Emu PSS - Software Emulator for DOMS

User guide
2021

Table of contents

Introduction

EmuPSS is a software emulator.
Running on a computer makes that computer behave like the DOMS PSS 5000 device running on a network on the same IP address as that computer on which EmuPSS is running.

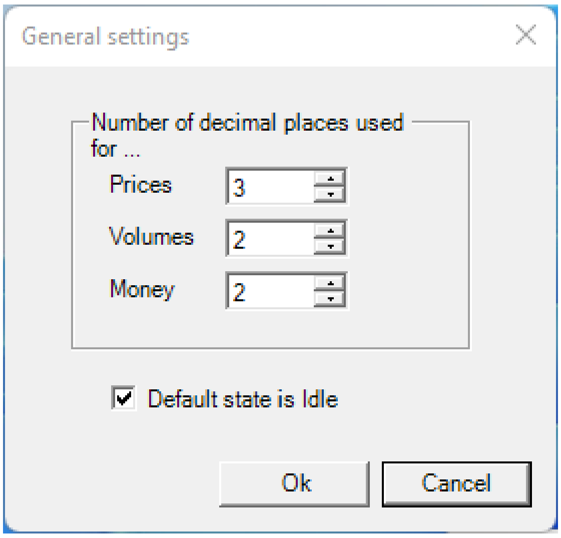
1. Configuration file

EmuPSS keeps all the configuration data in one file with the ".emupss" extension. EmuPSS configuration file has a file extension ".emupps".

Association is associated with an EmuPSS, so if you want to start EmuPSS with a configuration in a file, double click that file. In the main menu, there is an option to save the current configuration to a different file, making a copy. Also, there are dialogs for you to adjust the setup to your own needs. On each start application will try to load the setup from the last used file. If it fails it will challenge the user with a choice to create a new one or load some other configuration file. You can create a new configuration empty or with default grades and fueling points

1.1. General Settings

These settings depend on the country where the software is running.



General settings

Number of decimal places used for ...

Prices 3

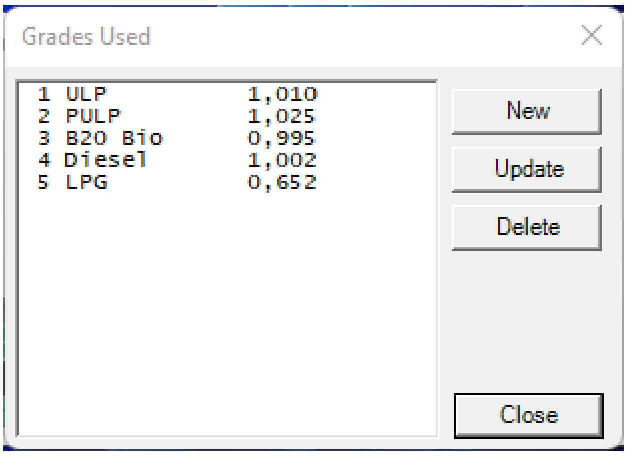
Volumes 2

Money 2

☑ Default state is Idle

- **Decimal places,** defines the units formating.
- **Default state is Idle**, if checked when the transaction clears, the pump goes to Idle state, if it is unchecked then the pump is going into preauthorized state

1.2. Grades

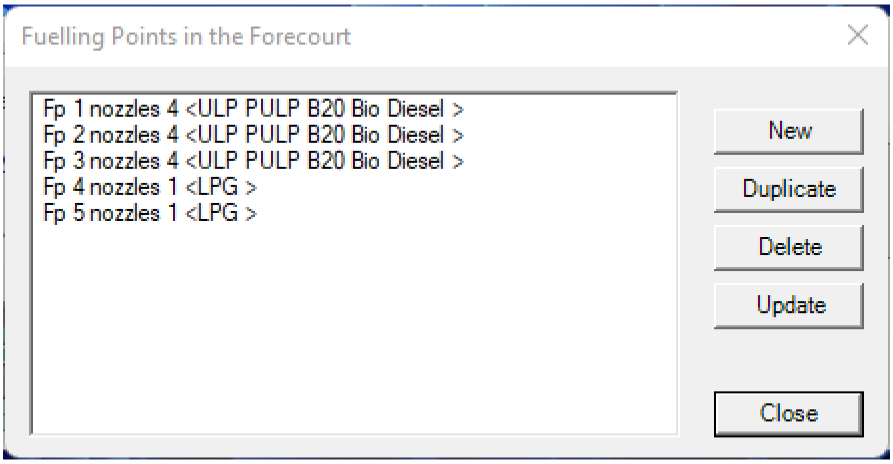


```
1 ULP          1,010
2 PULP         1,025
3 B20 Bio      0,995
4 Diesel       1,002
5 LPG          0,652
```

Collection of all the grades used in the petrol station EmuPSS is emulating. Id number for grades is automatically maintained in the order you enter them. Grades have the price too. Although you can use this form to update prices, the better way is to use POS clients for the task, because then the changes propagate to all connected clients.

Because the ID is ascending from zero, deleting the grade with an Id 3 will decrement Ids of Diesel and LPG grades by one, and any usage of those grades affected as fueling point grade options will be messed up. So, if you want to do that, please check the definition of the fuelling points after such an action.

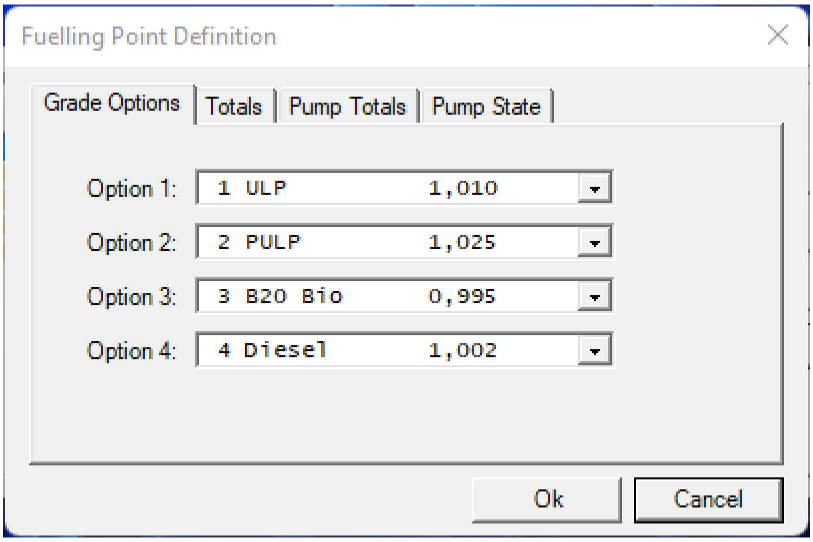
1.3. Fuelling Points


Fuelling Points in the Forecourt

Fp 1 nozzles 4 <ULP PULP B20 Bio Diesel >
Fp 2 nozzles 4 <ULP PULP B20 Bio Diesel >
Fp 3 nozzles 4 <ULP PULP B20 Bio Diesel >
Fp 4 nozzles 1 <LPG >
Fp 5 nozzles 1 <LPG >

