to enable / disable the key combination '.' + yellow button	
12767	SUPTEL-4328		External printer : improvement of printing with Custom Printer (odd characters printed)	
12720	SUPTEL-4496		Ingestate SSL frame read error fixed	
12855	SUPTEL-4561	Australia	Fix to avoid reset if signed file is corrupted (download via TMS)	
12921	SUPTEL-4687		External printer : CONNECT_OK is set (status())	
13021	SUPTEL-4806		External printer : auto detection of the printer settings for the Bluetooth ® printers: *DPU-S245 (Seiko) *MyPrinter (Custom) *EM 220 (Zebra) -> the parameter file \BT_Printers (Extprn.cfg) must be used. -> supported only with the OS component >=SDK 9.7.0	
12787	SUPTEL-4853		Bluetooth ® external printer : the driver checks the battery level and sets the status flag PRINTER_BAT_LOW (oem_public.h) when the battery voltage is low	
13218	SUPTEL-4913	LAR	[iWL280-iWL350] Double touch is now managed	
13323	SUPTEL-4931	NAR	Information had been added to "Infinite loop detected" reset diagnostic	
13398	SUPTEL-5105	NER	Change in function FS_length prototype	
13481	SUPTEL-4824	NER	Clear all the errors on ATZ command (There was problem sometimes when line was shared with a phone or a modem)	
13487	SUPTEL-4752	WE-Italy	Fix freeze with :-) on display. This may occur when turning on iwl2xx terminal	
13517	SUPTEL-5127		Time optimisation of umalloc and dllmalloc functions, in case of fragmented memory pool.	
11888			Add possibility to detect a key jammed	

13527	SUPTEL-5193	NAR	On portable terminal only: When terminal switches to idle state just after swapping magnetic card and before application closes SWIPE device. A terminal reset with SWP: ERC [FFFFFFF7] error in BOOSTER.DIA could be observed, at resume, when application tries to re-open SWIPE device. >> This improvement fixes this issue.	Already integrated in SDK 9.6.3
12706			On iWB, Dual SIM feature is managed	
13475			On iSMP-C: it's now possible to wake up the companion by pressing barcode keys.	
13488			Provides GSM and GPRS registration information (last CREG and CGREG answers).	
13104			The function “lire_infos_terminal” was anglicized (read_terminal_informations)	
13127			Error in is_iso2 documentation. is_ios2 returns number of bytes decoded	
12853			The update of the iST software via the Telium Manager menu “Evolution > CLess” on iSC350 is available.	
12943			DCD status is now enabled for virtual channel Telium Size	
12960			IAP over Bluetooth ® enable for iSMP-C	
12996			Sesam Vitale (French Health Care Domain): Update the USB device mode of the cradle when the terminal USB device mode is modified by using USBDEV_FIOCTL_SET_MODE. The cradle must provide the string "Lecteur Sesam Vitale" when the Sesam Vitale device mode is enabled on the terminal.	
13025			Add Biometric Stylus support	
13046			IWL280/350: Touchscreen is now efficient after waking up by touch	
13159			1. Improvement of accelerometer management. 2. OEM_ACCELERO.H is now deprecated. Use high level interface to use the accelerometer	
13169			Sleep mode enable for companion (iSMP-C)	
13187			[iMP3xx]: Firmware barcode download doesn’t reset anymore.	
13190			[iMP3xx] The administration channel is now functional	
13195			Correction on returned value of PWR_FIOCTL_ENTER_LOWPWR.	
13326			[iMP3xx]Now, QR codes returning a large number of data are rightly treated	
13327			Perturbation of display during the field Class activation has been reduced.	
13371			Improvement of accelerometer management	

12883	SUPTEL-4559	NAR	iWL250: Properly handle SPP_PORTNEG_IND message to be able to use OPEN_BT with Motion Computing Tablet PC running Microsoft Windows XP. Might also improve connectivity with other devices.	Already integrated in SDK 9.6.1
13227	SUPTEL-4752	NAR	iWL2xx: Fix freeze with :-) on display when turning on terminal (thunder 2 only)	Already integrated in SDK 9.6.1
13284	SUPTEL-4951	NAR	iUN2xx: In Mock-Up mode, using Dot+Yellow keys now makes the iUP250 and iUR250 reboot and don't put them anymore in Sleep Mode.	Already integrated in SDK 9.6.1
13074	SUPTEL-4851	NAR	ServiceCall function documentation is clarified	Already integrated in SDK 9.6.1
13202			iSC250: fix white screen (Mercadona)	Already integrated in SDK SDK 9.6.1
12908			Filter the "Sensormatic anti-theft device" for Magnetic card	Already integrated in SDK 9.6.1
12954			Add the V22 FC asynchronous mode (AT$M247) connection with the PSTN Modem. The connection command is AT$M247$M251F4\r	Already integrated in SDK 9.6.1
13267			Issue fixed for IWL22x/IWL25x, ISMP, and ISC2xx: PCI-V3 terminals doesn't report PCI_PTS_V3 on System IOCtl (SYS_FIOCTL_GET_PCI_PTS_VERSION…) call. Change fixes this issue.	Already integrated in SDK 9.6.1

6.2. Telium Manager

Following points are delivered in this release.

