

Evocon Line Efficiency Administrator Station software

User manual

Version: November 2012



Introduction

This document describes Evocon Administrator Station software for Evocon Line Efficiency (ELF) product.

It is assumed that person with basic computer software using experience reads this document.

Evocon Administrator program is used for ELF administrative tasks like creating working shifts for production stations monitored by ELF Station program.

1. User log on

Users are logging in with their user names and passwords when program is started. See figure 1.

Initial user name and password after installation is:

User: q

Password: q

Note: Create your own users and delete this q user at first occasion.

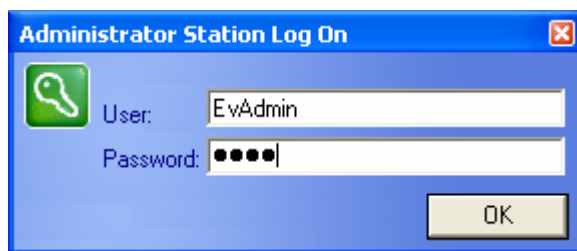
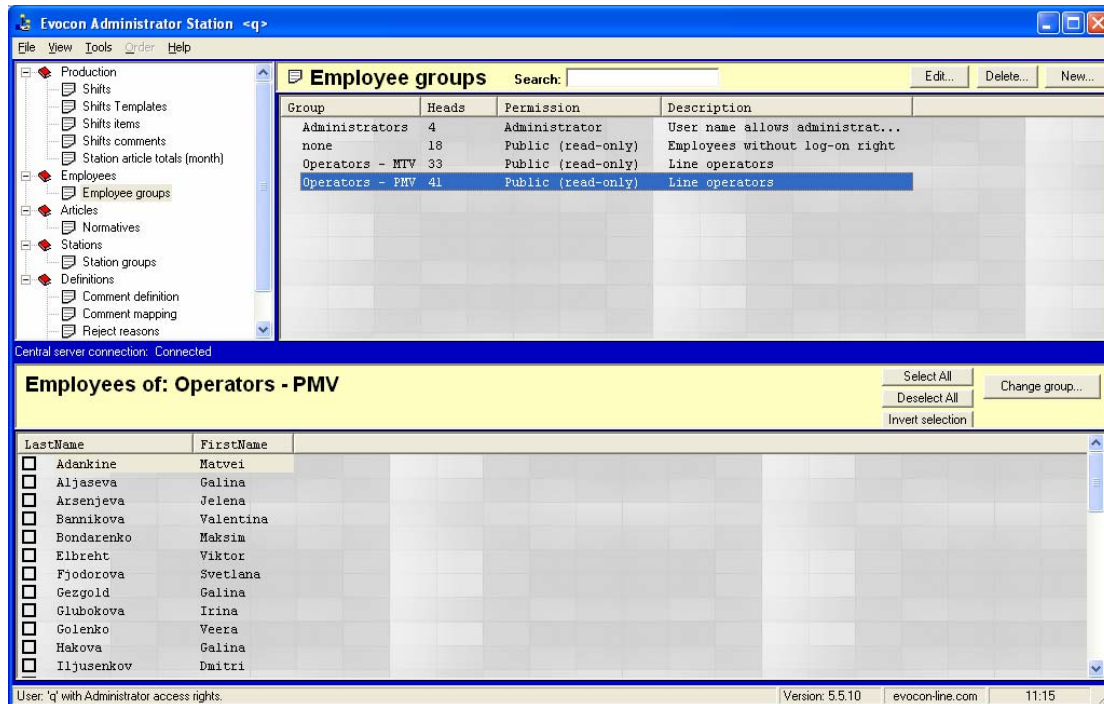


Figure 1. User log on dialog.

2. Employee groups view



Employees in ELF system are used for 2 purposes:

- For logging on to this Administrator station. An employee with his/her username must be in Engineer or Management group in order to log on to Administrator station.
- For selection registration into a shift as responsible operator during the shift. Operator can be registered into shift at shift creation in Administrator station or selected into current shift at ELF production station.

