

TopTronic[®] Supervisor

Presentation and advantages

Hoval Bulgaria

Hoval

TopTronic[®] online

and his big brother

TopTronic[®] Supervisor

The image shows a screenshot of the HovalDesk login interface. The background is a scenic landscape with mountains and a lake. The login form is centered and contains the following elements:

- HovalDesk logo
- Welcome to your interactive Hoval plant
- E-Mail input field
- Password input field
- Logon button
- Forgot password link
- Register button

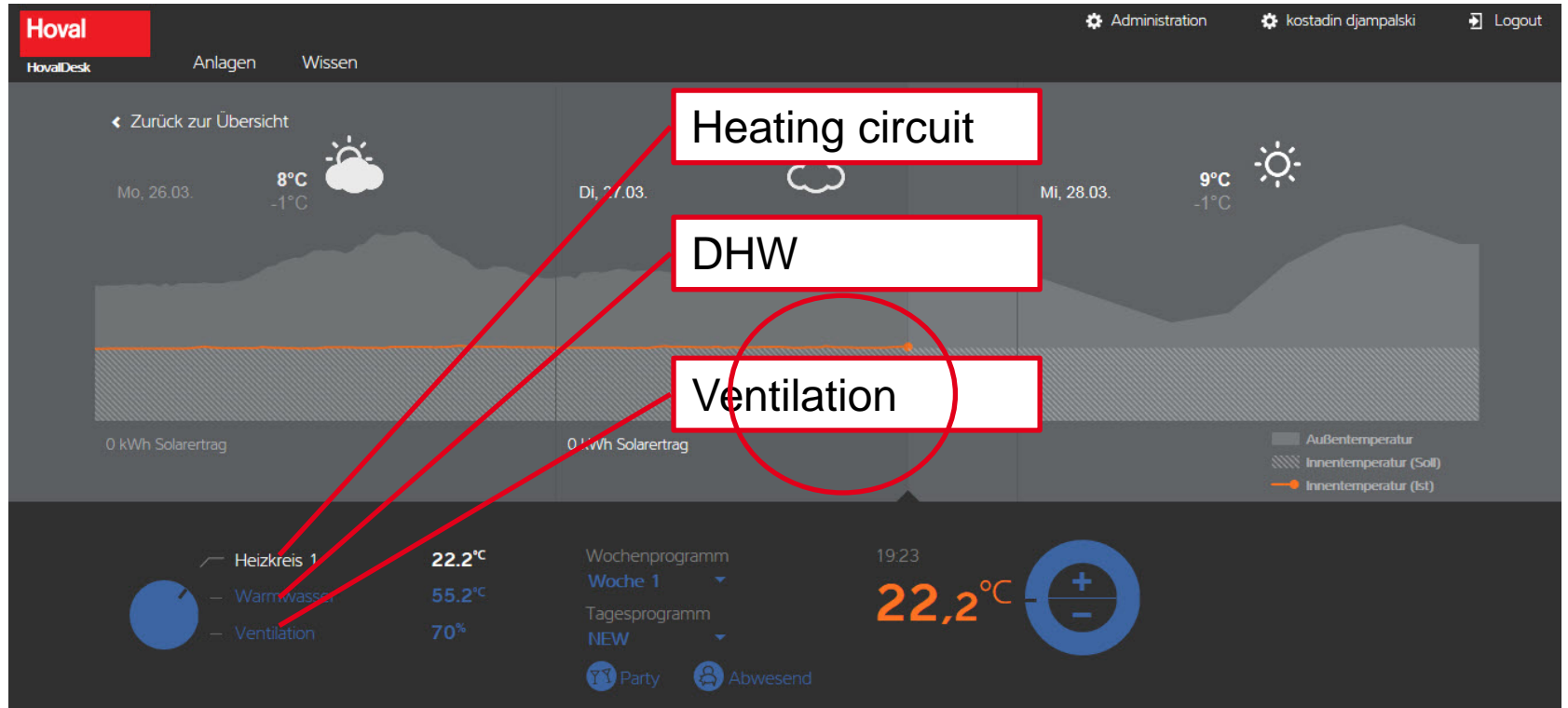
Two callout boxes with red borders and arrows pointing to the 'E-Mail' and 'Logon' fields are present:

- End customer level** (points to the E-Mail field)
- Installation level:**
 - Group of endcustomers (points to the Logon button)

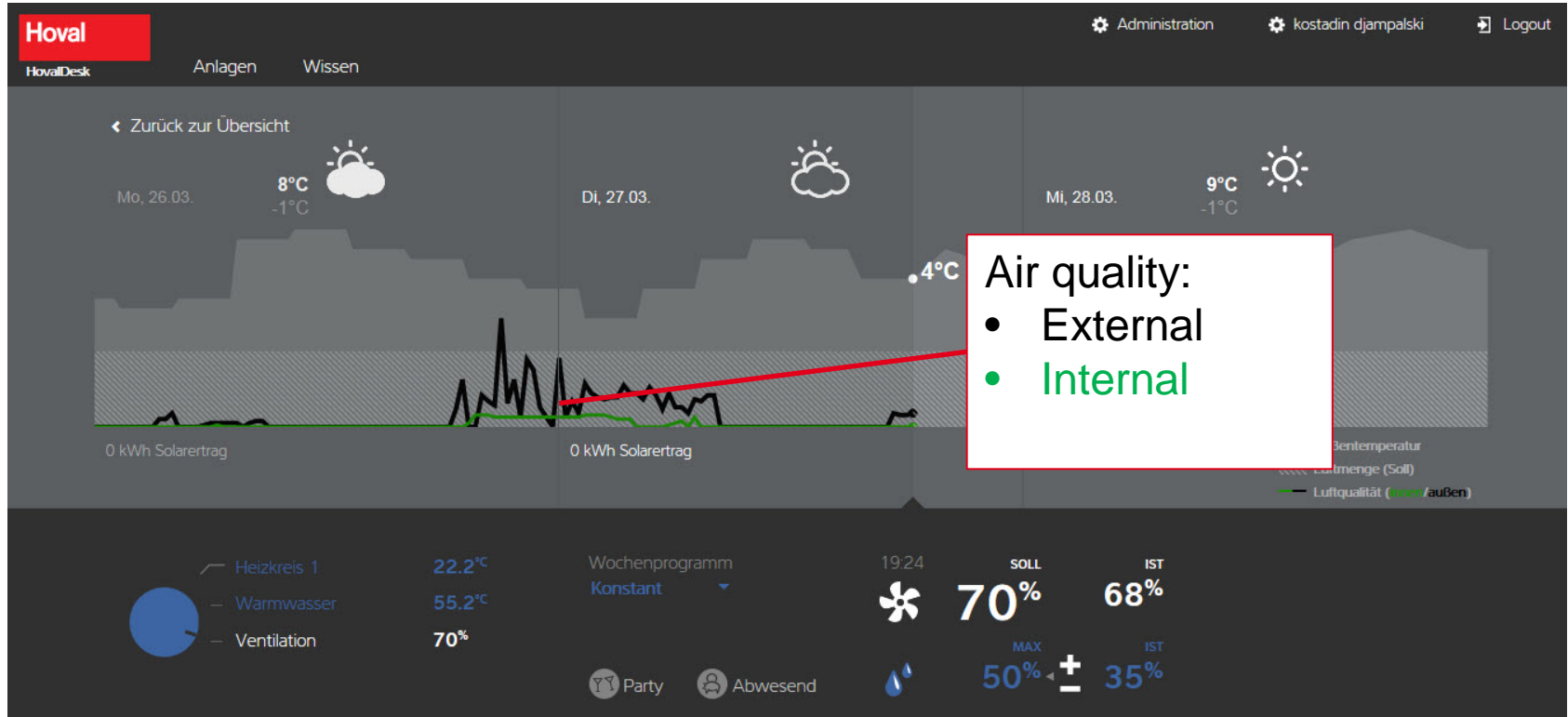
Additional page elements include the Hoval logo and 'HovalDesk' text in the top left, language options (Deutsch | English | Italiano | Français) in the top right, and copyright information (© Hoval Aktiengesellschaft) and footer links (Contact | Imprint | Terms of use | Privacy statement) at the bottom.

