VAKI

Biomest Daily Software

User manual



(English)

Software version 3.11 - March 2010



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1. USING THE SOFTWARE

The main screen shows the overview of the farm. All cages are displayed with the cage name and population name for the fish in this cage. Also displayed is the last 3 digits of the MAC address for the wireless sending box for the cage. If there has been a valid sample measured, then the average weight is also shown for each cage.

Colours are used to indicate the status.



- White means there is connection to the frame and the sample is large enough.
- Yellow indicates there is connection to the frame but the sample is too small to be valid
- Red indicates there is not a complete connection between the frame, connection box and base station computer.
- Grey, indicates there is no frame in the cage or the frame has been set to inactive.

By right clicking one of the cages, the following box appears.



Data chart

Data chart shows the daily measurements for a selected period, the bars indicate the number of fish measured each day, and the points show the average weight for every day.



By clicking on the "Calculate SGR" button the percentage daily growth is calculated for the period.



It is important to bear in mind that the number of fish in a daily sample should be large enough to consider the sample valid for the population in the cage.

Clicking one of the measuring points, size distribution and condition factor distribution are shown in two graphs. The size of the weight groups displayed can be changed, the graphs printed and the measurement saved into excel for further analysis.



Settings

It is possible to name the location of the frame, (the cage ID) and the population ID differently. The location is usually the cage name and where the frame is permanently placed. The population in a cage can change when the fish are graded, split or partly harvested or a new population created for

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the cage. The population can be selected for each cage using the "Fish population" drop down menu listing all populations available. (See Populations section for creating new populations) Tick the "Active" box to activate the frame in the Location indicated. The measurements from the frame in this location will be sent to the database for the population indentified.

Settings for CO7	
Settings for C07	Data Chart Settings Visual test Frame status View log Download Comments • Active
Cancel	

The shape and size of the cages can be adjusted. Choose between round or square cages of different sizes, all according to the layout of your site.

Settings for C07				
Location/Population	Graphical shape	MAC/IP	Min/Max wei	ght
C SQUARE C SQUARE C SQUARE C ROUNDI C ROUNDI	E SMALL E MEDIUM E LARGE ED SMALL ED MEDIUM ED LARGE			
			Cancel	Close

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The MAC addresses are unique for each connection box and are set in the radio network (see below).

Settings	s for CO7			
Location/	Population Graphical shape	MAC/IP	Min/Max weight	1
	MAC address	T		
			Cancel	Close

The Minimum and maximum weight settings exclude all fish outside these limits from the weight calculations.

Settings for C07	
Location/Population Graphical shape MAC/IP Min/Max weight	
Min weight [g] 700 Max weight [g] 8000	
Cancel	Close

Visual test (System check)

A visual test is used for checking that the 3 infrared LED arrays in the frame are operational and functioning. The check will also identify if something is blocking any or part of the diode arrays. If

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the diodes are blocked or not working, then a part of the white boxes below become black similar to the example below.



If everything is ok then all three boxes will be white except when fish swim through the frame where an image of the fish will be shown. There are two images seen from the side and one from the top.



Frame status

In the frame status box the population number that is being measured by the frame, date and time are shown in the first square. Frame status indicates if the connection box out on the cage is communicating with the computer. "Frame OK" indicates that the frame and the base station PC are communicating otherwise a warning message will be shown such as "Connection box not OK".



Press the "Initialize frame" button to reset the frame and to synchronise the clock in the frame to the PC clock. Average weight and number of fish refer to

the data that has been uploaded during the last hour. After each upload (See Upload interval under setup) the frame is automatically reset.

	Vaki Ltd.	
cation: CO8		
Population:		
Frame clock:	Number of fish:	Initialize frame
Frame status:	Last uploaded:	Get frame status
Frame OK	2010.02.09 17:01	Close
0 2 9 17 17; 11 4287;7.30e-(030.51585165;0000011	0 0 0; 24.98 0.23 0

