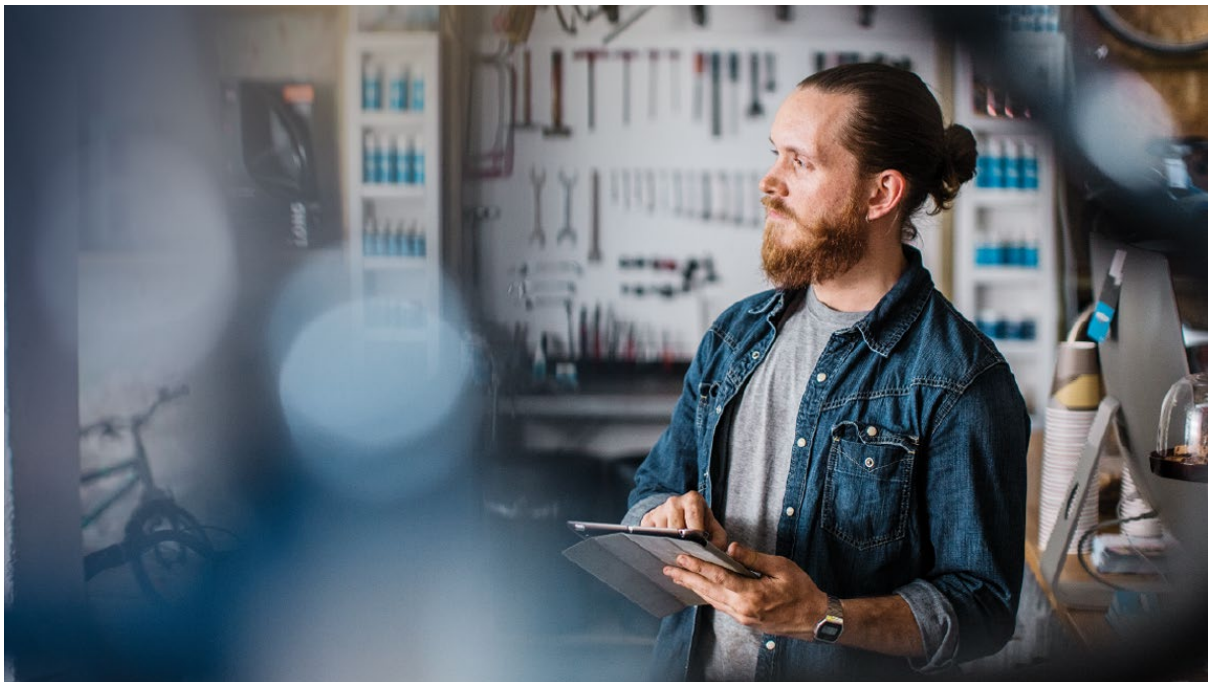


# Release Notes

## Viking Payment Terminals



Production Version 10.0.0 | Nov 2022

TETRA test version 1000 | Mock-up terminals version 9100

SMURR	AKANG	MADSA	Issued for Use
Originated	Checked	Approved	Remarks

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## 1. INTRODUCTION

This generic release covers all Ingenico terminals running on the Viking payment application.

The features improvements, User Interface (UI) and compliance-related upgrades in this release include:

- › Alternative Payment Methods improvements (e.g., Swish)
- › DCC requirements (Compliance)
- › Sound indication
- › Tipping improvements (UI)
- › Base pairing
- › PIN on recurring transactions
- › Removal of PIN bypass (Compliance)
- › UI upgrade
- › Vipps QR improvements

The production release version is 10.0.0 and the TETRA test version is 1000.

NB: The Software Security Framework (SSF) certification only applies to TETRA terminal models.

For information on the availability of this release, please contact your local Pre-Sales and After-Sales service teams or Account Manager. For further information on the terminal range, please consult the user guides/quick guides on the Nets website.

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## 2. FEATURES IMPROVEMENTS

### 2.1 ALTERNATIVE PAYMENT METHODS (APM)

#### Send reversal request as soon as transaction is cancelled by customer/operator

The terminal will now send a reversal request immediately if the transaction has been cancelled by customer. The terminal will show “Cancelled by customer” on the terminal screen immediately after the reversal response is received from the backend.

