



## User manual CowManager

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Manual for use of the web-based application CowManager



After going through the CowManager system installation guide, you can read about CowManager in general in this document. CowManager has been created to see at a glance whether cows have an alert for fertility, health and nutrition. The basic steps are written for you, but there are also some useful tips. This allows you to use the program easily and optimally.

This manual has been carefully compiled, as comprehensively as possible. If you still have questions don't hesitate to call or e-mail CowManager support.

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## Table of contents

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1	CowManager general information .....	4
2	CowManager modules .....	6
2.1	Fertility .....	6
2.2	Health .....	7
2.3	Nutrition .....	9
3	Cow list .....	10
3.1	Work screen columns per tab .....	11
3.2	Work screen filtering and sorting.....	11
3.3	Work screen alerts .....	12
3.4	The cow .....	14
4	Input .....	18
4.1	Add cow .....	18
4.2	Group management .....	19
4.3	Group event management .....	20
4.4	Linking.....	20
4.5	Delinking.....	21
5	Nutrition .....	22
5.1	Group overview .....	22
5.2	Behaviour around event.....	24
6	Settings .....	25
6.1	User settings.....	25
6.2	Management settings.....	25
7	Multiview.....	27
8	System status.....	28
8.1	CowManager system .....	28
8.2	Sensors .....	29
9	Instruction .....	31
9.1	User manual .....	31
9.2	Installation manual.....	31
9.3	About us .....	31



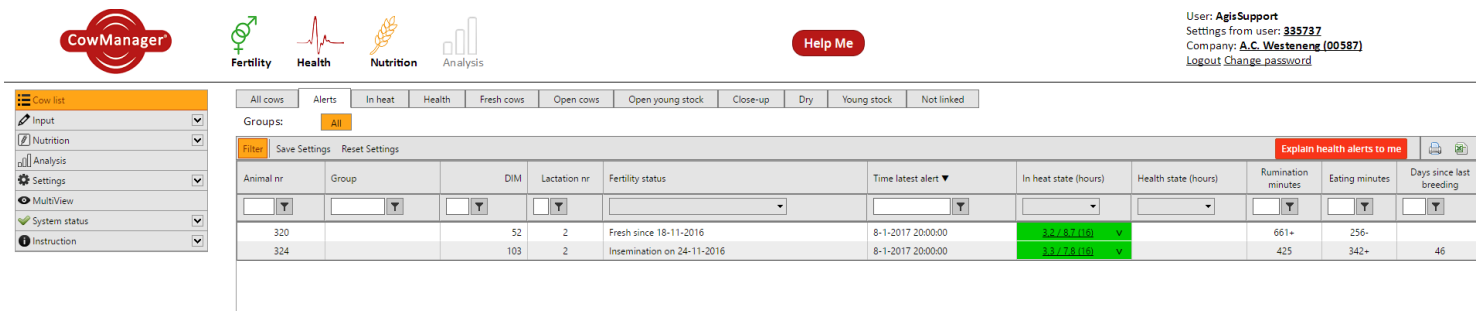
# 1 CowManager general information

After the installation of the CowManager System, an icon for the CowManager Program appears on the desktop of your computer. Double-clicking on this icon takes you to CowManager. Wherever you have a connection with the internet, you can also open CowManager in [www.Sensor.CowManager.com](http://www.Sensor.CowManager.com)

Please enter your username\* and password (send), and check 'Remember me next time'. Fill this in once, and the next time you click on the icon you will immediately enter CowManager. Don't forget that your internet browser checks and remembers your username and password.

\*Your username is your email address. This email address received an email with a link to create a password.

Then, the application opens and the following screen appears.



On the left side of the screen is the main menu, which contains the following headers:

- **Cow list**
- **Input**
- **Nutrition**
- **Analysis**
- **Settings**
- **Multiview**
- **System status**
- **Instruction**

Below, at the left side of the screen, two arrows and a search function are displayed. These functions are:

- **Next and previous cow**
- **Search cow function**

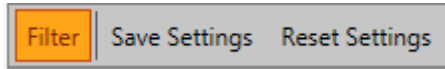


The 'Search cow' function can be used to search an individual animal by number. Just fill in the cow number and click on enter. The cow information will appear directly. If the cow doesn't exist, your cursor will automatically be back in the search row and you can type in another cow. By using the 'next' and 'previous' arrows you can also navigate to the next or previous cow.

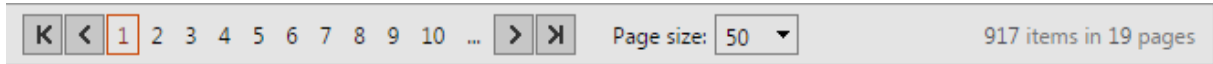
The left panel and search function are always on your screen. The right panel shows the content of the headers. When you open the Cow list, a few different tabs will appear: All cows, Alerts, In heat,



Health, Fresh cows, Open cows, Dry, Young stock and Not linked. When you make changes in the display of the columns, it is important that you save the settings. You can save them by clicking on the button “save settings” on the top of the page. If you want to go back to the default settings, you can click on “reset settings”.



The size of the page can be selected in the bottom of the screen. By larger lists the “next” and “previous” buttons can be used.

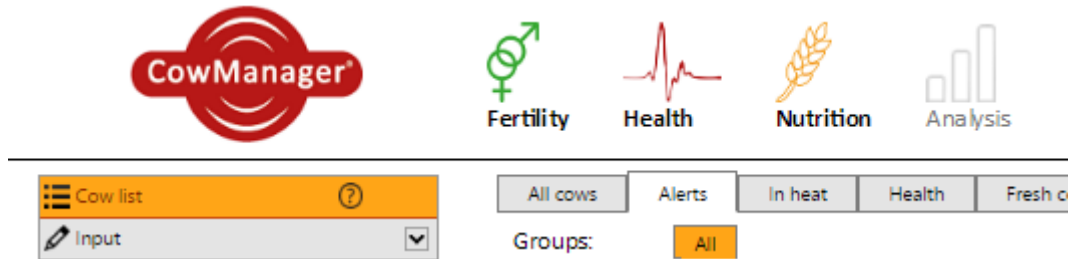


CowManager is also available via an App on your smartphone.

## 2 CowManager modules

The CowManager consists of three modules: Fertility, Health and Nutrition. The Cow list is always available for you. The type of alerts and graphs you can see are depending on the modules you choose. Which graphs and features are in each module is described below.

Above the cow list you can see which modules are active in your CowManager.






You can see in the image above that the modules Fertility, Health and Nutrition are active in contrast to the module Analysis. When the module is inactive, the name of the module is grey. The letters of the modules are bold when it is active, see picture above. In case you want to activate another module, you can contact your sales representative.

The module Analysis is not yet available. More information about the features of these modules can be found on our website [www.cowmanager.com](http://www.cowmanager.com).

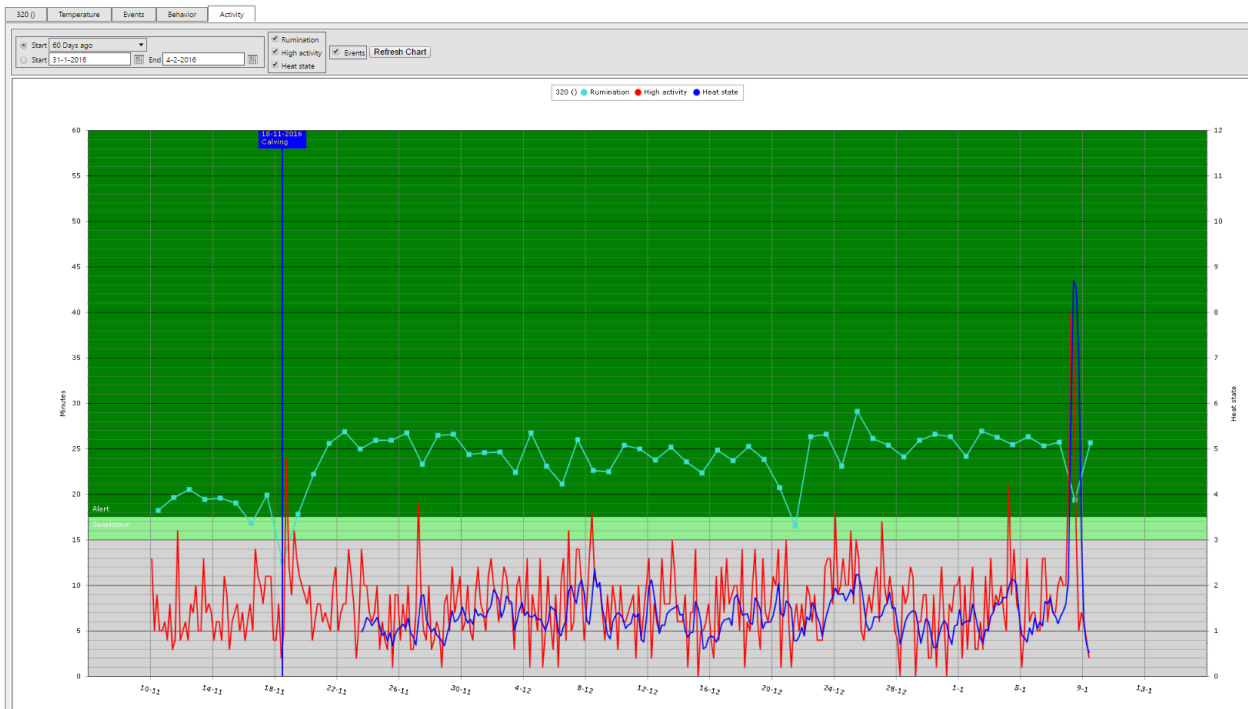
### 2.1 Fertility

Module Fertility consists a real time heat detection in your herd. In both tabs Alerts and In heat you can find all heat alerts. See the screen below.