View log

To display the log file for each download from the frame to the PC

6 10 0209 17.16 606 10 2 917 16: 0 4130.7.30e 03 0.515 85 165: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	10.02.0917:16 G06;10 2 917 16; 1 4131;7:30e-03 0.515 85165; 0	Settings Visual test Frame statu View log Download Comments • Active
6 10.02.0917/00 G06 10 2 917 0: 9 41307.30e030.515 85165; 0 0 1 0 2 0 0 2 1 0.22.300.24 0 6 100.2091600 G06 10 2 915 0: 0 41737.30e030.515 85165; 0 0 2 0 0 0 0 0 0 0 0 0 2.2211 0.24 0 6 100.2091600 G06 10 2 916 0: 33 41337.30e030.515 85165; 0 0 0 2 0 0 0 0 0 0 0 0 0 0 2.2217 0.24 0 6 100.2091600 Fird/ Eimer G06 10 2 917 1 6 100.2091600 Fird/ Eimer G06 10 2 913 1: 35 41747.30e030.515 85165; 0 0 0 3 2 2 0 0 4 5 2:22160.24 0 6 100.2091600 Fird/ Eimer G06 10 2 913 1: 35 41747.30e030.515 85165; 0 0 0 3 0 0 0 0 0 0 0 0 0 0 0 2.22300.23 0 6 100.2091401 G06 10 2 913 1: 35 41747.30e030.515 85165; 0 0 0 3 0 0 6 1 0 8 22.300.23 0 6 100.2091401 G06 10 2 913 1: 0 42207.30e030.515 85165; 0 0 0 3 0 0 6 1 1 8.22300.23 0 6 100.2091400 G06 10 2 913 1: 0 42207.30e030.515 85165; 0 0 0 1 0 0 0 0 0 0 0 0 0 0 2.22300.23 0 6 100.2091400 G06 10 2 913 1: 1 36 42207.30e030.515 85165; 0 0 9 1 4 0 0 9 34 11; 2.3230.23 0 6 100.2091200 G06 10 2 913 0: 1 36 42207.30e030.515 85165; 0 0 0 0 0 0 0 0 0 0 0 0 0 2.22230.23 0 6 100.2091200 G06 10 2 912 1: 0 42257.30e030.515 85165; 0 0 0 0 0 0 0 0 0 0 0 0 0 2.22230.23 0 6 100.2091200 G06 10 2 912 1: 0 42257.30e030.515 85165; 0 0 0 0 0 0 0 0 0 0 0 0 0 2.22210.23 0 6 100.2091200 G06 10 2 911 0: 0 42257.30e030.515 85165; 0 0 2 1 2 7 5 0 0 21 29 23;22.210.23 0 6 100.2091100 G06 10 2 911 0: 0 42407.30e030.515 85165; 0 0 0 0 0 0 0 0 0 0 0 0;24.900.21 0 6 100.2091100 G06 10 2 911 0: 0 42407.30e030.515 85165; 0 0 0 0 0 0 0 0 0 0 0 0;24.900.21 0 6 100.2091000 G06 10 2 910 0: 0 147407.30e030.515 85165; 0 0 0 0 0 0 0 0 0 0 0;24.900.21 0 6 100.2091000 G06 10 2 9 8 0: 0 41807.30e030.515 85165; 0 0 3 2 1 0 0 0 1 0 1 4 1.24.9590.21 0 6 100.2091000 G06 10 2 9 8 0: 0 41807.30e030.515 85165; 0 0 0 0 0 0 0 0 0 0 0 0;24.900.21 0 6 100.2091000 G06 10 2 9 8 0: 0 41807.30e030.515 85165; 0 0 0 0 0 0 0 0 0 0 0;24.900.21 0 6 100.2091000 G06 10 2 9 8 0: 0 41807.30e030.515 85165; 0 0 0 0 0 0 0 0 0 0 0 0;24.900.21 0 6 100.2091000 G06 10 2 9 8 0: 0 41807.30e030.515 85165; 0 0 3 2 1 0 0 0 0 1 5;24.900.21 0 6	5 10.02.09 17:00 G06; 10 2 917 0: 9 41307.30e-03 0.515 85165; 0 0 1 0 2 0 0 2 1 0:22.30.24 0 5 10.02.09 16:00 FirstF_time: G06 10 2 915 1 5 10.02.09 16:00 G06; 10 2 916 0; 33 41337.30e-03 0.515 85165; 0 0 2 0 0 0 0 0 0 2 2.217 0.24 0 5 10.02.09 15:00 G06; 10 2 915 0; 0 41737.30e-03 0.515 85165; 0 0 0 0 0 0 0 0 0 0 0 2.22.77 0.24 0 5 10.02.09 15:00 G06; 10 2 915 1; 35 41747.30e-03 0.515 85165; 0 0 3 2 2 0 0 4 5 2; 22.16 0.24 0 5 10.02.09 15:00 G06; 10 2 914 1; 41877.30e-03 0.515 85165; 0 0 0 0 0 0 0 0 0 0 0 0; 22.370.23 0 5 10.02.09 14:01 G06; 10 2 914 1; 41877.30e-03 0.515 85165; 0 0 0 0 0 0 0 0 0 0 0; 22.300.23 0 5 10.02.09 14:01 G06; 10 2 914 1; 7 41867.30e-03 0.515 85165; 0 0 9 6 3 0 0 6 11 8; 22.300.23 0 5 10.02.09 14:01 G06; 10 2 913 0; 0 42207.30e-03 0.515 85165; 0 0 9 6 3 0 0 0 0 0 0 0; 23.23 0.23 0 5 10.02.09 13:00 G06; 10 2 913 0; 136 42207.30e-03 0.515 85165; 0 0 9 1 4 0 0 9 34 11; 23.23 0.23 0 5 10.02.09 13:00 G06; 10 2 912 0; 0 42257.30e-03 0.515 85165; 0 0 9 1 4 0 0 9 34 11; 23.23 0.23 0 5 10.02.09 13:00 G06; 10 2 912 0; 0 42257.30e-03 0.515 85165; 0 0 0 0 0 0 0 0 0 0 0; 20.43 0.24 0 5 10.02.09 13:00 G06; 10 2 912 0; 10 42257.30e-03 0.515 85165; 0 0 0 0 0 0 0 0 0 0; 20.43 0.24 0 5 10.02.09 12:00 G06; 10 2 912 0; 151 42257.30e-03 0.515 85165; 0 0 0 0 0 0 0 0; 20.21 0; 23.23 0.23 0 5 10.02.09 12:00 G06; 10 2 912 0; 151 42257.30e-03 0.515 85165; 0 0 0 0 0 0 0; 22.21 0.23 0 5 10.02.09 11:00 G06; 10 2 911 0; 0 42517.30e-03 0.515 85165; 0 0 0 0 0 0 0; 22.21 0.23 0 5 10.02.09 11:00 G06; 10 2 911 0; 0 42407.30e-03 0.515 85165; 0 0 0 0 0 0 0; 22.21 0.23 0 5 10.02.09 11:00 G06; 10 2 911 0; 0 42407.30e-03 0.515 85165; 0 0 0 0 0 0 0; 22.21 0.23 0 5 10.02.09 10:00 G06; 10 2 910 0; 10 4407.30e-03 0.515 85165; 0 0 0 0 0 0 0; 0 0; 22.374 0.22 0 5 10.02.09 00; 0 06; 10 2 910 0; 107 42407.30e-03 0.515 85165; 0 0 0 0 0 0 0; 0 0; 24.990.21 0 5 10.02.09 00; 0 06; 10 2 9 10; 0 41817.30e-03 0.515 85165; 0 0 0 0 0 0 0 0; 0 0; 24.990.21 0 5 10.02.09 00; 0 06; 10 2 9 9 0; 0 41817.30e-03 0.515 85165; 0 0	Frame statu View log Download Comments • Active