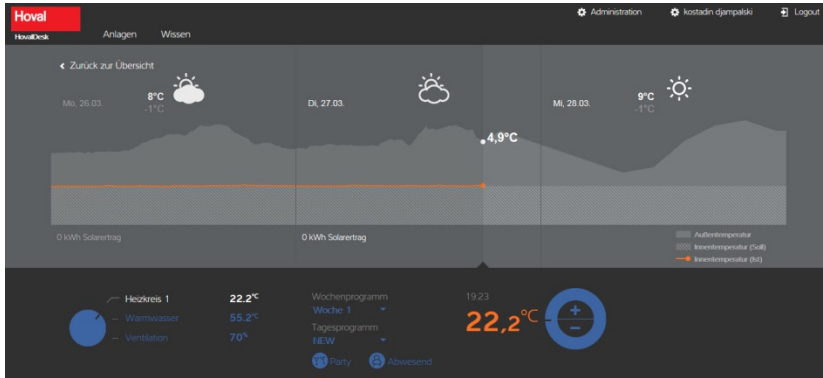
The screenshot displays the TopTronic®E online interface. At the top left, the 'Hoval' logo is visible in a red box, followed by 'HovalDesk' and navigation links for 'Anlagen' and 'Wissen'. On the top right, there are links for 'Administration', 'kostadin djampalski', and 'Logout'. The main area features a map of Bulgaria with several numbered circles representing connected devices: Sofia (7), Plovdiv (2), Haskovo (3), Plevan (2), and Varna (7). A red box highlights the map with the text 'Map visualization for all connected devices'. Below the map, a search bar contains the text 'bulgaria' and a button labeled 'Anlage finden'. On the right side, there is a sidebar with a plus sign icon, the text 'Neue Anlage hinzufügen', input fields for 'Seriennummer' and 'Passwort', and a 'Hinzufügen' button. At the bottom left, a red box contains the text 'All connected devices in Bulgaria'. The bottom of the interface shows the copyright information '© Hoval / Oct-18', the company name 'Hoval Corporation', and the page number '4'.

TopTronic®E, end user view



TopTronic®E, end user view, ventilation - HomeVent





Jürgen Raich Zuhause

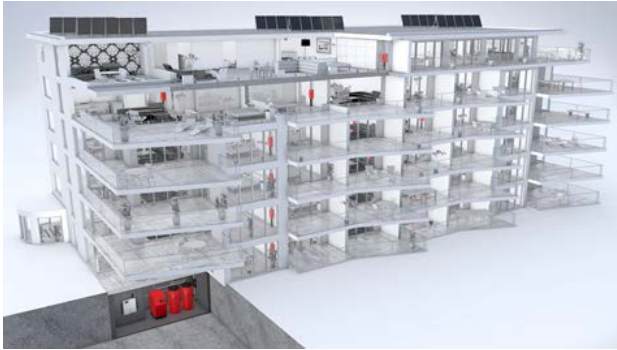


- Access to current user or group of users
- Real time and historical information about system performance
- Quick access to all heating and DHW circuits with the most important functions
- Quick access to ventilation functions
- Simple graphical processing of the room/DHW temperature curve influenced by weather – comparison with energy yield/consumption
- Error messages
- Solar yield earned kW, diagram
- Online check and adjustment of the parameter settings, level 5 (OEM)

If the end user is not connected to Internet, FM don't have access to his equipment!!!

Regular needs and requests

▪ Sample: Residential complex



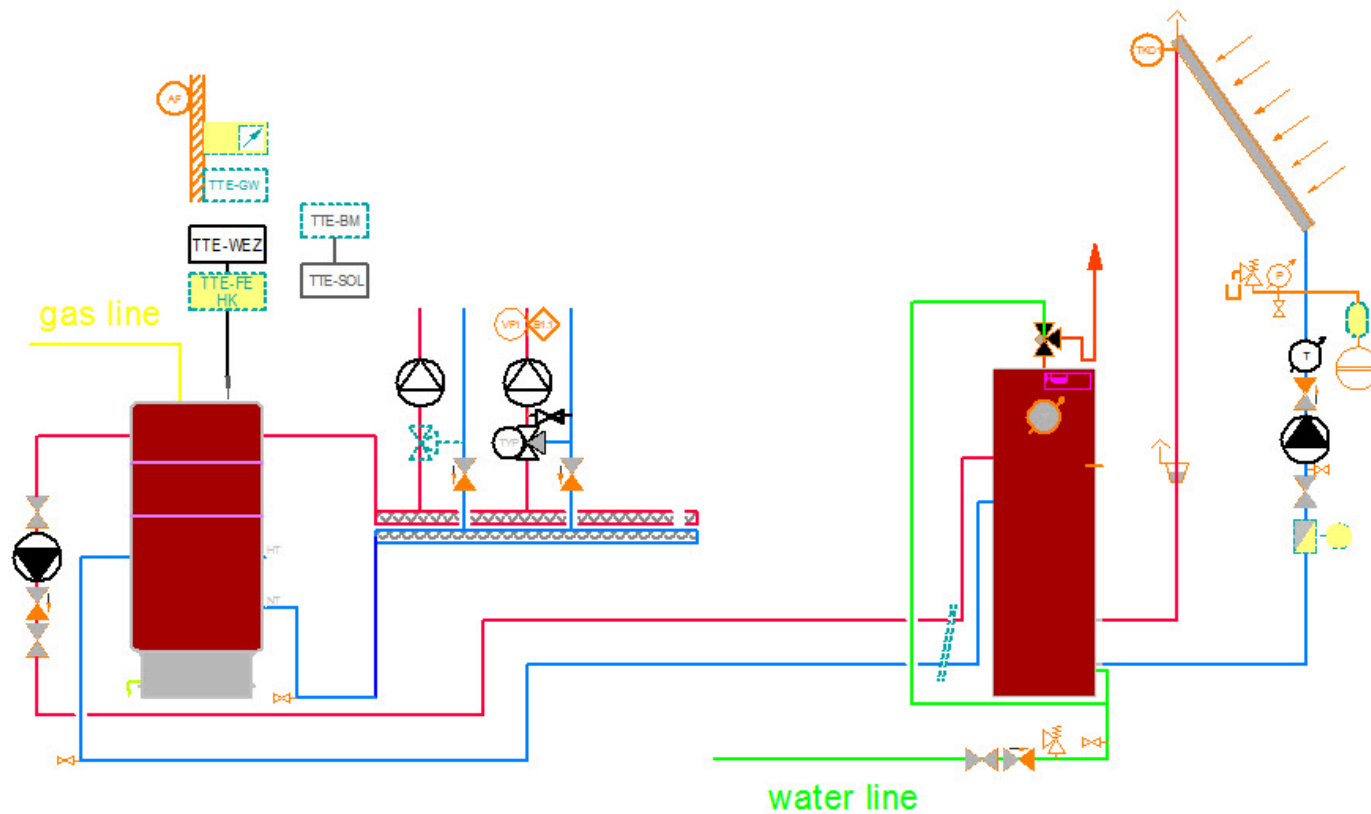
▪ Customer needs:

- ✓ **Energy management** for complete residential park
- ✓ **Gas & Water & Heat** consumption monitoring
- ✓ **Data storage** at Facility managers FM computer
- ✓ **Wired optical** communication between houses and FM office
- ✓ **Billing** for **Gas & Water & Heat** consumption
- ✓ **Notifications** for Regular maintenance & Alarm
- ✓ **Log files** with the most important parameters of the system
- ✓ **Accounts** for FM (different levels)
- ✓ **Alarm notification for Gas Magnetic valve** - We can receive potential free contact in order to provide the alarm notification
- ✓ **Access for the end users true TTSupervisor – NO!!**

