DVB for ALL!

TROPHY

INSTRUCTION MANUAL

DVB_BILLING_V.5
subscriber accounting software

Instruction Manual

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1. MAIN INFORMATION

1.1. DVB-BILLING Software and Statistics Billing

The DVB-BILLING program is designed to manage the subscriber base and manage subscriber decoders in large commercial broadcasting DVB networks.
The DVB-BILLING software comes with a Statistics Server. Depending on the sales order, the Statistics Server can be either the simplest (demo version) or the most complex, up to a group of servers assembled by cluster technology.

The main functions of the statistics server are:
- management of subscriber decoders;
- keeping records of subscribers' payments;
- feed to the EPG data stream;
- input of service information PAT, PMT, CAT, TSDT, NIT, SDT, EIT, TDT (formed in full compliance with the specification EN 300 468) into the transport stream;
- creation of various reports on payments.

Additional functions of the Statistics Server are:
- As part of the TROPHY base station, the Server takes full control of the DB100, DB800 and DB800CI streamers. The data generated by the Statistics Server is sent to the streamers using the dvbserver program.

The program is launched as follows:

cd / dvbserver / bin
killall camserver
./camserver dvbX, where X is the stream number.
Repeat the sequence of commands on all threads.

- Displaying real-time monitoring data of the streamers;
- Integration of the Statistics Server with the system of bank payment terminals.

How is everything arranged inside?

The system is installed on the Linux OS Debian 4.0.
The main components of the system are located in the /opt directory. Firebird is database. The database is located /var/db. Some components of the system are located in the /home/palich/bin/ directory, namely:
- net_cam_server - the subscription server with its configuration camserver.conf file;
- the generator of service tables si_gen with its configuration file si_gen.conf;
- parser xmlTV files with TV program xmlreadEPG;
- scripts for updating programs and auxiliary files.

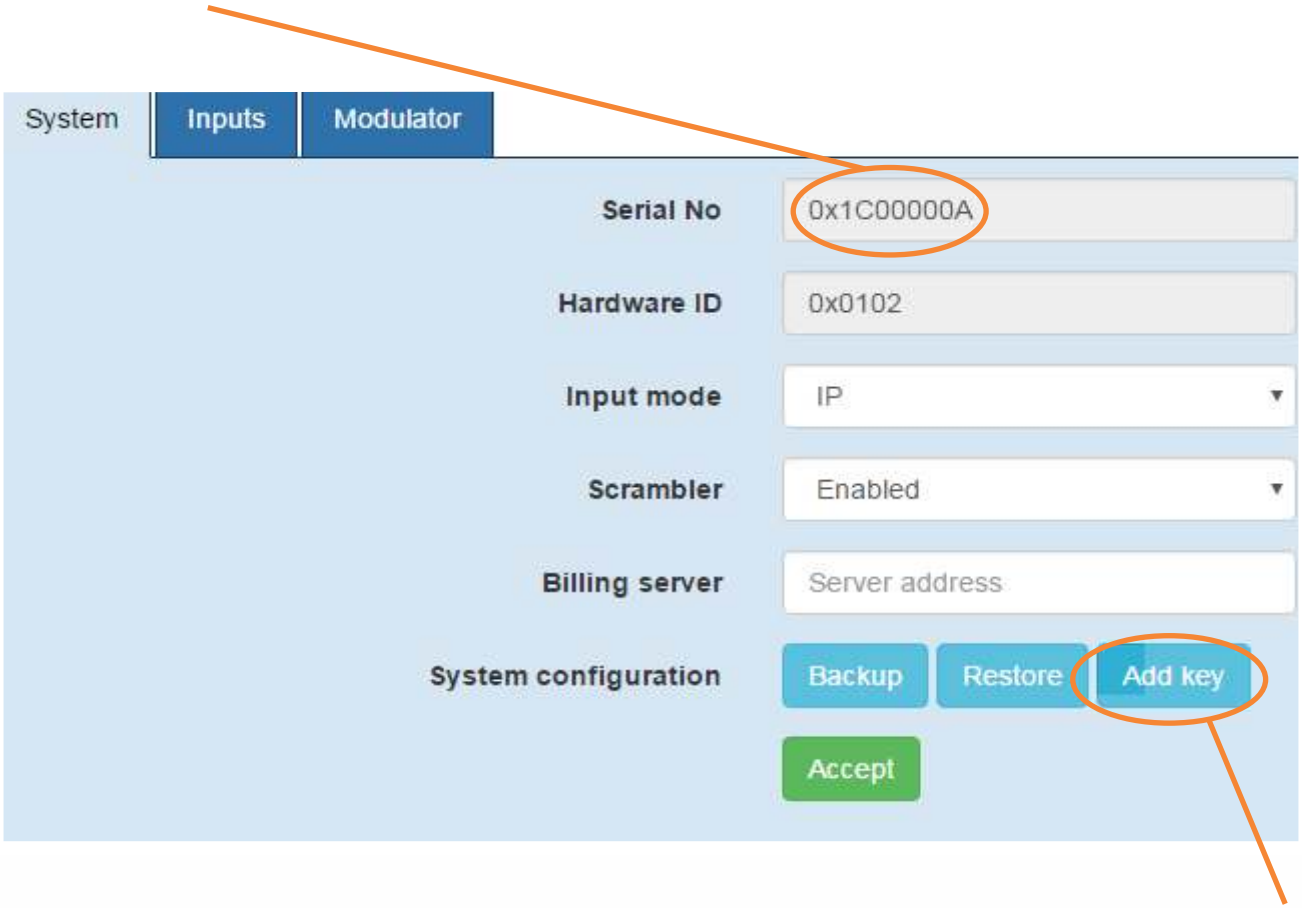
1.2. Main parameters of DVB-BILLING Subscribers Accounting Program:

Interface Language	English, Russian
Number of channels served	No restrictions
Number of serviced packets	No restrictions
Number at a time served customers	No restrictions
Information about subscribers	Contract number, Date of Contract, name, phone, city, street, house, apartment, e-mail, notes
The ability to quickly add client decoder number and installation the required application for a certain period	Yes
Automatic addition of the Contract Date and Registration data after assigning the decoder number	Yes
Automatic decoder shutdown when zero balance on subscriber's account	Yes
When you make a payment, the program instantly makes money to the client on the account and shows on what number is paid.	In VIEW mode
Ability to perform a quick search of customers by any criterion specified in the search list	Yes
Ability to print reports	Yes
Ability to enter different tariffs	Yes
The possibility of temporary disconnection and automatic activation at a specified time	Yes
Types of reports:	For payments for the period, for services, for tariffs, for balance, for viewing channels, for disabled subscribers for a certain date
Sending address messages	Up to 120 characters
Automatic sending of address messages about the need to deposit money into the account	Yes
Interface type	WEB
Architecture type	Open

1.3. TROPHY-ACCESS Conditional Access System (CAS), built-in modulator/multiplexer

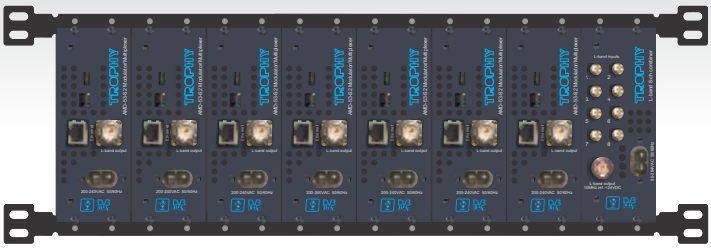
The TROPHY-ACCESS scrambler is built into the FPGA image of the modulator/multiplexer. In order for the TROPHY-ACCESS scrambling function to be available in the modulator you must purchase a special license:
http://dvb4all.com/?product=software-license-to-enable-trophy-access-scrambler-solution

After confirming the payment, the unique key, which is generated based on the serial number of your modulator/multiplexer, is sent to the client.
The serial number is listed in the first line of the SYSTEM menu of the modulator WEB interface.

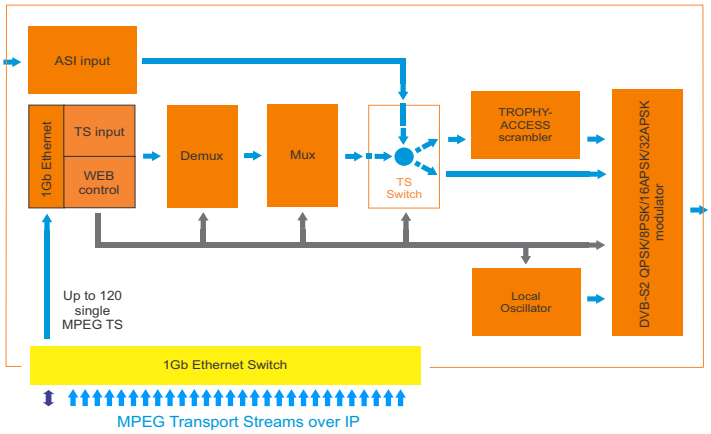


After receiving the key, you can enter its number in the SYSTEM menu by clicking the "Add key" button and entering the key in the appeared window.

1.4. Modulators (streams) and groups (ports).



Modulators/multiplexers are grouped together depending on the features of the broadcast. For example, it is necessary to transmit the streams in different ranges or in different standards. To do this, separate groups of modulators are created.
A group located on the same port number can have any number of modulators.
All the modulators on the same port number have the same subscription information. The system can be up to 10 ports with numbers 0 ... 9.



You assign the port number to which the modulator/ multiplex belongs, based on the scheme of tariff plans and channels viewing rights. When you install a Head-End with several modulators, you will need to plan which programs will be included in the packets, then distribute them over the streams (modulators), subscription ports, etc. In the first step, simply assign port "0" to all modulators / multiplexers.

Example:

10.10.10.21: 0 # modulator 10.10.10.21 (modulator IP-address) belongs to the group 0

10.10.10.22: 0 # the modulator 10.10.10.22 belongs to the group 0

10.10.10.23: 1 # the modulator 10.10.10.23 belongs to the group 1

10.10.10.24: 2 # the modulator 10.10.10.24 belongs to the group 2

2. TROPHY-ACCESS CAS

The TROPHY-ACCESS Conditional Access System developed without the CSA algorithm, which provides high reliability and the absence of the possibility of pirated viewing, called Cardhsaring. The scrambler is integrated into the hardware of modulators and IP/ASI scrambler of the TROPHY trade mark.
The Statistics Server and the DVB-BILLING SoftWare provide the ability to manage the subscription. The decoder is automatically disabled at zero balance in the subscriber account number. Subscription data is submitted to MODULATOR / MUX via Ethernet or ASI.

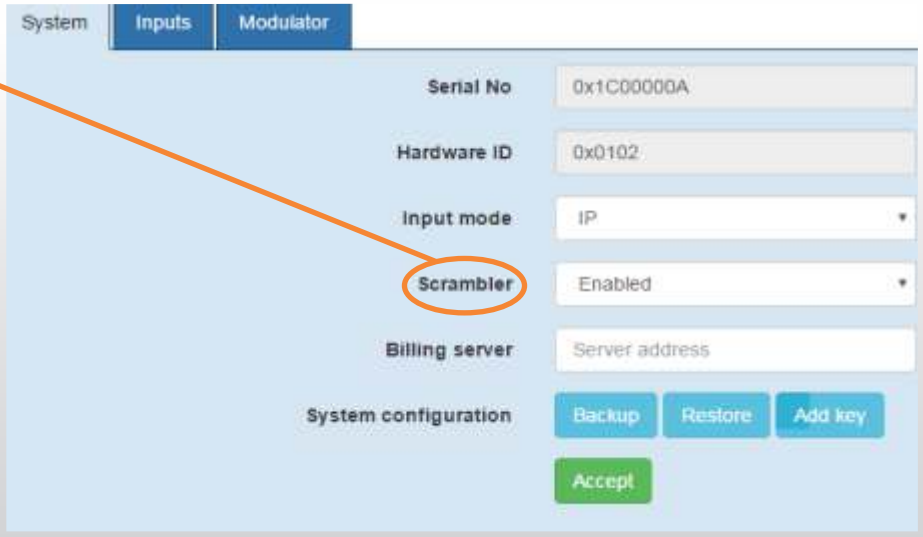
Basic parameters of the decoder:

Options	
Type of CAS	Cardless, doesn't match CSA algorithm
Polynomial length	2048 bits
The size of the decoder address field	32 bits
Quantity of addressable decoders	4,294,967,295
The number of serviced channels	without any restrictions
The number of packets serviced	without any restrictions
Automatic disconnection of the decoder	with zero balances in the account

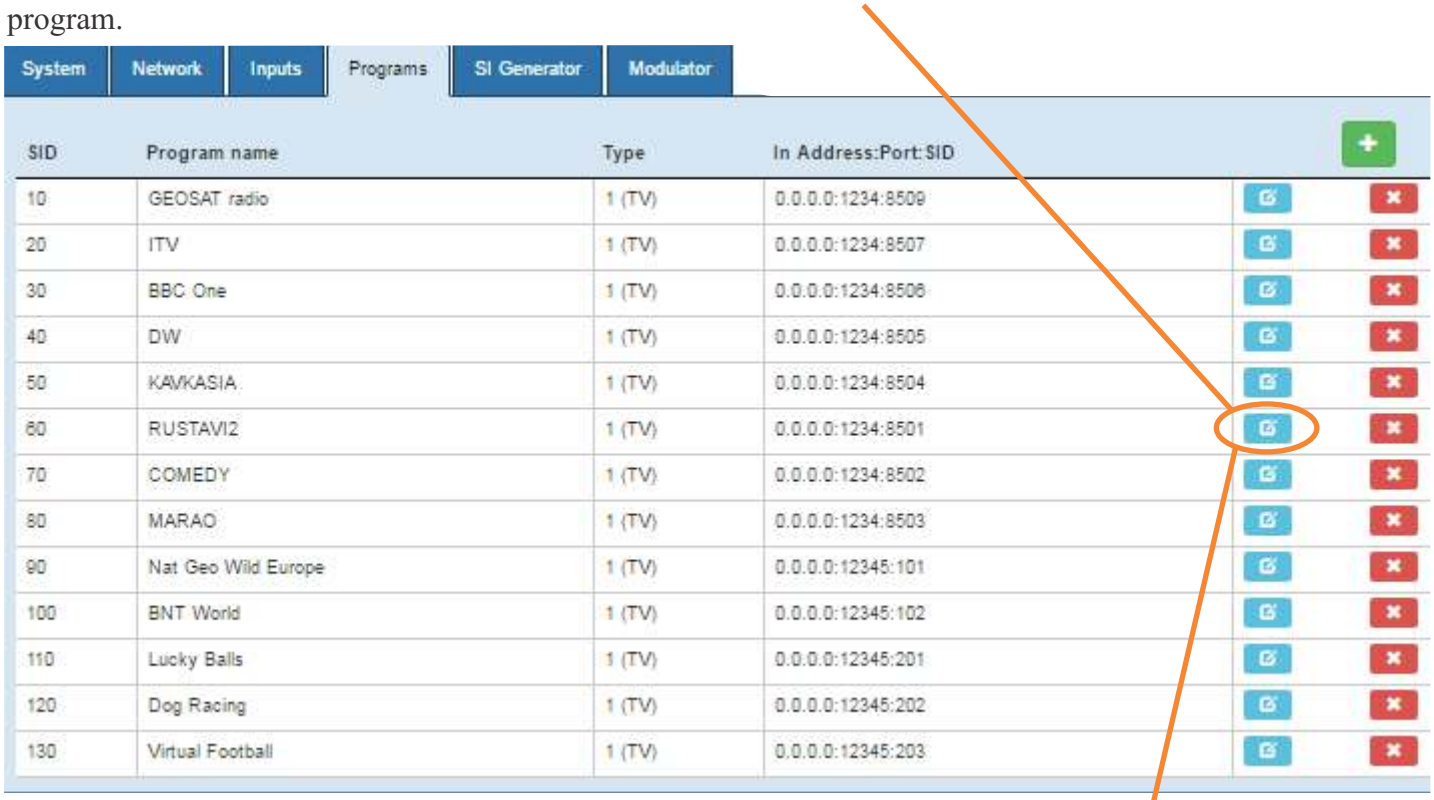
2.1. Enabling Scrambling Mode

• The modulator/multiplexer can transmit programs in an FTA or scrambled form. In order for the program to become scrambled you must to enable the scrambling function in modulators.