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6 10.02.09 08:00 G06;10 2 9 8 0; 17 4180;7.30e-03 0.515 85 165; 0 0 3 2 1 0 0 0 1 5;24.90 0.21 0 6 10.02.09 07:59 G06;10 2 9 8 0; 17 4180;7.30e-03 0.515 85 165; 0 0 3 2 1 0 0 0 1 5;24.90 0.21 0 6 10.02.09 07:00 G06;10 2 9 7 0; 0 4166;7.30e-03 0.515 85 165; 0 0 0 0 0 0 0 0 0 0 0;26.25 0.21 0 6 10.02.09 07:00 G06;10 2 9 7 0; 39 4166;7.30e-03 0.515 85 165; 0 0 12 13 5 1 0 22 7 28;26.25 0.21 0 6 10.02.09 07:00 G06;10 2 9 6 0; 0 4167;7.30e-03 0.515 85 165; 0 0 12 13 5 1 0 22 7 28;26.25 0.21 0 6 10.02.09 06:00 G06;10 2 9 6 0; 0 4167;7.30e-03 0.515 85 165; 0 0 10 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	5 10.02.09 08:00 G66 f10 2 9 8 0; 17 4180;7.30e-03 0.515 85 165; 0 0 3 2 1 0 0 0 1 5; 24.90 0.21 0 5 10.02.09 07:59 G66 f10 2 9 8 0; 17 4180;7.30e-03 0.515 85 165; 0 0 3 2 1 0 0 0 1 5; 24.90 0.21 0 5 10.02.09 07:00 G66 f10 2 9 7 0; 0 4166;7.30e-03 0.515 85 165; 0 0 3 2 1 0 0 0 0 0; 26.25 0.21 0 5 10.02.09 07:00 G66 f10 2 9 7 0; 0 4166;7.30e-03 0.515 85 165; 0 0 0 0 0 0 0 0 0 0; 26.25 0.21 0 5 10.02.09 07:00 G66 f10 2 9 7 0; 39 4166;7.30e-03 0.515 85 165; 0 0 12 13 5 1 0 22 7 28; 26.25 0.21 0 5 10.02.09 06:00 G66 f10 2 9 7 0; 39 4166;7.30e-03 0.515 85 165; 0 0 12 13 5 1 0 22 7 28; 26.25 0.21 0 5 10.02.09 06:00 G66 f10 2 9 6 0; 0 4167;7.30e-03 0.515 85 165; 0 0 0 0 0 0 0 0 0 0; 26.62 0.21 0 5 10.02.09 06:00 First_time: G06 10 2 9 5 4 5 10.02.09 06:00 G66 f10 2 9 6 0; 29 4167;7.30e-03 0.515 85 165; 4 1 6 16 3 1 0 9 6 37; 26.62 0.21 0	
6 10.02.09 07:00 FirstF_time: G06 10 2 9 6 1 6 10.02.09 07:00 G06 (10 2 9 7 0; 39 4166)7.30e-03 0.515 85165; 0 0 12 13 5 1 0 22 7 28; 26.25 0.21 0 6 10.02.09 06:00 G06 (10 2 9 6 0; 0 4167)7.30e-03 0.515 85165; 0 0 0 0 0 0 0 0 0 0 0 0; 26.62 0.21 0 6 10.02.09 06:00 G06 (10 2 9 6 0; 29 4167)7.30e-03 0.515 85165; 4 1 6 16 3 1 0 9 6 37; 26.62 0.21 0 6 10.02.09 06:00 G06 (10 2 9 6 0; 29 4167)7.30e-03 0.515 85165; 4 1 6 16 3 1 0 9 6 37; 26.62 0.21 0 Mathematical Additional Additio	5 10.02.09 07:00 FirstF_time: G06 10 2 9 6 1 5 10.02.09 07:00 G06 ;10 2 9 7 0; 39 4166;7.30e-03 0.515 85 165; 0 0 12 13 5 1 0 22 7 28; 26.25 0.21 0 5 10.02.09 06:00 G06 ;10 2 9 6 0; 0 4167;7.30e-03 0.515 85 165; 0 0 0 0 0 0 0 0 0 0; 26.62 0.21 0 5 10.02.09 06:00 FirstF_time: G06 10 2 9 5 4 5 10.02.09 06:00 G06 ;10 2 9 6 0; 29 4167;7.30e-03 0.515 85 165; 4 1 6 16 3 1 0 9 6 37; 26.62 0.21 0	
6 10.02.09 06:00 FirstF_time: G06 10 2 9 5 4 6 10.02.09 06:00 G06 (10 2 9 6 0; 29 4167)7.30e-03 0.515 85 165 ; 4 1 6 16 3 1 0 9 6 37; 26.62 0.21 0	5 10.02.09 06:00 FirstF_time: G06 10 2 9 5 4 5 10.02.09 06:00 G06 ;10 2 9 6 0; 29 4167;7.30e-03 0.515 85 165 ; 4 1 6 16 3 1 0 9 6 37; 26.62 0.21 0	
All Locations Clear Close		
All Locations Clear Close		>
	All Locations Clear	Close
	Jownioad	
	ed to manually download the data from the frame to the PC	Data Chart
JOWNIOAO Data Chart Seed to manually download the data from the frame to the PC Settings	-	Settings
JOWNIOaQ Data Chart Sed to manually download the data from the frame to the PC Settings Visual test Visual test		Settings Visual test
Download Data Chart Sed to manually download the data from the frame to the PC Settings Visual test Frame status		Settings Visual test Frame status
Download the data from the frame to the PC Settings Visual test Frame status View log		Data Chart Settings Visual test Frame status View log