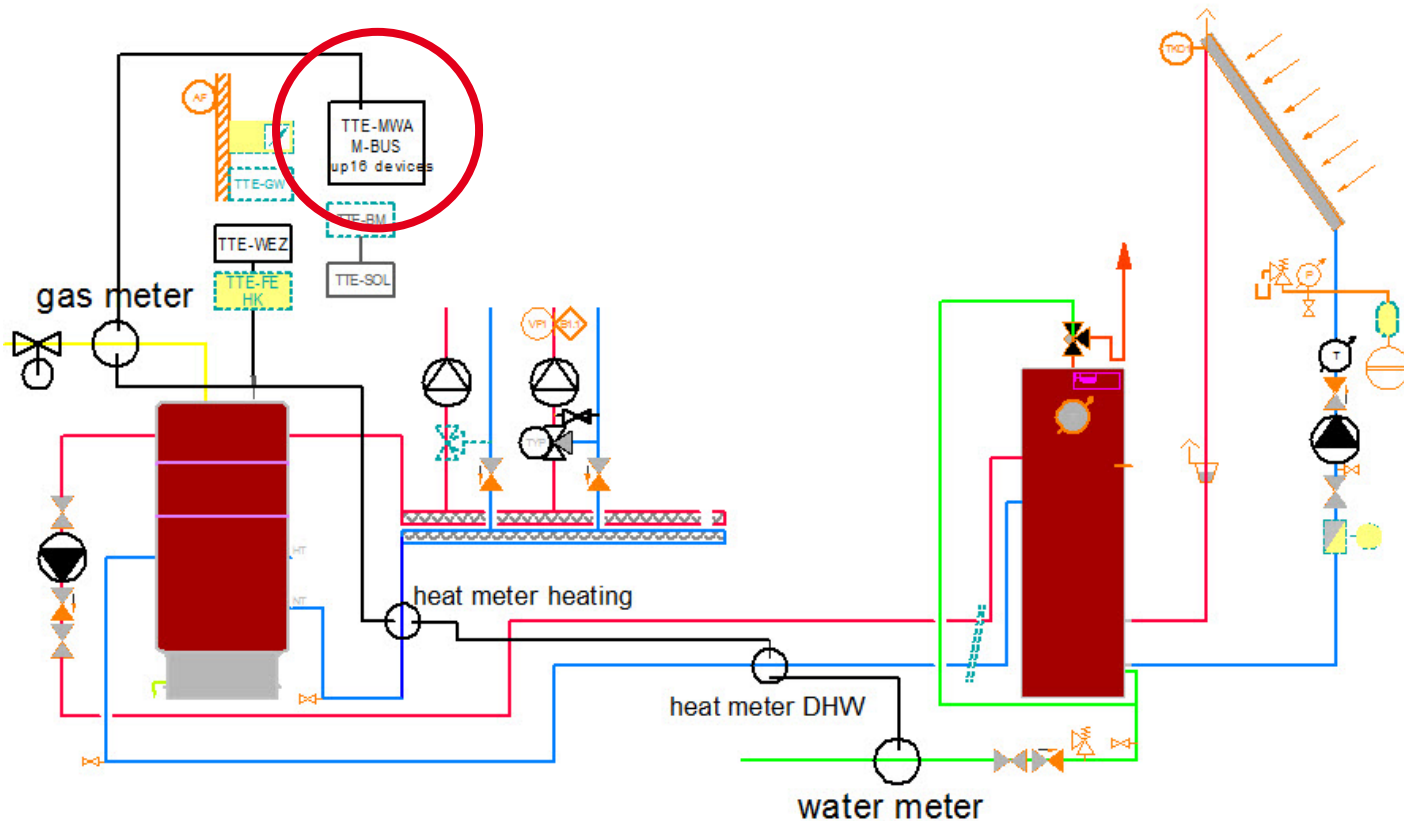
TopTronic Supervisor – Energy Manager

Warning:
It is not for end customer usage
It is only for FM company!!!

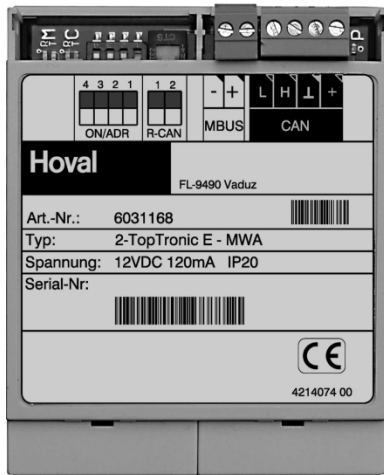
First step – Installation with TopTronic®E



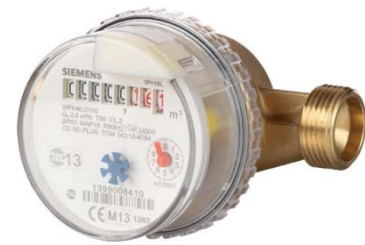
Second step - Integration of external measure devices



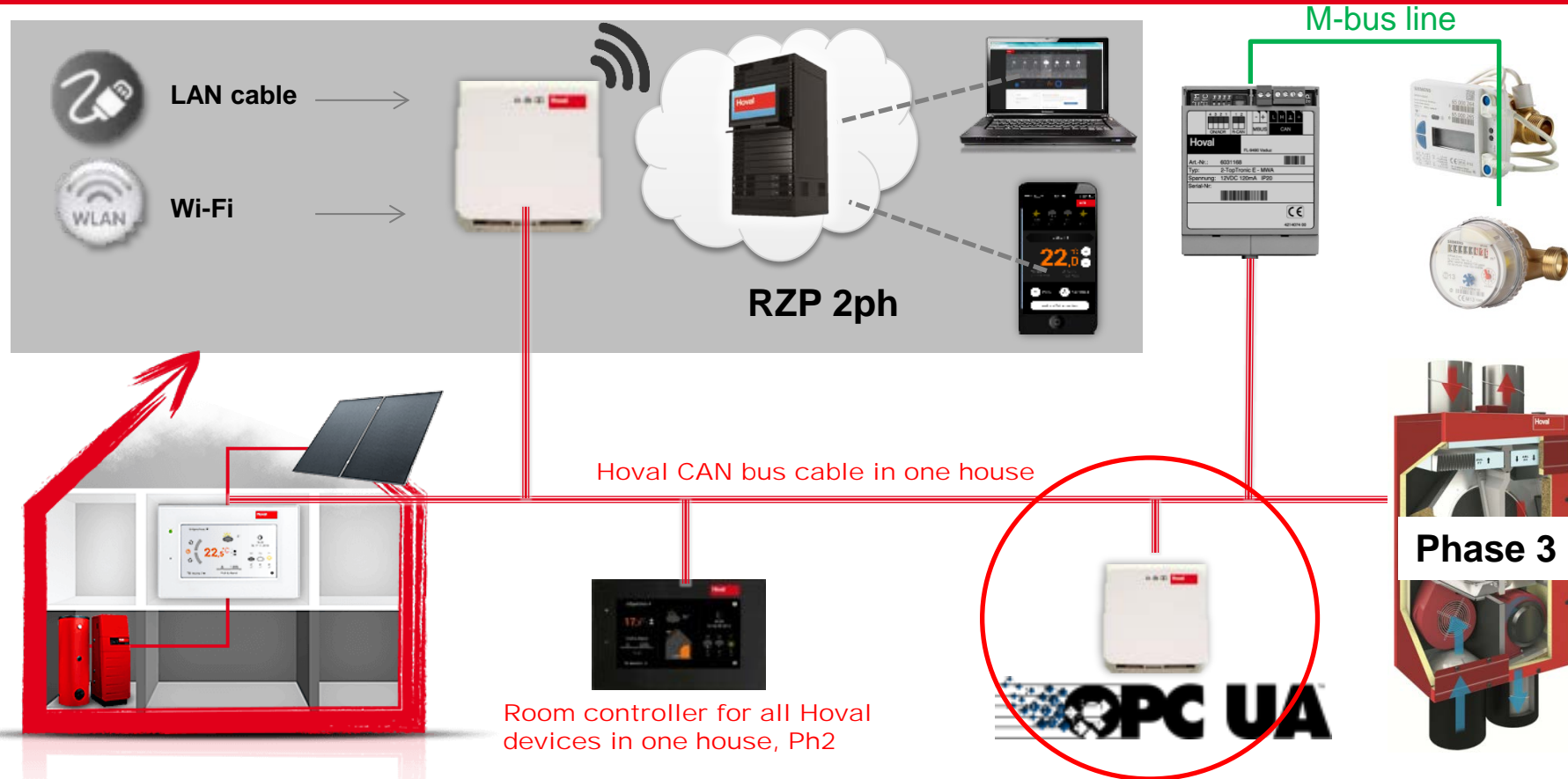
TTE MWA module for external measure devices