In the SYSTEM menu,
in the line SCRAMBLER
specify the ENABLED mode.

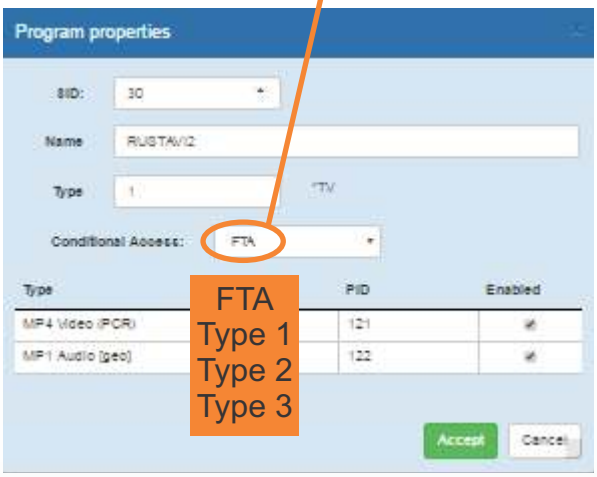


• In the setting of program that you want to scramble, you need to specify that this program should be closed and select the encoding type in the CONDITIONAL ACCESS field (Type 1, Type 2 or Type 3).
To do this, in the PRORGAMS menu, click the PROGRAM PROPERTIES icon in the line of the corresponding program.



SID	Program name	Type	In Address:Port:SID
10	GEOSAT radio	1 (TV)	0.0.0.0:1234:8509
20	ITV	1 (TV)	0.0.0.0:1234:8507
30	BBC One	1 (TV)	0.0.0.0:1234:8506
40	DW	1 (TV)	0.0.0.0:1234:8505
50	KAVKASIA	1 (TV)	0.0.0.0:1234:8504
60	RUSTAVI2	1 (TV)	0.0.0.0:1234:8501
70	COMEDY	1 (TV)	0.0.0.0:1234:8502
80	MARAO	1 (TV)	0.0.0.0:1234:8503
90	Nat Geo Wild Europe	1 (TV)	0.0.0.0:12345:101
100	BNT World	1 (TV)	0.0.0.0:12345:102
110	Lucky Balls	1 (TV)	0.0.0.0:12345:201
120	Dog Racing	1 (TV)	0.0.0.0:12345:202
130	Virtual Football	1 (TV)	0.0.0.0:12345:203

The modulator sends to the decoders the information about subscription that allows or prohibits the viewing of scrambled programs.



2.2. Mask and types of scrambling

Subscription allows the decoder to descramble programs depending on the specified mask. The mask is a binary number, the low bit of which corresponds to the first type of scrambling, and the high bit corresponds to the third type.
A unit in the corresponding bit indicates that this decoder is allowed to descramble this type of encoding.
For each decoder, a mask is assigned for each group. In this way it is possible to implement separate management of program viewing rights.
Decoders are described in the decoders.txt file. Each line describes one decoder in the form:
decoder number: mask.
The string to the right of the # character is a comment.
Spaces are ignored.

Example

Example of decoders.txt file.
This is a comment
12345: 111 111 111
12346: 010 100 000
12347: 000 011 111
12348: 000 000 000

12348 : 000 000 000
----- --- --- ---
  | | | |
  | | | Group mask 0
  | | Group mask 1
  | Group mask 2
  |
  Decoder number

A subscriber with a 12345 decoder will be able to watch all programs on all streams

A subscriber with a decoder 12346 will be able to watch:
- on modulators of group 0 (10.10.10.21 and 10.10.10.22) FTA programs only;
- on modulators of group 1 (10.10.10.23) programs with encoding type 3, as well as FTA;
- on modulators of group 2 (10.10.10.24) programs with encoding type 2, and also FTA.

A subscriber with a decoder 12347 will be able to watch:
- on the modulators of group 0 (10.10.10.21 and 10.10.10.22) all programs;
- on the modulators of group 1 (10.10.10.23) programs with the types of encoding 1 and 2, as well as FTA;
- on modulators of group 2 (10.10.10.24) FTA programs only.

A subscriber with a decoder 12348 will only be able to view FTA programs on all threads.

2.3. Decoder number and geographic zone

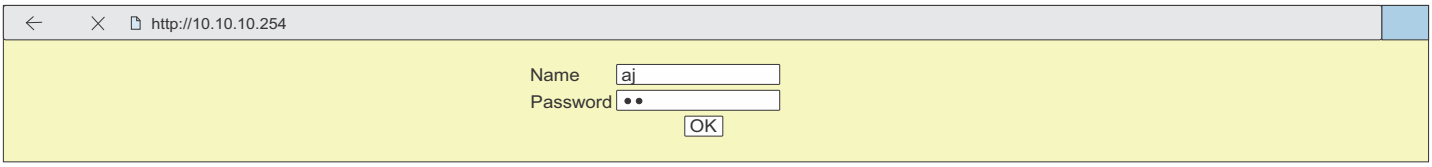
The full decoder number consists of 2 parts - the zone number and decoder number in this zone.
Each provider using TROPHY-ACCESS CAS receives a unique geographic zone number.
For example 42-12345 (Zone No.42, decoder No.12345). The subs_send program comes with a preset zone number and the decoders.txt file specifies the decoder number without a zone (in this case - 12345).

3. INSTRUCTIONS FOR WORKING WITH DVB-BILLING PROGRAM

3.1. Initial system setup

Work with the program is carried out using the WEB-interface.
The default Statistics Server address is 10.10.10.254.
Name: root
Password: 12345678
We recommend that you change the name and password to confidential.

Start any WEB browser and enter http://10.10.10.254 in the address bar
User name "aj"
Password "aj"



3.1.1. The Main Menu Review

Users	User List	View a list of subscribers with details, a list of decoders, a schedule for decoders, the current balance of the account, etc.
	Search	Search for a subscriber by one or more criteria of menu
	New	New subscriber registration.
	Change	Change the subscriber's credentials, assign it decoders, schedules for decoders, a price package for the decoder, send messages to the receiver.
	Delete	Removing a subscriber from the system. Completely and forever
Payments	Courses	System Accounting Rate
	Payments	Enter and edit payments for the current subscriber.
	Report	Report on the receipt of payments for the period.
Channels /Packets	Streams	Managing broadcasting streams list
	Channels	Managing the list of broadcast channels
	Streams< -Channels	Assignment of channels to broadcast streams
	Channels <-PIDs	Assignment of PIDs for broadcast channels
	Broad-casting	View the complete broadcast table for all streams
	Decoders	Managing the list of decoders
	Viewing	View the status of the decoder on the threads (debugging)
	Stat-Packet	View statistics of signed decoders by streams

The Main Menu review (continue)

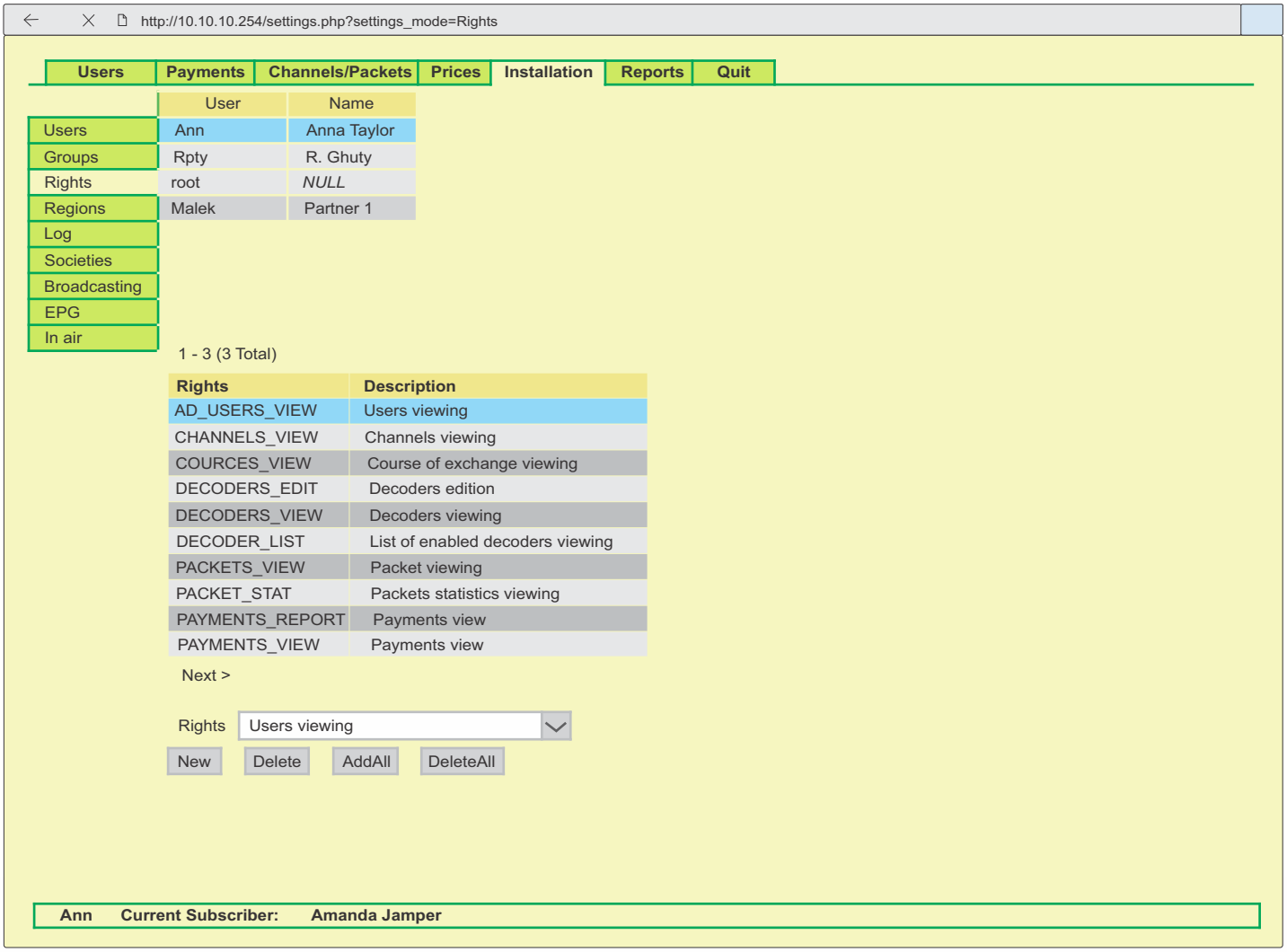
Prices	Prices	Management of price policy. Management of the list of price packages.
	Prices<-Streams	Assignment to price packets of broadcast streams
	Viewing	Reserve
Install-ation	Users	Manage users, rights, regions, messages, EPG. Manage the list of users of the system, the assignment of filters for the division of the subscriber base, and the list of price packages. Change passwords.
	Groups	Manage the list of user groups.
	Rights	Assigning rights to users of the system.
	Regions	Manage the list of regions.
	Logs	Viewing and clearing the system log.
	Messages	View and delete messages sent to subscriber receivers.
	Broad-casting	List of broadcast channels with EPG, the number of EPG, events in the database and the date of the last EPG event.
	EPG	The EPG editor.
	Now in the Air	Displays the list of programs that are now on the air, broadcast channels with EPG events on these channels.

Main Menu Review (ending)

Reports	Who will be disabled	This report displays subscribers who will be disconnected by the system after 3 days (by default). The number of days before disconnection can be changed.
	Channels viewing	The report on viewing by subscribers of broadcast channels, for any period, by default - for today.
	Balance	Balance for current subscribers, account balance and credit.
	Balance 2	Extended balance for subscribers per month. If in the "Period" field is any date of the current month, the balance is issued as of now. If the "Period" field indicates a date for another month, a balance is displayed as of the last day of this month.
	Users	Report on the number of subscribers, switched off and registered decoders (by region).
	Services	Services for the current subscriber, for all decoders registered by him, per day, per period.
	Prices	Report on subscribers with their price packages and decoder numbers with the possibility of filtering by the price package and the region.
Quit		Sign Out

3.1.2. User Rights.

In the main menu (Installation) -> (Rights), select the user "Ann" and click for the initial work "AddAll". Then we exit the main menu (Exit) and log in again under the user name "ann".



Why do you need different user rights?
You have operators or partners who should not be able to change, for example, broadcasting frequencies. For this, there is a system of differentiation of rights.
Each user can be assigned rights from the list.
To do this, select the necessary rights and add them to the right user at your discretion.

ATTENTION !! Rights are re-read only when the user logs on to the system. That is, if you have changed your rights, but nothing has changed, then you just need to go out and enter again.

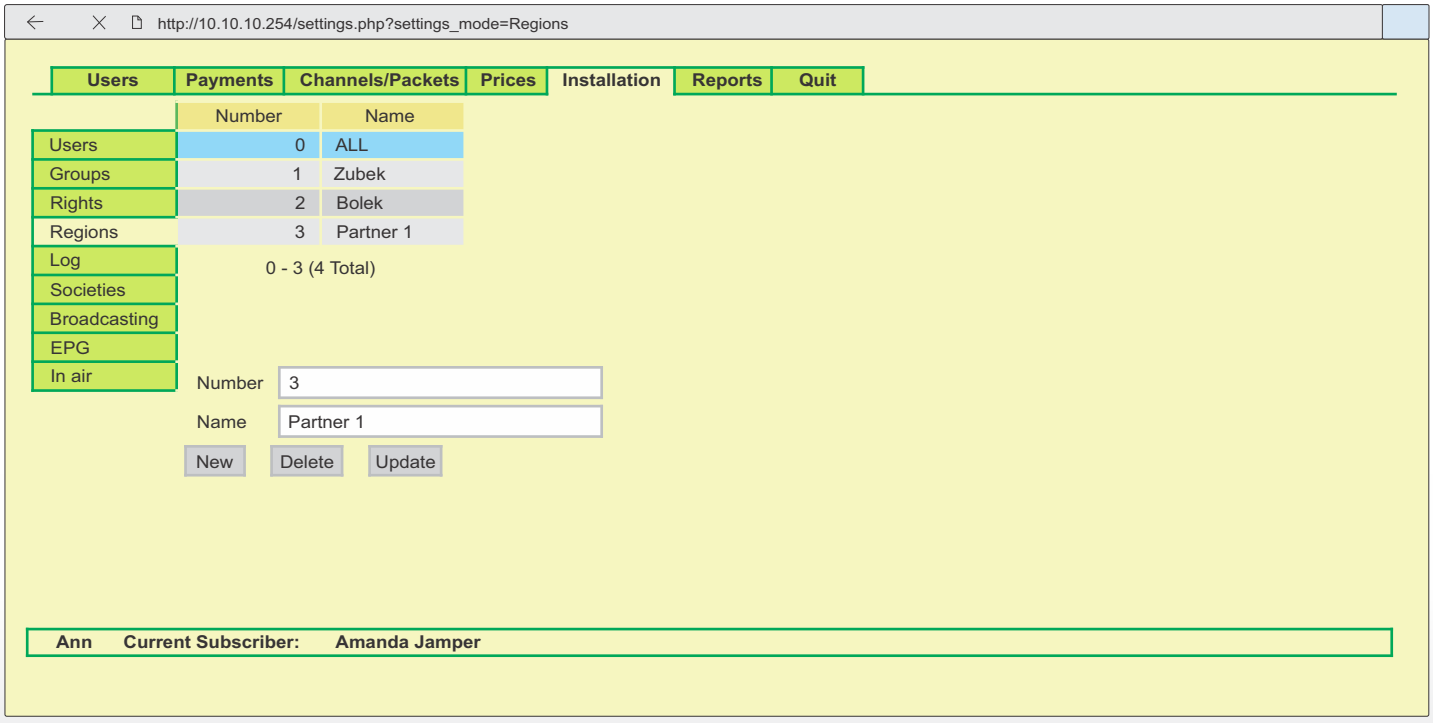
3.1.3. Filtering data in the system

To begin with, why is this necessary?
For example, you are a Cable provider. And you have a partner who builds his cable network and, for whatever reason, can not or does not want to put his base station. But..!!! is ready to purchase from you the content (your programs, from your HeadEnd).
You naturally do not want to show it to your subscribers, your financial results are your tariffs, etc., but at the same time you do not want to accompany its subscribers themselves, enter payments for it, communicate with its customers.