Comments

Comments can be stored during the growth cycle. The comments will appear on the data chart in Biomest 3000 and in the Biomass Daily reporting system growth trend graph. This may include the removal of the frame, grading, splitting, etc. Select the type (harvesting, grading, starve or other) and date of the comment, write text in the "Comment" field. Also listed are all the comments for this cage.

p02			Data Chart
Kind Other Harvest Grade Starve	Pertinent date 24/03/2010		Settings Visual test Frame statu: View log Download Comments
	Cancel OK	CommonND	
▶ 13/11/2009 09:46:29	p10	1	
		۲	

Active (In use)

Used to inactivate the frame when not in use or reactivate the frame when deployed in the cage for measuring.

Data Chart	Data Chart
Settings	Settings
Visual test	Visual test
Frame status	Frame status
View log	View log
Download	Download
Comments	Comments
 Make Inactive 	Active

Populations



Use the Population button to register new populations and new cages. It is important that the MAC address is corresponds to the correct wireless sending box connected to the frame.

Here you can administer the cages, create new locations (cages) and populations and link the correct population to every cage.

Distant Street Contract Street	Population I	nforma	tion				
Location Pop	oulation						
Location	Population	Active	Mac address	NWA	Firmware		
C01	G01	Act	0030660540000A5E	2	Vers1.18		
C03	G03	Act	0030660540000A5C	4	Vers1.18		
C04	G04	Inact		0	Vers1.18		
C05	G05	Inact		0	Vers1.18		
C06	G06	Act	0030660540000A90	3	Vers1.19		
C07	G07	Act	0030660540000A5F	5	Vers1.18		
C08	G08	Act	0030660540000A69	6	Vers1.18		
C09	G09	Act	0030660540000B9F	11	Vers1.18		
C10	G10	Inact		0	Vers1.18		
C11	G11	Act	0030660540000CA8	8	Vers1.18	New Location	
C12	G12	Act	0030660540000B9C	7	Vers1.18		
C13	G13	Act	0030660540000B9E	9	Vers1.18	Delete Location	
C14	G14	Act	0030660540000B8F	10	Vers1.18		.
				1	1		

Add new population when needed, e.g. when grading, splitting or harvested from one population.