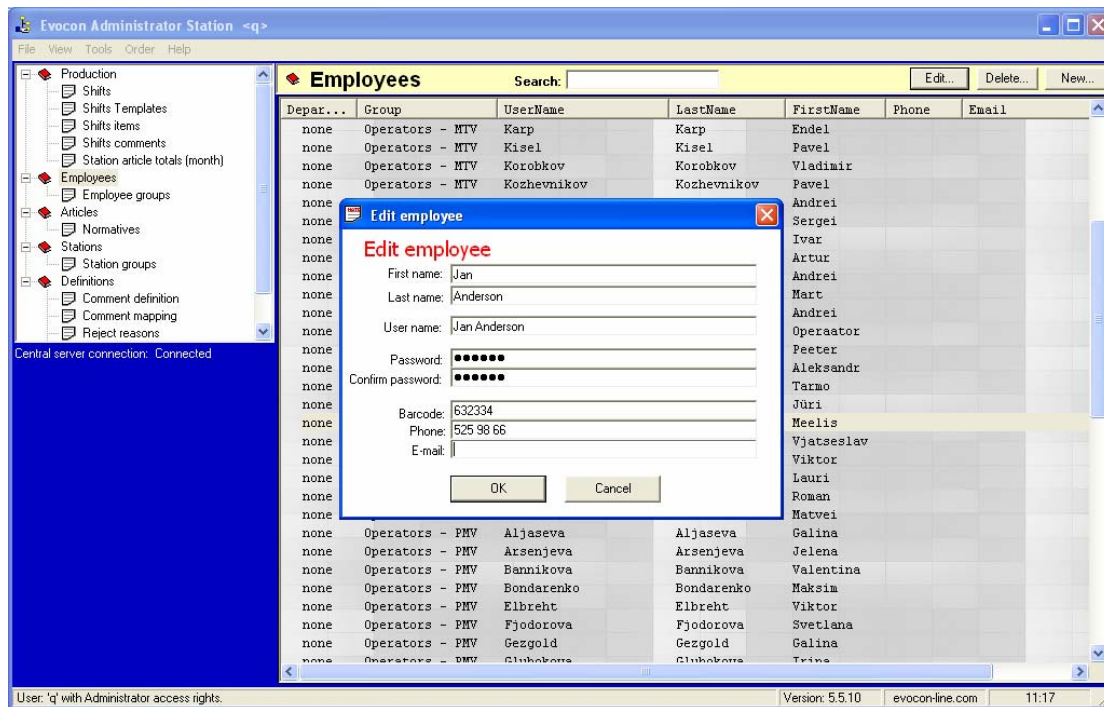
Employee groups are accessed selecting Employees > Employee groups at tree

Employee group name and permission can be edited by pressing 'Edit' button.

Employees of selected group are listed in sub-list ('Employees of:' list below the upper main list) with check box in front of each employee.

Selecting employee with check mark in this list allows to moving it to another group by pressing 'Change group...' button.

3. Employees view



Employees in ELF system are used for 2 purposes:

- For logging on to this Administrator station. An employee with his/her username must be in Engineer or Management group in order to log on to Administrator station.
- For selection registration into a shift as responsible operator during the shift. Operator can be registered into shift at shift creation in Administrator station or selected into current shift at ELF production station.

Employees are accessed selecting Employees at tree

Selected employee can be edited by pressing 'Edit...' button, this opens 'Edit employee' window (see image).

New employee is created by pressing 'New...' button. Window, similar to editing opens where employee data is entered. When new employee data is filled and OK button pressed then a list opens with employee group selection.

P.S. With SGSE configuration operators are imported from Axapta system automatically.

4. Stations view

The screenshot shows the 'Evocon Administrator Station' window. On the left is a tree view with categories like Production, Shifts, Employees, and Stations. The 'Stations' category is selected. The main area displays a table of stations. The bottom section shows the settings for the selected station, 'HECKERT 315'.

Name	Station Number	Description
CINCINNATI FTV 840-1800	TRV105	
DMU50T	TRV106	
MH550	TRV107	
MH400	TRV108	
AGIE MONDO	TRV109	
SODICK AQ 55L	TRV110	
AGIE EMS2.20	TRV111	
SODICK AQ750	TRV112	
AGIE CHALLENGE 3	TRV113	
SODICK AQ 325L	TRV114	
MIKRON TCE860T	TRV115	
HECKERT 315	TRV116	

Settings of: HECKERT 315
Note: Double-click on setting row to edit.