To do this, you need to filter!
There are three options:
1. Filter by region
2. By user
3. By group

3.1.3.1. Filter by region

You register the region in the Main menu - (Installation-> Regions)

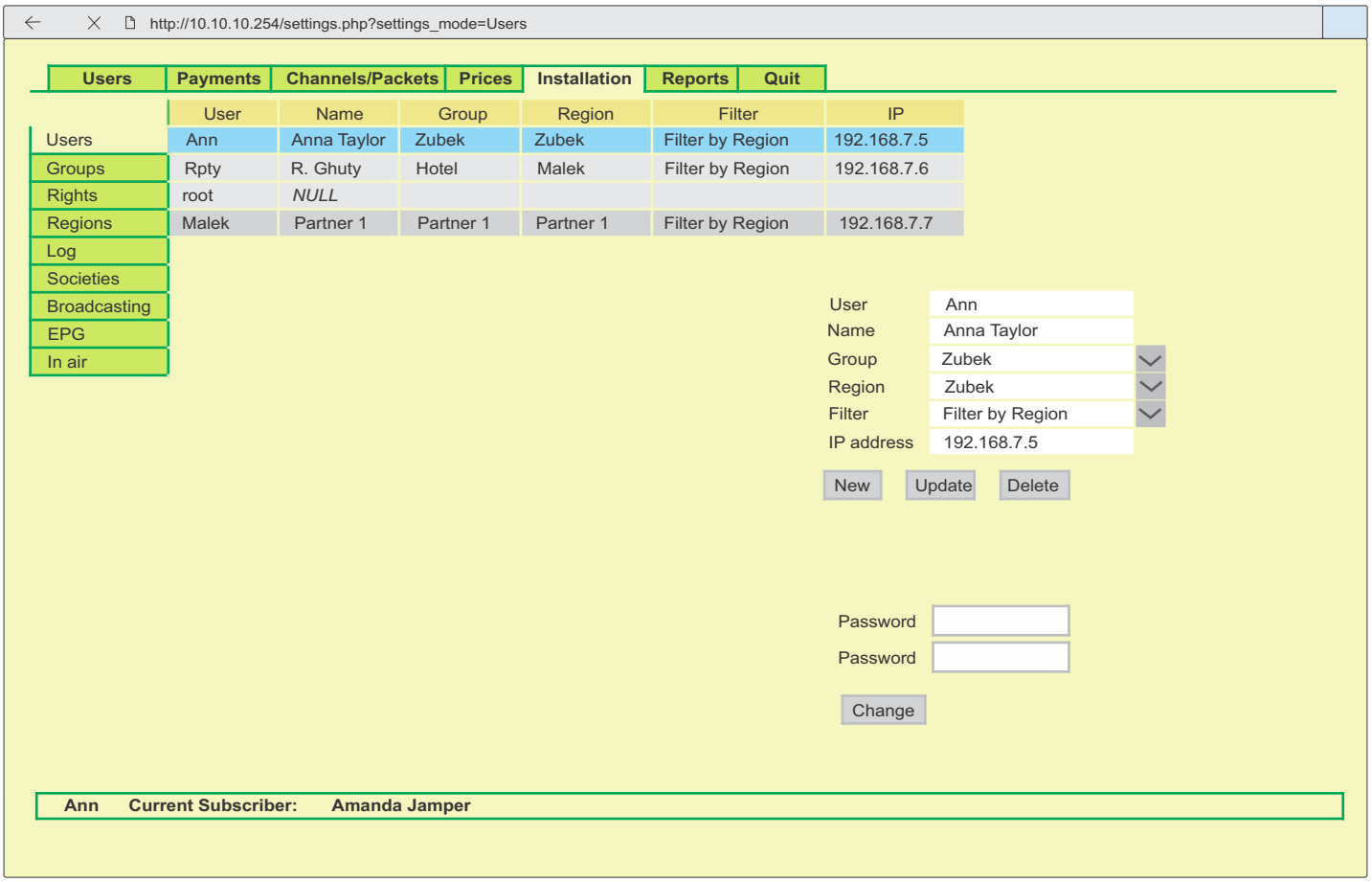


For example, register the "Partner 1" region, then register the user with the filter for the region, set the "Partner 1" region for this user, set the password for this user, and when he logs in to the system, he sees subscribers and tariff packages for which the region corresponds to "Partner 1", he has no opportunity to change the region for subscribers and tariff packages. For all reports except for the report on viewing channels, this filter is automatically superimposed. When subscriber is registered, the subscriber's region is automatically set in "Partner 1" when searching, there is also no way to select a region.

ATTENTION!! For all users in the system, the "Disconnected" tariff package is always available.

3.1.3.2. Filter by user

Let's say you are a large cable operator working in several regions, or you use the REGION field to track your development in several districts of the city of the region, etc. But you also have a partner who is ready to buy from you content with all the ensuing consequences. That is, filtering by region is not possible. We do the filtering by the owner. We register the user with the filter by the owner, this user sees only those subscribers and tariff packages that he registered himself, or for which you changed the owner manually. He himself can not change the owner and the group.
On all reports, except for the report on viewing channels, this filter is automatically superimposed.



3.1.3.3. Filter by group.

You are a very large cable operator, your partner has a whole subscriber department, in which there are several operators (Users). You want all operators of your partner to see the same data. For this, there is group filtering.
Create a group. The main menu is (Installation-> Groups), create users with a filter by group and set this group for these users.
After that, all users of this group see the same data, regardless of who exactly from users of this group registered the subscriber or the tariff package. The reports are automatically filtered by the group in addition to the channel view report. For these users there is no possibility to change the group and owner for subscribers and tariff packages.

User rights list:

USER_ADD Adding subscribers
USER_DEL Deleting Subscribers
USER_VIEW Viewing Subscribers
USER_SEARCH Search for subscribers
USER_EDIT Editing Subscribers
USER_EDIT_DET Editing Subscriber Details
USER_EDIT_DECODERS Editing subscriber decoders
USER_EDIT_SCHEDULE Editing a subscriber's schedule
USER_VIEW_DECODERS Viewing subscriber decoders
USER_VIEW_SCHEDULE Viewing a subscriber's schedule
USER_SEND_MESSAGES Sending messages to subscribers
USER_EDIT_OWNER Changing a group / owner of a subscriber

COURCES_EDIT Course Editing
COURCES_VIEW View Course

PAYMENTS_EDIT Editing payments
PAYMENTS_VIEW View payments
PAYMENTS_REPORT View payments

PACKETS_EDIT Editing packages
PACKETS_VIEW Package Viewer

CHANNELS_EDIT Editing channels
CHANNELS_VIEW Viewing channels

PCH_EDIT Editing
PCH_VIEW Look inside

DECODER_LIST View list of enabled decoders

DECODERS_EDIT Editing decoders
DECODERS_VIEW View decoders

PRICES_EDIT Price editing
PRICES_VIEW View prices

PRPT_EDIT Editing of price packages
PRPT_VIEW View price packages

AD_USERS_EDIT Editing Users
AD_USERS_VIEW Viewing Users
AD_USERS_CH_PASSWORDS Changing passwords
AD_USERS_CH_PASSWORD Change Password

REGIONS_EDIT Editing regions
REGIONS_VIEW Browse regions

PERMISSIONS_EDIT Editing user rights
PERMISSIONS_VIEW Viewing User Rights

LOGS_VIEW Log Viewer
LOGS_CLEAR Clearing logs

BR_PLAN_VIEW Viewing the broadcasting plan

EPG_EDIT Editing EPG
EPG_VIEW Viewing EPG
NOW_VIEW Viewing EPG on Air

REPORTS_OFF View report on disconnected subscribers
REPORTS_BALANCE View the balance of users
REPORTS_BALANCE_REGIONS View the balance of regions users
REPORTS_CH_USING Viewing channel usage
REPORTS_SERIVCES View services for the period
REPORTS_REGIONS View report by region
REPORTS_PRICES View a report on tariff plans

PACKET_STAT View packet statistics
REPORTS_PRICE_TYPE View by tariffs and regions

GROUPS_VIEW Views of groups
GROUPS_EDIT Editing Groups
MESSAGES_VIEW View posts

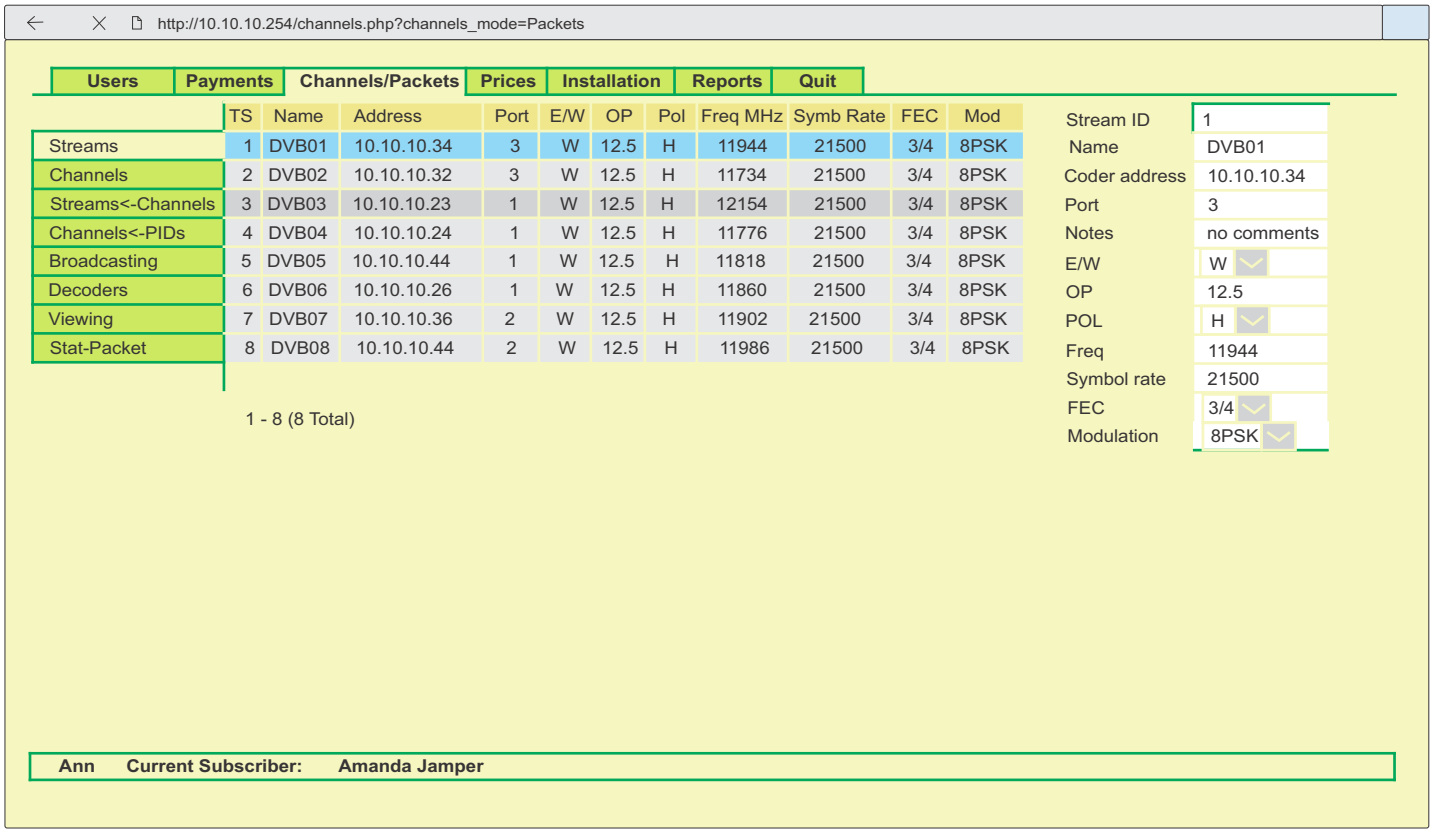
PIDS_VIEW Viewing PIDs
PIDS_EDIT Editing PIDs

3.2. Streams registration

In the main menu (Channels / Packets) -> (Streams), you must register all streams, while indicating the frequencies and parameters of the broadcast. These data are necessary for the formation of the NIT (Network Information Table).

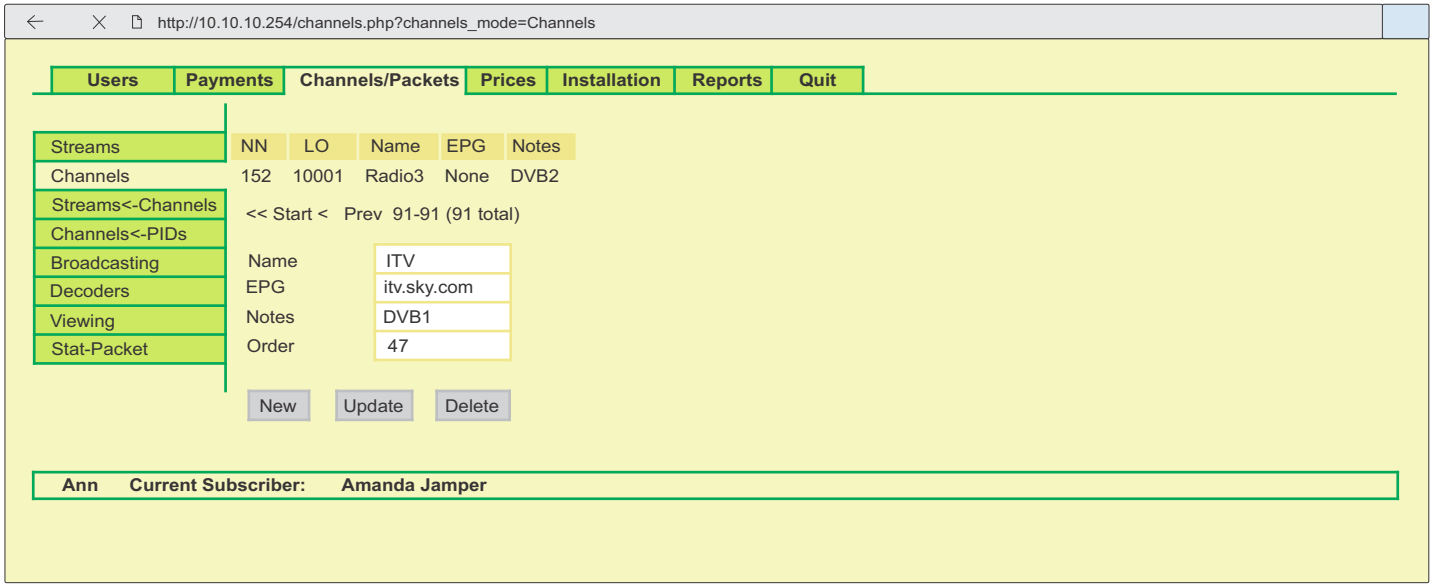
Fields E / W, OP can be left by default.

Attention! The TS (stream ID) must have a unique number.