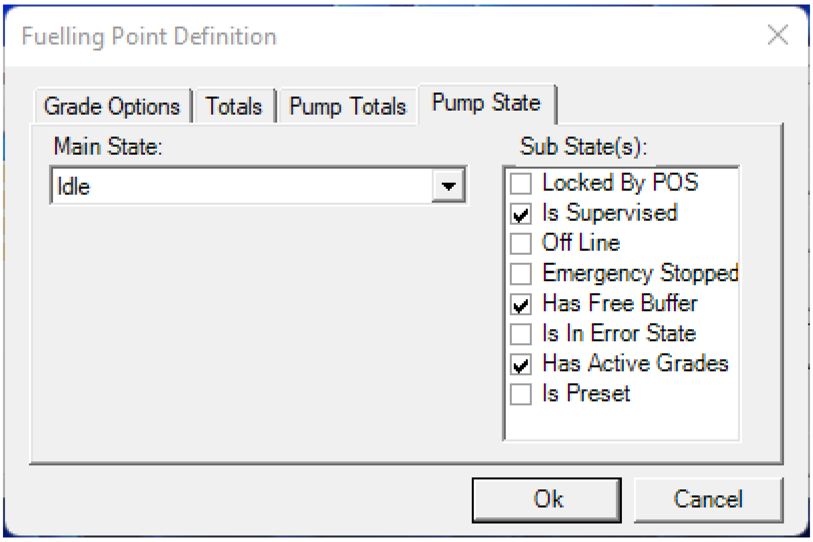
You may add, delete or update existing fuelling points. You can also duplicate the selected fuelling point. Meaning, new fuelling point is added to the list with the same features as the selected one. It comes in handy when entering two fuelling points belonging to the same double-sided dispenser.

Fuelling points are the individual dispensing points in the forecourt. The double-sided dispenser represents two fuelling points. Each side works independently from the other. Single-sided dispensers represents one fueling point only. For defining the fuelling point there is a more elaborate dialog.


Fuelling Point Definition

Option 1: 1 ULP 1,010
Option 2: 2 PULP 1,025
Option 3: 3 B20 Bio 0,995
Option 4: 4 Diesel 1,002

Select proper grades, when updating fuelling point you cannot change nozzle count. If you need to change the nozzle count, you must delete the fuelling point and create a new one with the desired count of nozzles. One grade can be used only once! The EmuPSS enforce that rule.



Fuelling Point Definition

Main State: Idle

Sub State(s):

- ☐ Locked By POS
- ☑ Is Supervised
- ☐ Off Line
- ☐ Emergency Stopped
- ☑ Has Free Buffer
- ☐ Is In Error State
- ☑ Has Active Grades
- ☐ Is Preset

These are DOMS main state and sub-state settings.
You may set any state you want for the fueling point. During EmuPSS working with POS clients some of those substate flags and states change according to commands and state transitions.

2. Working with EmuPSS

To use EmuPSS, you will need another program to work as its client.
In this document, we will describe it in use with with Demo POS, an application provided by DOMS manufacturer and available for all its customers.
The goal of EmuPSS is to serve as an emulator for forecourt POS client application developers, as a testing tool.

2.1. Start Working

Upon start, the application tries to start listening TCP/IP servers on ports 5000, 5001, and 5005. These port numbers hardware is used to communicate with POS clients. That's why it is not configurable.

If the application can not succeed in doing this (ports may be in use), the program will notify the user about the problem and exit.

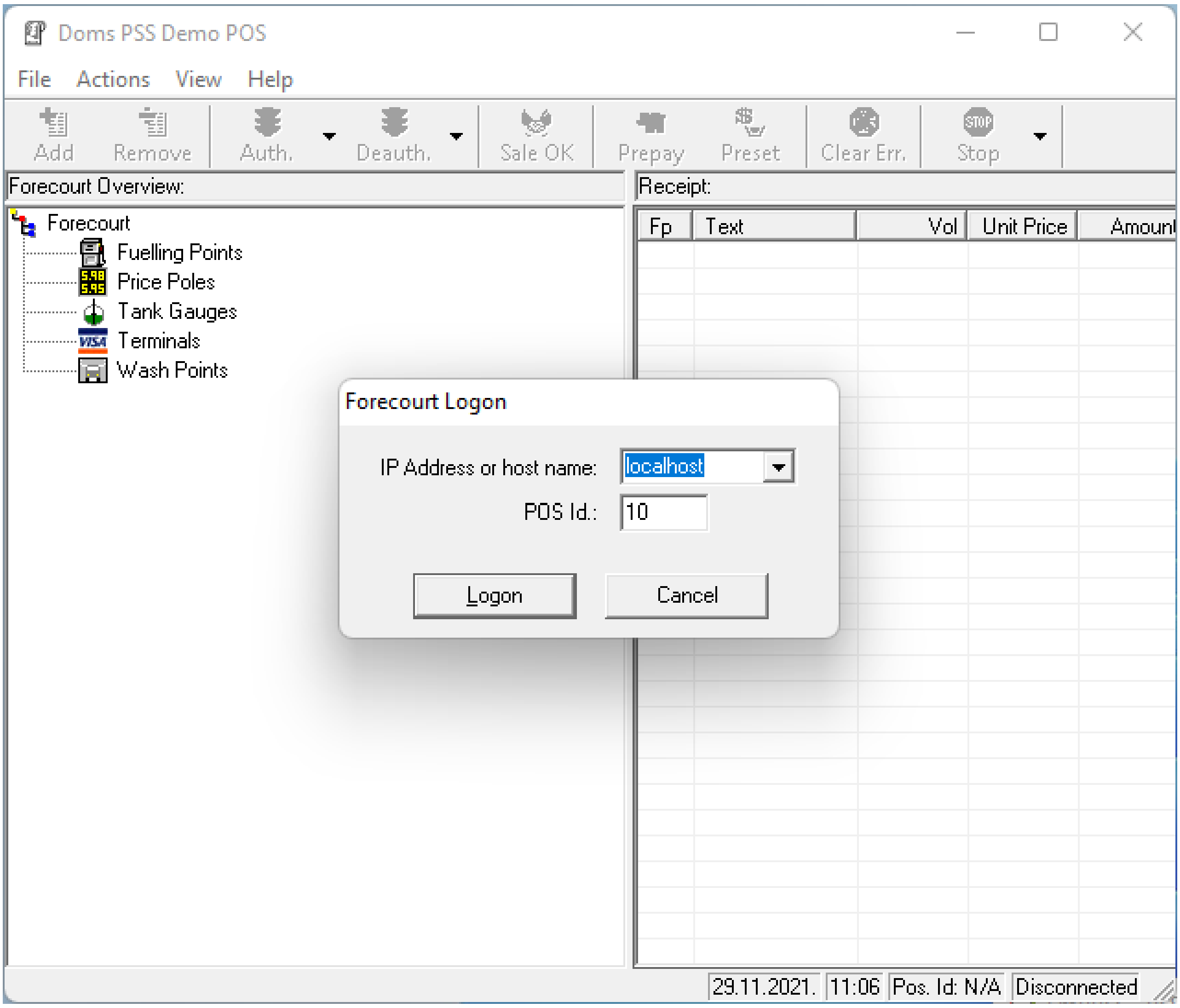
You may check what application is using any of those listed ports and try to stop it or reconfigure it. Or you can restart the computer and try again. This usually helps.

