



Intelligent Integration
Interface

Intelligent Integration Interface User Manual

Clinical System Integration for Numed Healthcare Products

Revision: 4.0

Software version 2.0.0_217



Supply ► Installation ► Training ► Support

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The Intelligent Integration Interface (I³) software accesses patient data from the Clinical Server through the clinical system provider's approved Application Programming Interface. It is the user's responsibility to ensure the patient data as displayed by the I³ software is the correct information for the patient undergoing consultation.

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Intelligent Integration Interface

User Manual

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Introduction

The Intelligent Integration Interface (I³) is a piece of software that acts as a link between the clinical system and a range of diagnostic products supplied by Numed Healthcare.

I³ is a Java based application designed to update automatically over the Internet, so updates and bug fixes can be automatically deployed quickly and efficiently with little or no user interaction. The software checks for an available update the first time it is used each day. A 'Check for Software Updates' button is available in the Settings screen which forces a check for a new version from the update server.

Pre-requisites

The following are required before installation and use of the I³ software.

- Windows XP-SP2 (not recommended), Windows 7 or Windows 10 Operating System.
- For use with the GE Healthcare ECG machines, Cardiosoft v6.71 or later must be installed and correctly configured.
- For use with the QRS Diagnostic ECG machines, CardioView v5 (Windows 7), Cardioview v6 (Windows 10) or Office Medic 5.7.1 or later must be installed and correctly configured. For Windows 10 systems, only Office Medic or Cardioview 6 are compatible.
- For use with the Cardioline HD+ ECG machine, TouchECG v3.20.2468.2 or later must be installed and correctly configured.
- For use with the Schiller MS12-USB ECG system, CS-104 version 19.02.1 or later must be installed and correctly configured.
- For use with the IEM Mobil-o-Graph BP Monitors, HMS-CS v4.71 or later must be installed and correctly configured.
- For use with the MedChip SpiroConnect Spirometer, SpiroConnect Data Manager software version 1.0 or later must be installed and correctly configured.
- For use with the NDD Trueflow USB spirometer, EasyOne Connect software version 03.03.00.11 or later must be installed and correctly configured.
- For Docman integration, Docman 10 must be installed and correctly configured.
- For Seca height/weight integration, a Seca 456 wireless USB receiver is required, correctly configured to link to a compatible Seca measuring device.

Clinical System Compatibility

I³ is currently compatible and accredited for use with the following clinical systems:

- EMIS LV – future development and support of EMIS LV interface ceased January 2017
- EMIS PCS
- EMIS WEB
- TPP SystemOne
- InPS Vision (LAN and Enterprise)
- Clanwilliam Socrates, Helix and HEALTHone (excluding MAC ECG machines)
- Docman 10 – users of Docman 10 can optionally file the results here in lieu of the clinical system

The software may be expanded into other clinical systems in due course.

Product Compatibility

I³ is currently compatible with the following diagnostic products:

- GE Healthcare Cardiosoft (v6.71 or later) CAM-USB ECG System
- GE Healthcare MAC600, MAC800, MAC1200, MAC1600 ECG machines when used with Cardiosoft software or SD card readers (when ECG machine supports PDF export to SD card)
- QRS Diagnostic Universal ECG cable with CardioView 5 software or Office Medic software
- QRS Biolog ECG system with CardioView 5 software
- Cardioline HD+ Bluetooth ECG with TouchECG software
- Schiller MS12-USB ECG cable with CS-104 software
- IEM Mobil-o-Graph Ambulatory Blood Pressure Monitor with HMS-CS software
- MedChip SpiroConnect Spirometer with SpiroConnect Data Manager software
- NDD Trueflow with EasyOne Connect software (formerly Easy On-PC) – Vision clinical system only
- Technomed ECG On-Demand® service. This is an optional chargeable ECG diagnosis service offered in partnership with Technomed. Details of the service and registration for use are provided from links within the I³ software.
- Seca 360 Wireless Measurement Systems

The software may be expanded into other diagnostic products or services in due course.

Installation

Initial installation is usually performed by remote support from our Technical Support team. You must be logged on as a user with local administrator rights for the software to install successfully.


If self-installation is required, please contact our technical support team for details of how to obtain the software.