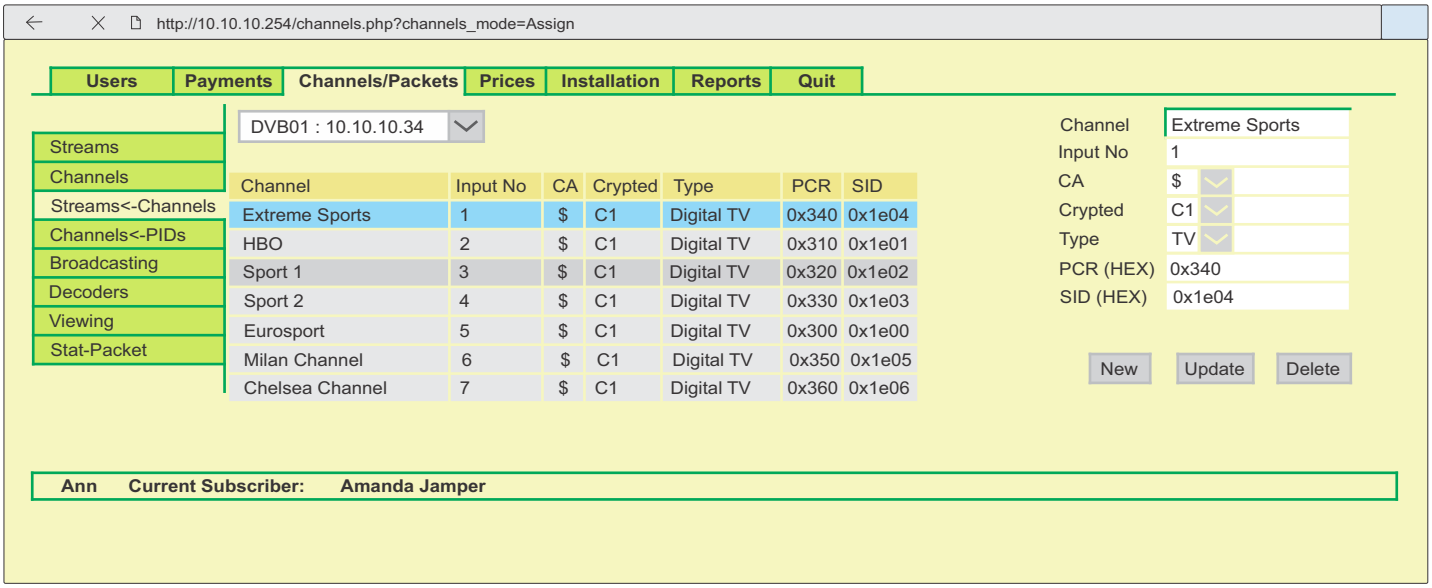
3.3. Adding channels

In the main menu (Channels / Streams) -> (Channels) add the missing channels and number the LO (Line Order) field.
The ORDER field specifies the sort order of the channel when using the TROPHY TA-1001 Set-Top-Box in the "skip tests" search mode.



3.4. Assigning channels to streams

In the main menu (Channels / Packets) -> (Streams <-Channels) assign channels to each stream with an encryption algorithm, channel type, PCR and SID.



SID is a program number unique to the flow, must not coincide with any of the other PIDs.

Video PID is calculated using the formula Remap + PN * 0x10, where PN is the service serial number in the services.conf configuration file or encoders.conf starting with 0.

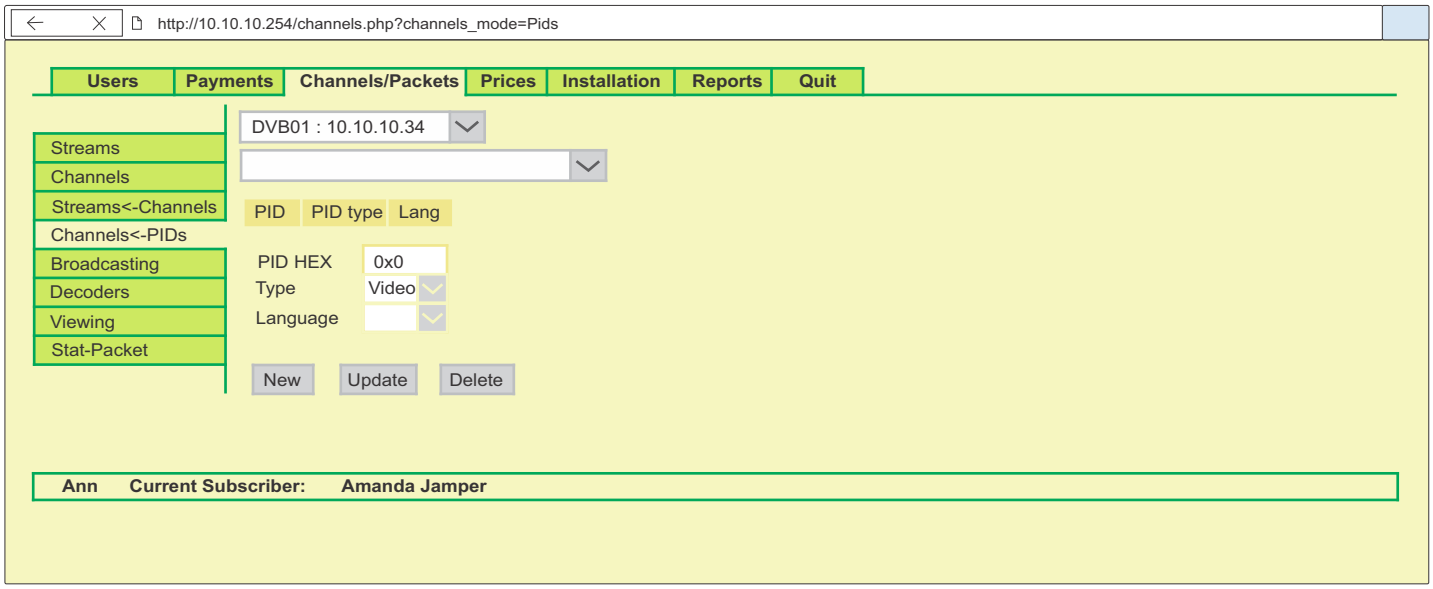
Remap for services from services.conf = 0x300, in encoders.conf is specified explicitly in the Remap line.

Audio PID = Video PID + 1 - for the first audio track, + 2 - for the second, etc.

PCR PID = Video PID

3.5. Assigning PIDs to channels

In the main menu (Channels / Packets) -> (Channels <-PIDs) register PIDs for each channel each stream. At least two PIDs must be for TV channels, one (or more) Audio PID and one Video PID.

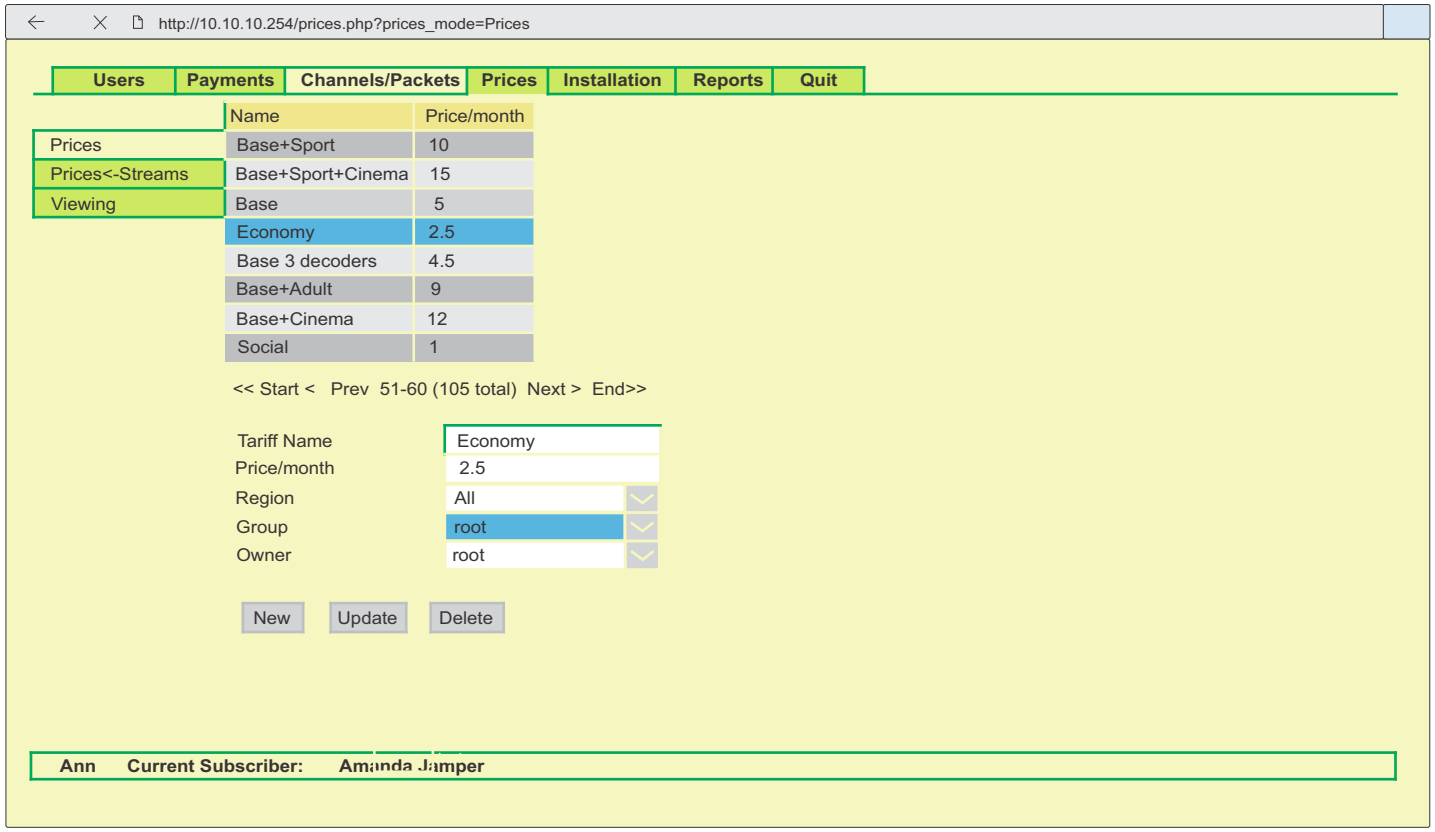


After setting up and checking the streams we move on to the price of packages.

3.6. Price Packages

In the main menu (Prices) -> (Prices) we add the price packages you need.

ATTENTION. Price package "Disabled" does not delete or change!

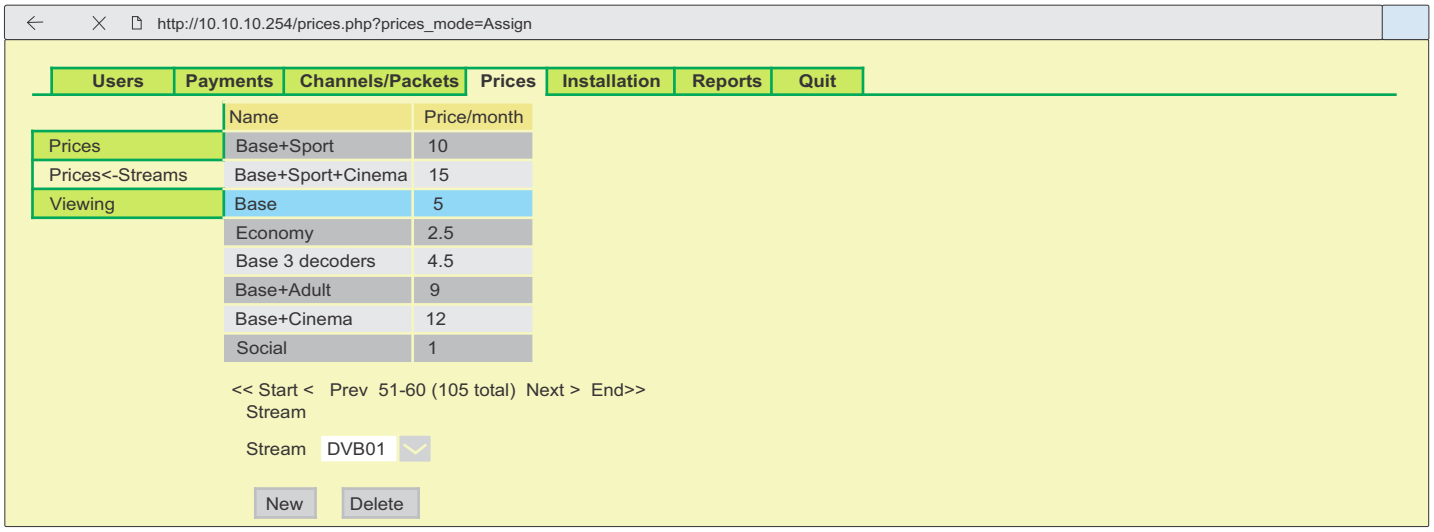


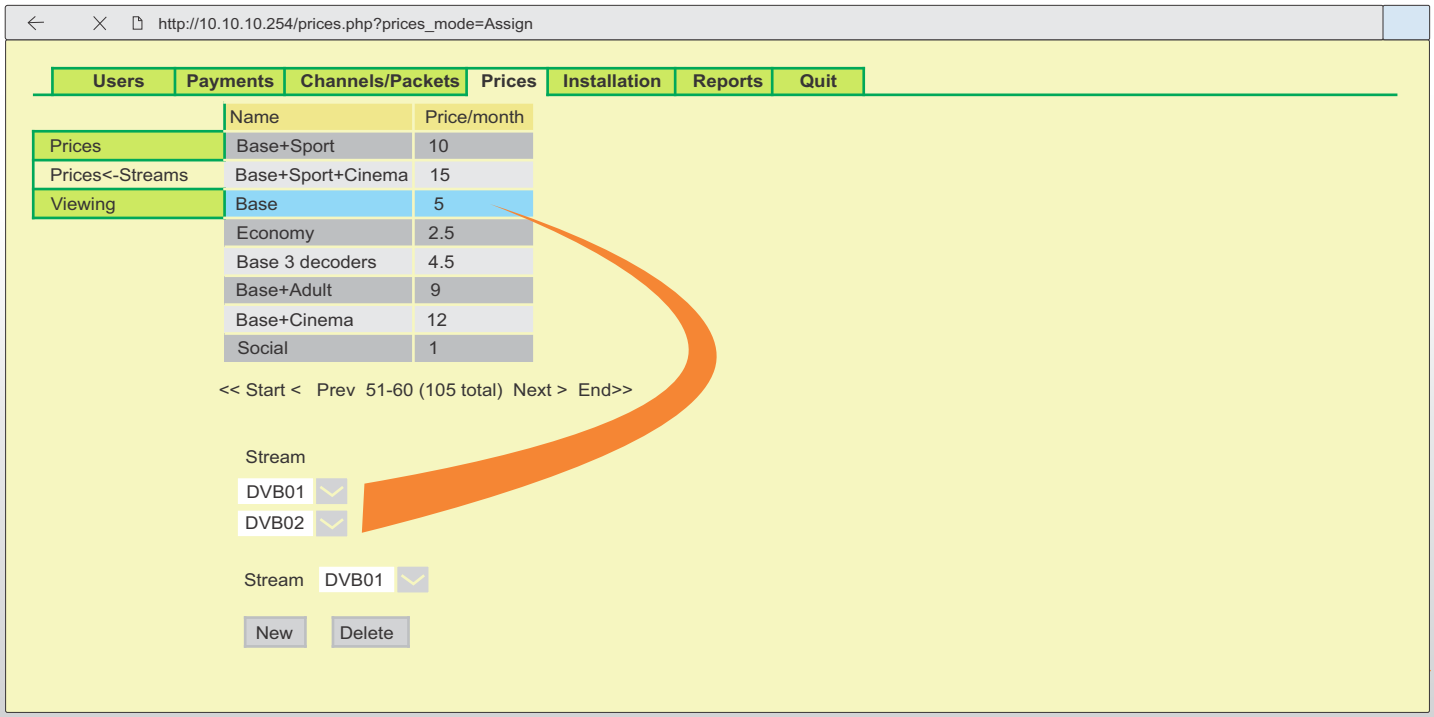
3.7. Assigning Streams to Price Packages

In the main menu (Prices) -> (Prices <-Streams) assign streams for price packages.
For example, we have three streams DVB01, DVB02 and DVB3 and we want to do on these streams three price packages:

- "Base + Sport" for $ 10 per month, paying for which the subscriber could view all three streams DVB01, DVB02 and DVB03.
- "Base" for $ 5 per month, paying for which the subscriber could view DVB01 and DVB02.
- "Social" for $ 1 per month, paying for which the subscriber could view DVB01 only.

