

TETRA Terminal User's guide

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1 Document information

1_1 Evolution follow-up

Revision	Change	Written by	Date
1	User manual build according to SDK 11.0.0.0 release candidate content.	JLF	08/07/2015
2	User manual build according to SDK 11.2.0.6 release candidate content: -hardware settings menu added -correction in PCI V4 time slot menu -firmware PCI PTS menu added	JLF	18/09/2015
3	User manual build according to SDK 11.4.0.10 release candidate content. -New Ingenico graphical chart -corrections and evolution according to targeted SDK release -annex on parameters *.PBT files	JLF	11/01/2016
4	User manual build according to SDK 11.6.0.06 release candidate content. -Adding of "Terminal information" menu + cosmetic reordering of the other menus. -BLUETOOTH+WIFI configuration menus adding due to BEM support on MOVE. -annex on parameters *.PBT files update	JLF	11/04/2016
5	User manual build according to SDK 11.10.0.06 release candidate content. -New Ingenico STONE graphical chart. -Some menus ordering according to users returns. -Non signed configuration support -Shortcuts feature and menu -Touch screen calibration menu -Bluetooth final menus -Modem settings menu -GPS menu -PINpad configuration (backlight, beep on PIN code, hardware information...) -Camera menu	JLF	03/10/2016

1_2 Document validity

	Name	Function	Date

Written by	FRIMOUR Jean-Luc	Software PLATFORM architect	24/10/2016
Checked by	CHARPIN Florence	QUALIFICATION PLATFORM team leader	24/10/2016
Checked by	ROUXEL Alice	PLATFORM Core team leader	24/10/2016
Checked by	GOMES Vincent	PLATFORM Protocol team leader	24/10/2016
Checked by	PLASSE Pascal	TELUM SDK and GCL team leader	24/10/2016
Approved by	MISSUE Eric	Agile SW Factory Manager	24/10/2016

1_3 Objective

The “TETRA User’s manual” is the object of this document. Part of this document can be reused to build a final user’s manual for end user (= retailers,...).

After a brief description of TETRA Terminals currently existing in the range, the following subjects will be developed:

- General TETRA human interface principle
- Detailed description of terminal start-up
- Detailed description of each menu provided by the minimal set of software components delivered in a terminal. (“General settings”, “Software settings”, ...)
- Advanced TETRA terminal configuration
- Annexes describing some optional menus.

1_4 Terminology

The creation of new terminal range is often associated with new branding and new names for terminals. By extension, all the components of their eco-system are also reviewed and renamed even if part their main features have not been challenged regarding those provided in the previous generation.

As users are more familiar with technical features name than with “marketing” features name, in this document or in TETRA terminal menus, the feature “Terminal Management System” will continue to be named as “TMS” although the new name of the server solution is “The Estate Manager”.

“PLATFORM” is the generic term to designate initial software of the terminals provided by INGENICO corp. All additional software added after are named in this document and in terminal as “user” or “customer” applications or packages.

2 TETRA terminals

At the publishing date of this document, the TETRA terminals range is composed of the touch screen color terminals family.

Note: Memory sizes of the terminals are given in Megabytes in different following tables.

2_1 With WEB applications running capabilities

Four terminals exist in this family.

	DESK5000	MOVE5000
Type	M70	M71
Display	Colour 3.5" (320x480) Touch screen	Colour 3.5" (320x480) Touch screen
Memory (Flash/RAM)	512 Mb /512 Mb	512 Mb /512 Mb
Terminal		
Compatibility	<ul style="list-style-type: none"> ■ Ethernet-Modem ■ Audio ■ Audio-3G ■ Audio-3G-Bluetooth ■ Audio-Bluetooth-WIFI 	<ul style="list-style-type: none"> ■ 3G-Audio ■ GPS-Barecode ■ Charging bases supported ■ Ethernet-Modem bases ■ Ethernet-Modem-Bluetooth ■ Ethernet-Modem-Bluetooth-WIFI bases
Comment	Supported Pinpads: <ul style="list-style-type: none"> ■ iPP280 (PIN entry, contactless) ■ iPP310 – PCI V3 or V4 (PIN entry, swipe, chip, contactless) ■ iPP315 – PCI V4 (PIN entry, swipe, chip, contactless) 	

Table 1 – TETRA terminals with WEB applications capabilities

Note: Current major or future options are in *italic*.

	LANE5000	LANE7000
Type	M72	M77
Display	Colour 3.5" (480x320) Touch screen	Colour 5" (800x480) Touch screen
Memory (Flash/RAM)	512 Mb /512 Mb	512 Mb /512 Mb
Terminal		
Compatibility	<ul style="list-style-type: none"> ■ Ethernet ■ <i>Audio</i> 	<ul style="list-style-type: none"> ■ Audio ■ Ethernet ■ <i>RS485 (Tailgate)</i> ■ <i>Ethernet switch</i> ■ <i>Bluetooth/BLE - WIFI</i> ■ <i>Camera</i>
Comment	<ul style="list-style-type: none"> ■ 	<ul style="list-style-type: none"> ■ Double side swipe reader ■ Communication options managed thanks to removable modules. ■ COMBOX support

Table 2 – Retail TETRA terminals with WEB applications capabilities

Note: Current major or future options are in *italic*.

2_2 Without WEB applications running capabilities

Five terminals exist in this family: no touch screen available in this range.




	DESK3200	DESK3500	MOVE3500
Type	M73	M74	M75
Display	Black and white 2.7" (128x64)	Colour 2.7" (320x240)	Color 3.2" (240x320)
Memory (Flash/RAM)	128 Mb / 128 Mb	128 Mb / 128 Mb	128 Mb / 128 Mb
Terminal			
Compatibility	<ul style="list-style-type: none"> ■ Ethernet-Modem ■ 3G 	<ul style="list-style-type: none"> ■ Ethernet-Modem ■ 3G 	<ul style="list-style-type: none"> ■ 3G ■ <i>Charging bases supported</i>
Comment	<p>Supported Pinpads:</p> <ul style="list-style-type: none"> ■ iPP280 (PIN entry, contactless) ■ <i>iPP310 - PCI V3 or V4 (PIN entry, swipe, chip, contactless)</i> <i>iPP315 - PCI V4 (PIN entry, swipe, chip, contactless)</i> 	<p>Supported Pinpads:</p> <ul style="list-style-type: none"> ■ iPP280 (PIN entry, contactless) ■ <i>iPP310 - PCI V3 or V4 (PIN entry, swipe, chip, contactless)</i> ■ <i>iPP315 - PCI V4 (PIN entry, swipe, chip, contactless)</i> 	

Table 3 – TETRA terminals without WEB applications capabilities

Note: Current major or future options are in italic.

	MOVE2500	LINK2500
Type	M76	M78
Display	Colour 2.4" (320x240)	Colour 2.4" (320x240)
Memory (Flash/RAM)	512 Mb / 128 Mb	256 Mb / 128 Mb
Terminal		
Compatibility	<ul style="list-style-type: none"> ■ Ethernet-Modem-3G ■ 	<ul style="list-style-type: none"> ■ Bluetooth - WIFI
Comment		

Table 4 – TETRA terminals without WEB applications capabilities

Note: Current major or future options are in *italic*.

2_3 TETRA keypads

The keypad type is terminal dependant.












<p>DESK5000</p>  <p>MOVE5000</p>  <p>LANE5000</p>  <p>LAN7000</p> 	<p>Terminals with touchscreen have limited number of keys on their keyboard.</p> <p>The minimal size is 4 keys:</p> <ul style="list-style-type: none"> • one green validation key ; • one red cancellation key ; • one yellow correction key ; • one Ingenico HOME key ; <p>Ingenico HOME key Function  is replaced by key F on Retail terminals.</p> <p>This minimal set can be completed by a numerical keyboard of 11 keys</p> <ul style="list-style-type: none"> • ten digital keys (from 0 to 9); • one decimal dot key ; <p>Terminals integrating a printer have a dedicated key:</p> <ul style="list-style-type: none"> • one function key  often used as “paper feed” key <p>Some terminals have other keys. Refer to the terminal user manual for more information.</p>
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Table 5 – Keypads of TETRA terminals with touchscreen








 <p>MOVE2500/3500</p>  <p>DESK3200/DESK3500</p>  <p>LINK 2500</p>	<p>Previous description of keypad for TETRA terminals with touchscreen is also valid for terminals without touchscreen.</p> <p>To address the lack of touchscreen, additional keys are present and allow moving on the screen.</p> <ul style="list-style-type: none"> 4 function keys , , , , which can be screen-printed depending on the terminal type. <p>Some terminals have other keys. Refer to the terminal user manual for more information.</p>
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Table 6 – Keypads of TETRA terminals with touchscreen

2_4 INGENICO graphical chart evolutions

According to SDK software release versions, different styles of the human interface have been implemented to respond to customer critics and change requests. The current skin, named STONE, is supposed to be the final one. The following pictures illustrate the 3 existing styles.



With the current style when an icon / icon list element / element list is:

- Selected => its background is as on the following icon .
- Not selected => its background is as on the following icon .

Note: According to the number of captured screenshots present in this document, the updates of some of them may have been forgotten.

Note: This document does not illustrate specifically black and white screen human interface, a part "No colour" the main characteristics are:

- Same menus logic
- Text length adjusted to view size and resolution constraints
- All actions done with keyboard
- Icon menus replaced by text lists

3 TETRA terminal human interface principle

A TETRA terminal is provided with a minimal set of software packages:

- PLATFORM software components providing a generic human machine interface based on screen and keyboard or on screen, touch screen and keyboard according to hardware terminal capabilities
- A set of “applications” managing settings of some category of terminal generic features.

3_1 Terminal “Desktop” and “Explorer” principle

“Desktop” and “Explorer” wording is frequently used in TETRA software domain: documentation, software components naming, ... Sometime these words are misused, (one for the other), it's useful to define them.

3_1_1 “Desktop” role

“Desktop” is a TETRA PLATFORM application managing the screen organisation and usage (ex: windows layers management). The screen management is organised around 5 areas:

- A user area
- An optional “Cless Leds bar” (= software leds) area
- An optional “Status bar” area
- An optional “Footer” area
- An optional “Virtual keyboard” area

Whatever WEB capabilities activated or not, “Desktop” application is always present.

3_1_2 “Explorer” role

“Explorer” is the first TETRA PLATFORM application that will use the user area of the screen. All the others software components that will run and used the screen will overlay screens windows of the “Explorer” screen window. So when every running application has released their graphical context, the “Explorer” is the default screen that can be seen and be active according to keyboard and touch screen inputs.

Functionally, the “Explorer” application role is to give access to applications (user or PLATFORM) to perform treatment thanks to human input actions that are suggested to user with different screen organisations and renderings:

- Associated to a feature, different “icons” (or “Icon list” or “list” according to configuration) are displayed on the screen.
- Thanks to keyboard or to touch screen, action on displayed element (“icon” or “icon list” or “list”) can
 - Open a new screen panel on which new icons (or “Icon list” or “list”) may be selected
 - Start a treatment.
 - Chaining the selection of different icons to start a treatment is equivalent of building a pathname where “Explorer” is root (‘\’) and where each path level corresponds to the different displayed element name selected to start a treatment.

The “Explorer” role is the same, whatever WEB capabilities are activated or not even if the rendering and the organisation of applications are different. The common terminology used also differs:

- When WEB capabilities are not activated, “Native Explorer” term is used

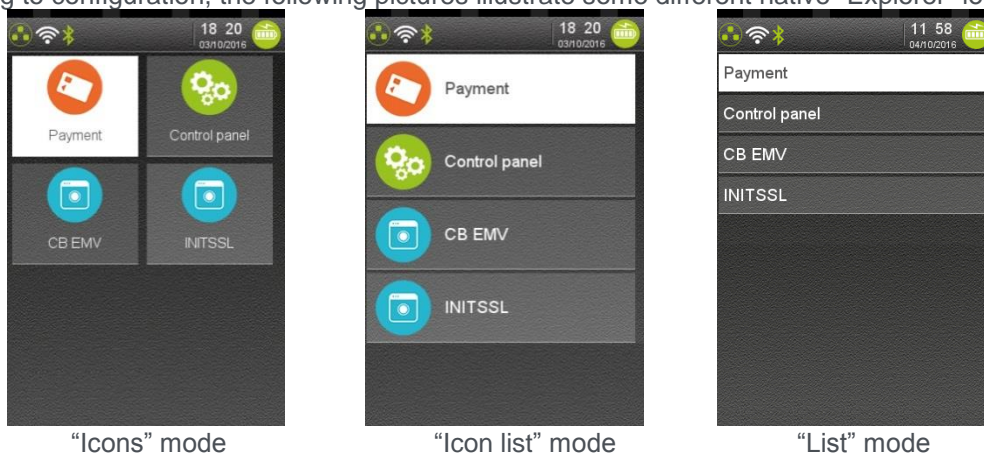
- When WEB capabilities are activated, “WEB Desktop” term is used

3_1_2_1 Native “Explorer”

Native “Explorer” is only present or activated when WEB capabilities are not activated.

By default “Icons” mode is activated on native “Explorer” on all terminals with touch screen. This default mode may be set by parameters file customisation.

According to configuration, the following pictures illustrate some different native “Explorer” looks.



The icons composing the minimal set present on “Explorer” are:

- “Control Panel” = this icon gives access to a new panel corresponding to terminal global configuration management.
- “Payment” or “No transaction” = one of these two icons according to the presence or not of initialized “user” applications.
 - “Payment” icon selection allows to start a payment in requesting to enter an “Amount”
 - “No transaction” icon selection informs the retailer that no applications are registered to make payment.

Unlike to TELIUM2 behaviour, no prompt informs the operator that the terminal must be initialized or that no applications are present: only “No transaction” present help him to detect this state.

“Explorer” default configuration mode is “Icons” without access protection (= no password to enter when selecting treatment).

“Explorer” default configuration mode and access protection can be changed according to parameters file customisation. (Refer to [TETRA parameters customization](#)).

The “Payment” icon is always located in the left upper corner

- Other icons are sorted and organized according to their registered properties when they have been declared by the applications.

When applications have been installed in terminal, they may have registered on “Explorer” some icons allowing to access to their own subpanels or to start one their specific treatment. On the previous figure, each application (“CB EMV” or “INIT SSL”) has added its own icon.

When the number of icons is greater than the user screen area can content, scrolling action is needed: a vertical slider is displayed. The slider size is proportional to the visible part; so smaller it is, larger is the non-visible part.

3_1_2_2 “WEB Desktop”

On terminals with WEB applications running capabilities activated, “WEB Desktop” takes in charge “Explorer” role whatever the type of the applications. It's has its ways to organize the menus and the access to the applications. It can manage it:

- Globally => no differentiation between applications based technology or functional perimeter (Payment, loyalty, etc ...)
- Sorted => the different type of applications and terminal configuration menus are sorted.
 - An “Explorer” exposing WEB Applications, it is the initial “Explorer” started.
 - Different subpanel exposing other applications and terminal configuration menus

The following picture illustrates examples of WEB “Desktop” looks on a terminal with WEB capabilities set.



Figure 1 – TETRA WEB Desktops different looks according to configuration

Note: Currently “WEB Desktop” configuration allows only rendering “menus” in list with icons.

3_2 Different screen sub-panels

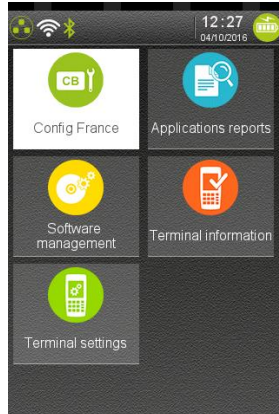
The main available subpanel is “Control Panel”. This icon gives access to the global configuration of the terminal. The different icons present in this panel allow performing:

- functional treatments
- simple parameter setting
- current global configuration state view

A minimal set of icons are present on “Control Panel”:

- “Software Management”
- “Terminal Settings” = Icon allowing to select “Terminal Settings” panel in which different icons give access to terminal configuration. Each icon present covers a set of dependant features as:
 - General settings
 - Human interface settings
 - ...

The following picture illustrates the “Control Panel” look.



3_3 The general tree of the “Explorer” sub-panels / menus

As explained previously, each accessible treatment or subpanel can be represented by a pathname. In the following table, all existing paths are listed. Some complementary information has been added:

- Path = pathname to access an icon or a menu line
 - **Green italic** = added by applications
 - **Blue italic** = optional (hardware terminal dependant)
 - **Orange italic** = optional (user/customer dependant)
 - Normal = default icons
- Description link = provides a hypertext link on the description or a brief description if not detailed in this document.
- Type = gives the nature of the element
 - Subpanel = Icon giving access to a subpanel related to a specific feature
 - Icon = Icon on which action starts a treatment
 - Menu = Icon on which action opens a menu organized in a list whatever the configuration mode of the “explorer”.
 - Menu line = elementary menu line on which action starts a treatment. (only those having a dedicated description associated with a paragraph number are present in this table)
- Level = indicates the number of selections to perform before accessing to the described feature, subpanel or menu.

Path	Description link	Type	Level
\Payment		Icon	1
ICB EMV	Example of user application presence in screenshots		1
WONEO	Example of user application presence in screenshots		1
UNIT SSL	Example of user application presence in screenshots		1
\Control Panel	6	Subpanel	1
\Control Panel\Applications reports	7	Subpanel	2
\Control Panel\Applications reports\Transaction	7.1	Icon	3
\Control Panel\Applications reports\Calls planning	7.2	Icon	3

\Control Panel\Applications reports\Diagnostics	7.3	Icon	3
\Control Panel\Applications reports\Diagnostics\Local	7.3.1	Icon	3
\Control Panel\Applications reports\Diagnostics\Diag to USB	7.3.2	Icon	3
\Control Panel\Applications reports\Diagnostics\Diag to MMC	7.3.2	Icon	3
\Control Panel\Applications reports\Diagnostics\Clear	7.3.3	Icon	3
\Control Panel\Applications reports\Batch Data capture	7.4	Icon	3
\Control Panel\Software management	8	Subpanel	2
\Control Panel\Software management\View configuration	8.1	Subpanel	3
\Control Panel\Software management\View configuration\Customer packages	8.1.1	Menu	4
\Control Panel\Software management\View configuration\Platform packages	8.1.2	Menu	4
\Control Panel\Software management\Evolution	8.2	Subpanel	3
\Control Panel\Software management\Evolution\Local upgrade	8.2.1	Icon	4
\Control Panel\Software management\Evolution\External upgrade	8.2.2	Icon	4
\Control Panel\Software management\Evolution\Remote upgrade	8.2.3	Subpanel	4
\Control Panel\Software management\Evolution\Remote upgrade\Start remote upgrade	8.2.3.2	Icon	5
\Control Panel\Software management\Evolution\Remote upgrade\Download specific package	8.2.3.3	Icon	5
\Control Panel\Software management\Evolution\Remote upgrade\Configure remote upgrade	8.2.3.1	Icon	5
\Control Panel\Software management\Evolution\Remote upgrade\Configure remote upgrade\Network type	8.2.3.1.1	Menu line	6
\Control Panel\Software management\Evolution\Remote upgrade\Configure remote upgrade\Contract Number	8.2.3.1.5	Menu line	6
\Control Panel\Software management\Evolution\Remote upgrade\Configure remote upgrade\TMS address	8.2.3.1.6	Menu line	6
\Control Panel\Software management\Evolution\Remote upgrade\Configure remote upgrade\TCP port	8.2.3.1.7	Menu line	6
\Control Panel\Software management\Evolution\Remote upgrade\Configure remote upgrade\SSL profile	8.2.3.1.8	Menu line	6
\Control Panel\Software management\Evolution\Remote upgrade\Configure remote upgrade\APN	8.2.3.1.9	Menu line	6
\Control Panel\Software management\Evolution\Remote upgrade\Configure remote upgrade>Login	8.2.3.1.10	Menu line	6
\Control Panel\Software management\Evolution\Remote upgrade\Configure remote upgrade>Password	8.2.3.1.11	Menu line	6
\Control Panel\Software management\Evolution\Remote upgrade\Configure remote upgrade\Phone number	8.2.3.1.12	Menu line	6
\Control Panel\Software management\Evolution\Remote upgrade\Configure remote upgrade\Print Parameters	8.2.3.1.13	Menu line	6
\Control Panel\Software management\Evolution\Remote upgrade\Automatic Upgrades	8.2.3.4	Subpanel	5
\Control Panel\Software management\Evolution\Remote upgrade\Automatic Upgrades\Cyclic calls	8.2.3.4.1	Subpanel	6
\Control Panel\Software management\Evolution\Remote upgrade\Automatic Upgrades\Cyclic calls\Reference Call	8.2.3.4.1.1	Icon	7
\Control Panel\Software management\Evolution\Remote upgrade\Automatic Upgrades\Cyclic calls\Cyclic call definitions	8.2.3.4.1.2	Icon	7
\Control Panel\Software management\Evolution\Remote upgrade\Automatic Upgrades\Cyclic calls\Manual parameters	8.2.3.4.1.3	Icon	7
\Control Panel\Software management\Evolution\Remote upgrade\Automatic Upgrades\Maintenance	8.2.3.4.2	Subpanel	6
\Control Panel\Software management\Evolution\Remote upgrade\Automatic Upgrades\Maintenance\Consult parameters	8.2.3.4.2.1	Subpanel	7
\Control Panel\Software management\Evolution\Remote upgrade\Automatic Upgrades\Maintenance\Deactivate	8.2.3.4.2.2	Icon	7
\Control Panel\Software management\Evolution\Remote upgrade\Automatic Upgrades\Maintenance\RAZ	8.2.3.4.2.3	Icon	5
\Control Panel\Software management\Evolution\Remote upgrade\Automatic Upgrades\Consult log	8.2.3.4.3	Icon	5
\Control Panel\Software management\Software packages removal	8.3	Icon	3
\Control Panel\Terminal settings	9	Subpanel	2

\Control Panel\Terminal settings\General settings	9_1	Subpanel	3
\Control Panel\Terminal settings\General settings\Currency	9_1_1	Icon	4
\Control Panel\Terminal settings\General settings\Date and Time	9_1_2	Subpanel	4
\Control Panel\Terminal settings\General settings\Date and Time\Set date	9_1_2_1	Icon	5
\Control Panel\Terminal settings\General settings\Date and Time\Set time	9_1_2_2	Icon	5
\Control Panel\Terminal settings\General settings\Date and Time\Date format	9_1_2_3	Icon	5
\Control Panel\Terminal settings\General settings\Date and Time\Time format	9_1_2_4	Icon	5
\Control Panel\Terminal settings\General settings\Language	9_1_3	Icon	4
\Control Panel\Terminal settings\General settings\PCIV4 time setting	9_1_4	Icon	4
\Control Panel\Terminal settings\Human interface	9_2	Subpanel	3
\Control Panel\Terminal settings\Human interface\BeepOnPincode	9_2_1	Subpanel	4
\Control Panel\Terminal settings\Human interface\BeepOnPincode\Frequency	9_2_1_1	Icon	5
\Control Panel\Terminal settings\Human interface\BeepOnPincode\Duration	9_2_1_2	Icon	5
\Control Panel\Terminal settings\Human interface\BeepOnPincode\Volume	9_2_1_3	Icon	5
\Control Panel\Terminal settings\Human interface\BeepOnPincode\Buzzer PINpad 1	9_2_1_4	subpanel	5
\Control Panel\Terminal settings\Human interface\BeepOnPincode\Print parameters	9_2_1_5	Icon	5
\Control Panel\Terminal settings\Human interface\Explorer	9_2_2	Icon	4
\Control Panel\Terminal settings\Human interface\Calibrate touch	9_2_3	Icon	4
\Control Panel\Terminal settings\Human interface\Camera	9_2_4	Subpanel	4
\Control Panel\Terminal settings\Human interface\Camera\Position	9_2_4_1	Icon	5
\Control Panel\Terminal settings\Human interface\Camera\Size	9_2_4_2	Icon	5
\Control Panel\Terminal settings\Human interface\Camera\Rotation	9_2_4_3	Icon	5
\Control Panel\Terminal settings\Human interface\Camera\Contrast	9_2_4_4	Icon	5
\Control Panel\Terminal settings\Human interface\Camera\Brightness	9_2_4_4	Icon	5
\Control Panel\Terminal settings\Human interface\Camera\Saturation	9_2_4_4	Icon	5
\Control Panel\Terminal settings\Human interface\Camera\Print	9_2_4_5	Icon	5
\Control Panel\Terminal settings\ECO mode	9_3	Subpanel	3
\Control Panel\Terminal settings\ECO mode\Screen saver time out	9_3_1	Icon	4
\Control Panel\Terminal settings\ECO mode\Standby	9_3_2	Icon	4
\Control Panel\Terminal settings\ECO mode\Print parameters	9_3_3	Icon	4
\Control Panel\Terminal settings\ECO mode\Backlight	9_3_4	Subpanel	4
\Control Panel\Terminal settings\ECO mode\Backlight \Backlight normal level	9_3_4_1	Icon	5
\Control Panel\Terminal settings\ECO mode\Backlight \Backlight low level	9_3_4_2	Icon	5
\Control Panel\Terminal settings\ECO mode\Backlight \Keyboard normal level	9_3_4_3	Icon	5
\Control Panel\Terminal settings\ECO mode\Backlight \Keyboard low level	9_3_4_4	Icon	5
\Control Panel\Terminal settings\ECO mode\Backlight \Display normal level	9_3_4_5	Icon	5
\Control Panel\Terminal settings\ECO mode\Backlight \Display low level	9_3_4_6	Icon	5
\Control Panel\Terminal settings\ECO mode\Backlight \PINPAD1	9_3_4_8	subpanel	5
\Control Panel\Terminal settings\ECO mode\Backlight \Backlight time out	9_3_4_7	Icon	5

\Control Panel\Terminal settings\ECO mode\Backlight \Print parameters	9 3 4 9	Icon	5
<i>\Control Panel\Terminal settings\ECO mode\Wakeup on tilt</i>	9 3 5	Subpanel	4
<i>\Control Panel\Terminal settings\ECO mode\ Wakeup on touch</i>	9 3 6	Subpanel	4
\Control Panel\Terminal settings\Communication means	9 4	Subpanel	3
\Control Panel\Terminal settings\Communication means\Ethernet	9 4 1	Icon	4
\Control Panel\Terminal settings\Communication means\Ethernet\DHCP activation	9 4 1 1	Menu line	5
\Control Panel\Terminal settings\Communication means\Ethernet\IP address	9 4 1 2	Menu line	5
\Control Panel\Terminal settings\Communication means\Ethernet\Subnet mask	9 4 1 3	Menu line	5
\Control Panel\Terminal settings\Communication means\Ethernet\Gateway address	9 4 1 4	Menu line	5
\Control Panel\Terminal settings\Communication means\Ethernet\DNS1 address	9 4 1 5	Menu line	5
\Control Panel\Terminal settings\Communication means\Ethernet\DNS2 address	9 4 1 6	Menu line	5
\Control Panel\Terminal settings\Communication means\Ethernet\Print parameters	9 4 1 7	Menu line	5
\Control Panel\Terminal settings\Communication means\Ethernet\Ping	9 4 1 7	Menu line	5
\Control Panel\Terminal settings\Communication means\Modem PABX	9 4 2	Icon	4
\Control Panel\Terminal settings\Communication means\Modem PABX\IPABX activation	9 4 2 1	Menu line	5
\Control Panel\Terminal settings\Communication means\Modem PABX\IPABX header	9 4 2 2	Menu line	5
\Control Panel\Terminal settings\Communication means\Modem PABX\IPABX number	9 4 2 3	Menu line	5
\Control Panel\Terminal settings\Communication means\Modem PABX\IPABX Trailer	9 4 2 4	Menu line	5
\Control Panel\Terminal settings\Communication means\Modem PABX\IPABX Standard	9 4 2 5	Menu line	5
\Control Panel\Terminal settings\Communication means\Modem PABX\Print parameters	9 4 2 6	Menu line	5
\Control Panel\Terminal settings\Communication means\Mobile Networks	9 4 3	Subpanel	4
<i>\Control Panel\Terminal settings\Communication means\Mobile Networks\Parameters</i>	9 4 3 1	Icon	5
<i>\Control Panel\Terminal settings\Communication means\Mobile Networks\Parameters\APN</i>	9 4 3 1 1	Menu line	6
<i>\Control Panel\Terminal settings\Communication means\Mobile Networks\Parameters\Login</i>	9 4 3 1 2	Menu line	6
<i>\Control Panel\Terminal settings\Communication means\Mobile Networks\Parameters>Password</i>	9 4 3 1 3	Menu line	6
<i>\Control Panel\Terminal settings\Communication means\Mobile Networks\Parameters\Startup mode</i>	9 4 3 1 4	Menu line	6
<i>\Control Panel\Terminal settings\Communication means\Mobile Networks\Set SIM code</i>	9 4 3 2	Icon	5
<i>\Control Panel\Terminal settings\Communication means\Mobile Networks\Set PUK code</i>	9 4 3 3	Icon	5
<i>\Control Panel\Terminal settings\Communication means\Mobile Networks\Retrieve status</i>	9 4 3 4	Icon	5
<i>\Control Panel\Terminal settings\Communication means\Mobile Networks\Select a network</i>	9 4 3 5	Menu	5
\Control Panel\Terminal settings\Communication means\WiFi	9 4 4	Subpanel	4
<i>\Control Panel\Terminal settings\Communication means\WiFi\Diisable or Enable</i>	9 4 4 1	Icon	5
<i>\Control Panel\Terminal settings\Communication means\WiFi\Scan networks</i>	9 4 4 2	Menu	6
<i>\Control Panel\Terminal settings\Communication means\WiFi\Advanced Options</i>	9 4 4 3	Subpanel	6
<i>\Control Panel\Terminal settings\Communication means\WiFi\Advanced Options\My networks</i>	9 4 4 3 1	Menu	6
<i>\Control Panel\Terminal settings\Communication means\WiFi\Advanced Options\VP configuration</i>	9 4 4 3 2	Menu	6
<i>\Control Panel\Terminal settings\Communication means\WiFi\Advanced Options\Active roaming</i>	9 4 4 3 3	Menu	5
\Control Panel\Terminal settings\Communication means\Bluetooth	9 4 5	Subpanel	4
\Control Panel\Terminal settings\Communication means\Bluetooth\Switch on or Switch off	9 4 5	Subpanel	4

\Control Panel\Terminal settings\Communication means\Bluetooth\Phone pairing	9.4.5.1	Menu	5
\Control Panel\Terminal settings\Communication means\Bluetooth\Add peripherals	9.4.5.2	Menu	5
\Control Panel\Terminal settings\Communication means\Bluetooth\Paired devices	9.4.5.3	Menu	5
\Control Panel\Terminal settings\Communication means\Bluetooth\Base	9.4.5.4	Subpanel	5
\Control Panel\Terminal settings\Communication means\Bluetooth\Base\Association	9.4.5.4.1	Subpanel	6
\Control Panel\Terminal settings\Communication means\Bluetooth\Base\Association\New base	9.4.5.4.1.1	Menu	7
\Control Panel\Terminal settings\Communication means\Bluetooth\Base\Association>Select base	9.4.5.4.1.2	Menu	7
\Control Panel\Terminal settings\Communication means\Bluetooth\Base\Association\Remove base	9.4.5.4.1.3	Menu	7
\Control Panel\Terminal settings\Communication means\Bluetooth\Base\Association\Print bases	9.4.5.4.1.4	Menu	7
\Control Panel\Terminal settings\Communication means\Bluetooth\Base\Advanced	9.4.5.4.2	Menu	6
\Control Panel\Terminal settings\Communication means\Bluetooth\Base\Base State	9.4.5.4.3	Menu	6
\Control Panel\Terminal settings\Communication means\Bluetooth\Base\Upgrade Base	9.4.5.4.4	Menu	6
\Control Panel\Terminal settings\Communication means\Bluetooth\Advanced options	9.4.5.5	Subpanel	5
\Control Panel\Terminal settings\Communication means\Bluetooth\Advanced options\Rename	9.4.5.5.1	Menu	6
\Control Panel\Terminal settings\Communication means\Bluetooth\Advanced options\Power mode	9.4.5.5.2	Menu	6
\Control Panel\Terminal settings\Communication means\Modem settings	9.4.6	Menu	4
\Control Panel\Terminal settings\GPS	9.5	Subpanel	3
\Control Panel\Terminal settings\GPS\Mode	9.5.1	Icon	4
\Control Panel\Terminal settings\GPS\State	9.5.2	Icon	4
\Control Panel\Terminal information	10	Subpanel	2
\Control Panel\Terminal information\Legal information	10.1	Icon	3
\Control Panel\Terminal information\Applications versions	10.2	Icon	3
\Control Panel\Terminal information\SDK information	10.3	Icon	3
\Control Panel\Terminal information\Firmware PCI PTS	10.4	Icon	3
\Control Panel\Terminal information\Hardware information	10.5	Subpanel	3
\Control Panel\Terminal information\Hardware information\Display	10.5.1	Subpanel	4
\Control Panel\Terminal information\Hardware information\Display\General	10.5.1.1	Icon	5
\Control Panel\Terminal information\Hardware information\Display\Wireless	10.5.1.2	Icon	5
\Control Panel\Terminal information\Hardware information\Display\Hardware	10.5.1.3	Icon	5
\Control Panel\Terminal information\Hardware information\Display\Readers	10.5.1.4	Icon	5
\Control Panel\Terminal information\Hardware information\Display\PINpad	10.5.1.5	Icon	5
\Control Panel\Terminal information\Hardware information\Print	10.5.2	Subpanel	4
\Control Panel\Terminal information\Shortcuts	10.6	Icon	4
\Control Panel\Config France	12.1	Subpanel	2
\Control Panel\Config France\Network Access	12.1.1	Menu	3
\Control Panel\Config France\Cash connexion	12.1.3	Menu	3

Table 7 - "Explorer" tree pathnames organisation

The following chapters will detail the different default sub-panels.

Note: Concerning all menus providing printing reports, even they are proposed on all terminal of TETRA range, their selection on a terminal without printer (ex: LANE5000) triggers nothing: no warning, no error message is reported to user.

On terminals with WEB applications running capabilities activated, the “WEB Desktop” follows up this tree pathnames organisation to perform its rendering as illustrated with the following pictures:

- On first screen “Control Panel” icon is selected
- On second screen “Terminal information” icon is selected.

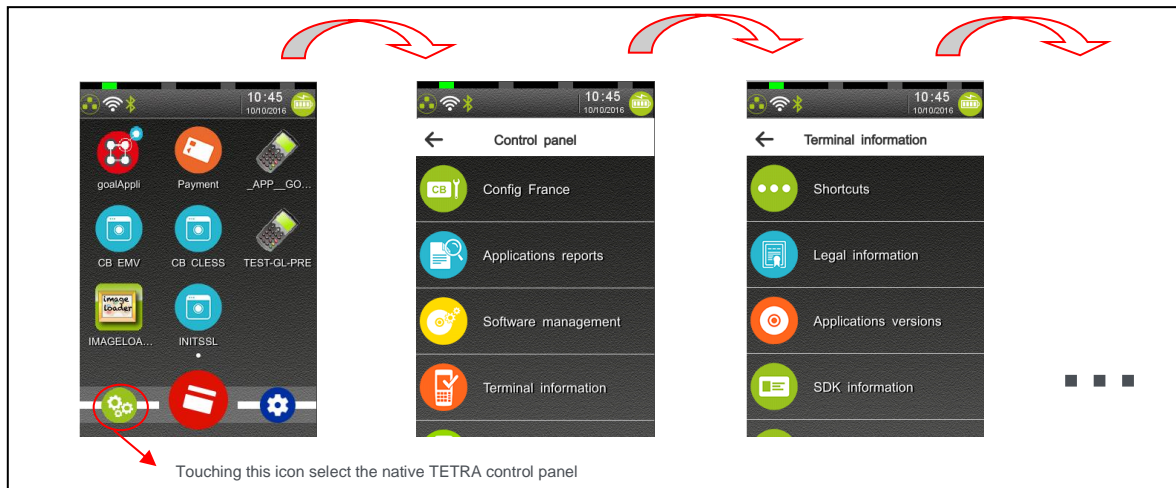


Figure 2 – TETRA “WEB Desktop” parsing “Explorer” tree

3_4 General rule of keypad usage

The minimal set of applications provided in the terminal used a common rule to manage keyboard during subpanel or menu management:

- **RED** key is used to cancel the operation in progress and to return to main menu or on “Explorer” according to use cases. This key may be implicitly expected even if it’s not proposed to selection on screen. (= case of “Explorer” and “sub-panels”)
- **YELLOW** key is used in menu, if proposed to selection on screen, to cancel the operation in progress and to return to the previous menu from where the operation was selected, highlighting maintained on the menu (= ready to be selected again)
- **GREEN** key is used to validate, to confirm a choice, an operation ...

As some menus or subpanels may be protected by password, no action during some duration stops waiting on this menu or subpanel: time-out term has same action as a **YELLOW** key hitting. This duration is governed by “Screen saver time-out” parameter (by default 60s).

3_5 TETRA “Status bar” description

By default one “Status bar” is displayed on top of the screen. Its location and presence on screen can be customized thanks to parameters file (refer to [TETRA parameters customization](#)).

3_5_1 General structure of the “Status bar”

The “Status bar” is divided in 2 main areas:

- Communications means status

- Other status

A separator materializes the boundaries of the 2 areas. When a status is not present in one area (ex: features not managed in the terminal) the reminding statuses are:

- left justified in communications means status area
- right justified in other status area

Communications means status area is divided in 6 areas: some of them are attached to a feature, the others reserved for future use:

- GPRS / 3G / 4G status
- Local network status (= Ethernet Lan)
- WIFI status
- Bluetooth status
- Modem status
- Unused areas reserved for future

Other status area is divided in 3 areas:

- Current time
- Current date
- Power status

Each area contents an icon of its associated feature except for date and time information. The look of the icon depends of the state of the feature. Common looks are:

- No icon = feature no presence in the terminal or OFF
- Grey icon = active feature but non connected
- Orange icon = when used connexion in progress
- Green icon = link ready to exchange data.

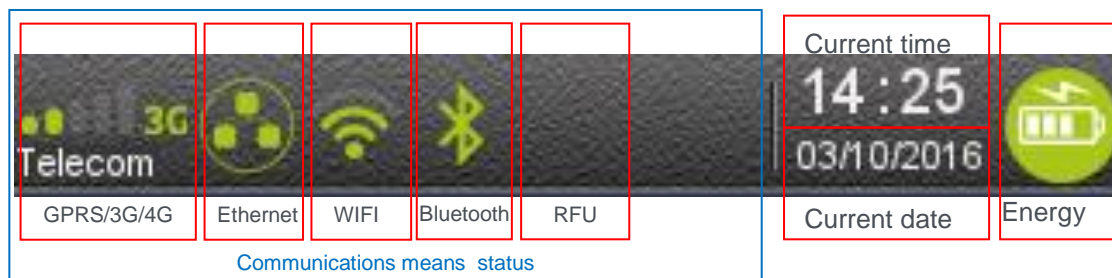


Figure 3 - The different areas in "Status Bar"

Note: Unlike TELIUM2 range terminals, the PKI information no more appears in the status bar.

Note: RFU area reserved for future use.

Note: This is a theoretical screenshot as all communication options displayed do not currently exist together on a terminal.

3_5_2 Date

The terminal displays the current date. The date is displayed according to format in "Date & Time format" menu (refer **Date and Time**). According to the different date format, to the short and long year format and to the different separators proposed, different date representations can be composed.

The following pictures illustrate some usual date format that can be displayed.



Figure 4 – Date European format (DD/MM/YYYY)



Figure 5 – Date Anglo-Saxon format (MM/DD/YYYY)



Figure 6 – Date Asian format (YYYY/MM/DD)



Figure 7 – Date ISO8601 format (YYYY-DD-MM)

3_5_3 Time

The terminal displays its current time with the HH:MM format. The “:” blinks at 1Hz frequency.

The current time is with 2 different modes:

- On 12 hours with AM or PM
- On 24 hours

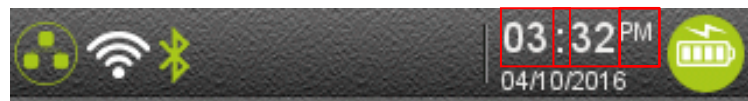


Figure 8 – Time on 12 Hours HH:MM AM or PM mode

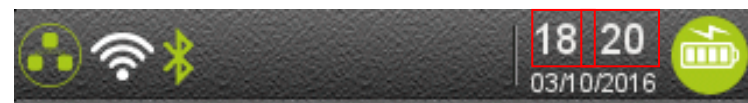


Figure 9 – Time on 24 Hours HH:MM mode

3_5_4 Power or Battery level status

External power supply present and battery charge level are reported on status bar of mobile terminal with:










- A thunderbolt icon  when mobile terminal is connected to a wired power supply. This icon overprints the icon of the battery.
- A battery icon  when terminal is only powered by its internal battery. In this case different icon shape illustrates the battery charge status.



Figure 10 – Power or battery status

Depending on the battery charge level, one of the following icons is displayed

-  → Battery charge greater than 80%,
-  → Battery charge greater than 60% and less than 80%,
-  → Battery charge greater than 40% and less than 60%,
-  → Battery charge greater than 20% and less than 40%,
-  → Battery charge less than 20%,
-  → Battery not present and connected to power supply,
-  → Powered by external power supply, battery full charge

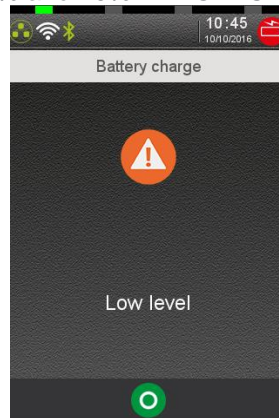
When a mobile terminal is charging its battery, external power supply may come from different sources:

- The terminal is on its base which is connected to main power, or
- The terminal is connected to a battery charging system via an USB link (PC, HUB...).

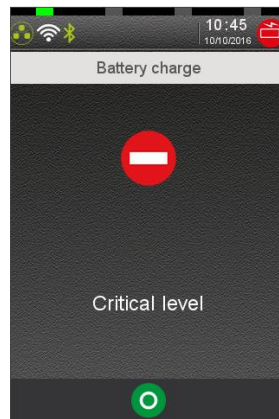
The battery charge status, illustrated by an icon of a battery, evolves according the acquired charge level until full charge will be obtained.

When the terminal is running on battery power supply and when the charge is less than a certain percentage, the terminal may display some specific message to warn the User.

- Battery charge level between 5% and 10% => LOW CHARGE state.



- Battery charge level = 5% => VERY LOW CHARGE state or battery charge level = 4% => CRITICAL state



- Battery charge level $\leq 1\%$ \Rightarrow terminal hardware automatically initiates a shutdown.

3_5_5 Main power connection


A part mobile terminal (=battery inside) on which a “thunderbolt” icon  indicates its connection to an external power supply (refer [Figure 10 – Power or battery status](#)), the status bar of the other terminals does present power status.



Figure 11 – Non mobile terminal connected to power supply

3_5_6 Ethernet network connection

The following icons indicate the Ethernet link status on a colour screen terminal.

No icon \rightarrow No Ethernet capability



\rightarrow Ethernet capability present and cable not connected;



\rightarrow Ethernet cable connected. When DHCP is selected, means no IP address set



\rightarrow Ethernet connected

The following icons indicate the Ethernet link status on black and white screen terminal.

No icon \rightarrow No Ethernet capability



\rightarrow Ethernet capability present with or without cable connected. When DHCP is selected, means no IP address set



\rightarrow Ethernet connected

This Ethernet link is established thanks to:

- An internal Ethernet interface, or



- An external Ethernet interface located in a basic ETHERNET/MODEM cradle or



- An external Ethernet interface located in a BLUETOOTH/ETHERNET/MODEM cradle



3_5_7 GPRS / 3G / 4G Network connection

The terminal displays the status of the 3G connection and the mobile network name.



Before connection, the mobile network status is represented by:

No icon → No mobile network module or module not activated;



→ Mobile network module is activated but not attached to a network.

The 3G network connection is represented by 2 elements:

- 3G connection status according icon colour: grey or green.



→ 3G module is attached to mobile network but not yet ready for data transfer;



→ 3G module is ready for data transfer to network, signal level is displayed;

- 3G connection reception signal level: number of highlighted bars.



→ Maximum reception level (100%)



→ High reception level (75%)



→ Medium reception level (50%)



→ Low reception level (25%)



→ Very low reception level (<5%)

According to network capabilities and operator SIM card configuration, terminal may connect in 2G. In this case the following icons are displayed:

- GPRS connection status:



→ Radio module is attached to 2G network but not yet ready for data transfer;



→ Radio module is attached to 2G network and it is ready for data transfer. In this case the signal level is displayed;

- GPRS connection reception signal level:



→ Maximum reception level (100%)



→ High reception level (75%)



→ Medium reception level (50%)



→ Low reception level (25%)



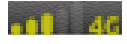
→ Very low reception level (<5%)

Some high mobile terminals offer 4G network connexion usage. In this case the following icons are displayed:

- 4G connection status:



→ Radio module is attached to 4G network but not yet ready for data transfer;



→ Radio module is attached to 4G network and it is ready for data transfer. In this case the signal level is displayed;

- 4G connection and reception signal level:



→ Maximum reception level (100%)



→ High reception level (75%)



→ Medium reception level (50%)



→ Low reception level (25%)



→ Very low reception level (<5%)

3_5_8 Bluetooth connection

The terminal displays the status of the Bluetooth connection.



The Bluetooth connection is represented by one element:

- The connection status:

No icon → no Bluetooth capability or Bluetooth OFF (= in config menu it can be enabled)



→ Bluetooth present but not activated.



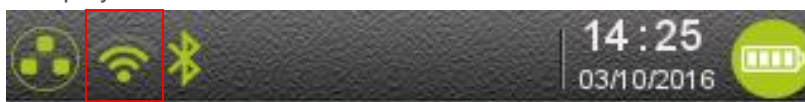
→ Bluetooth connection is in progress.



→ Terminal connected to at least one base.

3_5_9 Wi-Fi connection

The terminal displays the Wi-Fi connection status.



The Wi-Fi connection is represented by 2 elements:

- Wi-Fi connection status:

No icon → No Wi-Fi module present or Wi-Fi OFF (= in config menu it can be enabled)



→ Wi-Fi capability present and radio on;



→ Wi-Fi module is attached to an access point but waiting for an IP address;



→ Wi-Fi module is attached to network

- Wi-Fi connection reception signal level:



→ Maximum reception level (greater than -55 dBm)



→ High reception level (between -70 dBm and -55 dBm)



→ Medium reception level (between -85 dBm and -70 dBm)






→ Low reception level (lower than -85 dBm)

3_5_10 Contactless connection

When physical LEDs are not available, the terminal displays the Contactless connection status on screen (= notion of software LEDs).



The contactless connection status is represented by a LED:

- | | | |
|---|----------------|--|
|  | GRAY | → Contactless HW capable or led off state during blinking |
|  | GREEN Blinking | → Contactless HW & SW capable and READY. |
|  | GREEN Static | → Contactless field turned ON, waiting the contactless card. |

4 TETRA terminal Power-UP sequence

TETRA terminal start-up is divided in difference steps which durations may depend on operations to be performed. The number of operations may be different depending of terminal state;

- New software to control and to install will impact substantially the duration of start-up
- Some operations as Secured OS replacement or primary OS element may need intermediate hardware reboot to be performed.

4_1 Step1 = Secured OS initialization

The Secured OS is the first software of a TETRA terminal which is initialized and started. During this step the following screen is displayed.

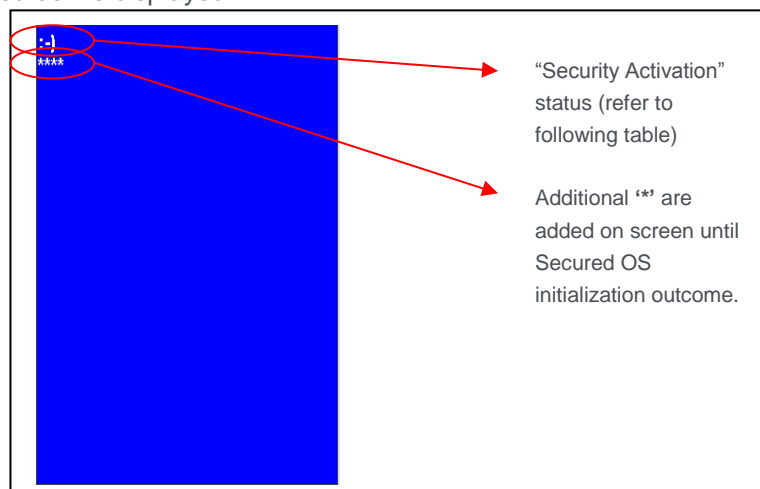


Figure 12 – Secured OS boot screen

When the terminal stops on this screen without other activity, the terminal must be sent to a repair center.