Initialisation with the Clinical System

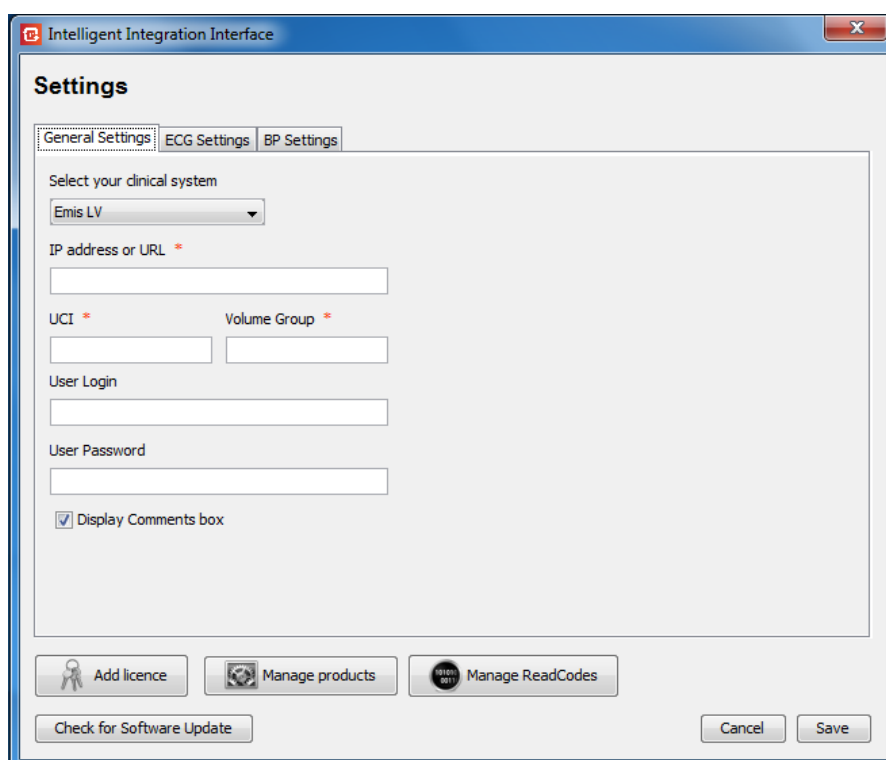
EMIS LV Configuration

NOTE: Support for the EMIS LV clinical system will be withdrawn from January 2017.

Start the I³ software from the desktop shortcut.

Click on the Settings icon in the top right corner of the first screen.  The Settings screen will appear.

When the software is first installed, the clinical system can be selected from the dropdown box. Select **EMIS LV**. Once the clinical system has been selected, subsequent changes to the system type are protected by a password. The password changes on a daily basis. This is to ensure if the clinical system is altered, our technical support team can register the change of clinical system so the correct licence renewal can be applied. Please contact Numed Healthcare Technical Support on 0114 399 0010 for assistance with changing the clinical system.



Enter the EMIS LV server IP address or URL along with the database UCI and Volume Group. If you do not know these, please contact your local IT helpdesk or EMIS support.

The **User Login** and **User Password** will not normally be required as the software usually auto-detects the current EMIS user. You will be prompted to enter these when using the software should the need arise.

Note: The Spirometry module is not available on EMIS LV.

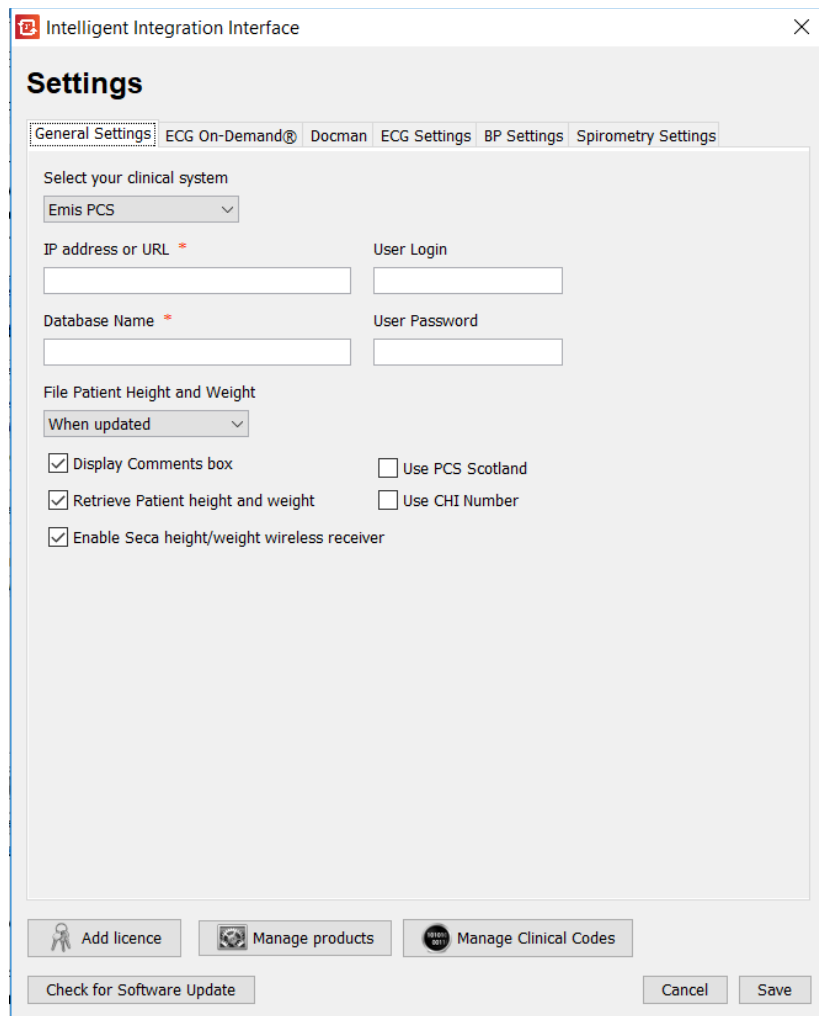
See the **Configuration Settings Common to all Clinical Systems** section for details of other settings.