Internal tracker	SUPTEL	Issuer	Description	
12893	SUPTEL-4462	Germany	Use 020647 parameter with MANAGER.PAR to customize key used to activate manual entry while transaction. Authorized values are 020647=00000028; or 020647=0000002E;	
11992	SUPTEL-3865	NER	Documentation improvement on function gprs_getParam()	
12753	SUPTEL-4531	France	CHM improvement for ServiceCall100	
12929	SUPTEL-4720	France	New menu to save diagnostic into USB key or MMC card	
13417	SUPTEL-5056	Italy	Shutdown is automatic every minute on EFT930BCC only if contactless is activated in IDLE state (implicit selection).	
13529	SUPTEL-5166	SEA	Print/Display "PRINTER(LOW)" only on EFT30 with LOW printer	
13545	SUPTEL-5214	NAR	Activation of DNS resolution in remote_download function	
13584	SUPTEL-5254	SEA	Hide FOOTER windows when FOOTER is deactivated by application	

13631	SUPTEL-5278		New function for COMH detection: extern int IsCOMH(void);	
13667	SUPTEL-5289	France	Allow applications to change timeout of detection after a CLESS RESTART	
13695	SUPTEL-5311	NER	Replace short_cut.h by Short_cut.h in SDK30.H	
13716	SUPTEL-5329	NER	Catalog comment file. 844089==HEADER_IWL250 844089==HEADER_IWL280. Instead of 844097==HEADER_IWL250 844089==HEADER_IWL280.	
13359	SUPTEL-5334	NAR	Removed from include files, API not provided in libraries	
13730	SUPTEL-5336	EMEA	remote_downloading_from_manager is internal only, use of remote_downloading is recommended	
12948	SUPTEL-4739	NAR	New function PSQ_Give_Full_Serial_Number added. It is used to get full terminal serial number.	
12827	SUPTEL-4553		StartBuzzer : add sample to control the sound volume.	
13035	SUPTEL-4837		Option added in PPS_Num_Entry function. It allows you to enable or disable the beep on entry of each character.	
13157	SUPTEL-4176	NAR, EMEA	Ability to enable / disable the key combination '.' + yellow button	
13450	SUPTEL-5046	EMEA	Use always manager message file when application display a message via a manager function.	
13410	SUPTEL-5095	France	Documentation of 0xD2E exit added in defdiag_Tmanager.h file	
13403			UTF8 management for message customization.	
13465			Add new function to call the TMS for remote software iPP target if the emulation mode is enable : int remote_IPP (S_PARAM_TLCHGT *param_telechgt);	
13662			Add new menu to choose peripheral for Hardware Configuration. But ".4" shortcut have the same behavior than before	
13230			Bad network name in header in remote download	
13228			A list is proposed to select an application for removal in the "remove" menu of manager	
13374			Only for ISC250, ISC350 and ISC480 platforms: menu to select stylus type added.	
12995			New software number for PPR DLL	
13387			Optimization of TMS download	
13409			Start Repair Level 2 application before launching application	
13413			Font file is now not necessary to manage additional message files in GOAL environment. But Message File must be generated with new version (0104 or higher) of BuildMsg tool.	
13428			When printing the list of shortcuts registered with the Manager with F.0 menu, no more shortcut names are missed.	
13470			Bitmap of footer is now centered correctly on ISC250.	
13514			PSQ_SetPinpad doesn't work at first call by an application	
13846			DLL CRYPTO is added in IST150 catalog	

13696	SUPTEL-5315	NAR, NER	Calling function download in an application does not reset anymore	Already integrated in SDK 9.6.3
13597	SUPTEL-5253	Italy	Don't display "empty plug-in" but display "normal pug-in" if terminal is powered (on cradle or with AC adaptor)	Already integrated in SDK 9.6.3
13661			PSS dialog optimized (health domain)	Already integrated in SDK 9.6.3
13315	SUPTEL-5033	NAR, Turkey	sprint problem when using C++ is fixed	Already integrated in SDK 9.6.2
13342	SUPTEL-5074	France	French domain only: Licence management improvement	Already integrated in SDK 9.6.2
13362	SUPTEL-5082	France	French domain only (use 0x19 value for PI25 instead of 0x25).	Already integrated in SDK 9.6.2
13473	SUPTEL-5067	NER	GPRS PPP connexion: A case where the terminal was frozen after reconnection is fixed.	Already integrated in SDK 9.6.2
13235			Header is now displayed on Black and White terminals when contactless is on external target	Already integrated in SDK 9.6.2
12134			Ethernet choice for network was not available on iUC180	Already integrated in SDK 9.6.2
13295			Bluetooth ® pincode issue fixed (it was not possible to modify Bluetooth ® pincode from Telium Manager menus)	Already integrated in SDK 9.6.2
13343			Use F3/F4 to navigate (down/up) in list entry menu on IWL220,IWL250 and EFT930 plateform. Set "EnableF3F4" parameter to 0 with PSQ_write_state_param function to disable F3/F4 keys	Already integrated in SDK 9.6.2
13358			DisplayTargetCless() displays now the cless logo at the right location.	Already integrated in SDK 9.6.2
12635	SUPTEL-4376 SUPTEL-5051	NER, Italy	GetStatusCam0 function removed from SDK	Already integrated in SDK 9.6.1
13153	SUPTEL-4907	France	RemoveCardWithBeep function is exported to applications	Already integrated in SDK 9.6.1
13200	SUPTEL-4891	SEA	Memory leak in FILE_RECEIVED	Already integrated in SDK 9.6.1
12129	SUPTEL-3621	NAR	New menu created to show / Print the report sending the serial number during USB enumeration	Already integrated in SDK 9.6.1
13115			iWB2xx:: Applications can now manage rotation of screen	Already integrated in SDK 9.6.1
13230			Bad network name in header in remote download	Already integrated in SDK 9.6.1
13234			Unable to download iST150 with remote download menu	Already integrated in SDK 9.6.1

13292			Wrong version of manager printed on diagnostic ticket with SDK9.6.0 is now fixed	Already integrated in SDK 9.6.1
13298			For French healthcare, fix of a reset in SDK 9.6.0 when CPS cards were read	Already integrated in SDK 9.6.1
13316			Force Cless=OFF if Driver CLESS is not mounted.	Already integrated in SDK 9.6.1

6.3. Security

6.3.1. Security DLL

Following point are delivered in this release:

Internal tracker	SUPTEL	Issuer	Description	
13418			Correction doc SEC_KeyVerify for key TLV_TYPE_KTDES_24	
13539			Functions SEC_GetSecretAreaMemory and SEC_listTLVKeys added.	
11417			DLL SECURITY updated to run with new scheme SCH_UTILTLV version	
13118			Implementation of security feature "Canary" allowing buffer overflow protection	
13185	SUPTEL-4835	France	SEC_PinEntry() return values are now identical between unattended products and other terminals.	Already integrated in SDK 9.6.1