#### Initiate a payment method directly from ECR

The ECR can now initiate a payment method (with transfer amount) to directly trigger a payment method without any cardholder interaction.

The following JSON should be added in TA optional data.

The Merchant Initiative (“mi”) tag allows the ECR to directly send payment a method in TA optional data.

Payment method types and supported triggers are specified in “paymth” within the “mi” tag:

Type (“type”)		Triggers (“trig”)		Schemes (“sch”)	
0	Card method (only for card payment)	0, 1, 2	0 - Chip (Default) 1 - CLess 2 - Mag	-	-
1	Alternate Acceptance Card (only for Mobile Dankort)	0, 1	0 - QR (Default) 1 - BLE	-	-
2	Alternate Acceptance Non-Card	0, 2	0 - Manual Key Entry (Default) 2 - QR	201, 202, 203, 206	201 - Swish 202 - Vipps 203 - Klarna 206 - Santander (more to come in the future)

```
{
  "od": {
    "ver": "1.01",
    "nets": {
      "ver": "1.00",
      "ch13": {
        "ver": "1.00",
```

```
"ta":{
"ver": "1.00",
"o":{
"ver": "1.06",

"mi":{"ver":"1.0", "paymth":{"type": 2, "trig": 2, "sch":"201"}}
}}}}}
```

### Ability to send optional data from ECR to backend, and from backend to ECR via terminal

The ECR can now send additional data, such as Order Number etc., towards the backend by using the below JSON in Transfer Amount optional data. The additional data should be under the "ecr2naa" tag.

Example of TA optional data:

```
{
"od":{
"ver": "1.01",
"nets":{
"ver": "1.00",
"ch13":{
"ver": "1.00",
"ta":{
"ver": "1.00",
"o":{
"ver": "1.06",

"mi":{"ver":"1.0", "paymth":{"type": 2, "trig": 2, "sch":"201"}}
}}}}}
```

```
{"od": {
"ver": "1.01",
"nets": {
"ver": "1.00",
"ch13": {
"ver": "1.00",
"ta": {
"ver": "1.00",
```

```
"o":
{"ver": "1.06", "ecr2naa": {"ver": "1.0", "lang": "en"}}
}}}}}
```

The backend can also send data back to the ECR. The data will be found in the "naa2ecr" tag and be visible in the ECR Local Mode optional data.

Example:

```
{"od":{"ver":"1.04",naa2ecr":{"ver":"1.0","ppref":"4567"}}}
```

### New error messages from backend

The terminal will now print a new error message on the receipt, which is received from the backend for rejected transactions. This is to give a better end-to-end experience for the end-user.

Example of new error messages:

```
3001: Refund amount too large.
1000: Invalid Purchase ID
3000: Invalid Transaction ID
1001: Insufficient funds
1003: Purchase amount does not match
1002: Purchase ID is already used
```

### Sample receipt

```

STANDARD
StoreID: 30779896
Term: 78090000-636363
2021-12-01 05:59

SANTANDER
Ref.: 341078090000000111
_C1
Session: 301
PP Ref.: 25169
AA Time: 2021-12-01 04:
59:50.778
AA Resp: REJECTED

DECLINED

1000: Invalid purchase ID
  
```

If the terminal offers more than one APM, the terminal will display the MENU and the cardholder must choose which payment method to use, e.g. Swish/Klarna.

## 2.2 BASE PAIRING

When a new terminal is put on the base for the first time, or an already paired terminal is put on a new base after reboot is performed, the terminal will ask the user to confirm the pairing with the new base:

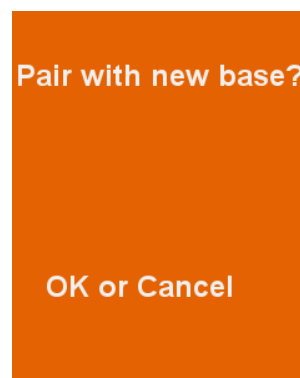


Figure 1: Base Pairing on Vipps

If no keys are pressed, after timeout the terminal will go back to the Idle screen.