SCREEN	MEANING
“ : (“ ☹	The Secured OS of the terminal has not been loaded. The terminal is not activated (☹symbol).
“ :-) “ ☺	The Secured OS of the terminal has not been loaded. The terminal is activated (☺symbol).

Table 8 - Secured OS startup status

On mobile terminals (ex: MOVE5000) some other screens may be optionally displayed according to battery charging status.

When battery level voltage is too low and the terminal is not connected to an external power supply, one of the following screens is displayed during 3 seconds and the terminal automatically shutdown.

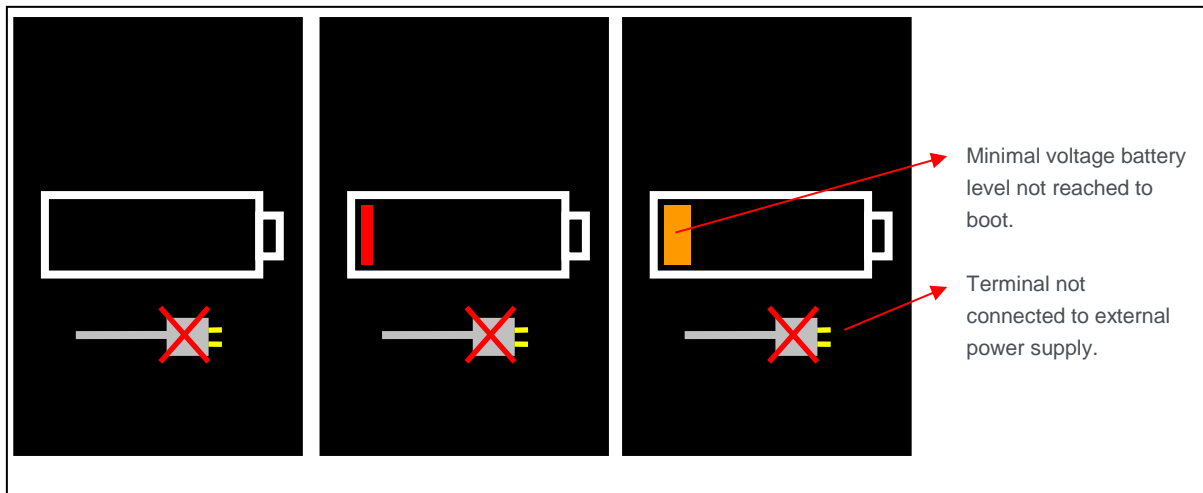


Figure 13 – Secured OS battery low state screen

When the terminal is connected to an external power supply and until the battery level voltage has not reached its nominal value to boot, one of the following screens is displayed.

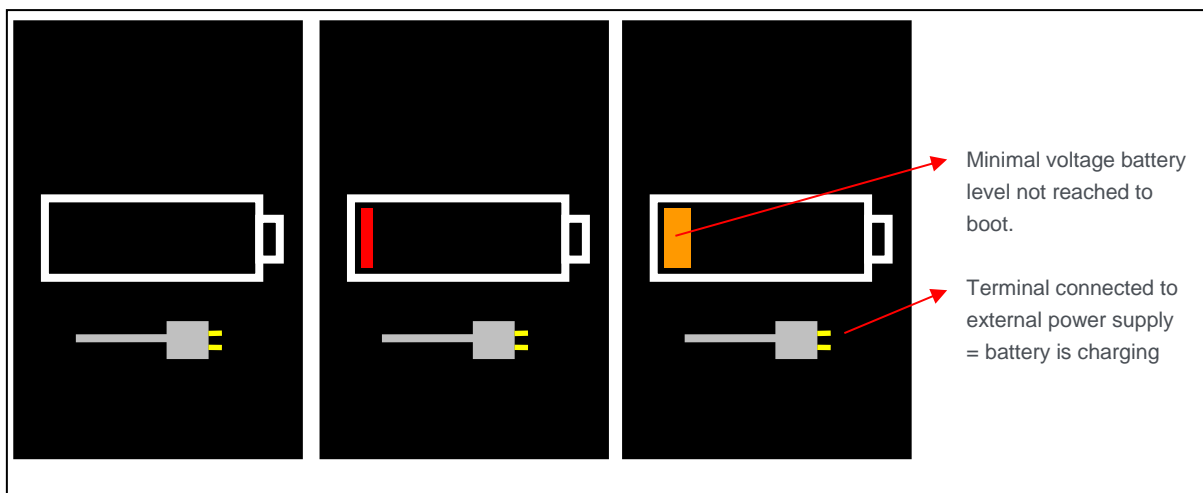


Figure 14 – Secured OS battery charging state screen

This first charging step may take tens of minutes.

4_2 Step2 = TETRA OS initialization and startup

The TETRA OS is the second software of a TETRA terminal which is authenticated, initialized and started. During this step the following screen is displayed.



Figure 15 – TETRA OS boot screen

During the second part of TETRA OS initialization (= Screen 2 displayed), a beep sounds: during the 2 seconds after it's possible in pressing key to enter in specific operations:

- Key '.' is pressed → Local loading mode is activated for local maintenance thanks to "LLT" PC tool (if no USB key is detected) or thanks to an USB key (if an USB key is detected) .
- Key '5' is pressed → Remote debug mode is activated for development. This is only available on terminal which is "development" mode (=> not in production state = Flashing red banner "Do not use for payment" visible).

When an USB is detected to perform local loading mode (= presence of "TELIUM3" directory), the terminal asks the user to confirm the loading. If the user cancels the operation, the terminal expects LLT connexion. According to the terminal state "development" or "production", the loading by an USB key allows performing:

- Software update whatever terminal state
- Factory reset software loading only for terminal in "development" state.

When the "\TELIUM3" directory, in the USB key, contents sub-directories, it is possible to parse them thanks to "YELLOW" key and to select a directory contenting the packages to load thanks to "GREEN" key.

The 2 following screens illustrate these 2 uses cases.

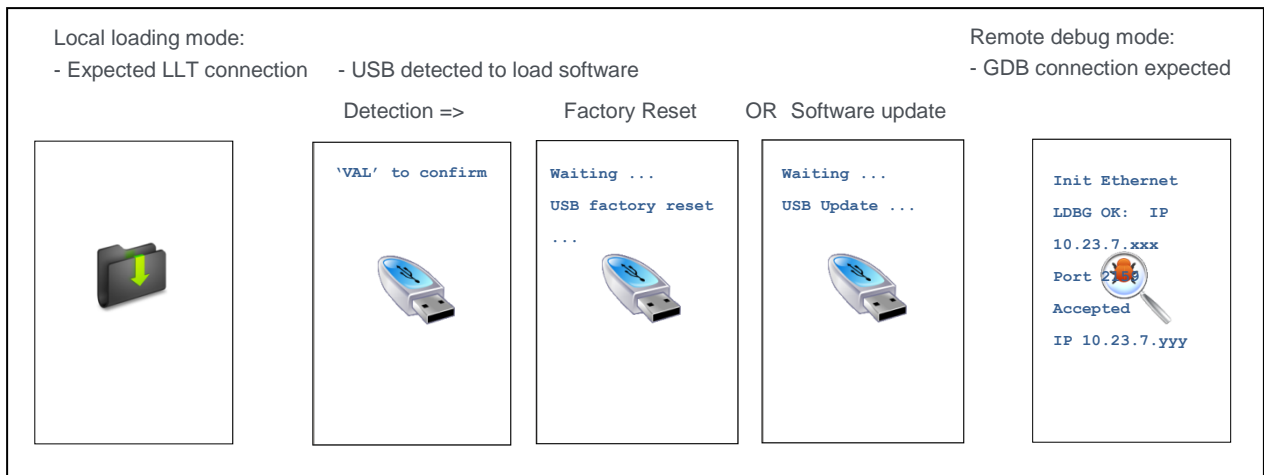


Figure 16 – TETRA OS local loading or wait for debug screen

When GDB connexion is expected the terminal displays the following messages:

- “Init Ethernet” until connexion to DHCP and IP address set
- “LDBG OK: IP 10.23.7.xxx Port 2159” when IP address is set and until connexion establishment with PC workstation running Ingedev/GDB.
- “Accepted IP 10.23.7.yyy” when connection is established with Ingedev/GDB.

During the second part of TETRA OS initialization (= Screen 2 displayed), after the beep, if the terminal is not ready to start, the Local loading mode is activated. When this appends in field, the terminal must be returned to a repair center:

- The minimal set of software to run is not present
- The minimal set of software to run is corrupted.

When there is no software update pending, the duration of this step is around 6s, otherwise this step take time according to the number of software packages to authenticate, to install, to update and to remove.

At this step, the applications of the terminal begin to start. During this step in which applications may wait to other applications availability to perform treatments, no human action is possible, on touch and on keyboard. This state is highlighted by the following screen:

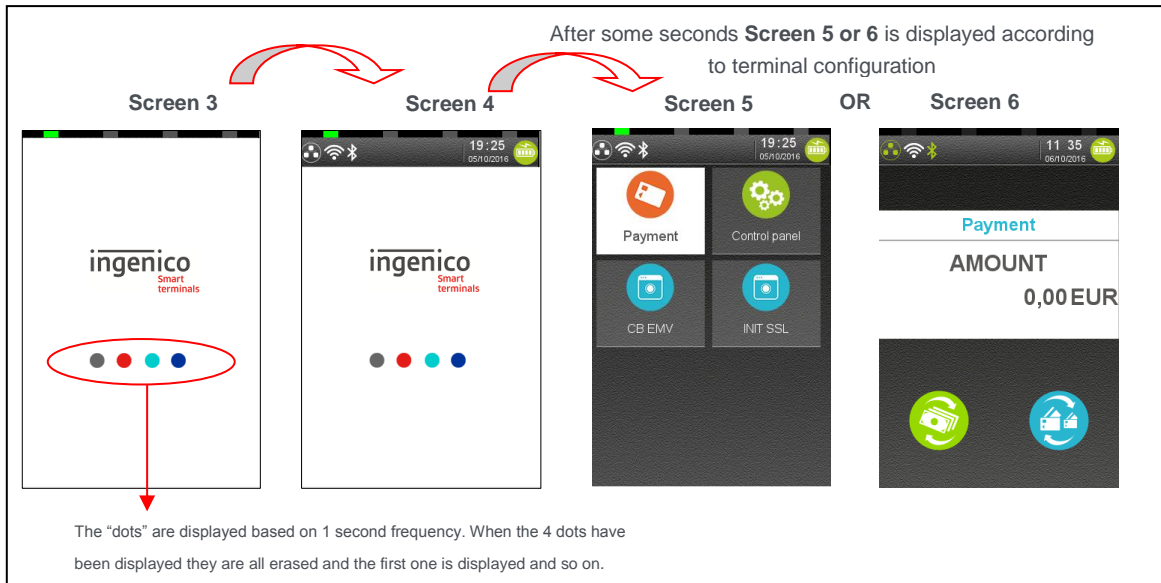
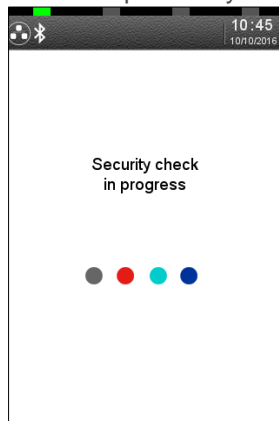


Figure 17 – TETRA applications start-up screen

Note: When the terminal has done a specific planned reboot (refer to **9_1_4 PCIV4 time slot**) to control the integrity of the software, screen 4 is replaced by the following screen:



When running WEB applications capabilities have been activated, the starting sequence is slightly different. After "Screen 4", other screens are displayed. The following figure illustrates start-up in presence of WEB PLATFORM:

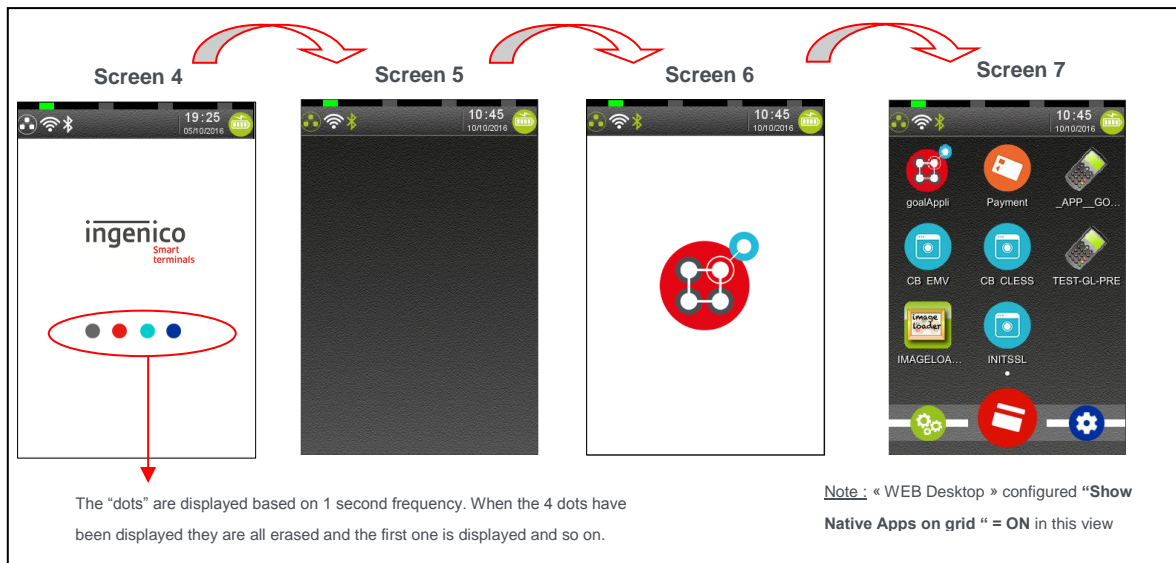


Figure 18 – TETRA applications in case of WEB applications presence

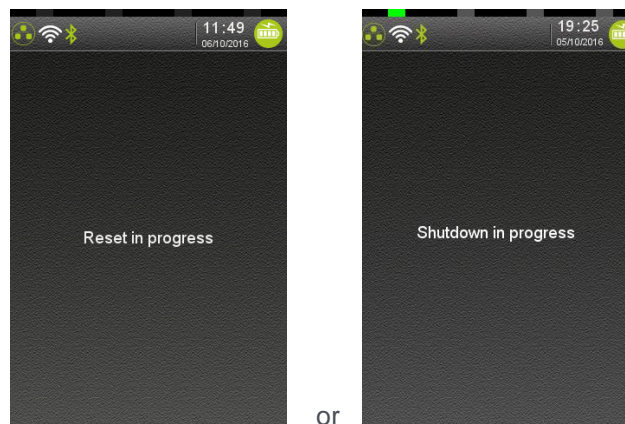
Note: According to terminal configuration "Payment" "Amount" screen may also be the issue of start-up when WEB applications capabilities are activated as in previous figure.

4_3 Power-down or reboot sequence

Keys combination of "YELLOW" key and "." triggers a reboot of the terminal.


- On standalone terminal (ex: DESK5000), the terminal stops software execution and restarts.
- On a mobile terminal (ex: MOV5000), the terminal stops software execution and power-down. The User needs to press "GREEN" key to power-on the terminal again.

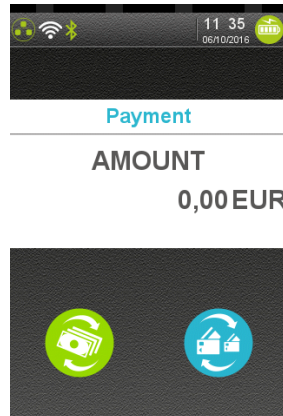
In this case the following screens are displayed until all processes in progress stop. According to resources used by applications this may take some seconds before a black screen appears and the real reboot starts.





Note: It's safe to use this keys combination than removing the power pack or the power supply when the terminal seems to be blocked.

5 “Explorer” “Payment” icon selection

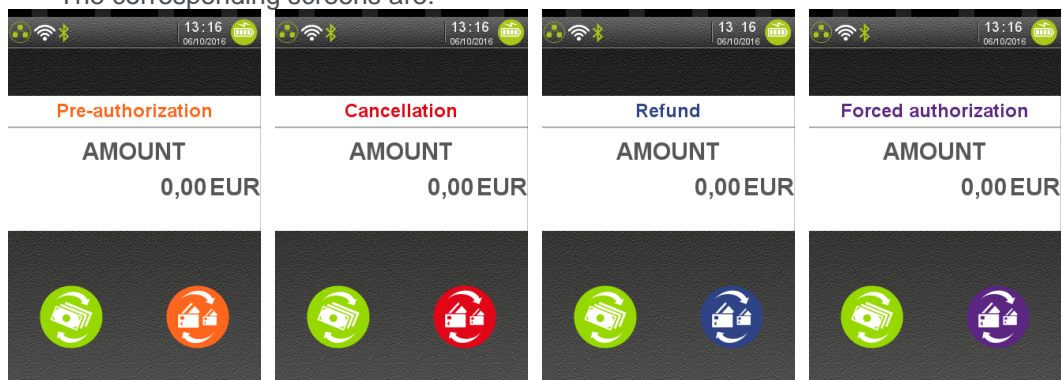
When selecting “Payment” icon  on “Explorer”, it’s possible to initiate a payment: the terminal proposes to user to enter an amount.



On bottom on the screen, some icons are present to typify the payment type or the amount:

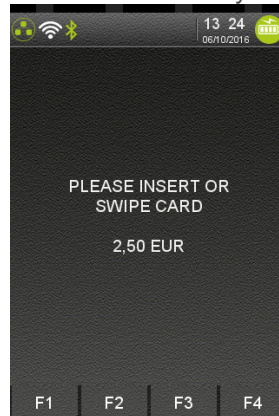
- Currency  icon allows selecting another currency according to those registered by applications. This icon is inactive when only one currency available. Amount entry field is automatically adjusted to currency specificities. (ex: separator, authorized number after separator, ...)
- Payment  icon allows selecting another payment type according to those authorized by applications. This icon is inactive when only one payment type authorized. Each time the payment icon is touched:
 - A new payment type is proposed
 - The background of payment icon is set to a new colour
 - The payment type is displayed on top of “Amount” text with the colour of the icon .
 - The different proposed payment types are:
 - “Payment”
 - “Auto. forced”
 - “Cancellation”
 - “Refund”
 - “Pre-authorization”

The corresponding screens are:




The following screen is displayed when an amount has been validated; the terminal starts to wait for payment means presentation.

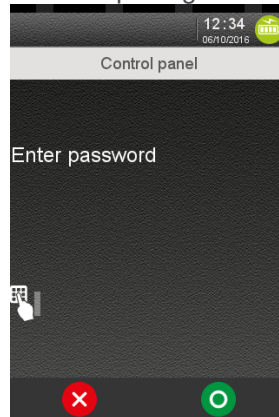
- The supported payment means depend of terminals settings and customisation done via applications or parameters files.
- The operation can be cancelled thanks to “RED” key.



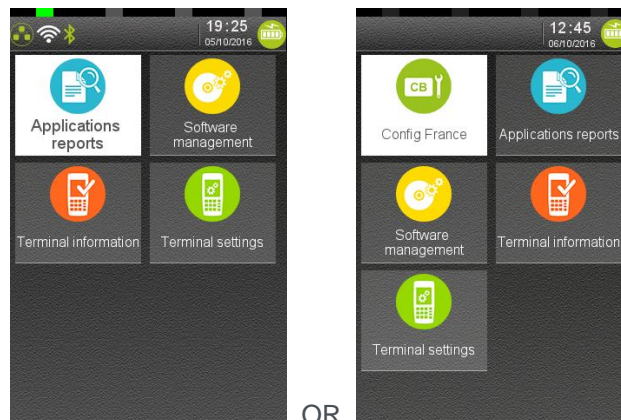
Enter a chip card or swipe a magnetic card or tap a contact less card to start a payment. This operation may be cancelled thanks to “RED” key.

6 “Control Panel” icon selection

When “Control panel” icon  on “Explorer” is selected and according to terminal configuration, an access password may be asked to user before opening “Control panel”.



When a valid password is entered the following screens could be displayed according loaded configuration:



Default

OR

Locally customized (ex: FRANCE)

The following chapters will detail the different panels or menus listed in [Table 7 - "Explorer" tree pathnames organisation](#) : One chapter per element of level 2 column.

The “Config France” icon is available only on French configuration. The description of this menu is provided in the annex chapter of this document.

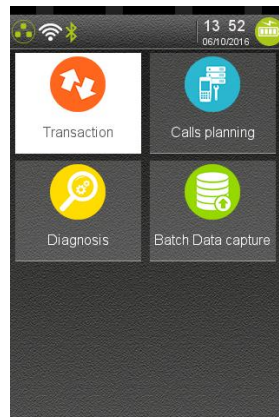
7 Applications reports

This menu gathers all printed reports done by the customers' applications and a subset of reports done by software PLATFORM. The other reports of the PLATFORM are provided by different sub-panels of the "General settings" panel.


This specific menu addresses the following items:

Item	Reference
Transaction State	7_1
Calls planning	7_2
Diagnostics	7_3
Batch Data capture	7_4


When "Application Reports" icon  is selected on "Control panel", the following subpanel is proposed:



7_1 Transaction

From "Application Reports" screen, select the  icon (named "Transaction"): when implemented in applications, it prints the log of the transactions. This item is functional only on terminals equipped with a printer.

7_2 Calls planning

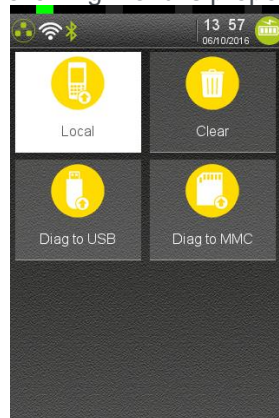
From the "Application Reports" screen, select the  icon (named "Calls planning"): when implemented in applications, it prints the schedule of coming automatic calls (as calls for downloading). This item is functional only on terminals equipped with a printer.

7_3 Diagnostics

To retrieve diagnostics information save in terminal, select from the “Application Reports” screen, the



icon (named “Diagnostics”). The following menu is proposed:



Three ways to extract diagnostics information from the terminal:

- By creating reports on screen or on printer = “Local” icon
- By saving diagnosis files on an USB key = “Diag to USB” icon.
- By saving diagnosis files on a MMC/SD card = “Diag to MMC” icon.


The recorded diagnostics may be also erased thanks to “**Clear**” icon.

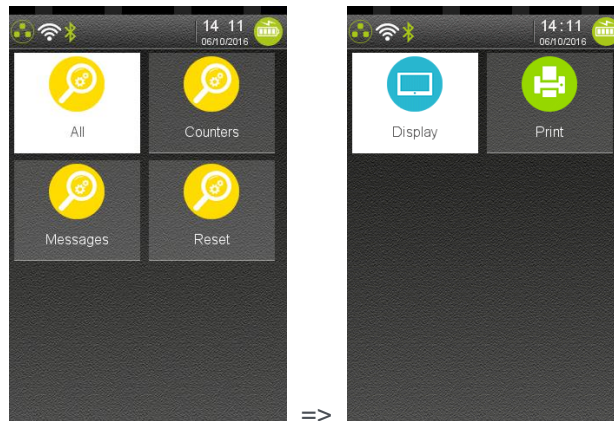
This specific menu addresses the following items:

Item	Reference
Local	7_3_1
Diag to USB	7_3_2
Diag to MMC	7_3_2
Clear	7_3_3

7_3_1 Local



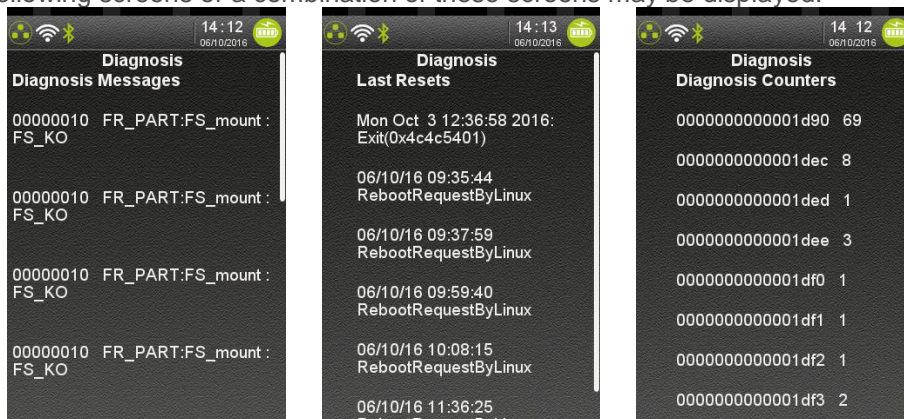
When selecting  icon (named “Local”), the terminal proposes to extract all recorded diagnosis files or specific type of diagnostic information: it will possible to choose afterward between screen rendering or printing.



Four ways to extract locally diagnostics information from the terminal:

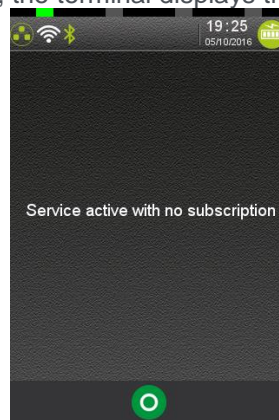
- Concatenation of all recorded diagnosis files
- Counters diagnosis file = Different counters recorded by applications and PLATFORM/OS software
- Messages diagnosis file = Different errors or warning messages recorded by applications and PLATFORM/OS software
- Reset diagnosis file = Different date / time and cause of the terminal reboot action.

One of the following screens or a combination of these screens may be displayed:




When information exceeds the one screen, it's possible to scroll thanks touch screen.

When there is no recorded information, the terminal displays the following error message:





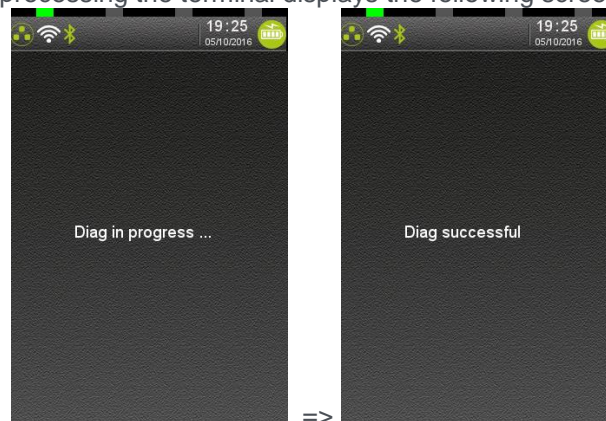


When selecting icon  (named "Print", the same information are reported on a ticket.

7_3_2 Diag to USB or MMC

Diagnostics information can be saved on USB key or on a MMC/SD card. Apart different memory support used; there is no difference between these 2 menus.

Insert an USB key (or a MMC) and select icon  (named "Diag to USB") or icon  (named "Diag to MMC"). During processing the terminal displays the following screens.



At the end of the operation the user can remove the key (or the MMC).

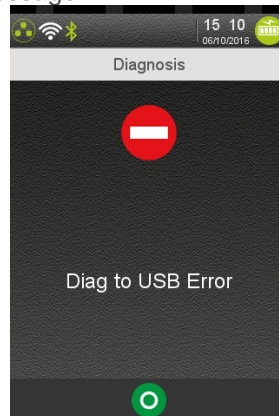
When the operation performs successfully, the terminal has:

- Create a directory named with the serial number of the terminal:
 - Ex = "141423413270000500000333"
- Inside this directory it creates a directory with date/time of the extraction:
 - Ex = "201604251419" corresponding to April 25th, 2016.
- It copies in these "date/time" directory all the log/diagnostics files it finds. Here after, the list of all files that may exist:

Filenames	Description
APPCOUNTER.DIA	Application usage diagnostics file
APPTXT.DIA	Application usage diagnostics file
BAT.DIA	Battery log = part managed by Secured OS
BAT.LOG	Battery log = part not managed by Secured OS
BOOTLOG.DIA	BOOT sequence log of Secured OS
COUPLE_SSL.CFG	SSL connexion log information
DEBUG.INI	Syslog trace settings
HTERMINAL.INI	Hard configuration description
INITRD.DIA	Linux kernel BOOT sequence log
KPANIC.DIA	Linux kernel log on kernel "panic" event
ldbg.log	LDBG/GDB log file (not in field)
LIFECOUNTER.DIA	Life counter
LOGPROD.DIA	Secured OS software configuration
network.dia	UDP/TCP input output log connexion

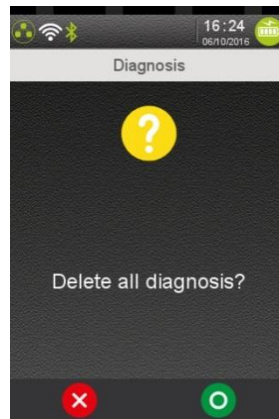
network.dia.bak	UDP/TCP input output log connexion backup file
ntpt3.log	Download protocol log information
OSSECURE.DIA	Secured OS usage log file
OSSECURE.LOG	Secured OS usage log file
MOCKUP.INI	Development mode activation state (Not in field)
PACKAGES.CSV	Terminal Software configuration
SECURE_OS.INI	Secured OS firmware information
STERMINAL.INI	Specific terminal configuration description (MAC address serial number ...)
sw_act.log	Software activation log file
syslog.log	General traces of OS/PLATFORM/applications present if activated
SYSTEM.CFG	
TMSCALL.log	TMS call log information
TMSCALL.TMS	TMS call configuration for automatic connexion
TMSCONFIG.TMS	TMS call configuration for manual connexion

When the USB key (or the MMC) has not been inserted before selecting the storing action, the terminal displays the following error message.



7_3_3 Clear

When selecting icon  (named “**Clear**”), the terminal proposes to user to erase the all diagnosis files. After confirmation by user, the files are erased. display or to print the content of diagnosis files.



Note: Whatever the result of the operation, nothing is reported to the user.


7_4 Batch Data capture

From “Application Reports” screen, select the icon named “Batch Data capture”. When implemented in applications, it prints the concatenation of the different batch data captures recorded by applications.

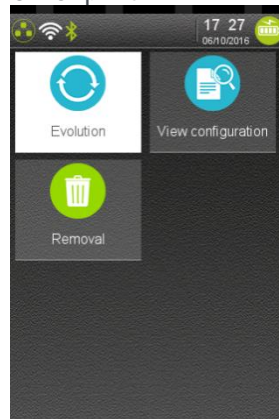
This item is functional only on terminals equipped with a printer.

When no application has subscribed to this feature, nothing appends.

8 Software management

“Software”  icon selection opens the following screen sub-panel dedicated to software management:


- Software evolution management (Local or automatic terminal supervision and download/upload)
- Local software package removal
- Software configuration reports view or print

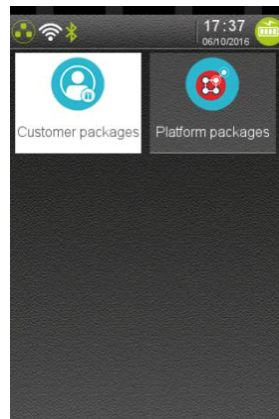


This specific panel addresses the following items:

Item	Reference
View configuration	8_1
Evolution	8_2
Removal	8_3

8_1 View configuration


From “Software management” panel, select the  icon (named “View configuration”). The following menu is proposed:



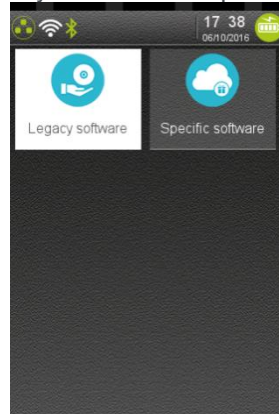
The “Software configuration” screen proposes to select the category of software to view:

- “Customer packages” menu concentrates all customer applications and their dependencies = all software developed locally for INGENICO’ customers.
- “Platform packages” menu concentrates all generic software developed by INGENICO group and provided by default to run on TETRA terminal.

8_1_1 Customer packages

When selecting  icon (named “Customer Packages”), it’s proposed to select the package nature on which information are required. Proposed package natures are:

- Legacy software = components developed using TELIUM+ framework, which may exist also on TELIUM2 range. It includes also legacy components provided by TELIUM Platform (INGENICO corp).
- T3 specific software = components developed using TELIUM3 framework, (which do not exist on TELIUM2 range) and which may use the full capabilities of TETRA terminal range.

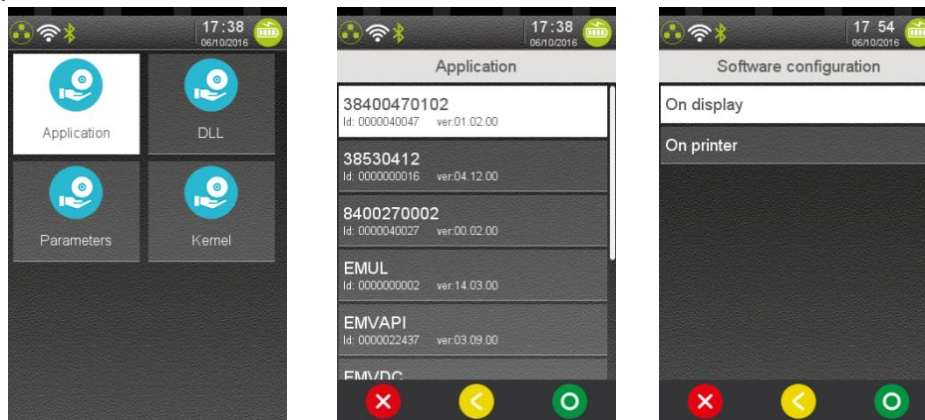
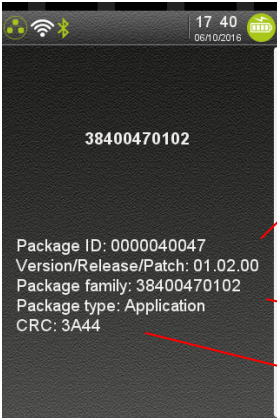


Whatever package nature selection, the next menu proposes to choose a type of component on which information must be reported.

- Application (extension .P3A)
- DLL (Dynamic Linked Library) (extension .P3L)
- Parameters file (extension .P3P)
- Keys file (extension .P3T)

When a type of component has been selected, the terminal displays the list of present components with brief information. Selecting or validating with GREEN key one element of list gives access to detailed information. This information can be displayed or printed according to a specific selection.

Follows here after the chaining of different screens to obtain detailed information of a specific component:

Package Identifier: 10 characters
 - Less than « 100000 », it's a legacy component. This component may also exist on TELIUM 2 range with the same identifier.
 - Otherwise the 3 first characters are country code of the software "editor": "999" means Ingenico GROUP, (other specific values exist).

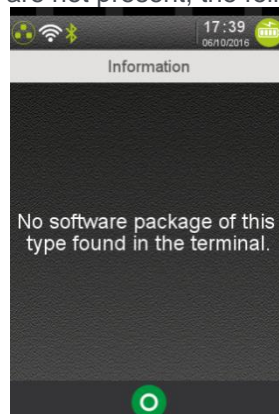
Version/Release/Patch: for legacy components patch may be not managed (fixed to zero or ignored)

Package family: It's the friendly part of the identification of a component.

CRC: value modified at each evolution of the component

Figure 19 - TETRA software packages identification description

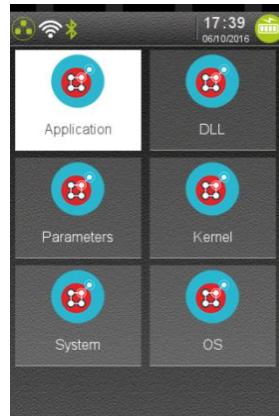
When some categories of components are not present, the following screen may be displayed:



8_1_2 Platform packages

When selecting “Platform Packages” menu, the package nature of the different components provided by TELIUM Platform (INGENICO corp) are listed. This list does not include legacy components (based on TELIUM+ framework). Proposed package natures are:

- Application (extension .P3A)
- DLL (Dynamic Linked Library) (extension .P3L)
- Parameters file (extension .P3P)
- Kernel (Keys or sensible software files, extension .P3T)
- SYSTEM file (extension .P3S)
- OS file (extension .P3O)

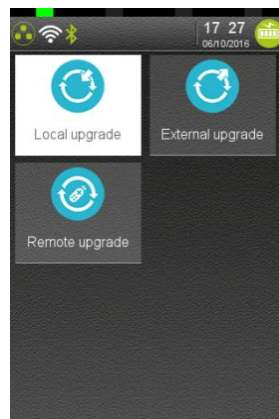


When a type of package has been selected, the terminal displays the list of present components with brief information. Selecting the focused component in the list gives access to detailed information: it can be displayed or printed according to a specific choice. Same type of screen capture may be obtained as in the previous menu.

8_2 Evolution

From “Software management” panel, select the  icon (named “Evolution”). The following menu proposes to user different types of software updates:


- via local PC and LLT tool
- via an external device as USB key or MMC media
- via remote TMS call

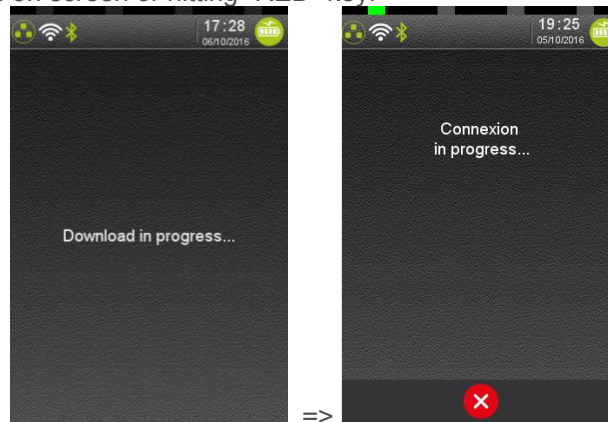


Select the way to upgrade the terminal. The list depends on the configuration and items can be:

Item	Reference
Local upgrade	8_2_1
External upgrade	8_2_2
Remote upgrade	8_2_3

8_2_1 Local upgrade

When  “Local upgrade” icon (=via LLT)” has been selected, the terminal displays the following screen until the user triggers a connection with LLT PC tool. The operation can be cancelled thanks to touching “RED” button on screen or hitting “RED” key.



When the user clicks on detected terminal in LLT interface, the loading operation begins (Refer to LLT user manual for more information.)

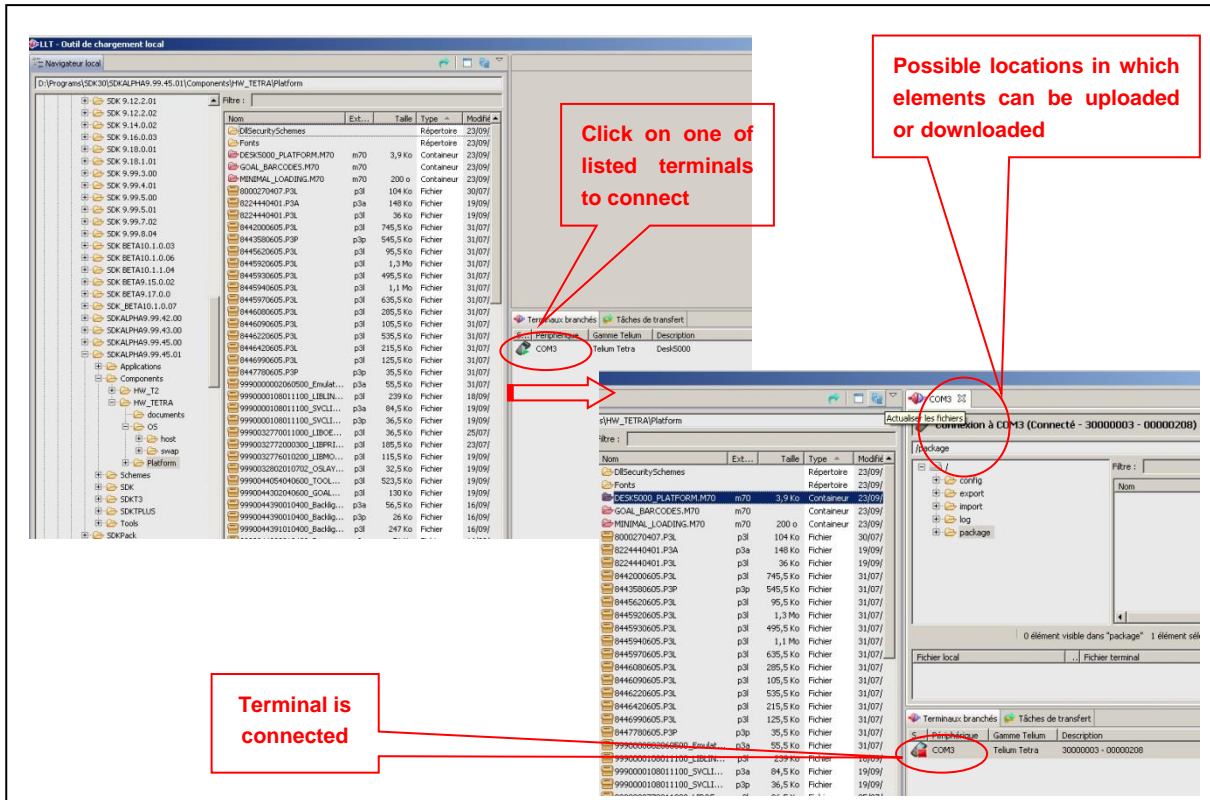
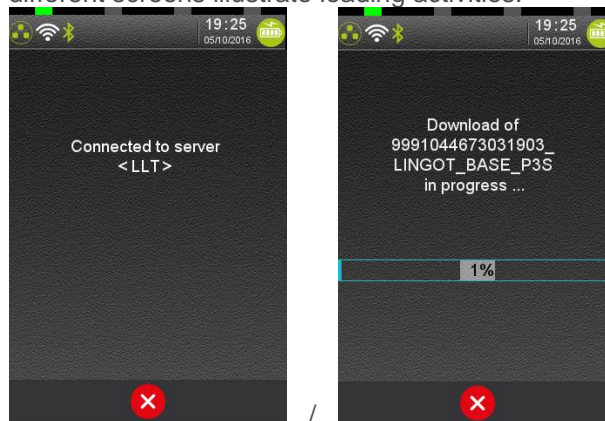


Figure 20 – LLT connection

During software transfer, different screens illustrate loading activities.

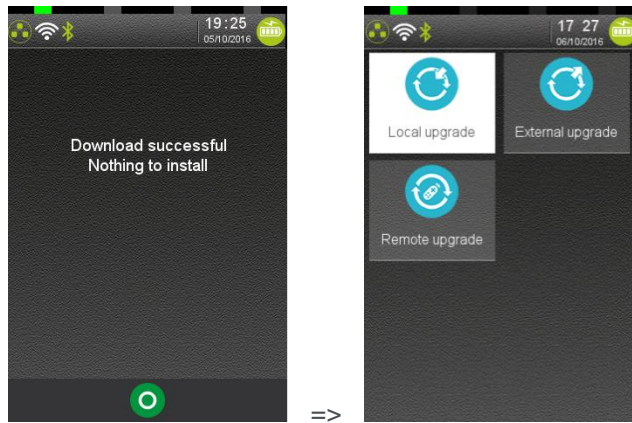


When the user disconnects “LLT” PC tool, the terminal displays a status of the operations done during loading:

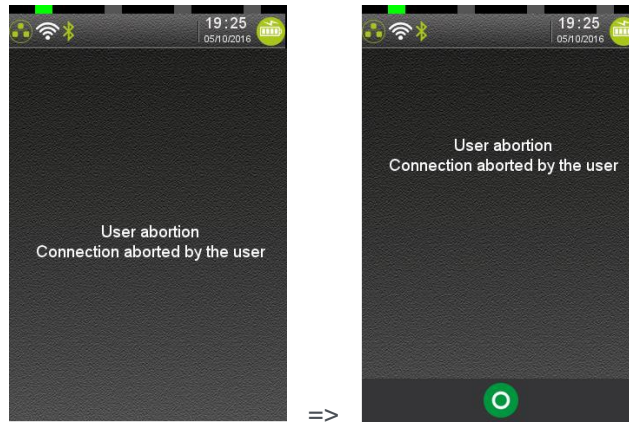
- Number of packages to install
- Number of packages to uninstall
- Number of files imported in “HOST” directory

When uploading/loading concerns software to install, a reboot of the terminal is required to finalize the operation.


In the other cases, at disconnection of the terminal, the previous screen is displayed and a new loading operation can be selected.



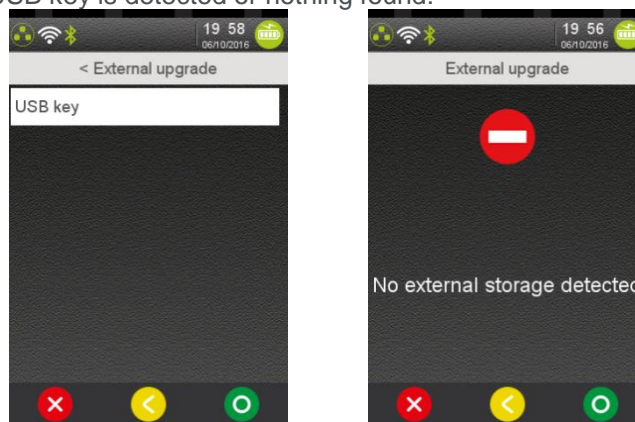
The local loading operation may be also aborted by user thanks to “RED” key. The following screen sequence is displayed:



8_2_2 Upgrade using External device

When selecting  “External Upgrade” icon, the terminal displays the list of detected external connected devices.


Screenshots when an USB key is detected or nothing found:



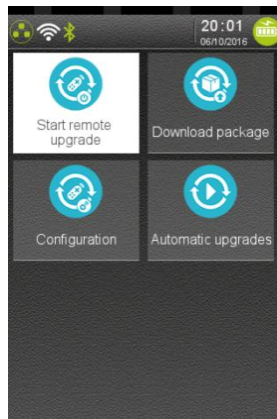
When selecting a connected device, the terminal parses the content of the media to find a “TELUM3” directory: it must content TETRA software packages to install. Currently only software loading is supported, it’s not possible to import file in terminal “HOST” directory.

The terminal displays the status of the loading operation in progress.

8_2_3 Remote upgrade

This menu is dedicated to software update thanks to TMS solution. When  “Remote upgrade” icon has been selected, the terminal displays the following possible actions:

- Manual connexion to TMS server to check if needed updates available.
- Manual connexion to TMS for a specific loading operation
- TMS parameters selection or modification
- Automatic connexion to TMS



Select the way upgrading the terminal. The list depends on the configuration and items can be:

Item	Reference
Start remote upgrade	8_2_3_2
Download specific package	8_2_3_3
Configure remote upgrade	8_2_3_1
Automatic Upgrades	8_2_3_4

8_2_3_1 Configure remote upgrade

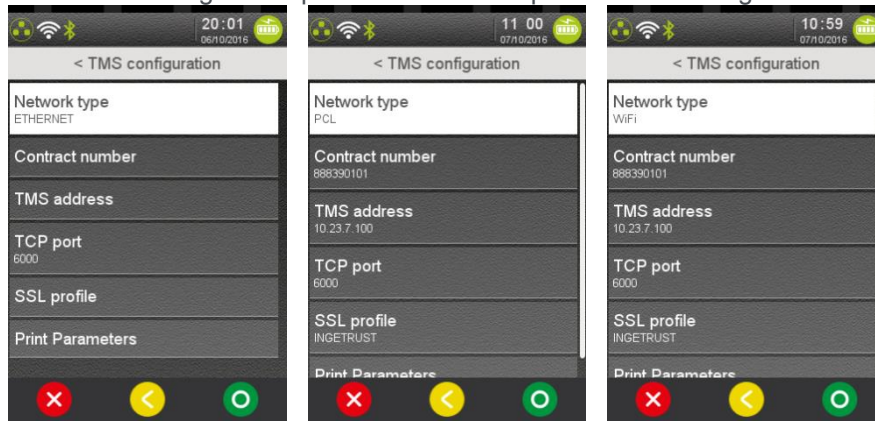
When  “Configure remote upgrade” icon has been selected, the terminal displays:

- Type of registered communication mean used to reach TMS server. “Network Type” are:
 - 3G/GPRS
 - ETHERNET
 - MODEM
 - MODEM ISP
 - WIFI
 - PCL
- The list of the different parameters (and their registered values) that can be modified according to “Network Type”.
- An additional menu to print all the recorded parameters corresponding to selected “Network Type”.

8_2_3_1_1 TMS ETHERNET or WIFI or PCL link

When “Network Type” is registered to “ETHERNET” (or to “WIFI” or to “PCL”):

- Each presented parameter can be modified.
- A status ticket of the registered parameters can be printed in selecting “Print Parameters”.