🕸 Cage Informations			<u>_ ×</u>
Location Population			
Fish populations TES P01 P03 P05 P06 P04 P02	Add population Delete population	insert fish pop Population name: OK Cancel	
		. 1	

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Setup



Here it is possible to set the upload interval for data transfer from the sending box to the PC. Recommended to use 1 hour and typically, Com 1 is used.

If you select "Show all data" (view all data) the average weights of the cages are displayed even when there are very low fish numbers in the measurement.

It is recommended to use <u>www.biomassdaily.com</u> for analysis of the data. It is possible to choose between the MAC or IP address, most systems use MAC address as the communication method between the sending box and PC. It is also possible to choose between salmon and trout, since there is a difference between weight calculation formula.

Settings		
Upload interval	Com port numbe	
C None	Com 1	
C 1 min	C Com 2	MHSW
0.45	C Com 3	
○ 15 min	C Com 4	I✓ Show all data
I hour	C Com 5	
C 4 hour	C Com 6	
C 1 day	C Com /	
, Tuay	C LOM 8	
Communitation met	hod	Fish species
MAC addresses	:	Salmon
C IB addresses		C. Daishau kaut
Site name		Radio network
Kobbavik		
,		Farm layout
version 3.27		

Radio network is used to connect each connection box to the right cage number in the software. By pressing "Reset Net" all the connection boxes send their MAC addresses to the computer.

Then it is possible to link each cage location to the correct MAC address.

By pressing the "Check connection" button, the LQI (Link Quality Index) is refreshed. The LQI can be between 0 and 127 and indicates the strength of the signal from the connection box. The higher the index, the stronger the signal.

Below 20 the signal is too weak. , this could be too great a distance or misalignment between sending box and base station antennae or and obstruction of the signal.

ICA should be 0, if 1 then there is not a connection to the frame.

						T	/ aki Ltd. ——		
🅸 F	ladio network								
NV 2	// Box MAC	C01	or LQI 46	ICA 0			Locations: C01 C03 C04	,	
4 5 6 7 8 9 10 11	0030660540000450 003066054000045F 003066054000089C 003066054000089C 003066054000089C 003066054000089F 003066054000089F	C03 C07 C08 C12 C11 C13 C14 C09	42 0 30 26 10 2 16 10 10			<<	C05 C07 C08 C09 C10 C11 C12 C12 C13 C14		
		Check conr	nction		vet net	Apply	Close	initialize base	

Clicking the **Farm layout** tab the layout of the cage positions can be changed by dragging and dropping.



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Moving a frame to a new cage

When frames need to be moved to a new pen the following procedure has to take place.

- 1. Before you start you should change your "Upload interval" to "None" as the Biomest 3000 software may close down if an upload from a frame starts as changes are being made.
- 2. If necessary create a new population by pressing the "Population" module in the upper left corner. (See Populations chapter)
- 3. Create a new cage if the cage has not already been created (see Populations chapter)
- 4. Make changes to the size and shape of the cage by right clicking on the cage (see settings) menu
- 5. Make any changes to the farm layout as necessary

Right click on the cage that the frame will be moving into and go into the **Settings** menu for that cage.



In the MAC / IP tab, select the cage from which you want to use the sending box from.



Populations Setup	Log file Close						
C01 (A5E) G01 4505 g	C03 [A5C] G03 4988 g	C05 G05	C07 (A5F) G07 3967 g	C09 [B9F] G09 3339 g		11 (CA8) 311 088 g	C13 [B9E] G13 3989 g
	CD4 GO4 GO4 Visual test Frame stat Urew log Download Comments Active	36 (A30) 306 163 g	C08 (AS9) G08 4340 g	CI0 G10		12 [B9C] à12 1807 g	C14 [89F] G14 4052 g
Base	connected	Swim W			Con	Auto	

Activate the new cage making sure that the original cage location for the frame is not active.

- 1. It is very important to check the MAC address (last three digits shown in blue in each cage on the image above) match between the new cage and the actual sending box out on that cage.
- 2. Close and restart application since cage and population are stored in the program itself
- 3. Right click on the original cage who had the farm and under Settings MAC / IP you have to manually delete the MAC address so it does not exist in two places in the system
- 4. Under Setup and radio network check the connection LQI (Line Quality Index) and Reset net to establish the search for all the MAC addresses from the sending boxes.
- 5. Close and restart the Biomest 3000 application

Restarting the sending box

On top of the black box (next to the cable plug) are three diodes, the green tells us there is power on the box, the red that it is in contact with the base and at the yellow / orange flashes when data is transferred to the base / PC.