For this purpose, in the menu (Prices) -> (Prices) we create the price packages "Social", "Base", "Base + Sport". In the same place we assign them a monthly price.
Then in the menu (Prices) -> (Prices <-Streams) assign the flows for each price package.
It is desirable, but it is not necessary to have a price package with zero cost, which includes all streams of broadcasting, for debugging purposes.

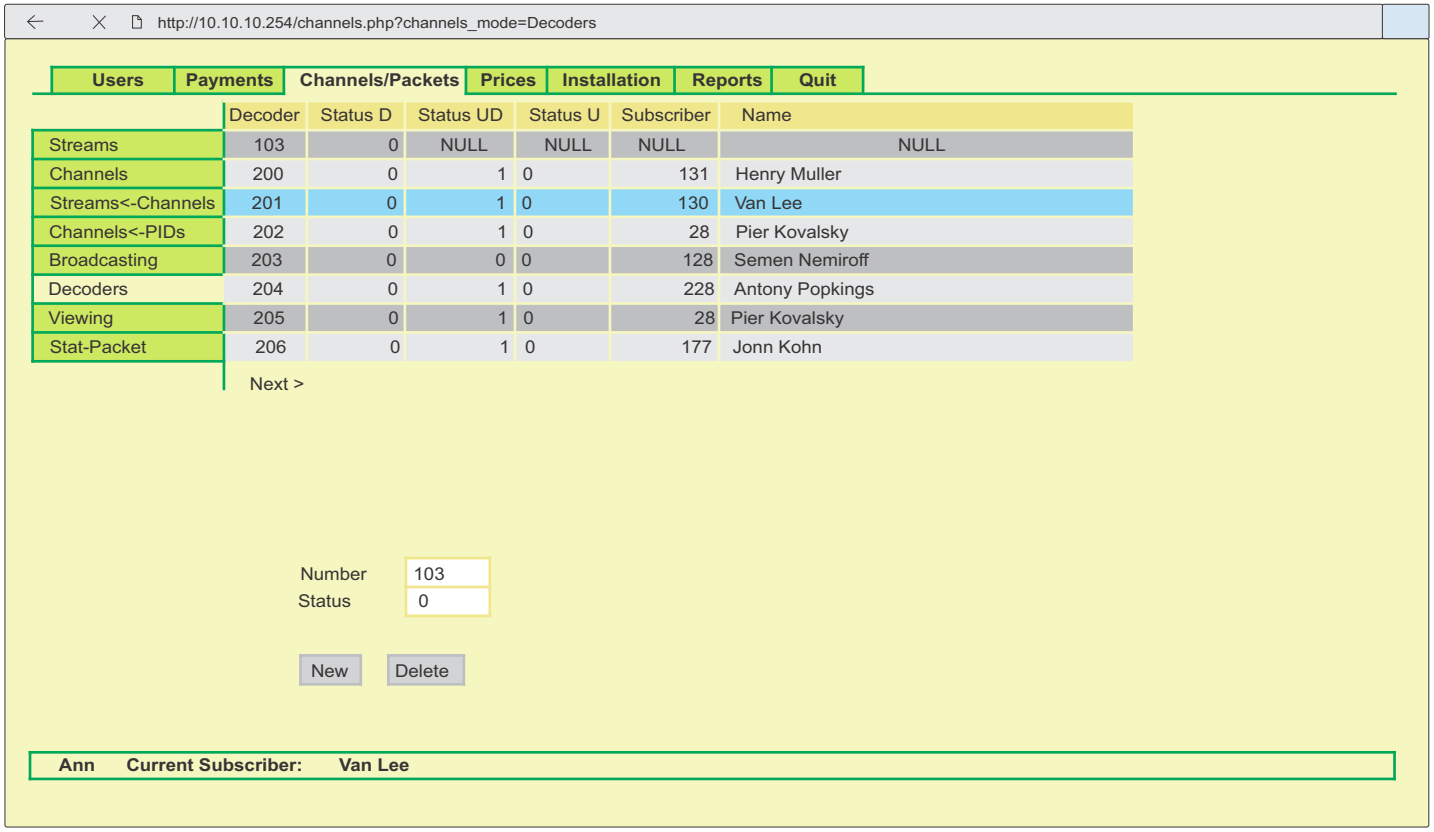




3.8. Adding a decoder to the database

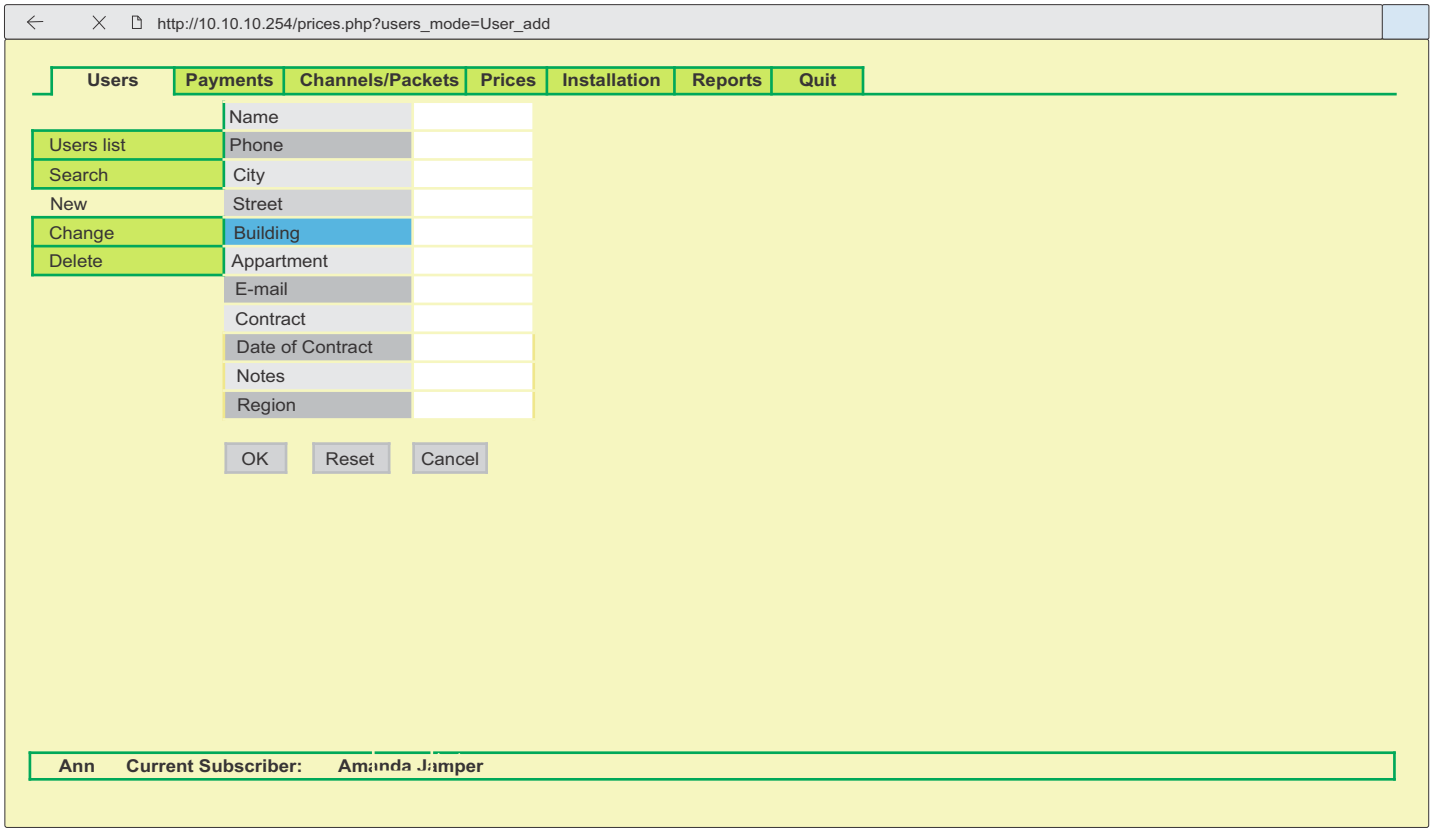
We add the decoder to the system in the main menu (Channels / Packets) -> (Decoders).

ATTENTION. In this menu item, it is necessary to add the numbers of ALL decoders operating in the system, before the decoder is assigned to the subscriber.



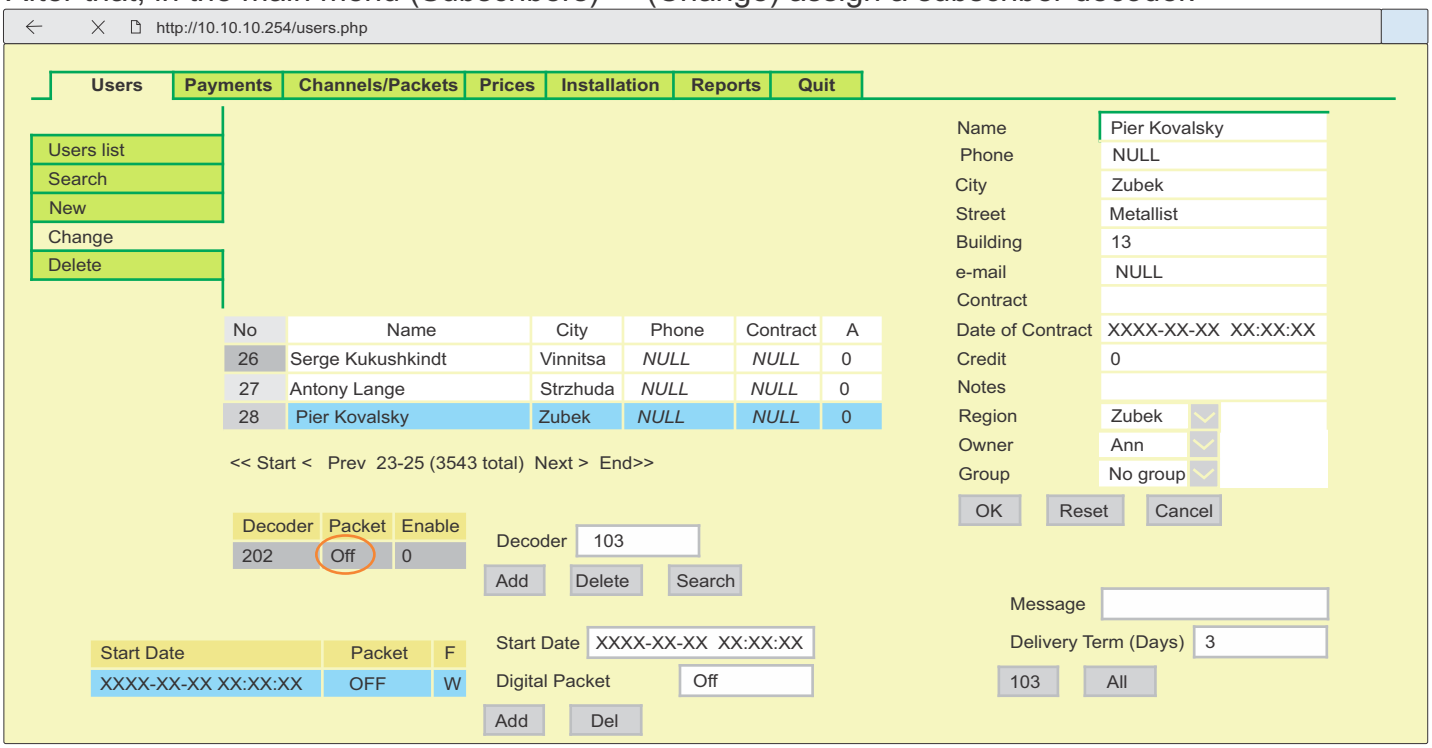
3.9. Subscriber Registration

We register the subscriber in the main menu (Subscribers) -> (New) -OK -Viewing.

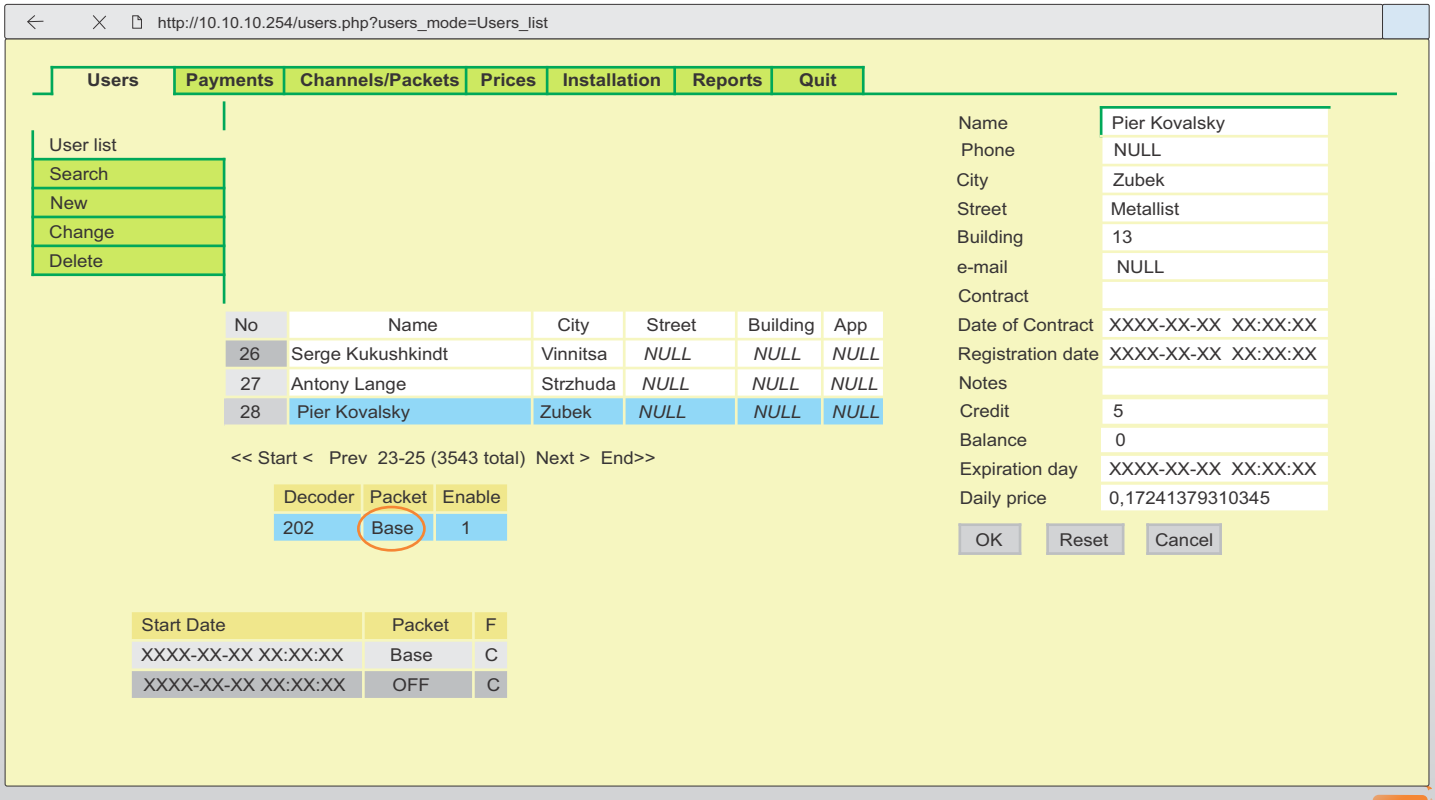


3.10. Assigning a decoder to a Subscriber

After that, in the main menu (Subscribers) -> (Change) assign a subscriber decoder.