6.3.2. E2EE DLL

Following point is delivered in this release:

Internal tracker	SUPTEL	Issuer	Description	
13091			Implementation of security feature "Canary" allowing buffer overflow protection	

6.3.3. Digest DLL

Following point is delivered in this release:

Internal tracker	SUPTEL	Issuer	Description	
13092			Implementation of security feature "Canary" allowing buffer overflow protection	

6.3.4. Extend pack

Following point is delivered in this release:

Internal tracker	SUPTEL	Issuer	Description	
11864			SEC_ComputeHMAC : Adding parameter value to use the whole MAC key (parameter iKeyIndex)	

6.4. Communication

Following point are delivered in this release:

6.4.1. Link Layer

Internal tracker	SUPTEL	Issuer	Description	
13009			USB HOST ports of a Bluetooth ® base are now available in the LinkLayer (links LL_PHYSICAL_V_USB_BASE_HOST_1 and LL_PHYSICAL_V_USB_BASE_HOST_2)	
13117			Implementation of security feature "Canary" allowing buffer overflow protection	
13125 13057	SUPTEL-4764		An iWL250 can now use the Ethernet interface of a PEM (non-Bluetooth) base.	
13550			New physical links to allow the serial communication with an iST150 Cless target (LL_PHYSICAL_V_USB_HOST_CL) or an iPP320/iPP350 pinpad (LL_PHYSICAL_V_USB_HOST_PP) connected to the USB host port of a terminal.	

6.4.2. DLL SSL

Following point is delivered in this release:

Internal tracker	SUPTEL	Issuer	Description	
13534	SUPTEL-5227		Add X509_RsaKeyCrypt function to cipher SSL RSA key	

6.4.3. FTP

Following point is delivered in this release:

Internal tracker	SUPTEL	Issuer	Description	
12947	SUPTEL-4733		FTP_SetOption() function that allows to specify the connection timeout is added.	

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

Following point is delivered in this release:

Internal tracker	SUPTEL	Issuer	Description	
13818	SUPTEL-5417		HTTP client API is not provided in the SDK. Include files have been cleaned.	

6.5. Display

6.5.1. CGUI

Following point is delivered in this release:

Internal tracker	SUPTEL	Issuer	Description	
13778			Functions from IMG_.h (Image services) will not be supported on Telium+. Please use GOAL instead.	
13139			Loading an image that is supported neither by GOAL nor by cGUI no longer causes reset	Already integrated in SDK 9.6.1

6.5.2. GOAL

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

Following points are delivered in this release:

Internal tracker	SUPTEL	Issuer	Description	
13259	SUPTEL-4966	Germany	GOAL File layer now tries to use the specified filepath case of disk and file to open it. If it fails it tries with the filepath upper case	
13363	INGEDEV-1755		Fixes problem percent and per thousand in user control not correctly rendered	
13422			Adds supports terminal isc480	
13580			cGUI is now deprecated. GOAL is the replacement	
13492			Fixes skins selection problem in win32	
13535	SUPTEL-5226	Germany	The keys F2 and F3 are mixed on virtual keyboard on IPP480	
13548	SUPTEL-5215	NAR	Fixes the problem of GL_Message_GetPosition on window message (SUPTEL- 5215)	
13618			Signature can now be made with the pen and the finger on ISC480	
13671			Corrects the regression positioning in a layout	
13672			Adds management of escapes sequences in labels	

13673			Signature capture widget now no longer expand by default, however, the versions compiled with an older GOAL will not change. On the signature field widget you should now set a minimal size or add in gml this text "<expand> all </ expand>"	
13692			Corrects the problem of layout dimension with nul size that appears and should not	
13848			Emptying the internal image cache caused a potential crash. It is now fixed.	
12877	SUPTEL-4602	SEA	Erroneous JPG with extraneous data at the end of the file (typically those taken from cell phones) are now supported	Already integrated in SDK 9.6.1
13291	SUPTEL-5003	Italy	Fixes the reset when the GOAL resource is shared by many application	Already integrated in SDK 9.6.1
13158	SUPTEL-4925		Colorizes the barcode	Already integrated in SDK 9.6.1
13334			Fixed a memory leak on cGUI when displaying animated GIF	Already integrated in SDK 9.6.1
13081			Fixes the prefix number in the menu stops at 9	Already integrated in SDK 9.6.1
13116			Fixes a problem with the placement of a user control	Already integrated in SDK 9.6.1
13144			Corrects the font size in black and white screens	Already integrated in SDK 9.6.1
13163			Enables the rotation of screen before the beginning of signature capture	Already integrated in SDK 9.6.1
13192			Size font problem with Chinese characters in x2 and x3	Already integrated in SDK 9.6.1
13226			The GetStatus function on the printer now handle correctly the status in the two cases : printer is opened by the application and printer is not opened	Already integrated in SDK 9.6.1
13317			Fixes the Chinese font problems.	Already integrated in SDK 9.6.1
13140			Fixes a problem while reading unsupported images with cGUI (provokes a reset)	Already integrated in SDK 9.6.1

13287			A reboot in signature mode, introduced with SDK9.6.0 is now fixed.	Already integrated in SDK 9.6.1

6.5.3. MSG TOOL

Internal tracker	SUPTEL	Issuer	Description	
13344	SUPTEL-5021		Messages ending by the characters \" were not correctly managed by the BuildMSG tool. For example, in the following message #message 10 MSG_EXAMPLE «EXAMPLE\", note that the message "EXAMPLE\" is not valid and should be "EXAMPLE\\".	
13407			MsgFormat field into ComponentInfo structure is modified to manage UTF8.	

6.6. Contactless

6.6.1. TPASS DLL

Following points are delivered in this release:

Internal tracker	SUPTEL	Issuer	Description	
8821			Software information can now be obtained from an iST150 in transparent mode.	
13062			Implementation of security feature “Canary” allowing buffer overflow protection.	
13452			Manage the new iSC480 product.	
13453			Manage the new iPP285 product.	
13800			Manage the new iPP310 product.	
13455	SUPTEL-4828 & 4986	NAR,	Reduce contactless card detection failures when applications do not request to detect Mifare cards (ie applications only manage EMV/ISO14443-4 cards).	
13531			New function TPass_GetFieldCenterCoords() to get the screen coordinates of where to display the contactless symbol.	

