CARDIOLEX

EC Sense
CareFusion JLab ™

version 4.0

Exercise ECG with oxygen measurement

Amendment to
System manual
EC Sense 4.0

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EC Sense 4.0 / Lexor D

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Content

1. Introduction

1.1 Intended use

It is possible to connect *EC Sense* to CareFusion JLab to send data via serial communication (RS232) or via shared files to display data on the screen and in reports.

From *EC Sense* it is possible to send the different phases along with the actual load, heart rate and entered blood pressure values to JLab.

Patient information (from GDT file) can be transferred from JLab to *EC Sense* (only applies to communication via shared files).

1.2 Safety information

This manual contains different types of safety messages written in italics on a grey background. These safety messages are placed where it is most likely that a potential danger may arise, or where the user needs additional information. The following types of messages appear:

WARNING	*Warning indicates a potential hazard which, if not avoided, may result in death or serious injury for the patient and/or the user.*
CAUTION	*Caution indicates a potential hazard which, if not avoided, may lead to personal injury or product damage.*
NOTE	*NOTE provides the user with information on how to use the device in the best way.*
	Read accompanying documents (Operator's manual).

1.2.1 How to read this manual

This manual is an amendment to the *EC Sense System manual* and is intended for biomedical engineers/technicians and IT personnel with skills in installation and configuration of PCs.

The amendment only describes the setup necessary in *EC Sense* to manage the communication from *EC Sense* to CareFusion JLab. The *EC Sense System manual* contains complete information on all configurations for *EC Sense* and the accompanying Operator's manual include instructions for use and how to carry out an *Exercise ECG*. For instructions for use and description of the CareFusion JLab please refer to the product's Operator's manual.

Please read all instructions and pay extra attention to safety information, warnings and cautions. Verify that the device has been properly installed in accordance with the instructions and that the users have sufficient knowledge about the requirements, including the safety instructions that have to be followed to protect the patient and yourself.

> *The user is advised to read the complete EC Sense System manual.*
>
> *Read this manual carefully and pay attention to all of the safety instructions before using a medical system. If this is neglected the patient's and your own safety is at risk.*
>
> *The safety information is presented where it seems most likely that a potential hazard could occur.*

1.2.2 Revision history

Version number for corresponding *EC Sense* and date is printed on each page of the manual.

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2. Connection and transfer of exercise data

Exercise data can be transferred via serial output from *EC Sense*, or via shared file.

Connection

For serial communication:
- Connect a serial cable (RS-232) between the PC and the external device.

For shared file communication:
- Connect the PC to the network with a TCP/IP cable or, use a wireless network connection.

Communication

Before the exercise data can be transferred it must be set up in *EC Sense*. See the section on "Settings".

The communication from *EC Sense* to JLab is managed through the file "ERGOSPIR.DAT". At serial communication this file gets updated via the program CardNet32.exe i JLab.
At communication with shared files the file gets updated directly via *EC Sense*. The file is cleared after the exercise ECG has finished.

⚠️
WARNING

The following requirements must be met when EC Sense is connected to an Ergospirometer:

- *If EC Sense and the Ergospirometer shall be interconnected, a medical PC or a PC with isolation transformer must be used for both devices.*

- *If a non-medical PC shall be used, a separation device (according to IEC 60601-1) must be installed between the PC and the RS 232 connected Ergospirometer.*

- *A separation device must be connected to the PC if the Ergospirometer is connected via a network cable, directly or via a network.*

- *Connection over wireless network requires no separation device.*

- *The PC and the Ergospirometer must be individually connected to a 230 V outlet. (Cord with multiple sockets may not be used).*

- *When combined, the Ergospirometer and EC Sense must fulfil IEC 60601-1.*

- *Follow the Operator's manual for the external device.*

- *The RS 232 contacts on the PC and the Ergospirometer must be properly secured in both ends if they are connected to each other.*

**NOTE**   *Data that is shown on the Ergospirometer can be delayed.*

3. Settings

3.1 Settings for serial communication

### 3.1.1 Settings in EC Sense

To open the window with *Settings* in *EC Sense*:

1. Press Ctrl+Shift+"up arrow" simultaneously.
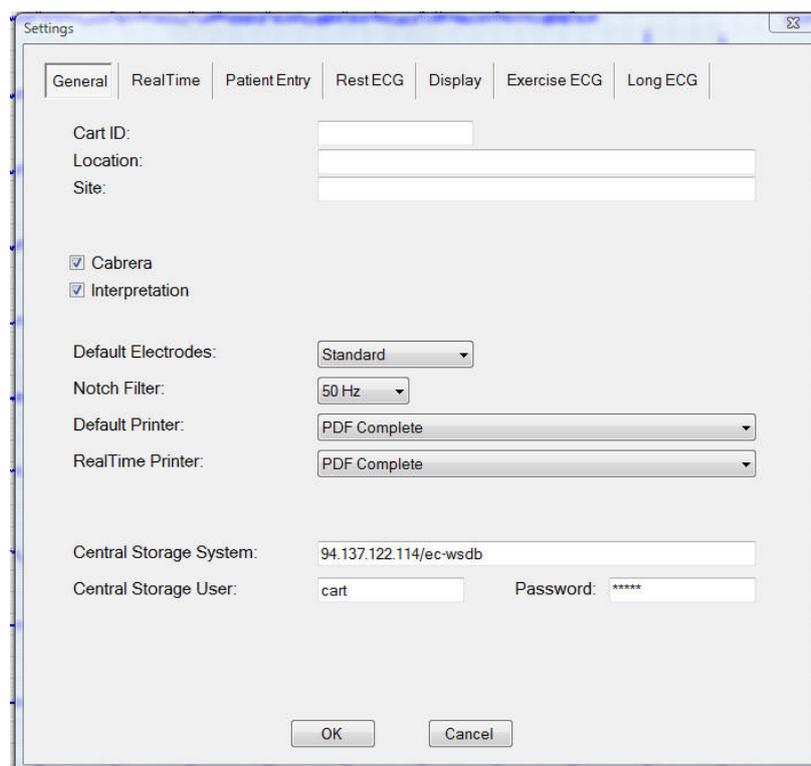
Settings window

2. The window with *Settings* opens.

3. Click on *Exercise ECG* at the top of the window.

4. Select *Protocols and equipment.*
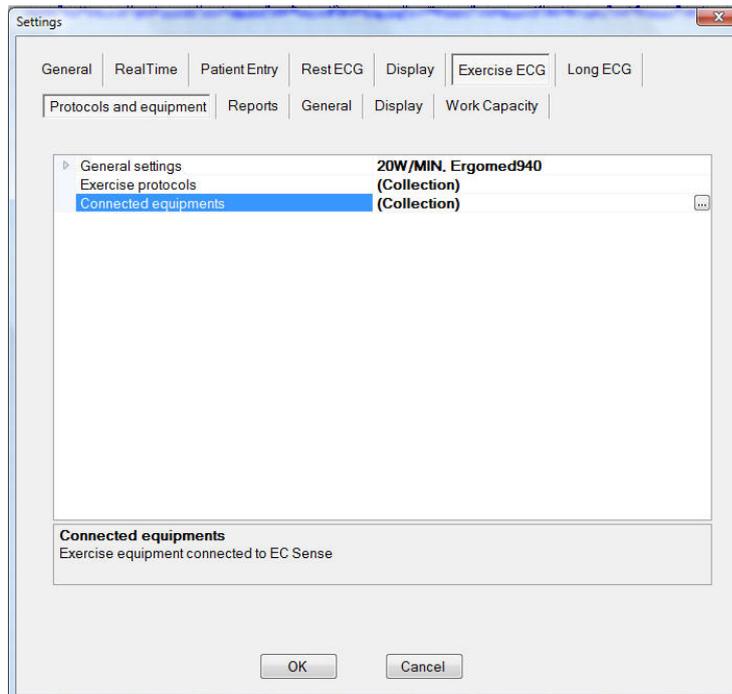
5. Select *Connected equipment.*
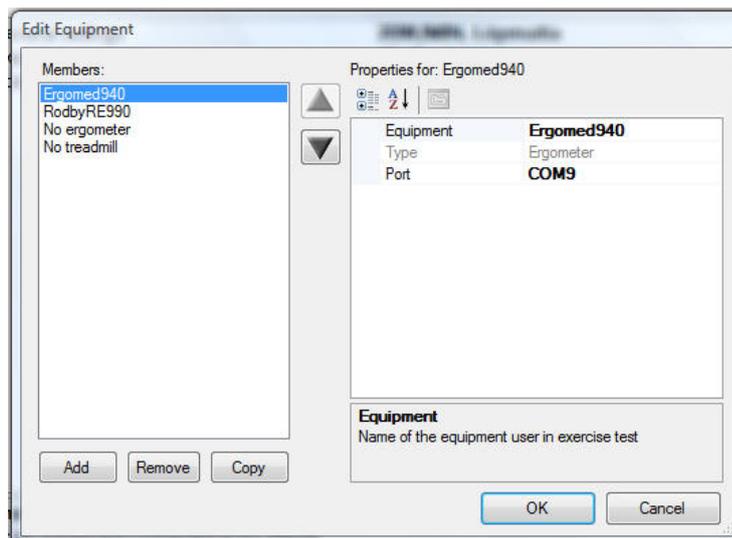
6. Click on *Add* and highlight the *Equipment.*
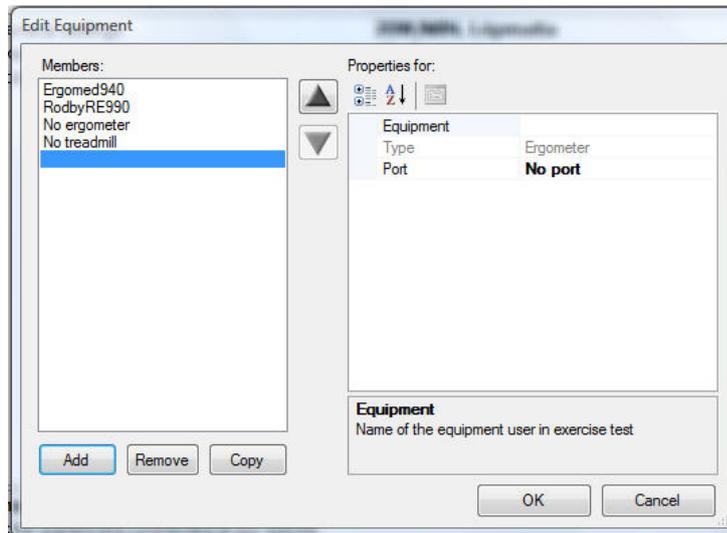
7. Select *CareFusion JLab* from the Equipment list.