The heat alerts are based on the deviations in behaviour of the cow compared with the reference period of 7 days of this cow.

Time latest alert	In heat state (hours) ▲
7-5-2014  	<input type="text"/> 
6-5-2014 22:00	^ <u>2.9 / 2.9 (1)</u>
6-5-2014 0:00	<u>2.9 / 3.4 (9)</u> ▼
6-5-2014 1:00	<u>2.9 / 3.7 (10)</u> ▼

In the figure above you see how the alert is displayed in the tab Alerts and In heat. In paragraph 3.3 *Work screen* alerts you'll find how to read these alerts. If you want to see the corresponding activity graph, just click on the alert.




This graph shows the high activity of the cow in the red line. When the blue line (heat state) comes into the green area, there will be an alert.

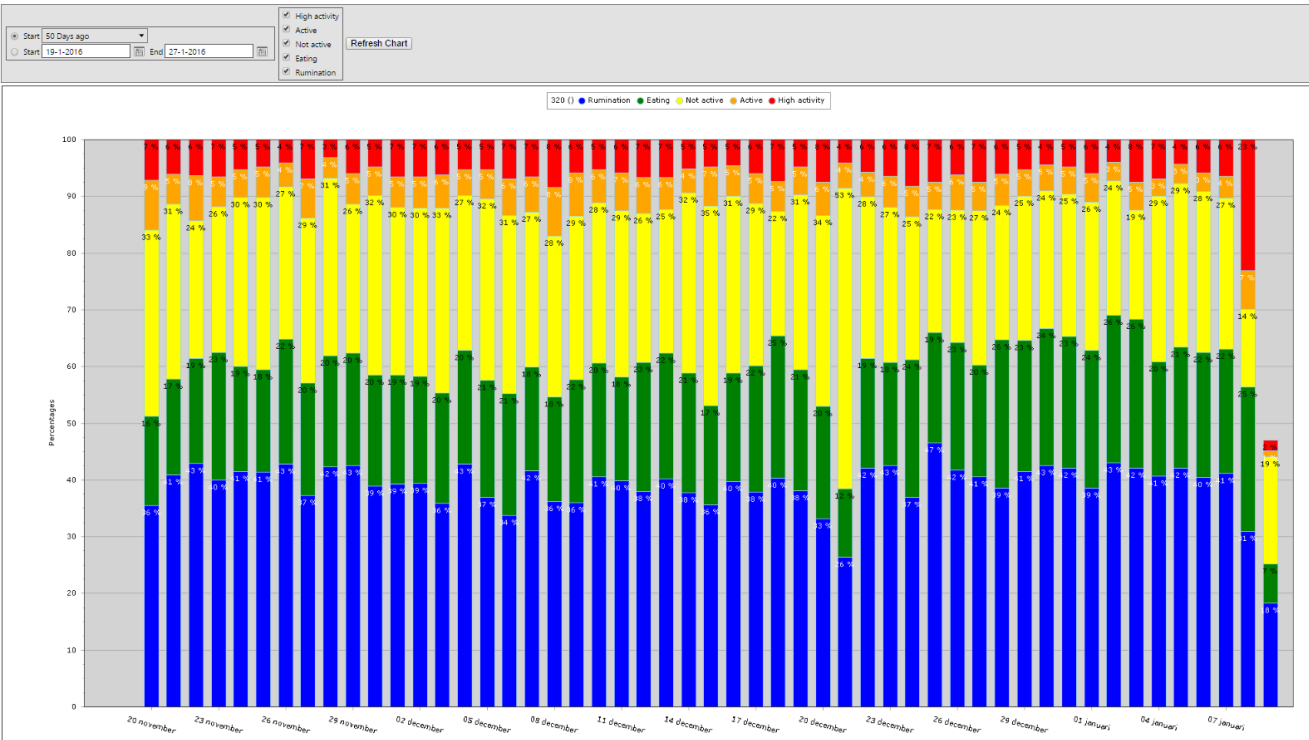
More information about this graph is given in paragraph 3.4

## 2.2 Health

The module Health calculates the behavior of the cow: eating, rumination, resting, active and high active behavior. It also shows the ear temperature compared to the temperature of the group. You can watch the alerts on the tab Alerts and Health. The alerts are based on deviations of the reference period of the cow. This is a strong indicator if getting a certain disease. The three types of health alerts are shown below.

Time latest alert	Health state (hours)
13-10-2014 8:00	<b>Very sick (34)</b>
13-10-2014 8:00	<b>Sick (11)</b>
13-10-2014 6:00	<b>Suspicious (28)</b>

These alerts are shown in the cow list in the tab Alerts and Health. A cow can be alerted as *suspicious*, *sick* or *very sick*. The temperature sign  appears when the temperature of the cow differs more than 7 degrees. More information about these alerts can be found in paragraph 3.3 *Work screen alerts*. If you want more information about a health alert, you can click on the alert and the corresponding behavior or temperature graph will appear.



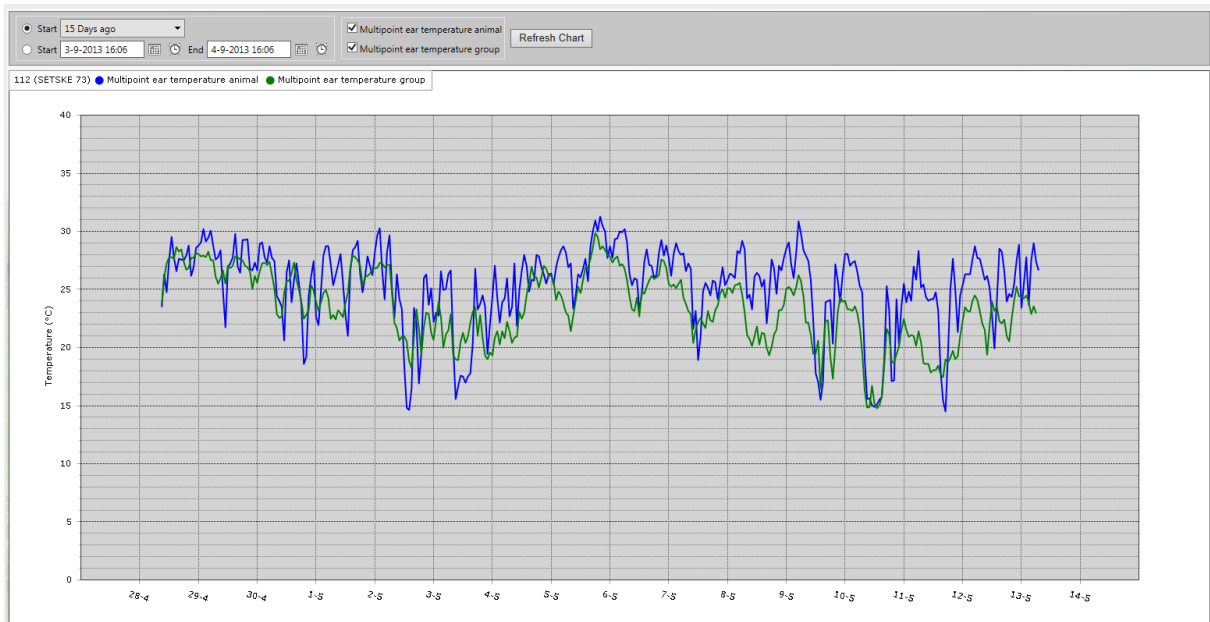
More information about this graph is given in 3.4 'The cow'

Time latest alert	Health state (hours)
13-10-2014 8:00	<b>Very sick (34)</b>
13-10-2014 8:00	<b>Sick (11)</b>
13-10-2014 6:00	<b>Suspicious (28)</b>

When you click on the health state the graph of the specific cow appears directly.

The temperature graph shows the eartemperature of the specific cow compared to the average eartemperature of the total group.





More information about this graph is described in 3.4 'The cow'

## 2.3 Nutrition

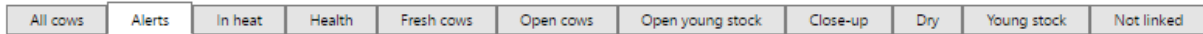
Within the module Nutrition the eating and rumination minutes are calculated and shown in the tab 'All cows' in the cow list and in the list with 'Alerts'. Besides this data, the module feeding calculates group overviews which are processed into graphs. See more information in chapter 5 *Nutrition*.

Rumination minutes	Eating minutes
<input type="text"/> ▼	<input type="text"/> ▼
458-	63+
496-	245-

The rumination- and eating minutes are both shown in the tab 'All cows' and the 'Alert lists'.

### 3 Cow list

In this overview you see different tabs which represent different types of alerts and groups. When opening the CowManager the tab 'Alerts' appears directly.