6.6.2. Driver Contactless

Following points are delivered in this release:

Internal tracker	SUPTEL	Issuer	Description	
9741			On P30, possibility to allow driver Mifare to leave encrypted mode	
10515	SUPTEL-2912 +4867	Italy, EMEA	On P30, driver Mifare is now able to authenticate Mifare classic cards with 7 bytes UID.	
11543	SUPTEL-3606	Spain	On P30, fix Mifare RESTORE command behavior.	

6.6.3. GTL

Following point is delivered in this release:

Internal tracker	SUPTEL	Issuer	Description	
13464			VERIFY macro (from GTL_Assert.h) no more generates a compilation warning in release mode.	

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.

Following point is delivered in this release:

Internal tracker	SUPTEL	Issuer	Description	
13722			AppParser now provides an option to check the compatibility of an application (source code) with Telium +. See AppParser users guide.	

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

Following point is delivered in this release.

Internal tracker	SUPTEL	Issuer	Description	
12917		France	IPP3_pinpad internal catalog added.	

6.10. AVL

AVL stands for Added Value Libraries.
Following point is delivered in this release.

Internal tracker	SUPTEL	Issuer	Description	
13859			AVL Barcodes functions will not be supported on Telium+. Please use GOAL instead.	

13254	SUPTEL-5029 SUPTEL-5027	NAR	TlvTree_Unserialize function call no longer causes a reboot.	Already integrated in SDK 9.6.1

6.11. Miscellaneous

Following point is delivered in this release.

Internal tracker	SUPTEL	Issuer	Description	
13322			Old font tool (libgr) back in SDK, for compatibility.	Already integrated in SDK 9.6.1

6.12. Documentation

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

Internal tracker	SUPTEL	Region	Description	
13678	SUPTEL-5298	Italy	Documentation about Contactless restriction completed.	
12792	SUPTEL-4582		Useful information formerly in SDK user's guide (removed file) is provided again in CHM.	
12534	SUPTEL-4368		OS_rtc_LeaveRegion and OS_rtc_EnterRegion functions are now documented.	
13491	SUPTEL-5199		SEC_DukptLoadDerivationKey and *SEC_DukptGenerateInitialKeyhave been documented*	
12848	SUPTEL-4612	France	EventHeader function rightly documented	
13834			Added a page in the CHM help file compiling all functions that will not be supported anymore on Telium+ (available in Module\List of functions not supported on Telium+)	
12657			SLE4404, AT88SC1003/102/1608 cards management samples added.	
13834			A new page is added in the CHM help file compiling all functions that will not be supported anymore on Telium+ (available in Module\List of functions not supported on Telium+)	
			New version of Telium rules	
13917			Modules already deprecated for Telium2 will be obviously not supported on Telium+. Nevertheless, deprecation process is redefined for Telium+ and if you had already set the deprecation define when you compiled with a previous SDK, you have to set the new define when you will compile with this SDK.	
13557	SUPTEL-5240	NER	Catalogue for contactless for iPP480 Added	Already integrated in SDK 9.6.2
13282	SUPTEL-4979	NAR	"Supported card types" sheet updated in the SDK Release Note	Already integrated in SDK 9.6.1
13283			PSQ_Give_Language function documentation	Already integrated in SDK 9.6.1
12049	SUPTEL-3919	NAR	Documentation updated: B&W terminals does not support Footer area	Already integrated in SDK 9.6.1

6.13. Samples

The samples are compatible with version Ingedev 7.16.1.3 or upper.
Following point is delivered in this release.

Internal tracker	SUPTEL		Description	
13397			Sample "Open BT" back in SDK	
13469			Sample "Message" back in SDK	
9710			TCPIP, GPRS and SSL samples updated	
13324			Samples used for SDK training added.	Already integrated in SDK 9.6.1

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	21.01	
Easy Path To Contactless	4.01	
Easy Path to Couponing	1.04	
Add On PCL for iPA280	1.20	
Add On PCL for iWP	1.15	
Add On PCL for iMP3xx	1.06	
Add On PCL for Android	1.03	
Bluetooth ® printer for iMP3	1.02	
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	