## 2.3 ENGLISH PROFILE

You can configure a terminal based on a specific profile for every supported country. The profile determines which parameters the terminal should be using when it comes to supported language, amount entry text etc.

In this version, the English profile has been added to be able to support an English set-up on the terminal.

### Parameters

Terminal profile:	United Kingdom (EN)
Host IP address:	Same production IP is used for all countries
Always copy:	NO
Amount mode:	Pounds/sterling
PORT Production environment:	9679
PORT Test environment:	9670
Customer Receipt:	Always
GPRS_APN:	"internet"
Host IP address:	91.102.24.142
PIN keytone:	Always
Terminal language:	English

## 2.4 VIPPS QR

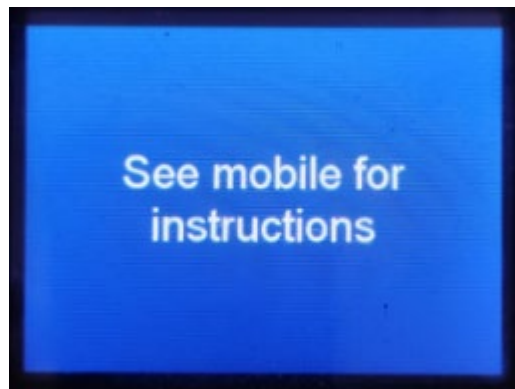
Two improvements related to the Vipps QR feature have been implemented in this release.

According to branding specifications from Vipps, the Vipps QR code screen will now be displayed with an orange background.



Figure 2: Vipps QR UI

In the old implementation, the QR code was displayed in the terminal screen until the transaction was approved/declined by the host. Now, when the QR code has been read by the Vipps app, the terminal will give the cardholder a notification to follow instructions on their smartphone.



*Figure 3: Vipps QR - Instructing the Cardholder*

### General limitations

- Offline purchase (reserveløsning) and refund is not supported using Vipps.
- Vipps QR is not supported on monochrome and unattended terminals.
- Vipps QR cannot be used in combination with VAS services or multi terminal setup.

### 3. UI UPGRADES

#### 3.1 DISPLAY SCREENS

More updates are added to the display screens shown to the cardholder. This is the fourth stage for updating the UI. Further updates will come in the upcoming release.

A change of background colour now reflects the result of the transaction, which will make the overall user experience clearer, and help to avoid any ambiguity in the communication with the cardholder.

Approved screen with green background	
Declined/aborted screen with red background	

NB: Monochrome and unattended terminals are not in scope of the UI changes.

#### 3.2 TIPPING

##### Improved tip input

In the Viking application, there are two ways to add a tip to a transaction; by entering an additional tip amount to the total amount, or by entering a new total amount (which includes the tip). Both options are now available and configurable for markets/countries.

It is now also possible to continue the transaction flow by pressing OK without entering the new tip/total amount.

### Enter tip amount

Screen before any extra tip amount is added.	
Screen after the extra tip amount is added	

### Enter new total amount

Screen before the new total amount is added	
Screen after the new total amount is added	

### Configurable tip prompt screen

There is now an option to add an additional screen to the tip flow, by making the terminal display a separate screen where the end user can select to continue with tip or else dismiss further tip entry.

New tip prompt screen	
-----------------------	--

The new screen is configurable and can be added via the menu under Function (default value is NO):

	<div style="background-color: #1a3d4d; color: white; padding: 2px;">Parameters</div> <div style="background-color: #1a3d4d; color: white; padding: 2px;">1 Change</div> <div style="background-color: #1a3d4d; color: white; padding: 2px;">2 Print</div>	
	<div style="background-color: #1a3d4d; color: white; padding: 2px;">Change</div> <div style="background-color: #1a3d4d; color: white; padding: 2px;">1 Function</div> <div style="background-color: #1a3d4d; color: white; padding: 2px;">2 Comms</div> <div style="background-color: #1a3d4d; color: white; padding: 2px;">3 ECR</div> <div style="background-color: #1a3d4d; color: white; padding: 2px;">4 Security</div>	
	<div style="background-color: #1a3d4d; color: white; padding: 20px; text-align: center;">Add. question</div> <div style="background-color: #1a3d4d; color: white; padding: 20px; text-align: center;">No</div>	

### 3.3 SOUND INDICATION

A need for a clear sound indication on the terminal was identified for cases where additional confirmation is needed from the cardholder, e.g. first cardholder interaction likes tip, DCC, MIF selection and application selection.