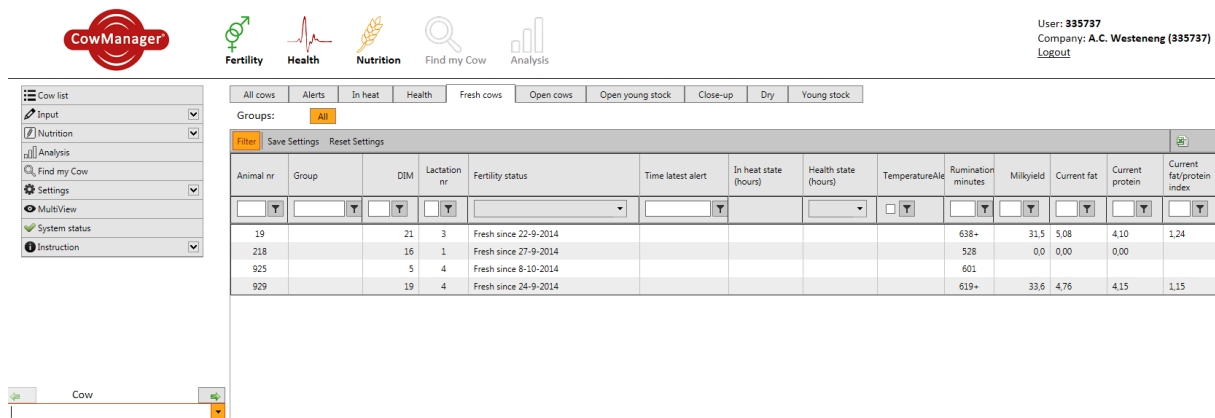


The tabs contains the following information:

- All cows: all cows including young stock which are known in the CowManager
- Alerts: all alerts around Fertility and Health
- In heat: all specific cows in heat
- Health: all cows with a health alert
- Fresh cows: all fresh cows up till 21 DIL (see paragraph 6.2 Management settings)
- Open cows: all open cows from 40 DIL till 200 DIL (see paragraph 6.2 Management settings)
- Open young stock: all young stock above 14 months without an insemination (see paragraph 6.2 Management settings)
- Close-up: all cows more than 266 days pregnant (see paragraph 6.2 Management settings)
- Dry: all dry cows
- Young stock: all young stock
- Not linked: all cows that are not linked to a Sensor

All tabs are divided in columns, as you can see in the figure below. These columns are selected specific for the type of alert or group. Eventually you can add or delete columns.

**Important! After a change in the work screen always click on 'save settings' to save the changes.**



Animal nr	Group	DIM	Lactation nr	Fertility status	Time latest alert	In heat state (hours)	Health state (hours)	Temperature	Rumination minutes	Milkyield	Current fat	Current protein	Current fat/protein index
19		21	3	Fresh since 22-9-2014					638-	31.5	5.08	4.10	1.24
218		16	1	Fresh since 27-9-2014					528	0.0	0.00	0.00	
925		5	4	Fresh since 8-10-2014					601				
929		19	4	Fresh since 24-9-2014					619+	33.6	4.76	4.15	1.15

You can easily search through the herd using the 'search-cow' function. The cursor is always in that field. Just fill in the cow number and click on enter. The cow information will appear directly. If the cow doesn't exist, your cursor will automatically be back in the search row and you can type in another cow.

### 3.1 Work screen columns per tab

You can choose yourself which columns you want to see per tab in CowManager.

- Go to the tab where you want to add another column.
- Click with the right mouse button on a column header and select → columns → put a checkmark in the box which is related to the column you wish to see.
- The columns can be dragged into your preferred order. Click on the column heading, hold down the mouse button and drag to the column where you want the column to be.

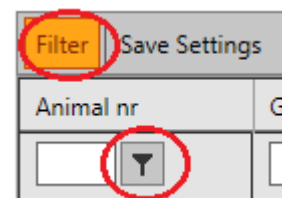
**Important! After a change in the work screen always click on 'save settings' to save the changes.**

The screenshot shows the CowManager interface with a table of cow data and a column configuration panel on the right. The table has columns for Animal nr, Group, DIM, Lactation nr, and Fertility status. The column configuration panel on the right allows users to select which columns to display, with checkboxes for various data points like Animal nr, Group, Name, Regnr, DIM, Lactation nr, Fertility status, Time latest alert, In heat state (hours), Health state (hours), Rumination minutes, Eating minutes, SensOr ID, Last measurement, Birth date, Age, Last calving date, Last insemination date, Days since last breeding, Number of inseminations, Sire name, Milkyield, Lactation value, Current fat, Previous fat, Current protein, Previous protein, Current fat/protein index, Previous fat/protein index, SCC, Dry, Young stock, Heat date, Days after last heat, Hormone treatment date, Days after hormone treatment, Date ET flushed, Days after ET flushed, Days before calving, and Expected calving interval.

### 3.2 Work screen filtering and sorting

The columns can be sorted in various ways.

- By clicking on the column's name (for example Animal nr or Name) this column is sorted. So, if you always want to see the latest attention, you sort on column 'time latest attention'.
- You can also sort by right-clicking on the column name. There will appear a menu where you can choose different sorting options.
- At the top of the bar when you click the 'filter' button, a box appears under the column name. In this box you can specify what you want to filter. In addition to the box there is also a filter button. Here you can choose how you want to filter.



### 3.3 Work screen alerts

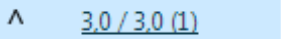
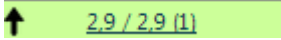

In the work screen 'cow list' are the columns of the cow's alerts. When you click on an alert, you can view the alert directly. When there are some new alerts since last time viewed, the button Cow list will be bold. The number of new alerts (displayed between parentheses) are also bold.

- Time latest alert

This column shows the date and time of the most recent alert. CowManager shows new alerts every hour. The alerts are shown in the screen for 24 hours, also when the behaviour of the alert cow is normal again.





- In heat state

In this column the heat alert are displayed. Heat alerts can have three different colours.



- Every hour, 'in heat' alerts will be calculated and refreshed. Clicking on the alert shows you the activity graph, to determine the time of insemination.
- The 'cold' alert,  appears when a cow is high active for a short time, less than 2 hours. When the heat behaviour remains the alert will be shown in light green or green.
- The light green 'in heat' alert  indicates that this cow is suspected to be in heat. The arrow which is pointing up or down indicates if the cow the level of high active behaviour is increasing or, when the arrow is pointing down, indicates the level of high activity is decreasing. The first number shows the current heat state, the second number shows the maximum heat state. The level of the heat state is similar with the colours of the alert and the levels in the heat graph. The number in the parentheses shows the hours that the cow is to be in heat, counting from the first alert.
- The dark green 'in heat' alert  indicates that this cow has a clear high active behaviour. The arrow which is pointing up or down indicates if the cow is becoming in heat and the level of high activity is increasing or, when the arrow is pointing down, indicates the cow is coming out of heat and the level of high activity is decreasing. The first number shows the current heat state, the second number shows the maximum heat state. The number in parentheses shows the number of hours that the cow is in heat, counting from the first alert.

- Health state

This column shows alerts on the behaviour of the relevant cow. When the behaviour differs from previous days, the cow gets an alert.

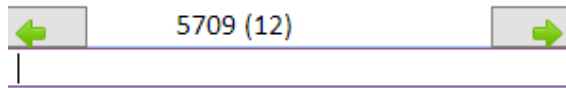
- Every hour these alerts will be calculated and refreshed. Clicking on the alert gives you the behaviour graph, to help you to diagnose the situation.
- The yellow 'suspicious' alert  means that the cow has decreased or moderately impaired eating and rumination activity. The number in parentheses shows the number of hours that the cow has had this health alert.
- The orange 'sick' alert  means that the cow is much less active with greatly reduced activity. The number in parentheses shows the number of hours that the cow has had an alert.
- The red 'very sick' alert  means that the cow is seriously reduced in activity, with seriously reduced eating and rumination. The number in parentheses shows the number of hours that the cow has had an alert.
- The black 'no movement' alert  means that there is no movement detected in the Sensor for more than 4 hours. It is possible that the Sensor is still linked to a

cow, but that this Sensor is not in the ear of the cow. The number in parentheses shows the number of hours that the cow has had an alert.

- The temperature alert  is given when the cow has a health alert and also a much lower temperature, 7 degrees lower than the normal group-temperature.
- The crossing arrow sign  means a physical group change. This icon will show up when a heat or health alert appears two days before or after a the group change (in total 4 days). This icon will help you to determine if the heat or health alert is true or false.

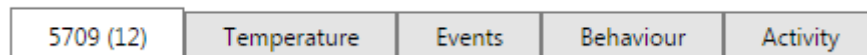
### 3.4 The cow

On the left side of this overview the latest alerts of this cow are displayed. CowManager shows the latest alerts over the past 60 days. When you double-click on the cow you see an overview of the selected cow. You see the date and time the first alert was given. In parentheses the number of hours this alert remained. The numbers in the third column are the numbers of days ago from now.



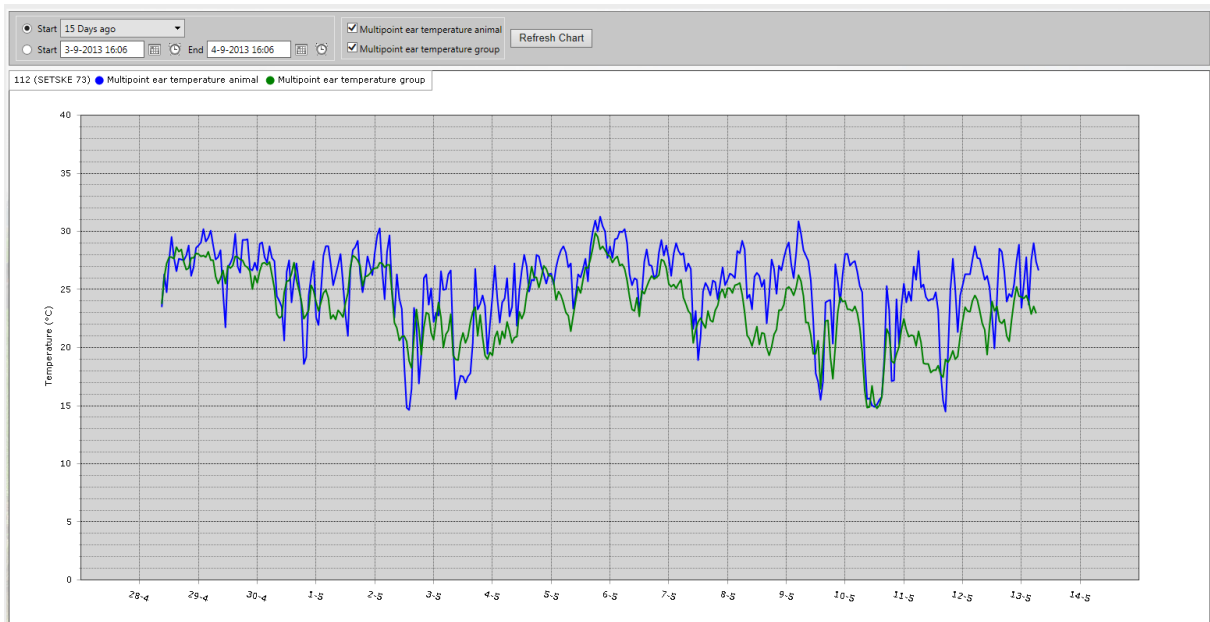
Fertility status	Insemination on 16-3-2015	-283
Age	2,04	
Latest alerts:		
- Sick	24-12-2015 8:00 (5)	0
- Sick	17-12-2015 19:00 (1)	-6
- In heat	16-12-2015 10:00 (2)	-8
- Sick	9-12-2015 14:00 (1)	-15
- Sick	20-11-2015 9:00 (3)	-34
- In heat	15-11-2015 9:00 (1)	-39