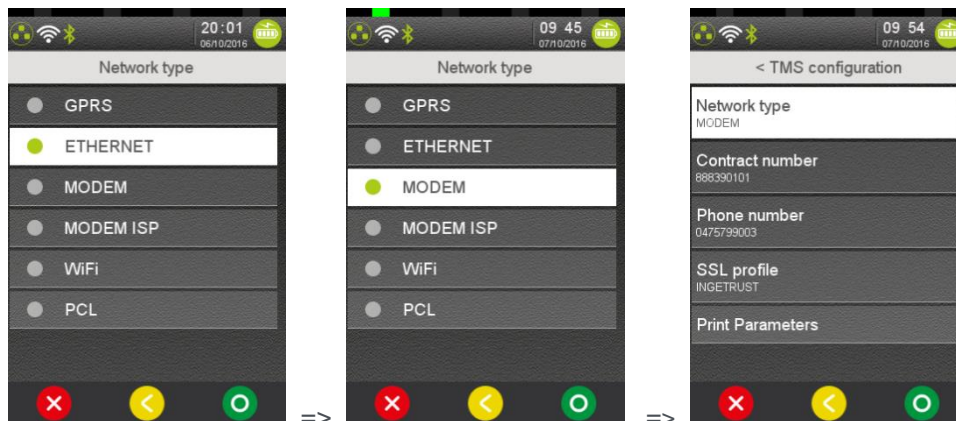
When selecting item menu “Network type”, the user can select another communication mean used to reach TMS server.

The following table provides the different parameters to set and to use “ETHERNET” or “WIFI” or “PCL” to perform remote TMS upgrades:

Item	Reference
Contract Number	8 2 3 1 5
TMS address	8 2 3 1 6
TCP port	8 2 3 1 7
SSL profile	8 2 3 1 8

8_2_3_1_2 TMS using MODEM link

Screenshots “Network Type” registering to “MODEM”:

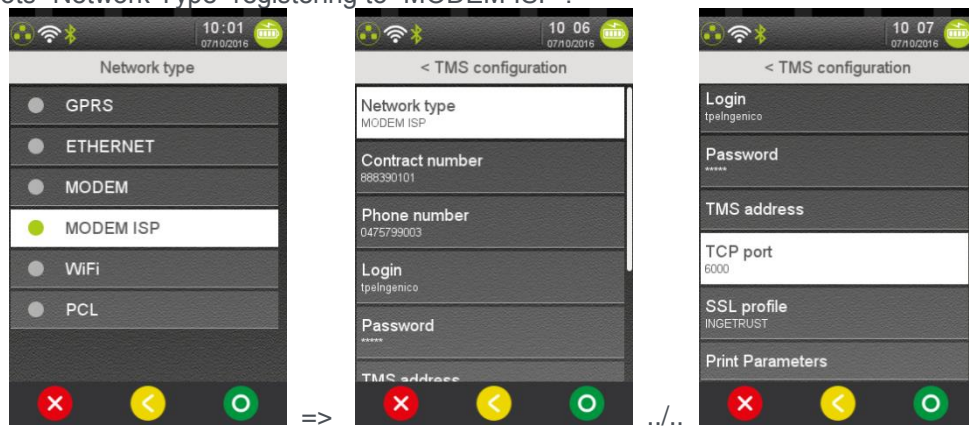


The following table provides the different parameters to set and to use “MODEM” to perform remote TMS upgrades:

Item	Reference
Contract Number	8_2_3_1_5
Phone number	8_2_3_1_12
SSL profile	8_2_3_1_8

8_2_3_1_3 TMS using MODEM ISP link

Screenshots “Network Type” registering to “MODEM ISP”:

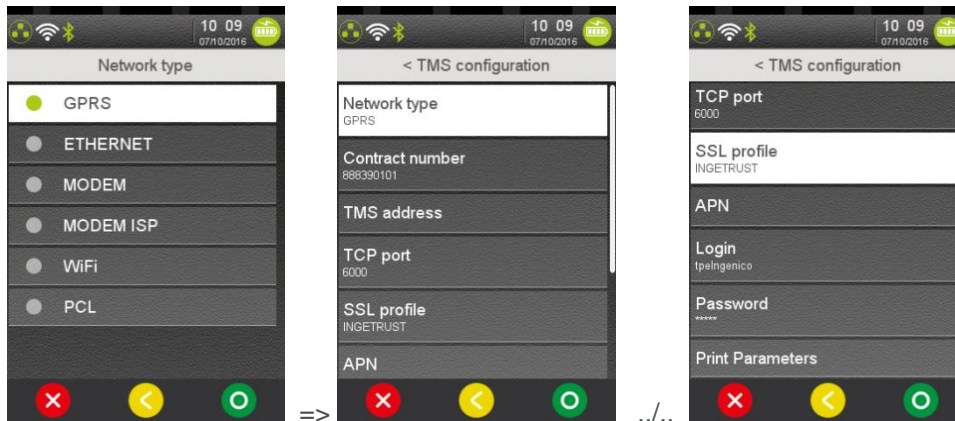


The following table provides the different parameters to set and to use “MODEM ISP” to perform remote TMS upgrades:

Item	Reference
Contract Number	8_2_3_1_5
Phone number	8_2_3_1_12
Login	8_2_3_1_10
Password	8_2_3_1_11
TMS address	8_2_3_1_6
TCP port	8_2_3_1_7
SSL profile	8_2_3_1_8

8_2_3_1_4 TMS using GPRS/3G link

Screenshots “Network Type” registering to “GPRS”:



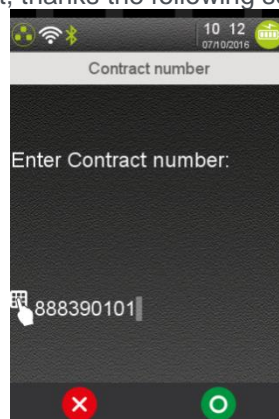
The following table provides the different parameters to set and to use “GPRS” to perform remote TMS upgrades:

Item	Reference
Contract Number	8_2_3_1_5
TMS address	8_2_3_1_6
TCP port	8_2_3_1_7
SSL profile	8_2_3_1_8
APN	8_2_3_1_9
Login	8_2_3_1_10
Password	8_2_3_1_11

The detailed description of each parameter is done in the next paragraphs. Some parameters are common to different “Network Type”.

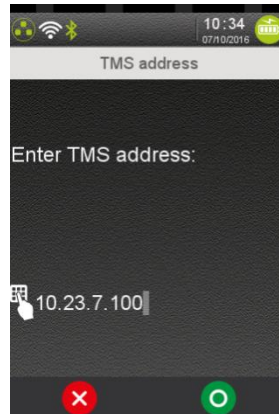
8_2_3_1_5 Contract Number

The “Contract Number” parameter is needed whatever the “Network type” chosen. Enter the value corresponding to your terminal contract, thanks the following screen.



8_2_3_1_6 TMS address

The “TMS address” parameter is only proposed when “Network type” = “ETHERNET” or “GPRS” is chosen.



Enter the TMS IP address (four digital fields, each one from “0” to “255”) corresponding to your download TMS server.

8_2_3_1_7 TCP port

The “TCP Port” parameter is only proposed when “Network type” = “ETHERNET” or “GPRS” is chosen.



Enter the TMS TCP port (up to 10 digits) corresponding to your download TMS server.

8_2_3_1_8 SSL profile

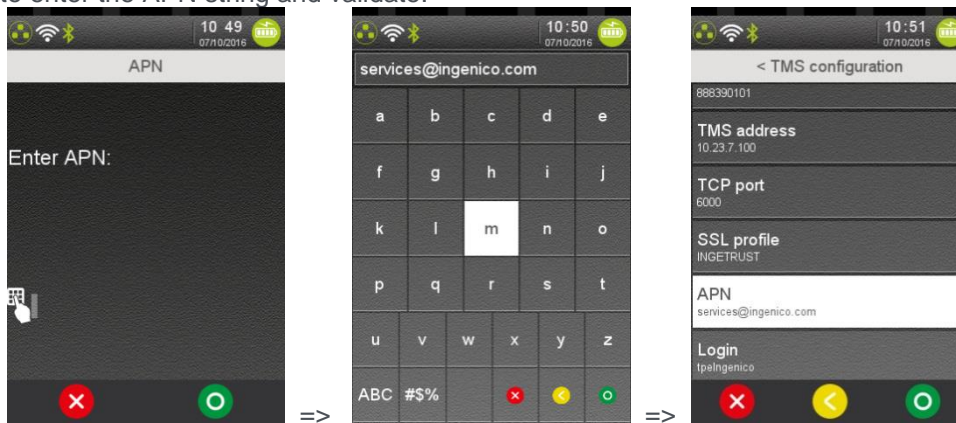
The “SSL profile” parameter is only proposed when “Network type” = “ETHERNET” or “GPRS” is chosen. The user must select one of the proposed SSL profiles:

- The list contents all SSL profiles registered in terminal.
 - By default: “ingetrust” is the only certificate present
 - In the following illustration, another profile “customcertif” has been registered in the terminal.
 - To allow connexion without SSL a specific choice “No SSL” has been added



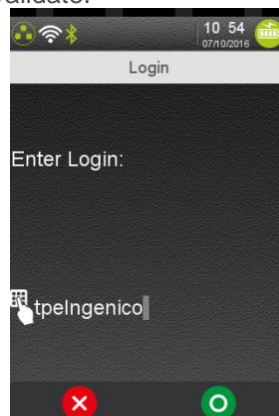
8_2_3_1_9 APN

The “APN” parameter is only proposed when “Network type” = “GPRS” is chosen. Use virtual keyboard to enter the APN string and validate.



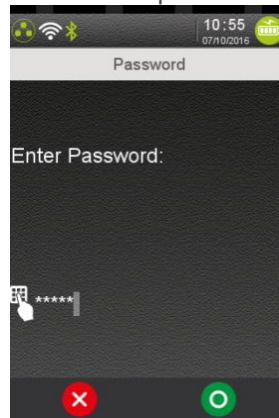
8_2_3_1_10 Login

The “Login” parameter is only proposed when “Network type” = “GPRS” is chosen. Use virtual keyboard to enter the login string and validate.



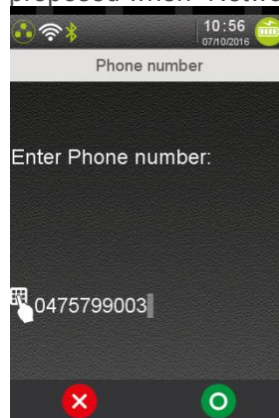
8_2_3_1_11 Password

The “Password” parameter is only proposed when “Network type” = “GPRS” is chosen. Use virtual keyboard or terminal physical keyboard to enter the password string and validate.



8_2_3_1_12 Phone number

The “Phone number” parameter is only proposed when “Network type” = “MODEM” is chosen.




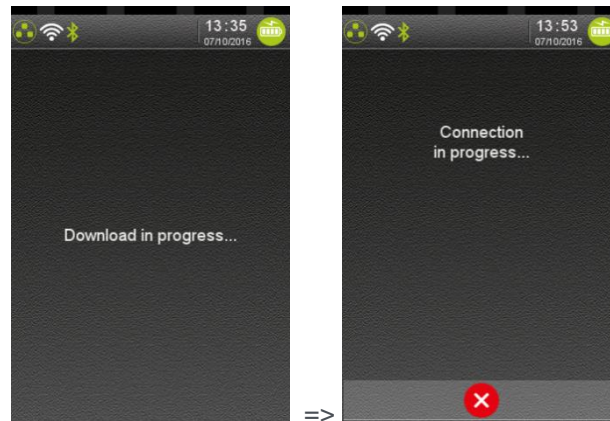
Enter the TMS phone number (up to 15 digits) corresponding to your download TMS server.

8_2_3_1_13 Print parameters

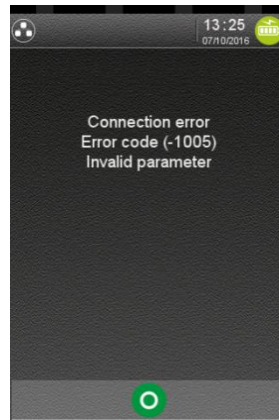
When touching the “Print Parameters” icon, a ticket of parameters summary is printed.

8_2_3_2 Start remote upgrade

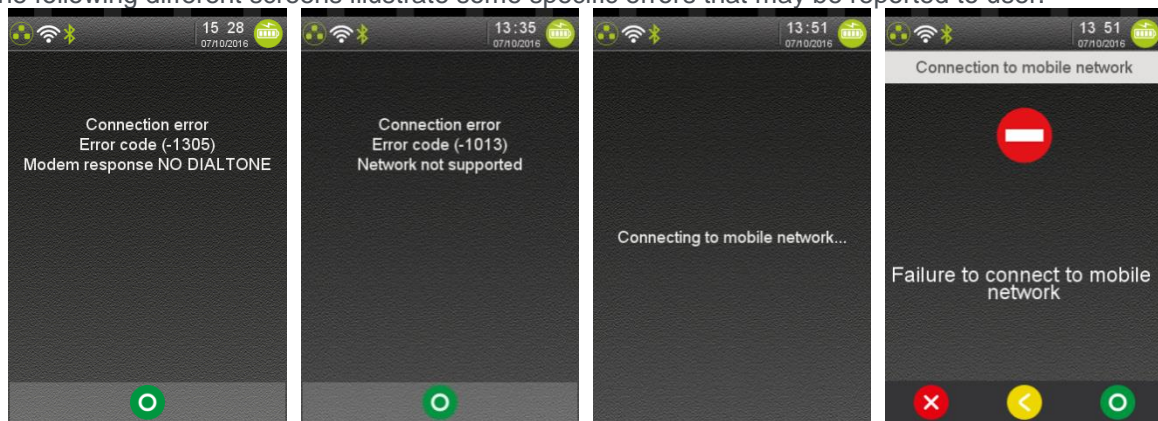
The selection of  “Start remote upgrade” icon starts a remote upgrade connexion with the recorded communication parameters of TMS server. The following screen is displays. To have a look on screenshots during processing refer to “Local upgrade” ([8_2_1](#)): similar screens.



When the selected “Network type” communication mean is absent, the terminal reports the following error.



The following different screens illustrate some specific errors that may be reported to user.

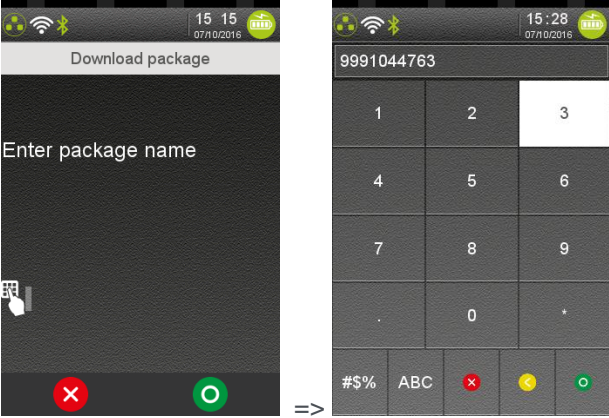


8_2_3_3 Download specific package



When “Download package” icon has been selected, the terminal asks to enter the package name to download:


- Package corresponds to “PackageID” = 10 characters as described Figure 19 - TETRA software packages identification description in Figure 19 - TETRA software packages identification description .

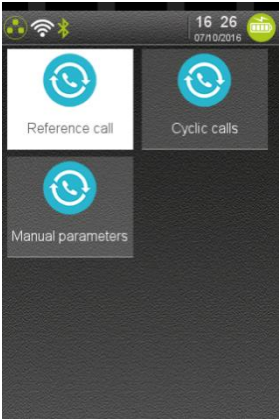


After package name validation, the terminal starts connecting to TMS server with the recorded communications parameters. To have a look on screenshots during processing refer to manual remote upgrade (8_2_3_2): similar screens.

If the package name is invalid, the terminal returns to “Remote upgrade” menu.

8_2_3_4 Automatic Upgrades

When selecting  “Automatic Upgrades” icon in “Remote upgrade” menu, the following menu is proposed:



The “Automatic Upgrades” delivers the same features as “TMSCall” application for TELIUM 2. It allows managing automatic connexions to a TMS server. During these established sessions, the TMS server can process:


- Download of new software package or parameters files
- Update existing software package or parameters files
- Upload parameters files or information files to perform terminal supervision

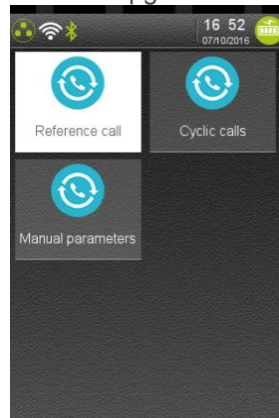
Select a type of the operations related to terminal upgrade thanks to TMS. The list depends on the configuration and items can be:

Item	Reference
------	-----------

Cyclic calls	8_2_3_4_1
Maintenance	8_2_3_4_2
Consult call log	8_2_3_4_3

8_2_3_4_1 Cyclic Calls


When selecting  "Cyclic calls" in "Automatic upgrades" menu, the following screen is displayed.



Select a type of the connection setting related to terminal upgrade thanks to TMS. The list depends on the configuration and items can be:

Item	Reference
Reference call	8_2_3_4_1_1
Cyclic call definitions	8_2_3_4_1_2
Manual parameters	8_2_3_4_1_3

8_2_3_4_1_1 Reference call

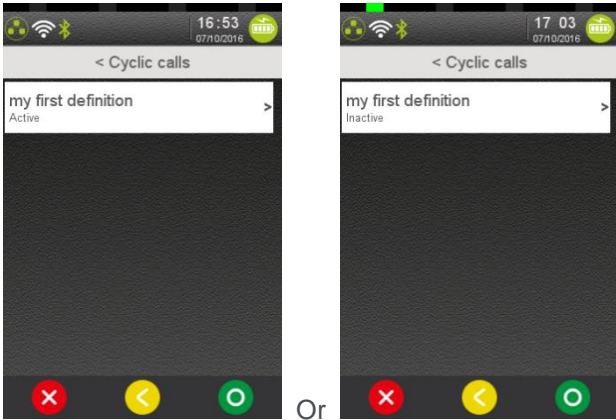
When selecting  "Reference Call" icon, the terminal prompts for a contract number and then triggers a download call using the TMS parameters ("Network type" and access parameters) and the aforementioned contract number.

It chains screens described in paragraph [8_2_3_1_5](#) and in paragraph [8_2_3_2](#).

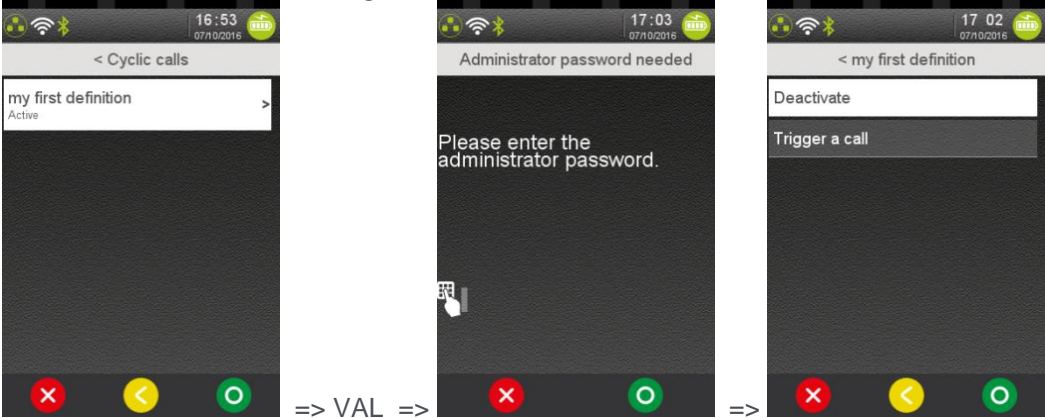
8_2_3_4_1_2 Cyclic call definitions

According to parameters registered in terminal (=been injected by "TMSCALL.PAR"), some "Cyclic calls" profile could have been defined. Using this menu, the user will be able to activate or deactivate the chosen profile.

When "Cyclic calls" icon is selected in "Cyclic calls" menu, one of the following screens is displayed:

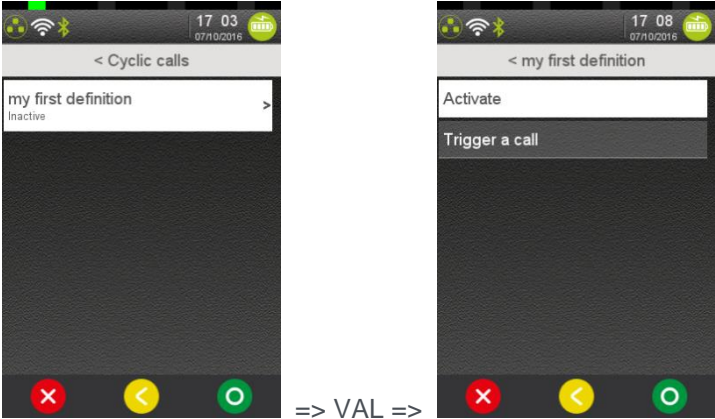


When validating an “active” registered cyclic call reference, an access password may be asked to user according to TMS parameter file configuration loaded the terminal.

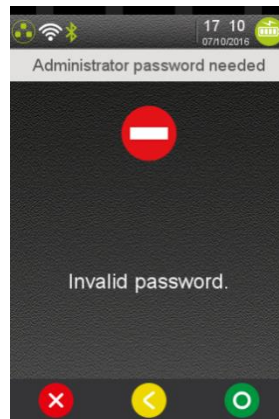


Inserting the valid administrator password allows to continue with “deactivate” menu.

When a registered cyclic call reference is in “inactive” state, no password is required to change the state as illustrated below.



When the administrator password is not valid, the following screen is displayed:

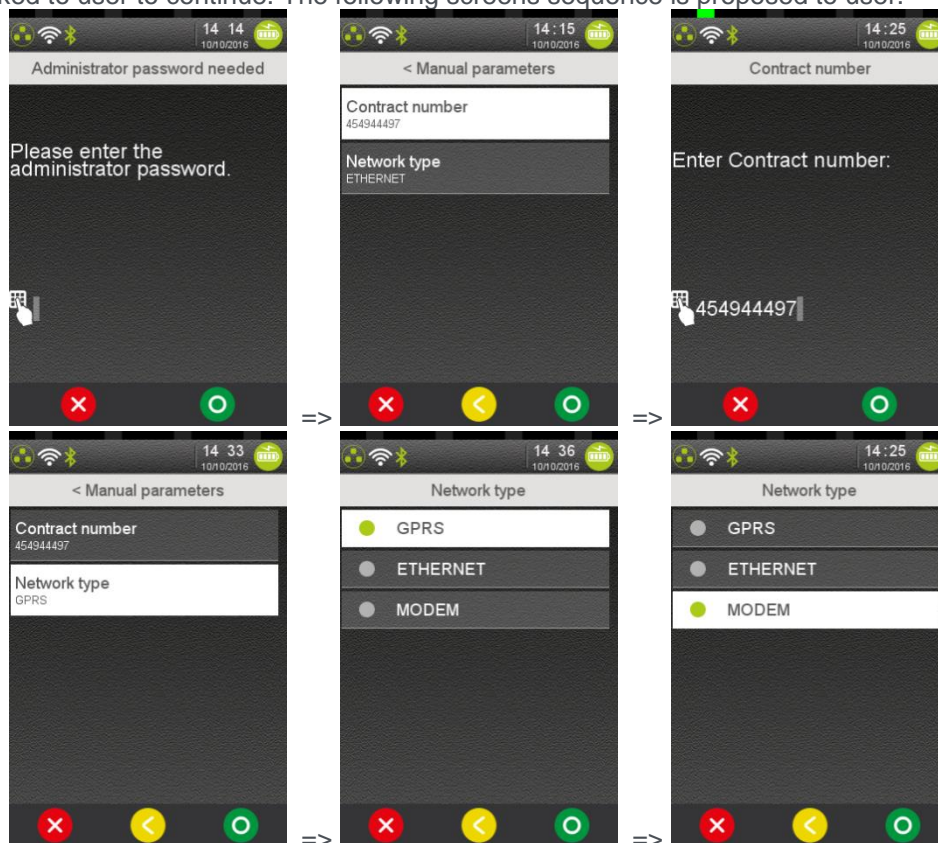


Valid the screen to continue

8_2_3_4_1_3 Manual parameters



The selection of “Manual parameters” icon allows modifying stored “Contract Number” or “Network Type”. According TMS parameter file configuration loaded the terminal, an access password may be asked to user to continue. The following screens sequence is proposed to user.



8_2_3_4_2 Maintenance




When selecting “Maintenance” icon in “Automatic upgrades” menu, the following screen is displayed:



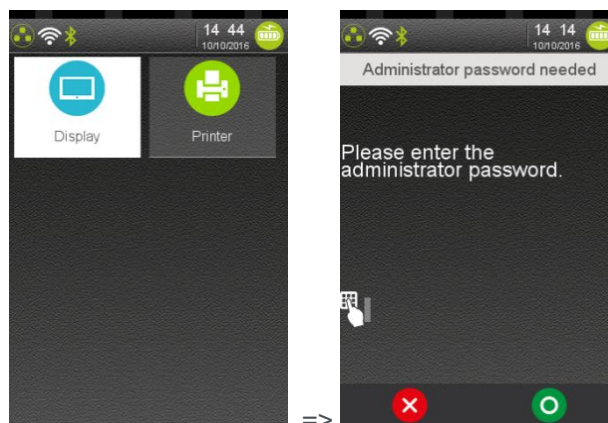
Select an operation to perform according to the following list:

Item	Reference
Consult parameters	8 2 3 4 2 1
Deactivate	8 2 3 4 2 2
Reset configuration	8 2 3 4 2 3

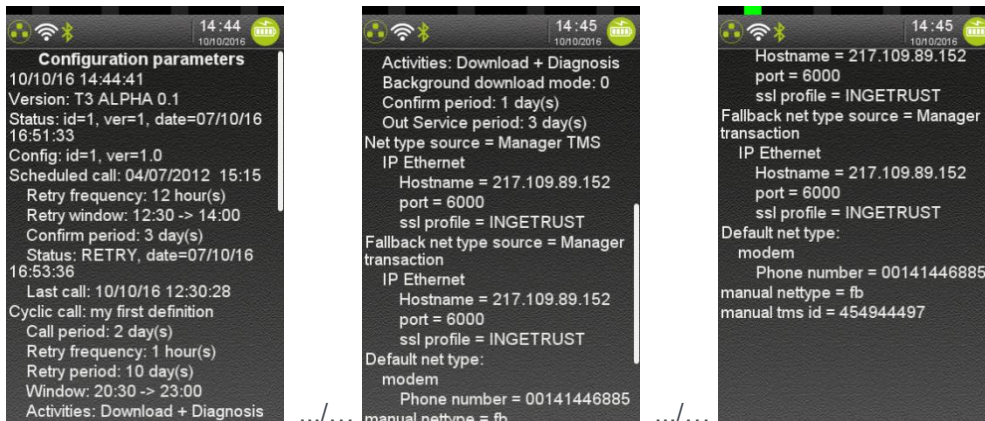
8_2_3_4_2_1 Consult parameters

The When selecting  "Consult parameters" icon in "Maintenance" menu, two options are proposed the user:
 Consultation on display
 Printing of the parameters

When one of the options has been selected and according TMS parameter file configuration loaded the terminal, an access password may be asked to user to continue. The following screens sequence happens:



Below is an example of display consultation:



Below is an example of such a ticket :

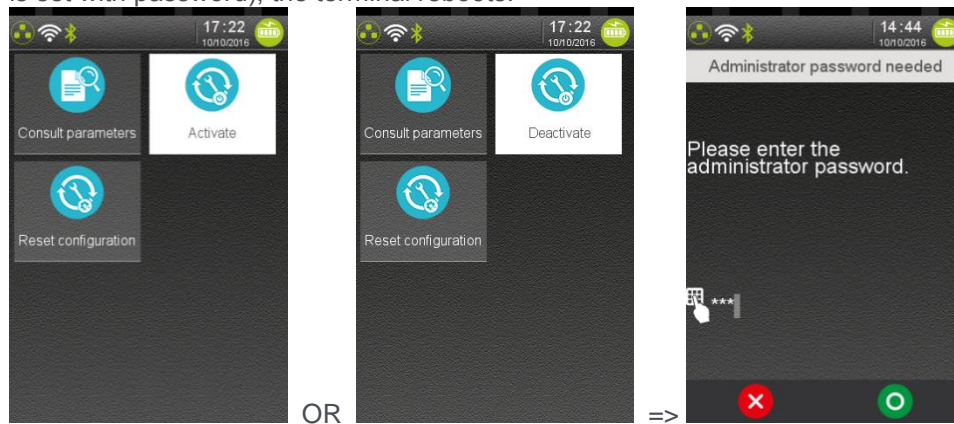
```

10/10/16 17:12:55
Version: T3 ALPHA 0.1
Status: id=1, ver=1, date=26/09/16 11:11:32
Config: id=1, ver=1.0
No scheduled call
Cyclic call: M.A.J Terminal
Call period: 7 day(s)
Retry frequency: 1 hour(s)
Retry period: 30 day(s)
Window: 00:02 -> 07:00
Activities: Download
Background download mode: 0
Confirm period: 1 day(s)
Out Service period: 60 day(s)
Status: RETRY, date=26/09/16 11:12:37
Last call: 10/10/16 06:28:41
Net type source = Other I
IP Ethernet
  Hostname = 83.206.130.148
  port = 21901
Fallback net type source = Other
IP Ethernet
  Hostname = 83.206.130.148
  port = 21901
Default net type:
modem
  Phone number = 0475799002
Cyclic call: HelpDesk
Call period: 3650 day(s)
Retry frequency: 1000 hour(s)
Retry period: 30000 day(s)
Window: 00:00 -> 00:00
Activities: Download
Background download mode: 0
Out Service period: 60000 day(s)
Status: RETRY, date=26/09/16 11:12:37
Last call: 26/09/16 11:12:37
Net type source = Other I
IP Ethernet
  Hostname = 83.206.130.148
  port = 21905
Fallback net type source = Other
IP Ethernet
  Hostname = 83.206.130.148
  port = 21905
Default net type:
modem
  Phone number = 0475799006
manual nettype = fe
manual tms id =

```

8_2_3_4_2_2 Deactivate/Activate


This menu allows deactivating or activating cyclic TMS call maintenance mechanism according to terminal state. After menu validation and password hitting (only for deactivation if parameter "TMSCall" is set with password), the terminal reboots.

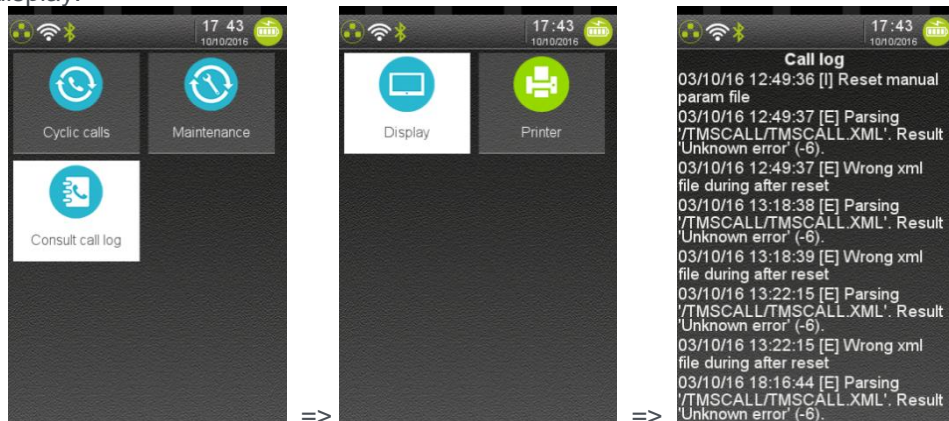


8_2_3_4_2_3 Reset configuration

"RAZ" menu clears all stored information and log files linked with cyclic TMS call maintenance mechanism. After menu validation and password hitting (if parameter "TMSCall" is set with password), the terminal reboots.

8_2_3_4_3 Consult log

The menu  "Consult log" allows consulting the log of all calls performed by the terminal thanks to printer or display.



Below is an example of such a ticket:

```

Cyclic call: M.A.J Terminal: RETRY
10/10/16 00:22:49 [I] M.A.J Terminal:
LastCallDate=10/10/16 00:22:49
10/10/16 00:22:49 [I] tmsRemoteCall
10/10/16 00:22:50 [I] bFallbackMode ==
FALSE
10/10/16 00:22:50 [I] nParamSource ==
SRC_CP_PARAM_FILE
10/10/16 00:22:50 [I] TMSIP
10/10/16 00:22:50 [I] num contrat manual
10/10/16 00:22:50 [I] performActivity 1
10/10/16 00:22:52 [I] download
10/10/16 00:22:53 [I] remote_download =
-5000002
10/10/16 00:22:53 [I] Result:
Result=-5000002
10/10/16 00:22:53 [I] M.A.J Terminal:
Status=RETRY
10/10/16 01:22:58 [I] RETRY not fallback
10/10/16 01:22:58 [I]

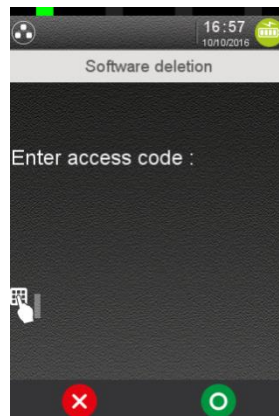
```

“[I]” is used for information. When there some error detected, “[E]” is used.

8_3 Software packages removal

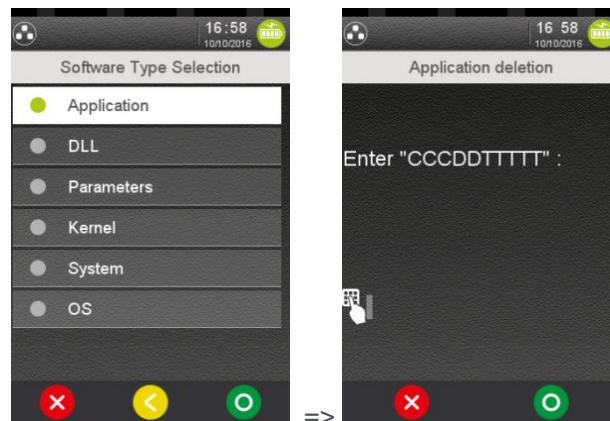
Warning! The feature described in this paragraph is reserved to experienced user: software removal may block terminal if essential software is removed.

From “Software management” panel, select the  icon (named “Removal”). The following screen is proposed.

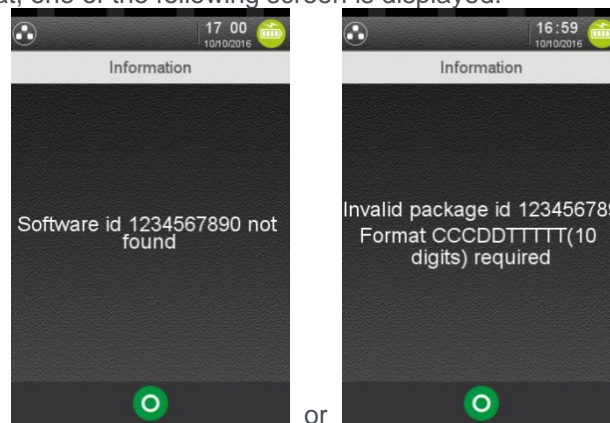


Software removal proposes two interfaces to remove software packaging according to access code:

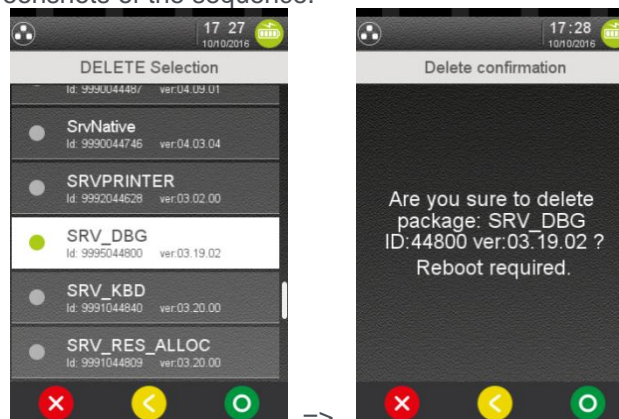
- “Access code” = “26” : Software removal by ID package
 - Software packages are sorted by types: Application, DLL, Parameters, Key, System, OS.
 - Having selected a type, the user is invited to enter the software package ID: 10 digits number.
 - Here after screenshots of the sequence.



- When package is not found the following screen or when package name does not fit the required format, one of the following screen is displayed:




- “Access code” = “07” : Software removal by “friendly” name
 - All software packages are listed not sorted (=discovery order)
 - Each software element contents its “friendly” name , its package ID number and its full version
 - Having selected a file, the terminal asks the user to confirm removal.
 - Here after screenshots of the sequence.

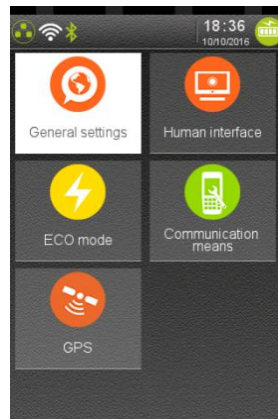


9 Terminal settings

The “Terminal Settings” subpanel allows managing the different parameters of the terminal: these parameters act on configuration of hardware features or of logical functionalities provided by software programs. The configuration is organized around 4 themes:

- General Settings: covering general logical functionalities
- Human interface: covering all related points linked with user interface
- ECO mode: covering power management and energy monitoring
- Communication means: covering all related points linked communications means
- Hardware settings

When “Terminal Settings” icon  is selected on “Control panel”, the following subpanel appears on screen:



Select an icon on the screen.

The following table provides the different links to subpanels description.


Item	Reference
General settings	9_1
Human interface	9_2
ECO mode	9_3
Communication means	9_4
GPS	9_4

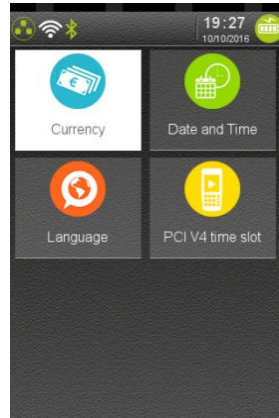
9_1 General settings

The “General Settings” subpanel gives access to “regional” settings. The configuration is organized around 3 themes:

- Currency
- Date and Time
- Language

- Time slot to tune automatic reboot for integrity memory checking.

When “General Settings” icon  is selected on “Terminal Settings”, the following subpanel appears on screen:




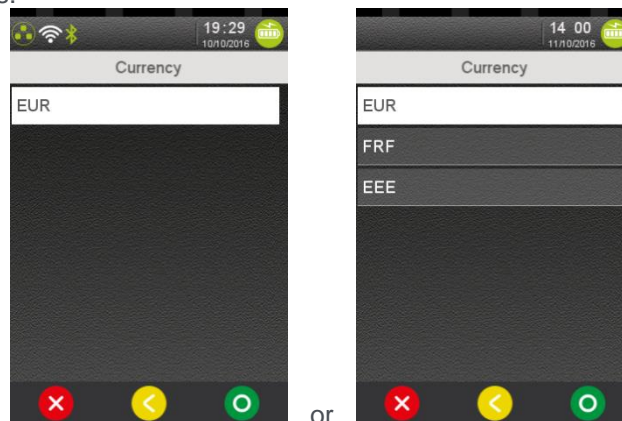
Select an icon on the screen.

The following table provides the different links to subpanels description.


Item	Reference
Currency	9_1_1
Date and Time	9_1_2
Language	9_1_3
PCIV4 time slot	9_1_4

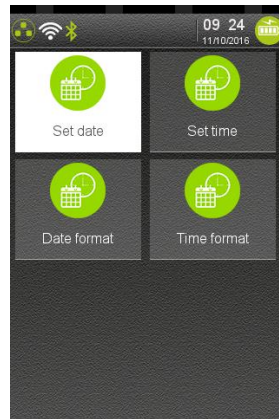
9_1_1 Currency

“Currency” icon allows setting the default currency to be displayed on the amount screen (driven by “AMOUNT” application) and the currency formatting to use. When “Currency” icon  is selected on “General Settings”, the terminal built the list of currencies managed by applications and displays the following type of screens:



9_1_2 Date and Time

“Date and Time” icon allows setting date and time values and the way they will be displayed and managed. When “Date and Time” icon  is selected on “General Settings”, the following subpanel appears on screen:



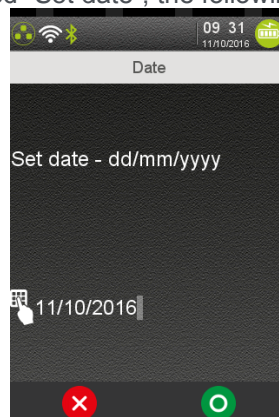
Select an icon on the screen.

The following table provides the different links to subpanels description.

Item	Reference
Set date	9_1_2_1
Set time	9_1_2_2
Date format	9_1_2_3
Time format	9_1_2_4

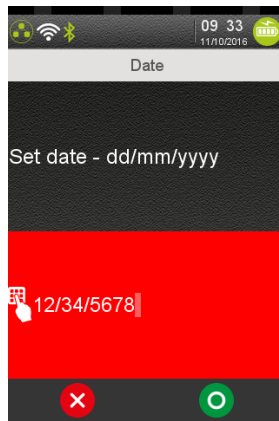
9_1_2_1 Set date

To modify date, select icon  named “Set date”, the following screen is displayed:



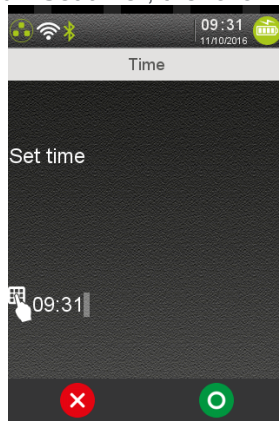
According to the date specified format, enter a new date and then validate.

Note: When the entered date is invalid, a “red” flashing screen is displayed when validating.



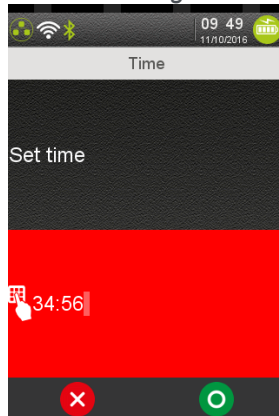
9_1_2_2 Set time

To modify time, select icon  named "Set time", the following screen is displayed:




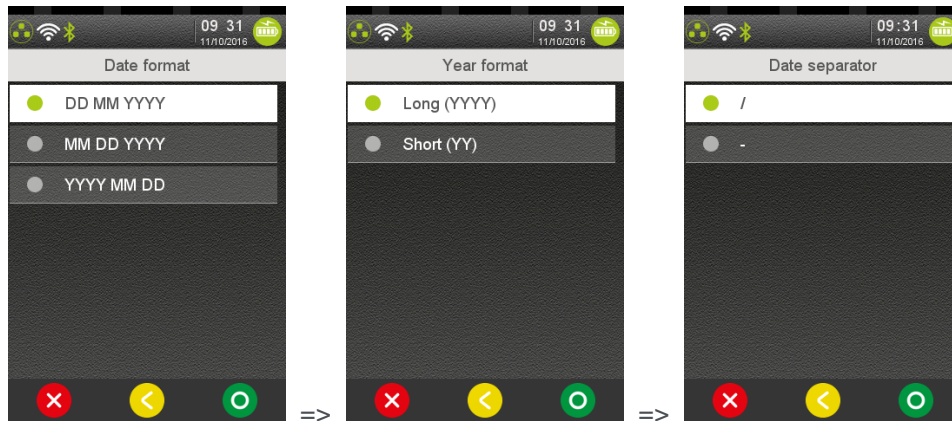
Enter a new time and then validate.

Note: When entered the time is invalid, a "red" flashing screen is displayed when validating.




9_1_2_3 Date format

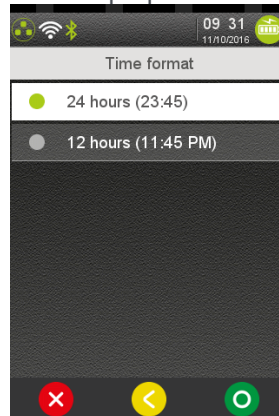
The date can be displayed with specific regional format. When icon  named "Date format" is selected the selection of the different formats is proposed thanks to the following sequence of screens:



Select and validate the different proposed setting that can be adjusted.

9_1_2_4 Time format

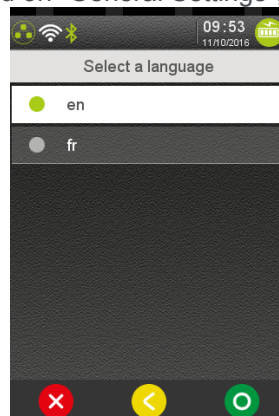
The time can be displayed with specific regional format. When icon  named "Time format" is selected the selection of the different formats is proposed thanks to the following screen:



Select and validate one of proposed setting.

9_1_3 Language

When "Language" icon  is selected on "General Settings", the following screen is displayed:

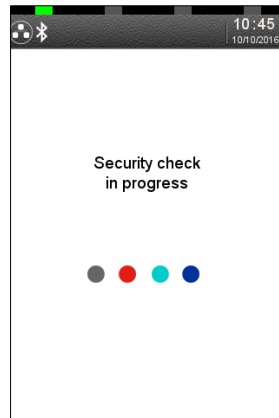


The list of available languages depends on the loaded configuration. Select the desired language.

9_1_4 PCIV4 time slot

PCI V4 security constraints impose to check integrity of “memory” at least once a day. The mechanism that was set up to respond to both integrity of executable code and other types of data, is based on a full reset of the terminal. To no worry the final user, some parameters are available to tune when this event happens.

In case someone would be present during this reset, a specific message is display during boot to warn the user.



9_1_4_1 Time slot principle

The Reset mechanism is designed to ensure a terminal reset at least one time per 24 hours running. To fulfill this requirement a time slot, called the “reset interval” represented by T_{min} and T_{max} has been defined. This period represents the time interval where the reset is allowed. Depending on the business case, the “reset interval” has to be customized during the terminal installation phase. By design, this period cannot be shorter than 30 minutes.

During this period, the reset occurs each day 5 minutes earlier as explained by the diagram below:

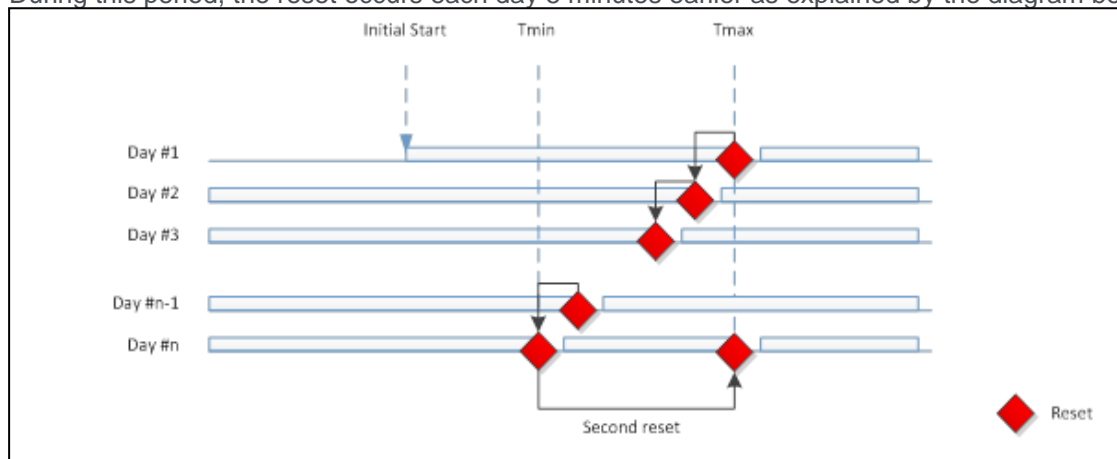


Figure 21 – PCIV4 Time slot principle

Sequence:

Day	Description
Day #1	The first day, since the terminal start after T_{max} , the reset will occur at T_{max} minus 5 minutes which is less than 24Hours.

Day #2	The second day, the reset occurs at Tmax minus 10 minutes
Day #3	The third day, the reset occurs at Tmax minus 15 minutes
---	---
Day #n-1	The reset occurs at Tmax minus n-5 minutes
Day #n	The reset occurs at Tmin. A second reset is triggered at Tmax.