Configuration data you learned about in the previous chapter resides in a single file. The EmuPSS must open one such file upon exit to start working as DOMS emulator. First, the application tries the last file used. If it is not found or if it is corrupt you may select a new one or create one empty or with default settings.
Of course, if you double-click on one of the files with ".emupss" extension, EmuPSS will try to open that file first.

For being able to use EmuPSS and see it in action you need some POS Client program, program that will use PSS Interface Components to connect to DOMS (or EmuPSS as its emulator) and control it.
Demo POS is a standard tool provided by a DOMS manufacturer, so it is available for all developers and chances are that EmuPSS users are already wery well acquainted with it.

2.2.1. Connect to EmuPSS

The POS client is needed to invoke an action on the forecourt.
Developers will use the one they develop.
For this document, Demo POS application will be used as it is familiar to all DOMS developers.



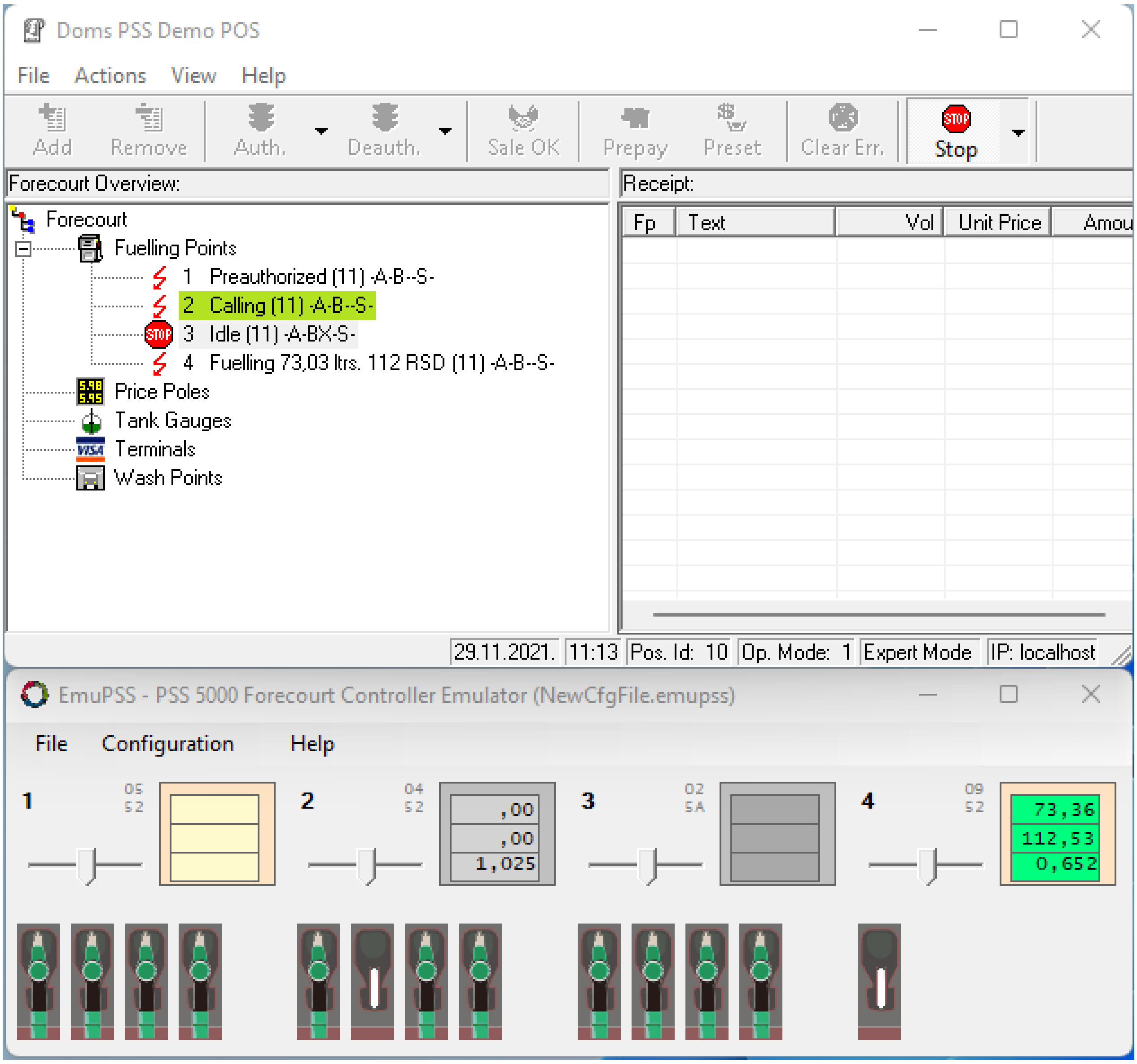
IP Address or host name: localhost

POS Id.: 10

To connect to EmuPSS just enter localhost or 127.0.0.1 in the Forecourt logon dialog.
You may also use it remotely, then you will enter the actual IP address of a remote computer running EmuPSS.

2.2.2. Working Together

The image shows a running Demo POS in the background and running EmuPSS on the top.
That is how the user can see how the invoke the action from the client and the effect on the emulator. To lift the nozzle on EmuPSS just do a left mouse click on it. The nozzle disappears. To replace the lifted nozzle, click on the empty slot. The lifted nozzle will reappear in the old place. The trackbar for each fueling point represents the speed of dispensing. When it is to the leftmost position no dispensing occurs. Using this trackbar users may simulate different dispensing speeds.



Forecourt
Fuelling Points
1 Preauthorized (11) -A-B--S-
2 Calling (11) -A-B--S-
3 Idle (11) -A-BX-S-
4 Fuelling 73,03 ltrs. 112 RSD (11) -A-B--S-
Price Poles
Tank Gauges
Terminals
Wash Points