8. Version of components

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

Date	SDK	System	Manager	Security						Communication					Display				Contactless						Applications		AVL	iPP3xx in emulation mode	
				DLL Security	DLL Security Extend	DLL Security Digest	DLL E2EE	TLV Schemes	Schemes	Link Layer	Pack IP	FTP	SNMP	SSL	GOAL	Cgui	Telium Fonts	DLL Image	DLL Tpass	Entry Point	GTL	Telium Pass	Vending Pass	Mifare	Incendo Online browser	Image Loader		DLL PPLoad	iPP3 conf
24/01/2013	**9.8.0**	2802	7401	3.42	2.16	2.02	4.06	2.12	3.07	3.31	3.16	1.25	1.01	2.03	3.42	2.10	1.11	1.01	3.03	0.25	1.41	2.25	3.03	2.02	03.01.05	2.01	2.06	2.01	4.04 4.05
19/12/2012	*9.7.1*	*27.12*	*73.04*	*3.41*	*2.16*	*2.02*	*4.06*	*2.12*	*3.07*	*3.30*	*3.15*	*1.24*	*1.01*	*2.03*	*3.41*	*2.09*	*1.11*	*1.01*	*3.02*	*0.25*	*1.41*	*2.24*	*3.02*	*2.02*	*03.01.05*	*2.01*	*2.04*	*2.01*	*4.02*
22/11/2012	*9.7.0*	*27.02*	*73.01*	*3.40*	*2.16*	*2.02*	*4.06*	*2.12*	*3.07*	*3.30*	*3.15*	*1.24*	*1.01*	*2.01*	*3.40*	*2.09*	*1.11*	*1.01*	*3.02*	*0.25*	*1.41*	*2.24*	*3.02*	*2.02*	*03.01.05*	*2.01*	*2.04*	*2.01*	*4.02*
23/01/2013	**9.6.3**	26.18(15)	72.07	3.29	2.14	2.01	4.05	2.12	3.07	3.29	3.15	1.24	1.01	1.95	3.35	2.09	1.11	1.01	2.40	0.25	1.40	2.24	3.02	2.02	03.01.05	2.01	2.04	2.01	4.02
30/11/2012	**9.6.2**	26.16(15)	72.05	3.29	2.14	2.01	4.05	2.12	3.07	3.29	3.15	1.24	1.01	1.95	3.35	2.09	1.11	1.01	2.40	0.25	1.40	2.24	3.02	2.02	03.01.05	2.01	2.04	2.01	4.02
25/10/2012	**9.6.1**	26.12(15)	72.03	3.29	2.14	2.01	4.05	2.12	3.07	3.29	3.15	1.24	1.01	1.95	3.35	2.09	1.11	1.01	2.40	0.25	1.40	2.24	3.02	2.02	03.01.05	2.01	2.04	2.01	4.02
27/09/2012	**9.6.0**	26.02	72.02	3.28	2.14	2.01	4.05	2.12	3.07	3.29	3.14	1.24	1.01	1.95	3.33	2.08	1.11	1.01	2.40	0.25	1.40	2.24	3.02	2.02	03.01.05	2.01	2.03	2.01	4.02
13/08/2012	*9.5.1*	*26.00*	*71.01*	*3.28*	*2.14*	*2.01*	*4.05*	*2.12*	*3.07*	*3.28*	*3.14*	*1.24*	*1.01*	*1.95*	*3.30*	*2.06*	*1.11*	*1.01*	*2.38*	*0.25*	*1.40*	*2.24*	*3.02*	*2.02*	*03.01.05*	*2.01*	*2.02*	*2.01*	*4.02*
09/07/2012	*9.5.0*	*25.00*	*71.00*	*3.28*	*2.14*	*2.01*	*4.05*	*2.12*	*3.07*	*3.28*	*3.13*	*1.24*	*1.01*	*1.95*	*3.23*	*2.06*	*1.11*	*1.01*	*2.38*	*0.25*	*1.40*	*2.24*	*3.02*	*2.02*	*03.01.05*	*2.01*	*2.01*	*2.01*	*4.02*
19/10/2012	**9.4.3**	24.00(14)	70.04	3.29	2.14	2.01	4.05	2.12	3.07	3.27	3.13	1.23	1.01	1.95	3.25	2.09	1.11	1.01	2.38	0.25	1.40	2.24	3.02	2.02	03.01.05	2.01	2.01	2.01	4.02
28/09/2012	**9.4.2**	24.00(14)	70.03	3.29	2.14	2.01	4.05	2.12	3.07	3.27	3.13	1.23	1.01	1.95	3.24	2.09	1.11	1.01	2.38	0.25	1.40	2.24	3.02	2.02	03.01.05	2.01	2.01	2.01	4.02
09/07/2012	**9.4.1**	24.04(13)	70.01	3.28	2.14	2.01	4.05	2.12	3.07	3.27	3.13	1.23	1.01	1.95	3.23	2.06	1.11	1.01	2.38	0.25	1.40	2.24	3.02	2.02	03.01.05	2.01	2.01	2.01	4.02
19/06/2012	**9.4.0**	24.00	70.00	3.28	2.14	2.01	4.05	2.12	3.07	3.27	3.13	1.23	1.01	1.95	3.22	2.05	1.11	1.01	2.37	0.25	1.40	2.24	3.02	2.02	03.01.05	2.01	2.01	2.01	4.02
22/05/2012	*9.3.1*	*23.10*	*69.03*	*3.27*	*2.14*	*2.01*	*4.05*	*2.12*	*3.07*	*3.27*	*3.13*	*1.23*	*1.01*	*1.95*	*3.21*	*2.05*	*1.11*	*1.01*	*2.36*	*0.25*	*1.34*	*2.24*	*3.02*	*2.02*	*03.01.05_RC1*	*2.01*	*2.01*	*2.01*	*4.02*
02/05/2012	*9.3.0*	*23.00*	*69.01*	*3.25*	*2.13*	*2.01*	*4.04*	*2.12*	*3.07*	*3.26*	*3.12*	*1.22*	*1.01*	*1.89*	*3.20*	*2.03*	*1.11*	*1.01*	*2.35*	*0.25*	*1.34*	*2.24*	*3.02*	*2.01*	*03.01.01*	*2.01*	*2.01*	*2.01*	*4.02*
11/05/2012	**9.2.2**	22.20	68.06	3.25	2.14	1.01	4.04	2.12	3.07	3.26	3.12	1.22	1.01	1.89	3.11	2.05	1.11	1.01	2.35	0.25	1.34	2.24	3.02	2.01	03.01.01	2.01	2.01	2.01	4.02
19/04/2012	**9.2.1**	22.12	68.05	3.25	2.12	1.01	4.04	2.11	3.07	3.26	3.12	1.22	1.01	1.89	3.10	2.03	1.11	1.01	2.35	0.25	1.34	2.24	3.02	2.01	03.01.01	2.01	2.01	2.01	4.02
15/03/2012	**9.2.0**	22.06	68.02	3.25	2.12	1.01	4.04	2.11	3.07	3.26	3.12	1.22	1.01	1.89	3.10	2.03	1.11	1.01	2.34	0.23	1.34	2.24	3.02	2.01	03.01.01	2.01	2.01	2.01	4.02
14/02/2012	*9.1.1*	*22.04*	*67.03*	*3.24*	*2.11*	*1.01*	*4.04*	*2.10*	*3.07*	*3.26*	*3.11*	*1.21*	*1.01*	*1.89*	*3.08*	*2.02*	*1.10*	*1.01*	*2.34*	*0.23*	*1.16*	*2.24*	*3.02*		*03.01.01*	*1.06*	*2.00*	*2.01*	*4.01*
19/01/2012	*9.1.0*	*21.00*	*67.01*	*3.21*	*2.08*	*1.01*	*4.02*	*2.06*	*3.07*	*3.25*	*3.11*	*1.21*	*1.01*	*1.85*	*3.06*	*2.02*	*1.10*	*1.01*	*2.32*	*0.22*	*1.16*	*2.24*	*3.01*		*03.01.01*	*1.06*	*1.19*	*1.04*	*3.02*