This is the power supply, green light if it is powered from 230V

> Internal wireless antennae



The orange button turns on and off the modem (black box)

The gray / silver box shows the status of the battery. Green light indicates there is 230V supply, Yellow is the status of the battery; Red indicates that the voltage is too low and the battery must be charged.

12V Battery

2. WEB-BASED REPORTING PROGRAM

Main Screen

The main screen for each system indicates the current status of all the frames in addition to the average weight and number of fish measured from each cage.

The overview of the farm shows all the cages and uses three colors for reporting the status.

- White indicates the frame is active and more than 200 fish are in the measurement.
- Yellow indicates that the sample is to small to be valid for the population (below 200 fish)
- Red indicates that there has been no data sent from the site for that cage within last 72 hours.



In each box is

- Population ID
- Average Weight
- Number of fish in the sample
- The time since the last fish was measured
- Visibility check that tells of the frame diodes are blocked and to be cleaned.
- Connection status indicated is contact between the sending box on cage and PC base station.

Population:	G12
Avg Wt:	3890
Num Fish:	3063
6 hours since	last fish
Visibility:	OK
Connection:	OK

G13
3705
814
e las <mark>t f</mark> ish
Unknown
ALARM

The system automatically displays the **Alarm** if there is something wrong with **Visibility** or **Connection.** The most common reasons for alarm in the Connection status is power problems on cage supplying the sending box.

If there is no connection with the sending box (Alarm on Connection) the status of the Visibility is indicated as **Unknown**.

Alarm Handler - Windows Internet	Explorer mHandler.aspx?Username=Benni&O	rganisation=8&Farm=33&PenID=G13	
Cage C13 alarm summary:			
AlarmType	Date & Time	Comment	
Lost Connection Alarm	10.2.2010 19:30:13		Cancel Alarm
			Close
Done		Internet	et 🔍 100% 💌

If the **Connection** is OK but **Visibility** has **ALARM** that the frame must be cleaned. When the status has changed (the frame has been cleaned or contact restored) the alarm disappears automatically and the status is shown as OK.

It is also possible to manually remove the alarm, press **ALARM** and write a comment and clear alarm.

There are also two other alarms in the system, these displays **Site Connection** which indicates that the PC on the base is switched on and has is in contact with the Internet.

The second is **Bio3000 status** which indicates that the measurement program on the base PC is running.

These alarms are also automatic, but again it is also possible to manually delete the alarm.

Site Connection:	Net connection lost or PC switched off		Site Connection:	OK
Bio3000 status:	Unknown		Bio3000 status:	OK

Graphical overview

On the main screen, press the "Click here for graph view" to display the daily measurements of average weight and number of fish measured every day in all cages over the past 4 weeks. In addition calculated daily % growth (SGR = Specific Growth Rate).

It may be interesting to compare at a glance, the growth and number of fish over a certain period of time, and to look at the estimated SGR again for comparisons over time.



Clicking on one of cages in the main screen or the graphical overview gives a detailed view of that cage.

The following is a typical graph for 30 days. The bars show the number of fish per day and each point in the blue line is the average weight on that day. The green line shows the average condition factor for each day. Placing the mouse over a point or bar on the graph will show the value

If the number of fish per day is less than 200 the daily point is shown gray. Today's measurement is always gray as it is not completed before until midnight.

📑 New Sub	bscription				*
Organisation	Marine Harvest Norway	Farm	Kobbavik		View Report
- Start Date	3.1.2010 14:30:31	End Date	3.2.2010 14:30:31		
Population	G11 V	Show SGR	No		
CO Start D	ate 3 1 2010 14:30:31	SCP End Date	3 2 2010 14:30:31		Full So
lice SW	No	Show CE	Yes		
use sw		Show Cr	13000		
Min Weight (g) /00	Max Weight (g)	13000		
Population Si		Feed Mass (kg)			
4 4 1	of 2 🕨 🕅 100% 💌	Find Next Select a	format 💌 Export 🔮 🆽		1
te:	Kobbavik	×			
pulation:	G11		A KI		
art: d:	3.2.2010	<u> </u>			
		Growth Trend			
	Number of Fish 🔸 Avg Weight 🕂 CF				
500	n-1			4500	
500	20-			4000	
450	20-			- 3600	
400		******		► -	
5 350	10 -			-3000	
E 300				-2500 -	
e 250				_2000	
2 200		_		1500	
150				1000	
100				-1000	
50	┉┥╴┫┫╢╝╗╝╗	▋▋▋▋▁▖▋▋▋		-500	
	12. ja 11. ja			8	
	2010 2010 2010 2010 2010	1.201 1	2010 2010 1 201 1 201 1 201 1 201 1 201 1 201 1 201 1 201	2010	
	0 0 0				
	Date	Number of Fish Avg Weigh	t Condition Factor		
	3. feb. 2010	1377 4153	1,28		
	2. feb. 2010	2239 4163	1,29		
	1. feb. 2010	1776 4191	1,27		
	31. jan. 2010	1589 4162	1,26		

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Below is the growth trend shown over a longer period.