Table 9 – PCIV4 resets schedule

To ensure to keep the reset in the “reset interval” specified by the customer and to ensure that a reset will occur per 24 hours, a water flow mechanism has been introduced. This mechanism shifts earlier the reset of 5 minutes per day. The consequence of this mechanism is after several days (depending on the reset interval) the reset will go out of the “reset interval”.

To prevent it a second reset has been introduced. This second reset occurs when the reset time reach the Tmin value. In this position (Day #n in the table above) a reset occurs at Tmin and a second one at Tmax.

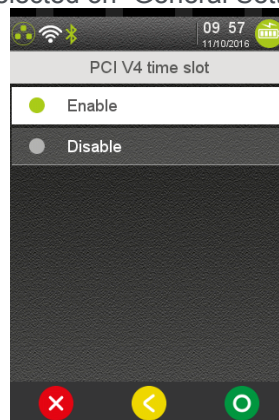
Depending on the “reset interval”, the second reset can occur more or less frequently. With a 30 minutes time interval between Tmin and Tmax, the double reset will occur each 6 days.

By default the reset period is

- 3h30 for Tmin
- 5h00 for Tmax

9_1_4_2 Time slot menus

When “PCIV4 time slot” icon  is selected on “General Settings”, the following screen is displayed:



When selecting “Disable”, the terminal will perform a cyclic reboot only according to its power-on date and time: 24 hours elapsed duration.

When selecting “Enable”, the terminal will propose to enter a slot of time during which the terminal will trigger a reboot.



Select a slot of time during which the terminal has low activity (no sale, no planned software automatic upgrade, ...).

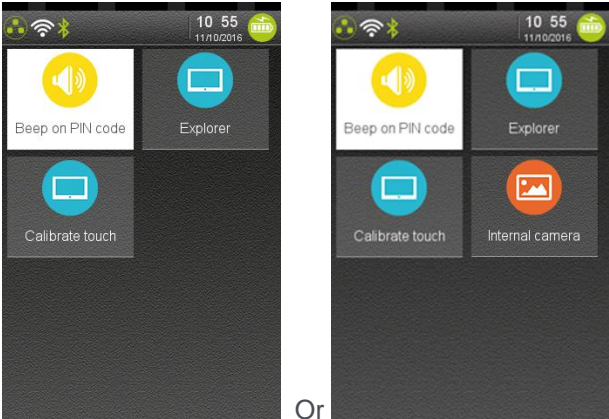
9_2 Human interface

The “Human interface” subpanel gives access to parameters related to inputs or outputs devices linked user. This configuration sub-panel is organized around 2 main themes and to 2 options only present when the hardware is detected:

- BeepOnPincode
- Explorer
- Touch calibration
- Internal camera



When “Human Interface” icon is selected on “Terminal Settings”, the following subpanel appears on screen:



Select an icon on the screen.

The following table provides the different links to subpanels description.

Item	Reference
BeepOnPincode	9 2 1
Explorer	9 2 2


Touch calibration	9_2_2
Internal Camera	9_2_4

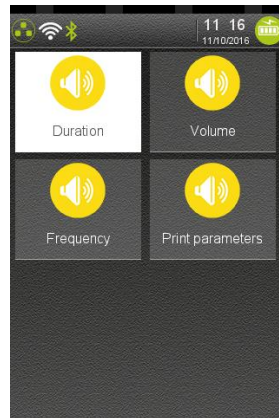
9_2_1 Beep On PIN code

The “Bip On PIN code” subpanel allows setting the different parameters of the buzzer when used during pin code sequence. Three parameters can be set:

- Frequency
- Duration
- Volume

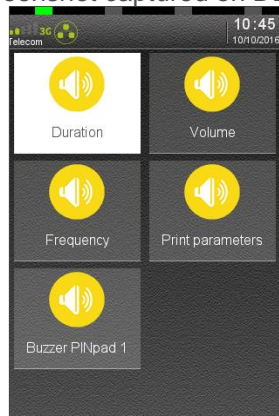
An icon is also proposed to summarize on a ticket the different parameters of buzzer configuration.

When “Beep on Pincode” icon  is selected on “Human interface” subpanel, the following subpanel appears on screen:



Select an icon on the screen.

For terminal on which a pinpad is connected, it is possible also to configure the beep during PIN code when the pinpad is used. Follows a screenshot captured on DESK5000 with a connected pinpad:



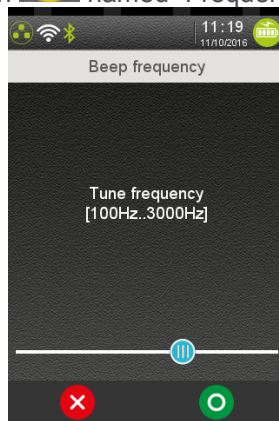
Select an icon on the screen.

The following table provides the different links to subpanels description.

Item	Reference
Frequency	9_2_1_1
Duration	9_2_1_2
Volume	9_2_1_3
Buzzer on PINpad 1	9_2_1_5
Print Parameters	9_2_1_5


9_2_1_1 Frequency

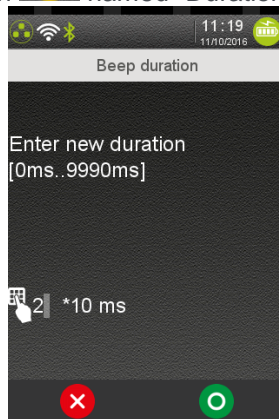
To modify buzzer frequency, select icon  named "Frequency", the following screen is displayed:



To select a frequency, move the slider and validate. Until the slider is moved and touched, the terminal beeps with a frequency corresponding to slider position.

9_2_1_2 Duration

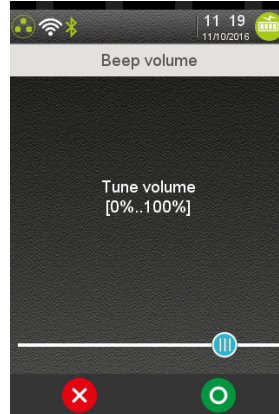
To modify buzzer frequency, select icon  named "Duration", the following screen is displayed:



Enter a value multiple of 10 milliseconds according to min and max on the screen and validate.

9_2_1_3 Volume

To modify buzzer frequency, select icon  named "Volume", the following screen is displayed:



To select a frequency, move the slider and validate.

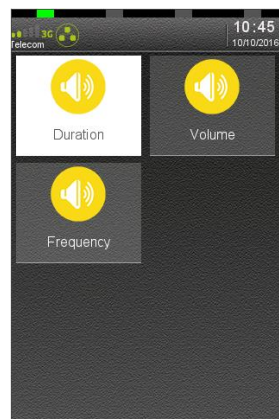
Until the slider is moved and touched, the terminal beeps with a frequency corresponding to slider position.

9_2_1_4 Buzzer on PINpad 1

The "Buzzer on PIN pad 1" subpanel allows modifying the beep during pin code when the pinpad is used. The following parameters are proposed:

- Duration
- Frequency
- Volume

The menus for PINpad are not specifically detailed; refer to previous menus described for the terminal part. Follows a screenshot example of typical "Beep on pincode" pinpad menus for DESK5000 connected to IPP315:



Select an icon and validate.

9_2_1_5 Print parameters

The following ticket is printed when touching the "Print Parameters" icon.

Beep on PIN code

Local buzzer

- Frequency : 738 hz
- Volume: 20%
- Duration: 20ms

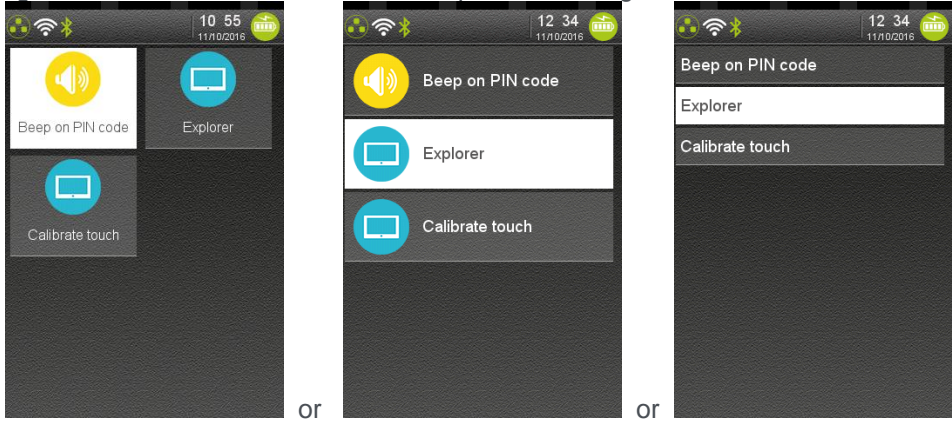
Note: When a pinpad is present, a section for pinpad parameters is added to the ticket.


9_2_2 Explorer

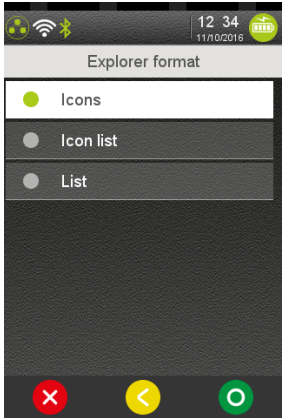
The “Explorer” panel manages 3 types of screen rendering according to its configuration:

- Big icons with feature name inserted ordered on the screen
- List of small icons followed by the feature name
- List of feature names. When a “>” is present at the end of the line, the menu gives access to another menu

The following screenshots illustrates the different possible configuration





To modify “Explorer” rendering configuration, select icon  named “Explorer”, the following screen is displayed:

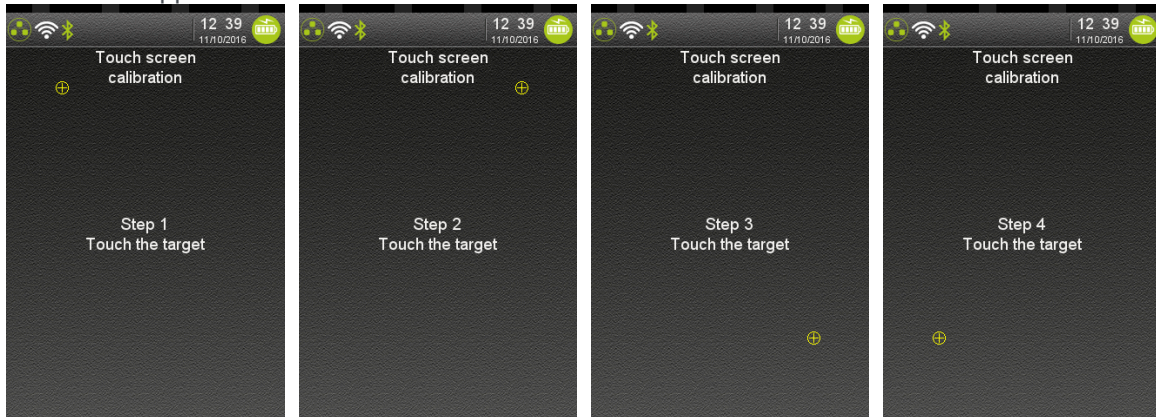


Select one of the proposed formats and validate.

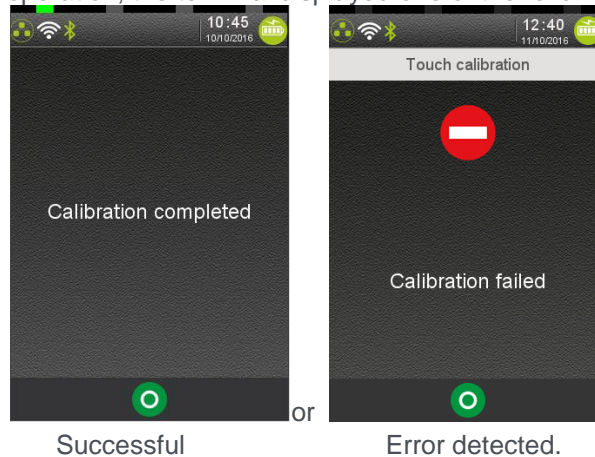
9_2_3 Calibrate touch

The “Calibrate touch” subpanel allows tuning the touchscreen calibration. During this operation dividing in 4 steps, the user must click on the screen on 4 different areas  (circumscribed with a circle in which a cross is drawn).

To access this operation, select icon  named “Calibrate touch”, the following sequence of screenshots happens:



According to the result of operation, the terminal displayed one of the following messages:



9_2_4 Camera

This menu is optional: only present on terminal equipped with a camera. It allows to set the different parameters of the camera.

When selecting, icon  named “Camera”, the following screen is displayed:



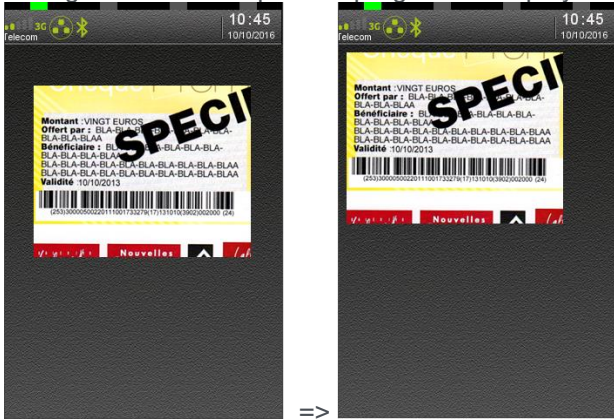
Select an icon on the screen.

The following table provides the different links to the different parameters description.

Item	Reference
Position	9 2 4 1
Size	9 2 4 2
Rotation	9 2 4 3
Contrast	9 2 4 4
Brightness	9 2 4 4
Saturation	9 2 4 4
Print	9 2 4 5


9_2_4_1 Position

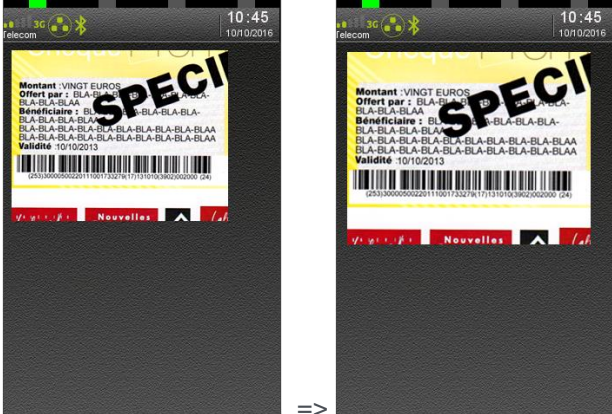
To set default position of the rendered capture of the camera on terminal screen, select icon named "Position". The following screen with capture in progress is displayed:



With your finger, select the capture and move it on the screen where you want to the capture to be displayed and validate. You must consider that you fix the x and y coordinates of the left top corner of the rendering.


9_2_4_2 Size

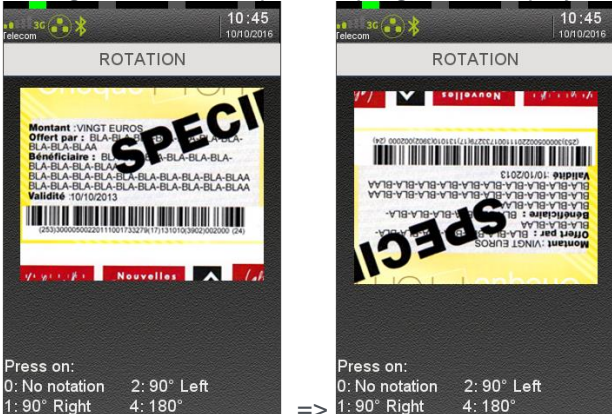
To set default size of the rendered capture of the camera on terminal screen, select icon  named "Size". The following screen with capture in progress is displayed:



With your finger, select the bottom or right border of the rendered capture and move it on the screen to adjust respectively height or width and validate.

9_2_4_3 Rotation


To set default orientation of the rendered capture of the camera on terminal screen, select icon  named "Rotation". The following screen with capture in progress is displayed:

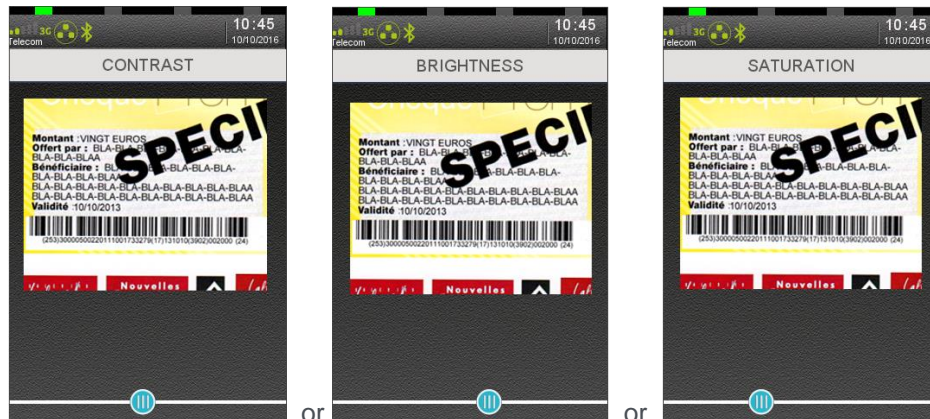


Select the orientation by hitting key 0, 1, 2 or 3 (as explained on the screen) and validate.

9_2_4_4 Contrast / Brightness / Saturation


The default contrast, brightness or saturation of the rendered capture of the camera on terminal screen, can be set by a dedicated menu for each of them: each menu has the same look and logic.

Select icon  with the name of feature to set, the following screen with capture in progress is displayed:



In moving the slider, select the default value and validate.

9_2_4_5 Print

To print the default parameters of the camera, select icon  named "Print". A typical ticket as follows may be printed.


CAMERA	
Position (v,y)	1:2
Size (w,h)	280:220
Rotation	180 degrees
Contrast [0..1000]	500
Brightness[0..1000]	500
Saturation[0..1000]	333

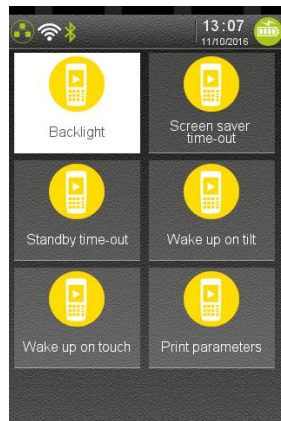
9_3 ECO mode

The "ECO mode" subpanel gives access to parameters driving power management and energy saving also called "Inactivity" management. The configuration is organized around up to 4 themes:

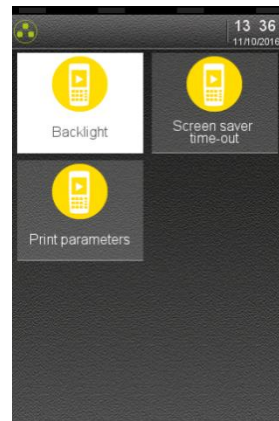
- Screen saver management
- Standby management (only proposed on mobile terminal)
- Backlight setting
- Wake up condition according to Tilt or Touch events (only proposed on mobile terminal)

An icon is also proposed to summarize on a ticket the different parameters managed by "Inactivity".

When "ECO mode" icon  is selected on "Terminal Settings" subpanel, the following subpanel appears on screen:



MOVE5000



Non mobile terminals


Select an icon on the screen.

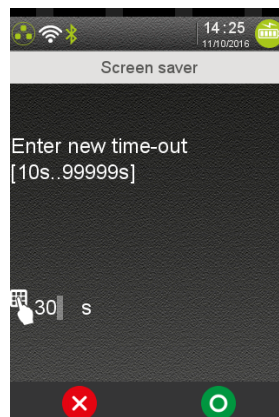
The following table provides the different links to subpanels description.

Item	Reference
Screen saver management	9_3_1
Standby management	9_3_2
Print parameters	9_3_3
Backlight setting Explorer	9_3_4
Wakeup on tilt	9_3_5
Wakeup on touch	9_3_6

9_3_1 Screen saver time out

The terminal provides to application some capabilities to display screen saver. This menu allows user to fix the duration to wait before activating screen saver mechanism.


To modify the screen saver configuration, select icon  named "Screensaver time out", the following screen is displayed:

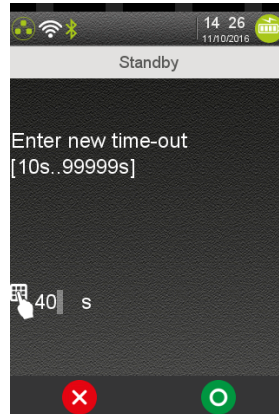


Enter a value according to min and max on the screen and validate: 99999s means no screen saver.

9_3_2 Standby

To optimize energy saving especially on “MOVE” range terminals, the user can fix the duration to wait before terminal enter in low power mode.

To modify the standby configuration parameter, select icon  named “Standby time out”, the following screen is displayed:



Enter a value according to min and max on the screen and validate: 99999s means no standby management; such choice on “MOVE” terminal range may affect battery sustainability => not recommended.

9_3_3 Print parameters

The following ticket is printed when touching the “Print Parameters” icon.

INACTIVITY parameters	
Low backlight time out	10s
Screen saver time out	30s
Standby time out	40s
Wake up on tilt	Enable
Wake up on touch	Enable
PCI V4 time slot	[03:30 05:00]

9_3_4 Backlight

According to terminal type and its backlight hardware design, the “Backlight setting” will propose different interfaces to manage:


- Couple backlight between display and keyboard (concerned terminals: DESK5000, DESK 3200)
- Independent channels to adjust backlight level on keyboard and on display backlight. (concerned terminal: LAN5000)
- Backlight level of the display that can be adjusted and backlight of the keyboard that can be turned on or off. (concerned terminal: MOVE5000)

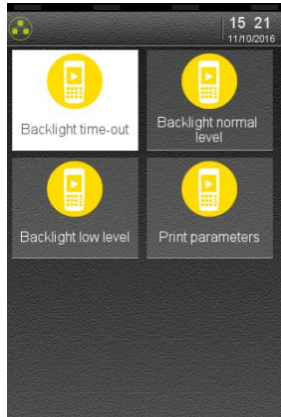
The “Backlight setting” subpanel allows modifying the different parameters of the backlight according to terminal activities:

- Level during normal mode
- Level during ECO mode (corresponding to low level)
- Duration to wait before switching from normal mode to eco mode

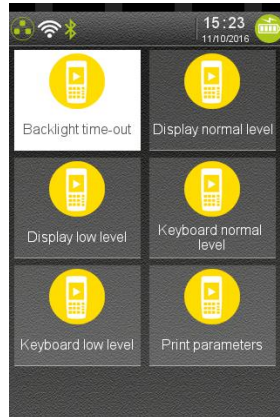
An icon is also proposed to summarize on a ticket the different parameters of backlight configuration.



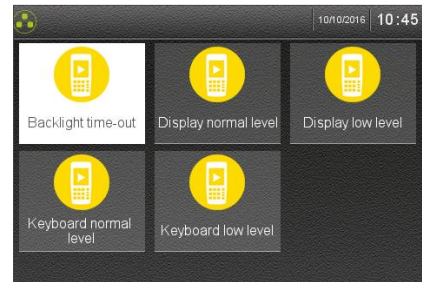
When icon  named "Backlight" is selected on "ECO mode" subpanel, the following subpanel may appear on screen:



DESK5000



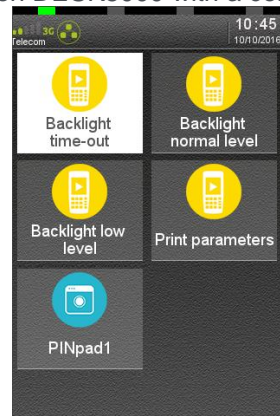
MOVE5000



LANE5000

Select an icon on the screen.

For terminal on which a pinpad is connected, it is possible also to configure the backlight of the pinpad. Follows a screenshot capture on DESK5000 with a connected pinpad:




Select an icon on the screen.

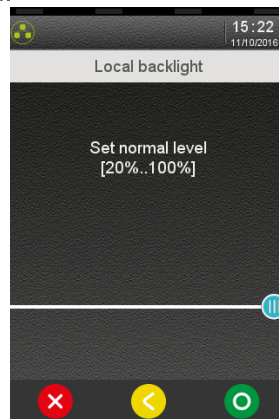
The following table provides the different links to subpanels description.

Item	Reference
Backlight normal level	9_3_4_1
Backlight low level	9_3_4_2
Keyboard normal level	9_3_4_3
Keyboard low mode	9_3_4_4
Display normal level	9_3_4_5
Display low mode	9_3_4_6

Backlight time-out	9 3 4 7
PINpad1	9 3 4 8
Print Parameters	Erreur ! Source du renvoi introuvable.


9_3_4_1 Backlight normal level

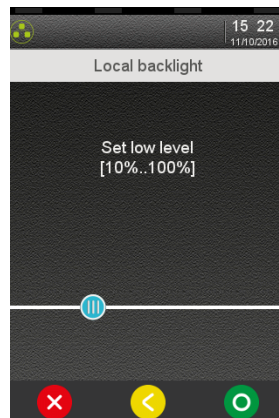
This parameter is proposed when the backlight of the keyboard and of the display are commonly managed. To modify backlight level during normal mode, select icon  named "Backlight normal level", the following screen is displayed:



Enter a value according to min and max on the screen and validate.


9_3_4_2 Backlight eco mode

This parameter is proposed when the backlight of the keyboard and of the display are commonly managed. To modify backlight level during ECO mode, select icon  named "Backlight low level", the following screen is displayed:



Enter a value according to min and max on the screen and validate. The eco-mode setting is always smaller or equal to the normal setting value: after normal setting selection, its value is automatically adjusted to normal setting value if greater.

9_3_4_3 Keyboard backlight normal level


This parameter is proposed when the backlight of the keyboard can be managed independently of the backlight of the display. To modify backlight level during normal mode, select icon  named "Keyboard normal level", the following screen is displayed:

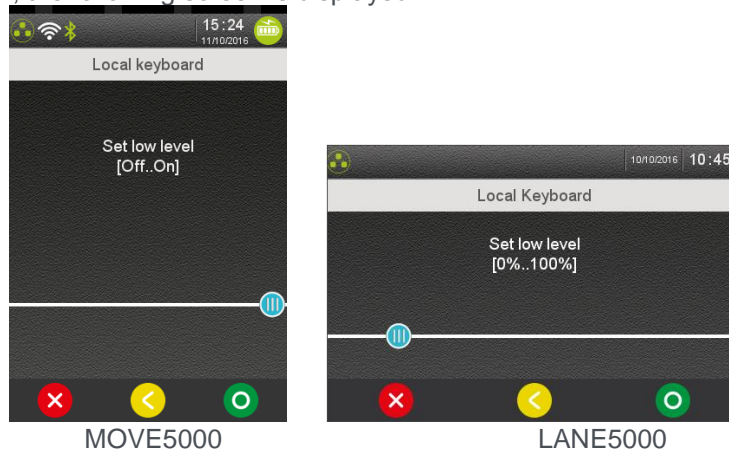


Enter a value according to min and max on the screen and validate. When the keyboard backlight only support turn on or turn off, proposed value are:

- OFF
- ON

9_3_4_4 Keyboard backlight low level


This parameter is proposed when the backlight of the keyboard can be managed independently of the backlight of the display. To modify backlight level during ECO mode, select icon  named "Keyboard low level", the following screen is displayed:

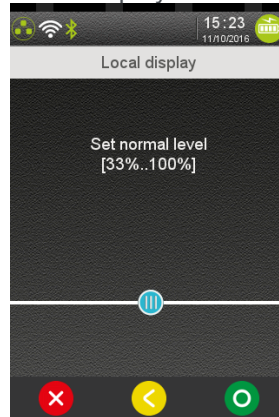


Enter a value according to min and max on the screen and validate. The eco-mode setting is always smaller or equal to the normal setting value: after normal setting selection, its value is automatically adjusted to normal setting value if greater. When the keyboard backlight only support turn on or turn off, proposed value are:

- OFF
- ON


9_3_4_5 Display backlight normal level

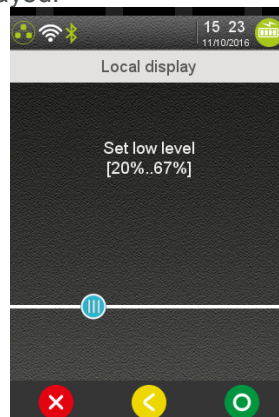
This parameter is proposed when the backlight of the display can be managed independently of the backlight of the keyboard. To modify backlight level during normal mode, select icon  named "Display normal level", the following screen is displayed:



Enter a value according to min and max on the screen and validate.

9_3_4_6 Display backlight low level


This parameter is proposed when the backlight of the display can be managed independently of the backlight of the display. To modify backlight level during ECO mode, select icon  named "Display low level", the following screen is displayed:

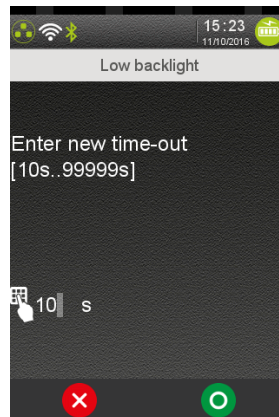


Enter a value according to min and max on the screen and validate. The eco-mode setting is always smaller or equal to the normal setting value: after normal setting selection, its value is automatically adjusted to normal setting value if greater.

9_3_4_7 Backlight time out

To optimize energy saving especially on "MOVE" range terminals, the user can fix the duration to wait before terminal switch from normal mode to eco mode.

To modify this duration parameter, select icon  named "Backlight time out", the following screen is displayed:



Enter a value according to min and max on the screen and validate: 99999s means no standby management; such choice on “MOVE” terminal range may affect battery sustainability => not recommended.

9_3_4_8 PINpad1

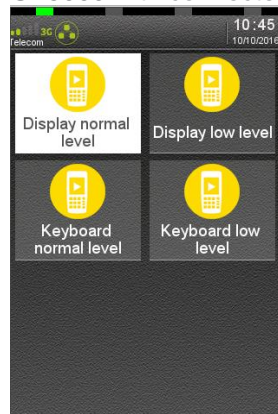
The “PINpad1” subpanel allows modifying the different parameters of the backlight of the pinpad according to terminal activities (based on “Backlight time-out” defined for the terminal):

- Level during normal mode
- Level during eco mode

The management of the backlight depends of backlight characteristics:

- Common backlight for keyboard and display
- Independent backlight for keyboard and display

The menus dedicated to PINpad are not specifically detailed, refer to terminal backlight menus. Follows a screenshot captured on a DESK5000 with connected IPP315 PINpad:



Select an icon on the screen.

9_3_4_9 Print parameters

One of the following tickets is printed when touching the “Print Parameters” icon.

Backlight	
Local backlight	
Normal level	100%
Low level	20%

On DESK5000

Backlight	
Local display	
Normal level	67%
Low level	20%
Local keyboard	
Normal level	On
Low level	On

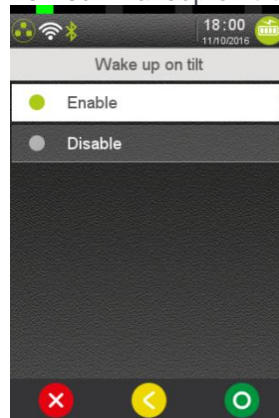
On MOVE5000

Note: When a pinpad is present, a section for pinpad backlight parameters is added to the ticket.

9_3_5 Wakeup on tilt management

The mobile terminals, equipped with a motion sensor may wake up thanks to this mechanism when it will be picked up. This menu allows user to activate/deactivate this feature.

To set wake up on tilt, select icon  named "Wakeup on tilt", the following screen is displayed:




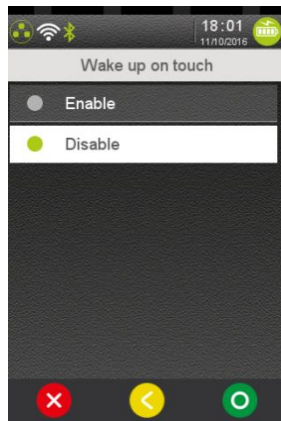
Select:

- "Enable" to automatically wake up the terminal when it is picked up while in standby.
- "Disable" to wake up the terminal only by pressing a key.

9_3_6 Wakeup on touch management

For mobile terminals equipped with touch screen, it is also possible to exit from standby mode by touching the screen panel. This menu allows user to activate/deactivate this feature.

To set wake up on touch, select icon  named "Wakeup on touch", the following screen is displayed:



Select:

- “Enable” to automatically wake up the terminal when it is picked up while in standby.
- “Disable” to wake up the terminal only by pressing a key.

9_4 Communication means

Communications means configuration can be modified thanks to “Communications means” subpanel. This screen is built according to terminal hardware communication capabilities. The current available communications features are:

- Ethernet
- Mobile Networks
- Modem PABX



When “Communications means” icon is selected on “Terminal Settings” subpanel, a subpanel is displayed proposing the different communications means available in the terminal. Below some representative subpanels that can be proposed according to terminal configuration.




Select an icon on the screen.

The following table provides the different links to menus description.

Item	Reference
Ethernet	9_4_1

Mobile Networks	9_4_3
Modem PABX	9_4_2
Wifi	9_4_4
Bluetooth	9_4_5
Modem Settings	9_4_6

9_4_1 Ethernet

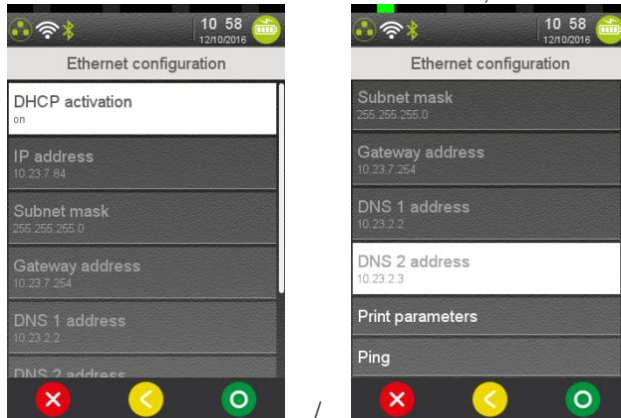
ETHERNET local network configuration can be modified thanks to  icon named "Ethernet". The following list of parameters can be set or modified.

- DHCP activation
- IP address
- Subnet mask
- Gateway address
- DNS1 address
- DNS2 address

The menu also offers to:

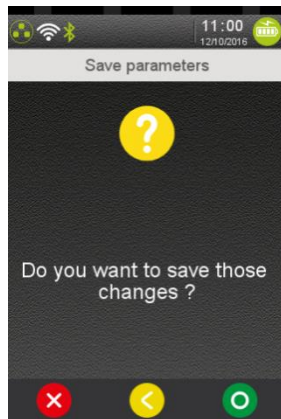
- Summarize on a ticket the parameters of Ethernet configuration.
- Test connectivity thanks to a "ping" test function

When "Ethernet" icon has been selected, the following screen menu is displayed:



Select active menu line. (According to some parameter settings, some parameters may be useless or only displayed as automatically obtained: there are displayed with a **greycod** colour (not with a flashing white!)).

When parameters have been changed, exit action on this menu will warn the user according parameters saving, the following screen is displayed:



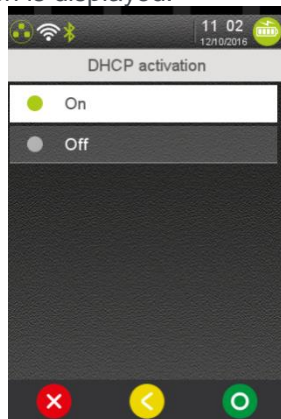
After selecting parameters recording, the terminal will take in account parameters and restarts ETHERNET. Since SDK 11.6, this operation appends without terminal reboot.

The following table provides the different links to menus description.

Item	Reference
DHCP activation	9_4_1_1
IP address	9_4_1_2
Subnet mask	9_4_1_3
Gateway address	9_4_1_4
DNS1 address	9_4_1_5
DNS2 address	9_4_1_6
Print parameters	9_4_1_7
Ping	9_4_1_8

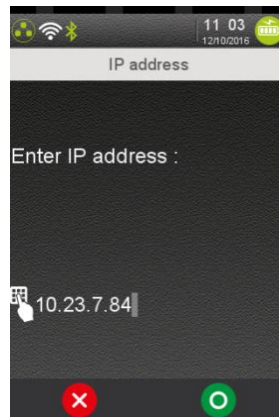
9_4_1_1 DHCP activation

DHCP is activated by default. Select the “DHCP activation” menu line to change the network configuration mode, the following screen is displayed:



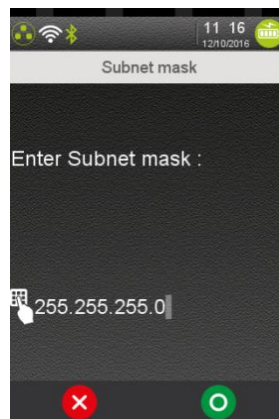
- When choosing “ON”, Dynamic Host Configuration Protocol will be used and parameters are negotiated during ETHERNET initialisation. The other parameters are not proposed to modification.
- When choosing “OFF”, all the parameters are required and must be set to configure local network: IP address, Network mask, Gateway, DSN1 and DSN2 parameters. (All menu lines can be selected).

9_4_1_2 IP address



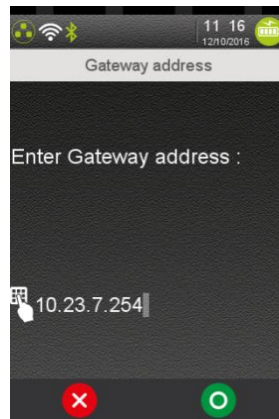
Enter the IP address of the terminal (supplied by the administrator of the local network). IP Address is composed of four digital fields, each one from 0 to 255.

9_4_1_3 Subnet mask



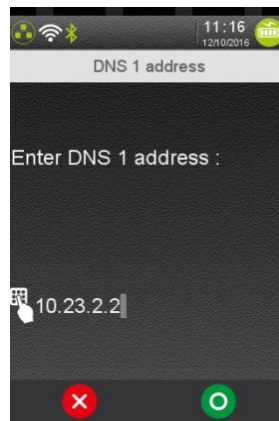
Enter the sub-network mask of the Ethernet interface (usually 255.255.255.000). As IP Address, the sub-network mask is composed of four digital fields, each one from 0 to 255.

9_4_1_4 Gateway address



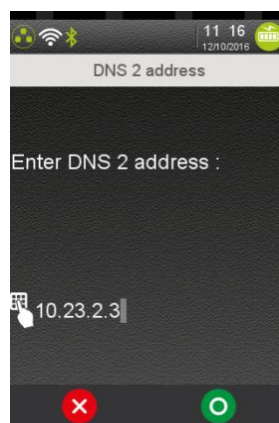
Enter Gateway address (supplied by the administrator of the local network) which is the IP address of the machine used by gateway to join other networks.

9_4_1_5 DNS1 address



Enter the IP address of Domain Name Servers 1 (supplied by the administrator of the local network).

9_4_1_6 DNS2 address



Enter the IP address of Domain Name Servers 2 (supplied by the administrator of the local network).

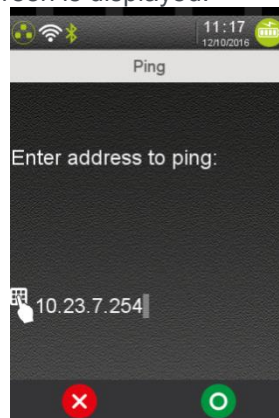
9_4_1_7 Print parameters

The following ticket is printed when selecting and validating "Print Parameters" menu line

Ethernet parameters	
DHCP activation	On
IP Address	10.23.7.32
Subnet mask	255.255.25.0
Gateway address	10.23.7.254
DNS1 address	10.23.2.2
DNS2 Address	10.23.2.3

9_4_1_8 Ping

When selecting "Ping", the following screen is displayed:

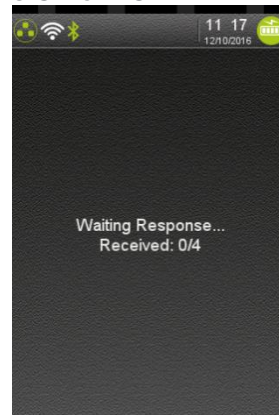


Enter the IP address to ping and validate.

The following screenshots may be visible when the ping is OK or KO.




OK



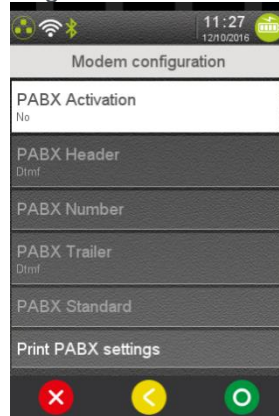
KO

9_4_2 Modem PABX

PABX configuration to use modem can be modified thanks to  icon named “Modem PABX”. The following list of parameters can be set or modified.

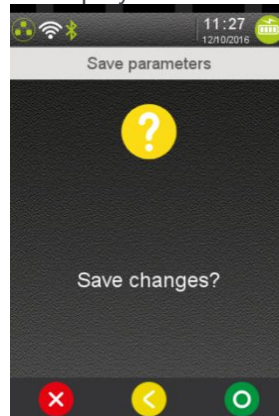
- PABX activation
- PABX header
- PABX number
- PABX Trailer
- PABX Standard

The menu also offers to summarize on a ticket the parameters of PABX configuration. When “Modem PABX” icon has been selected the following screen menu is displayed:



Select active menu line. (According to some parameter settings, some parameters may be useless).

When parameters have been changed, exit action on this menu will warn the user according to parameters saving, the following screen is displayed:



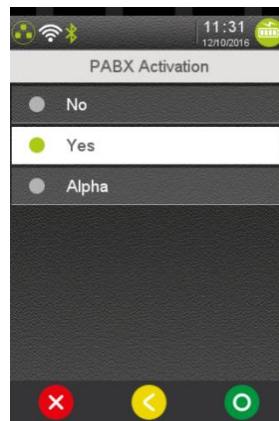
Validate to save the parameters.

The following table provides the different links to menus description.

Item	Reference
PABX activation	9_4_2_1
PABX header	9_4_2_2

PABX Number	9 4 2 3
PABX Trailer	9 4 2 4
PABX Standard	9 4 2 5
Print parameters	9 4 2 6

9_4_2_1 PABX activation

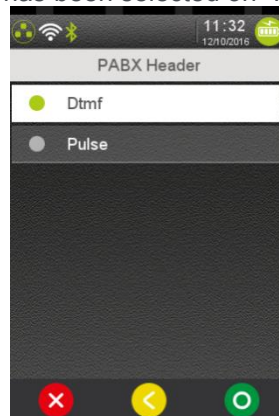


This menu is used to adapt the terminal to the phone line on which it is connected by defining the following parameters:

- **presence** (or absence) of private **PABX** between the terminal and the phone line,
- **DTMF** or pulse **dialing**,
- **Other parameters** like tone detection, various hold...

9_4_2_2 PABX header

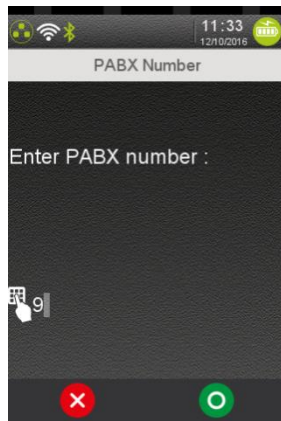
This parameter can be set when “Yes” has been selected on “PABX activation”.



Choose the dialling mode before the private switchboard: either **DTMF** (voice frequency dialling) or pulse (decimal dialling).

9_4_2_3 PABX number

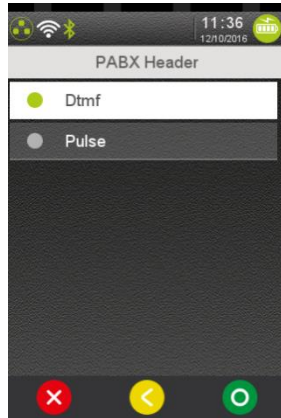
This parameter can be set when “Yes” has been selected on “PABX activation”.



Enter the number (1 to 13 alphanumeric characters) to use to connect the terminal to the public network through the private switchboard.

9_4_2_4 PABX Trailer

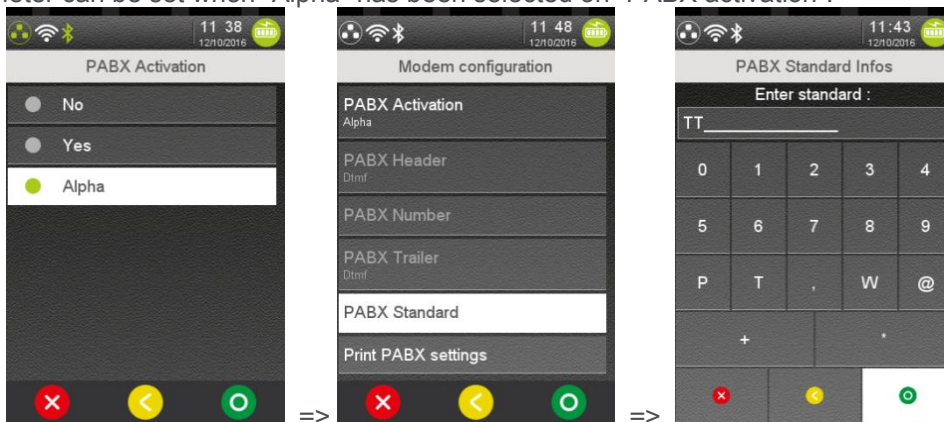
This parameter can be set when “Yes” has been selected on “PABX activation”.



Choose the dialling mode after the private switchboard: either DTMF (voice frequency dialling) or pulse (decimal dialling).

9_4_2_5 PABX Standard

This parameter can be set when “Alpha” has been selected on “PABX activation”.



- PABX activation selection in “Alpha” followed by PABX Standard selection
Enter up to fifteen characters and validate.

9_4_2_6 Print parameters

The following ticket is printed when selecting and validating “Print PABX settings” menu line

```

PABX modem parameters
PABX activation
Yes


PABX Header
Dtmf

PABX number
9

PABX Trailer
Dtmf

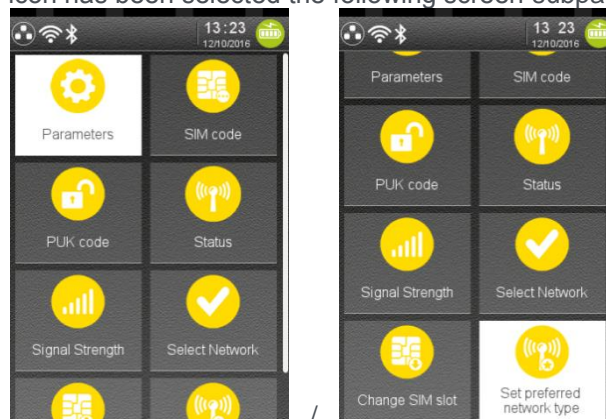
PABX Standard infos
  
```

9_4_3 Mobile Networks

Mobile networks configuration can be modified thanks to  icon named “Mobile Networks”. Thanks to a menu, the user can choose to:

- Modify main parameters thank to sub-menu
- Set SIM pincode
- Set PUK code
- Retrieve status
- Select a network
- Retrieve signal Strength
- Change SIM slot
- Set preferred network type

When “Mobile Networks” icon has been selected the following screen subpanel is displayed:



Select an icon.

Note: According to some parameters settings, some icons may be inactive: their selection will not imply screen changes.

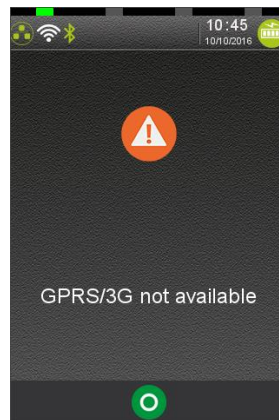
The concerned icons are:

- Sim code (available only when a new SIM has been introduced in the selected SIM slot and when its pin code has not been registered.)
- PUK code (not available until the parameter is not mandatory, remaining “Sim code” possible attempts)

The following table provides the different links to menus description.

Item	Reference
Parameters	9_4_3_1
Set SIM code	9_4_3_2
Set PUK code	9_4_3_3
Retrieve status	9_4_3_4
Select a network	9_4_3_5
Signal strength	9_4_3_6
Changed SIM slot	9_4_3_7
Set preferred network type	9_4_3_8

Note: When no “Mobile network” is available, the selection of the icon implies the displaying of the following screen.