Above this overview are five tabs.



The five tabs contains the following information:

1. The first tab is a general overview of the cow. In this overview you will find various information about the cow:
  - The cow's most recent events, calving, inseminations, dry off.
  - General information about the cow. Animal number, registration number, name and sexes.
  - You can always change this information by using the pencil.
  - Below more information about the Sensor the cow is linked with. When was the last communication and which antenna is the Sensor is communicating to?
2. The second tab is an overview of the cow's temperature over a certain period. This contains the following information:
  - Its temperature at 1, 8 and 15 day (s) ago. You can also select a specific period. This graph is automatically set to one day.
  - In the graph you can see the temperature of the individual cow (blue line) and the temperature of the biological group (green line) in which the cow is classified (young stock, dairy herd, dry cows).



Events are imported from your management system are shown in the vertical line. For example; calving dates, inseminations and treatments.

3. The third tab shows you all cow's events, from birth until today.

149 (GEERTJE 166)						
Temperature		Events	Behaviour	Activity		
	Date	Event	Result	Remark	Sire name	
<input checked="" type="checkbox"/>	13-5-2014	Aborted				
<input type="checkbox"/>	28-3-2014	Dry off				✕
<input type="checkbox"/>	22-10-2013	Pregnancy check	Positive			✕
<input type="checkbox"/>	17-8-2013	Insemination			G-FORCE	✕
<input type="checkbox"/>	16-8-2013	In heat				✕
<input type="checkbox"/>	26-7-2013	Insemination			EUSEBIO	✕
<input type="checkbox"/>	26-7-2013	Foul-in-the-foot				✕
<input type="checkbox"/>	2-7-2013	Insemination			G-FORCE	✕
<input type="checkbox"/>	10-6-2013	In heat				✕
<input type="checkbox"/>	19-5-2013	In heat				✕
<input type="checkbox"/>	27-4-2013	Calving				✕

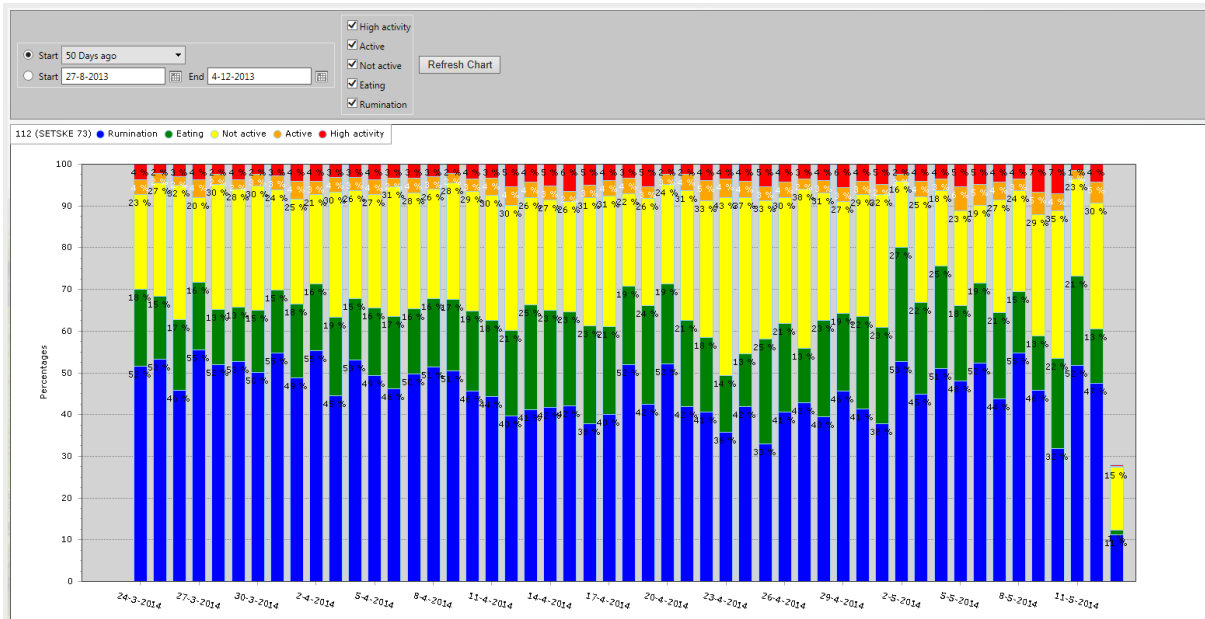
These can be manually;

1. Entered → by choosing the kind of event at the top line and clicking the checkmark.
2. Modified → by using the pencil on the left.
3. Removed → by using the cross at the right side of the screen.

Over here you can see also the group changes. This group change is also shown in the activity graph and temperature graph of this individual cow. The group change is shown under 'remark'.

You can also import events from your management system. We can make an interface with many management systems. Please contact CowManager for more information.

- In the fourth tab you can find the behaviour of the cow. This will show you the following information:
  - The behaviour per day of rumination, feeding, inactivity, normal activity and high activity. It is possible to check back 8, 15, 25, or 50 days. You can also choose other time periods.

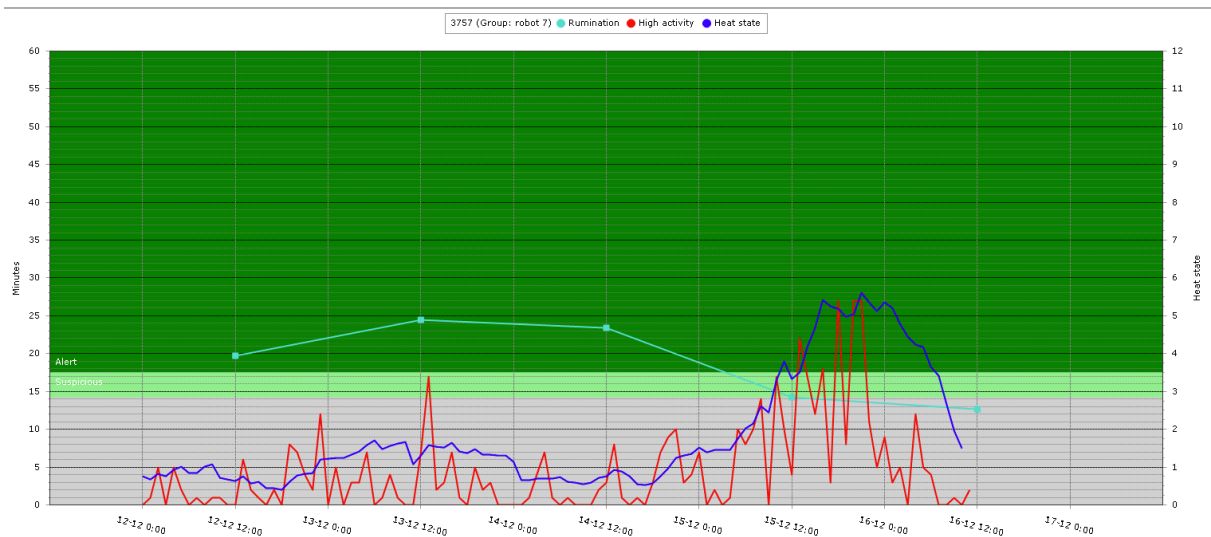
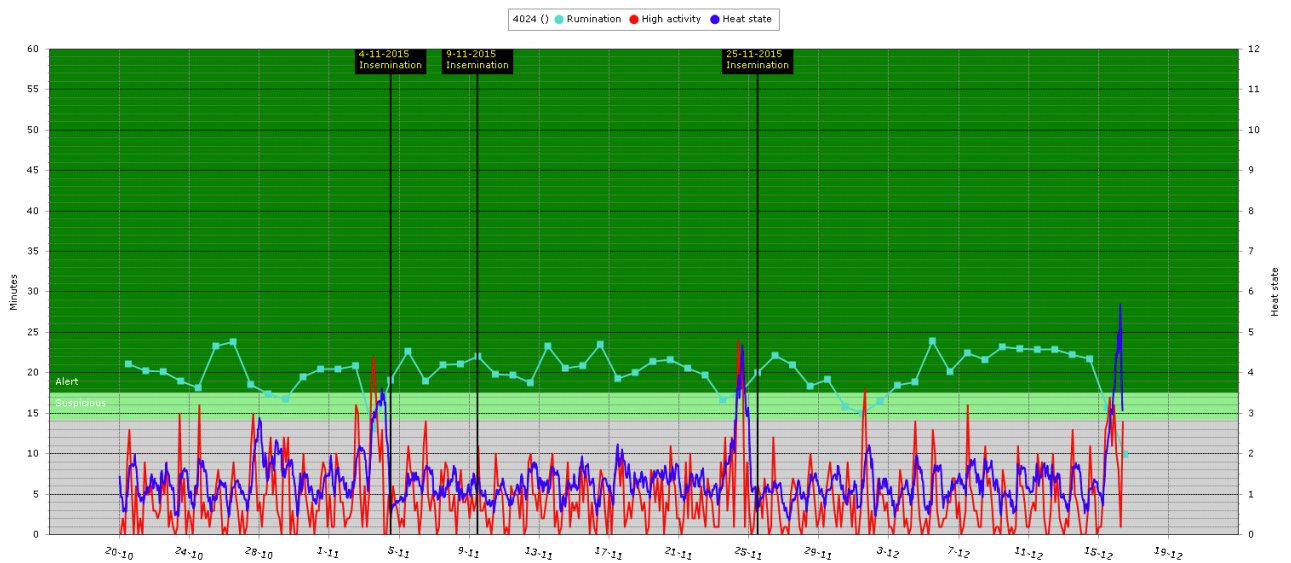