Setting	Value	Description
SignalRegMode	5	1-Pulses; 2, 3, 4, 5, 6 - Period options
MinimalOnInterval_Seconds	120	Shorter ON intervals are not registered. Used when SignalRegMode>1.
FilterOutSignalOffIntervals...	60	Used when SignalRegMode>1
TargetMode	1	1 - Targets and produced items by pulse registration; 2 - By % of ON intervals. 3 - By % of ON intervals.
RejectMode	7;55	0 - rejecting is disabled. See user guide. Example value: 1;3;5;6
RejectReasonNumbers	0	0 - reason selection is disabled. See user guide. Example value: 2;4;5;1000
SignalQty	1	Example: 1 or 10. Special cases: /3 - three signals result one product; //10 - one signal results ten products.
SignalOnFilterMS	-1	
SignalOffFilterMS	300	
ExtendNormativeForColoringB...	15	
UseFlowCorrection	0	

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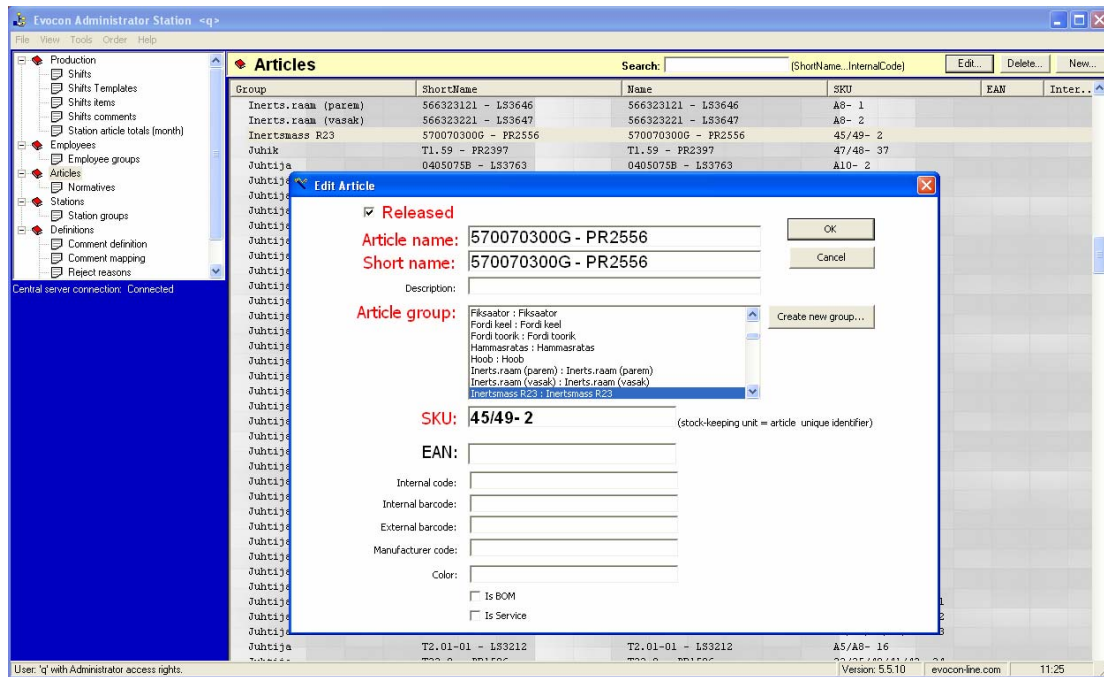
Stations are accessed selecting 'Stations' at tree

Selected station name, StationNumber and Description can be edited by pressing 'Edit...' button.

New station can be added by pressing 'New...' button.

System configurations of each station is displayed on lower half of the window.

5. Articles view



Articles are accessed selecting 'Articles' at tree

Selected article can be edited by pressing 'Edit...' button, this opens 'Edit Article' window (see image). New article is created by pressing 'New...' button. Window, similar to editing opens where article data is entered.

Normatives

Evocon Administrator Station -q>

File View Tools Order Help

Production

- Shifts
- Shifts Templates
- Shifts Items
- Shifts comments
- Station article totals (month)

Employees

- Employee groups

Articles

- Normatives

Stations

- Station groups

Definitions

- Comment definition
- Comment mapping
- Reject relations

Central server connection: Connected

Normatives

Search: (ShortName...InternalCode)

Name	Stat...	Description
PMV K37	PMV203	
PMV K24	PMV204	
PMV K29	PMV205	
PMV K28	PMV206	
PMV K27	PMV207	
PMV208	PMV208	
PMV209	PMV209	
PMV210	PMV210	
PMV211	PMV211	
PMV212	PMV212	
MTV2_4	MTV201	
MTV2_24	MTV202	

Timing of: PMV209 - PMV209

Edit... Use Ctrl or Shift+arrow keys to select many rows

Normative unit: Default: seconds per circle quantity (circle qty is defined by 'SignalQty' setting)