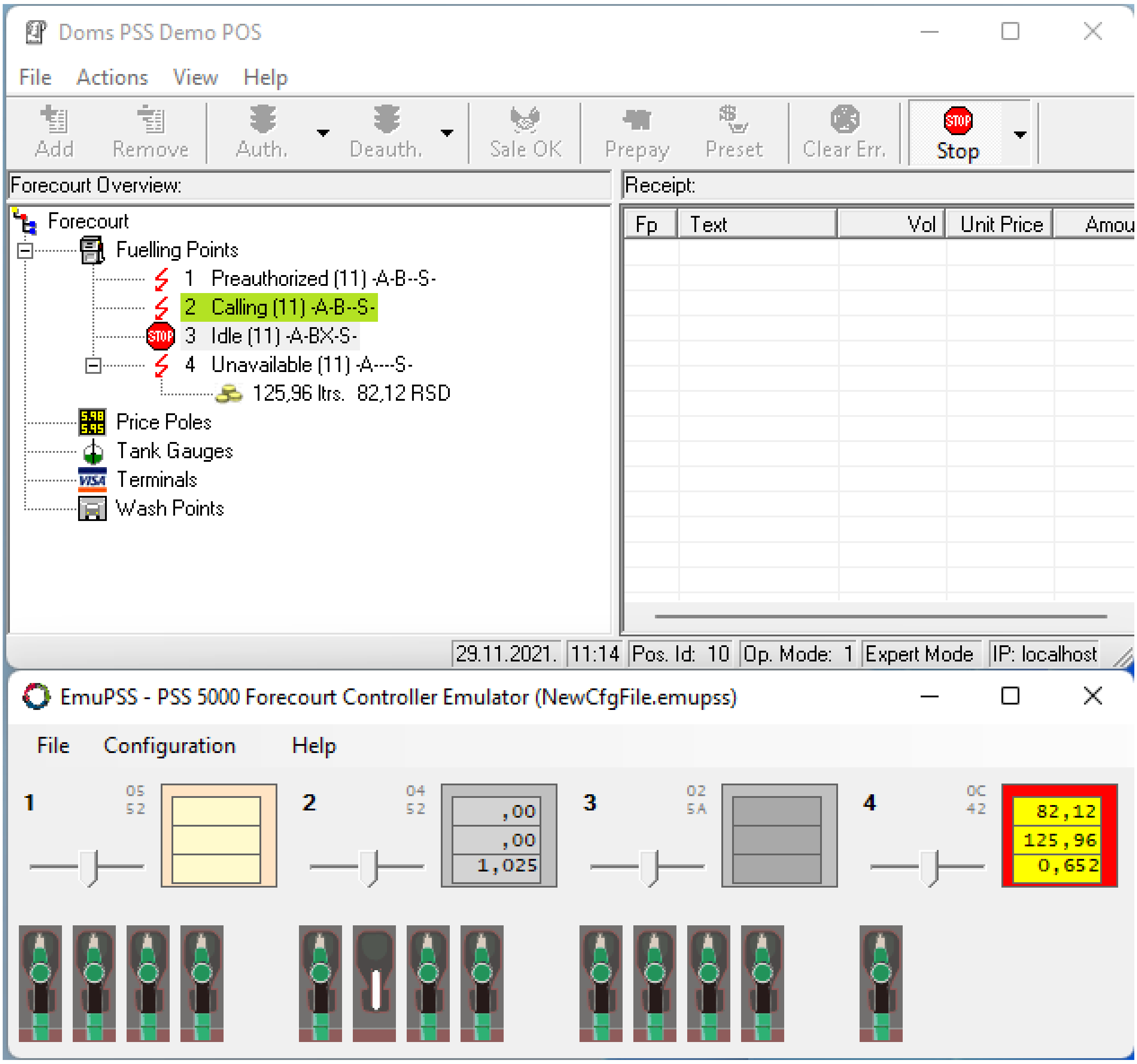
29.11.2021. | 11:13 | Pos. Id: 10 | Op. Mode: 1 | Expert Mode | IP: localhost

EmuPSS - PSS 5000 Forecourt Controller Emulator (NewCfgFile.emupss)
File
Configuration
Help
1
05
52
2
04
52
3
02
5A
4
09
52

```
2:    ,00      4:   73,36
      ,00          112,53
    1,025           0,652
```

Users can use all the commands available in Demo POS to manipulate the state of the emulator. For example, shown here, fueling point 2 has nozzle lifted, so it is Calling, fueling point 2 is Preauthorized (dispensing is possible), fueling point 3 is emergency stopped (no fueling possible), and fueling point 4 is currently dispensing (speed can be regulated with a trackbar)

2.2.3. Stop Dispensing



Forecourt Overview:

- Forecourt
  - Fuelling Points
    - 1 Preauthorized (11) -A-B--S-
    - 2 Calling (11) -A-B--S-
    - 3 Idle (11) -A-BX-S-
    - 4 Unavailable (11) -A----S-
      - 125,96 ltrs. 82,12 RSD
  - Price Poles
  - Tank Gauges
  - Terminals
  - Wash Points

Receipt:

Fp	Text	Vol	Unit Price	Amou

29.11.2021. | 11:14 | Pos. Id: 10 | Op. Mode: 1 | Expert Mode | IP: localhost

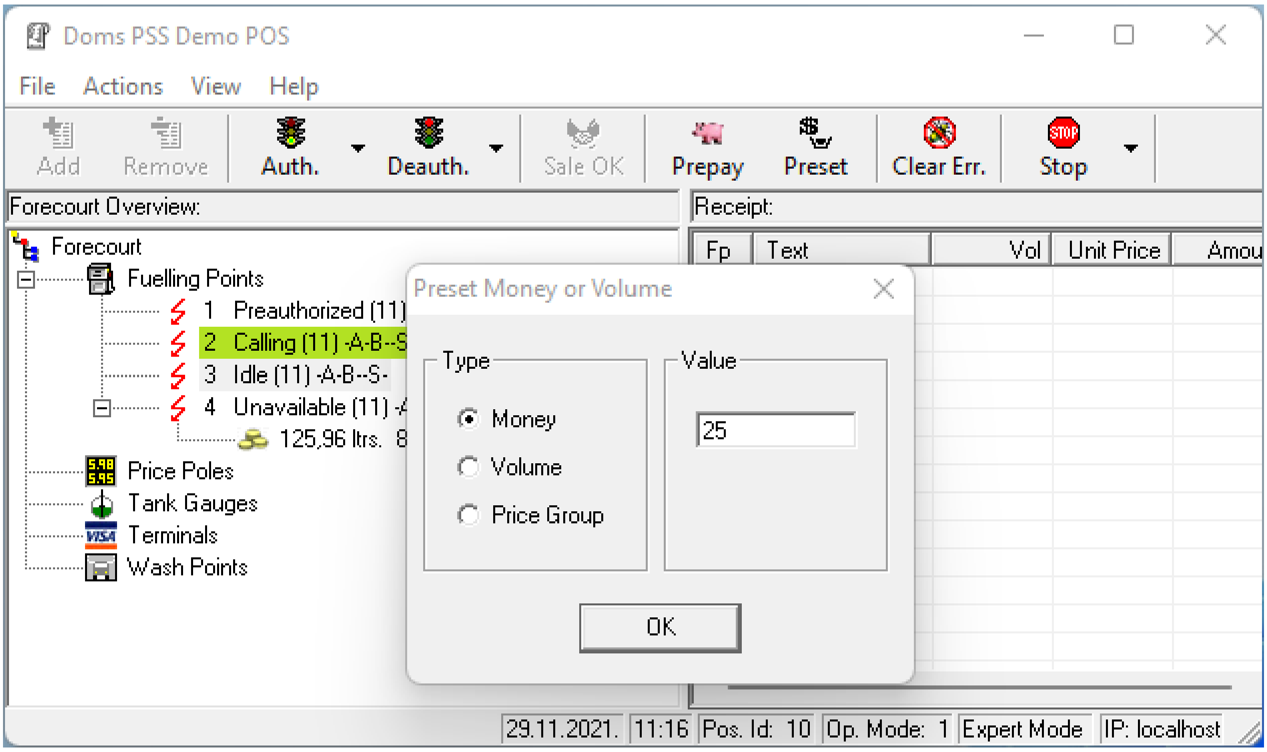
EmuPSS - PSS 5000 Forecourt Controller Emulator (NewCfgFile.emupss)
File
Configuration
Help
1
05
52
2
04
52
3
02
5A
4
0C
42

Fuelling point 2: ,00 / ,00 / 1,025

Fuelling point 4: 82,12 / 125,96 / 0,652

To stop dispensing, just replace the nozzle. This change is propagated to all client applications. No additional dispensing is possible until this transaction is cleared.