- The behaviour per hour (rumination, feeding, inactivity, normal activity and high activity). It is possible to check back every hour for 1, 2 or 3 days. You can also choose other time periods.





5. Under the fifth tab the activity graph is shown, this is a view of the cow's activity.
  - Different periods can be selected, so you can examine its fertility cycle.
  - The events of the cow are shown on the chart, so you can get an even better picture of the cow's history.
  - The red line indicates the 'in heat' behaviour of the cow.
  - The blue line shows the 'heat state' value of the cow.
  - The light blue line shows the rumination. Rumination is an extra parameter to underpin the heat.
  - The light green area indicates the value of the "suspected in heat" alert.
  - The dark green area indicates the value of the "in heat" alert.



## 4 Input

### 4.1 Add cow

Under the header 'Input' you can add cows by clicking 'Add cow(s)' Use this item only when an automatic data exchange with your herd management system is not available.

**Cow list**

- Input ▲
- Add cow(s)
- Group management
- Group event management
- Linking
- Delinking
- Nutrition ▼
- Analysis
- Settings ▼
- MultiView
- System status ▼
- Instruction (1) ▼

### Add cow(s) (not required for interfaces; only for manual entry)

Regnr

Animal nr

Name

Sex  Female  Male

Birth date

Last calving date

Latest dry off date

In this screen a new cow can be added and its data can be entered. When you enter a new cow, it is required to enter the registration number, animal number and date of birth. This information can be changed at any time in the cow overview by clicking the pencil. See the screen below.

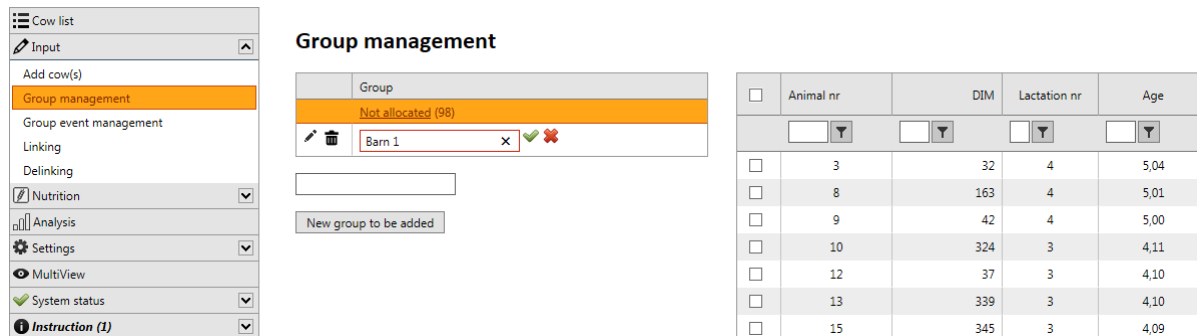
214 (INGER 10)		Temperature	Events	Behaviour	Activity
<b>Cow</b>					
Animal nr	214	Name	INGER 10		
Regnr	NL 765396998	Sex	Female		
Lactation value	109	Group			
Dry	<input type="checkbox"/>	Young stock	<input type="checkbox"/>		
SCC	13	Lactation nr	1		
Milkyield	32				
Current fat	3,78	Previous fat	3,66		
Current protein	3,32	Previous protein	2,89		
Current fat/protein index	1,14	Previous fat/protein index	1,27		
Birth date	7-8-2012	Age	2,02		
DIM	71				

Current lactation	Date	Days ago
Calving date	3-8-2014	71
Open date		
Heat date		
Hormone treatment date		
Insemination date		
Date ET flushed		
Pregnancy check date		
Dry off date		
Do not breed date		

## 4.2 Group management

CowManager has two types of groups: 'Biological' and 'not biological' groups. The biological group contains: lactating cows, dry cows and young stock. The 'not-biological' groups are groups that are set up by you or the interface with your management system. If you want to make a new group you can select 'Group management'. This screen will be displayed:



<input type="checkbox"/>	Animal nr	DIM	Lactation nr	Age
<input type="checkbox"/>	3	32	4	5,04
<input type="checkbox"/>	8	163	4	5,01
<input type="checkbox"/>	9	42	4	5,00
<input type="checkbox"/>	10	324	3	4,11
<input type="checkbox"/>	12	37	3	4,10
<input type="checkbox"/>	13	339	3	4,10
<input type="checkbox"/>	15	345	3	4,09

Some management systems can synchronise their data and group information with CowManager. In that case you can see the herd groups here.

If not, you can add new groups by entering a name and clicking on the 'new group to be added' button. When the new group is added, you will see the group at the left of the screen. Change this group by using the pencil or remove it by clicking the trashcan button.

At first all cows will be placed in the group "Not allocated". The number within parentheses shows the number of cows in that group. By clicking on this group the "not allocated" cows will be listed at the right part of the screen.

In this list of cows you can select cows by clicking the checkbox. If you want to select all of the cows in your screen, you can select the upper checkbox. You can also sort the cows by using the filters on Animal number, DIM, Lactation number, Fertility state etc. to select the cows you want to add in the same group quickly.

After you select the cows you can add them in the new group by dragging the mouse. It is important to release your mouse exactly on the name of the group (hyperlink). After that, the cows will be placed in the group you put them in and are out of the group where they coming from. A cow can be part of one group only.

## 4.3 Group event management

The following screen appears by selecting this header:

Cow list

Input

Add cow(s)

Group management

Group event management

Linking

Delinking

Nutrition

Analysis

Find my Cow

Settings

MultiView

System status

Instruction

### Group event management

	Date	Group	Event
<input type="checkbox"/>	17-10-2014 0:00	0	
<input type="checkbox"/>	14-10-2014 14:00:00	Lactating cows	new ration
<input type="checkbox"/>	7-10-2014 13:00:00	Lactating cows	new corn silage1/2 form vinohradok and malacky
<input type="checkbox"/>	1-10-2014 16:00:00	Lactating cows	New corn silage 1/3 from Vinohradok
<input type="checkbox"/>	22-9-2014 0:00:00	Lactating cows	Malacky corn silage
<input type="checkbox"/>	10-9-2014 0:00:00	6	change to Primiparous
<input type="checkbox"/>	10-9-2014 0:00:00	7	change to multiparous
<input type="checkbox"/>	10-9-2014 0:00:00	8	change to multiparous
<input type="checkbox"/>	31-8-2014 0:00:00	Lactating cows	300g less straw and hay
<input type="checkbox"/>	9-8-2014 0:00:00	Lactating cows	New Ration

In this screen you can add events which are relevant for a whole group, for example: vaccinations, ration changes, veterinary checks etc. First you have to select the date, next the group and last the group event. You can press the first bottom to save your input.

Group event are shown in group overviews and in the activity graph of individual cows in this group.

## 4.4 Linking

The items 'linking' and 'delinking' are necessary to link and delink a Sensor to a cow.

*Important! When the Sensor is used for the first time, it must be activated with the CowManager Activator. For more information, see the installation guide.*

1. Click the button 'linking' in CowManager (left menu)
2. The first drop down menu displays cows with their registration number and animal number. Type a part of the animal nr to find the cow faster. Select the cow you want to link to.

Cow list

Input

Add cow(s)

Group management

Group event management

Linking

Delinking

Nutrition

Analysis

Find my Cow

Settings

MultiView

System status

Instruction

### Linking

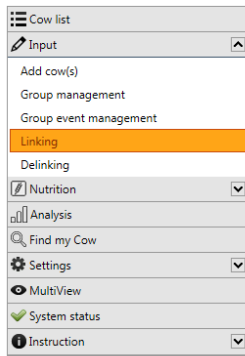
Cows:

SensOors:

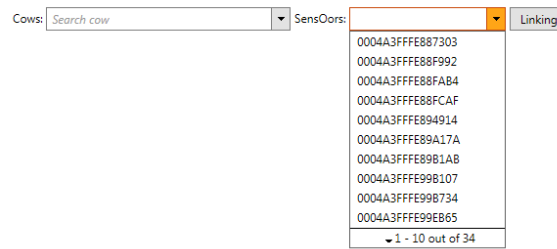
Regnr	Animal nr
NL 486809496	22
NL 968811896	23
NL 737914933	159
NL 426402709	0270
NL 931518030	1803
NL 747019053	1905
NL 747020017	2001
NL 747020365	2036
NL 747020637	2063
NL 747020668	2066

1 - 10 out of 108

3. In the second list all free Sensors are shown. Sensors already linked to a cow are not available in this list.



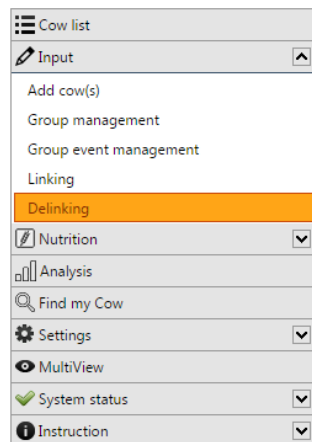
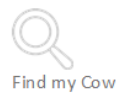
## Linking



- You can use these bars looking for cow numbers and Sensors. You need to select both the right cow and the Sensor number in the bars and then click on 'Linking'. CowManager always confirms the link you made between cow and Sensor.
- If you want to change Sensors between cows, you have to delink the sensor before you can link it to another cow.