ArtGroup	Article	SRT	LockCycleAutoCalc	NormativeSeconds	SDD*	RealMedianSeconds	RealAverage
Hamaaratas	600888606A - PR2595					0	
Hamaaratas	600888608A - PR2595					0	
Hamaaratas	600888609A - PR2595					0	
Hamaaratas	600888610A - PR2595					0	
Hamaaratas	600888611A - PR2595					0	
Hamaaratas	600888612A - PR2595					0	
Hoob	570574500B - PR2598					0	
Hoob	570574600B - PR2597					0	
Hoob	860453 - PR2555					0	
Inerts.ream (parem)	566323121 - L83646					0	
Inerts.ream (vasak)	566323221 - L83647					0	
Inerts.ream R23	570070300G - PR2556					0	
Juhtik	71.59 - PR2397					0	
Juhtija	0405075B - L83763					0	
Juhtija	0551997 - L83771					0	
Juhtija	0557910C - L82670					0	
Juhtija	0704082B - L83762					0	
Juhtija	08178P - PR2637A					0	

Normatives

Station: PMV209

Article: 570070300G - PR2556

☒ Lock normative automatic calculation

Normative: 60 s/circle qty

SDD*: 15 minutes

Changeover: 0 s

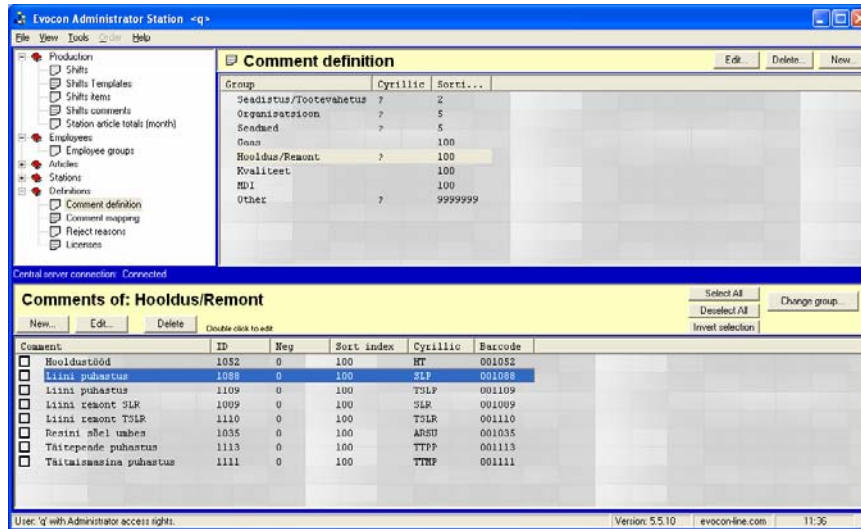
* SDD - Shortened Delay Definition. Station setting 'RedBackgroundDefinition' defines time period (for all articles of a station) when background changes from yellow to red. Entering smaller than 'RedBackgroundDefinition' value for this SDD setting causes red background for this article to start from entered value. Time period when background changes to red is important, because line operators are instructed to comment red delay periods.

DB times: 60 / 900

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Normatives of selected article are listed in sub-list ('Timing of:' list below the upper main list).

6. Comments definition



Comments definitions are accessed selecting Definitions > 'Comment definitions' at tree

Comments are listed for production operator for selection when commenting production downtime at ELF station program. Operator at ELF station has possibility to add new comments what are saved under 'Other' group. This possibility can be locked at ELF station.

P.S. See Managing comments for additional information.

In upper list the comment groups are listed.

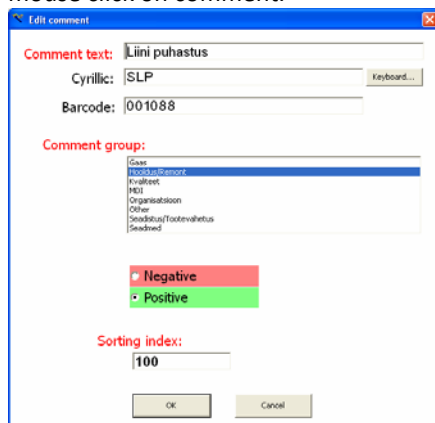
New groups can be created by pressing 'New...' button.

Selected comment group can be edited by pressing 'Edit...' button.

In lower list the comments belonging to selected group are listed.

New comments can be created by pressing 'New...' button on top bar of lower list.

Selected comment can be edited by pressing 'Edit...' button on top bar of lower list or with double mouse click on comment.



Selected comment can be deleted by pressing 'Delete...' button on top bar of lower list.

Comments can be moved into another group by selecting them with check box, pressing 'Change group...' button and selecting new group.