2.2.4. Preset Fuelling Point



Forecourt
- Fuelling Points
  - 1 Preauthorized (11)
  - 2 Calling (11) -A-B--S
  - 3 Idle (11) -A-B--S-
  - 4 Unavailable (11) -
    - 125,96 ltrs. 8
- Price Poles
- Tank Gauges
- Terminals
- Wash Points

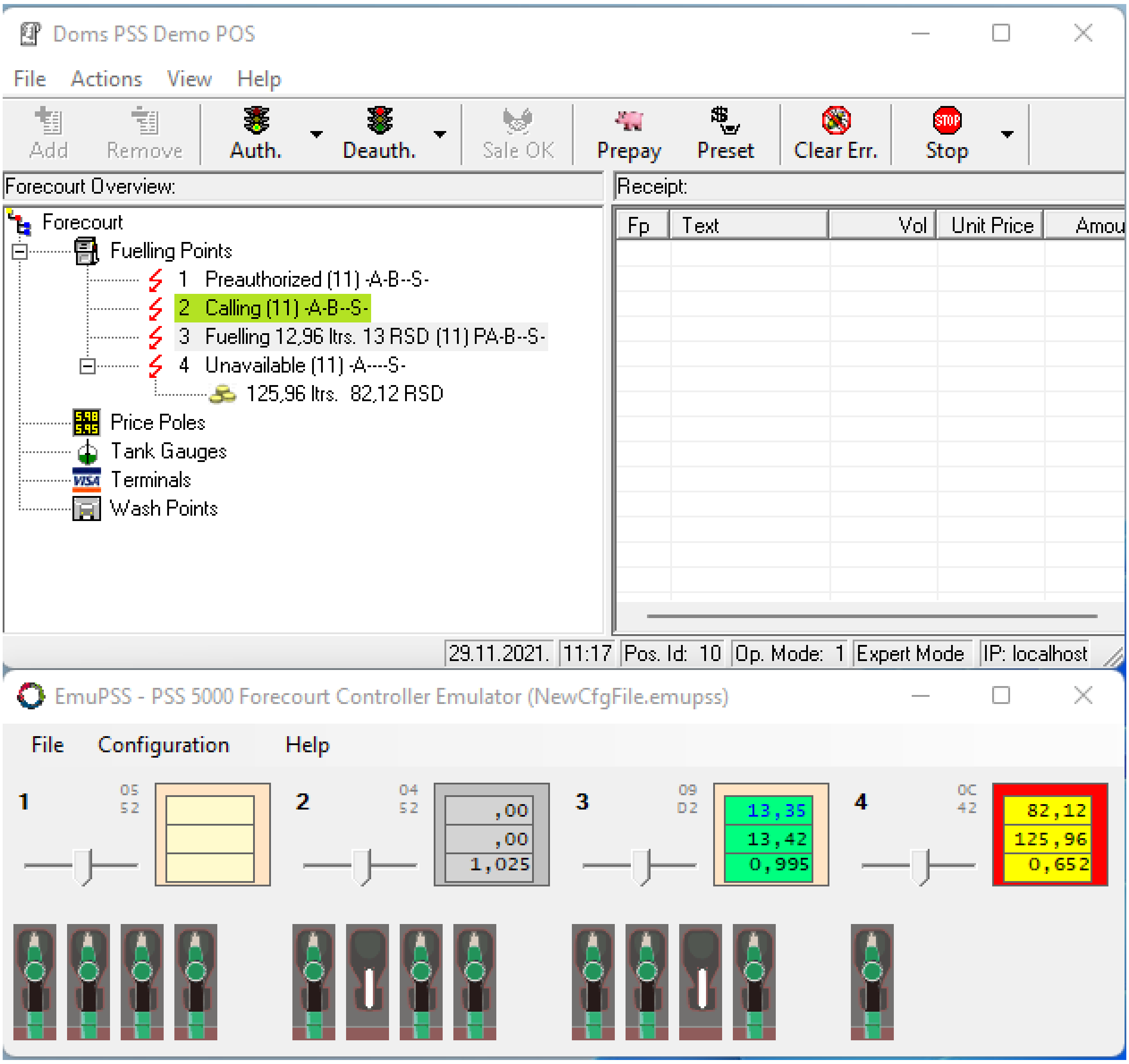
Preset Money or Volume

Type
- ● Money
- ○ Volume
- ○ Price Group

Value: 25

29.11.2021. | 11:16 | Pos. Id: 10 | Op. Mode: 1 | Expert Mode | IP: localhost

There is a preset option (volume or money) for authorizing fueling points. The fueling point must be in Idle state for that function to succeed. Select fueling point in the Demo Pos and click on Preset button, fill the form and click OK.



Forecourt Overview:

```
Forecourt
  Fuelling Points
    1  Preauthorized (11) -A-B--S-
    2  Calling (11) -A-B--S-
    3  Fuelling 12,96 ltrs. 13 RSD (11) PA-B--S-
    4  Unavailable (11) -A----S-
         125,96 ltrs.  82,12 RSD
  Price Poles
  Tank Gauges
  Terminals
  Wash Points
```

Receipt:

Fp	Text	Vol	Unit Price	Amou

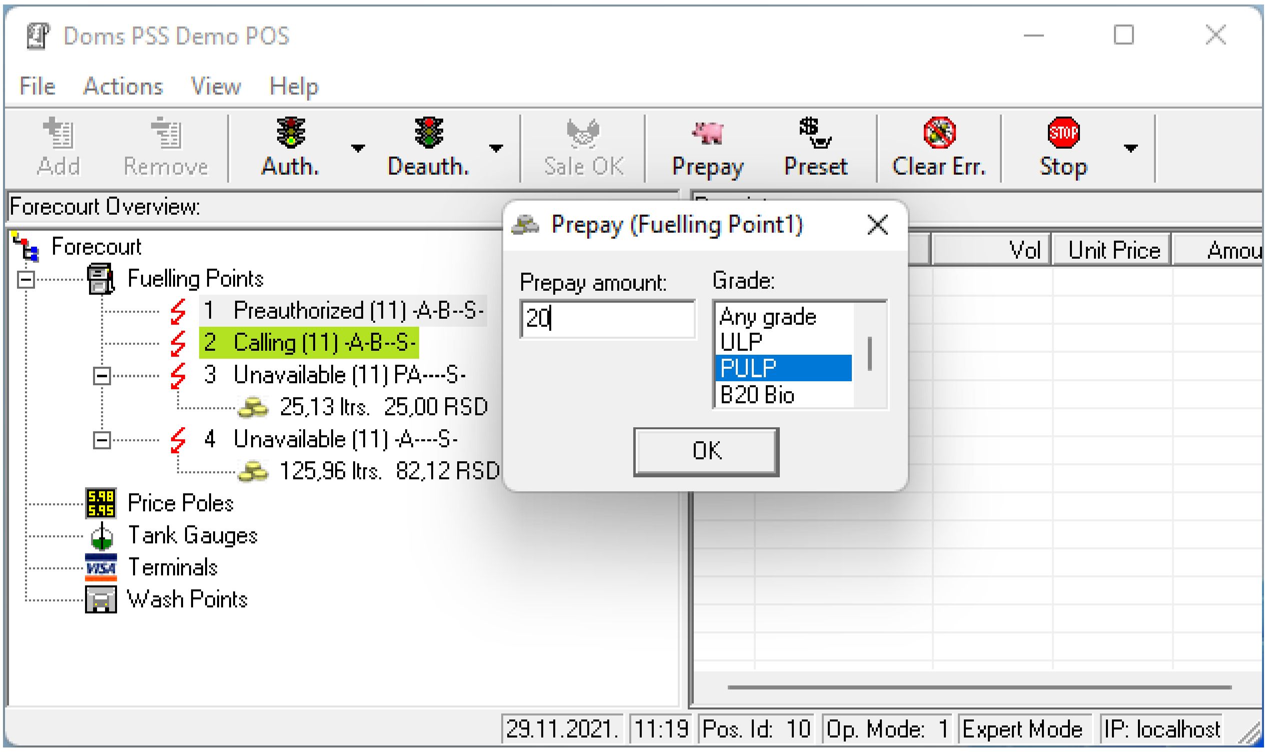
29.11.2021. | 11:17 | Pos. Id: 10 | Op. Mode: 1 | Expert Mode | IP: localhost