8.   Select a communication port from the list.
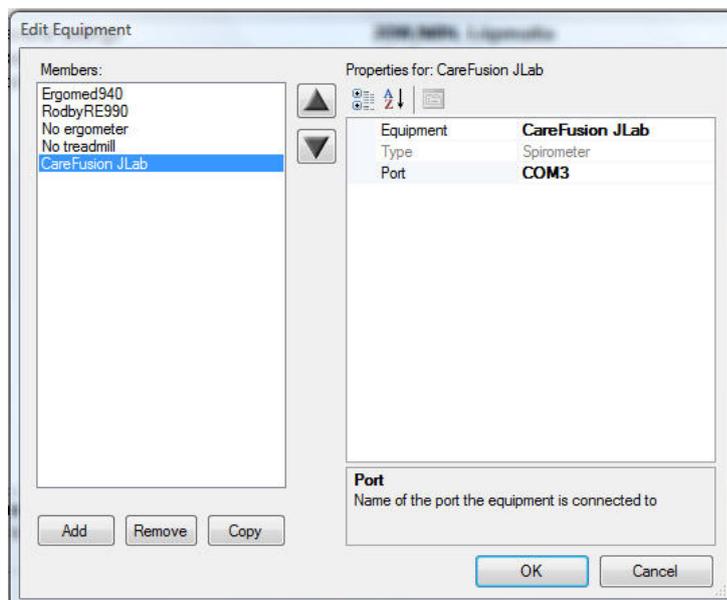
9.   Click on *OK* to finish.

3.1.2 Settings in JLab

1. Log on to the JLab computer.

2. Start JLab.

3. Select the *Utilities* tab.

4. Open *Global Configuration CPNET* and select settings as shown below.

5. Click on *Setting.*

6. Select the *Extern ECG* tab.

7. Log on as "Service Man" by pressing CTRL+ALT+SHIFT+S.

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Log in

You are logged in as   Type password for Service Man

Operator = Level 0

logout   login   Accept

Close
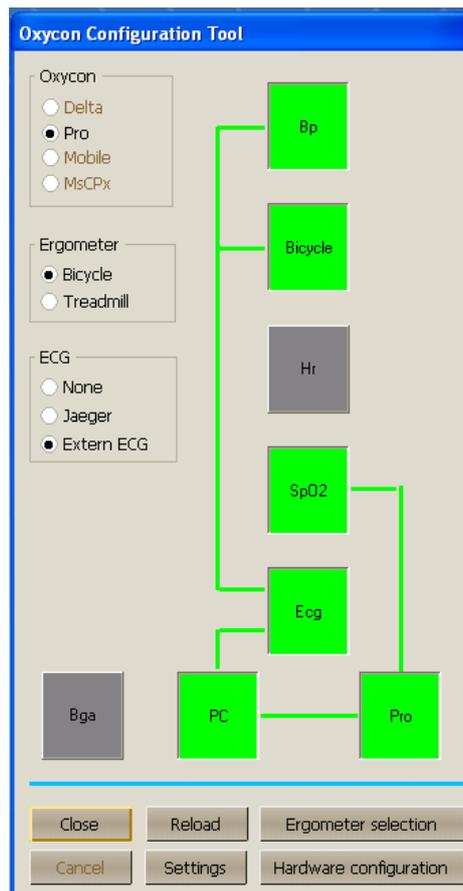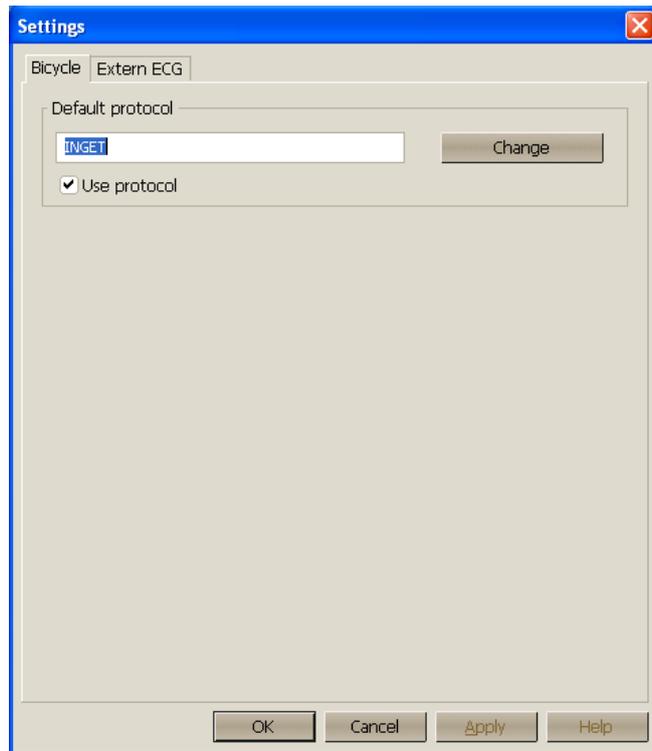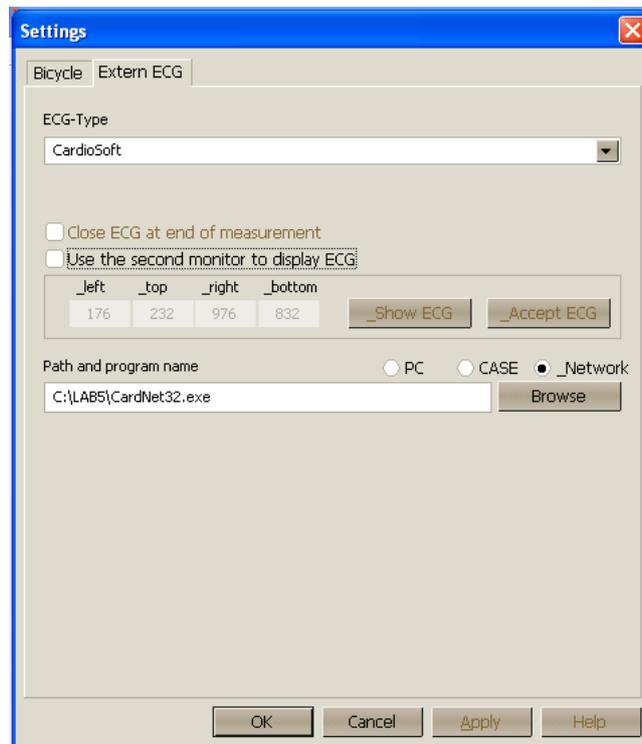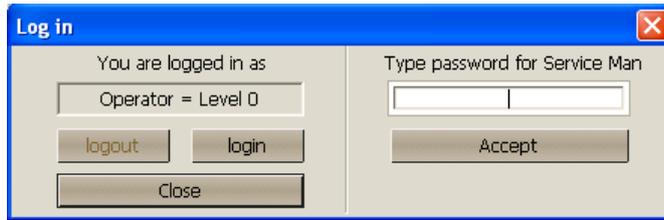
8. Check that CASE is selected.
   Set "Path and program name:" as shown below.
   Set "Path:" as shown below. (Path according to TEMP variable.)