M-bus devices



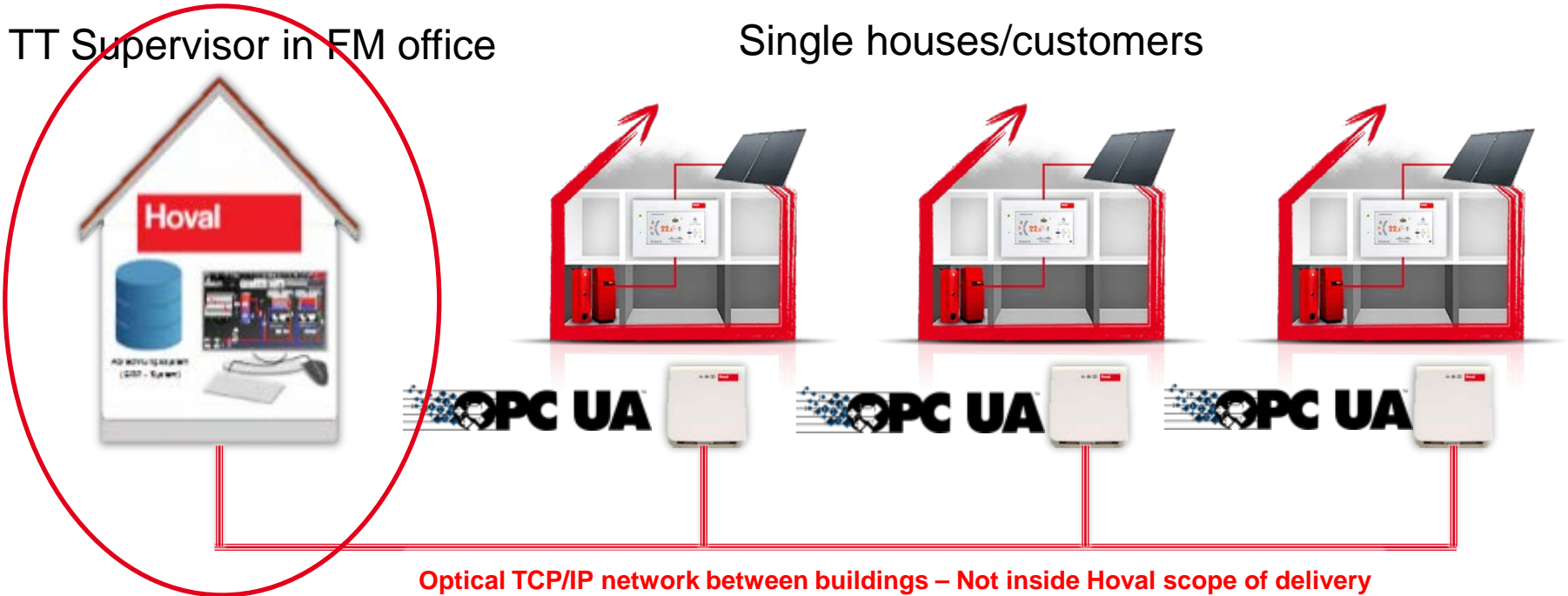
Step 3 - Transformation from TopTronic®E to TopTronic®Supervisor



TT Supervisor - System overview

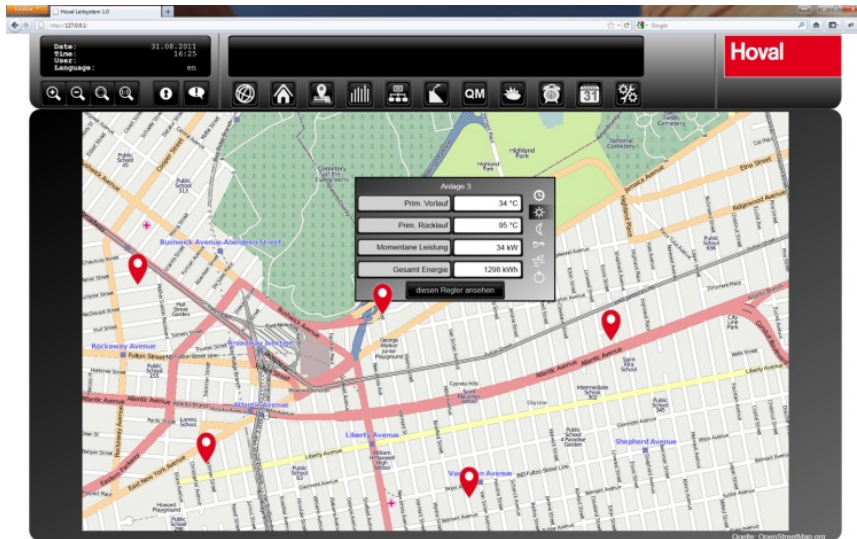
TT Supervisor in FM office

Single houses/customers



Optical TCP/IP network between buildings – Not inside Hoval scope of delivery
<https://www.leoni.com/de/unternehmen/>