7. Shift Comments

The screenshot shows the 'Evocon Administrator Station' window. On the left is a tree view with 'Production' expanded, showing 'Shifts', 'Shifts Templates', 'Shifts Items', 'Shifts comments', and 'Station article totals (month)'. The main area is titled 'Shifts comments' and shows a table of shifts for Month: 7, 2012, Station: 200-Lin2. The table has columns: Operator, Number, Day, Start, End, Comments, Pause..., and Descr... The data shows shifts for Wednesday, Thursday, Friday, Saturday, Sunday, and Monday. Below this table, there is a section for 'Comments of: 1 26. Thursday - 06:45' with buttons for 'Select All', 'Deselect All', 'Invert selection', 'Change comment...', and 'Delete selected'. At the bottom, there is a table of comments with columns: CommentTime, Comment, ID, Neg, Group, and DelayMinutes. The status bar at the bottom indicates 'User: 'q' with Administrator access rights', 'Version: 5.5.10', 'evocon-line.com', and '11:39'.

Shift comments definitions are accessed selecting 'Production > Shift Comments' at tree

Shift comments are comments entered by production operator working in given shift when commenting production downtime at ELF station program.

P.S. See Managing comments for additional information.

In upper list the shifts of selected station, month and year are listed.

In lower list the comments given during selected shift are listed.

Selected comments can be deleted by pressing 'Delete selected...' button on top bar of lower list. Selected comments can be corrected (changed to other comment) by pressing 'Change comment...' button and selecting new comment.

'Show all given comments for selected station' button displays all given comments in lower list without shift, station nor time limitation (all given comments in database are shown). See Managing comments about purpose of this function.

8. Station Comments – comment mapping

Evocon Administrator Station <q>

File View Tools Order Help

Production

- Shifts
- Shifts Templates
- Shifts items
- Shifts comments
- Station article totals (month)

Employees

- Employee groups

Articles

Stations

Definitions

- Comment definition
- Comment mapping
- Reject reasons
- Licenses

Comment mapping

Name	Stati...	Descr...
Liin1	100	
Liin2	200	
Liin3	300	
Liin4	400	
Liin5	500	

Central server connection: Connected

Comments of: Liin2 Change limit time... Load from station...

Notes: a) Click on column header to sort by this column. b) Use Space and arrow keys to place check marks faster.

Comment	Neg.	Group	LimitSeconds	LimitReadable	Cyrillic	Barcode
<input checked="" type="checkbox"/> Tootevahetus	0	Seadistus/Tootevahetus	900	0h 15m 00s	TVAH	000018
<input checked="" type="checkbox"/> Aine vahetus Resin	0	Seadistus/Tootevahetus	9999999	2777h 46m 39s	TAVR	001099
<input checked="" type="checkbox"/> Etiketi vahetus	0	Seadistus/Tootevahetus	9999999	2777h 46m 39s	PETIKV	001062
<input checked="" type="checkbox"/> Kaalu kontroll	0	Seadistus/Tootevahetus	9999999	2777h 46m 39s	KK	001054
<input checked="" type="checkbox"/> Karbisulguri seadistus	0	Seadistus/Tootevahetus	9999999	2777h 46m 39s	SKR	001086
<input checked="" type="checkbox"/> klietusmasina seadistus	0	Seadistus/Tootevahetus	9999999	2777h 46m 39s	SKM	001085
<input checked="" type="checkbox"/> Krimperi e valtsija vale...	1	Seadistus/Tootevahetus	9999999	2777h 46m 39s	TKrVS	001108
<input checked="" type="checkbox"/> seadistus SFS	0	Seadistus/Tootevahetus	9999999	2777h 46m 39s	SFS	001083
<input checked="" type="checkbox"/> seadistus SSTR	0	Seadistus/Tootevahetus	9999999	2777h 46m 39s	SSTR	001093
<input checked="" type="checkbox"/> seadistus STP	0	Seadistus/Tootevahetus	9999999	2777h 46m 39s	STP	001094
<input checked="" type="checkbox"/> Seisak riinni vahetus	0	Seadistus/Tootevahetus	9999999	2777h 46m 39s	STV	001095

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Station comments definitions are accessed selecting 'Definitions > Comment mapping' at tree

Station comments view is used for mapping defined comments (see Production Comments definition) to station.

In upper list the station is selected for what comment mapping is defined in lower list.

In lower list all defined comments are listed with check box in front of it. Selecting comment with check mark maps this comment to given station and this comment is shown to ELF program operator for selection at given station (enabled comment for station).

9. Managing comments

This chapter describes operational issues about comment management.