Automatically for the decoder, the price packet "Off" is set, that is, in the schedule for this decoder a command to disable this decoder is prescribed.
After this, you can add commands to the schedule of the decoder to include one or another price package, indicating the time of the beginning of the action of this price package.

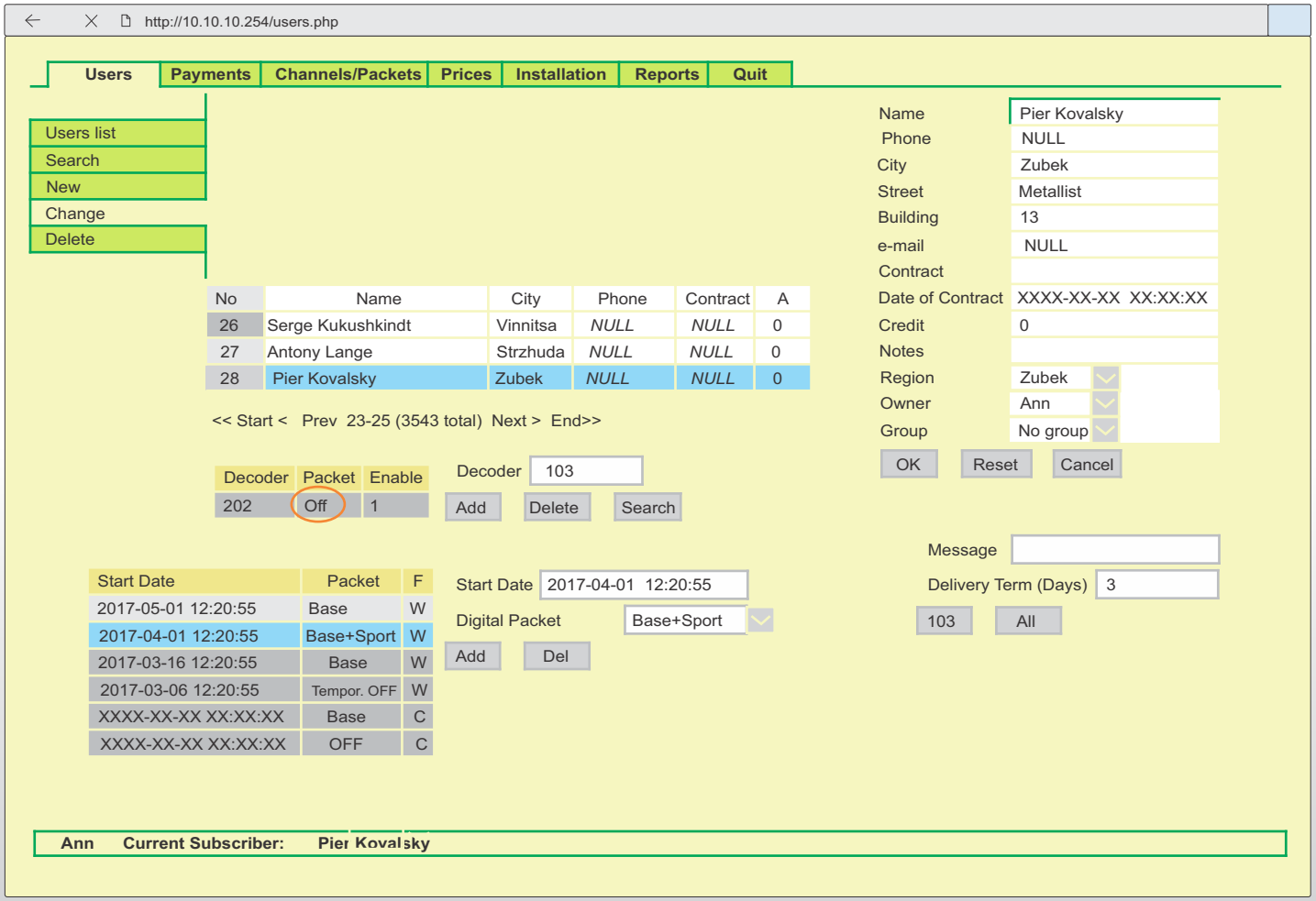


3.11. Schedule of subscriber price packages

After executing the Operator's command, the price package will remain in effect until the command to include another price package indicated in the schedule takes effect or until the subscriber has run out of funds in the account.
You can add any number of commands to the schedule. For example, a subscriber wants to temporarily turn off for the period of his vacation from 06/03/2017 to 16/03/2017
To do this, add two lines to the decoder schedule:
03/06/2017 OFF "Temporary OFF"
03/16/2017 "Base" (Subscriber's price package)
Thus, on 06.03.2017 the decoder will be switched to the "Off" price package and on 16.03.2017 it will automatically switch to "Its price package".
The frequency of scheduling is specified in the system configurations. The default is 180 seconds.
The frequency of activation of subscriber subscription information, from the moment when the processing of the schedule is completed to the actual disconnection or inclusion of the subscriber, on a particular stream, with default settings from 1 to 60 minutes.

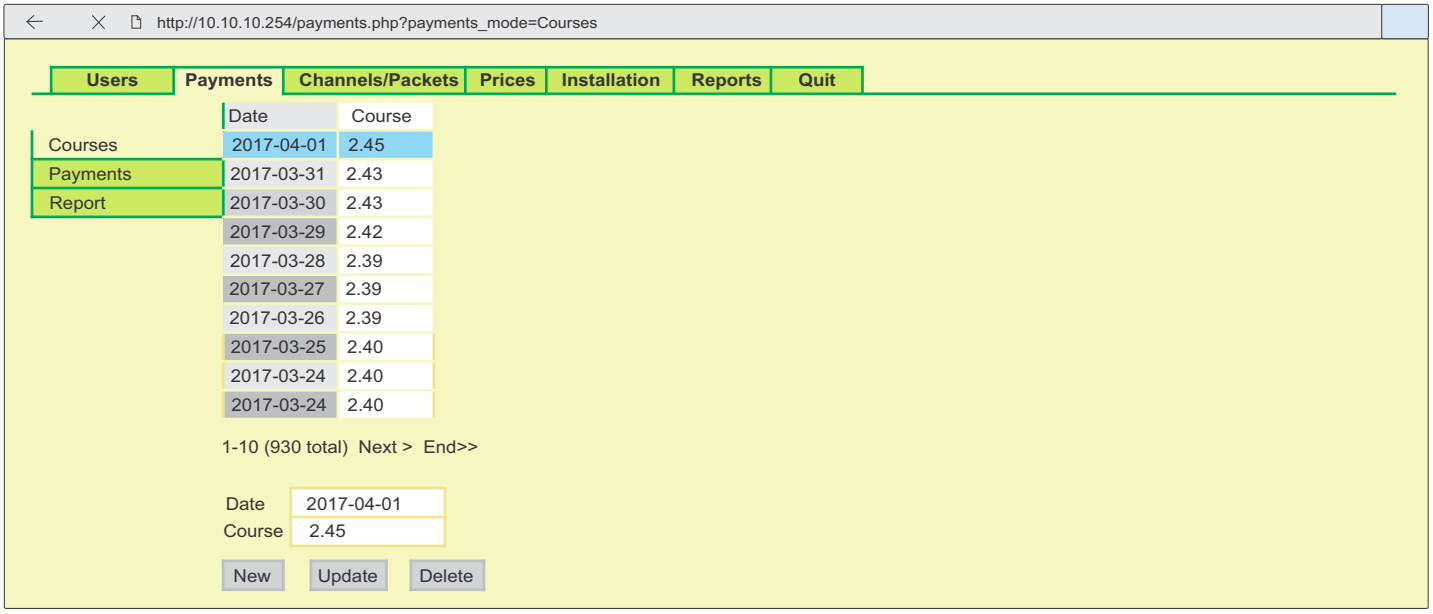
Withdrawal of money from subscribers' accounts takes place daily, as of 23:59:59 (that is, at the last minute of the day).

If within a day the subscriber had switching from one tariff to another, withdrawing money will happen as of 23:59:59 regardless of the number of times per day.

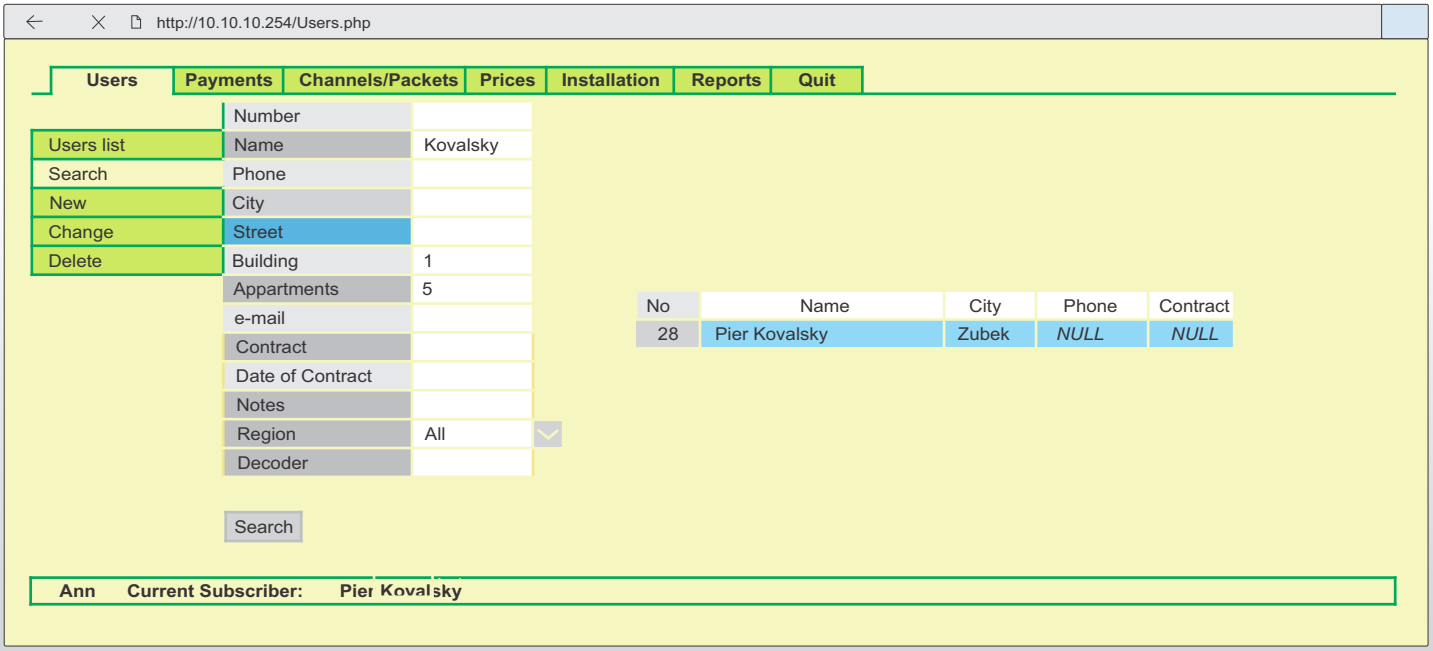


3.12. Make payments

1) Make sure that you have set a course in the main menu (Payments) -> (Courses). If not, then you need to add a course for today.

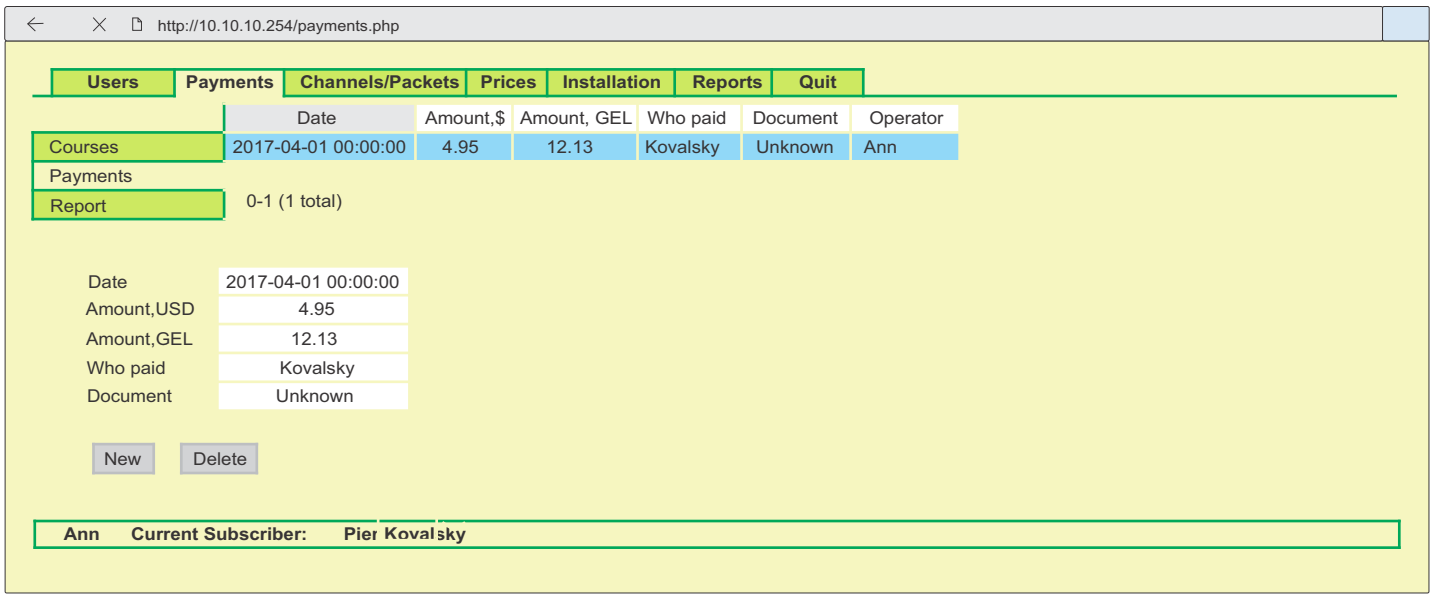


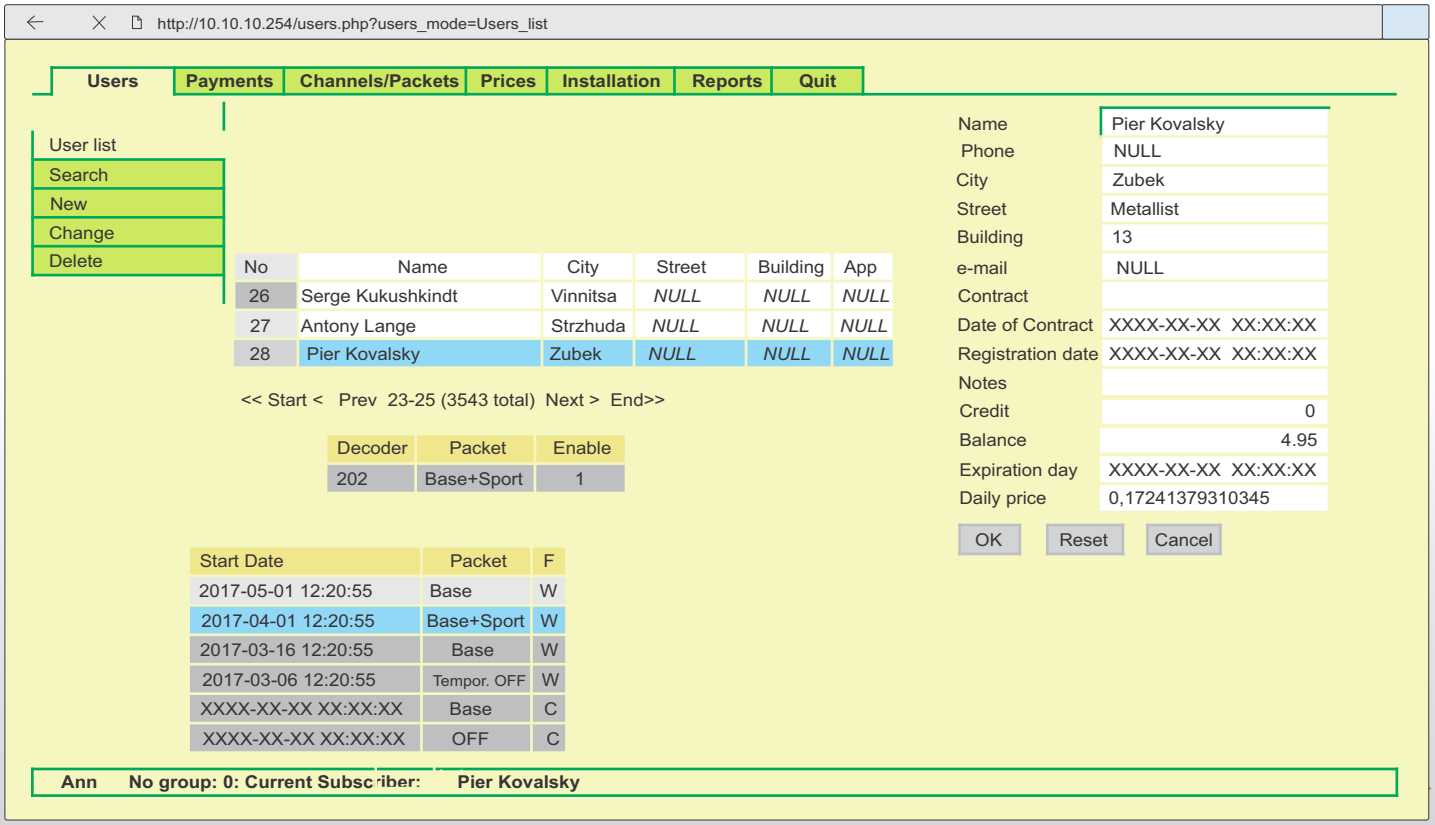
2) Find the subscriber in the main menu (Users) -> (Search) on any of the fields. When multiple fields are filled, the "AND" condition is applied, the search is performed by substring in text fields and case-insensitive.
3) If a filter hits several subscribers, all of them will be displayed in the list to the right of the search parameters. To select a subscriber from this list, click on the Name of this subscriber. If only one subscriber is found as a result of the search, it immediately becomes the current one.