EmuPSS - PSS 5000 Forecourt Controller Emulator (NewCfgFile.emupss)
File
Configuration
Help

```
1  05 52                 2  04 52        3  09 D2         4  0C 42
                              ,00             13,35            82,12
                              ,00             13,42           125,96
                            1,025             0,995            0,652
```

Fueling point 3 is preset with 25 (money), meaning the dispensing will stop when the money amount exceeds the preset value. The nozzle must be replaced manually for the transaction to finish. The indicator for money has blue foreground color, indicating the preset value present.

2.2.5. Prepay Fuelling Point



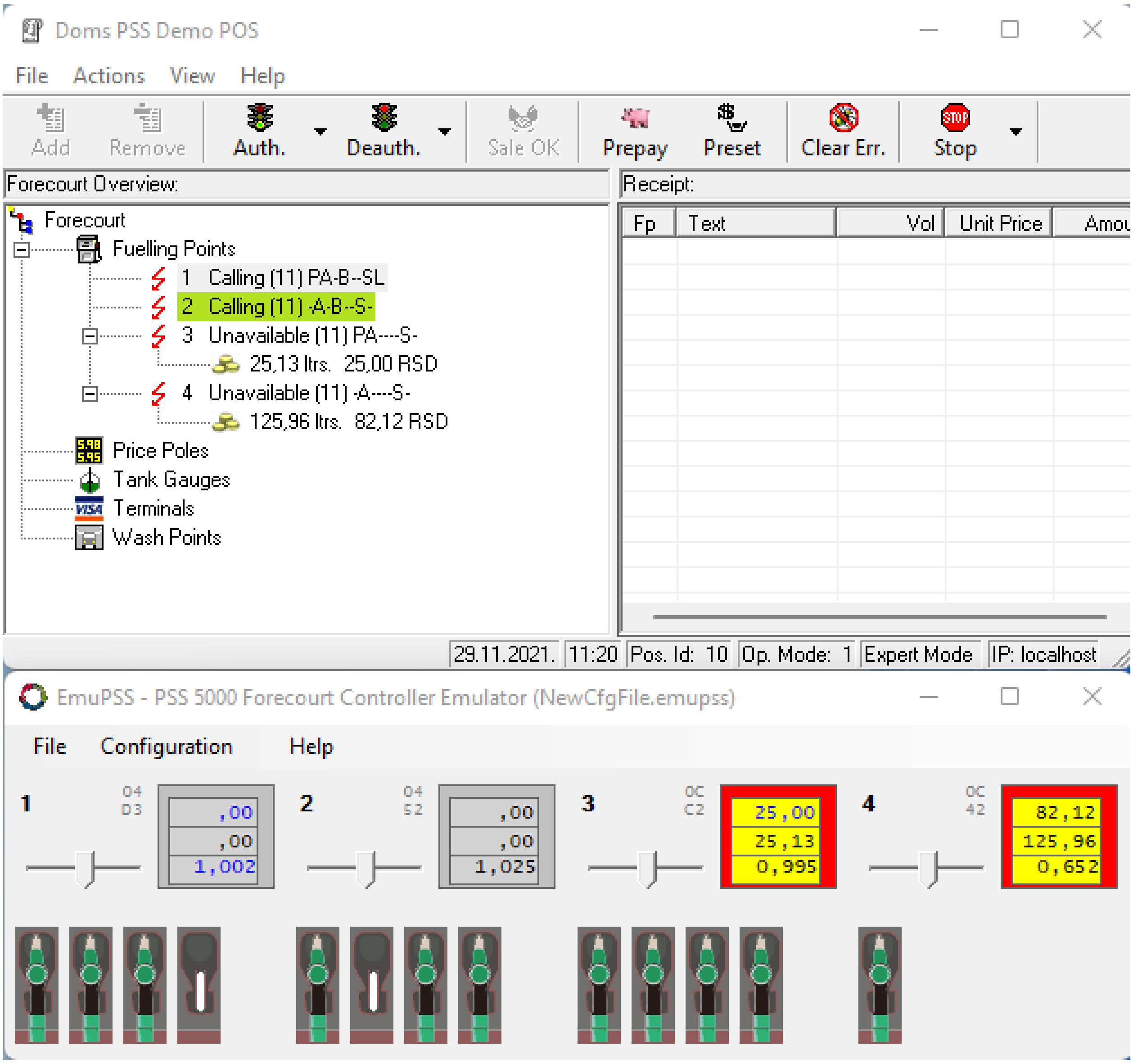
1 Preauthorized (11) -A-B--S-
2 Calling (11) -A-B--S-
3 Unavailable (11) PA----S-
25,13 ltrs. 25,00 RSD
4 Unavailable (11) -A----S-
125,96 ltrs. 82,12 RSD

Prepay amount: 20

Grade: Any grade, ULP, PULP (selected), B20 Bio

29.11.2021. | 11:19 | Pos. Id: 10 | Op. Mode: 1 | Expert Mode | IP: localhost

Prepay is similar to money preset, but with several important distinctions. First, the grade option is selected. This action may be activated regardless of the state of the fueling point.