When system is taken to use then administrator using this program defines all possible comments and maps selection for each station.

During first weeks of operation the station operators are adding new comments at ELF station. These comments are saved in 'Other' group. This is usually leading to 2 issues:

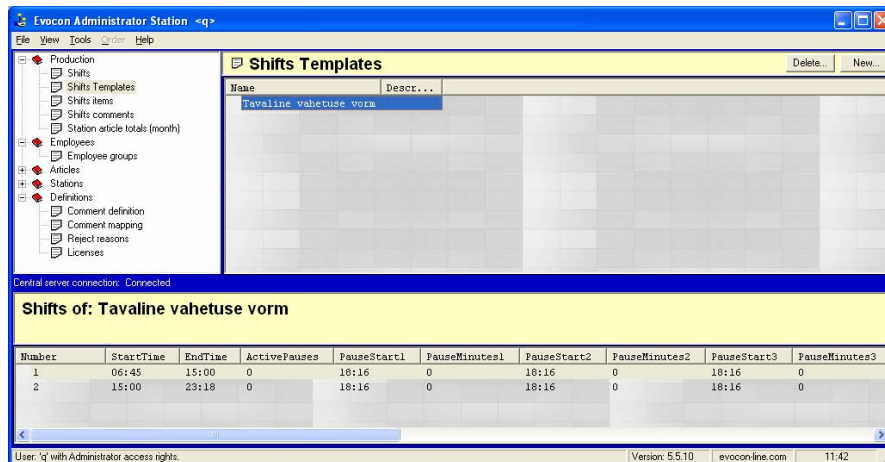
- a) Obvious new comments for station are surfacing what can categorized under an existing group (not Other group).
- b) There are too many comments ('Other') added by operator from what many are similar (or too detailed) and could be joined. Too many similar or too detailed comments are causing losing good overview of downtime causes in reporting.

Procedures solving these issues:

- a) Select Definitions > 'Comment definitions' at tree view, select 'Other' group and find this 'surfaced obvious comment', mark it with check box and press 'Change group' to move this comment under new group.
- b)
 - 1. First find out what are such comments. In lower list of Definitions > 'Comment definitions' view 'Other' group click on comment column header to sort comments by name. Write down ID numbers (column 'ID') of similar and/or too detailed comments what can be joined.
 - 2. For sets of joined ID numbers (comments) create new (usually more general) comment (under appropriate group) or find an existing comment as target for joined set. Write down these target comments for joined sets of IDs.
 - 3. Change joined comments (point 1.) to target comments (point 2.).
Press 'Show all given comments for selected station' button in Production > Shift Comments' view. This lists all given comments for station in database. When data rows are displayed click on ID column header to sort all given comments by ID number. Scroll to needed IDs to be joined and select check boxes of comments what should be joined (use Space and arrow keys for faster selection). Now press 'Change comment...' button, window opens with list from where select the target comment to what should be changed to.

P.S. It is recommended to lock possibility of adding new comments at ELF production stations after few weeks of operation when no new important comments are surfacing.

10. Shift templates



The 'New Shift Template' dialog box is shown. It has a 'Shift template name' field containing 'Nädalavahetused' and a 'Description' field. Below are three sections for defining shifts:

- 1st shift of the day:** Start: 08:00, End: 14:00. ☐ Is next day
- ☒ **2nd shift of the day:** Start: 14:00, End: 19:00. ☐ Is next day
- ☒ **3rd shift of the day (or 2nd when ends next day):** Start: 19:00, End: 01:00. ☒ Is next day

Buttons for 'OK' and 'Cancel' are at the bottom.