4) in the main menu (Payments) -> (Payments) fill in the fields and enter a payment.

ATTENTION! All calculations are made in **accounting units**, the rate of which absolutely coincides with the USD rate, which for each day must be added to (Payments) -> (Courses).
If you want to make all calculations in national currency, then simply set the rate to 1.
The payment amount must be entered either in the **accounting units** or in the national currency, the system will automatically recalculate the amount based on the current rate.
ATTENTION! The current subscriber is shown in the status bar at the bottom left of the screen.

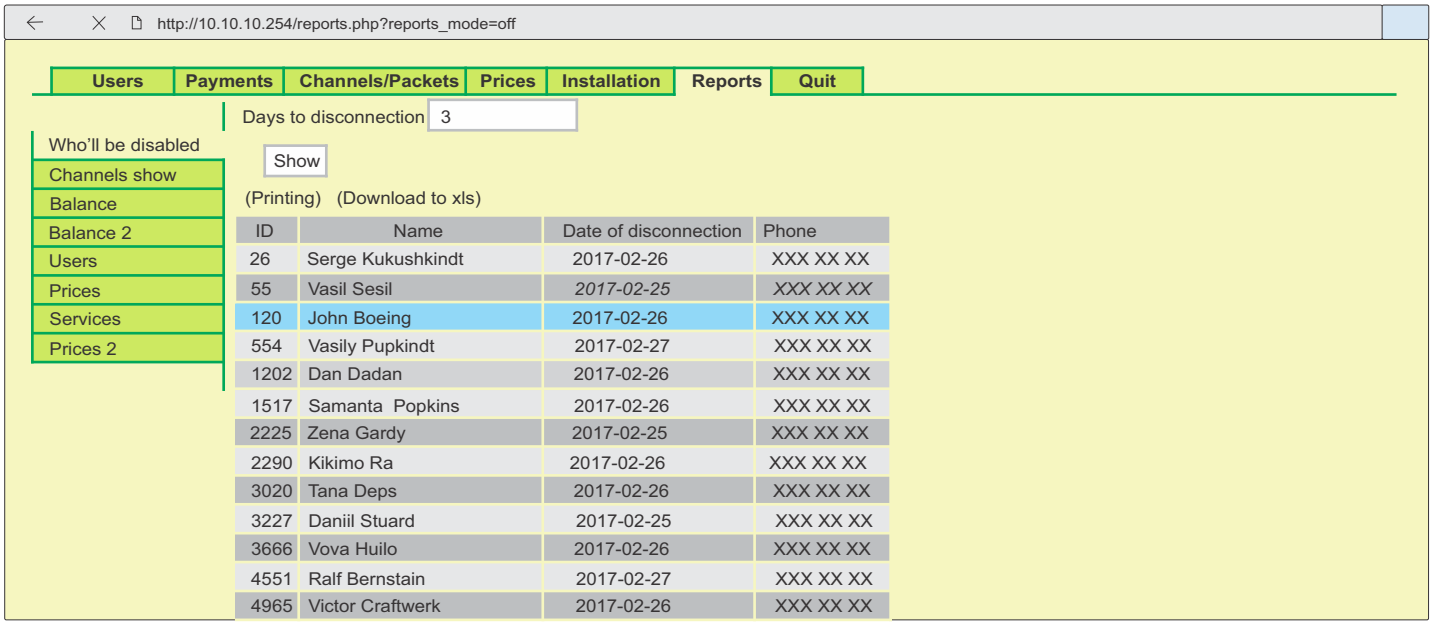




4. REPORTS

4.1. Who will be disabled

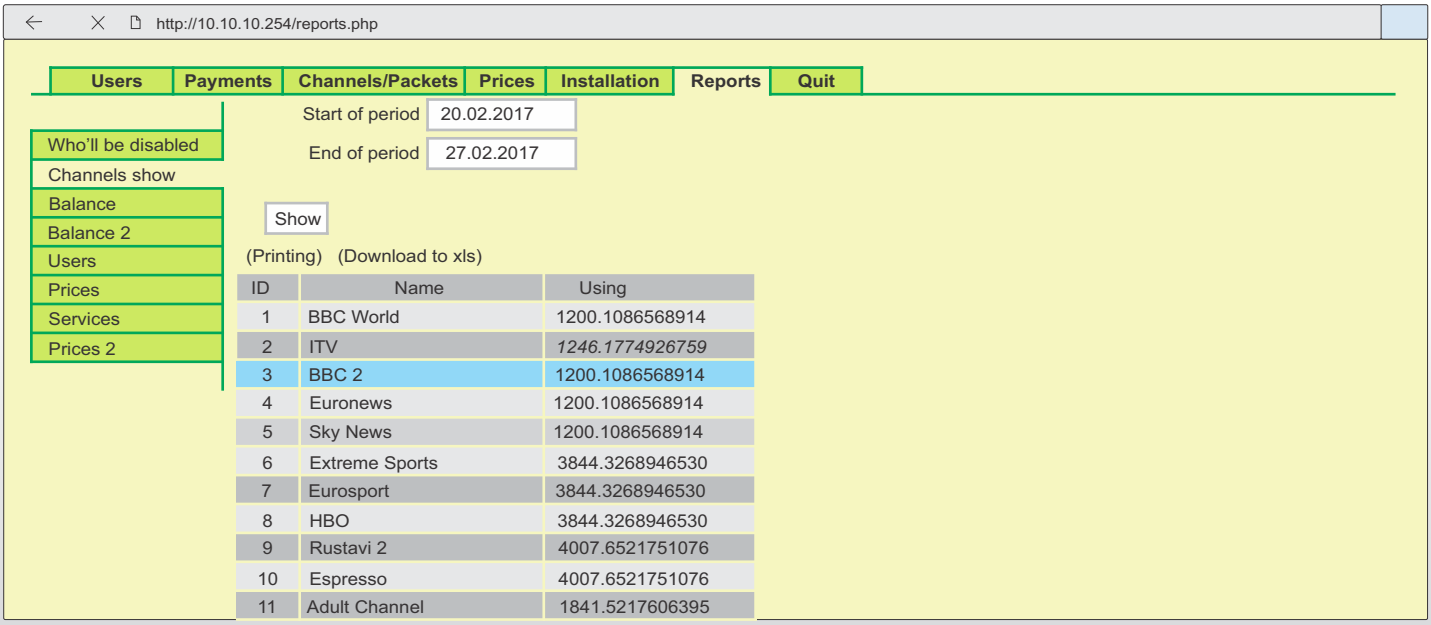
This report displays subscribers who will be disconnected by the system after 3 days (by default). The number of days before disconnection can be changed.



ID	Name	Date of disconnection	Phone
26	Serge Kukushkindt	2017-02-26	XXX XX XX
55	Vasil Sesil	2017-02-25	XXX XX XX
120	John Boeing	2017-02-26	XXX XX XX
554	Vasily Pupkindt	2017-02-27	XXX XX XX
1202	Dan Dadan	2017-02-26	XXX XX XX
1517	Samanta Popkins	2017-02-26	XXX XX XX
2225	Zena Gardy	2017-02-25	XXX XX XX
2290	Kikimo Ra	2017-02-26	XXX XX XX
3020	Tana Deps	2017-02-26	XXX XX XX
3227	Daniil Stuard	2017-02-25	XXX XX XX
3666	Vova Huilo	2017-02-26	XXX XX XX
4551	Ralf Bernstain	2017-02-27	XXX XX XX
4965	Victor Craftwerk	2017-02-26	XXX XX XX

4.2. Channels show

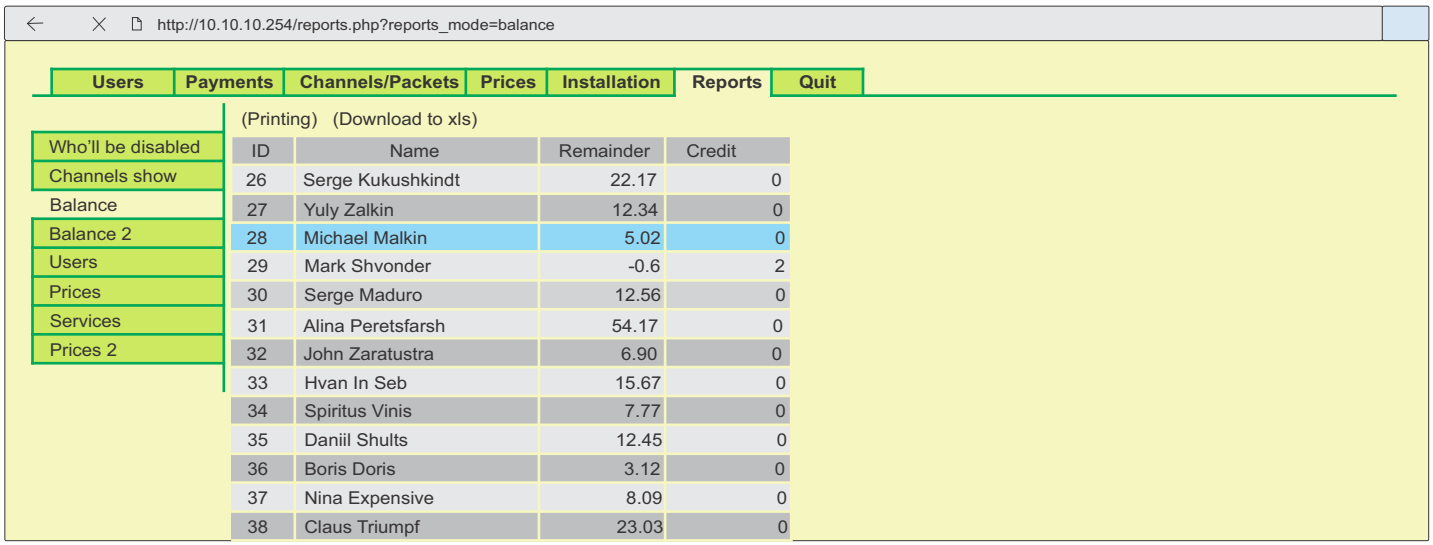
The report on viewing by subscribers of broadcast channels, for any period, by default for today.



ID	Name	Using
1	BBC World	1200.1086568914
2	ITV	1246.1774926759
3	BBC 2	1200.1086568914
4	Euronews	1200.1086568914
5	Sky News	1200.1086568914
6	Extreme Sports	3844.3268946530
7	Eurosport	3844.3268946530
8	HBO	3844.3268946530
9	Rustavi 2	4007.6521751076
10	Espresso	4007.6521751076
11	Adult Channel	1841.5217606395

4.3. Balance

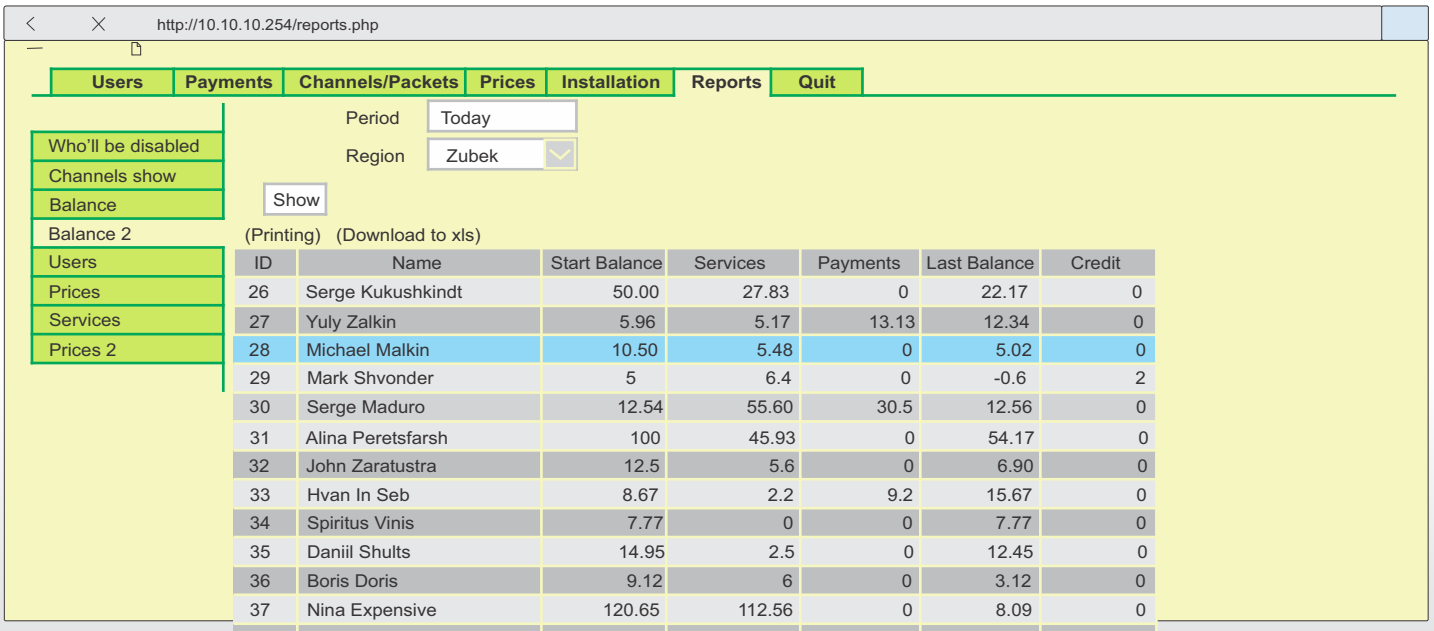
Balance for current subscribers, account balance and credit.