Main screen – PROJECT VIEW



Google maps or personal master plan

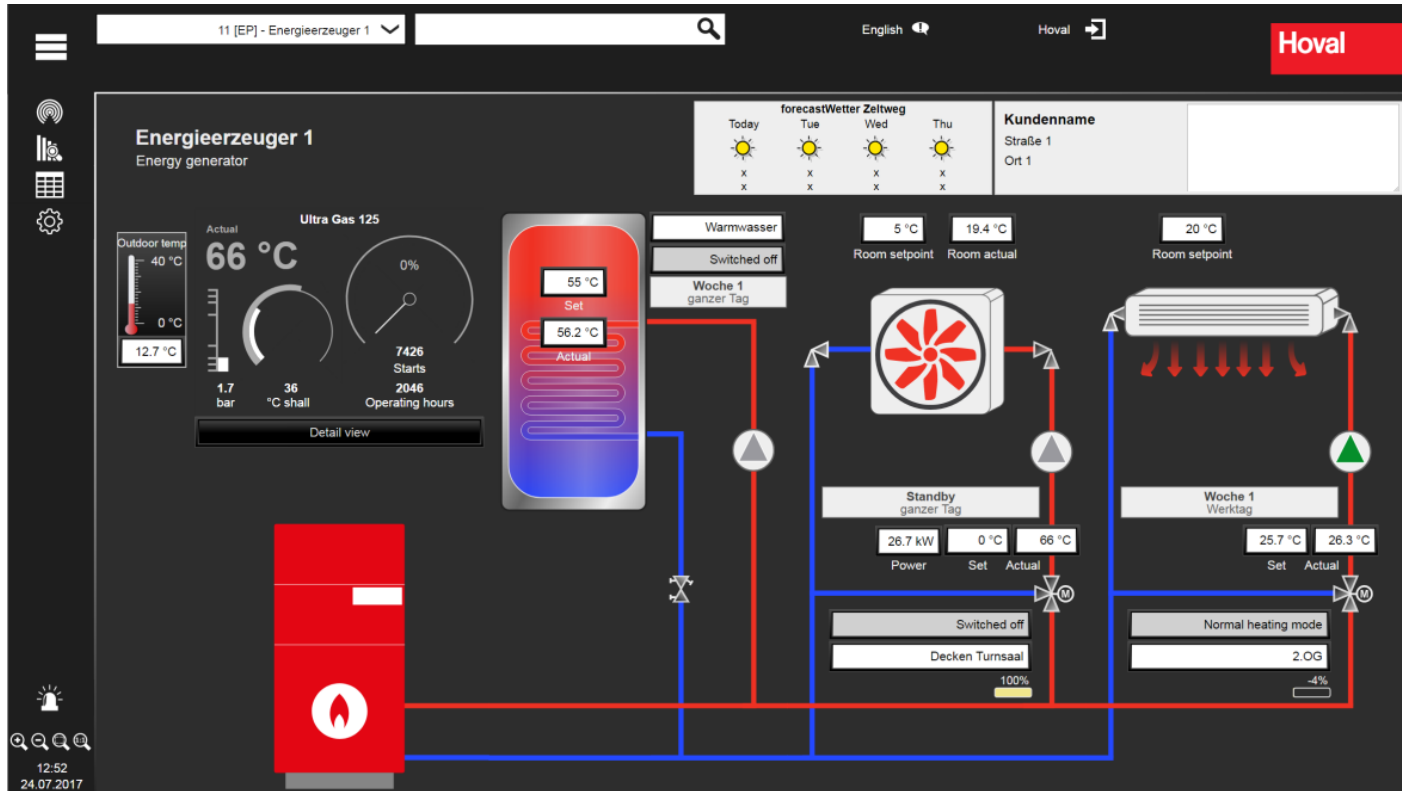
House 1



House ...n



TopTronic® Supervisor screen



TopTronic® Supervisor screen

03 [EP] - Atanas_House

English HovalServiceHR %

Hoval

Atanas_House
Energy generator

forecast/Wetter Dolni Lozen

Today	Fri	Sat	Sun
x	x	x	x
x	x	x	x

Atanas House
Sv. Spas 36
1151 Lozen

Current data

Outdoor temp
10 °C
-30 °C
1.8 °C

Actual TopGas
53.5 °C
1.6 bar
0 °C shall
24 Starts
8 Operating hours

Room setpoint 22 °C
Room actual 22.2 °C

35 °C 40.3 °C
Actual 30 °C

Parameter list
Operation choice
Automatic operation

Set Switch OFF Temp
-18 °C

Parameter list
Operation choice
Automatic Operation

Set Switch ON Temp
-20 °C

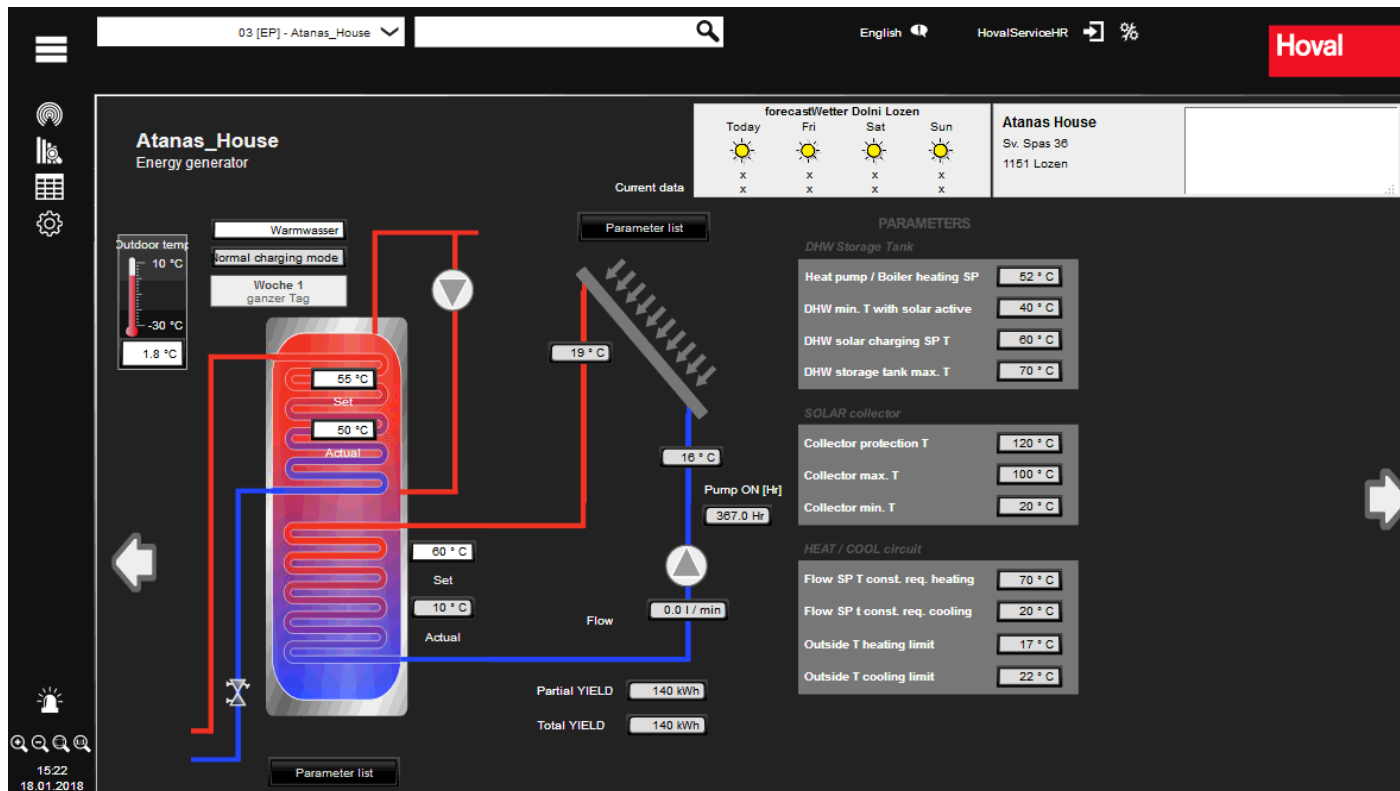
Parameter list
Heat/Cool Curve
Schedule

Woche 1 NEW
Normal heating mode
Heizkreis 1

Op. choice
Week 1

15:20
18.01.2018

TopTronic® Supervisor screen



TopTronic® Supervisor screen

03 [EP] - Atanas_House English HovalServiceHR % **Hoval**

Atanas_House
Energy generator

forecastWetter Dolni Lozen
Today Fri Sat Sun
x x x x
x x x x

Atanas House
Sv. Spas 36
1151 Lozen

Current data

Operation choice **Constant**

Constant SP Modulation **70 %**

Extract Air Humidity **34 %**

Extract Air Temperature **21.7 °C**

VOC Extract Air **0 %**

454 ppm

Outdoor temp
10 °C
-30 °C
1.8 °C

Modulation **70 %**

Fan Outside Air set **68 %**

Fan Exhaust Air set **68 %**

Outside Air Temperature **1.9 °C**

VOC Outside Air **0 %**

454 ppm

Parameter list

WEEK 1 Schedule

Monday All day
Tuesday All day
Wednesday All day
Thursday All day
Friday All day
Saturday All day
Sunday All day

WEEK 2 Schedule

Monday All day
Tuesday Longer day
Wednesday Early & late
Thursday Only Evening
Friday New
Saturday
Sunday

Schedule

15:23
18.01.2018

TopTronic® Supervisor for industrial projects is also available

TopTronic® Supervisor for industrial projects is also available

Hoval

English | HovalServiceHR | %

Total | [Search]

ZONE 01

Zone Units Operating Mode: VE

Zone SP Temperature Day: 22.0 °C

Zone SP Temperature Night Cooling: 26.0 °C

Zone General Alarm: [Green]

Settings | Alarms

VENU / REMU	RECU
VENU 01 01	RECU 01 61
REMU 01 02	RECU 01 62
REMU 01 03	RECU 01 63
VENU 01 04	RECU 01 64
VENU 01 05	RECU 01 65
VENU 01 06	
REMU 01 07	
REMU 01 08	
VENU 01 09	
REMU 01 10	
VENU 01 11	
REMU 01 12	
REMU 01 13	
REMU 01 14	
REMU 01 15	

ZONE 01 01 RHC

Unit Act. Operating Mode: VENTILATION

Frost Protection Alarm: [Green]

Main Switch Off: [Green]

Local Protection Mode: [Green]

General Alarm: [Green]

Alarms

VENU 01 01 RHC Schematic

Outside Air Temperature: 18.1 °C

Fresh Air Damper: 100.0 %

Fresh Air Filter: [Green]