Calculation of daily growth (SGR = Specific Growth Rate)



By the use of **Biomass Daily** has the opportunity to calculate the first real growth over a specified period. When used all measurements over selected time and then subtracted the best line through all the daily measurements. It is only taken into account the blue dots (more than 200 fish a day)

when the best line is calculated. It is important to take into account the number of fish measured per day since, as the calculations are based on a larger sample, the better they become. Below is how the daily growth is calculated for the selected period.

Calculation of biological feed factor (bFCR)

Biological feed factor is based on measured growth, the number of fish and the amount of feed used during the time period. There are many factors that can affect the calculations and it is important that the measurements are accurate with a large number of fish measured each day. Low numbers of fish measured can lead to greater fluctuations in the measurements and reduce the quality of the calculations. Below is how the biological feed factor is calculated for a selected period.



Control bar

In all screens the control bar can be shown or hidden using the double chevrons



In the control bar using the Farm tab you can choose between sites within the same company.

The **Start Date** and **End Date** buttons select the time interval to be displayed on the trend graph. Remember to press the **View Report** at the top right to display the new data.

Use the Show SGR and SGR Start Date End Dates options to view the SGR.

Software version 3.11 - March 2009

Population selects the cage to be viewed.

Note: Only populations who have valid measurements in the selected date range are displayed in the drop down list.

Choosing a longer date range will increase the number of populations in the drop down list.

Select Yes in the Show CF tab to display the condition factor on the graph.

Use SW allows a pre set starvation weight to be displayed instead of live weight. *Note: This function needs to be activated specifically for each company.*

🚰 New Subsc	ription		×)
Organisation	Marine Harvest Norway	Farm Kobbavik V	View Report
Start Date	3.1.2010 14:30:31	End Date 3.2.2010 14:30:31	
Population	G11 💌	Show SGR Yes	
SGR Start Date	3.1.2010 14:30:31	SGR End Date 3.2.2010 14:30:31	
Use SW	No	Show CF Yes	
Min Weight (g)	700	Max Weight (g) 13000	
Population Size	95650	Feed Mass (kg) 28650	
	of 2 🕨 🔰 100% 💌	Find Next Select a format 💌 Export 📓 🎒	*

It is important to use the **Min Weight** and **Max Weight** settings to ensure that the sample reflects the fish population you wish to measure.

E.g. To prevent populations of other species having an effect on the average weight.

In the report the number of fish that are excluded from the measurement are shown (see section below).

Total number of fish in the cage (**Population size**) and feed consumption (**Feed Mass.**) are used for the calculation of the feed factor (see above).

The bottom bar contains functions to: Scroll to the next page, Enlarge the screen, Find text in the report

Export data in another format (pdf, excel, word, html, tiff ...). There are also buttons for "refresh" and printing.

Automatic reporting

Under "New Subscription" it is possible to subscribe to automatic status reports via e-mail.

🔗 New Subsc	cription			*
Organisation	Marine Harvest Norway	Y Farm	Kobbavik View	w Report
Start Date	3.1.2010 14:30:31	End Date	3.2.2010 14:30:31	
Population	G11 💌	Show SGR	Yes	
SGR Start Date	3.1.2010 14:30:31	SGR End Date	3.2.2010 14:30:31	
Use SW	No	Show CF	Yes	
Min Weight (g)	700	Max Weight (g)	13000	
Population Size	95650	Feed Mass (kg)	28650	
	of 2 🕨 🔰 100% 💌	Find Next Select a	a format 💽 Export 📓 🚑	\$

Click the "**New Subscription**" and the following menu will open. Type in the e-mail address and press "**Select Schedule**" to select when the report will be sent automatically to selected e-mail.

Report Delivery Options										
Specify options f	Specify options for report delivery.									
Delivered by: E-Mail										
То:										
Subject:	@ReportName was executed at @ExecutionTime									
	✓ Include Report Render Format: MHTML (web archive)									
Priority:	Normal									
Subscription Processing Options										
Specify options fo	or subscription processing.									
Run the subscript	ion:									
When the scheduled report run is complete. Select Schedule At 08:00 every Mon of every week, starting 15.2.2010										

Select how often automatically report to be sent to selected e-mail.

Use this sched	Use this schedule to determine how often this report is delivered.										
Schedule det	Schedule details										
Choose wheth	Choose whether to run the report on an hourly, daily, weekly, monthly, or one time basis.										
All times are e	All times are expressed in (GMT) Greenwich Standard Time.										
OHour	Daily Schedule										
 ● Day ○ Week ○ Month ○ Once 	 On the following days: Sun Mon Tue Wed Thu Fri Sat Every weekday Repeat after this number of days: 1 Start time: 08:00 										
Start and end	d dates										
Specify the da	ate to start and optionally end this schedule.										
Begin runnin	ng this schedule on: 15.2.2010										
Stop this	s schedule on:										
ОК	Cancel										



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By clicking on one of the bars (which shows the number of fish per day) it is possible to write comments on this selected date, for example to indicate, grading, splitting, starve, slaughter, removal of the frame, service, etc.