(15):26.14 for iWB2xx, 26.12 for the other terminals
(14):24.10 for iSC250, 24.08 for CAD30UCR, iUP2XX and iUC1XX, 24.04 for iSC350, 24.00 for the other terminals
(13):24.04 for iUC1xx and iSC350, 24.00 for the other terminals

9. Supported card types

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

Product	EMV 1.X	EMV 2.X	Mifare Plus	Mifare Desfire*	Mifare 1K	Mifare 4K	Mifare UltraLight	STM	Innovatron Calypso
Telium Pass+	A-O 3.0	-	-	SDK9.4	A-O 3.0	A-O 3.5	A-O 3.5	A-O 3.5	A-O 3.6
Vending Pass	A-O 3.0	-	-	SDK9.4	A-O 3.0	A-O 3.6	A-O 3.5	A-O 3.5	A-O 3.5
P30	SDK5.8 A-O 3.0	-	-	SDK9.4	SDK5.8 A-O 3.0	SDK7.2 A-O 3.5	SDK6.4.1 A-O 3.5	-	-
ML30	SDK5.8 A-O 3.0	-	-	SDK9.4	SDK5.8 A-O 3.0	SDK6.6 A-O 3.5	SDK6.4.1 A-O 3.5	-	-
CAD30UCR + EPSUM A40	SDK5.8 A-O 3.0	-	-	SDK9.4	SDK5.8 A-O 3.0	SDK7.1 A-O 3.5	SDK6.2.2 A-O 3.5	SDK5.8 A-O 3.5	SDK7.3 A-O 3.5
iUC150/iUC180	-	SDK9.4	SDK9.4		SDK9.4	SDK9.4	SDK9.4	SDK9.4	SDK9.4
EFT930CC	SDK6.2 A-O 3.0	-	-	SDK9.4	SDK6.2 A-O 3.0	SDK7.1 A-O 3.5	SDK6.4 A-O 3.5	-	SDK7.1 A-O 3.5
iCT2xx	SDK6.4 A-O 3.0	-	SDK9.4	SDK9.4	SDK6.4 A-O 3.0	SDK7.1 A-O 3.5	SDK6.4 A-O 3.5	SDK7.1 A-O 3.5	SDK7.1 A-O 3.6
iCT2xx PCI-V3	-	SDK8.2	SDK9.4		SDK8.2	SDK8.2	SDK8.2	SDK8.2	SDK8.2
iPA280	SDK6.4 A-O 3.0	-	SDK9.4	SDK9.4	SDK6.4 A-O 3.0	SDK7.1 A-O 3.5	SDK6.4 A-O 3.5	SDK7.1 A-O 3.5	SDK7.1 A-O 3.6
iPP220 iPP250	- -	SDK7.1 A-O 3.2	SDK9.4	SDK9.4	SDK7.1 A-O 3.2	SDK7.1 A-O 3.5	SDK7.1 A-O 3.5	- -	SDK7.2 A-O 3.5
iPP280	-	SDK7.5 A-O 3.7	SDK9.4	SDK9.4	SDK7.5 A-O 3.7	SDK7.5 A-O 3.7	SDK7.5 A-O 3.7	-	SDK7.5 A-O 3.7
iPP320 iPP350	- -	SDK7.1 A-O 3.2	SDK9.4	SDK9.4	SDK7.1 A-O 3.2	SDK7.1 A-O 3.5	SDK7.1 A-O 3.5	SDK7.1 A-O 3.5	SDK7.1 A-O 3.6
iPP480	-	SDK9.4	SDK9.4		SDK9.4	SDK9.4	SDK9.4	SDK9.4	SDK9.4
iSC250	-	SDK7.5 A-O 3.7	SDK9.4	SDK9.4	SDK7.5 A-O 3.7	SDK7.5 A-O 3.7	SDK7.5 A-O 3.7	SDK7.5 A-O 3.7	SDK7.5 A-O 3.7
iSC350	-	SDK7.2 A-O 3.2	SDK9.4	SDK9.4	SDK7.2 A-O 3.2	SDK7.2 A-O 3.5	SDK7.2 A-O 3.5	SDK7.2 A-O 3.5	SDK7.1 A-O 3.6
iWL220 iWL250	- -	SDK7.5 A-O 3.7	SDK9.4	SDK9.4	SDK7.5 A-O 3.7	SDK7.5 A-O 3.7	SDK7.5 A-O 3.7	SDK7.5 A-O 3.7	SDK7.5 A-O 3.7
iWL280	-	SDK8.0.1 A-O 3.10	SDK9.4	SDK9.4	SDK8.0.1 A-O 3.10	SDK8.0.1 A-O 3.10	SDK8.0.1 A-O 3.10	SDK8.0.1 A-O 3.10	SDK8.0.1 A-O 3.10
iMP3xx	-	SDK8.0.1 A-O 3.10	SDK9.4	SDK9.4	SDK8.0.1 A-O 3.10	SDK8.0.1 A-O 3.10	SDK8.0.1 A-O 3.10	SDK8.0.1 A-O 3.10	SDK8.0.1 A-O 3.10
iST150 (TeliumPass emul.)	-	SDK7.5 A-O 3.7	SDK9.4	SDK9.4	SDK7.5 A-O 3.7	SDK7.5 A-O 3.7	SDK7.5 A-O 3.7	SDK7.5 A-O 3.7	SDK7.5 A-O 3.7
iST150 (Intelligent mode)	-	SDK7.5 A-O 3.9	SDK9.4	SDK9.4	SDK7.5 A-O 3.9	SDK7.5 A-O 3.9	SDK7.5 A-O 3.9	SDK7.5 A-O 3.9	SDK7.5 A-O 3.9

A-O = Add-On

*** Mifare Desfire cards are supported by older SDKs if used with Easy Path to C'Less 3.7.1 or 3.7.2**

10. Appendix: Reminder for important highlighted points

10.1. 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.