## 4.5 Delinking

- Click the button 'Delinking' in CowManager.



## Delinking

Animal nr	Regnr	SensOor	
9	NL 919633924	001ECOFFFE8D <b>4E87</b>	✕
3107	NL 432600131	001ECOFFFE8E <b>31B1</b>	✕
3251	NL 477007904	0000400F1538 <b>510A</b>	✕
3160	NL 447904644	001ECOFFFE8D <b>3B30</b>	✕
3516	NL 919635160	001ECOFFFE8D <b>7D55</b>	✕

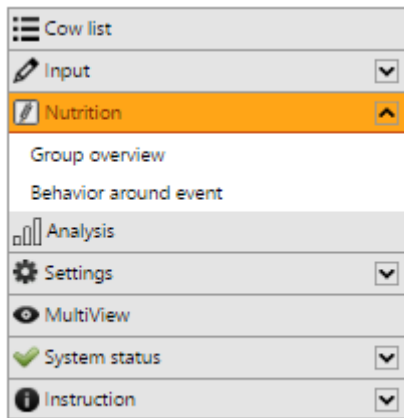


- A list appears with linked animals and Sensors. (Registration number, cow number and Sensor ID).
- You can type a Sensor ID, registration number or cow number in the bar to find the connection you want to delink.
- Select the cows or Sensors that need to be delinked.
- Click 'delinking' and delink them all at once.
- The Sensor and cow number are now disconnected successfully.

If you accidentally chose the wrong cow or Sensor, you can remove it from the list by clicking on the cross on the right side. If you click on the button "Delinking" all Sensors in the selection will be delinked.

## 5 Nutrition

In the left menu in CowManager you will find the header “Nutrition”. Nutrition is divided into two subheadings, the “group overview” and “behavior around event”.



The rumination- and eating minutes in the cow list are also a part of the Nutrition software module. See the image below.

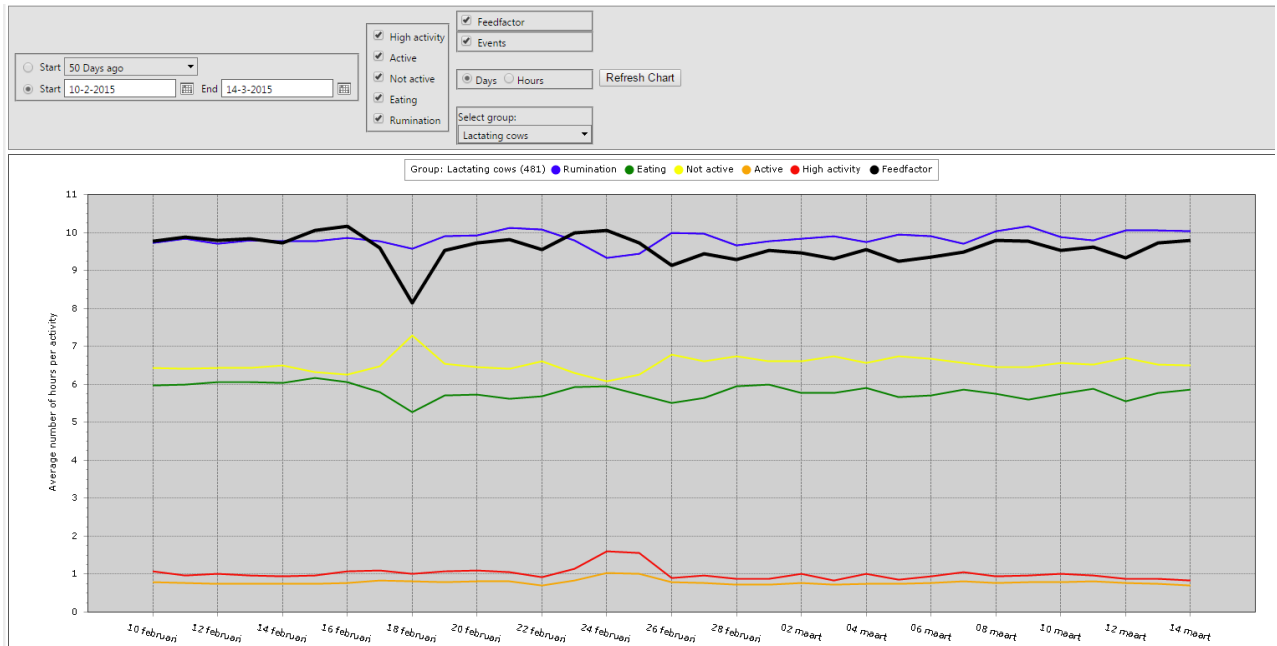
Animal nr	Rumination minutes	Eating minutes
<input type="text"/> ▼	<input type="text"/> ▼	<input type="text"/> ▼
320	661+	256-
324	425	342+

These minutes are calculated minutes showing the average of the minutes per hour over the last 24 hours. When last hour differs more than 10% compared to the average of the last 24 hours you get a “+” or “-” sign behind the value.

### 5.1 Group overview

At the left menu in CowManager you will find the ‘Group overview’. Here you can look at the behaviour of biological and not-biological groups by using the drop-down box under ‘Select group’. With biological groups, we mean: lactating cows, young stock and dry cows. Not-biological groups are based on lactation stage, parity, etc.

The behaviour of the group in respect of rumination, feeding, inactivity, activity and high activity can also be read here. For this behaviour the feed-factor is calculated: livestock behaviour can be formatted, continuously. In addition, this feed-factor is an indication of how much time the group spends feeding. When this coefficient drops, this can indicate that something is happening within the group, making the cow pay less attention to its food and possibly producing less.

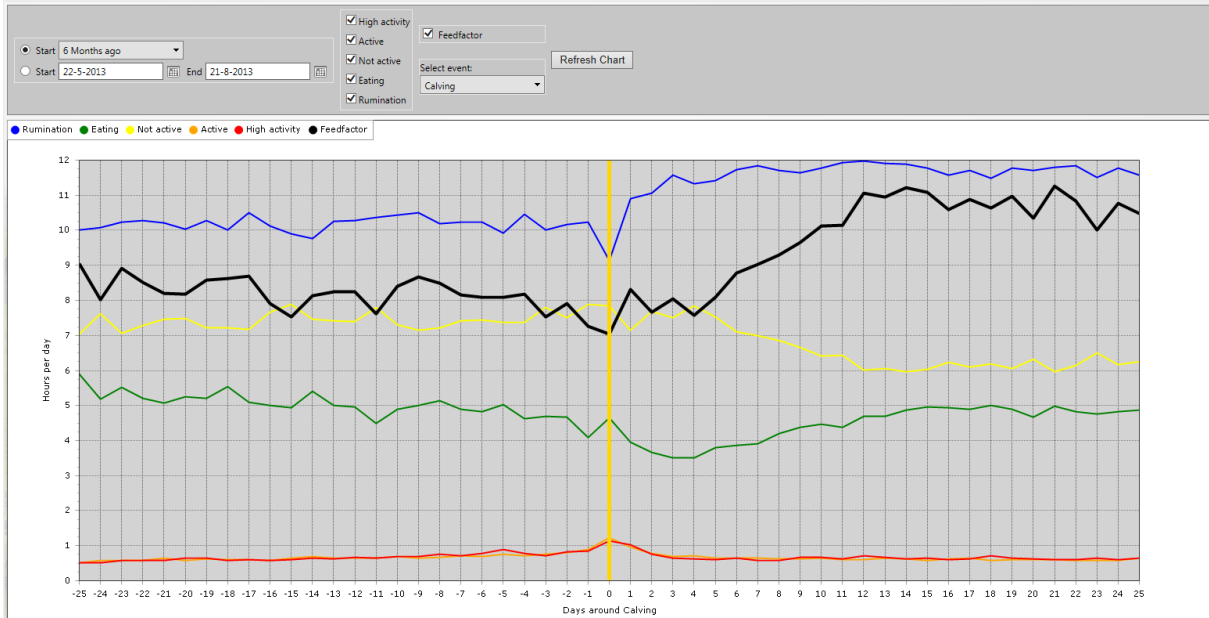


- The behaviour of the group in the graph can be observed over 7, 25 or 50 days. Other variable periods may also be chosen.
- Click on "Hours" to see the behaviour of the group the last day per hour.
- Left above the graph you see the group and the number of the cows in these group.
- The events created by group event management are shown by the associated group in the graph. The events are displayed automatically in the graph. There is a checkbox with events, which makes it possible to not show the events in the graphs. Uncheck the box and click on 'Refresh Chart' to make it disappear.