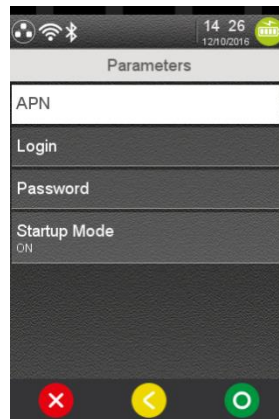


9_4_3_1 Parameters

The main parameters of mobile networks configuration can be modified thanks to menu line “Parameters”. The parameters are:

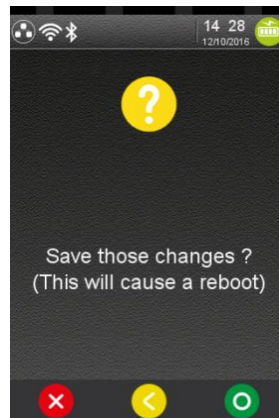
- APN
- Login
- Password
- Startup mode

When “Mobile Networks” icon has been selected the following screen menu is displayed:



Select active menu line. (According to some parameters settings, some parameters may be useless).

After main parameters of mobile networks configuration completion, when the user will exit of this menu (**RED** key or **YELLOW** key), the terminal asks the user to confirm their registration. The following screen is displayed:



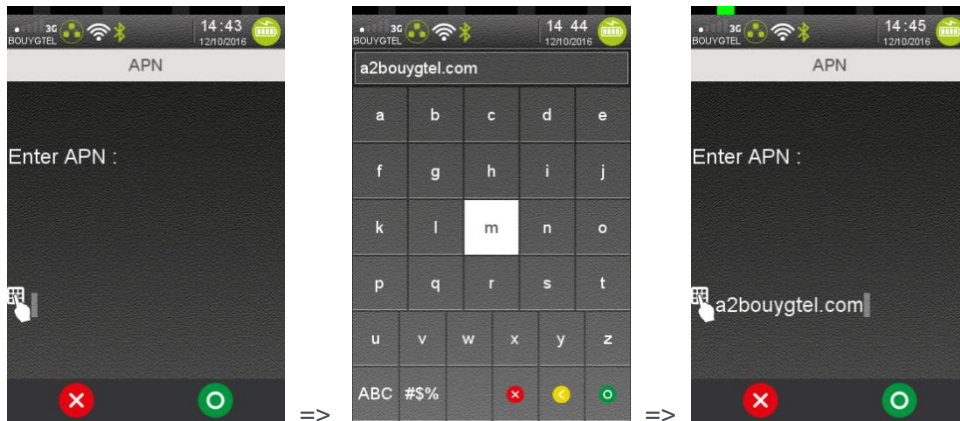
After confirmation, a restart begins to configure the 3G module according to these parameters.

The following table provides the different links to menus description.

Item	Reference
APN	9_4_3_1_1
Login	9_4_3_1_2
Password	9_4_3_1_3
Startup mode	9_4_3_1_4

9_4_3_1_1 APN

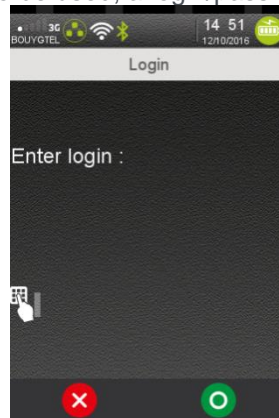
According to server services planned to be used, an Access Point Name (APN) string must be set.



Enter "APN" string thanks to virtual keyboard and validate.

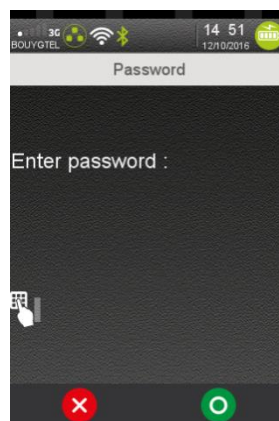
9_4_3_1_2 Login

According to server services planned to be used, a login/password may be required.



Enter "Login" string thanks to virtual keyboard and validate.

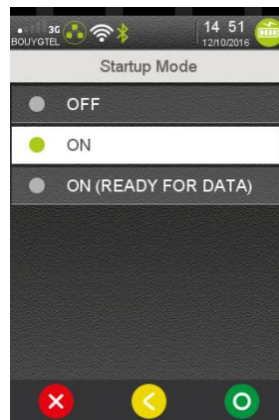
9_4_3_1_3 Password



Enter "Password" thanks to virtual keyboard or terminal physical keyboard and validate.

9_4_3_1_4 Startup mode

This menu allows selecting when and how the 3G communication mean will be initialized at terminal startup.



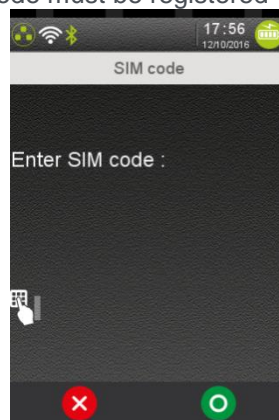
Select one mode and validate.

- OFF : at startup, the 3G module is not activated, (3G icon will stay crossed with a red line)
- ON: the 3G module is activated during startup but does not allow data exchanges
- ON (ready for DATA): the 3G module is activated during startup for data exchanges

9_4_3_2 Set SIM code

This menu is not accessible when:

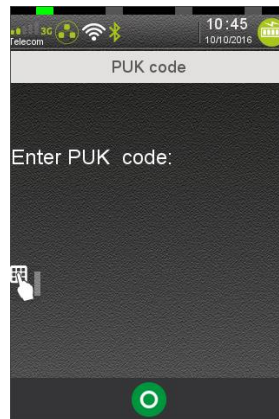
- No Sim card has been detected
- A Sim card has been detected but first mobile configuration has not been done
- Sim card is blocked and PUK code must be registered



Enter "SIM Code" and validate.

9_4_3_3 Set PUK code

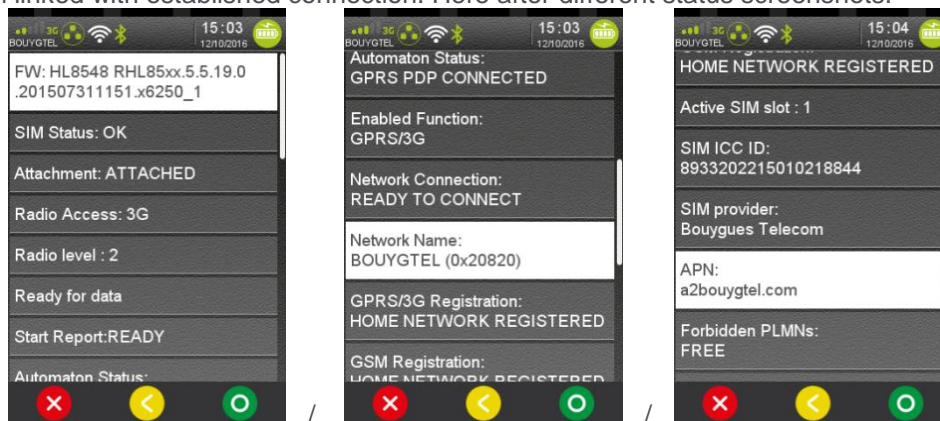
The Pin Unlock Key (PUK) must be provided to revalidate the SIM card when the SIM card is blocked (3 invalid Sim pin code have been entered). This menu is accessible only when:
Sim card is blocked



Enter "PUK Code." and validate.

9_4_3_4 Retrieve status

When  "Status" icon is selected in "Mobile Networks" subpanel, the terminal displays different information linked with established connection. Here after different status screenshots.



The different available status report items are:

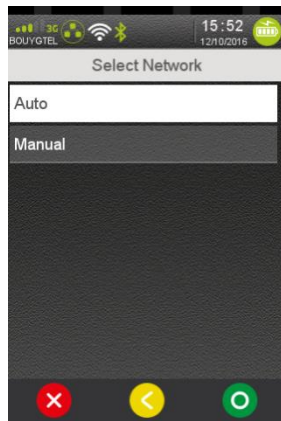
- FW: GPRS/3G module version and firmware version
- SIM status: GPRS/3G Sim card status
 - "NOT YET" = Sim card status not yet received
 - "OK" = Sim card detected and a valid Sim pincode has presented.
 - "KO" = Sim card error
 - "PIN?" = Sim card pincode required
 - "PIN2?" = second Sim card pincode required
 - "BAD PIN" = invalid sim pincode was presented
 - "NO SIM" = Sim card not present
 - "PUK?" = Sim card PUK required
 - "PUK2?" = second Sim card PUK2 is required
- Attachment:
 - "NOT ATTACHED"
 - "ATTACHED"
- Radio Access: type of radio access
 - "2G"
 - "3G"
- Radio level: level of radio signal
 - 0 to 4 = corresponding to the number of bars present with 3G icon in status bar.

- Network availability: type of available network
 - "Netw. Availability: not yet known"
 - "Netw. Ready for data" = link established for data exchanges
 - "Netw. Not ready for data" = link not established for data exchanges
- Start report:
 - "NOT RECEIVED YET"
 - "READY"
 - "PIN OK" = a valid pincode has been presented to Sim card.
 - "PIN REQUIRED"
 - "SIM NOT PRESENT"
 - "SIM LOCK"
 - "FATAL ERROR"
 - "UNKNOWN ERROR"
- Automaton Status:
 - "GPRS DISCONNECTED"
 - "GPRS PDP READY"
 - "GPRS PDP CONNECTED"
 - "GPRS PPP NEGOCIATED"
 - "GPRS ATTACHEMENT FAILED"
- Enabled function:
 - "None"
 - "GSM"
 - "GPRS/3G"
 - "Global"
- Network connection
 - "DISCONNECTED"
 - "EMERGENCY ONLY"
 - "CONNECTED"
 - "COM IN PROGRESS"
- Network name = returns GPRS/3G provider name followed by PLMN mobile network code
- GPRS/3G Registration: status reported by specific command "CGREG" on module
 - "NOT REGISTERED NOT SEARCHING"
 - "REGISTERED HOME NETWORK"
 - "NOT REGISTERED SEARCHING"
 - "REGISTRATION DENIED"
 - "UNKNOWN"
 - "REGISTERED ROAMING"
- GSM Registration: status reported by specific command "CREG" on module
 - "NOT REGISTERED NOT SEARCHING"
 - "REGISTERED HOME NETWORK"
 - "NOT REGISTERED SEARCHING"
 - "REGISTRATION DENIED"
 - "UNKNOWN"
 - "REGISTERED ROAMING"
- Sim slot = slot number in terminal in which sim card has been inserted

9_4_3_5 Select a network

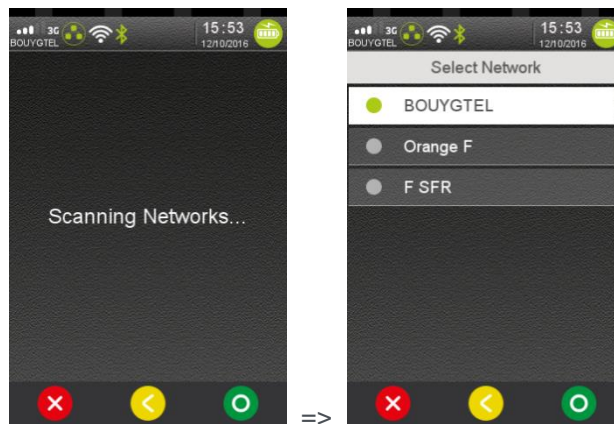
The network selection can be configured to be done automatically or manually according to all

discovered mobile network provider. When  "Select Network" icon is selected in "Mobile Networks" subpanel, the terminal displays the following screen:

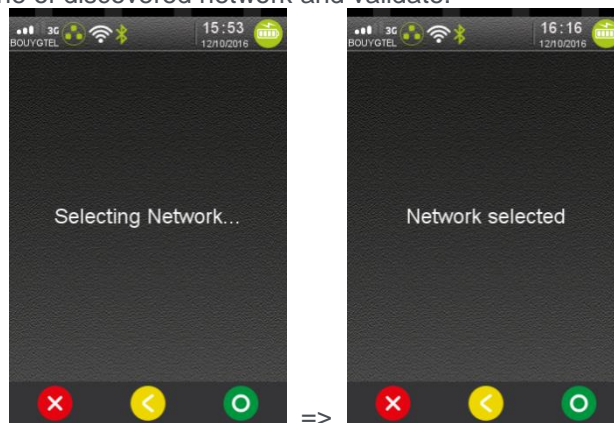


Note: **Automatic selection** must be the default **mode to privilege**, and manual selection has to be exceptional. You must consider that manual mode is intended to be used for test purpose.

When selecting “Manual” choice, the networks are scanned. **Networks scan operation may be up to one minute long.** The discovered networks are listed and proposed to user for selection. The following screens are displayed:

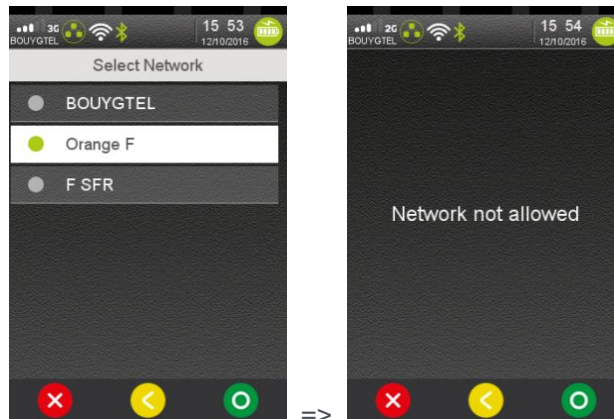


The user has to select one of discovered network and validate.



If the selection is valid, the 3G icon state will change to give the level. Otherwise, in case of not supported network, an error message is displayed.

The following screen illustrates the selection of a not authorized provider.

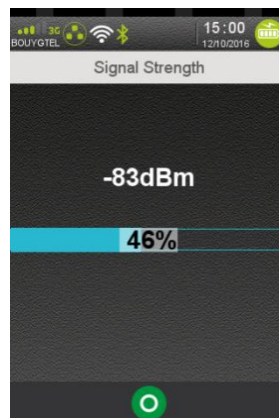


9_4_3_6 Signal Strength

One icon in the status bar of terminal is dedicated to GPRS/3G/4G status, the strength of signal is given thanks a number of bars corresponding to a range of signal level. The value in dBm of the signal strength can be obtained thanks to this dedicated menu "Signal Strength".




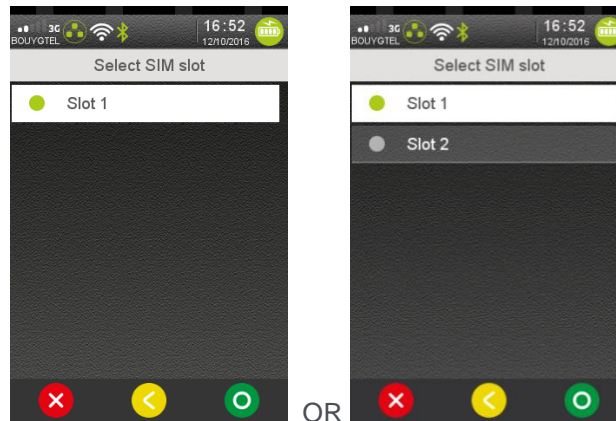
When the icon "Signal strength" is selected in "Mobile Networks" subpanel, GPRS/3G/4G signal strength is displayed as here after:



9_4_3_7 Change SIM slot

A mobile terminal may be equipped with more than one SIM slot, it is possible to select which SIM slot will be selected by default. To activate another SIM slot, no active connection must be established

(GPRS icon in status bar must be in GRAY color). When the icon  "Change SIM slot" is selected in "Mobile Networks" subpanel, the following screen is displayed:




Select one option and validate.

Note: Do not forget to change the APN!

Note: The current implementation does not facilitate usage; future improvements are expected to allow configuring each SIM slot and its SIM card with their own parameters.

9_4_3_8 Set preferred network type


According to mobile terminal equipment and to available mobile network capabilities, it may be possible to connect in 2G, 3G or 4G and to perform some fallbacks from high to low inputs/outputs data rate. However, according to applications present in the terminal, it may be required to fix the network type.

When the icon  "Set preferred network type" is selected in the "Mobile Networks" subpanel, the terminal displays the different available choices between specific network types and automatic management. The following typical screen is displayed:

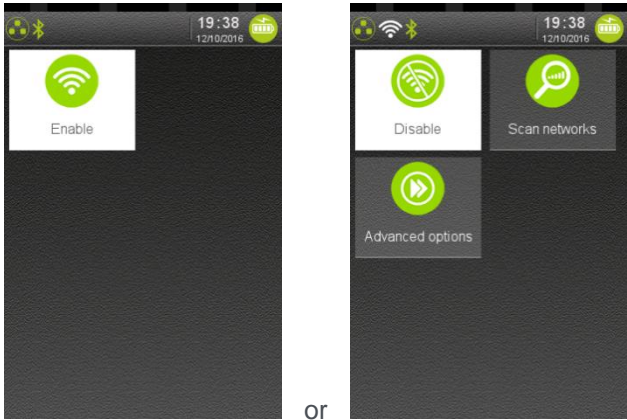


Select one option and validate.

9_4_4 Wi-Fi configuration

Wi-Fi configuration can be modified thanks to  icon. This item is displayed only on Wi-Fi terminals.

According to registered configuration or to default terminal configuration (=first usage), access to this menu can produce one of the two following screens:



or

- “Wi-Fi (OFF)”: Wi-Fi connectivity is not activated
- “Wi-Fi (ON)” Wi-Fi connectivity is activated and configuration can be modified.

The following scheme illustrates WI-FI configuration general configuration logic:

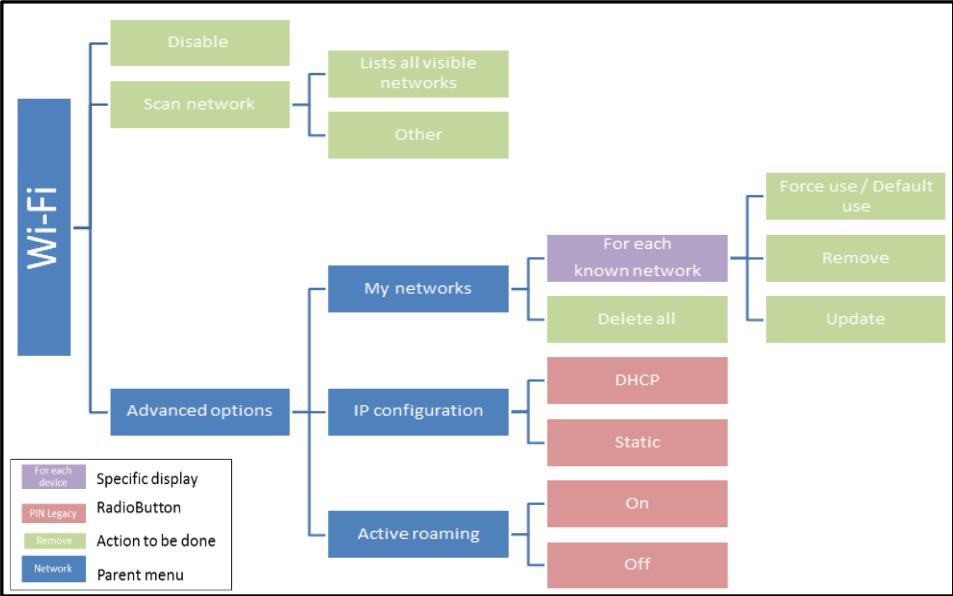


Figure 22 – Wi-Fi configuration synoptic

WI-FI configuration consists in creating a profile, i.e. the set of parameters required for connection to an “Access Point”. Several profiles can be created if connection is required to more than one Access Point. In this case, you can choose the profile which is active or let the terminal connect to the best available access point amongst all defined profiles.

The following table provides the different links to menus description.

Item	Reference
Disable/ Enable	9_4_4_1
Scan networks	9_4_4_2
Advanced options	9_4_4_3

Security note:

If the Wi-Fi interface is used to transfer any sensitive authentication data, including but not limited to the encrypted PIN or account data, the Wi-Fi interface must enforce encryption.
The WIFI configuration profile shall be consistent with the PCI DSS v2 Wireless Guidance.

Note: the Wifi service will refuse to create profiles for unsecure network (open or WEP networks).

9_4_4_1 Activation menu

According the Wi-Fi connectivity status, the displayed menu line is:

- “Disable” = allows disabling Wi-Fi connectivity (up to and including the radio emission). Its selection implies:
 - Wi-Fi connectivity is shutdown
 - Menu line “Disable” is renamed “Enable”
 - None of the other Wi-Fi menus is visible
- “Enable” = allows enabling Wi-Fi connectivity. Its selection implies:
 - Wi-Fi connectivity is activated
 - Menu line “Enable” is renamed “Disable”
 - All Wi-Fi menus are visible

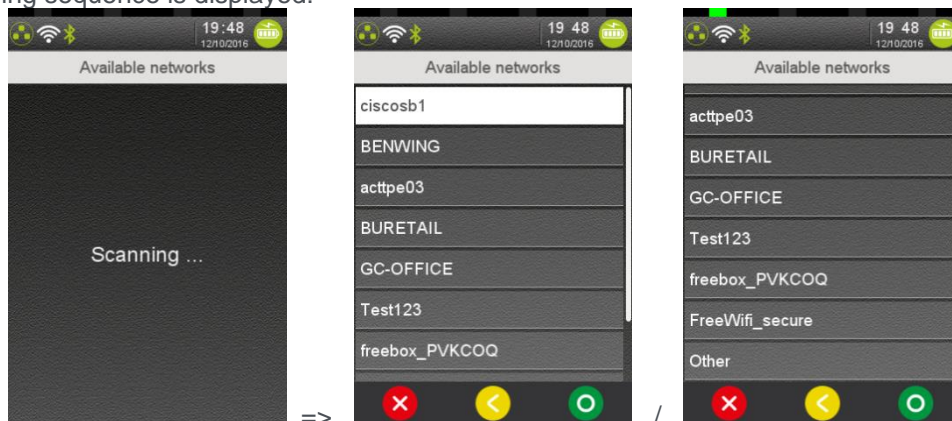
Loaded with the default configuration, the Wi-Fi is proposed enabled on a Wi-Fi connectivity capable terminal.

9_4_4_2 Scan networks

When selecting “Scan network”, the terminal performs a full search of the different networks that may be present around it. At the end of the scan, the terminal displays “Available networks” menu which is composed of:

- The list of available networks that respond to security criteria (network with NONE security or WEP security are not shown)
- A static menu named “Other”.

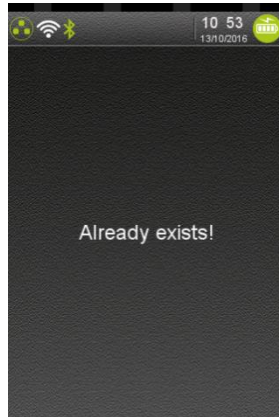
The following sequence is displayed:



To select an existing network or “Other” menu:

- Set the radio-button
- Validate with “Green” key (on screen or on keyboard)

When the selected network is already configured, the terminal displayed the following error message. In this case go in “Advanced options” -> “My networks” to delete the previous registered profile (refer to **9_4_4_3_1_1_2 “Remove”**).

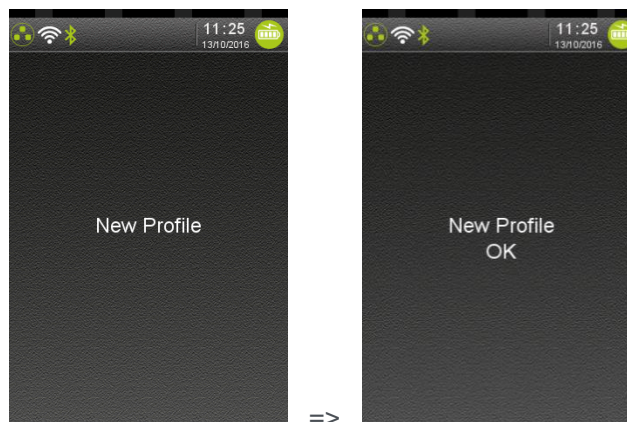


9_4_4_2_1 Selecting an existing network

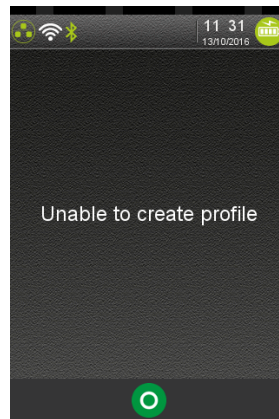
When an existing network is selected (i.e. any other entry than “Other”), the terminal proposes to configure a new profile, for example it will ask to enter the Wi-Fi password with following screen for a Home security network:



After validation, a new profile is created, registered and activated. The following sequence is displayed.



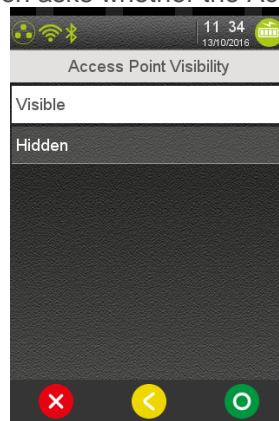
When the terminal is not able to create the profile some error could be displayed as below.



For a profile with enterprise security network example, refer to section [9_4_4_2_2_2](#).

9_4_4_2_2 Manual network selection

When “Other” menu is selected, a screen asks whether the Access Point is hidden or not.

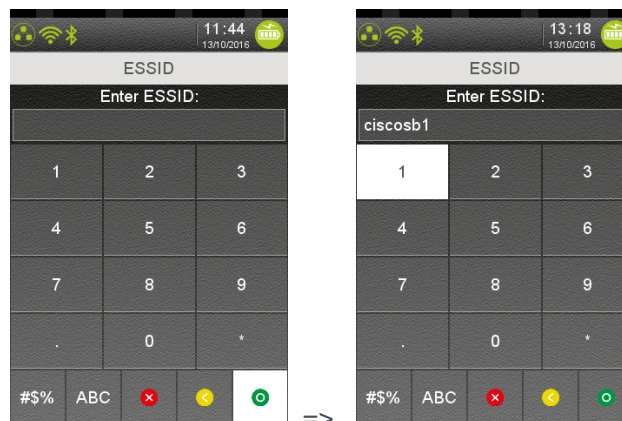


Select “Visible” or “Hidden” and then validate with “green” key (on screen or on keyboard).

Note: It is recommended to select “Visible” if the network is really visible.

When “Access Point visibility” has been chosen, the selection of “Network name (SSID)” is proposed to user:

- Enter the Wi-Fi network name (ESSID).
- Then validate.



Once the SSID is configured, the terminal proposes to select the security type to manage.

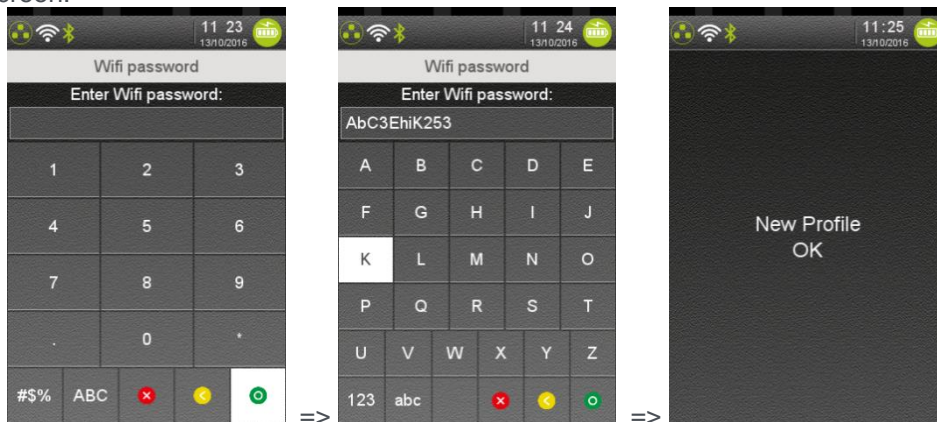


According to what is select refer to the following paragraphs:

Item	Reference
Home security	9_4_4_2_2_1
Enterprise security	9_4_4_2_2_2

9_4_4_2_2_1 Home security

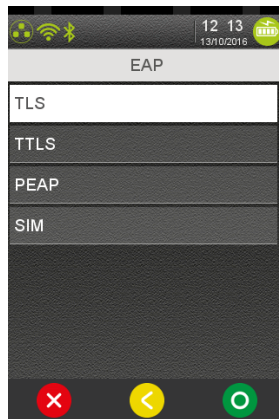
When “Home security” is selected, the terminal proposes to enter the Wi-Fi password with the following screen:



After validation, a new profile is created, registered and activated. The configuration is finished, the terminal return to “Available networks menus”.

9_4_4_2_2_2 Enterprise security

When “Enterprise security” is selected, the terminal proposes to select which type of **Extensible Authentication Protocol (EAP)** to use. A screen proposing all the available authentication capabilities of the terminal is displayed:



Select one of the authentication methods and validate.

According authentication methods selected refer to the following paragraphs:

Item	Reference
TLS	9_4_4_2_2_2_1
TTLS	9_4_4_2_2_2_2
PEAP	9_4_4_2_2_2_3
SIM	9_4_4_2_2_2_4

9_4_4_2_2_2_1 TLS

When this authentication method is used, the following parameter will be asked to the user:

- User name identifier.
- CA certificate
- Client certificate
- Private key
- Private key password

After validation of “TLS” (Transport Layer Security) choice, the following screen is displayed:



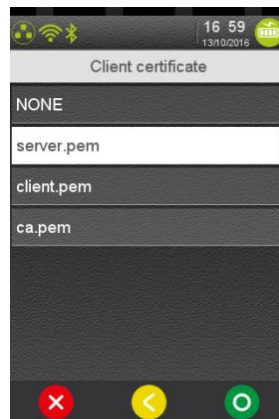
Enter the username and validate.

Next, the selection of the root certificate according to the list of certificates previously loaded and saved in the terminal is proposed.



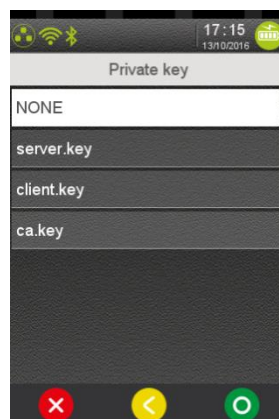
Select the root certificate corresponding to the targeted network and validate.

Next, the selection of the client certificate according to the list of certificates previously loaded and saved in the terminal is proposed.



Select the client certificate corresponding to the targeted network and validate.

Next, the selection of the private key according to the list of private key previously loaded and saved in the terminal is proposed.



Select the private key. Then validate.

Note: WARNING Private key MUST BE PKCS8 format.

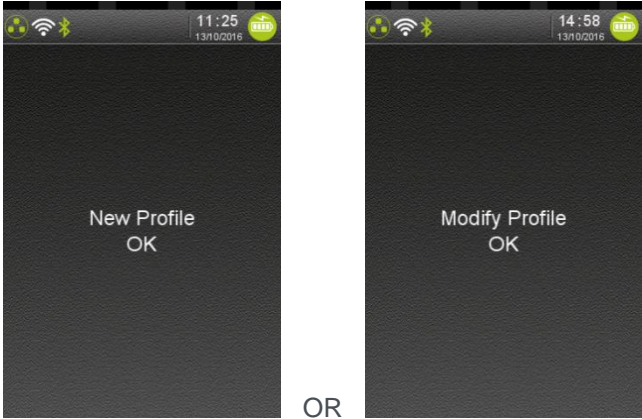
Next, the password related to selected private key must be entered.



Enter the password and validate.

Note: Validation is only accepted if something has been entered!

The “TLS” configuration sequence is finished and according from initial menu selected, the success of the profile creation or update is notified to user.



9_4_4_2_2_2_2 TTLS

When this authentication method is used, the following parameter will be asked to the user:

- Phase 2 negotiation method.
- Username
- Wifi Password
- CA certificate

After validation of “TTLS” (Tunneled Transport Layer Security), the user must select the “Phase2” negotiation method according to a list established by the terminal according to its capabilities. The following screen is displayed.



Select one of the methods and validate.

Next, a username must be entered:



Enter the username and validate.

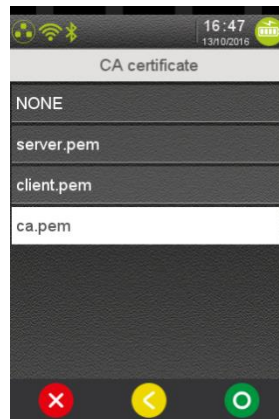
Next, the Wifi password must be entered:



Enter the password and validate.

Note: Validation is only accepted if something has been entered!

Next, the selection of the root certificate according to the list of certificates previously loaded and saved in the terminal is proposed.



Select the root certificate corresponding to the targeted network and validate.

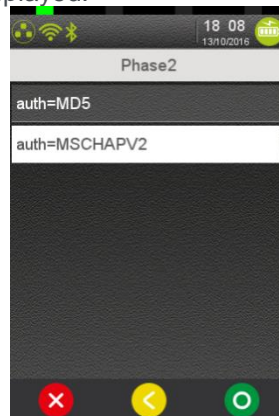
The “TTLS” configuration sequence is finished and according from initial menu selected, the success of the profile creation or update is notified to user as exposed in “TLS” configuration sequence.

9_4_4_2_2_2_3 PEAP

When this authentication method is used, the following parameter will be asked to the user:

- Phase 2 negotiation method.
- Username
- Wifi Password
- CA certificate

After validation of “PEAP” (Protected Extensible Authentication Protocol), the user must select the “Phase2” negotiation method according to a list established by the terminal according to its capabilities. The following screen is displayed.



Select one of the methods and validate.

Next, a username must be entered:



Enter the username and validate.

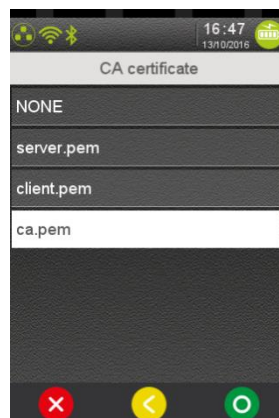
Next, the Wifi password must be entered:



Enter the password and validate.

Note: Validation is only accepted if something has been entered!

Next, the selection of the root certificate according to the list of certificates previously loaded and saved in the terminal is proposed.



Select the root certificate corresponding to the targeted network and validate.

The "PEAP" configuration sequence is finished and according from initial menu selected, the success of the profile creation or update is notified to user as exposed in "TLS" configuration sequence.

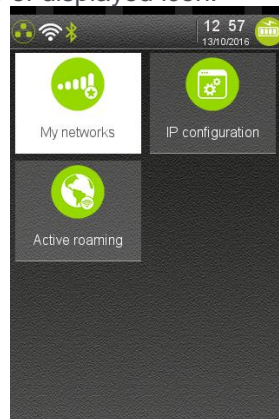
9_4_4_2_2_2_4 SIM

When this authentication method is used, needed parameters are present in SIM.

Select “SIM choice and validate. According from initial menu selected, the success of the profile creation or update is notified to user as exposed in “TLS” configuration sequence.

9_4_4_3 Advanced options

When “Advanced options” subpanel is selected the following screen is proposed to the user:
To select a menu touch or validate one of displayed icon:



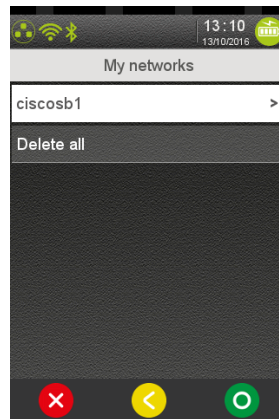
The following table provides the different links to subpanels description.

Item	Reference
My networks	9_4_4_3_1
IPv4 configuration	9_4_4_3_2
Active roaming	9_4_4_3_3

9_4_4_3_1 My networks

“My networks” subpanel allows managing all registered profiles in the terminal. When selecting this menu, as illustrated in following screenshot:

- All saved profiles are displayed. Each “Profile name” line can be selected to manage specifically this profile.
- The currently activated profile (ie the Preferred one) is highlighted in the list
- A menu allows to delete all registered configuration



The following table provides the different links to menus description.

Item	Reference
“ciscosb1” (A named profile)	9_4_4_3_1_1
Delete All	9_4_4_3_1_2

9_4_4_3_1_1 Management of one registered profile

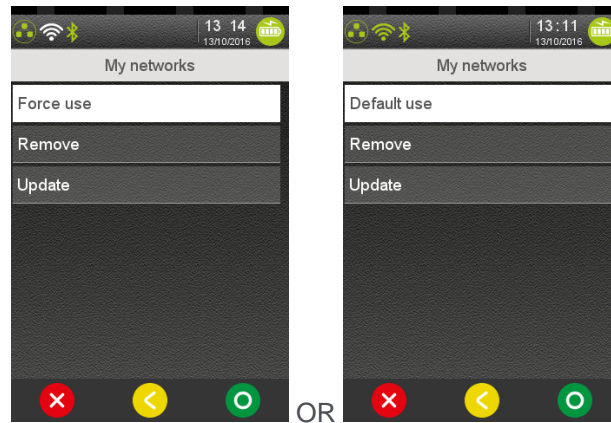
The management of each registered profile can be done in selecting “Profile name” line. Three operations can be performed:

- Selecting usage condition “Force use” or “Default use”: to set the selected profile as the preferred profile, ie if a profile is “forced”, the Wifi will not connect to any other profiles, even if the forced network is not available it will be this one that will be used, whatever is the signal strength or other parameters. When “Force use” has been selected, next access to menu it will be proposed the reverted possible choice: “Default use”.
- Additional information: Selecting “Force use” for a profile automatically put any other profile previously put in “Force use” into “Default use”
- Removing of the selected profile. Once the profile is removed, the user go back to the Network menu
- Updating of the profile. The update process is similar to create profile. Once the update is done, the user will go back to Network menu

The following table provides the different links to menus description.

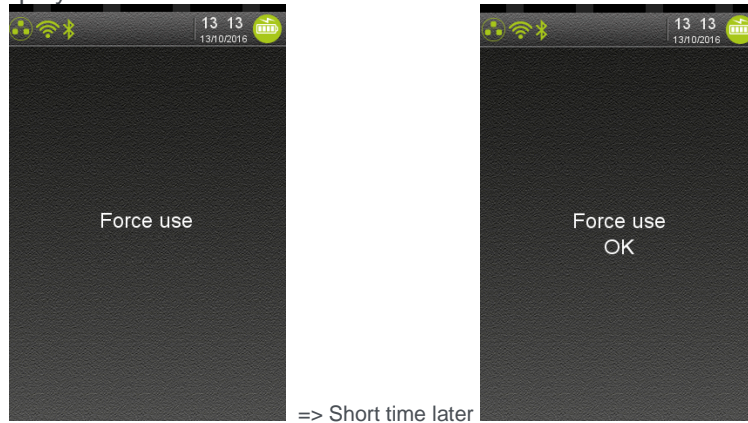
Item	Reference
Force use/Default use	9_4_4_3_1_1_1
Remove	9_4_4_3_1_1_2
Update	9_4_4_3_1_1_3

When a “Profile name” line is selected and according previous recorded parameters, three possible operations are proposed:

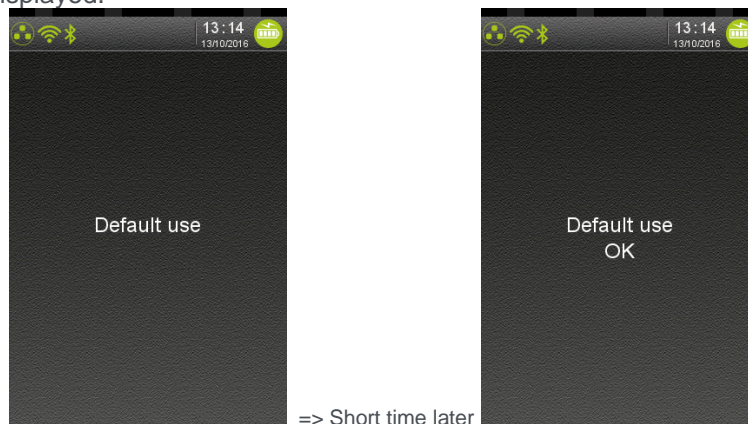


9_4_4_3_1_1_1 “Force use” / “Default use”

When “Force use” is proposed and selected, the terminal displays a message to user until the completion of the operation (duration = some seconds). When the operation is finalized, a result or an error message is displayed.

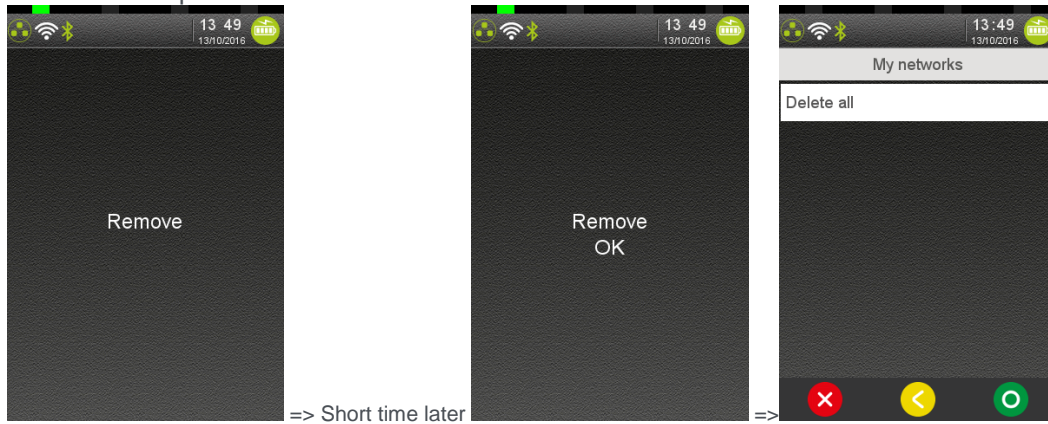


When “Default use” is proposed and selected, the terminal displays a message to user until the completion of the operation (duration = some seconds). When the operation is finalized, a result or an error message is displayed.



9_4_4_3_1_1_2 “Remove”

When “Remove” is selected, the terminal removes the selected named profile. The terminal displays a message to user until the completion of the operation (duration = some seconds). At the end of the operation the named profile no more exist in the menus lines.



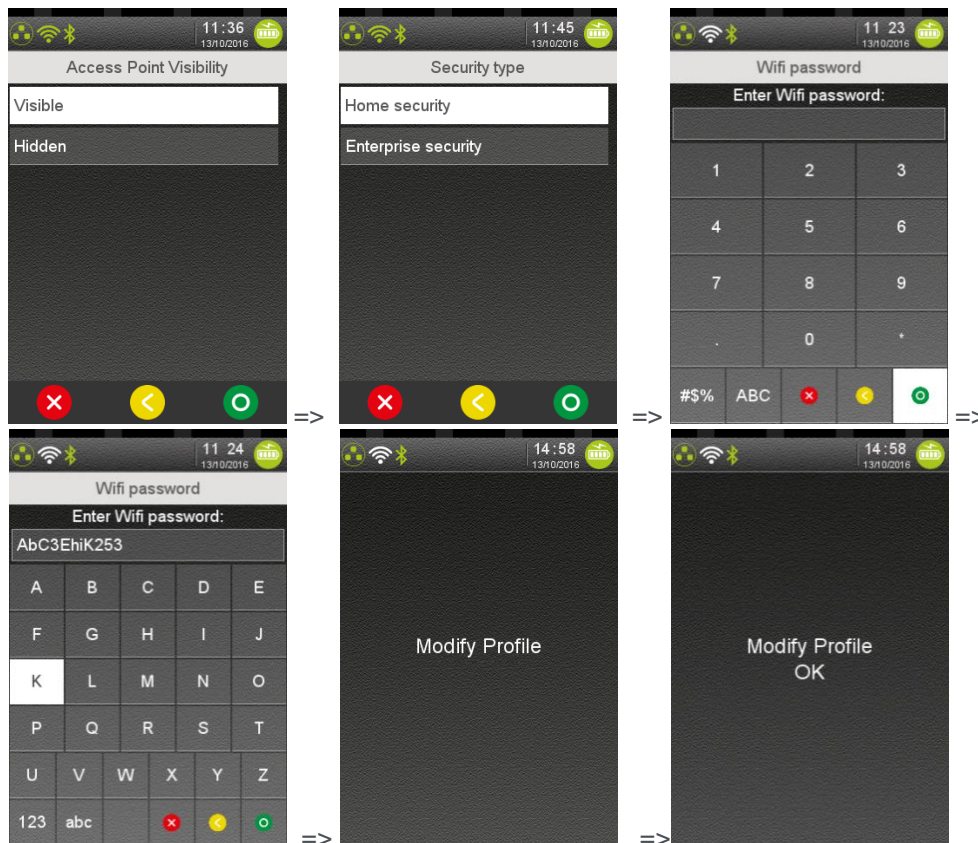
Note: During this operation, the WiFi icon color in the status bar has evolved. At the end of the operation, the icon is gray meaning that only radio activated but not connected to a network.

9_4_4_3_1_1_3 “Update”

When “Update” is selected, the registered parameters can be changed. The terminal asks to:

- Adjust “Hidden” and “Visible”.
- Select between “Home” or “Enterprise” security profile
- Reenter the “Wi-Fi password”

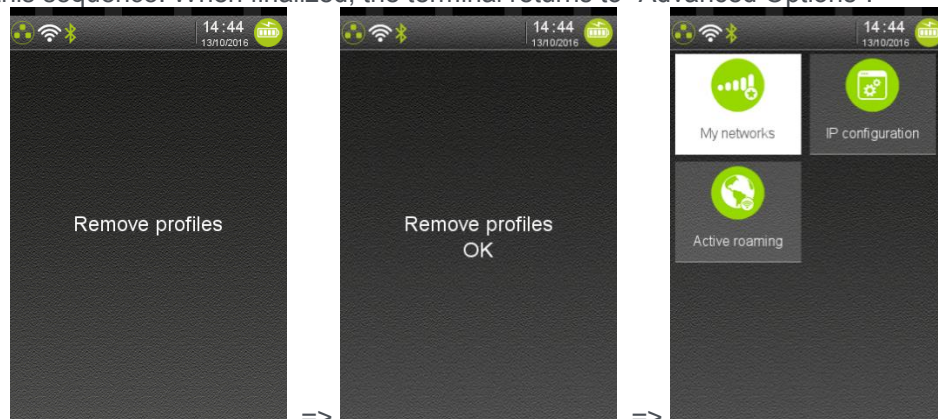
The terminal displays a message to user until the completion of the operation (duration = some seconds). When the operation is finalized, a result or an error message is displayed. The following screenshots illustrates this sequence.



Note: For detailed description of “Enterprise security” parameters setting refer to [9_4_4_2_2_2 Enterprise security](#) paragraph.

9_4_4_3_1_2 Delete all

This menu is used to delete all the networks registered in the terminal. The following screenshots illustrates this sequence. When finalized, the terminal returns to “Advanced Options”.

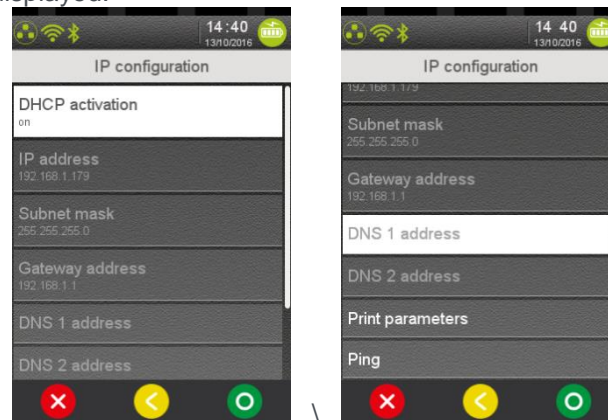


9_4_4_3_2 IPv4 Configuration

When “IP configuration is selected, the user is able

- To configure the IP address thanks to DHCP or in setting all the parameters.
- To print current IP Wi-Fi parameters
- To ping a specific address.

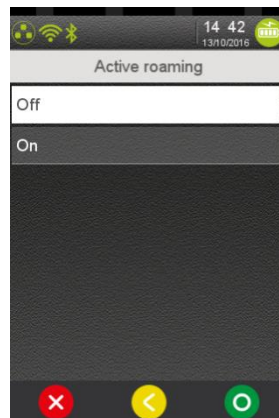
The following screen is displayed.



This menu is similar to Ethernet configuration. (Refer to [9_4_1](#)).

9_4_4_3_3 Active roaming

When selected, this menu displays 2 radio buttons (On / Off) used to specified whether the dynamic roaming must be enabled or not.



The registered state is displayed:


- Change setting and validate or go back to previous menu.