Shift templates are accessed selecting Production > 'Shift templates' at tree

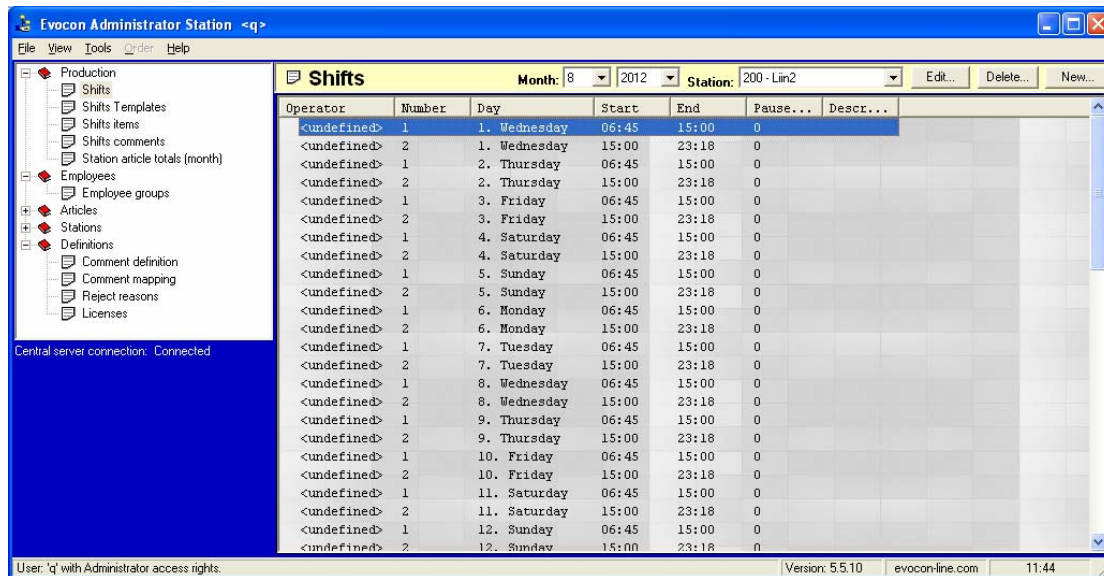
Shift templates can be used for creating daily shifts for production stations. In templates the shift start, end and pause times are already defined and shift creation is done quickly, where creating shift without template requires many date and time selections for one shift and is very time consuming.

In upper list the shift templates are shown by name, this name is displayed to user at shift creation when selecting the template to apply.

In lower list the template content of selected template is shown.

New shift template can be created by pressing 'New...' button. This opens new window (see image) for template creation. Note four check boxes: if there is 2nd and 3rd shift for a day then enable them with check mark and 'Is next day' checkboxes define that time value is for next day (overnight shift). Selected shift template can be deleted by pressing Delete... button.

11. Shifts



Shifts are accessed selecting Production > Shifts' at tree.

All shifts of selected station in selected month and year are listed.

With 'Delete...' button one or multiple shifts can be deleted.

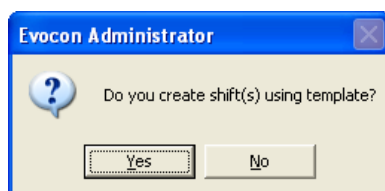
Note: there is another bulk shift deleting option: Tools menu > 'Delete multiple shifts...' allows deleting all shifts for station after defined date. This is normally used with there were many month shifts created in advance using template.

With 'Edit...' button the operator for one or multiple shifts can be edited.

Note: Multiple selection of shifts is done holding down SHIFT key (range selection) or CTRL key (one by one with mouse selection).

Shift is working time period of responsible station operator. For each station shifts have to be created before shift is started at production station.

New shift can be created by pressing 'New...' button.



Program asks if you want to use template for shift creation or not.

Shift templates can be used for creating daily shifts for production stations. In templates the shift start, end and pause times are already defined and shift creation is done quickly, where creating shift without template requires many date and time selections for one shift and is very time consuming.

Creating shift without template.

New Shift

Shift description:
L11

Start: Time (hh:mm) 11:00 6 November 2012

End: Time (hh:mm) 16:00 6 November 2012

Number (sequence):
1

Add pauses: Time (hh:mm) 11:00 6 November 2012
Pause length: 0 minutes
Add > Selected pauses:
< Remove

Stations:
Lin1
Lin2
Lin3
Lin4
Lin5

Station group leaders:
undefined
Jan. Anderson
SV
mm
q
SK

OK Cancel

Exceptional shifts are created without template. See from image that there are many date and time selections to be made just for creating one shift for one station. Therefore you should have templates defined for all common shifts.

Creating shift using template

The screenshot shows a dialog box titled "New Shift from template". It contains the following elements:

- Template to use:** A dropdown menu showing "Tavaline vahetuse vorm".
- Shifts from:** Three dropdown menus showing "6", "November", and "2012".
- To:** Three dropdown menus showing "31", "December", and "2012".
- For station:** A list box with checkboxes for "Lin1", "Lin2", "Lin3", "Lin4", and "Lin5". "Lin1" and "Lin2" are checked.
- Station group leader (initial):** A list box with the following entries: "<undefined>", "Jon Anderson", "JY", "nm", "q", and "SK".
- Buttons:** "OK" and "Cancel" buttons at the bottom right.

Shift for one station within selected time range are created.

Normally you create shifts for one week.

You may need two or more templates if shift times are different during weekdays (for example Saturday and Sunday).