Rec. Air Damper: 100.0 %

T Extract Air SP: 20.8 °C

T Extract Air: 20.8 °C

Extract Air Filter: [Green]

Air Injector: 100.0 %

Room Temp. Act. SP: 21.0 °C

Room Temperature: 21.4 °C

Air Quality: 483 ppm

Relative Humidity: 35 %

T Exhaust Air: 30.0 °C

Bypass Air Damper: 0.0 %

T Supply Air SP: 17.0 °C

T Supply Air: 12.9 °C

Frost Prot. Return Water: [Green]

Frost Prot. Supply Air: [Green]

09:47
31.01.2018

Billing for Gas & Water & Heat consumption

01 [DH] - Fernwärme 1 02 English HovalServiceHR %

Consumer overview: 01 - Fernwärme 1 All heat meters Update data CSV export Print

customer	Controller ID & name	last c.(sec)	Function	OTemp.(°C)	OTFrost.(°C)	SF1(°C)	SecFLset(°C)	SecFLast(°C)	Con.kW	mom_pwr (kW)	Flow rate (l/h)	FL prim.(°C)	Ret. prim.(°C)	Diff.T(°C)	Heat quantity (MWh)	HL-F
0001 Kunde 1	Regler 0002 - 0002	17	Automatic	8.7	0	57.4	43.3	43.2	14	3	91	72.6	38.2	34.4	71.871	OK
0002 Kunde 2	Regler 0001 - 0001	106	Automatic	12.9	1		63.4	64.1	120	0	0	64.1	43.7	20.3	139.46	OK
0003 Kunde 3	Regler 0003 - 0003	35	Automatic	12.1	2		70	70	110	4	100	71.6	28.9	42.7	493.827	OK
0004 Kunde 4	Regler 0004 - 0004	70	Automatic	8.1	0		49.9	57.4	75	0	0	61.2	48.5	12.6	56.222	OK
0005 Kunde 5	Regler 0005 - 0005	127	Automatic	8.3	0		56.8	55.8	10	0	0	55	40.3	14.7	29.778	OK
0006 Kunde 6	Regler 0008 - 0008	45	Automatic	9.4	1		50.9	50.4	45	1	27	63.1	28.2	34.8	46.609	OK
0007 Kunde 7	Regler 0006 - 0006	145	Automatic	9.3	1		50.4	50.5	34	8	240	75	44	31	196.943	OK
0008 Kunde 8	Regler 0007 - 0007	113	Automatic	9.6	0	50.3	43	43	10	2	69	71.3	37.4	33.8	73.886	OK
0009 Kunde 9	Regler 0009 - 0009	70	Automatic	9.4	0	48.5	48.3	48.3	19	2	100	69.4	44.5	24.8	85.073	OK
0010 Kunde 10	Regler 0010 - 0010	130	Automatic	9.2	0	55	55.4	55.4	12	3	111	69.6	43.8	25.7	85.154	OK
0011 Kunde 11	Regler 0011 - 0011	37	Automatic	10.7	0	56.5	44.5	46.4	20	1	47	74.1	40.4	33.7	89.419	OK
0012 Kunde 12	Regler 0012 - 0012	69	Automatic	8.8	0	48.2	36.8	36.8	12	1	44	67.9	33.1	34.8	57.114	OK
0013 Kunde 13	Regler 0013 - 0013	18	Automatic	10.3	1		47.8	48	20	2	63	74.4	36.3	38.1	55.615	OK
0014 Kunde 14	Regler 0014 - 0014	74	Automatic	11	0	70.8	47.3	76.9	18	0	0	38.3	30.5	7.7	37.049	OK
0015 Kunde 15	Regler 0015 - 0015	37	Automatic	9.5	0	48.7	52.4	52.6	27	1	50	71.9	37.4	34.4	81.273	OK
0016 Kunde 16	Regler 0016 - 0016	108	Heating	9.6	0		56.6	69.8	70	0	0	62.8	57.7	5.1	68.29	OK
0017 Kunde 17	Regler 0017 - 0017	53	Automatic	8.7	0	52	45.9	46	11	2	72	73.5	41.4	32.1	78.013	OK
0018 Kunde 18	Regler 0018 - 0018	46	Automatic	8.7	0	67.9	0	66.3	15	0	0	66.4	55.4	10.9	80.988	OK
0019 Kunde 19	Regler 0019 - 0019	110	Automatic	9	0	45.3	39.4	39.6	10	1	36	71.4	35	36.4	44.83	OK
0020 Kunde 20	Regler 0020 - 0020	13	Automatic	9.2	0	47.9	45.2	45.2	15	3	106	70	40.4	29.6	79.893	OK
0021 Kunde 21	Regler 0021 - 0021	45	Automatic	20.2	0	67.4	0	67	15	0	0	56.3	53.3	3	74.813	OK
0022 Kunde 22	Regler 0022 - 0022	50	Automatic	7.2	0	44.3	56.1	55.9	19	3	133	72	48.9	23.1	68.656	OK
0023 Kunde 23	Regler 0023 - 0023	128	Automatic	9.1	0	49.3	46.7	46.8	20	5	156	73.2	43.6	29.5	121.116	OK
0024 Kunde 24	Regler 0024 - 0024	144	Heating	9.9	0	77.2	59.8	59.8	10	1	106	68.1	51.8	16.2	55.437	OK
0025 Kunde 25	Regler 0025 - 0025	126	Automatic	8.8	0		47	46.6	42	0	0	70.7	36.1	34.6	0	OK
0026 Kunde 26	Regler 0026 - 0026	22	Automatic	10	0		46.2	46.3	150	18	547	71.3	41.8	29.5	370.282	OK
0027 Kunde 27	Regler 0027 - 0027	18	Automatic	9.5	0		49.5	49.6	150	17	499	72	42.4	29.5	400.343	OK
0028 Kunde 28	Regler 0028 - 0028	125	Automatic	10.5	0		48.5	48.6	150	11	327	69.7	38.7	31	306.087	OK
0029 Kunde 29	Regler 0029 - 0029	68	Automatic	10.2	0		49.1	49	0	8	273	72.4	45	27.4	260.322	OK
0030 Kunde 30	Regler 0030 - 0030	114	Automatic	9.8	0	55.2	57.6	53.3	0	11	387	68.8	43.8	25	98.532	OK
0031 Kunde 31	Regler 0031 - 0031	18	Heating	9.2	0		62	61.6	0	10	275	77.8	44	33.8	232.782	OK

Data: 1 - 31 of 52

15:40 26.01.2018 *Totalling over all heat meters that have power calculation activated. Restrict Updated on: 26. 01. 2018. 15:40:44

Billing for Gas and Water consumption

- Export to CSV file

The screenshot shows the Hoval software interface. At the top, there are search fields for '01 [DH] - Fernwärme 1' and '02'. The main area is titled 'Consumer overview:' and contains a table with columns for customer ID, name, controller ID, function, and various temperature and flow rate metrics. A red arrow points to the 'CSV export' button in the top right corner of the table area.

customer	Controller ID & name	last c. sec.	Function	OTemp. (°C)	OTFrost (°C)	SP1(°C)	SecFlues(°C)	SecFlact(°C)	Con.kW	mom. pwr (kW)	Flow rate (l/h)	Flow rate (l/h)	Ret. prim. (°C)	DifT. (K)	Heat quantity (MWh)	HM-F.	
0001	Kunde 1	Regler 0002 - 0002	17	Automatic	8.7	0	57.4	43.3	43.2	14	3	91	72.6	38.2	34.4	71.871	OK
0002	Kunde 2	Regler 0001 - 0001	106	Automatic	12.9	1		63.4	64.1	120	0	0	64.1	43.7	20.3	138.46	OK
0003	Kunde 3	Regler 0003 - 0003	35	Automatic	12.1	2		70	70	110	4	100	71.6	28.9	42.7	483.827	OK
0004	Kunde 4	Regler 0004 - 0004	70	Automatic	8.1	0		49.9	57.4	75	0	0	61.2	48.5	12.6	56.222	OK
0005	Kunde 5	Regler 0005 - 0005	127	Automatic	8.3	0		56.8	55.8	10	0	0	55	40.3	14.7	29.778	OK
0006	Kunde 6	Regler 0008 - 0008	45	Automatic	9.4	1		50.9	50.4	45	1	27	63.1	28.2	34.8	46.609	OK
0007	Kunde 7	Regler 0006 - 0006	145	Automatic	9.3	1		50.4	50.5	34	8	240	75	44	31	196.943	OK