10.2. 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.

10.3. Protection against distorted scheme

Since SDK 9.4.0, when an application tries to execute a distorted scheme, the display at the terminal start-up is: ..:-)
This behavior is the same for production or mockup device.

10.4. Telium SDK APIs

10.4.1. 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.

10.4.2. 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.

10.4.3. 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.

10.5. 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.

10.6. Security

10.6.1. Canary

A new security feature is integrated in this SDK: "Canary" feature allows buffer overflow protection. This mechanism is provided thanks to the compilation of some component with GNU 4.3.4:

- Telium Manager
- Link Layer
- DLL TPass
- DLL Security
- DLL E2EE
- DLL Digest

The compilation of these components with a new compiler is an important evolution of the platform.

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

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

The restriction forbids communicating:

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

It is also forbidden to receive APDU command queries from the external and to relay them to the smartcard. The restriction imposed by PCI SSC is not limited to banking cards. Direct communication to other types of cards (e.g. loyalty) is not allowed except if they are managed through the "white list" mechanism. Moreover, banking card information may be transmitted encrypted using the approved On-Guard encryption.

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)

10.6.3. 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).

10.7. Contactless

10.7.1. Best practices for Contactless

10.7.1.1. 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.

10.7.1.2. 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.

10.7.1.3. 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).

10.7.2. Card supported

The list of cards supported by this SDK is given in the paragraph Supported Card types.

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

10.7.3. Desfire library

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

10.7.4. Contactless restriction on iWL280 and iWL350

During a transaction, on iWL280, iWL350 and iPP480, 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.

10.8. Communication

With SDK 9.6.0, it was not possible to change the USB type of a terminal (CDC, CDC Legacy, HID) by using HWCNF.PAR or by using function HWCNF_SetUSBDevMode.
It is fixed since SDK 9.6.1.

10.9. GTL (Generic Tool Library) API

'GTL_TagsInfo.h' is only used by contactless applications that need to manage proprietary tags. So, it has been moved to Easy Path to C'Less 3.7.3.

'GTL_DataStorage.h' is no more available, it is not useful. Applications must not include this file (=> just remove the corresponding #include in ClessSample_Implementation.h').
However, a compilation problem may occur because some contactless CUSTOMs used an incorrect define:
Some applications will have to replace DS_POSITION_NULL by SHARED_EXCHANGE_POSITION_NULL.
These define have the same value (NULL) and replacement will not cause dysfunctions.

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

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

- When you start a new project since SDK 9.4.0, you will automatically have this object in you link;
- If you migrate your application from an older SDK, you have to add this file to your link (In IngeDev, open your project properties, select Telium/Build Configuration/System Libraries, and add libcpatch for each GNU configuration). Once done, you must not remove this file from your link if these functions are used.

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

10.11. Naming convention

10.11.1. 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.

10.11.2. New software numbers for Telium Manager DLLs

10.11.2.1. 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.

10.11.2.2. 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.

10.11.3. 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.

10.11.4. 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)

10.12. Telium System specificities

10.12.1. 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.

10.12.2. 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).

10.13. Terminal specificities

10.13.1. 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.

10.13.2. IMP3

10.13.2.1. 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.

10.13.2.2. 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.

10.14. Deprecation

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.

10.14.1. Libgr functions

SetRegionColor(), ClearRegionColor() et GetRegionColor() are deprecated (FT12423) since SDK 9.4.0. See CHM for information.

10.14.2. 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.

10.14.3. 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.

10.15. Information about downward compatibility for applications compiled with SDK newer or equal to 9.2.0

This paragraph adds precisions to the technical information bulletin referenced ICO-OPE-00132 about downward compatibility for applications compiled with SDK newer or equal to 9.2.0

This information is done in the event that this case occurs even if it should not happen because we do not assure downward compatibility.

10.15.1. List of functions concerned

Here is the list of functions concerned.

```
hterm_t *GetConfiguration(void)
char GetTerminalType(void)
unsigned long lire_gamme_produit(unsigned char *produit)
int IsBIO(void)
int IsRadioETHERNET(void)
int IsPortable(void)
int IsUsbHost(void)
int IsUsbSlave(void)
int IsPrinter(void)
int IsSlowPrinter(void)
int IsISO1(void)
int IsISO2(void)
int IsISO3(void)
int IsCAM1(void)
int IsCAM2(void)
int IsCAM3(void)
int IsSAM1(void)
int IsSAM2(void)
int IsSAM3(void)
int IsSAM4(void)
int IsCOM0(void)
int IsEFT30(void)
```

int IsCOM1(void)
int IsCOM1Pinpad(void)
int IsCOM1RS232(void)
int IsCOMN(void)
int IsCOMU(void)
int IsCOM2(void)
int IsCOM3(void)
int IsBUZZER(void)
int IsTILTO(void)
int IsMMC(void)
int IsSmallDisplay(void)
int IsMODEM(void)
int IsDisplay(void)
int IsHeaderDisplayed(void)
int IsCless(void)
int IsTwin33(void)
int IsICT220(void)
int IsICT250(void)
int IsICT280(void)
int IsISC350(void)
int IsSPM(void)
int IsLargeDisplay(void)
int is_ZKA(void)
int IsLedOnDisplay(void)
int IsModemV34(void)
int IsIPP320(void)
int IsIPP350(void)
int IsISC250(void)
int IsTwin32(void)
int IsIWL220(void)
int IsIWL250(void)
int IsE532(void)
int IsColorDisplay(void)
int IsIST150(void)
int IsIWL280(void)
int IsIMP350(void)
int IsIWL2XX(void)
int IsTermCGUI(void)
char *GetCguiFileName(char *FileName)
int IsIPP3XX(void)
int IsWifi(void)
ethernet_t *GetEthernetConfiguration(void)
int IsRadio(void)
int IsETHERNET(void)
int IsCOM0Available(void)
int IsCOM1Available(void)
int IsCOM2Available(void)
int IsMODEMAvailable(void)
int IsETHERNETAvailable(void)
int IsCOM1RS232Available(void)
int IsScreenSaver(void)
int IsBacklightSaver(void)
int IsPinpadAuthorized(void)
int IsModePinpadAvailable(void)
int IsIWL350(void)
int BoosterType(void)
int IsTwin31(void)
int GetPKIVersion(int Periph)
int IsML30(void)
int IsIUC180(void)
int IsIUC150(void)
int IsTargetModeAvailable(void)
int IsIPP480(void)
int GetProductName(unsigned char *Name)