Settings

Bicycle   Extern ECG

ECG-Type

CardioSoft

☐ _Set Style
☐ F1 activated in recovery
☐ Close ECG at end of measurement
☐ Use the second monitor to display ECG

_left	_top	_right	_bottom		
176	232	976	832	_Show ECG	_Accept ECG

Path and program name   ○ PC   ● CASE   ○ _Network

C:\LAB5\CardNet32.exe COM1:1200,n,8,1   Browse

Title: Use the text in ECG application.

Cardio

Path: When ECG is not located on the same harddisk as the Jaeger

C:\DOCUME~1\User\LOCALS~1\Temp

Skip device
● None   ○ Blood pressure   ○ Bicycle   ○ Treadmill   ○ All

1   Time-out in seconds to find connection with extern ECG program

OK   Cancel   Apply   Help

9. Check that the file C:\Windows\Jaeger.ini in the section
   [ECG_Hellige] includes the following:
   Path=C:\DOCUME~1\User\LOCALS~1\Temp

3.2 Settings for communication via shared file

3.2.1 Settings in EC Sense

Open *Settings* in *EC Sense*, see previous description in chapter 3.

1. Select *Exercise EGG → Protocol and equipment*.
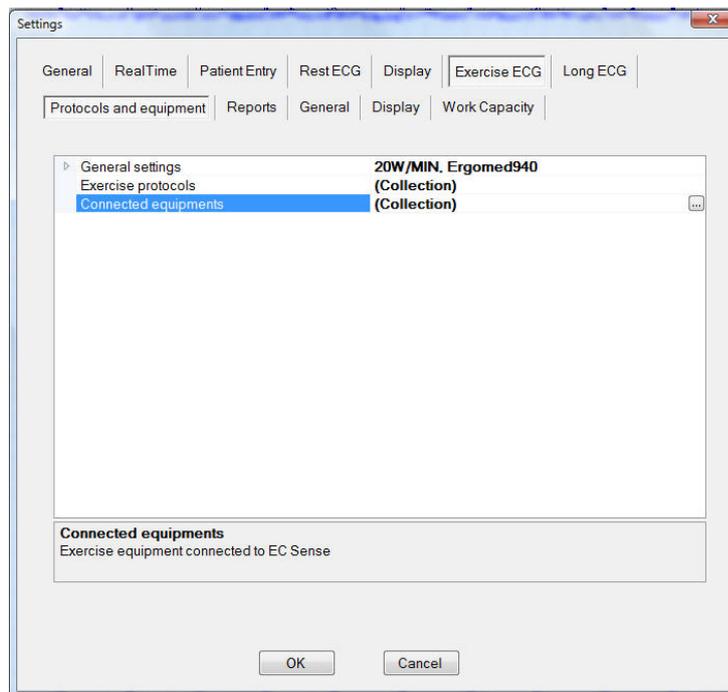

2. Select *Connected equipment.*
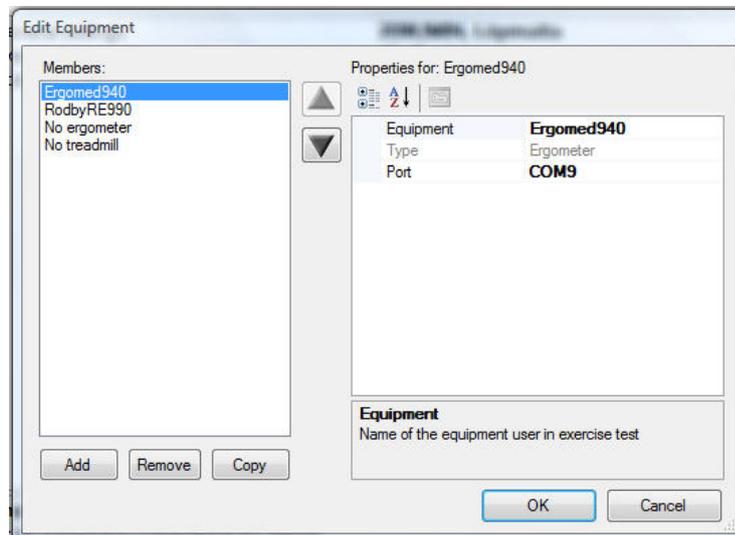
3. Click on *Add* and highlight the *Equipment.*
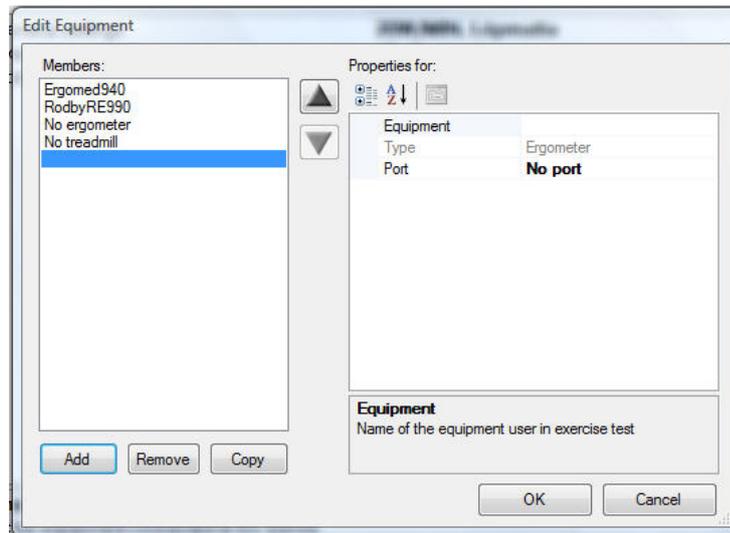
4. Select *CareFusion JLab* from the Equipment list.

5. At *Port,* type the network path to the map *\\server name\LAB5\DB* on the JLab computer. (Do not select a port from the list.)
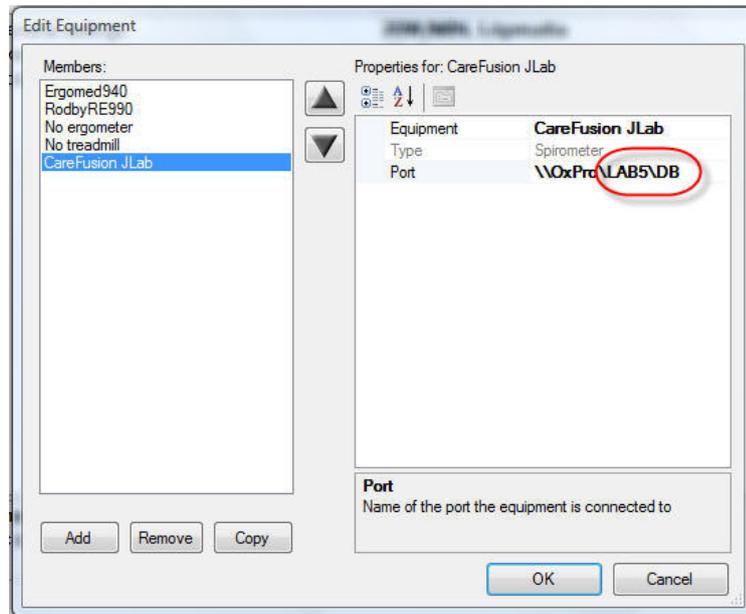