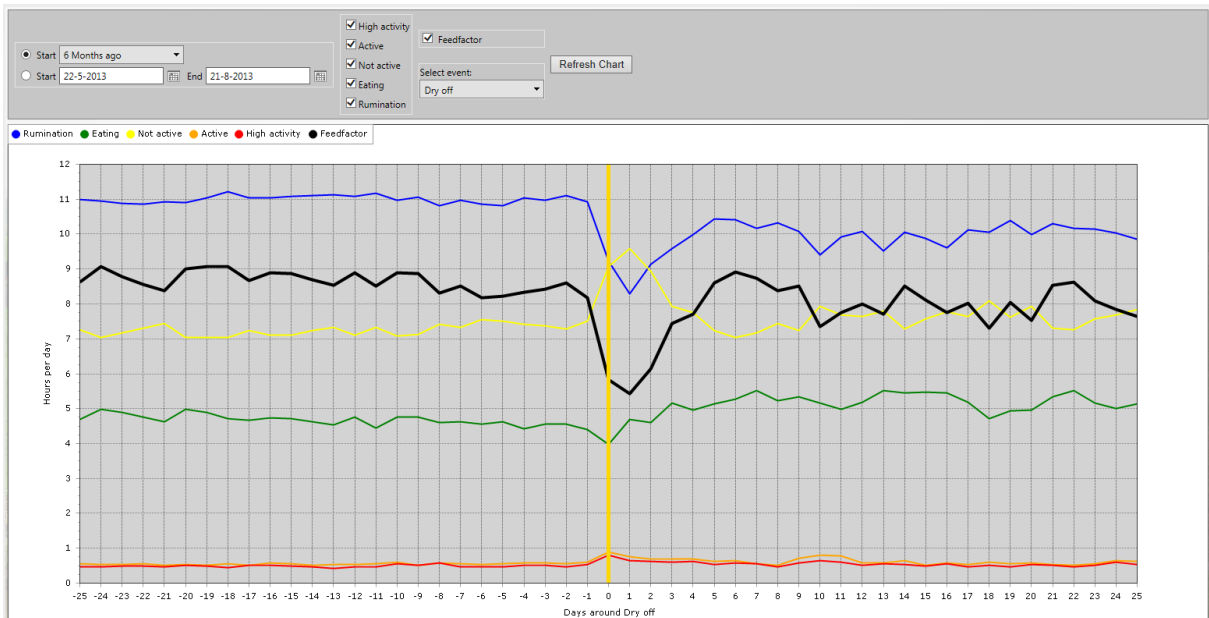
## 5.2 Behaviour around event

In these graphs the behaviour around the most important events of a cow is visible; calving and drying off. Here you can closely analyse the transition period. Simply select a period in which the event must fall, also select the event you want (calving or drying off). For example, if you choose 'calving' and 3 months ago you will see the behaviour of the cows that have calved the past three months. The behaviour is the average of these cows 25 days before calving and 25 days after calving.

### Calving



### Dry off





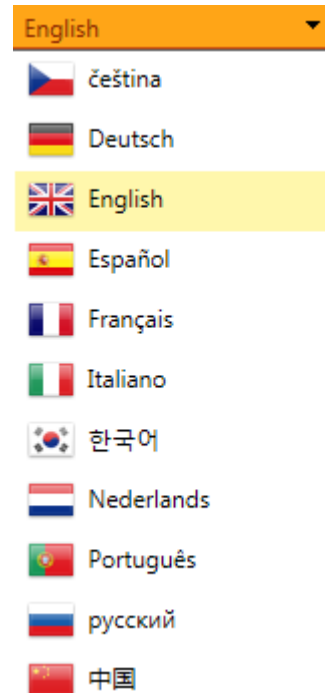
## 6 Settings

### 6.1 User settings

Here you can set the CowManager per user. You can choose the following languages:

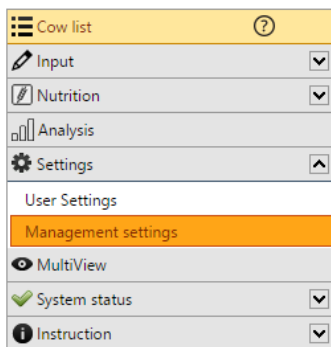
Depending on the language CowManager is set, the user manual is adjusted.

In user settings you can also specify in which value the temperature should be shown; Celsius or Fahrenheit.



### 6.2 Management settings

In this screen the you can set your own requirements for your farm. This view is shown below.



#### Management settings

##### Alerts

No heat alerts if cow is do not breed	<input type="checkbox"/>	Standard: Off
No heat alerts if lactating cow is pregnant after this expiration period	<input type="text"/>	Standard: Off
No heat alerts if young stock is pregnant after this expiration period	<input type="text"/>	Standard: Off
No heat alerts if cow has calved within this waiting period (days)	<input type="text"/>	Standard: 14
No heat alerts if heifer has calved within this waiting period (days)	<input type="text"/>	Standard: 14
Number of days no heat alert after insemination (young stock)	<input type="text" value="1"/>	Standard: Off
Number of days no heat alert after insemination (lactating cows)	<input type="text" value="1"/>	Standard: Off
Number of days no heat alert after linking	<input type="text"/>	Standard: Off
Number of days no health alert after linking	<input type="text"/>	Standard: Off
No heat alerts if young stock younger than (months)	<input type="text"/>	Standard: Off
No potential heat alerts	<input type="checkbox"/>	Standard: Off
No suspicious heat alerts	<input type="checkbox"/>	Standard: Off
No suspicious health alerts	<input type="checkbox"/>	Standard: Off
Number of days in which a groupchange affects an alert	<input type="text"/>	Standard: 2

##### Groups

Fresh cow overview: maximum DIM	<input type="text"/>	Standard: 21
Open young stock: min. age (in months)	<input type="text"/>	Standard: 14
Open cow overview: minimal DIM	<input type="text"/>	Standard: 40
Open cow overview: maximum DIM	<input type="text"/>	Standard: 200
Close-up cows: min. days since last breeding	<input type="text"/>	Standard: 266

The alerts will be calculated for a cow anyway even when these settings are changed. The alerts only will not be shown in the alert list. When the settings no longer apply for a cow, you will see the alerts by the individual cow, at the left of the screen.

**Alerts:***“No heat alerts if cow is do not breed”*

When a cow is “Do not breed”, you can choose to not get heat alerts from this cows any longer. In the standard settings this is turned off, so the heat alerts will always show up for this cows. You can do the same to pregnant cows.

*“No heat alerts if lactating cow/ young stocks is pregnant after this expiration period”*

When the pregnancy check is positive you can choose to not show any heat alert for this cow/ young stock. In practice pregnant cows join cows in heat more often than fresh cows. This setting is also turned off in the standard settings, so the pregnant cows will get a heat alert when they are more high active.

*“No heat alerts if cow/ heifer has calved within this waiting period (days)”*

You can also set a voluntary waiting period (days) for cows/heifers after calving to get a heat alert. For example, when fresh cows stay in a separated barn for some time. With this setting you can prevent those false alerts when these cows move to the herd. Standard is this setting on for the first 7 days, you can change the number of days of course.

*“Number of days no heat alert after linking”*

The number of days you would not like to receive heat alerts after linking the Sensor to the cow. With this setting you can prevent those false alerts within the new linked cows. Standard is this setting on for the first 7 days, you can change the number of days of course.

*“Number of days no health alert after linking”*

The number of days you would not like to receive health alerts after linking the Sensor to the cow.

*“No heat alerts if young stock younger than (months)”*

The young stock under ... months for which you do not want to receive no alerts from young stock younger than ... months. With this setting you can hide the heat alerts of young stock who are too you for breeding.

**Groups:**

The fresh cows are standard all cows until standard 21 days in milk. Also you can change this maximum if you want.

Open young stock is all the young stock older than 14 months without an insemination.

Open cows are all cows standard between 40 and 200 days in milk who didn't have an insemination or pregnancy check positive. You can change the minimum and maximum days in milk where open cows have to be in between.

Close-up cows are all cows close to calving. Default are cows shown in this view with DCC 266 or more, but of course this could be adapted to the number of days you want. This is meant to give the cows close to calving the attention they deserved.

Don't forget to click on the “Save” button after changing these settings.

## 7. Multiview

The Multiview tool in CowManager gives you the opportunity to give employers, veterinarians and advisors more insight in CowManager and to take note of specific information in CowManager.

Each user needs a username and password first. When this person is a new CowManager user, fill in his/her email address at 1 and press “Register”.

### User management

Here you can add other existing CowManager users to your company.  
For all users you indicate the tasks granted to them within your company.  
Attention: the user name should exist within CowManager.

2

User name	E-mail address:	Main user	PC Application	Fertility	Health	Nutrition	Input	(De)linking	App	System info	API	Last viewed	Locked out	
				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			Add existing user
335737	westeneng1@zonnet.nl	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	9-6-2015 12:15	<input type="checkbox"/>	
335737-Jan	jan.de.pestel@unifarm.be	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	20-2-2015 14:21	<input type="checkbox"/>	Update Delete
335737-Pieter	pkirkels@ulp.nu	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	3-2-2015 17:39	<input type="checkbox"/>	Update Delete
335737-Thijs	Thunink@de-heus.nl	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	9-6-2015 12:17	<input type="checkbox"/>	Update Delete
CowManagerApi-AgroVision	j.debree@agis.nl	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	Update Delete
9a8260da-0404-4777-a9c8-06e79a3437f7	westeneng1@zonnet.nl	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	9-6-2015 12:20	<input type="checkbox"/>	

### New user

Here you can create a new (sub)user for your company.  
Do not forget to enter the correct authorisation after having created the user.

1

E-mail address:

If you don't want to use your e-mail address as username.