12. Station article totals.

Station article totals (Month: 8, 2012)

Name	Stati...	Descr...
Liin1	100	
Liin2	200	
Liin3	300	
Liin4	400	
Liin5	500	

Totals of: Liin3 300

Name	SKU	EAN	InternalCode	Total	Normative (s)	RealMedianCycleTime	RealAverageCycleTime	HourTarget
<input type="checkbox"/> CR2032	A31			318300	13	14	15	277

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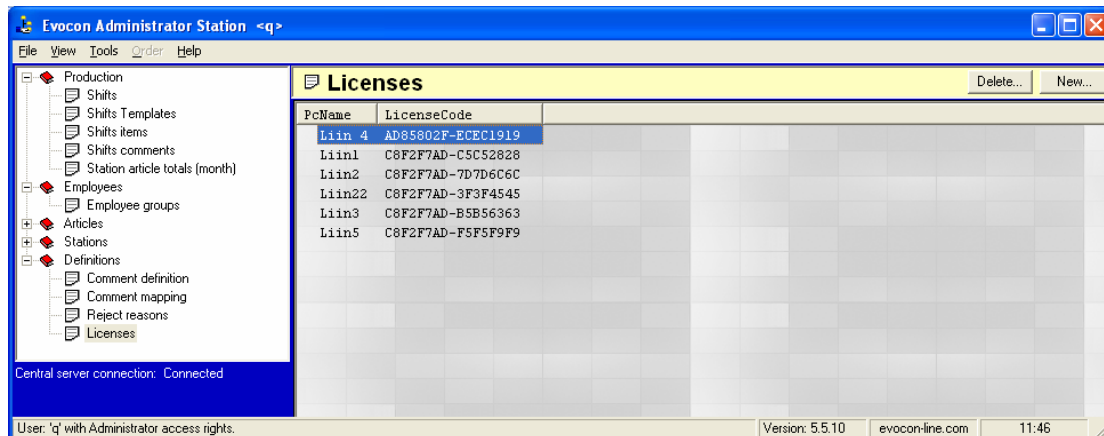
Total produced quantities of articles of selected station in selected month are listed in sub-list.
Cycle times of articles marked with check box can be recalculated with 'Recalculate selected article cycle times by month data' button.

Additional columns 'RealMedianCycleTime', 'RealAverageCycleTime' and 'HourTarget' display same information about these articles as at "Articles view".

Notes:

- After recalculation of one or many articles by selected month data you can lock calculated cycle time values from being automatically recalculated when they are produced at stations (see 5. Article view).
- There is another cycle time recalculation option in Tools menu > 'Recalculate all cycle times'. This operation recalculates all articles cycle times for all stations by 3000 (default) last produced articles.
- Click on 'Total' column header of sub-list to sort articles by quantity for better view.

13. Licenses



Licenses are needed for ELF station programs what are operating in signal counting mode. When new ELF station is added then at first start it does not find correct LicenseCode for it and displays a PC fingerprint code. Forward this code to your system supplier for having a valid LicenseCode for PC

New license can be added by pressing 'New...' button.

14. Support contact

Evocon OU

Phone: +372 525 9866

E-mail: info@evocon-line.com

Web: www.evocon-line.com

Appendix A. Automatic cycle time calculation

Evocon automatic cycle time (ECT) calculation procedure.

1. A set of last S number of cycle time values is taken.
By default S=3000 (stored in database)
2. Medial cycle time (M) from set is found as measure of central tendency.
3. Reduced set (x count of numbers) of cycle time values (N1...Nx) is taken from S values what includes cycle times in range between M and M x Cs.
x - number of cycle times used for automatic calculation.
Cs – cycle time span coefficient.
4. Sum of squared deviations (SSD) between each cycle time and M is found: $SSD = (N1-D)^2 + \dots + (Nx-D)^2$
5. Average squared deviation (ASSD) is found: $ASSD = SSD / x$
6. Square root (SR) from average squared deviation (ASSD) is found: $SR = \text{SQR}(ASSD)$
7. Evocon automatic cycle time (ECT) is calculated by multiplying SR with adjustment coefficient (Ca) and adding it to median cycle time (M): $ECT = M + SR \times Ca$
By default Ca=1.15 (stored in database)
8. Critical cycle time (CTC) used to define “production stop” (displayed in red at station program) is calculated by multiplying ECT with adjustment coefficient (Cr): $CTC = ECT \times Cr$
By default Cr = 2 (stored in database)

Notes:

Procedure steps 4 to 6 are similar used to calculate standard deviation.