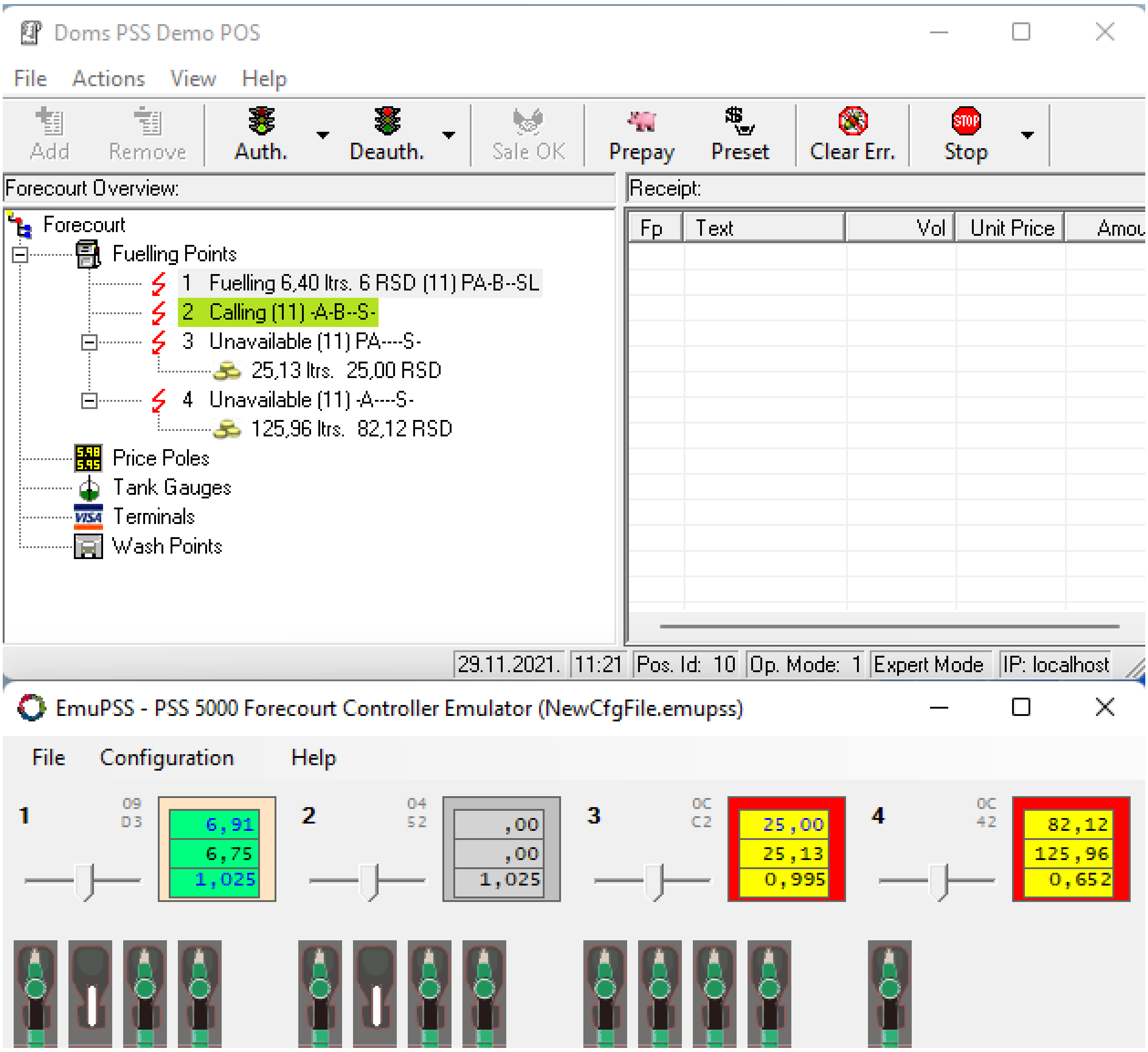
Forecourt
- Fuelling Points
  - 1 Calling (11) PA-B--SL
  - 2 Calling (11) -A-B--S-
  - 3 Unavailable (11) PA---S-
    - 25,13 ltrs. 25,00 RSD
  - 4 Unavailable (11) -A---S-
    - 125,96 ltrs. 82,12 RSD
- Price Poles
- Tank Gauges
- Terminals
- Wash Points

29.11.2021. | 11:20 | Pos. Id: 10 | Op. Mode: 1 | Expert Mode | IP: localhost

EmuPSS - PSS 5000 Forecourt Controller Emulator (NewCfgFile.emupss)
File
Configuration
Help
1
04
D3
2
04
52
3
0C
C2
4
0C
42

1	2	3	4
,00	,00	25,00	82,12
,00	,00	25,13	125,96
1,002	1,025	0,995	0,652

Fueling point 1 is now prepaid. If the nozzle of non-matching grade is lifted, the state is Calling and dispensing does not start.


Doms PSS Demo POS
File Actions View Help
Add Remove Auth. Deauth. Sale OK Prepay Preset Clear Err. Stop
Forecourt Overview:
Receipt:
Fp Text Vol Unit Price Amou

Forecourt
Fuelling Points
1 Fuelling 6,40 ltrs. 6 RSD (11) PA-B--SL
2 Calling (11) -A-B--S-
3 Unavailable (11) PA----S-
25,13 ltrs. 25,00 RSD
4 Unavailable (11) -A----S-
125,96 ltrs. 82,12 RSD
Price Poles
Tank Gauges
Terminals
Wash Points

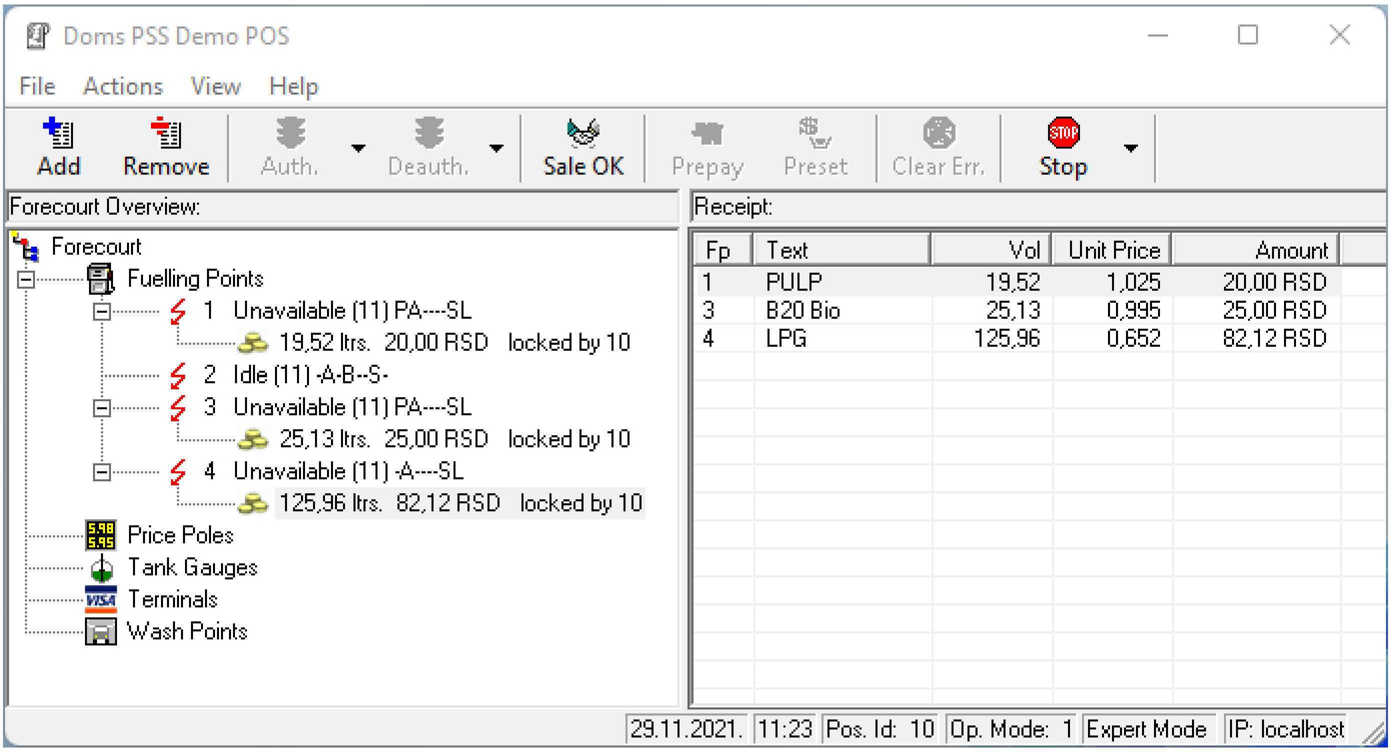
29.11.2021. | 11:21 | Pos. Id: 10 | Op. Mode: 1 | Expert Mode | IP: localhost