ID	Name	Remainder	Credit
26	Serge Kukushkindt	22.17	0
27	Yuly Zalkin	12.34	0
28	Michael Malkin	5.02	0
29	Mark Shvonder	-0.6	2
30	Serge Maduro	12.56	0
31	Alina Peretsfarsh	54.17	0
32	John Zaratustra	6.90	0
33	Hvan In Seb	15.67	0
34	Spiritus Vinis	7.77	0
35	Daniil Shults	12.45	0
36	Boris Doris	3.12	0
37	Nina Expensive	8.09	0
38	Claus Triumpf	23.03	0

4.4. Balance 2

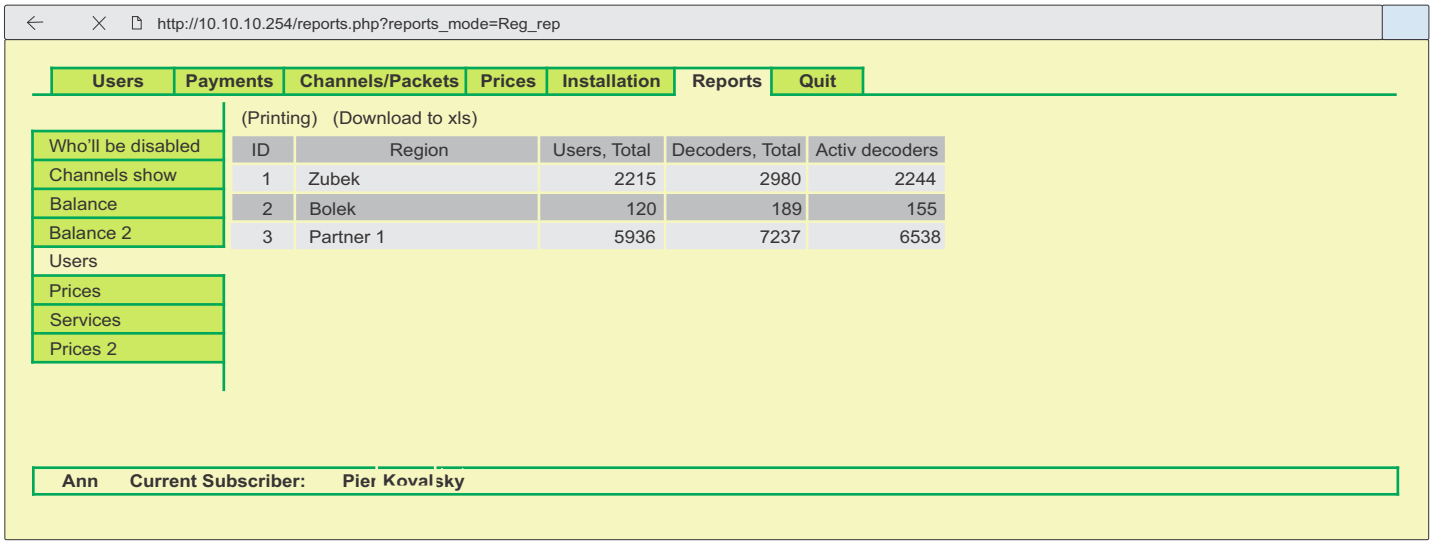
Extended balance for subscribers per month. If in the period field any date for the current month is indicated, the balance is issued as of now. If the date is indicated in the period field for another month, a balance is issued as of the last day of the specified month.



ID	Name	Start Balance	Services	Payments	Last Balance	Credit
26	Serge Kukushkindt	50.00	27.83	0	22.17	0
27	Yuly Zalkin	5.96	5.17	13.13	12.34	0
28	Michael Malkin	10.50	5.48	0	5.02	0
29	Mark Shvonder	5	6.4	0	-0.6	2
30	Serge Maduro	12.54	55.60	30.5	12.56	0
31	Alina Peretsfarsh	100	45.93	0	54.17	0
32	John Zaratustra	12.5	5.6	0	6.90	0
33	Hvan In Seb	8.67	2.2	9.2	15.67	0
34	Spiritus Vinis	7.77	0	0	7.77	0
35	Daniil Shults	14.95	2.5	0	12.45	0
36	Boris Doris	9.12	6	0	3.12	0
37	Nina Expensive	120.65	112.56	0	8.09	0
38	Claus Triumpf	25	1.97	0	23.03	0

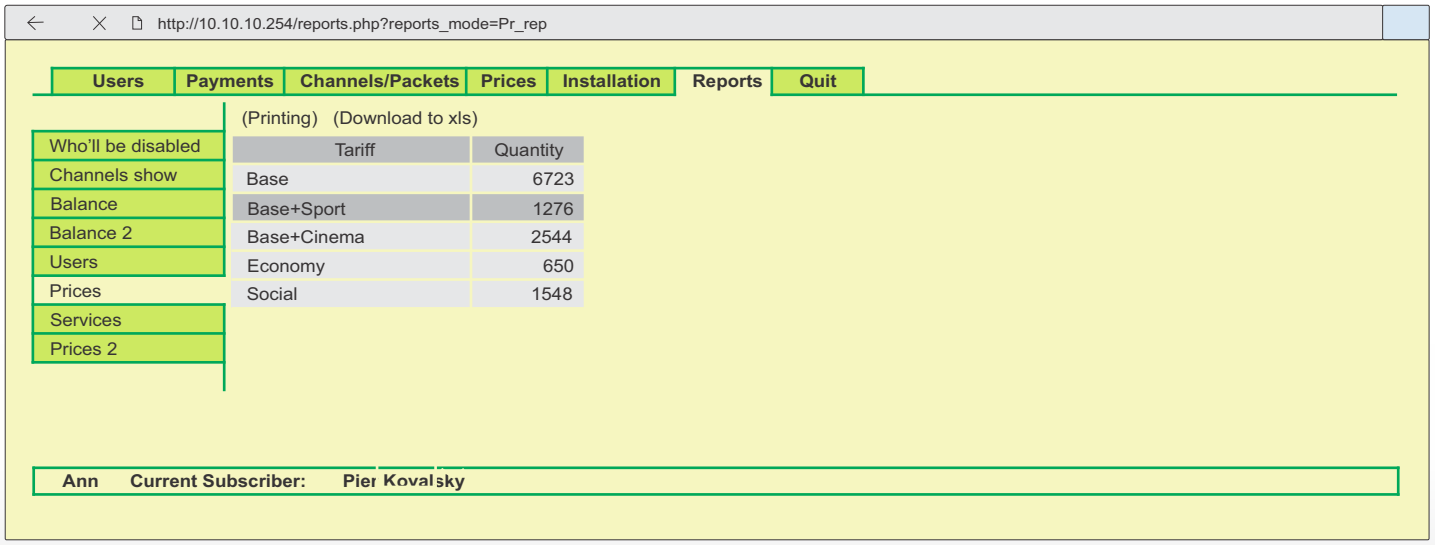
4.5. Users

Report on the number of subscribers, switched off and registered decoders in the context of regions.



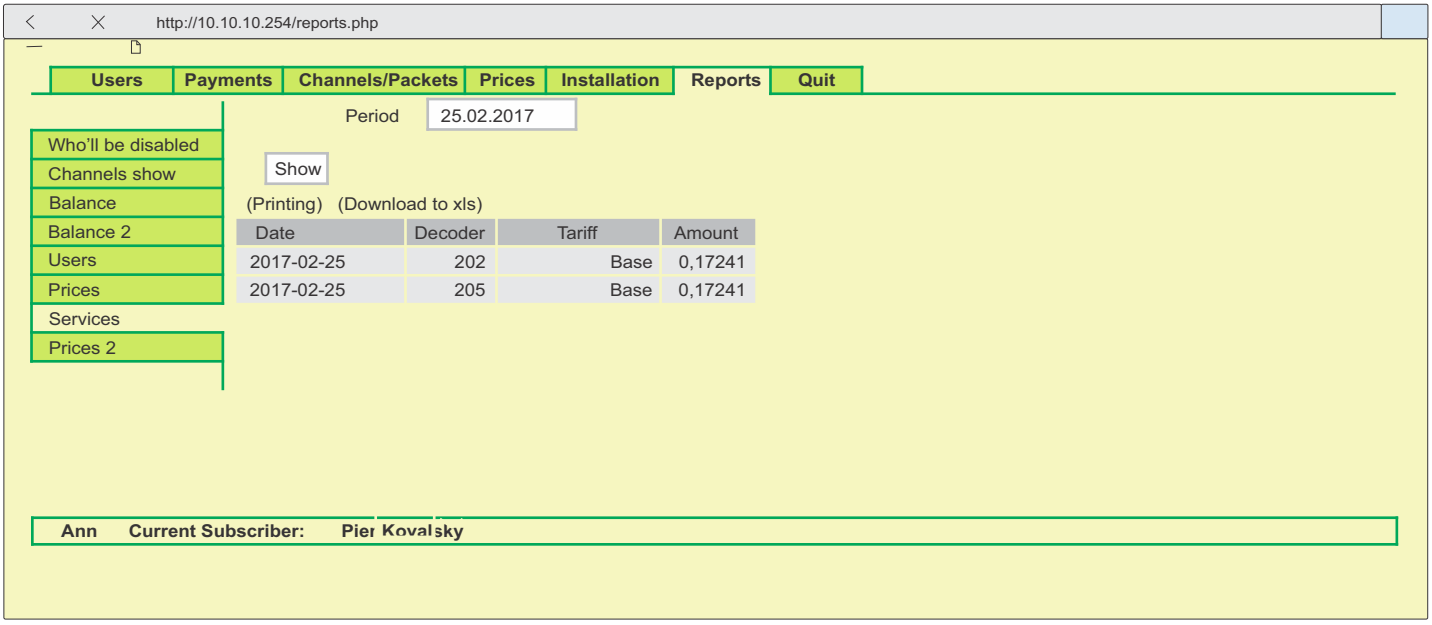
4.6. Prices

Report on the number of decoders in the context of price packages.



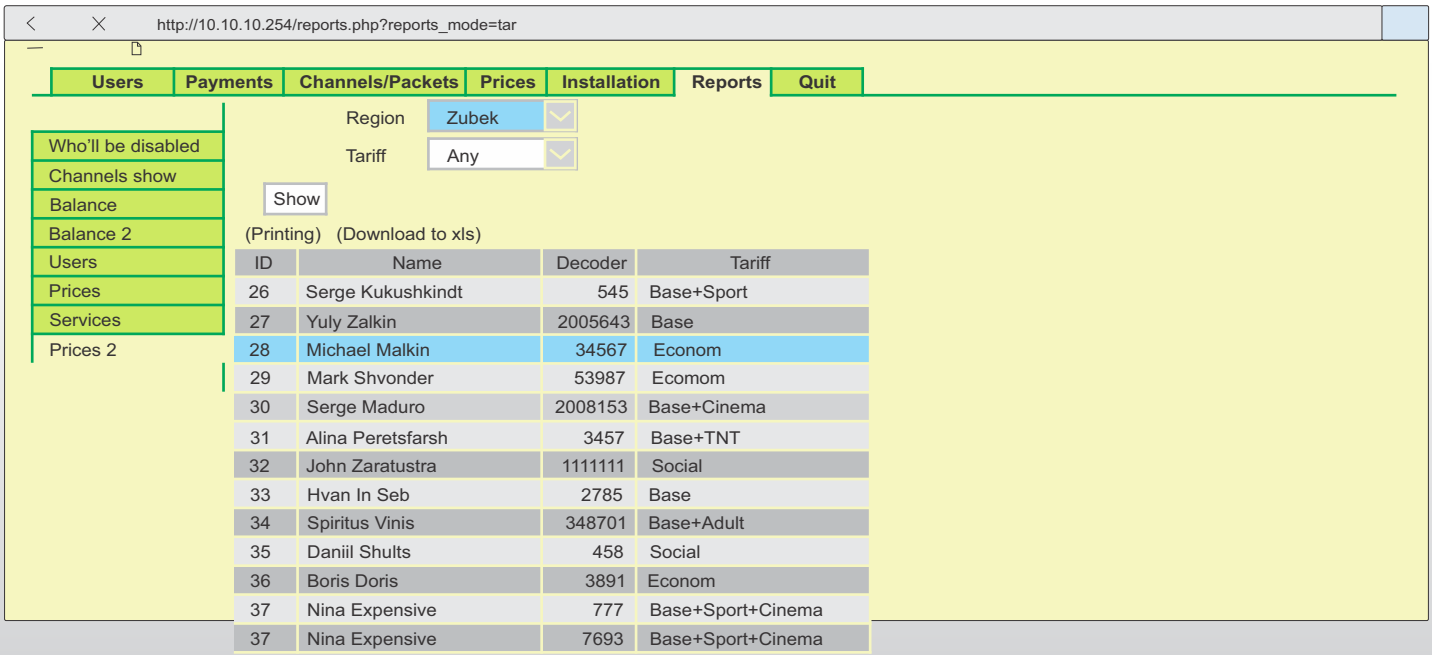
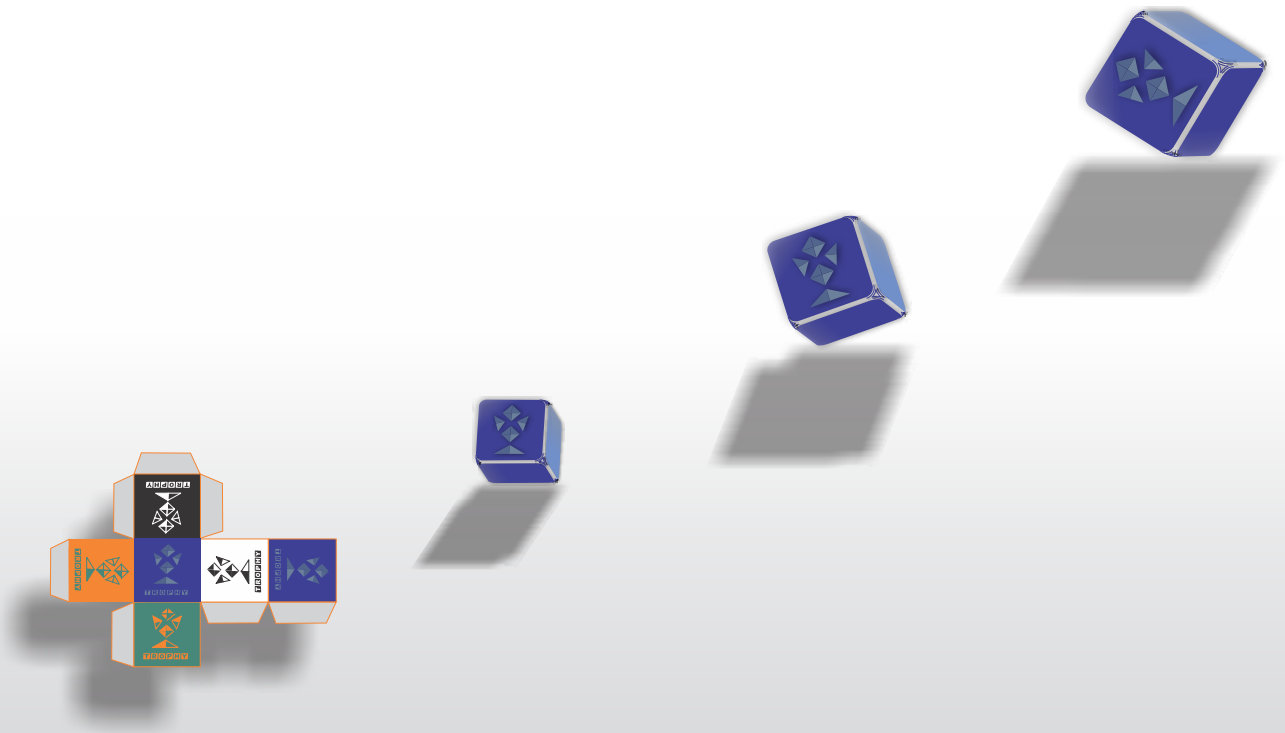
4.7. Services

Services for the current subscriber, for all decoders registered on it, per day, per period.



4.8. Prices 2

Report on subscribers with their price packages and decoder numbers with the possibility of filtering by the price package and the region.



In all tables, where necessary and possible, there is a technique for changing the sort order of the data. How to do it? It is very simple - to click on the name of the column on the plate and the system will show the data sorted by this column, and the name of the column will show "*". If you want to change the sorting, then click again on the name of the same column. The "*" sign will appear to the right of the column name and the sort order will reverse.
Where it is impossible to click on the column name, you can not change the sort order.