int IsIUP250(void)
int IsBT(void)
int IsRadioWifi(void)
int IsRadioGPRS(void)
int IsRadioCDMA(void)
int IsGPRS(void)
int IsRadio3G(void)
int IsIngetrust(void)
int IsTouchScreen(void)
int GetTerminalPKIVersion(void)
int GetTerminalPCIPTSVersion(void)

10.15.2. Context

If you do not use one the functions concerned, you can ignore this information.
Before SDK 9.2.0, these Telium Manager functions were provided in static library. They are now provided in DLLs.
Benefits of this change are:

- Improvement of performance.
- A re-compilation of your application is no more needed to get improvements on these functions provided in future SDK.

10.15.3. Compatibility

Due to this evolution, applications built with a version of SDK 9.2.0 or newer, requires a SDK version 9.2.0 or greater loaded in the terminal.
When using an older SDK than 9.2.0, the terminal will reboot when the application calls one of the listed functions.

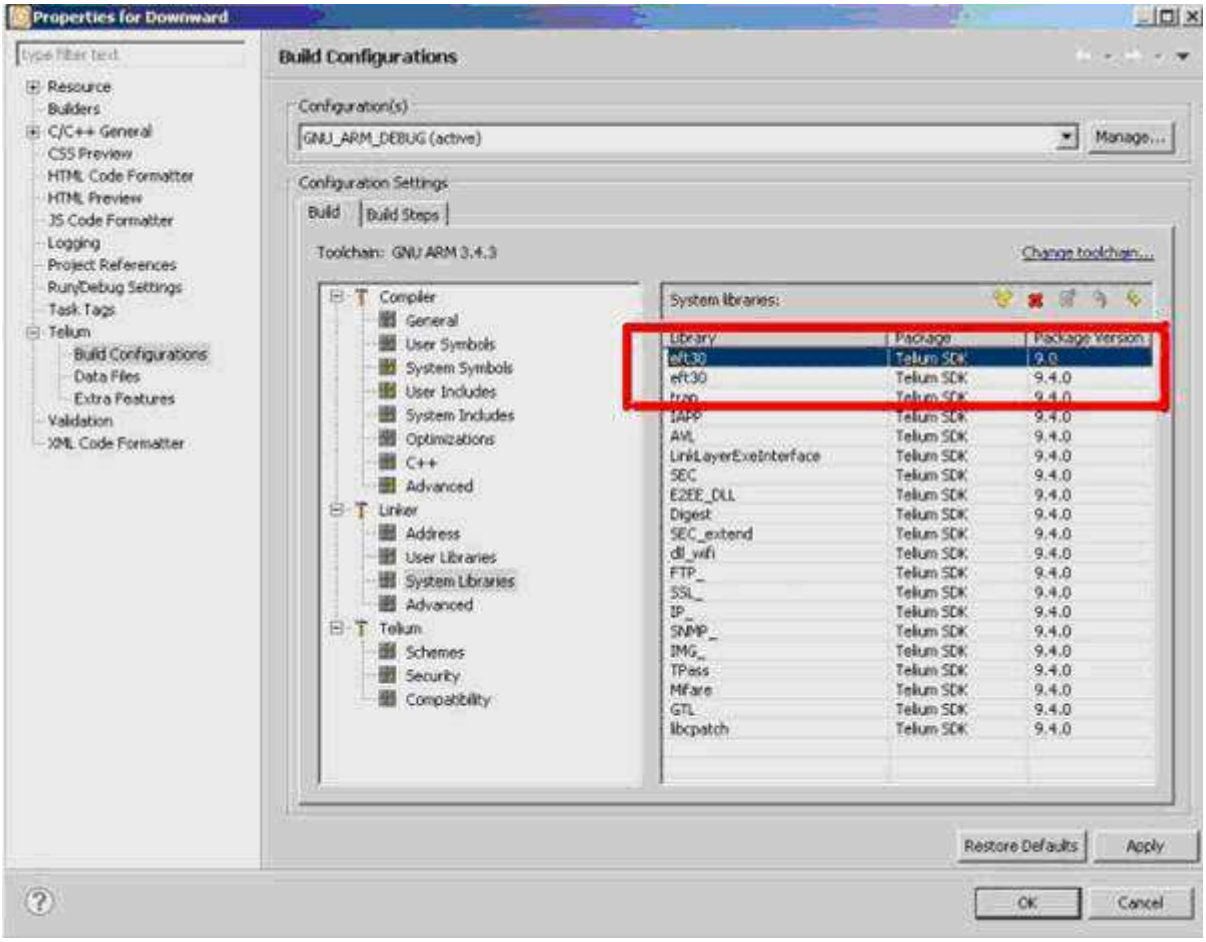
10.15.4. Solution

You are not concerned:

- if you don't use the functions concerned, or
- If you use ones of these functions and don't need to be downward compatible.

To be downward compatible on this point, you have to add the eft30.lib provided in SDK 9.0 to your link. This library must be added in the list of libraries before the eft30.lib provided with the SDK you build with.

For example, with Ingedev, you have to do the following:



WARNING: Integrity of TELIUM Manager and TELIUM System must be respected
You shall respect the integrity of SDK components (c.f. list)
and **never mix components from different SDKs,** except following INGENICO requirements.
INGENICO only guarantees a standard package. Partial or modified packages cannot be either downloaded, nor supported, nor guaranteed by INGENICO.

This SDK is available on CDROM format on request or can be downloaded from INGENICO FTP server.