6. Click on *OK* to finish.

3.2.2 Settings in JLab

1. Log on to the JLab computer.

2. Start JLab.

3. Select the *Utilities* tab.

4. Open *Global Configuration CPNET* and select settings as shown below.

5. Click on *Setting.*

6. Select the *Extern ECG* tab.

7. Log on as "Service Man" by pressing CTRL+ALT+SHIFT+S.

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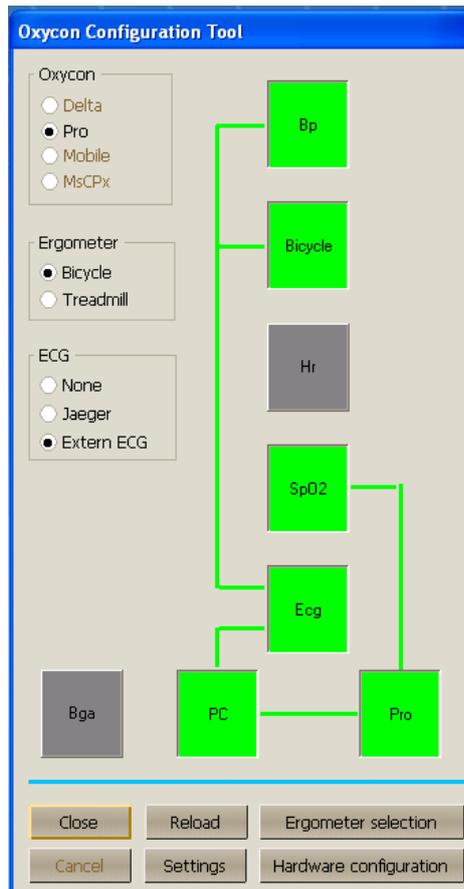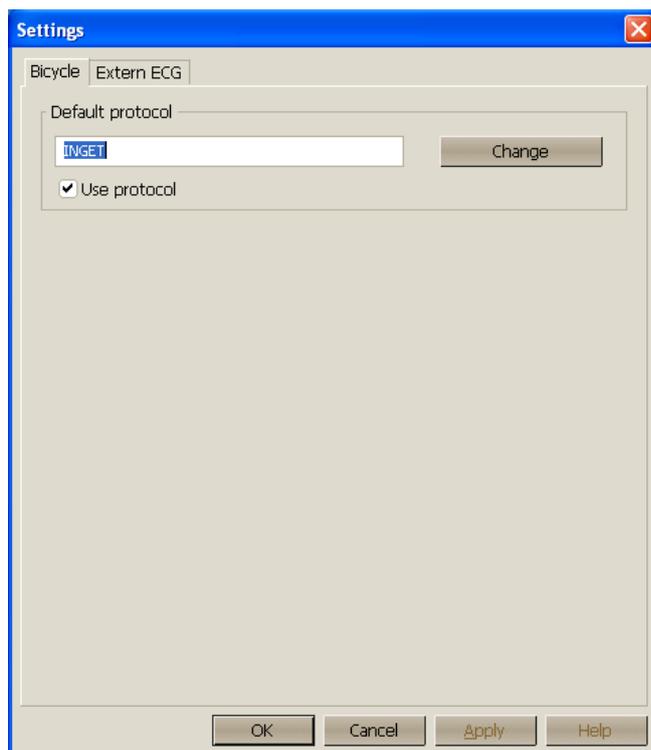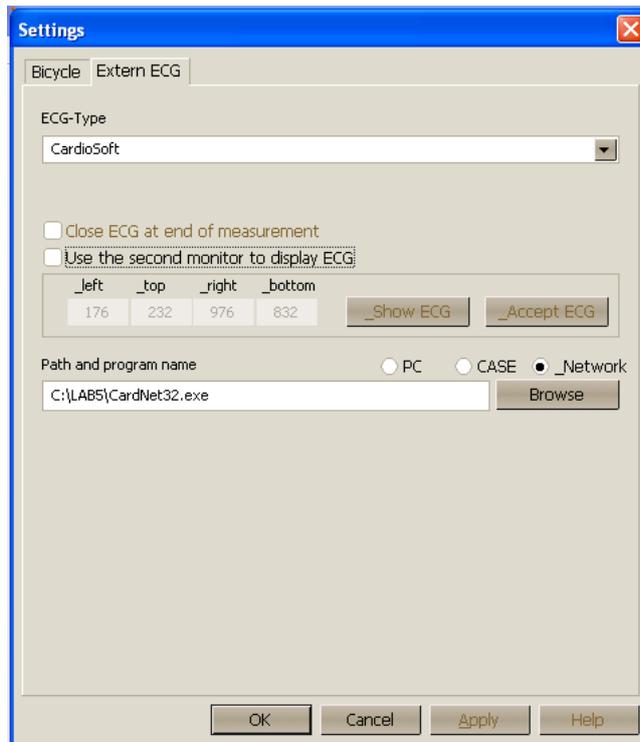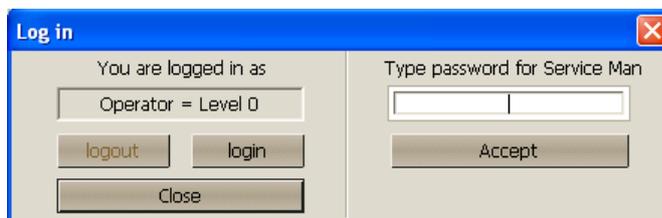
8.   Check that "Network" is selected and set the path to "C:\LAB5\DB".
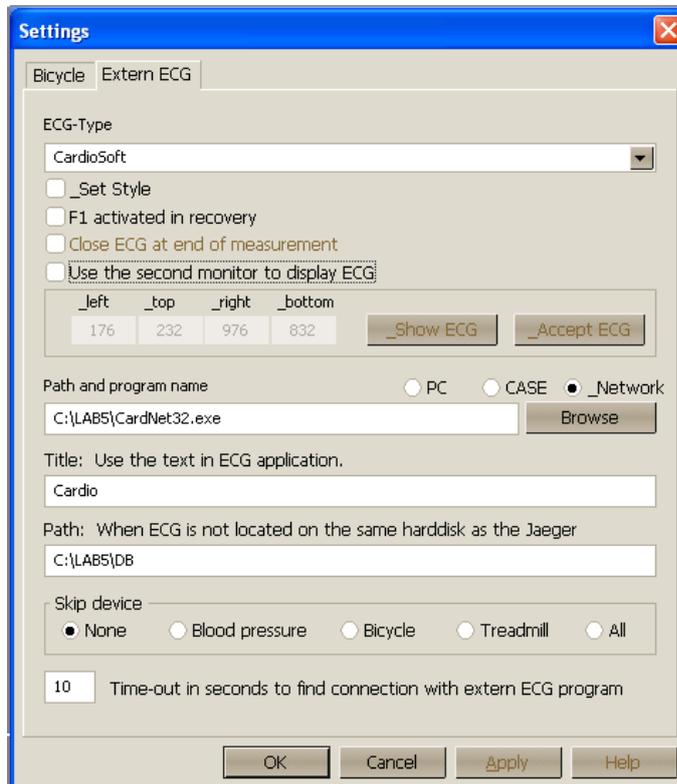
3.3 GDT management