The terminal will now make a clear sound if any cardholder interaction is needed, and if the transaction is declined.

Following the upgrade, the default value for the sound parameter is yes (enabled).

For those terminals being upgraded, and where the sound parameter is already disabled, the sound indication will also be disabled.

To check the parameter “Attention sound” via the menu:

	Parameters 1 Change 2 Print	
	Change 1 Function 2 Comms 3 ECR 4 Security	
	Sound  On Error	
	PIN key tone  Always	
	Attention Sound  Yes	

To set the parameter “Attention sound” via the menu:

	Attention Sound* <No>	
	Attention Sound* <Yes>	
	Attention Sound = Yes	

## 4. COMPLIANCE-RELATED UPGRADES

### 4.1 DYNAMIC CURRENCY CONVERSION (DCC)

#### Same font size on all texts in the DCC screen

All the texts strings displayed in the DCC terminal screen have been changed to the same font size. Layout may vary depending on the screen size.

Choose Currency		
1.	76,33	DKK
2.	100,00	NOK
ECB 1NOK = 0,7633 DKK Markup Up Fee: 3,31%, over ECB		

Figure 4: Fonts on DCC Screen

## Removal of text on the receipt

In the consent row, as shown in sample receipt below, after performing the successful DCC transaction, the transaction receipt will no longer show the text "AND THIS CHOICE IS FINAL":

Old DCC Receipt	New DCC Receipt
<pre>Gopal Norway i test for CityOfNorway  Term: 11550211-115502 2022-04-19 14:02  Visa Contactless *****1688-0 AID: A0000000031010 ATC: 00805 TVR: 0000000000 StoreID: 5806649 Ref.: 593717 450231 K&amp;L Resp.: 00 DCC Resp.: 00 Session: 979  PURCHASE AMOUNT NOK      110,00  TRANS. CURRENCY AMOUNT DKK      83,96 GODKJENT  EXCHANGE RATE BASED ON ECB AT 2022-04-19. EXCHANGE RATE: 1 NOK = 0,7633 DKK MARK-UP FEE %: 3,31% THIS CURRENCY CONVERSION SERVICE IS PROVIDED BY ELAVON22041913020857.  I ACCEPT:  Gopal Norway HAS OFFERED ME A CHOICE OF CURRENCIES FOR PAYMENT AND THIS CHOICE IS FINAL .  THE EXCHANGE RATE AND FINAL AMOUNT IN 'DKK'.</pre>	<pre>Gopal Norway i test for CityOfNorway  Term: 11550211-115502 2022-04-19 15:56  Visa Contactless *****1688-0 AID: A0000000031010 ATC: 00808 TVR: 0000000000 StoreID: 5806649 Ref.: 606044 455643 K&amp;L Resp.: 00 DCC Resp.: 00 Session: 980  PURCHASE AMOUNT NOK      110,00  TRANS. CURRENCY AMOUNT DKK      83,96 GODKJENT  EXCHANGE RATE BASED ON ECB AT 2022-04-19. EXCHANGE RATE: 1 NOK = 0,7633 DKK MARK-UP FEE %: 3,31% THIS CURRENCY CONVERSION SERVICE IS PROVIDED BY ELAVON22041914565249.  I ACCEPT:  Gopal Norway HAS OFFERED ME A CHOICE OF CURRENCIES FOR PAYMENT.  THE EXCHANGE RATE AND FINAL AMOUNT IN 'DKK'.</pre>

Figure 5: Receipt for DCC transaction

## 4.2 PIN ON RECURRING CONTACTLESS TRANSACTIONS

To comply with security regulations, PIN on all recurring payment transactions has been implemented.

New parameters related to force online and force CVM need to be parsed in version 1.0 of 'mi' field.