The comments appear as a blue note, place the mouse on the column to read the comment.



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Size Distribution

Clicking one of the blue measurement points in the trend graph will open the size distribution and condition factor report for the selected day.



In this report the distribution of size and condition factor of live or gutted fish, is shown both graphically and in table form.

🗳 New Subsc	ription														⇒	
Organisation	Marine Harv	est Norway			~	Farm		Kobbavik	~					View Repor	rt	
Population	G11	~				Sample	Date	2.2.2010								
Min Weight (g)	100					Max We	eight (g)	13000								
Bin Size (g)	1000gr	~				Gutting	Factor (%)	0								
Population Size	0					CF incre	ement	0.1	~							
Min CF	0,7	~				Max CF		1,7	~							
Use SW	No	~														
	of 1 🕨 🕅	100%	~		Find	Next	Select a fo	rmat	Export	¢	4				\$	
Site: Population:	Kobbavik G11					1	Ζ.		1						^	J
Sample Date:	2.2.2010							AK								
Li	ve Weight Distr	ibution			Condit	ion Facto	or Distributio	n								
40	39			40			36									
_{ير} 30 -	28			_ق 30-			28									
in 20-		20		pendo 20												
× 10	6	6		5 % 10-		12	12	2								
0 0		0	0	0	1 2	5		2 1								
Ξ,	-2 -3 -4 -5	6-7 6-7	9		8'0.	4 4	-1,2 1,2	1,5								
	0.1	12 2	2 24	4.5	5.6	6.7	7.9									
Bin Size Biomass Live	[%] 0	1 6	28	39	20	6	0	0								
% of Populatie	on 0	2 1	0 33	37	15	4	0	0								
Condition Fac	tor 0,8 - 0,9	0,9 - 1 1 - 1,	1 1,1 - 1,2	1,2 - 1,3	1,3 - 1,4 1	,4 - 1,5 1	,5 - 1,6 1,6 -	1,7								
Population [%] 1	2 5	12	28	36	12	2 1	1								
Number of Fi	sh 45	130 280	648	1511	1949	667	133 3	0								
Fish in Sample	Avg W	/eight (gr)	С	v	Avg Cl	F										
5393		4163	0,	24	1,29											
Site: K	obbavik	Population:	G11		Sample	Date: 2	2.2.2010									
Gutting Factor: 0		Population S	ize: 0		Created	at: 1	15.2.2010 10:	27:59								
Min Weight: 1	00	Max Weight:	13000		Bin Size	: 1	1000									
Min CF: 0,	,7	Max CF:	1,7		CF incre	ement: (D,1									
Excluded Fish: 0																
WWW.VAKI.I	S AKRA	LIND 4, IS-201, KO	PAVOGUR, IC	ELAND, TE	L. (+354) 595	3000, FAX.	(+354) 595 300	1, VAKI@VAKI.	IS						~	
	_															-

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Input the number of fish in the cage (Population Size), insert the lower weight limit ("Min Weight" to exclude small fish such as pollock and wrasse from the sample) and use "**Gutting Factor**" to re calculate the weight of gutted fish. Remember to press "**View Report**".

Rew Subscription						
Organisation	Marine Harvest Norway	~	Farm	Kobbavik	~	
Population	G11 💌		Sample Date	2.2.2010		
Min Weight (g)	700		Max Weight (g)	9000]
Bin Size (g)	1000gr 💌		Gutting Factor (%)	0]
Population Size	95000		CF increment	0.1	~	
Min CF	0,7 💌		Max CF	1,7	~	
Use SW	No					
I I of 1 ▷ ▷ I 100% ♥ Find Next Select a format ♥ Export I IIII						

"Min / Max Weight" and "Min / Max CF" are used to exclude fish or fish-like shadows which may cause a measurement under or over these limits.

Min weight is the most important to be aware of since young fish, pollock and wrasse can have a major impact on the average weight of a large fish population if they swim in large quantities through the frame.

Max weight, and min / max CF are used to exclude the few cases where the fish-like shadows that can occur when two fish swim at the same time through the frame and the shadow is not automatically discarded.

"Bin Size" is selected to set the weight groups on the X-axis,

"Gutting Factor" is used to calculate the gutted weight

"**Population Size**" is the number of fish in the cage to calculate the total biomass and the biomass in each weight group.

Remember to press the "View Report" for changes.

"Use SW" must be activated by Vaki IT specialists for each user, this is to display starved weight instead of live weight.

Below is an example of a report made by the Export button.