The Active roaming is a feature that allows the terminal to actively perform background Wi-Fi scans, looking for an Access Point that would provide a stronger signal than the one currently in use. If such an Access Point is found, the terminal will automatically connect to it, even if it still has a connection to the current Access point

By default, the option is set to "OFF" because of the possible side effect: if a room with weak access to 2 access points, the terminal might end up switching back and forth to each access point, making the actual use of the Wi-Fi useless

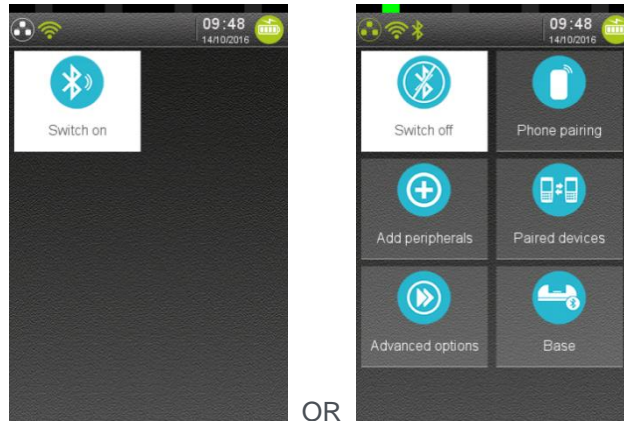
9_4_5 BLUETOOTH configuration



BLUETOOTH configuration can be modified thanks to  icon. This item is displayed only on BT terminals. According to BLUETOOTH status, two different screens may happen when this icon is selected:

- BLUETOOTH is activated

- BLUETOOTH is not activated



Note: In the following paragraph, BT abbreviation will be use in place of BLUETOOTH.

This menu provides a set of configuration features to manage BT ecosystem around payment terminal:

- Activation/deactivation of BT module
- Phone pairing
- Attachment of different BT peripherals to the terminal
- Management of all BT peripherals currently paired with the terminal
- Management of terminal BT bases (BEM)
- Management of different terminal BT advanced options.

The following table provides the different links to menus description.

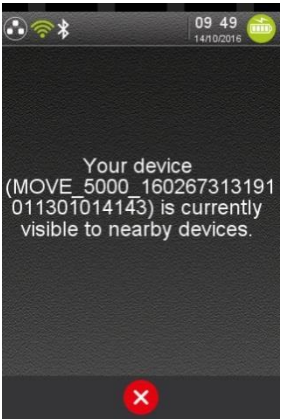
Item	Reference
Phone pairing	9_4_5_1
Add peripherals	9_4_5_2
Paired devices	9_4_5_3
Base	9_4_5_4
Advance options	9_4_5_5

Before processing part of these menus, the general configuration of BT on the terminal must have been done. (refer to [Advanced terminal](#) options menu).

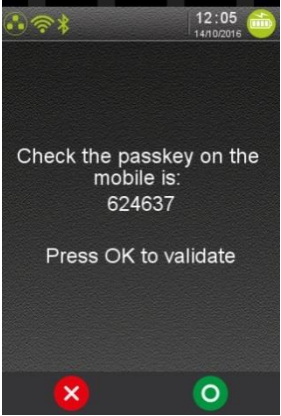
9_4_5_1 Phone pairing



To pair a mobile phone or a tablet to your terminal, select "Phone pairing" icon. During 1 minute the terminal will be visible or detectable to be paired with a BT equipment. It displays the following screens sequence in which the remaining duration of visibility is refreshed until pairing failed or achieved with success.

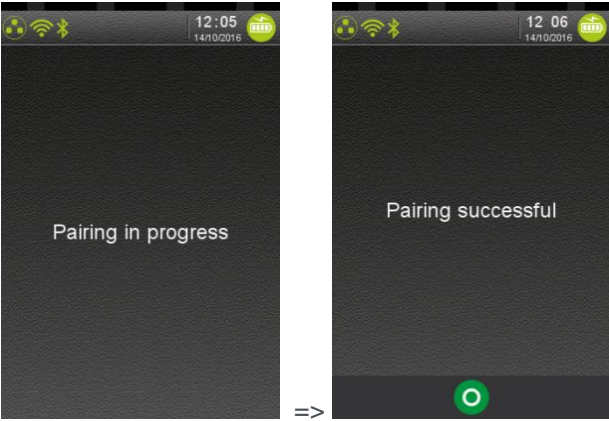


On the mobile phone starts a recognition process of BT peripherals in field. TETRA BT terminals only support « PIN Matching » pairing method. When phone start association exchanges sequence, the terminal displays the following type of messages:

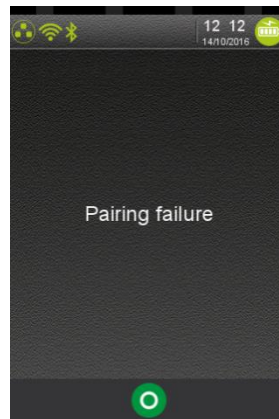


After having control the pin value on the mobile phone, validate to confirm the association.

If pairing treatment is successful, the terminal and the mobile phone confirm pairing success in displaying a message. On mobile phone, the paired BT equipment lists content the terminal name or reference.




In case of pairing failure or when visibility sequence duration expires, the terminal displays the following message.



9_4_5_2 Add peripherals

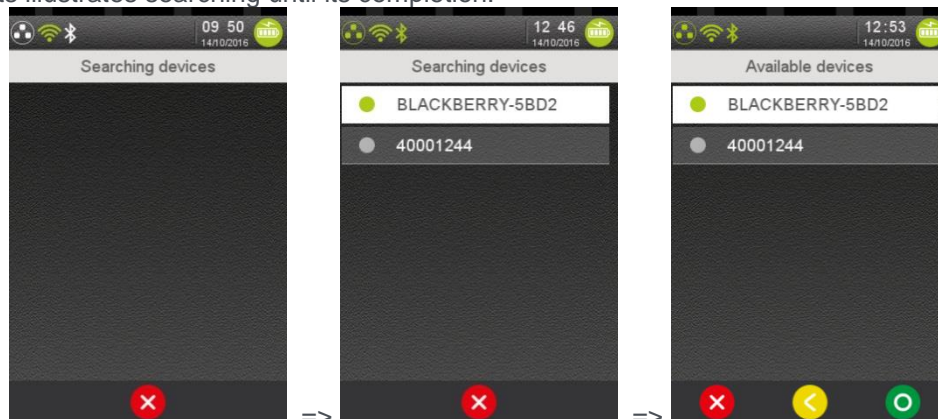


In selecting  “Add peripherals” icon, you can pair a device to a TETRA BT terminal. The current supported types of BT on TETRA are:

- Bluetooth printer:
- Bluetooth barcode reader:
- iOS bridge:

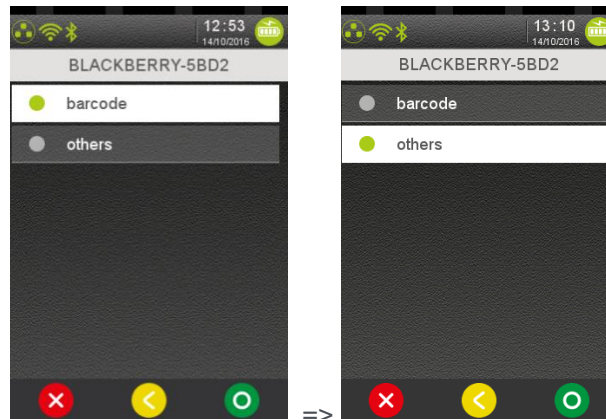
Note: An iOS bridge is a type of BT device that will be physically connected to the TETRA terminal but will be functionally driven by the iOS application. That’s why this type is only available on device with the iAP chip. (=not on all BT TETRA terminal)

When “Add peripherals” menu is selected, the terminal starts to search the available devices in its perimeter. The list of the available Bluetooth devices is displayed and adjusted according to new device discovering. During this phase, it is possible to cancel operation thanks to “RED” button or key. When searching phase is finished, the user can select a device to pair with its terminal. The following screenshots illustrates searching until its completion.

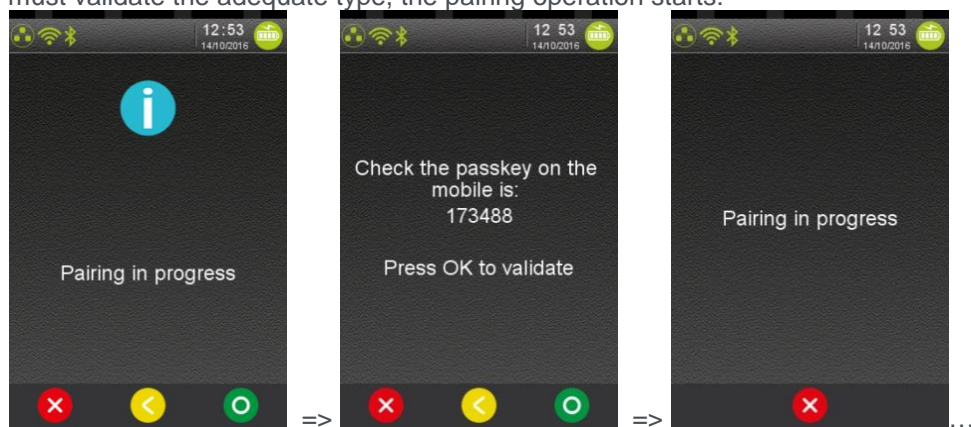


When the expected device to pair appears in the list, select it to start pairing.

If the terminal cannot automatically determine whether the device is a printer or a barcode reader, it will display a specific screen to select the type of device. In the following illustrated use case, “Others” will be selected.




The User must validate the adequate type, the pairing operation starts:



The next steps of this operation are similar to « Phone pairing » (refer to [9_4_5_1](#)).

9_4_5_3 Paired devices

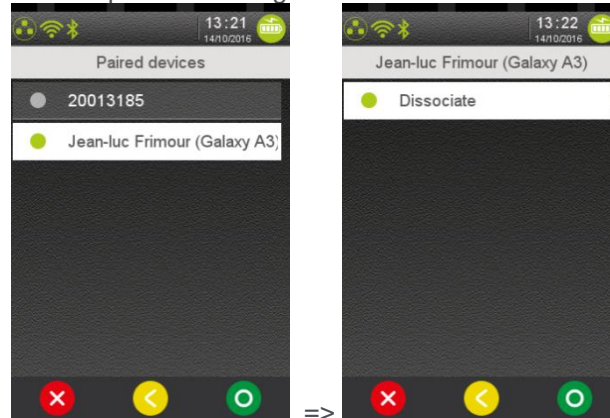
The “Paired devices” menu allows managing paired BT devices registered by the terminal. The available functions depend on BT device type.

In selecting  “Paired devices” icon, you can pair a device to a TETRA BT terminal. The current supported types of BT on TETRA are:

- Bluetooth printer:
 - Remove: unpair the device
 - Auto connect: (if this option is supported by the printer)
 - YES to keep the connection alive. This will increase the power consumption (lower battery life) but speed up the printing
 - NO to connect on demand (managed by the Telium application). This will slow the printing as the Bluetooth connection will have to be established each time
- Bluetooth barcode reader:
 - Remove: unpair the device
- iOS bridge:
 - Remove: unpair the device
- Mobile device for other cases (smartphone or tablet):
 - Remove: unpair the device

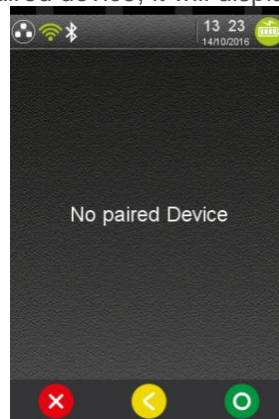
- Connect : to restart SmartConnection algorithm (item only available on Apple device if SmartConnection is enabled, device set by default and not connected)

The short following sequence illustrates displays menu when another terminal is paired to the terminal and when the User chooses to unpair an existing association.




Validate to confirm “dissociation” between the two devices. The operation does not report any error. The terminal stay after on BT main menu.

When the terminal does not find any paired device, it will display the following error message:



9_4_5_4 BT bases setup

From the “Bluetooth” subpanel, select the  “Base” icon and validate. The terminal displays the following menu to the User.




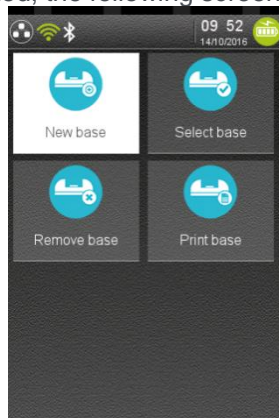
To be operational, a Bluetooth terminal shall be associated to at least one base (“Association” item). Once associated, the terminal can use one of the base communication ports (“Advanced” item) like modem, USB, Ethernet...

The following table provides the different links to menu description.

Item	Reference
Association	9_4_5_4_1
Advanced	9_4_5_4_2
Base State	9_4_5_4_3
Upgrade Base	9_4_5_4_4

9_4_5_4_1 Association

When  “Association” icon is selected, the following screen is proposed to the user.




Thanks to the “Association” menus the User can:

- Create a new base association.
- Select between base which base will be used
- Remove a registered associated base
- Print base associations registered in the terminal.

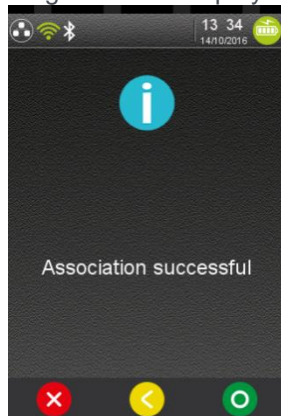
The following table provides the different links to menus description.

Item	Reference
New Base	9_4_5_4_1_1
Select Base	9_4_5_4_1_2
Remove Base	9_4_5_4_1_3
Print Base	9_4_5_4_1_4

9_4_5_4_1_1 New base

Before selecting the  "New base" icon, place the terminal on the new base to associate. At association achievement, the terminal displays the operation result.

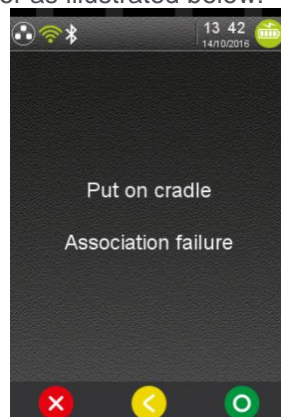
- If result is successful, the following screen is displayed



=>

Note: the BT icon in status bar will be updated (=BT Green Icon) on first reboot of the terminal outside the base.

- If the association is not successful, the result screen contains the "Association failure" message and the text of the error as illustrated below:




The user must put the terminal on the base to associate and validate. Until the terminal is not on the base "GREEN" button or key is inactive.

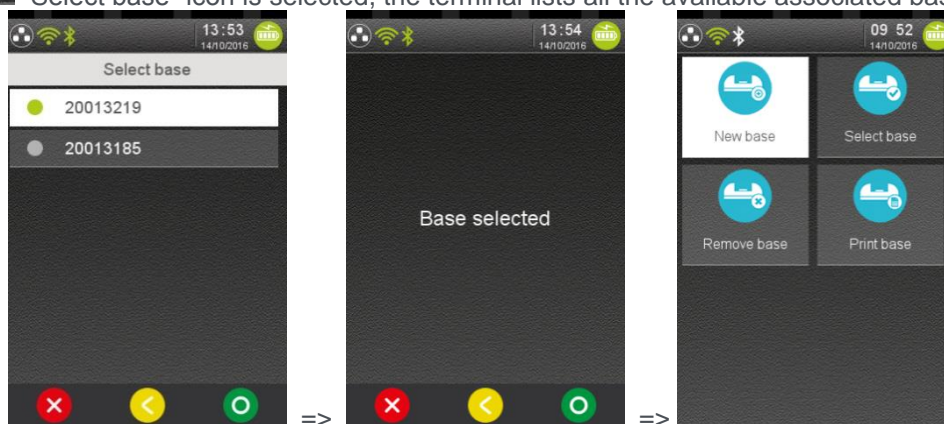
The description of "Error text" is given in the following table.

Displayed error text	Description of association failure
"IR link not available"	InfraRed link not available (trace on COM0, MODEM.IS_IR or COM0.IS_IR selected)
"Connection timeout"	Base couldn't be connected to (not a smart base ?)
"Cannot send"	The terminal fails to transmit its association request.
"Receive timeout"	The terminal has transmitted its association request but has not received a reply.
"Base @ = 0"	Base has returned a null address (base not yet started up or out of order).
"Put on cradle"	Association not possible: portable terminal not on a base.
"Wrong driver version"	Device driver is too old (either portable or base) => update needed.
" Wrong base firmware "	Software version of the base is incorrect.
"Wrong portable firmware"	Software version of the terminal is incorrect.
"Wrong firmware"	Different causes may set this error: <ul style="list-style-type: none"> • Software version of the base is unknown. • Software version of the terminal is unknown • Software versions of both base and terminal are incorrect.

Then if the association was successful, the terminal may propose updating of base software (refer [Upgrade software base](#)).

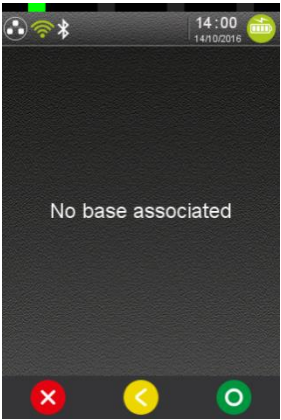
9_4_5_4_1_2 Select Base

When  "Select base" icon is selected, the terminal lists all the available associated bases.




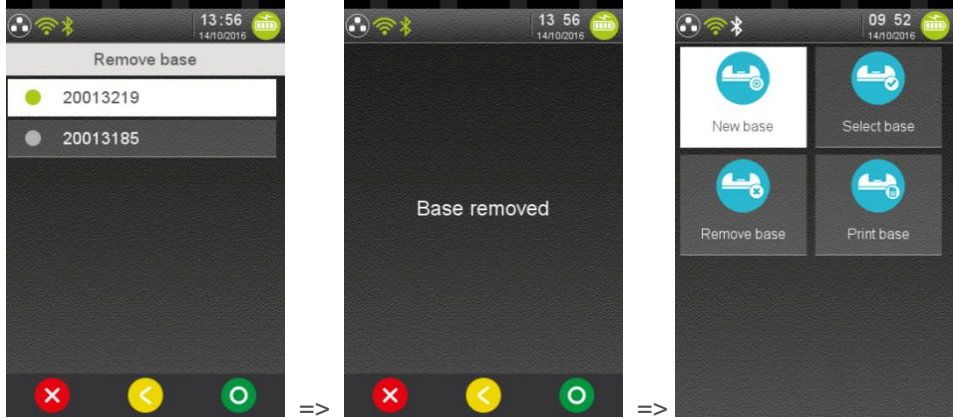
Select in the list of associated bases the one to use as peripheral. The terminal confirms base selection and returns to "Association" subpanel.

When no base has been associated, the terminal displays the following error message.



9_4_5_4_1_3 Remove Base


When  "Remove base" icon is selected, the terminal lists all the available associated bases.



Select in the list of associated bases the one to delete. Peripherals are automatically reassigned to the first known base. The terminal confirms base removal and returns to "Association" menu.

When no base has been associated, the terminal displays the following error message "No base associated".

9_4_5_4_1_4 Print Base

When  "Print base" icon is selected, the terminal print information of all available associated bases. (Two associated bases in the example below)

```


----- Bases information -----
Name | Serial : 20013185 | 20013185 Type |
Bluetooth@ : 127 |7F:54:9C4662
Firmware | Loader :4841 | 4841
-----
Name | Serial : 20013219 | 20013219 Type |
Bluetooth@ : 127 |7F:54:9C45EF
Firmware | Loader :4841 | 4841
    
```

The available information of the base is:

- its name

- its type
- its Bluetooth address
- its serial number
- its firmware versions for loader and loaded software.

9_4_5_4_2 Base advanced functions

When selecting  “Advanced” icon in “Base” subpanel, the terminal displayed the list of all available features of the base that can be configured.





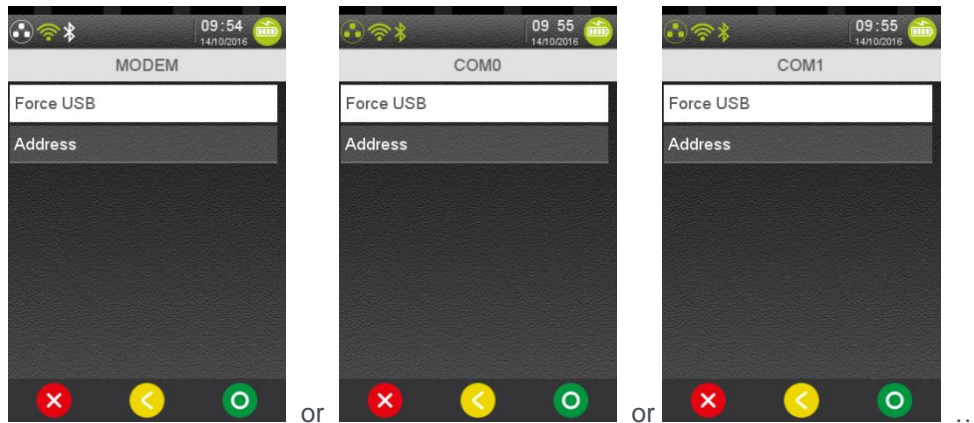
The following table provides the different links to menus description.

Item	Reference
Modem	9_4_5_4_2_1
COM0	9_4_5_4_2_1
COMU	9_4_5_4_2_1
COM1	9_4_5_4_2_1
COMN	9_4_5_4_2_1
COMH	9_4_5_4_2_1
Set base name	9_4_5_4_2_2
Print	9_4_5_4_2_3
Clear Secret	9_4_5_4_2_4

9_4_5_4_2_1 Modem, COM0, COM1, COMU, COMH and COMN

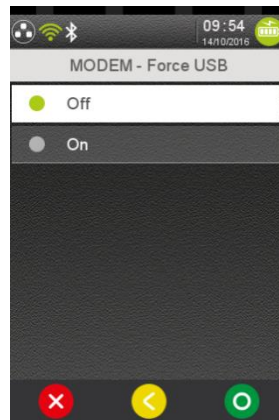
The following description illustrates “MODEM” menu. It’s also valid for “COM0”, “COM1”, “COMU”, “COMH” and “COMN”: “MODEM” text is replaced by the adequate “COMx” text or icon.

Select  or  or ... icon in “Advanced” subpanel and validate.

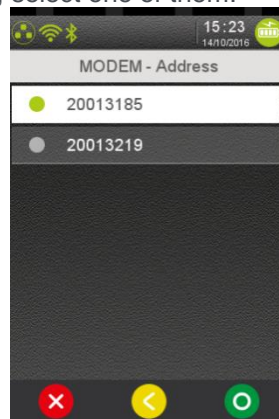


Select the way to communicate via a modem (from highest to lowest priority):

- “Force USB”: set “ON” to force the use of the serial link even if the selected base has a “Bluetooth” interface.

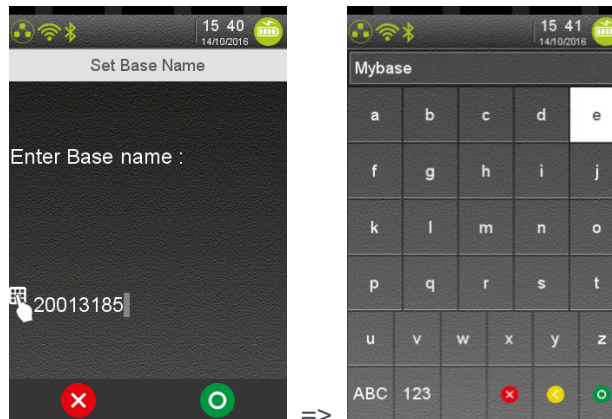


- “Address”: force the use of a specific “Bluetooth” base. The terminal displays the addresses of its associated registered bases, select one of them:




9_4_5_4_2_2 Set base name

To set a name to an associated base, select  “Set base name” icon in “Advanced” subpanel. The terminal displays the following screens:



Enter the name of the base which will be displayed during configuration management.

9_4_5_4_2_3 Print

When  "Print" icon is selected in "Advanced" subpanel, the terminal print configuration and association of all Bluetooth ports:

```

----- Bases information -----
Name | Serial : 20013185 | 20013185
Type | Bluetooth@ : 127 |7F:54:9C4662
Firmware | Loader :4841 | 4841
-----
Name | Serial : 20013219 | 20013219
Type | Bluetooth@ : 127 |7F:54:9C45EF
Firmware | Loader :4841 | 4841
----- Local information -----
Local @      547F:54:9C421A
----- Local options -----
modem_force_usb = OFF
modem_address = 20013185
com0_force_usb = OFF
com0_address = 20013185
com1_force_usb = OFF
com1_address = 20013185
comN_force_usb = OFF
comN_address = 20013185
comU_force_usb = OFF
comU_address = 20013185
comH_force_usb = OFF
comH_address = 20013185
----- Connection information -----
address[0]=20013185
address[1]=20013219
-----
SPP[0] base name = 20013185
SPP[0] progress = 1

```


The available information of the base is:

- Bases information
- Local information

- Local options
- Connection information

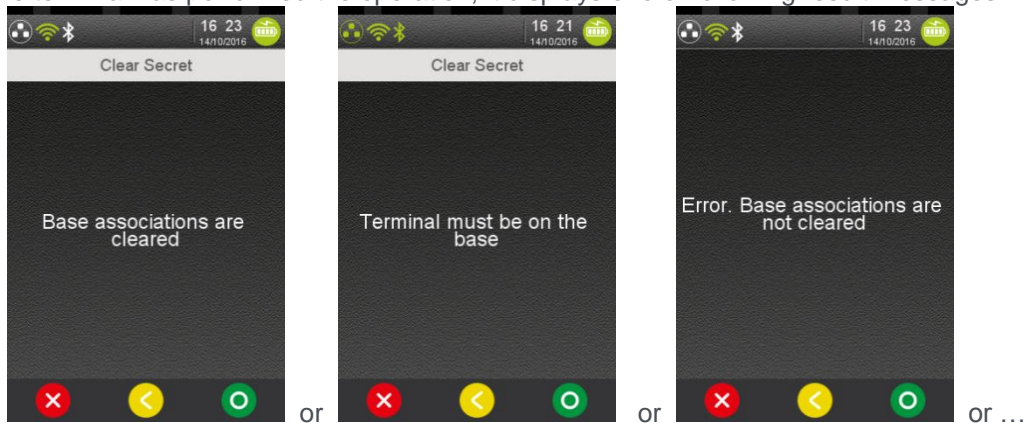
9_4_5_4_2_4 Clear Secret

To erase the association between a terminal and its base and to clear the registered information,

select  "Clear secret" icon in "Advanced" subpanel:

- put the terminal on the base
- select "Clear Secret" menu.

When the terminal has performed the operation, it displays one of following result messages:

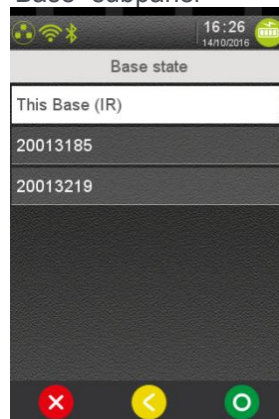


When the operation succeeds, all the terminals have to be associated again to use this base.

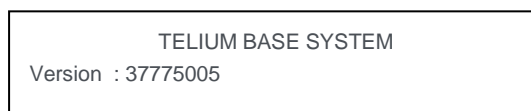
9_4_5_4_3 Base state

With "Base state" menu, it possible to retrieve the software version present in a given associated

base. Select  "Base State" icon in "Base" subpanel



Select in the proposed list a base address or name. After validation, terminal prints out its report.



9_4_5_4_4 Upgrade software base

The conditions of the base software update are:

- Done automatically when the terminal starts on base and if the software version of the base is **different** from the base software packages stored in the terminal (so it may be the case after a base association operation as the terminal will reboot to take it into account)
- Triggered by user thanks to menu. The loading happens if the software version of the base is **different** from the base software packages stored in the terminal

Note: The logic to take into account new software is not identical to TELIUM 2.

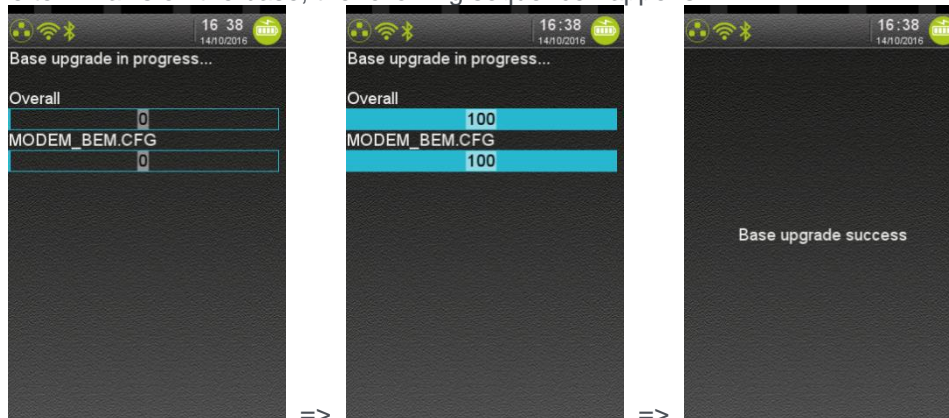
If MODEM_BEM.CFG file is present on the terminal, it is also sent to during automatic or manual upgrade of the software. When the base detects a new version, it will reboot to apply configuration. In the other case, nothing happens, the base is ready.

With "Upgrade Base" menu, it is possible to trigger an update of the software present in a given associated base. To perform this operation, you must put the terminal on the associated base to update.



Select "Upgrade Base" icon in "Base" subpanel and validate.

- If the terminal is on the base, the following sequence happens:



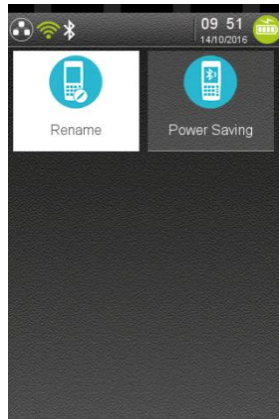
At the end of the loading, the terminal reports the status of the operation with one of the following text.

- "Base upgrade success"
- "Base upgrade failure"
- If the terminal is not on the base, the following error message is displayed.



9_4_5_5 Advanced terminal options

When selecting  "Advanced options" icon in "Bluetooth" subpanel, the following menu is proposed:




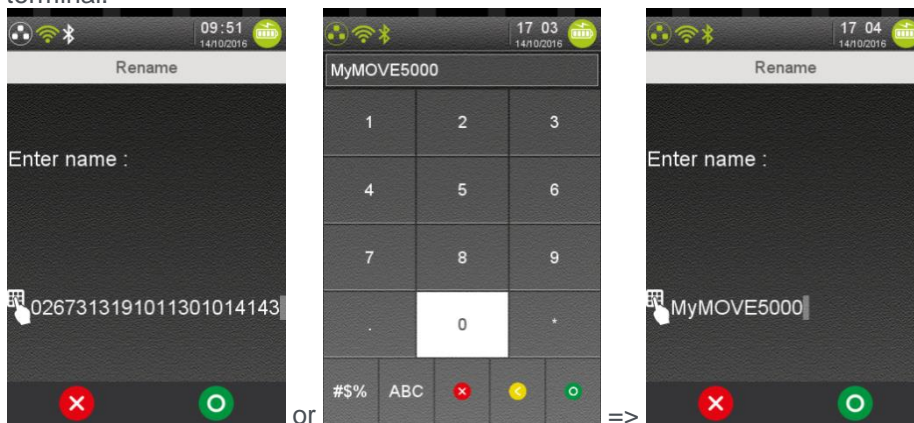
Thanks to the "Advanced options" menus the user can:

- Give a name to the terminal or rename it
- Select power saving state

Item	Reference
Rename	9_4_5_5_1
Power save	Erreur ! Source du renvoi introuvable.

9_4_5_5_1 Rename

When  "Rename" icon is selected in "Advanced options" subpanel, a name or a new name can be given to the terminal.



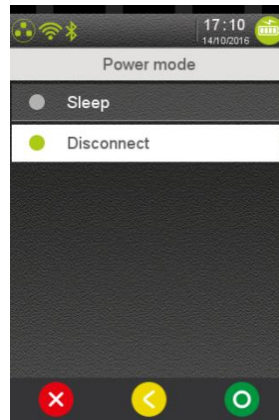
Select the alpha numeric keyboard on the screen and enter a name and validate.

Note: As the default name is based on the serial number of the terminal, only the end of name is visible on the screen.

9_4_5_5_2 Power save mode



When selecting “Power saving” icon in “Advanced options” subpanel, the terminal displays the current mode in use.



Select between the 2 proposed modes and validate:

- **Sleep**
- **Disconnect**

The terminal changes power saving mode without reboot and returns to “Advanced options” subpanel.

9_4_6 Modem settings



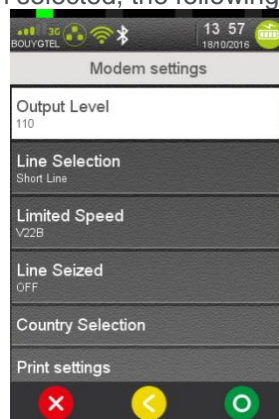
Modem settings configuration can be modified thanks to “Modem settings”. The following list of parameters can be set or modified.

- Output Level
- Type of phone line
- Modem speed limitation
- Line seized
- Country phone norm selection

The menu also offers to:

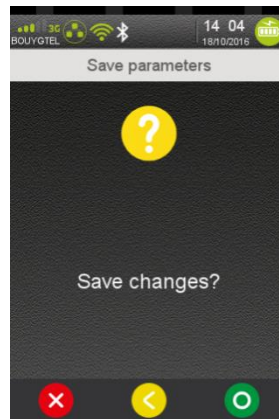
- Summarize on a ticket the parameters of Modem configuration.

When “Modem settings” icon has been selected, the following screen menu is displayed:



Select active menu line.

When parameters have been changed, exit action on this menu will warn the user according parameters saving, the following screen is displayed:



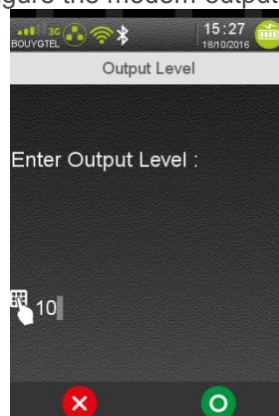
After selecting parameters recording, the terminal will take in account parameters and reconfigure modem.

The following table provides the different links to menus description.

Item	Reference
Output level	9_4_6_1
Line selection	9_4_6_2
Limited speed	9_4_6_3
Line seized	9_4_6_4
Country selection	9_4_6_5
Print parameters	9_4_6_6

9_4_6_1 Output level

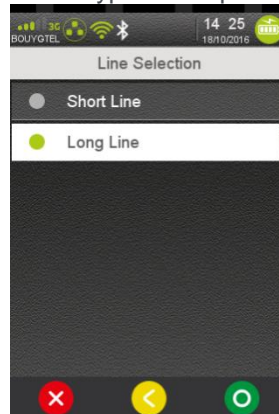
Select "Output level" menu line to configure the modem output level.



Enter a value between 0 and 15 dbm, and validate.

9_4_6_2 Line selection

Select "Line selection" menu line to select the type of the phone on which the terminal is plugged.



Choose between long or short line and then validate.

9_4_6_3 Limited speed

Modem present in terminal is able to manage different connection speeds. According to usage perimeter, it may be required to limit the modem maximum connection speed to a slower speed than it can perform.

Select "Limited speed" menu line to limit the bitrate of the modem. The terminal displays according to modem capabilities the different available speeds. Common connection speeds on TETRA modem are:

- V22B : 2,4 kbit/s
- V32B : 14,4 kbit/s
- V34 : 33,6 kbit/s
- V90 : 56 kbit/s / 33,6 kbit/s

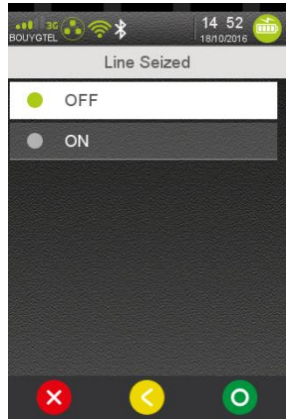


Choose between one of the proposed bitrate and then validate.

9_4_6_4 Line seized

Before dialing it may be required verifying than the phone line is not seized.

Select "Line seized" menu line to activate or deactivate this control.



Choose between one of the choices and then validate.

9_4_6_5 Country selection

According to country regulation where the modem is used, some of its specific parameters must be adjusted. In selecting, the country parameter, the terminal will automatically configure the modem behaviour.

Select "Country selection" menu line to configure local parameters of the modem.



Enter a (hexadecimal) value according to the joined table and virtual keyboard and then validate.

T.35 code	Country	T.35 code	Country	T.35 code	Country	T.35 code	Country
0	Japan	40	Gabon	80	Niger	C0	Yemen (Republic of)
1	Albania	41	Gambia	81	Nigeria	C1	Yugoslavia
2	Algeria	42	Germany	82	Norway	C2	Zaire
3	American Samoa	43	Angola	83	Oman	C3	Zambia
4	Germany	44	Ghana	84	Pakistan	C4	Zimbabwe
5	Anguilla	45	Gibraltar	85	Panama	C5	Slovakia
6	Antigua and Barbuda	46	Greece	86	Papua New Guinea	C6	Slovenia
7	Argentina	47	Grenada	87	Paraguay	C7	(available)
8	Ascension (see Saint Helena)	48	Guam	88	Peru	C8	(available)
9	Australia	49	Guatemala	89	Philippines	C9	(available)
0A	Austria	4A	Guernsey	8A	Poland	CA	(available)
0B	Bahamas	4B	Guinea	8B	Portugal	CB	(available)
0C	Bahrain	4C	Guinea-Bissau	8C	Puerto Rico	CC	(available)
0D	Bangladesh	4D	Guayana	8D	Qatar	CD	(available)
0E	Barbados	4E	Haiti	8E	Romania	CE	(available)
0F	Belgium	4F	Honduras	8F	Rwanda	CF	(available)
10	Belize	50	Hongkong	90	Saint Kitts and Nevis	D0	(available)
11	Benin	51	Hungary	91	Saint Croix	D1	(available)
12	Bermudas	52	Iceland	92	Saint Helena and Ascension	D2	(available)
13	Bhutan	53	India	93	Saint Lucia	D3	(available)
14	Bolivia	54	Indonesia	94	San Marino	D4	(available)
15	Botswana	55	Iran (Islamic Republic of)	95	Saint Thomas	D5	(available)
16	Brazil	56	Iraq	96	Sao Tomé and Principe	D6	(available)
17	British Antarctic Territory	57	Ireland	97	Saint Vicent and the Grenadines	D7	(available)
18	British Indian Ocean Territory	58	Israel	98	Saudi Arabia	D8	(available)
19	British Virgin Islands	59	Italy	99	Senegal	D9	(available)
1A	Brunei Darussalam	5A	Côte d'Ivoire	9A	Seychelles	DA	(available)
1B	Bulgaria	5B	Jamaica	9B	Sierra Leone	DB	(available)
1C	Myanmar	5C	Afghanistan	9C	Singapore	DC	(available)
1D	Burundi	5D	Jersey	9D	Solomon Islands	DD	(available)

1E	Belarus	5E	Jordan	9E	Somalia	DE	(available)
1F	Cameroon	5F	Kenya	9F	South Africa	DF	(available)
20	Canada	60	Kiribati	A0	Spain	E0	(available)
21	Cape Verde	61	Korea (Republic of)	A1	Sri Lanka	E1	(available)
22	Cayman Islands	62	Kuwait	A2	Sudan	E2	(available)
23	Central African Republic	63	Lao (People's Democratic Republic)	A3	Suriname	E3	(available)
24	Chad	64	Lebanon	A4	Swaziland	E4	(available)
25	Chile	65	Lesotho	A5	Sweden	E5	(available)
26	China	66	Liberia	A6	Switzerland	E6	(available)
27	Colombia	67	Libya	A7	Syria	E7	(available)
28	Comoros	68	Liechtenstein	A8	Tanzania	E8	(available)
29	Congo	69	Luxembourg	A9	Thailand	E9	(available)
2A	Cook Islands	6A	Macao	AA	Togo	EA	(available)
2B	Costa Rica	6B	Madagascar	AB	Tonga	EB	(available)
2C	Cuba	6C	Malaysia	AC	Trinidad and Tobago	EC	(available)
2D	Cyprus	6D	Malawi	AD	Tunisia	ED	(available)
2E	Czech Republic	6E	Maldives	AE	Turkey	EE	(available)
2F	Cambodia	6F	Mali	AF	Turks and Caicos Islands	EF	(available)
30	Democratic People's Republic of Korea	70	Malta	B0	Tuvalu	F0	(available)
31	Denmark	71	Mauritania	B1	Uganda	F1	(available)
32	Djibouti	72	Mauritius	B2	Ukraine	F2	(available)
33	Dominican Republic	73	Mexico	B3	United Arab Emirates	F3	(available)
34	Dominica	74	Monaco	B4	United Kingdom	F4	(available)
35	Ecuador	75	Mongolia	B5	United States	F5	(available)
36	Egypt	76	Montserrat	B6	Burkina Faso	F6	(available)
37	El Salvador	77	Morocco	B7	Uruguay	F7	Lithuania
38	Equatorial Guinea	78	Mozambique	B8	Russia	F8	Latvia
39	Ethiopia	79	Nauru	B9	Vanuatu	F9	Estonia
3A	Falkland Islands	7A	Nepal	BA	Vatican City State	FA	US Virgin Islands
3B	Fiji	7B	Netherlands	BB	Venezuela	FB	(available)
3C	Finland	7C	Netherlands Antilles	BC	Vietnam	FC	(available)
3D	France	7D	New Caledonia	BD	Wallis and Futuna	FD	(Universal)
3E	French Polynesia	7E	New Zealand	BE	Western Samoa	FE	Taiwan

3F	(available)	7F	Nicaragua	BF	Yemen (Republic of)	FF	escape code to extension List
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Table 10 – ITU T.35 code for modem settings

9_4_6_6 Print parameters

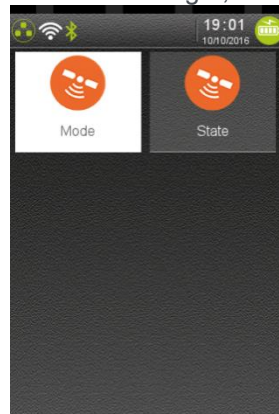
The following ticket is printed when selecting and validating “Print Parameters” menu line

Modem settings
Output level 15
Line Selection Short Line
Limited Speed V22B
Country Selection 3D

9_5 GPS

Mobile terminal can be equipped with GPS hardware feature. A dedicated subpanel “GPS” allows configuring and looking about its running state.

When “GPS” icon  is selected on “Terminal Settings”, the following subpanel appears on screen:




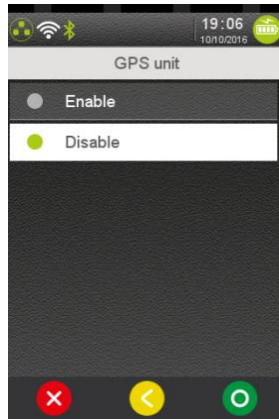
Select an icon on the screen.

The following table provides the different links to subpanels description.

Item	Reference
Mode	9_5_1
State	9_5_2

9_5_1 Mode

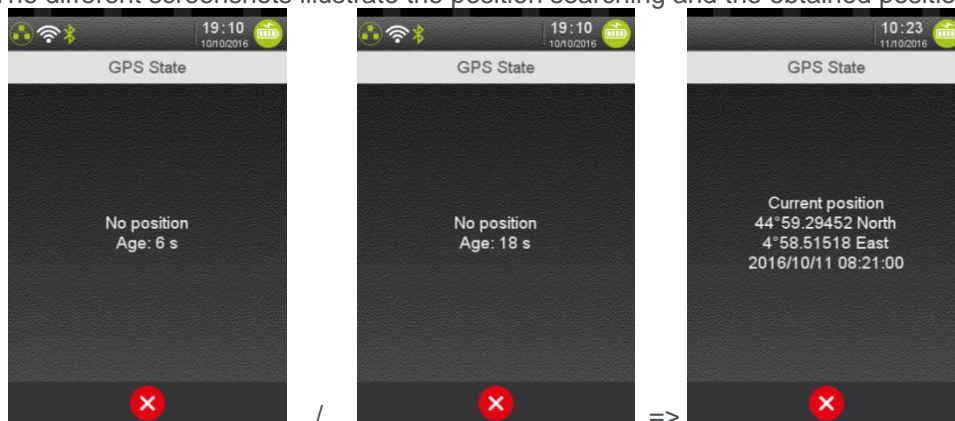
By default the GPS feature is not activated. The selection  "Mode" icon in "GPS" subpanel allows enabling or disabling the "GPS":



Select one of proposed choice and then validate.

9_5_2 State


The selection  "State" icon in "GPS" subpanel allows knowing the current state and position of the terminal. The different screenshots illustrate the position searching and the obtained position:

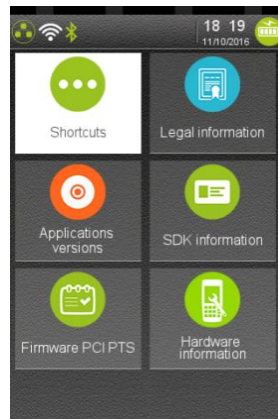


10 Terminal information

The “Terminal information” subpanel centralizes all reporting of information related to the terminal identification, its characteristics and its contents. The reporting is organized around 5 themes of information:

- Legal = provides the different licenses of software components.
- Applications versions = reports user application software identification
- SDK = reports elementary software identification
- Firmware PCI PTS = reports information related to PCIPTS certification
- Hardware = terminal hardware characteristics

When “Terminal information” icon  is selected on “Control panel”, the following subpanel appears on screen:



Select an icon on the screen.

The following table provides the different links to subpanels description.

Item	Reference
Legal information	10_1
Applications versions	10_2
SDK information	10_3
Firmware PCIPTS	10_4
Hardware information	10_5
Shortcuts	10_6

10_1 Legal information

The software of the terminal consists of different packages/components, each with its own license. A specific menu is dedicated to consult this information on the screen of the terminal: the generic

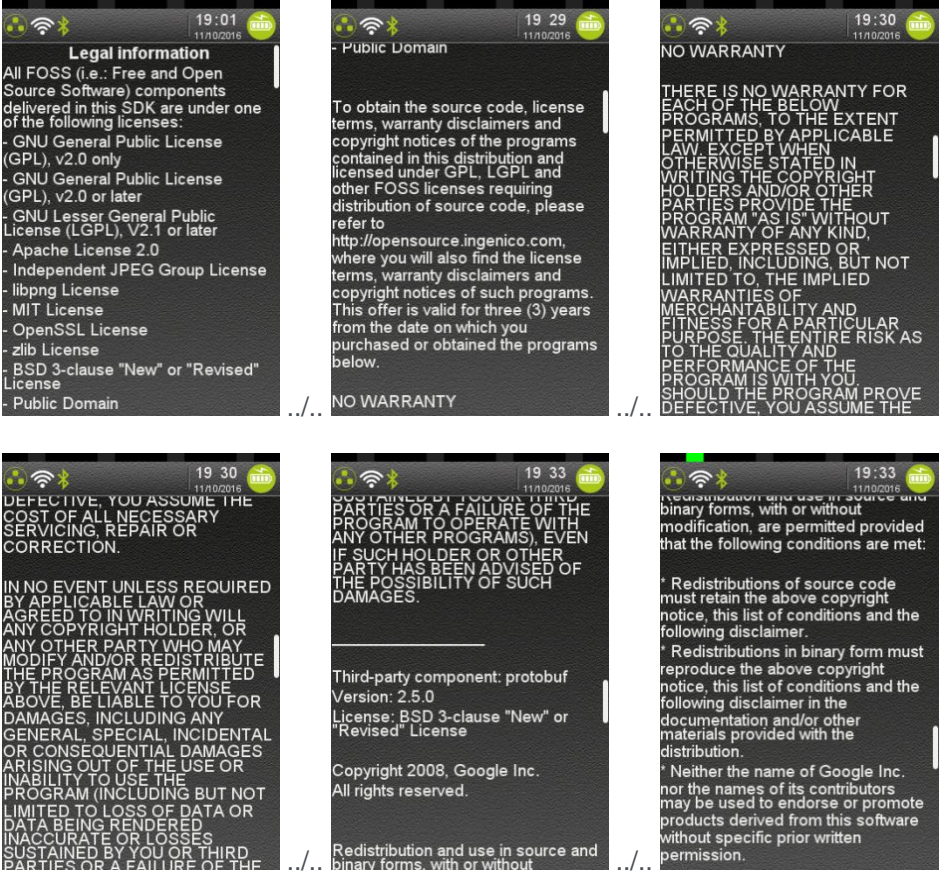
software and each application of the terminal are able to feed this menu by their own licences. This menu is intended to respond to legal requirements in particular related to Open Sources licences usage.