'Online' denotes force online and values are, 0 - Standard (default), 1 - Force Online, 2 - Force Offline (reserved for future use), 3 - Prefer Online (reserved for future use).

'CVM' denotes forced CVM, and values are 0 - Standard (default), 1 - Force CVM, 2 - Online PIN (reserved for future use), 3 - Offline PIN (reserved for future use), 4 - Signature (reserved for future use), 5 - No CVM (reserved for future use).



Optional data can be modified as shown below:

```
{ "od": { "ver": "1.01", "nets": { "ver": "1.00", "ch13": { "ver": "1.00", "ta": { "ver": "1.00", "o": { "ver": "1.06", "exclude": 30, "mi": { "ver": "1.0", "online": 1, "cvm": 1 } } } } } } }
```

### Support Force Online for Contact and Contactless Transactions using optional data tag 'online'

ECR can send 'online' tag with transfer amount. The below JSON should be added in TA optional data.

If 'online' is received as 1 from optional data, then CLess transaction is to be forced online.  
If 0 then should work as it was before.

Merchant Initiative tag allows ECR to directly send 'online' in TA optional data.

```
{ "od": { "ver": "1.01", "nets": { "ver": "1.00", "ch13": { "ver": "1.00", "ta": { "ver": "1.00", "o": { "ver": "1.06", "exclude": 30, "mi": { "ver": "1.0", "online": 1 } } } } } }
```

### Supporting Force CVM for contact and contactless transactions using the optional data tag 'online'

The ECR can send the 'CVM' tag using the below JSON in Transfer Amount optional data.

If 'CVM' is received as 1, then the contactless transaction is to be forcibly asked for the CVM.  
If 0, then it will work as it was before.

The Merchant Initiative tag allows the ECR to directly send 'CVM' in TA optional data.

```
{ "od": { "ver": "1.01", "nets": { "ver": "1.00", "ch13": { "ver": "1.00", "ta": { "ver": "1.00", "o": { "ver": "1.06", "exclude": 30, "mi": { "ver": "1.0", "cvm": 1 } } } } } }
```

### Generic changes for all interfaces

A generic change is made to handle Force CVM on all VAS and DA requests. Single-tap transactions will be forced for CVM no matter what amount or placeholder amount is received in VAS/DA requests.

If the CVM value in TA is different to that of VAS/DA requests, the transactions are then forced for double-tap.

The below requirements are fulfilled in this change:

CVM tag in VAS/DA request	CVM tag in TA request	Result
CVM = 1	CVM not sent	PIN is requested and transaction approved
CVM not sent	CVM = 1	Goes for double-tap, PIN is requested, and transaction is approved
CVM = 0	CVM not sent	Transaction approved
CVM not sent	CVM = 0	Transaction approved
CVM = 0	CVM = 0	Transaction approved
CVM = 1	CVM = 1	PIN is requested and transaction approved
CVM = 0	CVM = 1	Goes for double tap, PIN is requested, and transaction is approved
CVM = 1	CVM = 0	Goes for double-tap and transaction is approved

VAS and DA requests with CVM tags are as detailed below:

Cardinfo JSON -

```
{"cardinfo":{"ver":"1.11","issid":"?","loyaltyinfo2":"?","aid":"?","ph_amount":"1","txntype":"30","cvm":1}}
```

cardinfo TLD

```
3010 US 0003 US 001 RS 3016 US 0001 US 1 RS 3017 US 0002 US 30 RS 3022 US 0001 US 1 RS
```

Customerinfo TLD

```
2000 US 0003 US 001 RS 2002 US 0003 US 001 RS 2001 US 0000 US RS 3017 US 0002 US 30 RS 3020 US 0008 US 00001100 RS 3022 US 0001 US 1 RS
```

DA JSON

```
{"da":{"ver":"1.4","type":998,"action":3,"ra2t":{"ver":"1.2","query":{"mode":4,"pin":0,"amount":"3000","txntype":"30","cvm":1}}}}
```

### 4.3 REMOVAL OF PIN BYPASS

The PIN bypass feature has been removed for all card schemes. This is for all markets and all terminal types (standalone and integrated terminals).