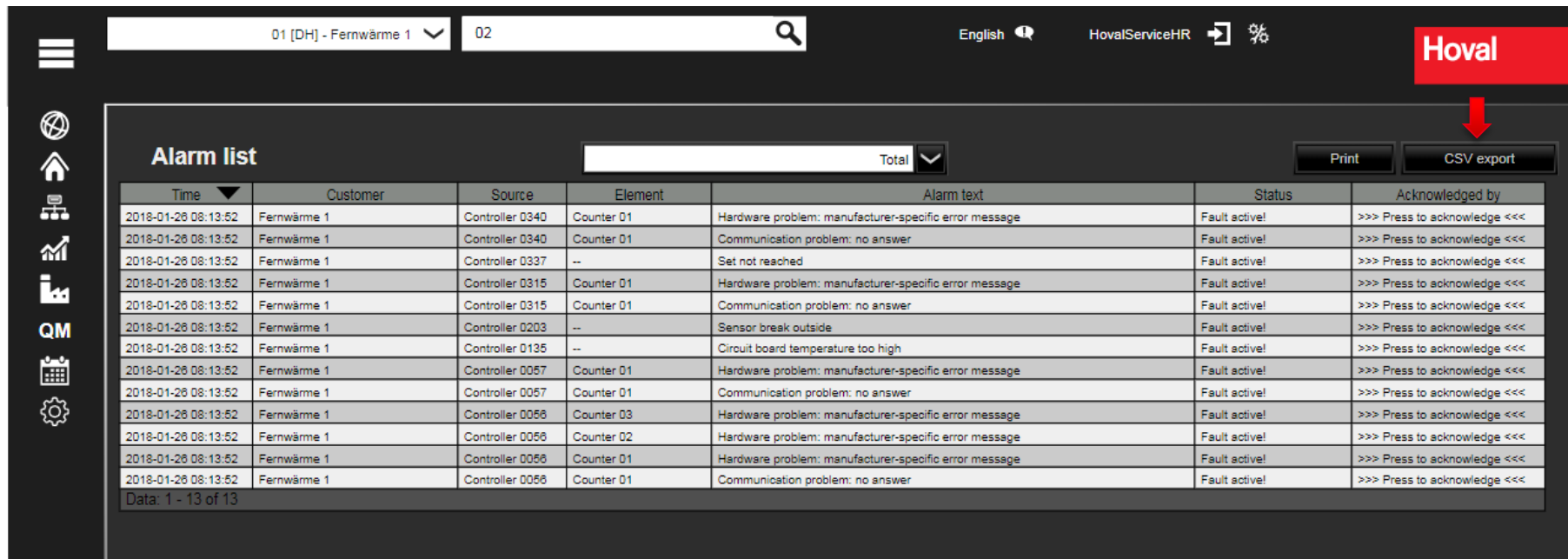


The screenshot shows a Microsoft Excel spreadsheet with the following data rows (representing the first 10 rows of the CSV export):

ID	customer	Controller ID & name	last c. sec.	Function	OTemp. (°C)	OTFrost (°C)	SP1(°C)	SecFlues(°C)	SecFlact(°C)	Con.kW	mom. pwr (kW)	Flow rate (l/h)	Flow rate (l/h)	Ret. prim. (°C)	DifT. (K)	Heat quantity (MWh)	HM-F.
1	0001	Kunde 1;Regler 0002 - 0002	17	Automatic	8.7	0	57.4	43.3	43.2	14	3	91	72.6	38.2	34.4	71.871	OK
2	0002	Kunde 2;Regler 0001 - 0001	106	Automatic	12.9	1		63.4	64.1	120	0	0	64.1	43.7	20.3	138.46	OK
3	0003	Kunde 3;Regler 0003 - 0003	35	Automatic	12.1	2		70	70	110	4	100	71.6	28.9	42.7	483.827	OK
4	0004	Kunde 4;Regler 0004 - 0004	70	Automatic	8.1	0		49.9	57.4	75	0	0	61.2	48.5	12.6	56.222	OK
5	0005	Kunde 5;Regler 0005 - 0005	127	Automatic	8.3	0		56.8	55.8	10	0	0	55	40.3	14.7	29.778	OK
6	0006	Kunde 6;Regler 0008 - 0008	45	Automatic	9.4	1		50.9	50.4	45	1	27	63.1	28.2	34.8	46.609	OK
7	0007	Kunde 7;Regler 0006 - 0006	145	Automatic	9.3	1		50.4	50.5	34	8	240	75	44	31	196.943	OK
8	0008	Kunde 8;Regler 0006 - 0006	145	Automatic	9.3	1		50.4	50.5	34	8	240	75	44	31	196.943	OK
9	0009	Kunde 9;Regler 0009 - 0009	70	Automatic	8.1	0		49.9	57.4	75	0	0	61.2	48.5	12.6	56.222	OK
10	0010	Kunde 10;Regler 0010 - 0010	130	Automatic	9.2	0	55.5	45.5	41.2	3	11	159	64.8	25.7	85	154	OK

Alarm notification

- Export to CSV file



The screenshot displays the Hoval alarm notification interface. At the top, there is a navigation bar with a search field containing '01 [DH] - Fernwärme 1' and '02', a language selector set to 'English', and the user 'HovalServiceHR'. The 'Hoval' logo is in the top right corner, with a red arrow pointing to the 'CSV export' button. Below the navigation bar is the 'Alarm list' section, which includes a search field and a 'Total' dropdown. The main content is a table with the following columns: Time, Customer, Source, Element, Alarm text, Status, and Acknowledged by. The table contains 13 rows of alarm data. At the bottom left of the table, it says 'Data: 1 - 13 of 13'. On the left side of the interface, there is a vertical sidebar with various icons for navigation.

Time	Customer	Source	Element	Alarm text	Status	Acknowledged by
2018-01-26 08:13:52	Fernwärme 1	Controller 0340	Counter 01	Hardware problem: manufacturer-specific error message	Fault active!	>>> Press to acknowledge <<<
2018-01-26 08:13:52	Fernwärme 1	Controller 0340	Counter 01	Communication problem: no answer	Fault active!	>>> Press to acknowledge <<<
2018-01-26 08:13:52	Fernwärme 1	Controller 0337	--	Set not reached	Fault active!	>>> Press to acknowledge <<<
2018-01-26 08:13:52	Fernwärme 1	Controller 0315	Counter 01	Hardware problem: manufacturer-specific error message	Fault active!	>>> Press to acknowledge <<<
2018-01-26 08:13:52	Fernwärme 1	Controller 0315	Counter 01	Communication problem: no answer	Fault active!	>>> Press to acknowledge <<<
2018-01-26 08:13:52	Fernwärme 1	Controller 0203	--	Sensor break outside	Fault active!	>>> Press to acknowledge <<<
2018-01-26 08:13:52	Fernwärme 1	Controller 0135	--	Circuit board temperature too high	Fault active!	>>> Press to acknowledge <<<
2018-01-26 08:13:52	Fernwärme 1	Controller 0057	Counter 01	Hardware problem: manufacturer-specific error message	Fault active!	>>> Press to acknowledge <<<
2018-01-26 08:13:52	Fernwärme 1	Controller 0057	Counter 01	Communication problem: no answer	Fault active!	>>> Press to acknowledge <<<
2018-01-26 08:13:52	Fernwärme 1	Controller 0056	Counter 03	Hardware problem: manufacturer-specific error message	Fault active!	>>> Press to acknowledge <<<
2018-01-26 08:13:52	Fernwärme 1	Controller 0056	Counter 02	Hardware problem: manufacturer-specific error message	Fault active!	>>> Press to acknowledge <<<
2018-01-26 08:13:52	Fernwärme 1	Controller 0056	Counter 01	Hardware problem: manufacturer-specific error message	Fault active!	>>> Press to acknowledge <<<
2018-01-26 08:13:52	Fernwärme 1	Controller 0056	Counter 01	Communication problem: no answer	Fault active!	>>> Press to acknowledge <<<

History Log files

- Export to CSV file

The screenshot displays two overlapping windows from the Hoval software interface. The top window is the 'Logging' window, and the bottom window is a data visualization window.