At start-up *EC Sense* can read patient information from a GDT file that has been created in JLab.
This will happen due to that *EC Sense* is started up with two commands; GDT and the name of the GDT file.

Example

```
LexorX100.exe GDT \\OxPro\LAB5\DB\HellJae.GDT
```

These parameters can be combined with other parameters.
If for instance, a different setup file shall be used then the following may be displayed:

```
LexorX100.exe /Setup=C:\Temp\KlinFys.xml GDT
\\OxPro\LAB5\DB\HellJae.GDT
```

NOTE

The GDT file is only executed when *EC Sense* is starting up. The *EC Sense* program needs to be restarted to update the patient information in *EC Sense* when switching to a new patient in JLab.

4. Suggested workflow
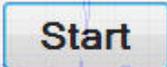
	EC Sense	JLab	Comment
1		Select Patient	
2		Activate *Breath by Breath*	
3	Start the Exercise Test Select protocol/start load and start the Exercise Test **Start**	Start *Breath by Breath* F1	Jlab shows **bgnd zeroing** for a few seconds and thereafter **OK**. **Check** is shown and thereafter **Rest** when *EC Sense* starts up
4	Go to next stage in PreExercise		JLab changes stage to **Reference**
5	Go to Exercise		JLab changes stage to **Test**
6	Go to Recovery		JLab changes stage to **Recovery**
7	Stop Exercise Test		JLab changes stage to **Ready**
8	Edit the Exercise Test	Finish *Breath by Breath* F12	
9	Exit this program	Save measurement? Confirm saving. Save measurement? Yes No Cancel Advanced...	