Select the items you want the user to get access to. To protect your system, do not access every user to input, linking and delinking of Sensors.

In some cases your vet of advisor already have an login for CowManager. In that case fill his/her CowManager username in at 2. Press the button “Add existing user” and set the rights for this user.




## 8. System status

In the left menu in CowManager you will find the system status. The system status shows whether the entire system, the coordinator, router(s) and Sensors are still working. You will also see whether the synchronization of the information from the Sensors to the CowManager still works properly.

- In front of the header 'System information' in the left menu there is a red cross **X** or a green tick **✓**. The red cross **X** means that there is a fault in the system. The green tick **✓** means that everything is working properly.
- There is only a red cross for the heading 'System status' when either synchronization of the Sensor information to CowManager, or the coordinator/router(s) are not working.

### CowManager System

Last synchronisation SensOor information 9-1-2017 13:58 **✓**  
 Last synchronisation cow data 6-1-2017 18:11  
 Cow data interface AgroVision via SmartConnect

	Type	Name	ID	Software version	Last synchronisation	
	PC	Laptop	0ebe	V2.8.0.6	9-1-2017 13:56	<b>✓</b>
	Coördinator	Coordinator	B1FD	V5.22	9-1-2017 13:55	<b>✓</b>
	Router	Router	06BD	V4.22	9-1-2017 13:55	<b>✓</b>

### 8.1 CowManager system

The first item under CowManager status is System. Here you can see when CowManager was last updated with information from the Sensors.

- A red cross **X** appears if no information from the Sensor has arrived in CowManager for over an hour.
- A green checkmark **✓** appears if the information synchronization to the CowManager is working well.
- Also shown is the last cow data synchronisation between your management program and the CowManager.
- The used cow data interface is shown.

You can see the parts of your system in an overview below:

- The PC and the version of the PC application.
- The coordinator. The ID is the address of the coordinator which is also printed on the device.
- The router(s). The ID is the address of the routers which is also printed on the device.

Behind each device there is either a red cross **X** or a green checkmark **✓**, meaning the device has a failure or is working properly at the moment. When a device is not sending any Sensor information for one hour the green tick changes in a red cross.

Hint: use the pencil to give your devices a specific name or number, for example to make clear where the device is located.

## 8.2 Sensors

In this part of the system you can see the activated sensors. It has three tabs:

- 'All': shows the activated sensors in your system.
- 'Not linked': all sensors that are not linked to a cow.
- 'Not communicating': the sensors that are more than 24 hours behind.

### SensOors

SensOors													
All	Not linked	Not communicating											
Save Settings	Reset Settings											Explain icons	
SensOor ID	PC-application name	Name Antenna	Id Antenna	Software version	Animal nr	Group	Cow status	Activation date	Linking date	Last transmit date	Last measurement	Status	
A0000ABBEA05 0358	Laptop	Router	0004A3FFFEA2 068D	V7.4				6-8-2016 13:50		9-1-2017 13:43	9-1-2017 13:40	✓	
A0000ABBEA05 1427	Laptop	Router	0004A3FFFEA2 068D	V7.4	407		In herd	20-6-2016 12:58	30-6-2016 20:39	9-1-2017 13:43	9-1-2017 13:40	✓	
A0000ABBEA05 1638	Laptop	Router	0004A3FFFEA2 068D	V7.4				20-6-2016 12:58		9-1-2017 13:43	9-1-2017 13:41	✓	
A0000ABBEA04 8777	Laptop	Router	0004A3FFFEA2 068D	V7.4	326		In herd	20-6-2016 13:04	23-6-2016 18:54	9-1-2017 13:43	9-1-2017 13:41	✓	
A0000ABBEA04 9202	Laptop	Router	0004A3FFFEA2 068D	V7.4				6-8-2016 13:50		9-1-2017 13:43	9-1-2017 13:41	✓	
A0000ABBEA05 1525	Laptop	Router	0004A3FFFEA2 068D	V7.4	316		In herd	20-6-2016 12:58	23-6-2016 18:53	9-1-2017 13:43	9-1-2017 13:42	✓	
A0000ABBEA05 1560	Laptop	Router	0004A3FFFEA2 068D	V7.4				20-6-2016 13:04		9-1-2017 13:43	9-1-2017 13:42	✓	
A0000ABBEA05 1557	Laptop	Router	0004A3FFFEA2 068D	V7.4	315		In herd	20-6-2016 13:10	23-6-2016 18:53	9-1-2017 13:43	9-1-2017 13:42	✓	
A0000ABBEA05 1745	Laptop	Router	0004A3FFFEA2 068D	V7.4	301		In herd	20-6-2016 13:10	23-6-2016 18:52	9-1-2017 13:43	9-1-2017 13:42	✓	
A0000ABBEA05 1429	Laptop	Router	0004A3FFFEA2 068D	V7.4				20-6-2016 13:04		9-1-2017 13:43	9-1-2017 13:42	✓	
A0000ABBEA04 8025	Laptop	Router	0004A3FFFEA2 068D	V7.4	307		In herd	20-6-2016 12:58	23-6-2016 18:52	9-1-2017 13:43	9-1-2017 13:42	✓	
A0000ABBEA05 1641	Laptop	Router	0004A3FFFEA2 068D	V7.4	27		In herd	20-6-2016 13:04	23-6-2016 18:42	9-1-2017 13:43	9-1-2017 13:42	✓	
A0000ABBEA05 1455	Laptop	Router	0004A3FFFEA2 068D	V7.4	327		In herd	20-6-2016 13:10	23-6-2016 18:54	9-1-2017 13:49	9-1-2017 13:42	✓	
A0000ABBEA04 8015	Laptop	Router	0004A3FFFEA2 068D	V7.4	212		In herd	20-6-2016 13:04	23-6-2016 18:50	9-1-2017 13:49	9-1-2017 13:42	✓	
A0000ABBEA04 9272	Laptop	Router	0004A3FFFEA2 068D	V7.4	416		In herd	6-8-2016 13:50	11-8-2016 10:34	9-1-2017 13:49	9-1-2017 13:43	✓	
A0000ABBEA05 3456	Laptop	Router	0004A3FFFEA2 068D	V7.4				6-8-2016 13:50		9-1-2017 13:49	9-1-2017 13:43	✓	
A0000ABBEA05 1734	Laptop	Router	0004A3FFFEA2 068D	V7.4	214		In herd	20-6-2016 13:10	23-6-2016 18:50	9-1-2017 13:49	9-1-2017 13:43	✓	
A0000ABBEA05 1639	Laptop	Router	0004A3FFFEA2 068D	V7.4	25		In herd	20-6-2016 13:04	23-6-2016 18:41	9-1-2017 13:49	9-1-2017 13:43	✓	
A0000ABBEA04 8773	Laptop	Router	0004A3FFFEA2 068D	V7.4				20-6-2016 13:04		9-1-2017 13:49	9-1-2017 13:43	✓	
A0000ABBEA04 8875	Laptop	Router	0004A3FFFEA2 068D	V7.4	2		In herd	20-6-2016 13:04	23-6-2016 18:39	9-1-2017 13:49	9-1-2017 13:44	✓	

- In the column 'Sensor ID', the address of the Sensors is displayed. This ID can also be found on the Sensor itself.
- The next three columns are showing the pc and router the sensor is communicating with.
- In the column 'Software version', the current software version from the Sensor is displayed.
- In the column 'Animal' the number and name of the cow is displayed, which is linked to a Sensor.
- In the column 'Last transmit date', the most recent date and time on which the Sensors forwarded information to the coordinator /router(s) is displayed.
- The column 'last measurement' displays the time and date of the last measurement that CowManager has received.
- Behind the column 'Last measurement' is a green checkmark ✓, a clock ⌚ or a grey cross mark ✖.

The green checkmark ✓ means that the Sensor forwarded information to the coordinator/router(s) within the last 24 hours.

The clock sign ⌚ shows that this Sensors has a latency in the data (last transmit less than 24 hours and last measurement more than 24 hours ago).

The grey cross mark ✖ shows that this Sensor needs attention, because it didn't communicate for more than 24 hours (last transmit and last measurement are more than 24 hours ago).



*Note: If one or more Sensors has not forwarded information to the coordinator/router(s) for more than 24 hours there will be an alert on in the bottom of your cow alert list, so you can check what has happened. This alert disappears automatically after 48 hours.*

## 9. Instruction

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### 9.1 User manual

Now you are reading the user manual. You can find it under *Instruction*. In these manual all the ins and outs of CowManager are described.

### 9.2 Installation manual

This manual guides you through the installation of CowManager on your PC.

### 9.3 About us

Here you can find the contact information of CowManager B.V. Do you have questions? Call us or mail to [support@CowManager.com](mailto:support@CowManager.com)

☰ Cow list	
✎ Input	▼
✎ Nutrition	▼
📊 Analysis	
⚙ Settings	▼
👁 MultiView	
✅ System status	▼
<b>📄 Instruction</b>	<b>▲</b>
User manual	
Installation manual	
About us	

## 10. FCC and IC Declarations

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### **Compliance statement (part 15.19)**

This device complies with part 15 of the FCC Rules and with the Industry Canada license-exempt RSS standard(s).

Operation is subject to the following two conditions:

- (1) this device may not cause harmful interference, and
- (2) this device must accept any interference received, including interference that may cause undesired operation.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes:

- (1) l'appareil ne doit pas produire de de brouillage, et
- (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

### **Warning (part 15.21)**

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This in particular is applicable for the antenna which has been delivered with the

### **RF Exposure (OET Bulletin 65)**

To comply with FCC RF exposure requirements for mobile transmitting devices, this transmitter should only be used or installed at locations where there is at least 20cm separation distance between the antenna and all persons.