Logging Window:

- Header: 03 [DH] - Fernwärme 3 | 02
- Language: English | User: HovalServiceHR
- Buttons: English, HovalServiceHR, %, Print, CSV export (highlighted with a red arrow)
- Filter: All | Use settings
- Time Range: From: 25.01.2018 16:03:28 | Up to: 26.01.2018 16:03:28
- Table Columns: Time, Type, customer, Source, Element, Alarm/Event, Acknowledged by
- Table Content: Multiple rows of audit logs, including entries for 'Value /Inteme/variablen | searchString' and 'User logged on: HovalServiceHR'.

Data Visualization Window:

- Header: 12 [EP] - Energieerzeuger 2 | 02
- Language: English | User: HovalServiceHR
- Buttons: English, HovalServiceHR, %, Hoval
- Graph: A line chart showing data over time from 23.04 14:00 to 24.04 14:00. The Y-axis ranges from 0 to 100. Multiple colored lines (green, red, blue, cyan) represent different data series.
- Table: A table below the graph with columns: Delete, Visible, Strapses, Axis, Style, Colour, Width, Designation, Value, Date.

Changes to TopTronic® supervisor 4.0

The screenshot displays the TopTronic supervisor 4.0 interface. At the top, there is a navigation bar with a search field containing 'te', a language selector set to 'Deutsch', and a user profile icon for 'test'. Below this, a row of system status indicators shows: '01 - TEST Fernwärme', '03 - testa Energiezentrale', '06 - asdfasdf test Fernwärme', and '07 - testasdfasdf Energiezentrale'. A 'Weiterer Ergebnisse' link is also present.

The main content area is titled 'Statistiken' and features a grid of 14 interactive icons for data visualization and management:

- Grafisch: Bar chart with a line graph overlay.
- Tabelle: Grid icon representing a data table.
- Kunden Übersicht: Hierarchical tree diagram.
- Effizienz Übersicht: Three overlapping circles.
- Zeitraum Verbrauchsanalyse: Pie chart.
- Durchflussmanagement: Three wavy lines and a triangle.
- WW-Ladezeiten: Three vertical bars of varying heights.
- Heizkreise Schaltzeiten: Three overlapping rectangles.
- Grafisch 2 Kunden: Bar chart with two target markers.
- Tabelle 2 Kunden: Two overlapping grid icons.
- Abrechnung: Document icon with horizontal lines.
- Projekt Übersicht: Globe icon.
- Wetter: Cloud with a sunburst.
- Kommunikation: Network diagram with nodes and connections.

A vertical sidebar on the left contains icons for home, QM, and other functions. At the bottom left, the time '13:52' and date '27.02.2017' are displayed.

User management

The screenshot displays the 'User management' interface in a dark theme. At the top, there is a navigation bar with a search bar containing '02', language settings for 'English', and the application name 'HovalServiceHR'. The 'Hoval' logo is in the top right corner. A sidebar on the left contains various icons for navigation. The main content area is titled 'User management' and features a 'Create user' form. The form includes fields for 'User name', 'Group', 'Complete name', 'E-mail', 'Standard language', 'Password', and 'Repeat password'. A 'Password strength' indicator shows a grey bar and the text 'Passwortstärke'. A 'Password strength requirement' dropdown is set to 'Weak'. A 'Create user' button is at the bottom of the form. A status bar at the bottom left shows the time '16:04' and date '26.01.2018', along with a notification icon and a message: 'users and sessions currently logged onto the system'.

03 [DH] - Fernwärme 3 02 English HovalServiceHR Hoval

User management

Edit a user

Create user:

* User name

* Group

Complete name

E-mail

Standard language

* Password *** Password ***

* Repeat password *** Password ***

Passwortstärke

Create user

Password strength requirement

Weak

16:04 26.01.2018

users and sessions currently logged onto the system

Why TopTronic® Supervisor

- **100% Hoval tool/instrument**, suitable specially for Hoval equipment
- **Energy management and consumption optimization of** for HVAC systems
- **Easy** implementation and installation
- **Offline remote control** of HVAC system (via VPN)
- System **visualizations**, graphical **overview of trends** in order to optimize system
- **Alarm** overview + notifications
- History **log file**, **statistics of the most important parameters of the system**
- **Data export** (.csv) for billing creation (from other ERP systems, or personal software)
- All **data are stored** on FM computer
- Data communication is **encrypted**
- User account management for **different user levels** in the system, no limit
- Single project/house record of service/maintenance activities, for easy follow up the service actions

One small step further, gives you a lot of opportunities.....

Questions and Answers

Questions and Answers

QUESTIONS	ANSWERS
Can we control Pumps, 3-way valves and dampers	Yes, TopTronic E is controlling pumps and three way valves. I am not sure which kind of dampers you want to control!
Can we have a room control? Underfloor, Radiators, Fan coils	We can control just heating circuit. If one heating circuit is responsible for one room then we can do it. If heating circuit is responsible for more room than we can't separate those rooms. All room will work parallel
Can we request data for specific period for specific parameters (for example: data from watermeter and heatmeter for last 30 days or from 01.05.2018-30.05.208)	Yes ,you can select specific period for data!
Can we connect electrometer (electricity meter)	We can connect all kind of Mbus meters, but you need to send us type of Electric meter in order to check with R&D is this meter compatible with our system
Can we do some summary statistics / resume	We are investigating this possibility!
can we customize some buttons on the screens	Yes we can!
do we have deferent level access and can we customize levels?	Yes!
Can we see who has changed the parameters, witch user?	Yes!
Can we connect cooling meter or heating/cooling meter?	Yes!

Additional questions

- Additional questions
- Q: Parameters of the PC
- Q: Technical request for wired optical network.

A: Optical network is not our part!

Customer can contact company

you can find on a link below!

<https://www.leoni.com/de/unternehmen/>

A: Dell Precision 5820 Tower

Intel Xeon W-2104 3.2GHz, 4C, 8.25M Cache, No Turbo, No HT, (120W) DDR4-2400

Precision 5820 Tower 425W Chassis

16GB (2x8GB) 2666MHz DDR4 RDIMM ECC

Internal PCIe SSD (Dell Ultra-Speed Drive)

2.5" 500GB 7200rpm SATA Hard Drive

2 x M.2 1TB PCIe NVMe Class 50 Solid State Drive

Integrated Intel AHCI SATA chipset controller (8x 6.0Gb/s), SW RAID 0,1,5,10

No Optical

NVIDIA NVS 315, 1GB, DMS59 (DMS59 to DVI-I adapter)

Dell Ultra-Speed Drive Duo PCIe SSD x8 Card

Dell Wired Mouse MS116 Black

Dell Multimedia Keyboard - Slovenian (QWERTZ) - Black

Boot drive or storage volume is greater than 2TB (select when 3TB/4TB HDD is ordered)

Windows 10 Pro for Workstation (up to 4 Cores) Multi - English, Arabic, French,

Russian, Turkish

Windows 10 Pro OS Recovery 64bit - DVD

Microsoft Office 30 Day Trial - Excludes Office License

McAfee Security Center 30 day trial, Digital Delivery

3Yr Basic Warranty - Next Business Day

What you can count on.

As a specialist in heating and air-conditioning technology, Hoval is your experienced partner for system solutions. Hoval ties together the various technologies and also integrates room ventilation into this system. You can be sure to save both energy and costs while protecting the environment.

Hoval is one of the leading international companies for indoor climate solutions. More than 70 years of experience continuously motivates us to design innovative system solutions. We export complete systems for heating, cooling and ventilation to more than 50 countries.

Responsibility for energy and environment.

Hoval