EmuPSS - PSS 5000 Forecourt Controller Emulator (NewCfgFile.emupss)
File Configuration Help

1	09 D3	6,91 6,75 1,025	2	04 52	,00 ,00 1,025	3	0C C2	25,00 25,13 0,995	4	0C 42	82,12 125,96 0,652

The wrong nozzle replaced, correct nozzle lifted, and dispensing starts until preset money is exceeded (or nozzle is manually replaced before that).

2.2.6. Clearing Transactions



Forecourt Overview:

- Forecourt
  - Fuelling Points
    - 1 Unavailable (11) PA---SL
      - 19,52 ltrs. 20,00 RSD locked by 10
    - 2 Idle (11) -A-B--S-
    - 3 Unavailable (11) PA---SL
      - 25,13 ltrs. 25,00 RSD locked by 10
    - 4 Unavailable (11) -A---SL
      - 125,96 ltrs. 82,12 RSD locked by 10
  - Price Poles
  - Tank Gauges
  - Terminals
  - Wash Points

Receipt:

Fp	Text	Vol	Unit Price	Amount
1	PULP	19,52	1,025	20,00 RSD
3	B20 Bio	25,13	0,995	25,00 RSD
4	LPG	125,96	0,652	82,12 RSD

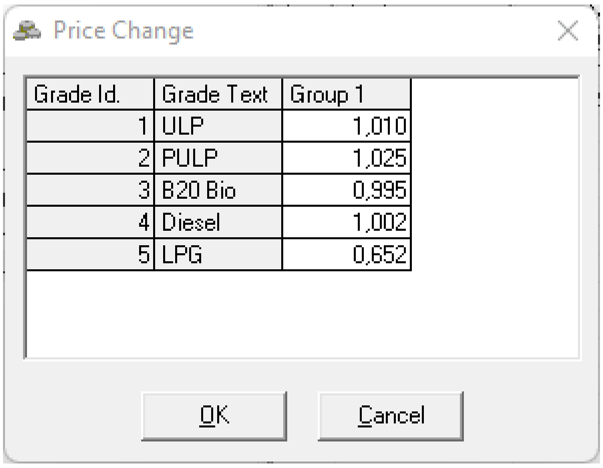
29.11.2021. | 11:23 | Pos. Id: 10 | Op. Mode: 1 | Expert Mode | IP: localhost

To clear the existing transactions, drag and drop them to the receipt list on the right side in the Demo Pos form. When put on receipt, they are locked. No other POS client can unlock or lock an already locked transaction. It is the way to prevent double billing for the same dispensing. For this to work user must ensure that each client connects with a different POS ID.

When a receipt is ready, pressing the `SALE OK` button on Demo POS clears the transactions in the receipt, and fueling points switch to Idle state.

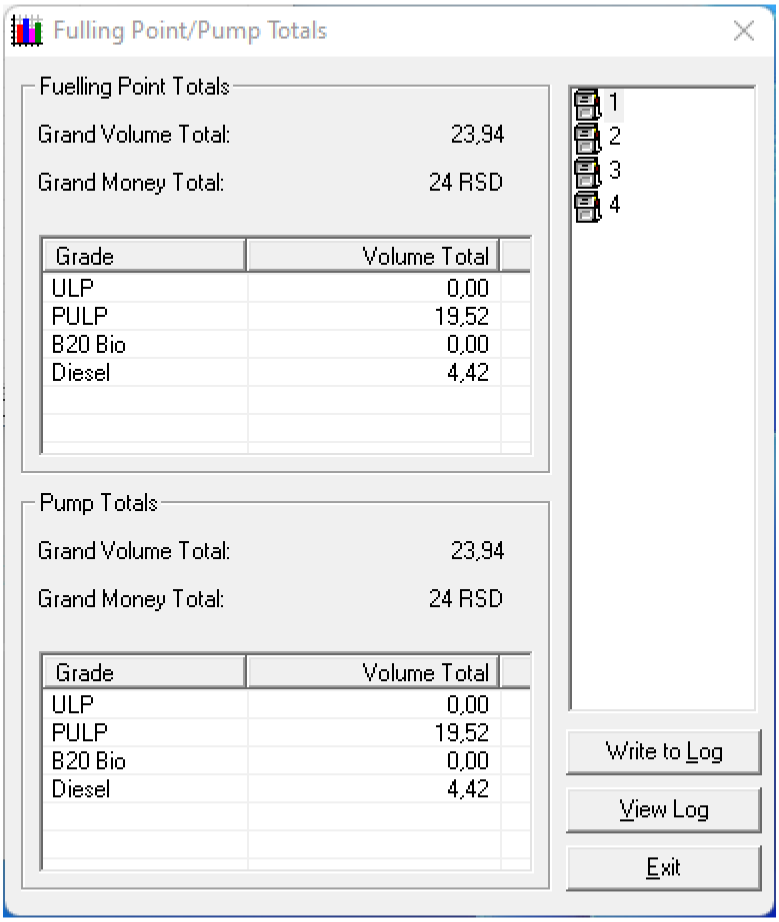
It only a basic work procedure simulation. You are free to investigate yourself and try different scenarios.

2.2.7. Other DOMS functions



Grade Id.	Grade Text	Group 1
1	ULP	1,010
2	PULP	1,025
3	B20 Bio	0,995
4	Diesel	1,002
5	LPG	0,652

Demo POS may be used to change prices. Select an option from the menu, and fill the new prices set. New prices go into effect immediately.
If you hover the mouse above nozzles in EmuPSS form, it will show you the grade name and the actual price.



Fuelling Point Totals

Grand Volume Total: 23,94

Grand Money Total: 24 RSD

Grade	Volume Total
ULP	0,00
PULP	19,52
B20 Bio	0,00
Diesel	4,42

Pump Totals

Grand Volume Total: 23,94

Grand Money Total: 24 RSD

Grade	Volume Total
ULP	0,00
PULP	19,52
B20 Bio	0,00
Diesel	4,42

Totalizers are also available, and Demo POS can be used to check them. DOMS distinguish two different types of totals. Fueling point totals are usually maintained by DOMS itself, and Pump totals are maintained in physical dispensers. The reason for having them both is that some types of dispensers does not allow totals to be read by forecourt controllers, or have only mechanical totals to be read by forecourt controllers, or have only mechanica totalizers installed.

This chapter concludes this manual.
It contains enough information to get you up and running with your client application connected to EmuPSS as a DOMS and Forecourt emulator.