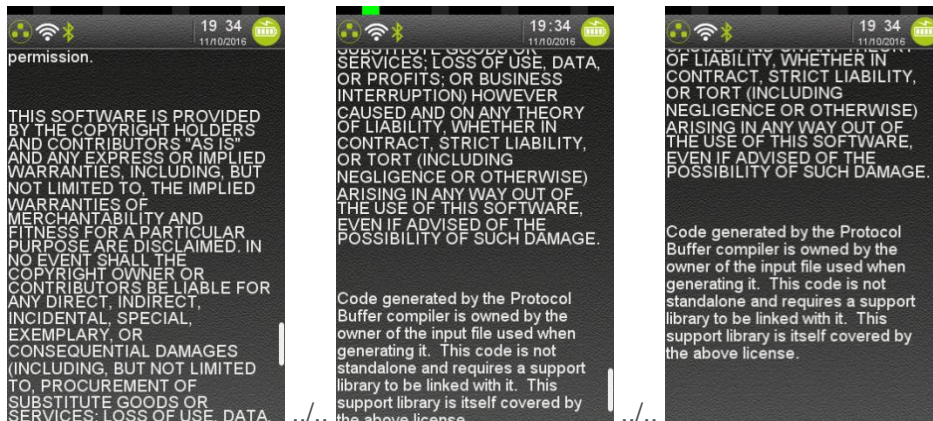


To access to this menu, select the icon (named "Legal information") in "Terminal information" panel. The following screenshots illustrate the basic use case of terminal loaded with its generic software and some INGENICO Group applications.



After having select the package/component, the legal information is displayed, the user can read it with scrolling action. The displayed legal information screens of TETRA PLATFORM software are here after:





10_2 Applications versions

From the “Applications Reports” screen, select the  icon (named “Applications versions”): when implemented in applications, it prints the different information related to applications executables as:

- Application name and associated INGENICO identification (=application type value)
- Dependant DLLS and parameters files and resources.
- Version number, CRC (or hashes) which were declared as references for certification
- Legal licences information implied by Open sources usage (= compatible licences with the application developer contract).
- Application status.
- ...

These reports does not content information related to software management: installation packages and their version: these information are available in [View configuration](#) section.

10_3 SDK information

When selecting “SDK information” menu, a synthetic summary on software and hardware status is done on display or on printer.




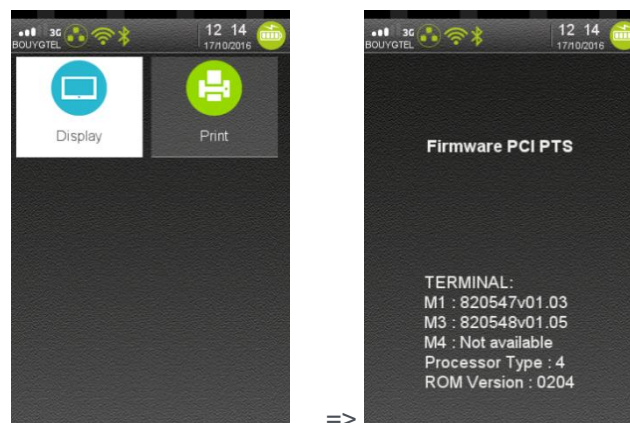
Displayed information are:

- **SDK Version:** Version of SDK used by the terminal (Release/version/patch), with its CRC value in parenthesis.
- **SDK Build:** Delivery build number of the SDK Version.

- **System Version:** Current version of System used by the terminal (Release/version/patch), with its CRC value in parenthesis.
- **Terminal Type:** Terminal range identifier.
- **Catalogue Type:** Service TRANSACTION loaded
 - “T+” = legacy implementation
 - “T3” = new implementation supporting legacy T+ features and improvements dedicated to Telium3 framework based application features.

10_4 Firmware PCI PTS


When selecting “Firmware PCI PTS”  icon in “Terminal information” subpanel, a synthetic summary of the firmware information required for PCI standard approval is done on display or on printer.

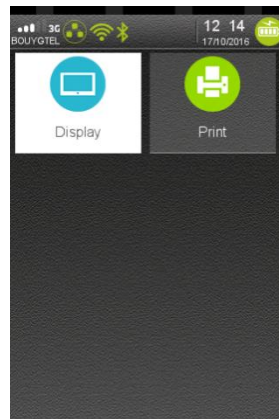


Displayed information are:

- **M1:** Firmware PCI version.
- **M3:** Open Protocol version.
- **M4:** SRED version.
- **Processor Type:** TELIUM hardware secured unit version. ‘4’ = TELIUM TETRA processor
- **ROM Version:** Current version of TELIUM TETRA processor ROM.

10_5 Hardware information

The terminal hardware characteristics can be obtained thanks to “Hardware information” icon : the following subpanel appears on screen:



Select an icon on the screen.


The following table provides the different links to menus description.

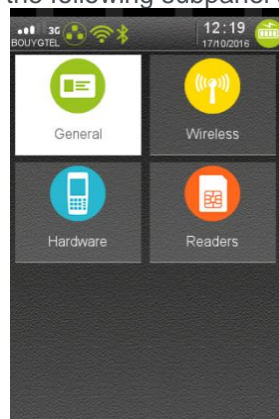
Item	Reference
Display	10_5_1
Print	10_5_2

10_5_1 Display

The terminal hardware characteristics have been organized in 4 screens according to specific themes:

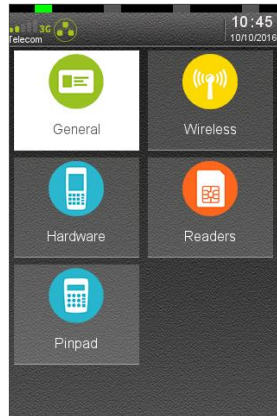
- General = product identification (Product name, serial number ...)
- Hardware = list availability of each possible hardware sub-module (except wireless and card readers)
- Wireless = list availability of each possible wireless sub-module
- Readers = list availability of each possible card reader sub-module

When “Display” icon  is selected, the following subpanel appears on screen:



Select an icon on the screen.

When a PINpad is connected to the terminal, it is possible to access to its information.




Select "Pinpad" icon to access pinpad information.

The following table provides the different links to menus description.

Item	Reference
General	10_5_1_1
Hardware	10_5_1_2
Wireless	10_5_1_3
Readers	10_5_1_4
PINpad	10_5_1_5

10_5_1_1 General

When "General" icon  is selected, the terminal displays its general information:

- Product name
- Product reference
- Manufacturer name
- Serial number
- Manufacturing date
- PCI and PCI PTS version
- Memory flash & RAM used and total size
- Screen resolution in pixels

The following picture illustrates the obtained result.



Any action on keyboard allows returning to previous menu.

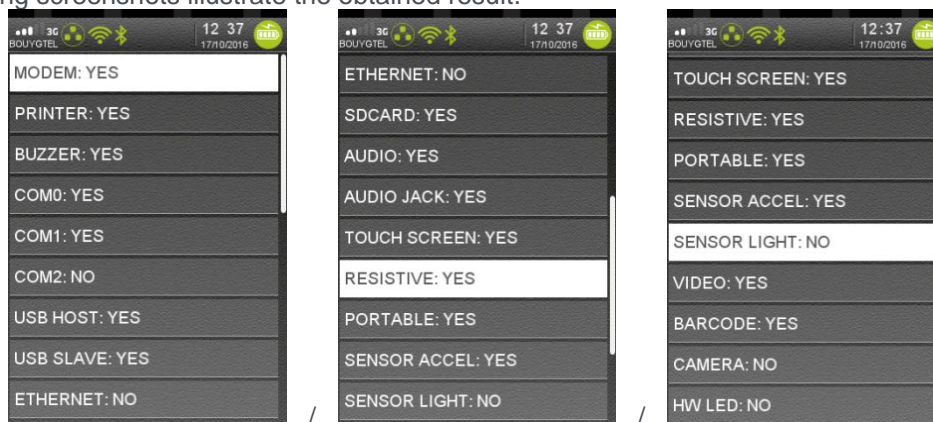
10_5_1_2 Hardware



When "Hardware" icon is selected, the terminal displays the list of each possible hardware sub-module (except wireless and card readers) and a status on their presence:


- Modem
- Printer
- Buzzer
- Serial link = Com0 , Com1 and Com2
- USB = host and slave
- Ethernet
- SD card
- Audio = Presence and audio jack
- Touch screen
- Mobile = or not
- Tilt sensor
- Light sensor
- Video capacity
- Barcode capacity
- Camera presence
- Hardware or software leds

The following screenshots illustrate the obtained result.



Any action on keyboard allows returning to previous menu.

10_5_1_3 Wireless

When “Wireless” icon  is selected, the terminal displays the list of each possible wireless sub-module and a status on their presence:


- GPRS
- BLUETOOTH
- WIFI
- CDMA
- Dual SIM
- 3G
- GPS

The following picture illustrates the obtained result.



Any action on keyboard allows returning to previous menu.

10_5_1_4 Card readers

When “Cards readers” icon  is selected, the terminal displays the list of each possible card readers sub-modules and a status on their presence:


- Magnetic tracks reader (Iso1 track, Iso2 track and Iso3 track)
- Contact card reader (CAM1)
- Small contact card reader (SAM1, SAM2, SAM3 and SAM4)
- Contact Less card reader

The following snapshots illustrate the obtained result.



Any action on keyboard allows returning to previous menu.


10_5_1_5 PINpad

When “PINPAD” icon  is selected, the terminal displays all the information of the pinpad in a unique list: scroll to access to all details.

The major parameters are:

- Serial Number
- Product name and reference
- INGETRUST Security version
- PCI version
- PCI PTS firmware version
- Screen characteristics (width, height,color type)
- Readers information (Chip reader, SAM , Cless)

10_5_2 Print

When “Print” icon  is selected, the terminal prints a ticket summarizing terminal hardware settings.

The following ticket illustrates MOVE5000 hardware settings.

Terminal Configuration		-----Hardware options -----	
17/10/2016 17:53			
-----Terminal -----			
Serial Number	160267313191011301014143	MODEM	YES
Product Name	MOVE5000	PRINTER	YES
Product reference	000031910113	BUZZER	YES
Product Code	M71	COM0	YES
Constructor Code	INGENICO	COM1	YES
Manufacturing Date	26012016	COM2	NO
IFM HW	0101	USB HOST	YES
IFM SW	0101	USB SLAVE	YES
INGETRUST Security	PKI v3	ETHERNET	NO
PCI version	PCI v4	SD CARD	YES
PCI PTS firmware	820547v01.03	AUDIO	YES
Flash memory	282/512 Mbytes	AUDIO JACK	YES
RAM Memory	382/512 Mbytes	TOUCH SCREEN	YES
Screen width	320	RESISTIVE	YES
Screen height	480	PORTABLE	YES
Screen Color	8	SENNSOR ACCEL	YES
		SENSOR LIGHT	NO
		VIDEO	YES
		BARCODE	YES
		CAMERA	NO
		HW LED	NO
		-----Readers -----	
		ISO1	YES
		ISO2	YES
		ISO3	YES
		CAM1	YES
		SAM1	YES
		SAM2	YES
		SAM3	NO
		SAM4	YES
		CLESS	YES
-----Wireless options -----			
GPRS	YES		
BLUETOOTH	YES		
WIFI	YES		
CDMA	NO		
3G	YES		
Dual SIM	YES		
GPS	YES		

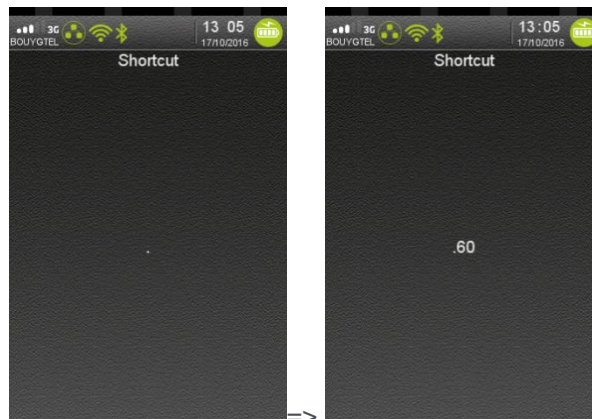
.../...

Note: When a pinpad is connected to a terminal, a specific section is added to the ticket concerning pinpad information. Follows an example for an IPP315 connected to a DESK5000.

PINpad Configuration	
Serial Number	16035PP82060158
Product Name	IPP315
Product reference	IPP315-31T3409A
INGETRUST Security	PKI v3
PCI version	PCI v4
Firmware PCI PTS	82018v01.02
Screen width	320
Screen height	240
Screen Color	4
BUZZER	YES
-----Readers -----	
ISO1	YES
ISO2	YES
ISO3	YES
CAM1	YES
SAM1	NO
SAM2	NO
SAM3	NO
SAM4	NO
CLESS	YES

10_6 Shortcuts

“Shortcuts” is a feature allowing quick access to widely used parameters setting and/or full feature menus. When the terminal displays the “Explorer” panel, dot key “.” must be pressed to activate the mechanism.




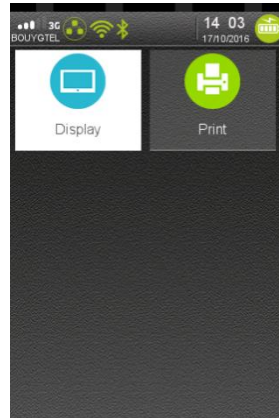
Enter a numerical value and validate.

- If the mechanism is not activated nothing happens when dot key is pressed.
- If no shortcuts definition corresponds to first entered numerical value, nothing happens.
- When a valid value corresponding to a shortcut definition is entered, the next displayed screen is in the selected menu or dedicated parameter setting screen.

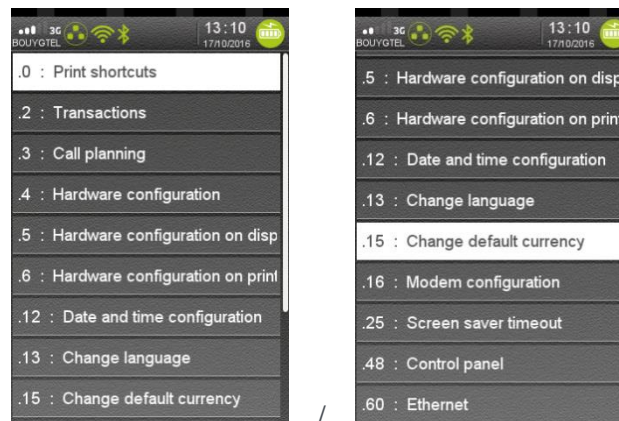
To be active, the loaded configuration in the terminal must content a shortcuts table definition.

Thanks to “Advanced customisation” (refer chapter [11](#)), it is possible to customize the shortcuts list or to remove the usage of this mechanism.

A menu is provided to display or print the shortcuts table definition loaded. To access this menu select the  icon (named "Shortcuts") in "Terminal information" subpanel. The following screen is displayed.



When the "Display" is selected, the following screenshots illustrates an example of a basic shortcuts table definition.



When "Print" is selected, the same information is reported on a ticket.

11 Advanced configuration

Advanced configuration concerns terminal configuration part that cannot be directly managed by the final user thanks the provided menus of the terminal. The two main subjects regarding this point concern:

- Customization of different default values of the parameters that can be set by user or eventually not proposed to final user for modification
- Customization of internationalization parameters as language

The advanced configuration can be considered as development:

- INGEDEV development tools chain needs to be acquired and used
- Produced files to be installed in a terminal must be signed
 - Sign Kit + signature card must be obtained
 - A contractual commitment with INGENICO have to been signed

11_1 Software TETRA identification rule summary

To understand the customization principle, the main keys of TETRA software identification rules must be described.

According to TETRA constraints, all executable files or parameters are injected in terminal through a software container called "Package". According to its content, indicated by the extension of its filename, it may content one or more files. The "Package" is the elementary part that can be managed by "The Estate Manager" (TMS solution).

To guaranty the uniqueness of the package files, a naming convention has been established. The package name has the following structure "**CCDDTTTTTVRRPP_suffix.P3x**" where

- "CCC"= Package country code based on ISO3166-1 numeric norm with the range "990" to "999" restricted to INGENICO Co uses. It guaranties, by default, uniqueness of TETRA software wherever and by whom it is produced.
- "DD"= Package range, from "00" to "63", used to discriminate current Package number. It is used to create derivate software: identical "CCC" and "TTTTT" with different "DD" between on 2 packages allows during TMS operation to replace one by the other.
- "TTTTT"= Package number from "00000" to "65536",
 - "00000" to "32768" = allocation in this range is managed locally to maintain uniqueness of TETRA software packages.
 - "47900" to "47999" = "transversal" reserved range used to customization package from INGENICO corp by overlay or addition for specific features.
 - Other ranges = reserved for future usage
- "VRRPP"= Major Version, Minor release & Maintenance Patch number
- "_suffix": friendly part of the name up to 15 chars
- "X" : package type 'A','L','P','C' ...

Ex: "9992047901020200_PltfParam.P3P" one of the delivered software packages (part of SDK TETRA components)

- "999" = INGENICO Co
- "20" = one of range internally reserved for PLATFORM packages
- "47901" = specific package number identifying "TETRA parameter configuration"
- "020200" = version 2.2.0
- "_ PltfParam" = acronym for "Platform Parameters"

- “P” = package contenting parameters information

Refer to **Figure 19 - TETRA software packages identification description**, to make link with printed or displayed information in TETRA “Software view”

All packages identified by a number in the “Transversal” (“47900” to “47999”) will content components of same nature whatever “CCC” and “DD” value:

- “999” package provided by the INGENICO co is present as reference or default,

Currently 2 package numbers have to be considered:

- “47900” = PLATFORM dictionary, contenting the default languages of terminal
- “47901” = PLATFORM parameters, contenting the default values of the parameters of the terminal.

11_2 TETRA parameters customization

Behind each menu or alterable element to modify in menus corresponds to a “backup” parameter (stored in files system). Two ways of parameters customisation exist:

- One, customizing/replacing the default startup initial values. This customization overloads initial configuration provided by INGENICO Group thanks to SDK components. It is valid for all parameters as the injected files are signed. (Named **CUSTOM CONFIG**)
- One, setting parameters case by case and eventually targeting differently each customer. This customization is not signed and can be also set remotely but as data (loaded in legacy “HOST” directory of the terminal files system). (Named **LIVE CONFIG**)
 - Parameters present in menus can be set.
 - Non sensible (=related to security) parameters non present in menus can be set,
 - Others are ignored by the terminal.

Here after a drawing illustrating how and the priority of taking in account these different types of configuration.

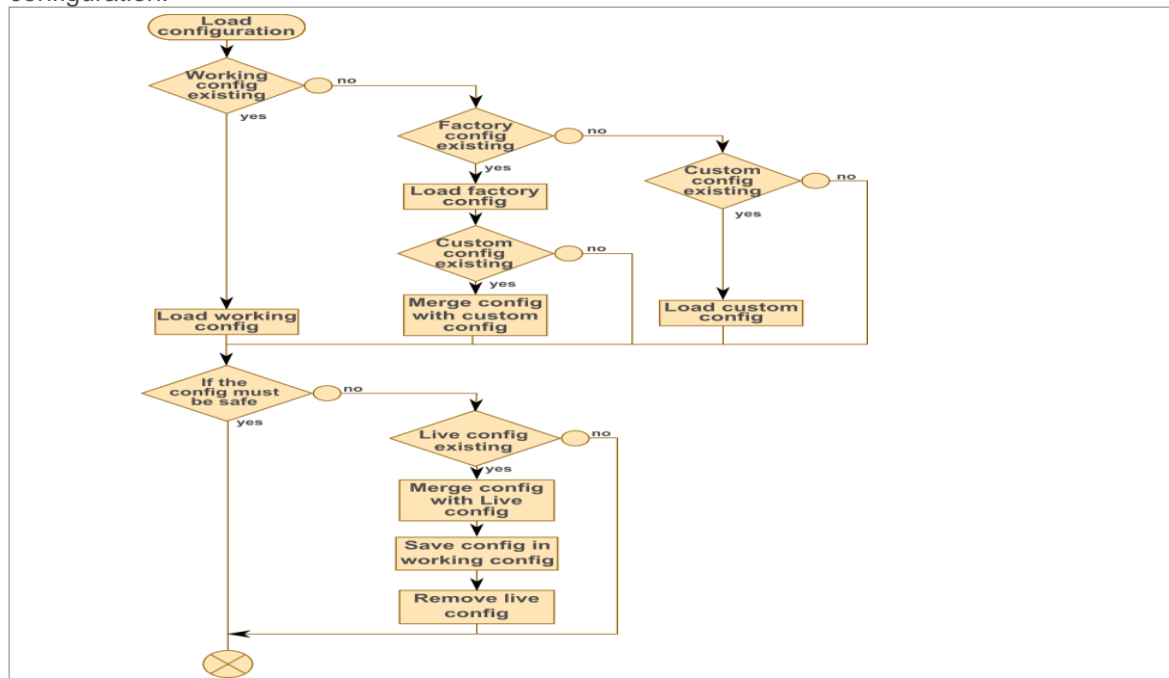


Figure 23 – CUSTOM and LIVE CONFIG taking in account logic

11_2_1 TETRA default parameters provided

To allow pre-initialization of the terminal with a targeted configuration, specific signed parameters files are provided to set these default values. Whatever the configuration to build, the content of these initial files are the bases of the construction.

These initial signed package file is provided in the SDK installation directory:

- "\\Components\HW_TETRA\Platform\package".

Its name is:

- "9992047901040402_PltfParam.P3P".

Its internal unpacked content is also provided in the SDK installation directory:

- "\\Tools\HW_TETRA\UnsignedTerminalConfig"

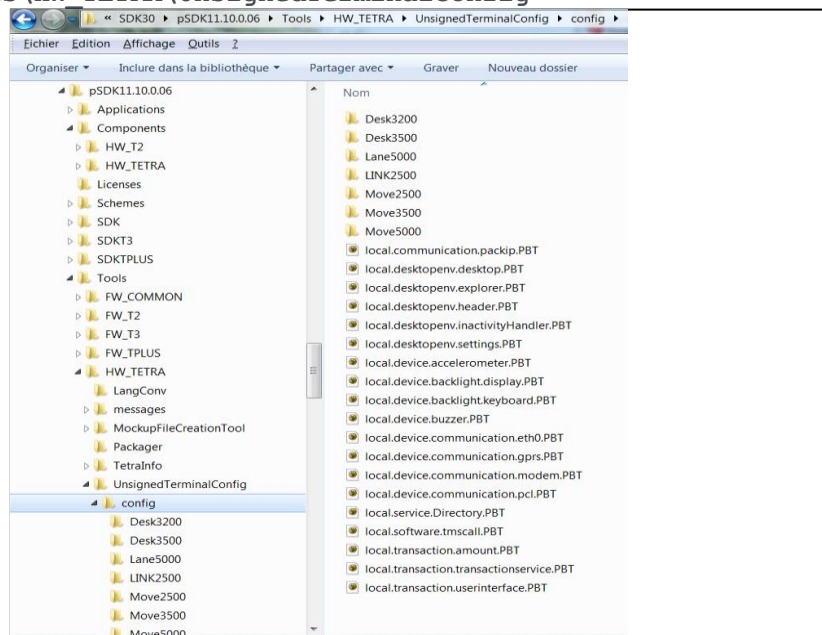


Figure 24 – Initial terminal parameters

As illustrated in the previous figure, the unpacked default parameters is constituted of:

- A set of parameter files (".PBT" extension) corresponding to common configuration whatever the supported TETRA terminals
 - One file per provided feature
 - Filename is related to the service class name managing the feature.
 - Each file is provided with comments (thanks to # character) illustrating all capabilities and active line corresponding to the default setting as illustrates in the following figure.

```

# Way to display Explorer's items. Either ICON_LIST, ICONBUTTON_LIST, or BUTTON_LIST
listFormat: ICON_LIST

# Url of the icon to be launched automatically at start-up
#autostartUrl: "Payment"

# List of icons url to be masked (currently empty)
#blackListedUrls: "first black listed url"
#blackListedUrls: "second black listed url"

# List of url protected by password (no password on "Control panel")
protectedUrls {
  url: "Control panel"
  password: ""
}
#protectedUrls {
# url: "Second protected url"
# password: "second password"
#}

# Hereafter a sample of shortcut registration
#shortcuts {
# shortcut: ".123"
# entryUrl: "Payment"
# description: "Sample shortcut to payment menu"
#}
shortcuts {
  shortcut: ".0"
  entryUrl: "Control panel/Terminal information/Shortcuts/Print?ExpId=2"
  description: "Print shortcuts"
}
shortcuts {
  shortcut: ".2"
  entryUrl: "Control panel/Applications reports/Transaction?cmdId=4"
  description: "Transactions"
}
shortcuts {
  shortcut: ".3"
  entryUrl: "Control panel/Applications reports/Calls planning?cmdId=6"
  description: "Call planning"
}
shortcuts {
  shortcut: ".4"
  entryUrl: "Control panel/Terminal information/Hardware information"
  description: "Hardware configuration"
}
shortcuts {
  shortcut: ".5"
  entryUrl: "Control panel/Terminal information/Hardware information/Display"
  description: "Hardware configuration on display"
}
shortcuts {
  shortcut: ".6"
  entryUrl: "Control panel/Terminal information/Hardware information/Print?cmdId=12"
  description: "Hardware configuration on printer"
}

```

Figure 25 – “local.desktopenv.explorer.PBT” parameters file of Explorer

- For complex parameters, on which basic comments may not be sufficient to understand their usage, a description is provided in the SKD CHM file.
- A set of directories corresponding to specific configuration for each supported TETRA terminal
 - One directory per provided terminal type
 - Contenting also parameter files (“**.PBT**” extension), with the same name that at root directory of the unpacked configuration
 - Each duplicated and modified parameter files overlays the values of the common parameters. See the following figure illustrating the difference on common parameters managing power and standby (named “inactivity”) between MOVE5000 and other terminals.

MOVE5000	Other TETRA terminals
<pre># Service class of the screen saver to be used #serviceClass: "local.myPackage.myScreenSaver" # Time-out before starting screen saver ([10..99999], in seconds) screenSaverTimeout: 60 # Time-out before switching backlight level ([10..99999], in seconds) backlightTimeout: 131 # Time-out before switching in standby mode ([10..99999], in seconds) standbyTimeout: 120 # Wake-up authorized on movement detection wakeUpOnTilt: true</pre>	<pre># Service class of the screen saver to be used #serviceClass: "local.myPackage.myScreenSaver" # Time-out before starting screen saver ([10..99999], in seconds) screenSaverTimeout: 60 # Time-out before switching backlight level ([10..99999], in seconds) backlightTimeout: 130 # Time-out before switching in standby mode ([10..99999], in seconds) standbyTimeout: 9999 # Wake-up authorized on movement detection wakeUpOnTilt: true</pre>

Figure 26 – Specific “local.desktopenv.inactivity.PBT” for MOVE5000 terminal

11_2_1_1 TETRA default parameters customization

The “CUSTOM CONFIG” building consisted in:

- Modifying the provided default configuration
- Packaging in TETRA format

In practice:

- Under INGEDEV create a new project.
 - Select TELIUM 3 framework project
 - Select T3 Resource project without GOAL resource + click on “Next”
 - Select a SDK + click on “Next”

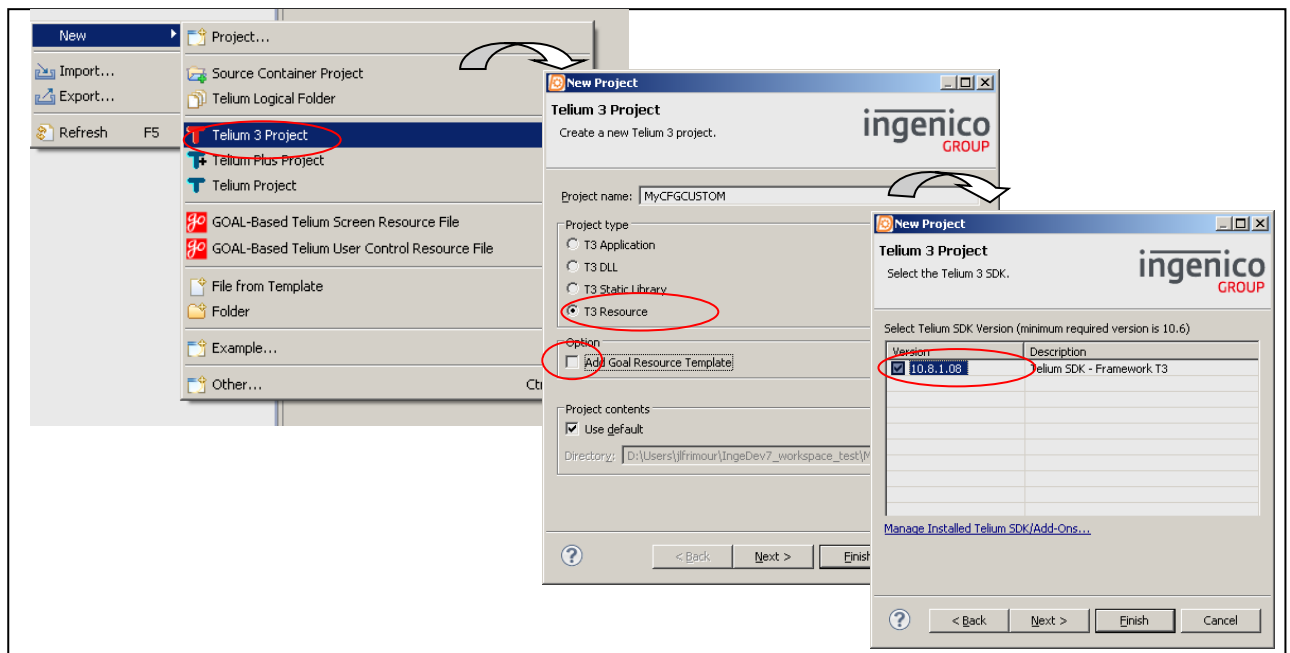


Figure 27 – TETRA terminal parameters project creation (step 1)

- Give a description to your project
- Adjust eventually “Family name”
- Set “Application type” to “47901” in decimal or “0xBB1D” in hexadecimal. Indegev will warn you with the following message “The entered value for ‘Package Identifier’ is for specific use !”
- Set the “Data Binary File base name in selecting “Use specific data binary base name”. The chosen data binary name must be set to: “CFGCUSTOM” .
 - Click on “Next”
- Set package properties
 - Set signature certificate according to your signature card right
 - Select a “Domain/Country code” according to your country/region
 - Eventually set a “Package Range”
 - Verify “Package Identifier” is set to “47901”. Indegev will warn you with the following message “The entered value for ‘Package Identifier’ is for specific use !”
 - Set “Package Version” according to your needs.
 - Set “Package Family” according to your needs.
- Click on “Finish”

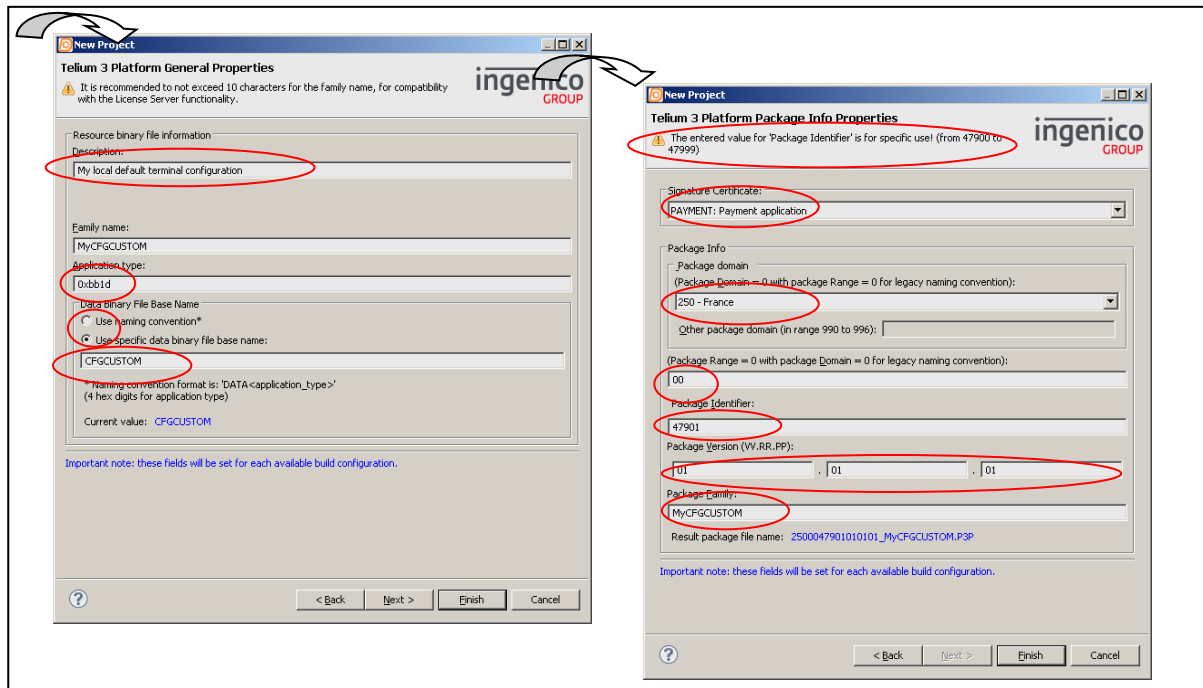


Figure 28 –TETRA terminal parameters project creation (step 2)

- Set your project view with visible “Resource inside Telium project: right click on icon surrounded with a red circle. Select “Customize view..”, unselect “Resources inside Telium project” and click on “OK”.

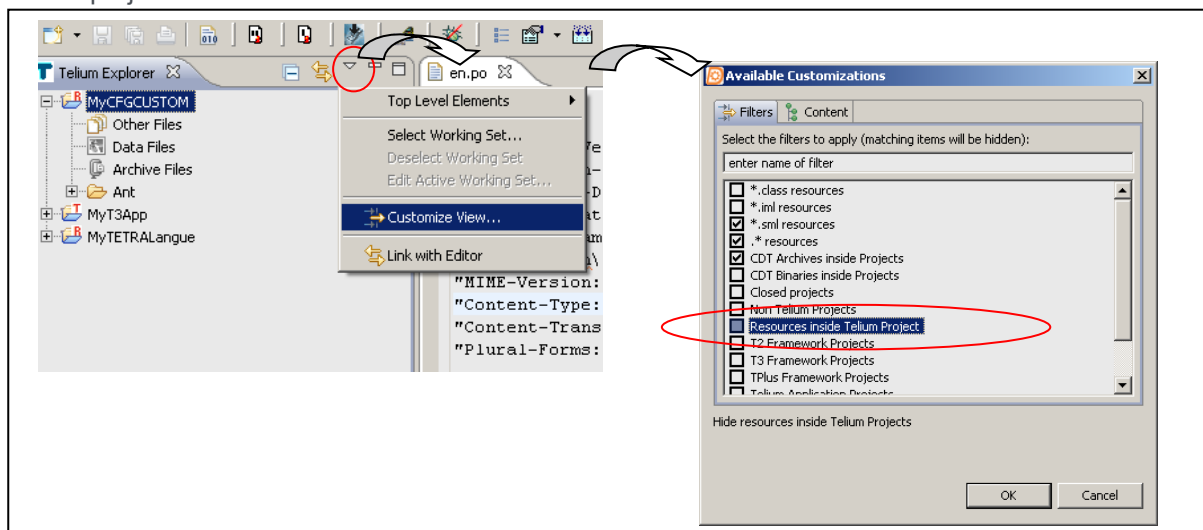


Figure 29 – Make visible “Resource inside Telium project”

- In Telium Explorer view, right click on “MyCFGCUSTOM” + select “New” + select “Folder” + name the new folder “CFGCUSTOM” + click on finish

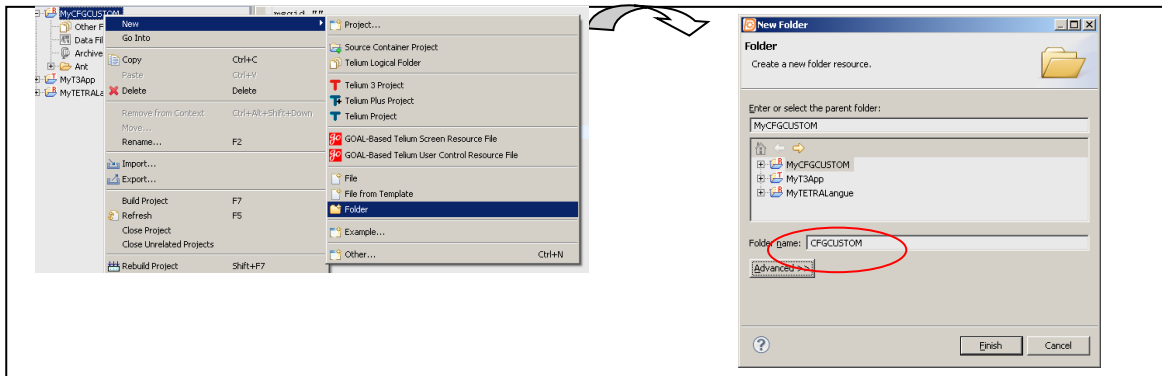


Figure 30 – “CFGCUSTOM” folder creation

- Right click on “archive files” virtual folder to create new archive with “CFGCUSTOM” folder as root folder

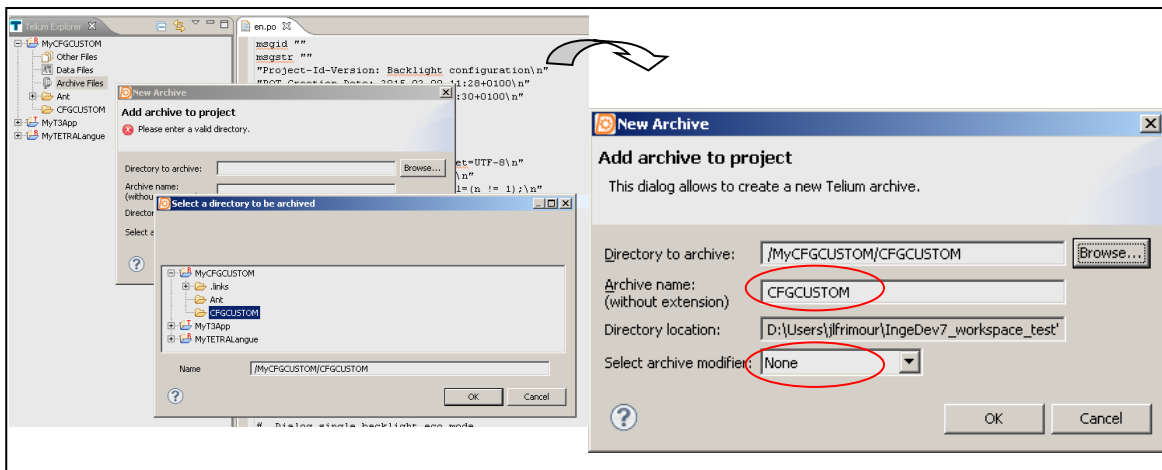


Figure 31 – Archives files creation

- Creation of a new data file with “CFGCUSTOM” archive as DATA file.
 - Right click on “Data files” virtual folder to create new data with “CFGCUSTOM” archive as DATA file.
 - “User Data files” properties open , select “+ “ to add a data file
 - On “New data file” screen set “Set as default data file” and select “Archive file”
 - On “Select Archive” screen select the archive “CFGCUSTOM” previously defined
 - Confirm all the operations by clicking on “OK”.

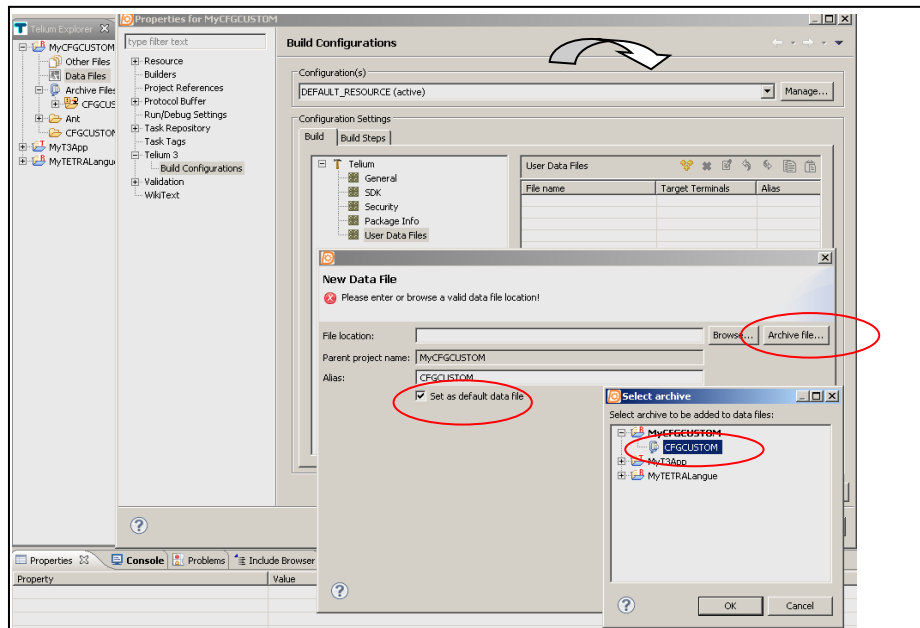


Figure 32 – Data files creation

Final step:

- Outside Ingedev, with Windows file explorer copy the content of the unpacked configuration delivered in SDK installation directory "\\Tools\HW_TETRA\UnsignedTerminalConfig".
- Modify each PBT file according to your need
- Make Ingedev "Build"
 - In "Bin\DEFAULT_RESOURCE\CFGCUSTOM" can be found the binary to load in terminal

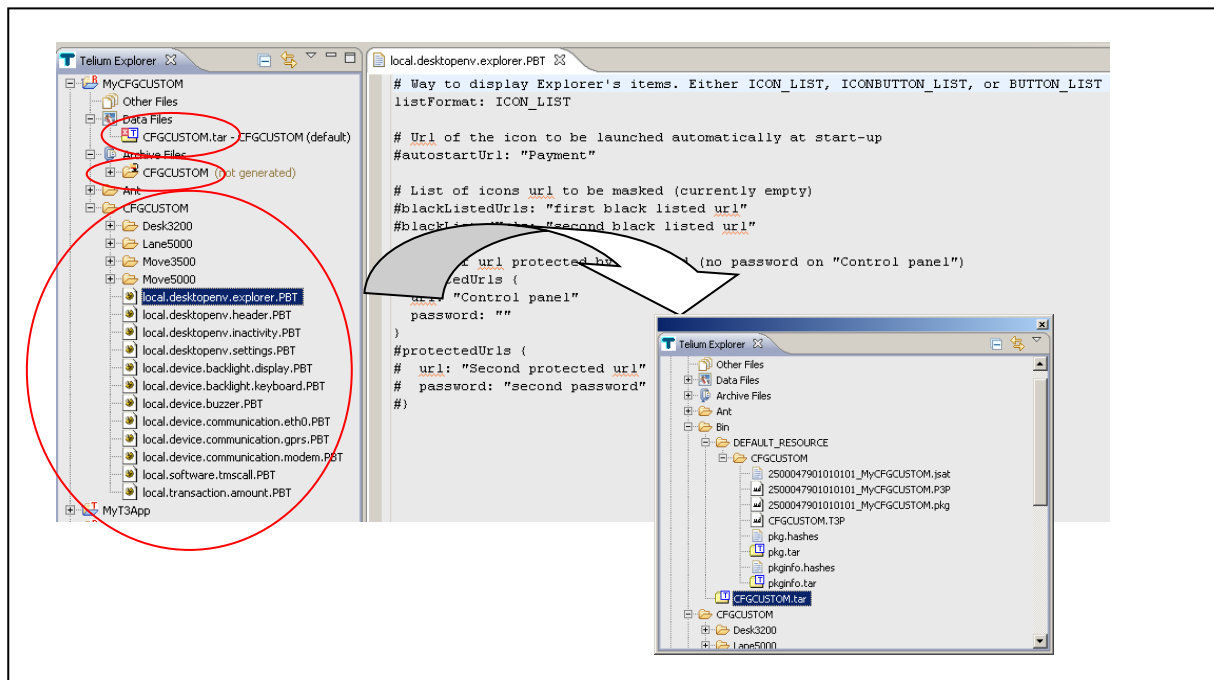


Figure 33 – Ready to build custom configuration

Note: "Signature" steps are not described as there is not specificity compared to other software TETRA package generation. Refer to INGEDEV CHM or "TRAINING" documentation.

11_2_2 Non signed TETRA parameters customization

The "LIVE CONFIG" building consisted in:

- Modifying one of the provided **".PBT"** provided file in the default configuration
- Loading it in terminal

Note: When the parameters file is not common to all terminals, take care to get the default in the directory with a name corresponding to the type of your terminal:

- Example: For mobile terminals, modification of some parameters related to standby conditions may affect on battery operating time.

Note: It may be possible to overload only one parameter: their absence in the provided configuration involves the persistence of the previous recorded value.

Note: As the parameters files are recognized according their filenames, they must not be changed and must fit to the corresponding name supported the initial software installed in the terminal.

11_3 TETRA internationalization setting

The terminal is provided with 2 default languages:

- English
- French

Customizing language means giving a translation of each text of each default components of a TETRA terminal. All these new created texts, associated to a language, are stored in files called language "dictionaries".

Follow here after:

- A brief description of internationalization principle in TETRA terminal
- The "cooking" operation to create and to modify language "dictionaries".

11_3_1 TETRA internationalization principle

The language customization is based on *"gettext"* principle:

- The source code is tooled up to allow strings extraction on those requiring translation
- The extracted strings are stored in files reusing standard "gettext" file format and naming as:
 - *".pot"* format = Portable Object Template
 - *".po"* format = Portable Object
 - File naming is made of **"[LANGUAGE]"** or **"[LANGUAGE]_[COUNTRY]"** according to ISO 639-1 two-letter language code values and to ISO-3166 two-letter country code
 - The extracted strings are used as identifier reference to search translation.
- All created language files can be manipulated using GNU tools as *"xgettext"*, *"msginit"* and *"msgfmt"*.
- Their produced file, as *".mo"* file (Machine Object file), will be reused to create language files to load in TETRA terminals.
 - TETRA "Dictionaries" file structure container is specific to INGENICO TETRA terminals range.
 - A proprietary implementation has been developed by INGENICO, to manage TETRA "Dictionaries" and language translation rendering in terminal: this implementation does not called or reused GNU source code in terminal.

- Plurals management is supported. (detailed later)

11_3_2 “Dictionaries” type and files organization

To allow customization, the SDK delivery provides a directories structure filled with initial “*en.po*” and “*fr.po*” files. It is located in the installation directory of the SDK in “*Tools\HW_TETRA\Messages*”:

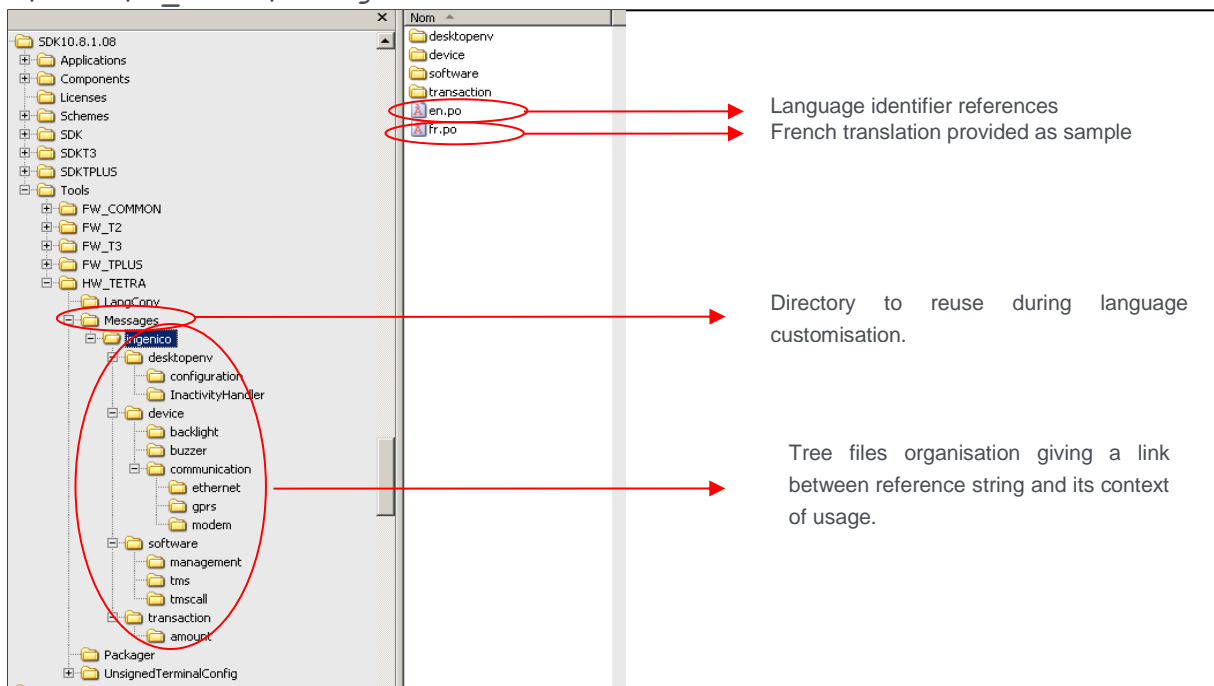


Figure 34 – SDK reference languages delivery

Taking as model, the default provided PLATFORM language files, “*9992047900020200_PltfLang.P3P*”, its unpacked content in the following view illustrates the elements to rename and to customize:

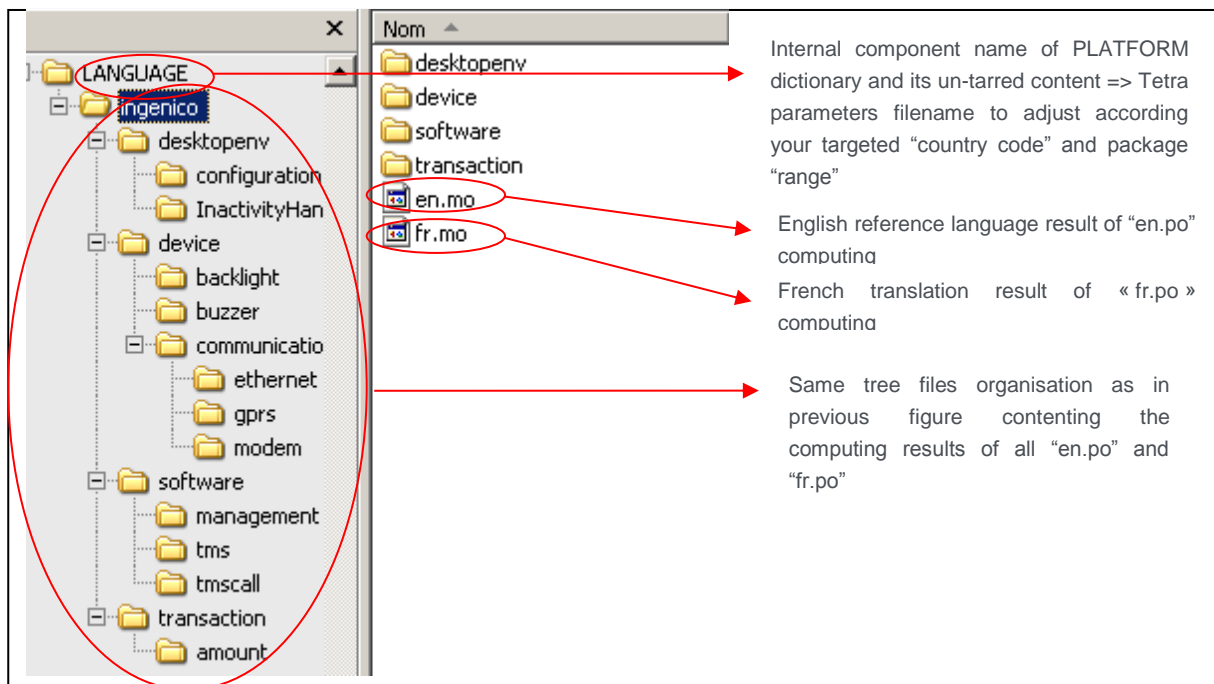


Figure 35 – Unpacked Platform language dictionary

A customised language dictionary is a PLATFORM language files in which:

- “LANGUAGE” file name is replace by a filename with the following structure: “CCCDD47900”
 - “CCC”= country code, same value as the package country code
 - “DD”= range, same value as the package range.
 - “47900”= predefined application type for dictionary
- Each “fr.mo“ file have been replaced by a new “[LANGUAGE].mo” resulting from a computing of an “[LANGUAGE].po” in which all translations have been inserted: [LANGUAGE] is based on ISO-639-1 two-letter language code.
- All “en.mo“ files have been removed.

11_3_3 Needed tools

To extract, to merge and to produce “Machin Object” file (“.mo”), “gettext” GNU Tools for Windows can be downloaded from <https://github.com/vslavik/gettext-tools-windows> and installed on your development PC.

Current version tested and used to verify the proposed “cooking” process is:

- “*gettext-tools-windows-0.19.4*”.

Note: The installation of this tool in a directory of your INGEDEV workspace may facilitate the use by script used during project building. It's the choice done in the presented example.

Note: Other open sources off-self tools can be installed to edit “.po” file or to create “.mo” file.

- “gtd” (“GetText EDitor”) : an Eclipse plug-in to create/edit “.po” file and to build “.mo” file . It's available at <http://www.gted.org>. Tests usage of “.po” file edition in INGEDEV ecosystem is successful. “gtd” manages “.po” or “.mo” file creation, but according to TETRA dictionary directories organisation, it requires some extra works to set the INGEDEV project directory organisation as expected by “gtd” and “gettext” tools for windows .
- “Poedit”: a dedicated editor for “.po” file. It's available at <http://poedit.net/download>.

Note: An INGEDEV plug-in to support TETRA dictionaries, based on open sources with a compliant licence with the INGEDEV software distribution licence, is underdevelopment.

11_3_4 Language customization “cooking” process

To process this operation, it possible to:

- Benefit of help from some INGEDEV Tools (refer to INGEDEV HELP: see following picture)

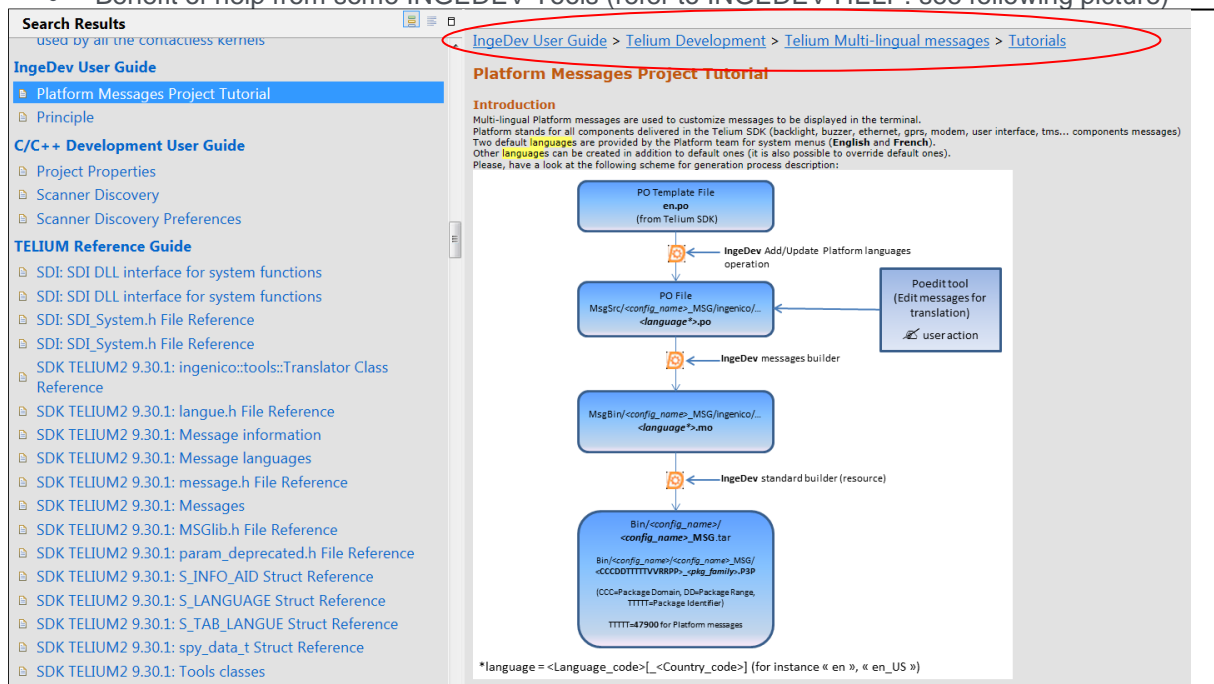


Figure 36 – Language customisation thanks to INGEDEV

- Do it yourself as when INGEDEV Tools did not exist: the next part of the paragraph will illustrates this way, it also help to understand what it's behind INGEDEV tools.

The customization consisted in:

- Using the “Messages” directory to build a new language dictionary to complete default languages of the terminal.
- Packaging of the created dictionary in TETRA format

To simplify illustration, the building of a spanish customization for Spain will be described with the following selected elements:

- “CCC”= country code = ‘724’
- “DD”= ‘00’
- Language = ‘es’
- INGEDEV project name = “LANG_es”

Follow here after the different steps.

11_3_4_1 INGEDEV creation project

Under INGEDEV create a new project: “LANG_es”.

- Select TELIUM 3 framework project
- Select T3 Resource project without GOAL resource + click on “Next”
- Select a SDK + click on “Next”

- (refer on **Figure 27 – TETRA terminal parameters project creation (step 1)**)
- Give a description to your project
- Adjust eventually “Family name”
- Set “Application type” to “47900” in decimal or “0xBB1C” en hexadecimal. IngeDev will warn you with the following message “The entered value for ‘Package Identifier’ is for specific use !”
- Set the “Data Binary File base name in selecting “Use specific data binary base name”. The chosen data binary name must be set according to your targeted package domain and range: ex “7240047900” .
 - Click on “Next”
- Set package properties
 - Set signature certificate according to your signature card right
 - Select a “Domain/Country code” according to your country/region
 - Eventually set a “Package Range”
 - Verify “Package Identifier” is set to “47900”. INGEDEV will warn you with the following message “The entered value for ‘Package Identifier’ is for specific use !”
 - Set “Package Version” according to your needs.
 - Set “Package Family” according to your needs.
- Click on “Finish”

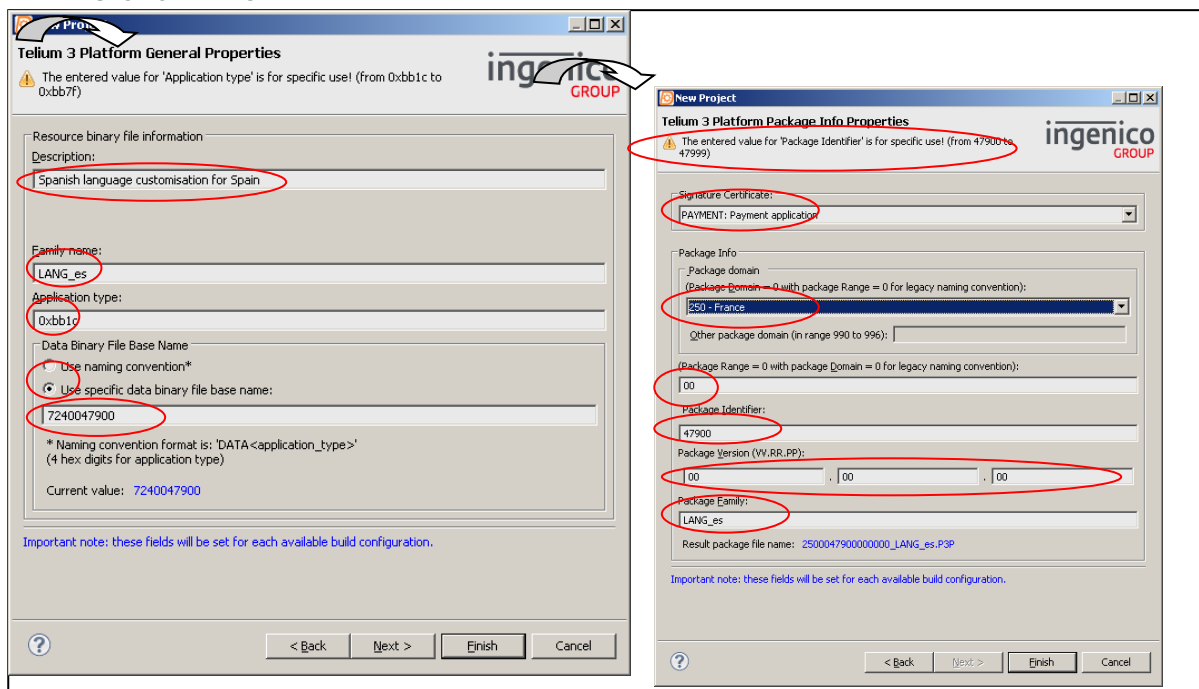


Figure 37 –TETRA language customisation project creation

- Set your project view with visible “Resource inside Telium project
- (refer on **Figure 29 – Make visible “Resource inside Telium project”**)
- In Telium Explorer view, right click on “LANG_es” + select “New” + select “Folder” + name the new folder “MESSAGES” + click on finish
- In Telium Explorer view, right click on “LANG_es” + select “New” + select “Folder” + name the new folder “CUSTOM_MSG” + click on finish
- (refer on **Figure 30 – “CFGCUSTOM” folder creation**)
- Right click again on “LANG_es” + select “New” + select “Folder” + name the new folder “RESULT” + click on finish

- Right click on “archive files” virtual folder to create new archive with “RESULT” folder as root folder.

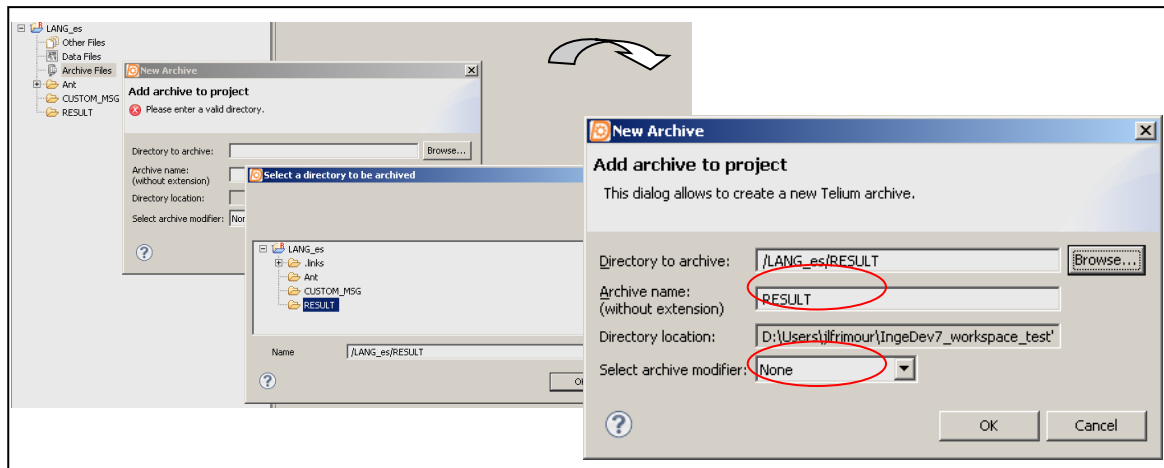


Figure 38 – Archives files creation

- Creation of a new data file with “RESULT” archive as DATA file.
 - Right click on “Data files” virtual folder to create new data with “RESULT” archive as DATA file.
 - “User Data files” properties open , select “+” to add a data file
 - On “New data file” screen set “Set as default data file” and select “Archive file”
 - On “Select Archive” screen select the archive “RESULT” previously defined
 - Confirm all the operations by clicking on “OK”.

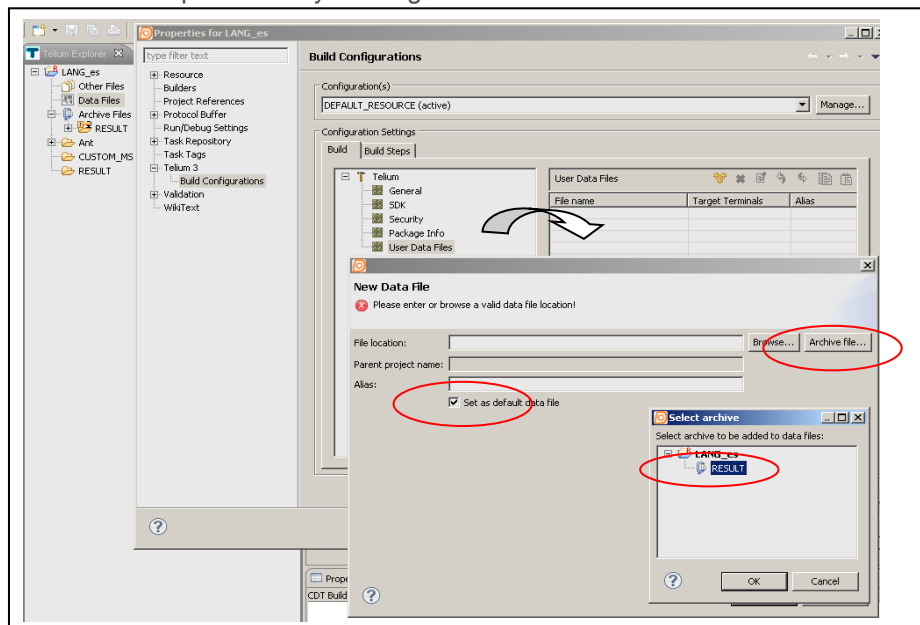


Figure 39 – Data files creation

11_3_4_2 Template dictionary installation and language customization

At this step, the default language provided in the SDK can be copied in the TELIUM project and the language customization can start:

- Outside Ingedev, with Windows file explorer copy “*ingenico*” directory, delivered in SDK installation directory “\Tools\HW_TETRA\Messages” to “LANG_es” project

- in "**MESSAGES**" folder used as reference directory.
- in "**CUSTOM_MSG**" folder dedicated to create or update translation.

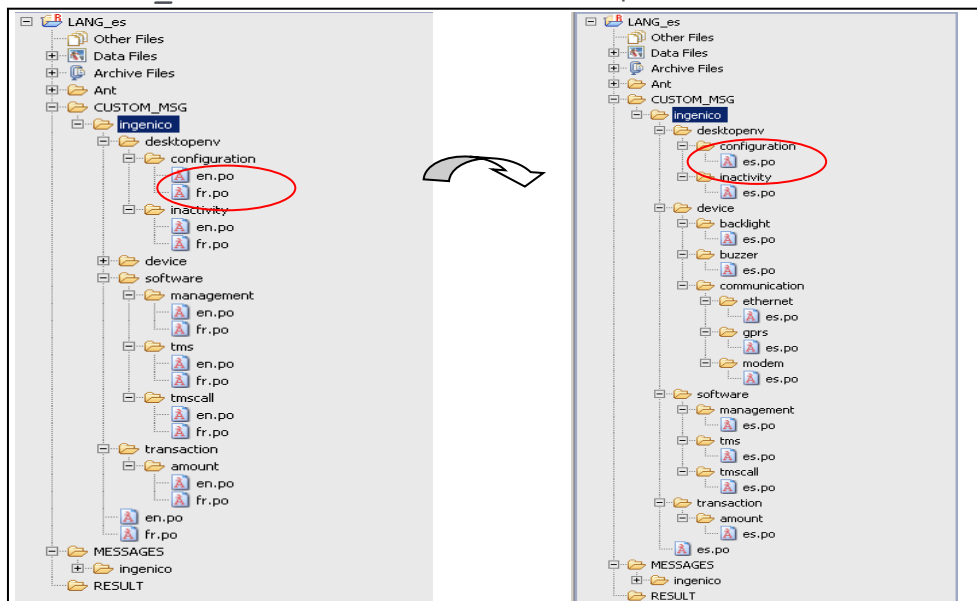


Figure 40 – Default language insertion in project result

- in "**CUSTOM_MSG**" folder, remove all the "**fr.po**". (these files are present to illustrate an example of translated texts)
- According your targeted language, rename all "**en.po**" in "**[LANGUAGE].po**" (in our example: "**es.po**").
- Open each "**[LANGUAGE code].po**" (ex: 'es.po') file with text editor of Eclipse.
 - On "**Language:**" line, replace "**en**" by "**[LANGUAGE code]**" (ex: "**es**") or "**[LANGUAGE code]_[COUNTRY code]**" according to your need (ex: "**es_ES**" Spanish language for Spain country).
 - On "**Plural-Forms:**" line set the values of "**nplurals**" and the rule on plurals setting according to your targeted language.
 - Plurals setting information can be found at <http://localization-guide.readthedocs.org/en/latest/110n/pluralforms.html>.
 - Note that currently only « **nplurals=2; plural=(n != 1);\n** » and « **nplurals=1; plural=0;\n** » are managed by TETRA terminal whatever setting.
 - On each "**msgstr**" line, introduce the corresponding translation of text present on previous line with "**msgid**" text.
 - Note that it's recommended to use INGEDEV (Eclipse CDT part) to make edition and file manipulation: inappropriate editor may corrupt UTF8 initial file format that consequently will imply errors reported by "**gettext**" formatting tools.


```

msgid ""
msgstr ""
"Project-Id-Version: Platform\n"
"POT-Creation-Date: 2015-02-20 14:40+0100\n"
"PO-Revision-Date: 2015-02-20 14:40+0100\n"
"Last-Translator: \n"
"Language-Team: \n"
"Language: es\n"
"MIME-Version: 1.0\n"
"Content-Type: text/plain; charset=UTF-8\n"
"Content-Transfer-Encoding: 8bit\n"
"Plural-Forms: nplurals=2; plural=(n != 1);\n"

#. TRANSLATORS: Exported transaction type
ingenico::transaction::Application::PAYMENT
msgid "Payment"
msgstr "Débito"

#. TRANSLATORS: Exported transaction type
ingenico::transaction::Application::REFUND
msgid "Refund"
msgstr "Crédito"

```

Figure 41 – “es.po” created file example

11_3_4_3 Pre-building and building of the project

The new language is now in place in the project, building step can begin.

- Create prebuilt command file that will call “msgfmt” gettext tool to create the “.mo” files.
- Note that to optimize time computing usage of “.mk” file (makefile) may be used to condition messages formatting to “.po” dependency and evolution.

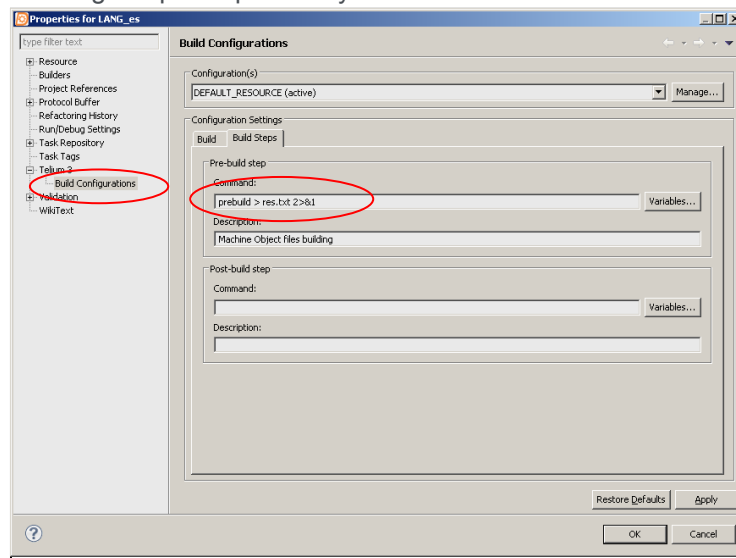


Figure 42 – Set a prebuild command step

The following figure illustrates the content of “prebuild.bat” file.

```

rem declare language variable
set LANG=es

rem declare variables on different existing dir in Ingedev project and on tools location
set MESSAGES=. \CUSTOM_MSG\ingenico
set RESULT=. \RESULT\ingenico
set GETTEXTTOOLS=.. \gettext-tools-windows-0.19.4\bin
set MSGFMT="%GETTEXTTOOLS%\msgfmt.exe"

rem CLEAN-UP
rmdir /S /Q %RESULT%

rem Dir creation to store result ".mo"
mkdir %RESULT%
mkdir %RESULT%\desktopenv\configuration
mkdir %RESULT%\desktopenv\inactivity
mkdir %RESULT%\device\backlight
mkdir %RESULT%\device\buzzer
mkdir %RESULT%\device\communication\ethernet
mkdir %RESULT%\device\communication\gprs
mkdir %RESULT%\device\communication\modem
mkdir %RESULT%\software\management
mkdir %RESULT%\software\tms
mkdir %RESULT%\software\tmscall
mkdir %RESULT%\transaction\amount

rem creation of .mo files
%MSGFMT% %MESSAGES%\%LANG%.po -o %RESULT%\%LANG%.mo
%MSGFMT% %MESSAGES%\desktopenv\configuration\%LANG%.po -o %RESULT%\desktopenv\configuration\%LANG%.mo
%MSGFMT% %MESSAGES%\desktopenv\inactivity\%LANG%.po -o %RESULT%\desktopenv\inactivity\%LANG%.mo
%MSGFMT% %MESSAGES%\device\backlight\%LANG%.po -o %RESULT%\device\backlight\%LANG%.mo
%MSGFMT% %MESSAGES%\device\buzzer\%LANG%.po -o %RESULT%\device\buzzer\%LANG%.mo
%MSGFMT% %MESSAGES%\device\communication\ethernet\%LANG%.po -o %RESULT%\device\communication\ethernet\%LANG%.mo
%MSGFMT% %MESSAGES%\device\communication\gprs\%LANG%.po -o %RESULT%\device\communication\gprs\%LANG%.mo
%MSGFMT% %MESSAGES%\device\communication\modem\%LANG%.po -o %RESULT%\device\communication\modem\%LANG%.mo
%MSGFMT% %MESSAGES%\software\management\%LANG%.po -o %RESULT%\software\management\%LANG%.mo
%MSGFMT% %MESSAGES%\software\tms\%LANG%.po -o %RESULT%\software\tms\%LANG%.mo
%MSGFMT% %MESSAGES%\software\tmscall\%LANG%.po -o %RESULT%\software\tmscall\%LANG%.mo
%MSGFMT% %MESSAGES%\transaction\amount\%LANG%.po -o %RESULT%\transaction\amount\%LANG%.mo

```

Figure 43 – “prebuild.bat” content

Build your Ingedev project

- Make Ingedev “Build”
- In case of errors, take care on those reported by “*prebuild.bat*” command: errors are reported in console and in “*res.txt*”. Refer to “gettext” tools documentation to correct errors.
- The final dictionary is now available (signed for production or for development according the selection done in INGEDEV project) and can be loaded in the terminal.

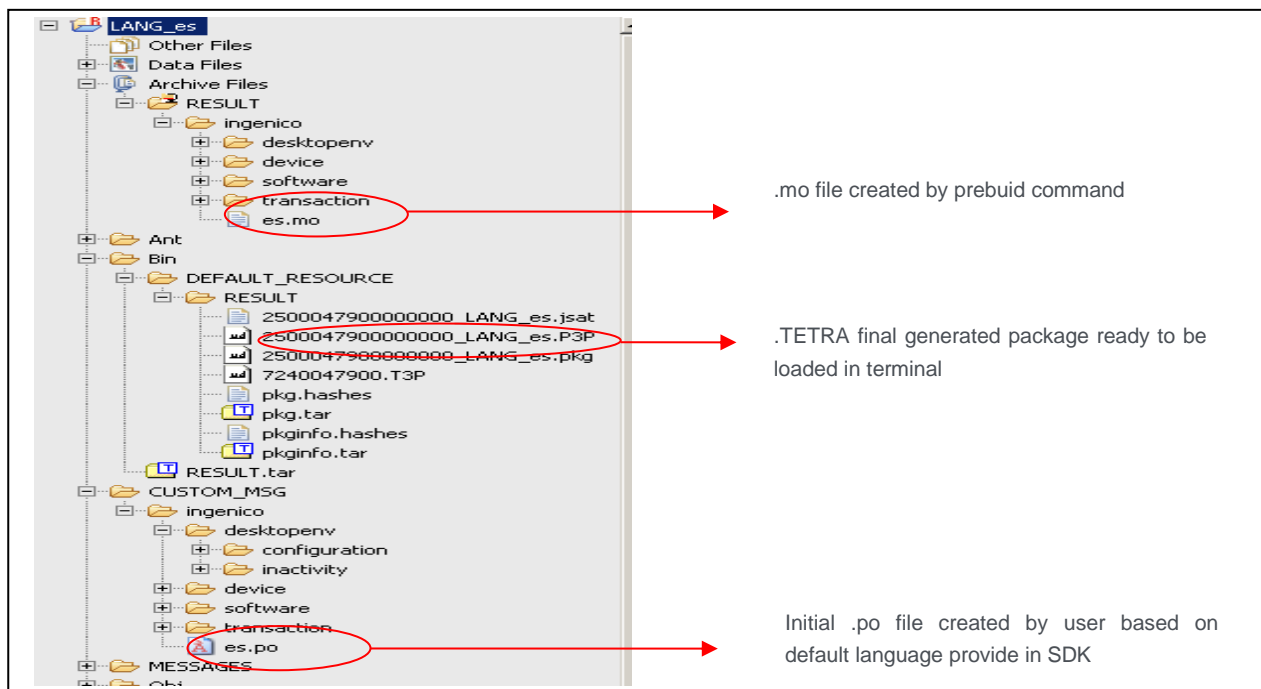
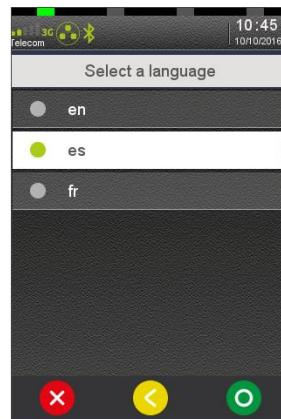


Figure 44 – Final package to load

When your customized dictionary has been loaded in terminal, you can select a new language in "`\Control Panel\Terminal settings\General settings\Language`" subpanel. In our example what is displayed on the terminal:



11_3_4_4 Taking in account of previous translation

The evolution of the default dictionary is linked to human interface modifications:

- new menus creation
- menus removal
- modifications

These evolutions must be reported in the different customized dictionaries.

The previous exposed procedure is valid but is not efficient: "`gettext`" tool allows taking advantage of previous translations. They creates ".po" file merging result of inserted new released messages to translate and those unchanged already translated.

Follow here after, how to take in account your previous translation when receiving a new SDK.

In the project used to create the initial language customization in “MESSAGES” reference directory

- Remove “ingenico” directory
- Outside Ingedev, with Windows file explorer copy “*ingenico*” directory, delivered in the new SDK installation directory “\Tools\HW_TETRA\Messages” to “*MESSAGES*” folder of “*LANG_es*” project (= messages references are updates).
- Create and run a batch command “merge_SDK_msg.bat” that will merge in your previous created customisation language the new “msgid” line to translate.
- Return on INGEDEV tool, and complete the translation in each “[*LANGUAGE*].po” (in our example: “*es.po*”).

```

rem declare language variable
set LANG=es

rem declare language variable
set LANG=es

rem declare variables on different existing dir in Ingedev project and on tools location
set MESSAGES=. \CUSTOM_MSG\ingenico
set SDKMSG=. \MESSAGES\ingenico
set GETTEXTTOOLS=. \gettext-tools-windows-0.19.4\bin
set MSGMERGE="%GETTEXTTOOLS%\msgmerge.exe" --backup=none --no-location --update --no-fuzzy-matching

rem merge in previous created %LANG%.po files
%MSGMERGE% %MESSAGES%\%LANG%.po %SDKMSG%\en.po
%MSGMERGE% %MESSAGES%\desktopenv\configuration\%LANG%.po %SDKMSG%\desktopenv\configuration\en.po
%MSGMERGE% %MESSAGES%\desktopenv\inactivity\%LANG%.po %SDKMSG%\desktopenv\inactivity\en.po
%MSGMERGE% %MESSAGES%\device\backlight\%LANG%.po %SDKMSG%\device\backlight\en.po
%MSGMERGE% %MESSAGES%\device\buzzer\%LANG%.po %SDKMSG%\device\buzzer\en.po
%MSGMERGE% %MESSAGES%\device\communication\ethernet\%LANG%.po %SDKMSG%\device\communication\ethernet\en.po
%MSGMERGE% %MESSAGES%\device\communication\gprs\%LANG%.po %SDKMSG%\device\communication\gprs\en.po
%MSGMERGE% %MESSAGES%\device\communication\modem\%LANG%.po %SDKMSG%\device\communication\modem\en.po
%MSGMERGE% %MESSAGES%\software\management\%LANG%.po %SDKMSG%\software\management\en.po
%MSGMERGE% %MESSAGES%\software\tms\%LANG%.po %SDKMSG%\software\tms\en.po
%MSGMERGE% %MESSAGES%\software\tmscall\%LANG%.po %SDKMSG%\software\tmscall\en.po
%MSGMERGE% %MESSAGES%\transaction\amount\%LANG%.po %SDKMSG%\transaction\amount\en.po

```

Figure 45 – “merge_SDK_msg.bat” content

Build your Ingedev project

- Make Ingedev “Build”
- In case of errors, take care on those reported by “*prebuild.bat*” command: errors are reported in console and in “*res.txt*”. Refer to “gettext” tools documentation to correct errors.
- The final dictionary is now available (signed for production or for development according the selection done in INGEDEV project) and can be loaded in the terminal.

12 Annexes

Two topics in this annexes chapter:

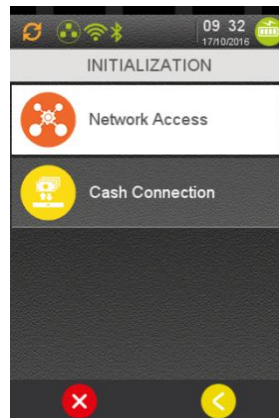
- Additional menu in FRANCE configuration
- Summary of parameters to customize

According to TETRA terminal usage, some regional parameters may be managed: a dedicated icon can be added in “Control panel” to perform these treatments.

The following paragraphs give an example how “Default network” parameters are managed and initialized in FRENCH TETRA terminals.

12_1 “French domain“ parameters

These parameters are provided thanks to “Config France” icon on “Explorer” panel. The following menu is displayed.



The following table provides the different links to menus description.

Item	Reference
Network Access	12_1_1
Cash register connexion	12_1_3

When exiting from this menu (after parameters selection or on cancelling operation in progress or on keying time-out achievement), the user can select to print the current registered configuration. The terminal displays:

If validated, the terminal prints the following ticket.

```
18/01/2016 09:46:57
Initialization

GENERAL

Network Access :
Pstn
Gateway Access :
IP/Eth
GATEWAY :
33
IP ADDRESS :
10.23.7.200
PORT :
6000
SSL :
Yes
PROFIL SSL :
INGETRUST
Fallback network :
Yes

FalLback

Network Access :
Gprs
GATEWAY :
33
IP ADDRESS :
10.23.7.200
PORT :
6000
SSL :
Yes
PROFIL SSL :
INGETRUST

CASH

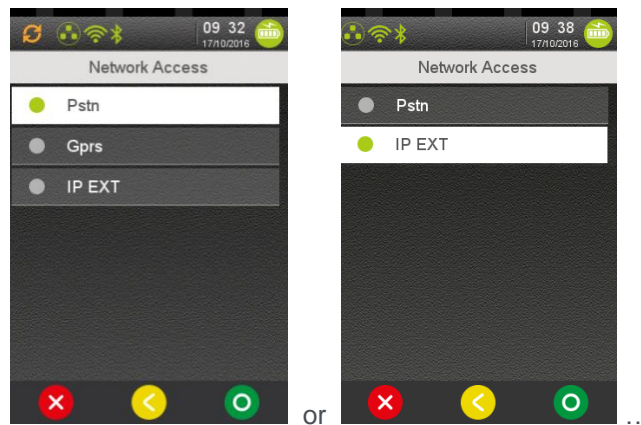
Cash Connection :
Yes
Serial link :
COM0
Speed :
9600
```

12_1_1 Main network access point selection

When selecting "Network Access" menu line, the following options can be currently proposed to user according to communication means discovered in terminal:

- "PSTN" = Public Switched Telephone Network
- "GPRS" = Mobile phone network
- "IP EXT" = External communications means provided thanks to PCL via a connected peripherals (cash register, tablet ...).

The user will select between choices what will be used to perform application configuration and funds transfer. Follow screenshots corresponding to existing terminal configuration:



Except for “X25” via “PSTN”, a common set of parameters are needed for each communications mean. There are proposed to user after specific parameters setting. Common set of parameter are listed in table below: refer to [Table 11 – French configuration – Communications means common set of parameters](#).

When “PSTN” is selected, before proposing common parameters, the terminal requires the gateway access mode selection.



Select one of the two possibilities:

- **X25** – access to Transpac servers via internal modem and PAD. If selected, the configuration of the network is finished.
- **IP/Eth** – access to Transpac servers via IP/X25 gateway.

When “GPRS” or “IP EXT” is selected, only the common set of parameters is proposed to the user.

The following table lists the different parameters that will be proposed in next step and the links on their description.

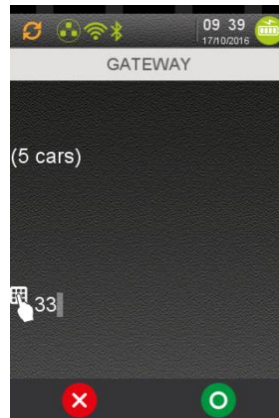
Item	Reference
Gateway for IP/ETH access	12_1_1_1
SSL for IP/ETH access	12_1_1_2
IP address	12_1_1_3
Port	12_1_1_4

Fallback network access	12_1_2
--------------------------------	---------------

Table 11 – French configuration – Communications means common set of parameters

12_1_1_1 Gateway for IP/ETH access

When “IP/ETH” has been selected the type of gateway or its absence must be selected, as illustrates below:



Enter the gateway number according to predefined values listed in the table below.

Item	Reference
0	NO GATEWAY
32	NO X28
33	PAD X28 SSL
40	RFC1086
41	RFC1086 SSL
42	RFC1086+
43	RFC1086+ SSL
64	GIPX25 V2
65	GIPX25 V2 SSL
66	GIPX25 V1
67	GIPX25 V1 SSL

Table 12 – French configuration - List of gateway numbers

Note: Configuration without SSL must not be used anymore.

12_1_1_2 SSL for IP/ETH access

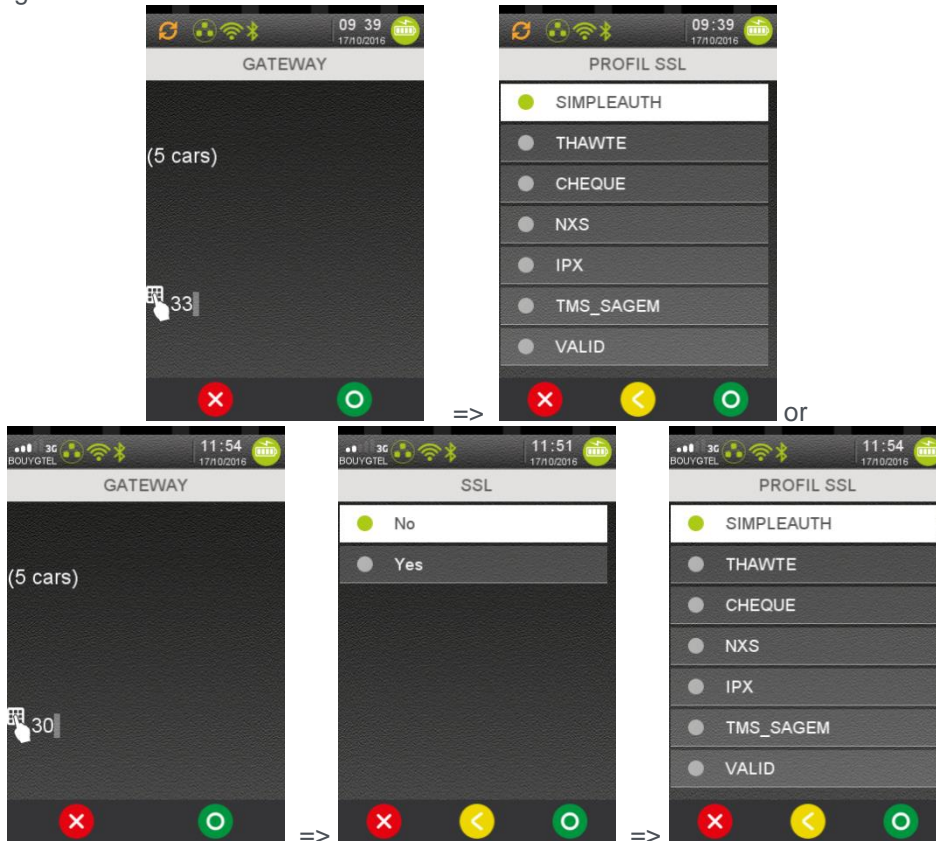
When a gateway has been selected, according to its constraints:

- No SSL required
- SSL required
- SSL is an option

The terminal proposes respectively to:

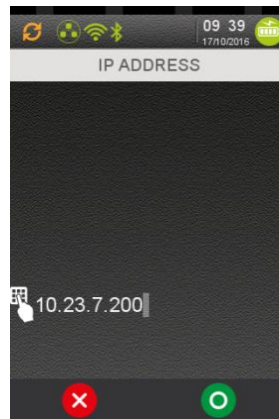
- select SSL profile according to all profiles present in terminal (predefined gateway with odd number, SSL is required => SSL choice not proposed)
- select optional activation of SSL followed with profile selection
- continue to next parameters. (predefined gateway with even number, SSL is not required)

The following screenshots illustrate the 2 use cases:



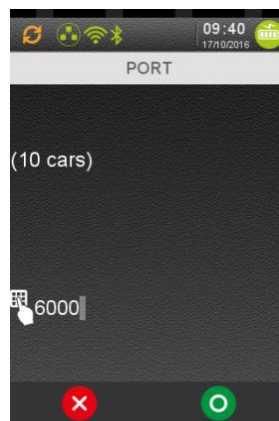
If SSL is activated, select a SSL profile in the list.
Next parameters to select are IP address and port number.

12_1_1_3 IP address



Enter the IP address. IP Address is composed of four digital fields, each one from 0 to 255.

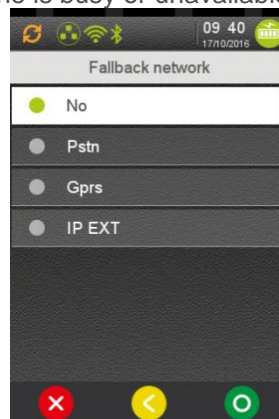
12_1_1_4 port



Enter the port number (up to ten digits).

12_1_2 Fall back network access parameters

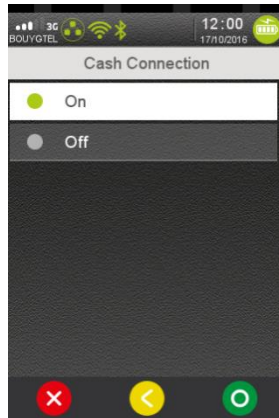
At the end of the network access parameters selection, the terminal proposes to select a second network access to use when the first one is busy or unavailable.



When a fall back network access is selected, the same sequence than exposed in the previous paragraphs related to PSTN or GPRS is proposed to select parameters.

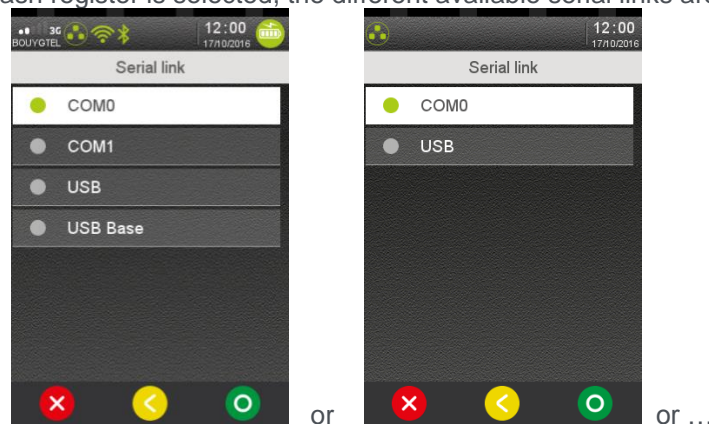
12_1_3 Cash register activation

This menu is used to activate the cash register connection according to French standard protocol. When selecting "On", the communication link used must be specified. The following screen is displayed.



Declare (or not) the connection to a computer system. Activate only if there is an effective connection to a computer system.

If a connection to a cash register is selected, the different available serial links are proposed to user:



If a no USB link is selected, the serial port speed is proposed to selection.




Select the dialog speed on the serial link.

12_2 Summary of parameters to customize

The terminal configuration is divided in 19 files reflecting TETRA services recorded in terminal: it also eases default parameters overlaying according to hardware and software differences between terminals.

Filenames	Description
<i>local.desktopenv.explorer.PBT</i>	Default parameters of Explorer <ul style="list-style-type: none"> • Explorer style • Default idle state • Blacklisting of Explorer panel / subpanel / Icon / menu • Default shortcuts table definition
<i>local.desktopenv.header.PBT</i>	Default parameters of Header <ul style="list-style-type: none"> • Position • Set or not
<i>local.desktopenv.inactivityHandler.PBT</i>	Default idle state parameters <ul style="list-style-type: none"> • screen saver management • eco-mode management (wake-up and standby conditions) • PCI V4 cyclic reboot <p><i>Note: The name of file has been changed since SDK11.10.0. Custom configuration including this file to compatible must be updated accordingly.</i></p>
<i>local.desktopenv.settings.PBT</i>	Default general settings parameters <ul style="list-style-type: none"> • Language • Time and date formats • Internationalization parameters (Currency, separator ...)
<i>local.communication.packip.PBT</i>	Default IP stack parameters <ul style="list-style-type: none"> • ICMP echo mode
<i>local.device.backlight.display.PBT</i>	Default parameters of display backlight <ul style="list-style-type: none"> • Low power level • Normal level • Inactivity duration before low power
<i>local.device.backlight.keyboard.PBT</i>	Default parameters of keyboard backlight <ul style="list-style-type: none"> • Low power level • Normal level • Inactivity duration before low power
<i>local.device.buzzer.PBT</i>	Default parameters of buzzer <ul style="list-style-type: none"> • Frequency • Volume • Beep duration
<i>local.device.communication.eth0.PBT</i>	Default parameters of Ethernet (ETH0) <ul style="list-style-type: none"> • DHCP activation • IPv4 address • Netmask • Gateway address
<i>local.device.communication.gprs.PBT</i>	Default parameters of GPRS <ul style="list-style-type: none"> • APN • Login

	<ul style="list-style-type: none"> • Password • Data mode to activate during startup
<i>local.device.communication.modem.PBT</i>	<p>Default parameters of modem</p> <ul style="list-style-type: none"> • PABX configuration • PABX default parameters (type, number,...)
<i>local.service.directory.PBT</i>	<p>Default parameters of terminal startup sequences.</p> <ul style="list-style-type: none"> • Initial PLATFORM software components list to start . (cannot be customized by USER) • Mandatory CORPORATE software components list to start first. (cannot be customized by USER) • User software components list to start first. • List of software components that can be postponed and started later when the processor is less overloaded. • Parameters to consider processor not overloaded condition.
<i>local.software.tmscall.PBT</i>	<p>Default parameters of automatic download</p> <ul style="list-style-type: none"> • Network type • TCP address • TCP port • SSL profile • Phone number • APN • Login • Password • Contract number
<i>local.transaction.amount.PBT</i>	<p>Default parameters of amount entry</p> <ul style="list-style-type: none"> • Amount entry as default or not • Loop mode activation • Time-out to clear entry • Default payment type
<i>local.transaction.transactionservice.PBT</i>	<p>Default parameters of Transaction service</p> <ul style="list-style-type: none"> • Time-out of card insertion detection • Time-out of card removal waiting • Number of magnetic card swipe retries • Number of contact card retries • Chip to swipe fallback activation • Contactless interface activation • Generic payment type definition (string and value)
<i>local.transaction.userinterface.PBT</i>	<p>Default parameters of Transaction service human interface</p> <ul style="list-style-type: none"> • Beep on card removal activation • Frequency of the removal beep
<i>local.desktopenv.desktop.PBT</i>	<p>Default parameters of desktop service (in particular screen windows and layer management)</p> <ul style="list-style-type: none"> • Screen rotation activation
<i>local.desktopenv.accelerometer.PBT</i>	<p>Default parameters of accelerometer</p>

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	<ul style="list-style-type: none"> • Wake up condition activation
<i>local.device.communication.pcl.PBT</i>	Default parameters of PCL interface <ul style="list-style-type: none"> • Used communication link • Start condition • SSL activation • Targethost

*Note: When possible values to set are not documented in *.PBT file, refer to framework TELIUM3 CHM file and search current set value or parameter to obtain other possible values.*

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