EMIS PCS Configuration

Start the I³ software from the desktop shortcut.

Click on the Settings icon in the top right corner of the first screen.  The Settings screen will appear.

When the software is first installed, the clinical system can be selected from the dropdown box. Select **EMIS PCS**. Once the clinical system has been selected, subsequent changes to the system type are protected by a password. The password changes on a daily basis. This is to ensure if the clinical system is altered, our technical support team can register the change of clinical system so the correct licence renewal can be applied. Please contact Numed Healthcare Technical Support on 0114 399 0010 for assistance with changing the clinical system.



Enter the EMIS PCS server IP address or URL along with the database name. If you do not know these, please contact your local IT helpdesk or EMIS support.


For installations in Scotland, tick the **Use PCS Scotland** box. To use the Community Health Index number in lieu of the NHS number, click the **Use CHI Number** box.

The **User Login** and **User Password** will not normally be required as the software usually auto-detects the current EMIS user. You will be prompted to enter these when using the software should the need arise.

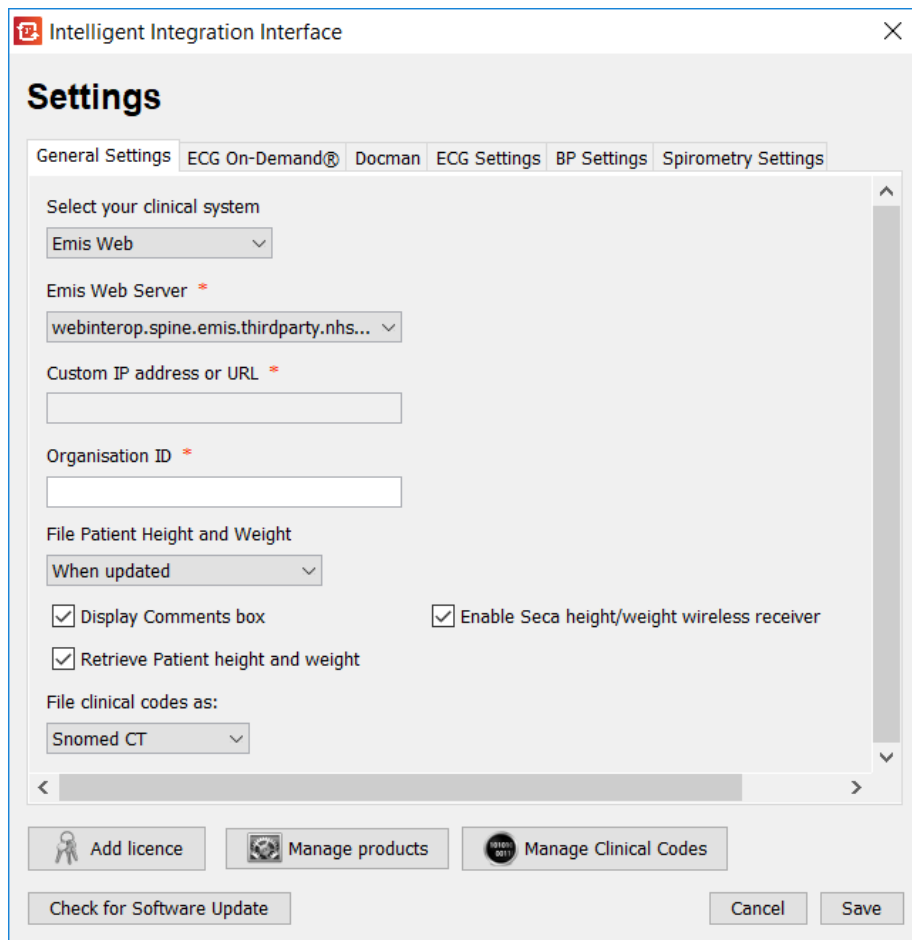
See the **Configuration Settings Common to all Clinical Systems** section for details of other settings.

EMIS WEB Configuration

Start the I³ software from the desktop shortcut.

Click on the Settings icon in the top right corner of the first screen.  The Settings screen will appear.

When the software is first installed, the clinical system can be selected from the dropdown box. Select **EMIS WEB**. Once the clinical system has been selected, subsequent changes to the system type are protected by a password. The password changes on a daily basis. This is to ensure if the clinical system is altered, our technical support team can register the change of clinical system so the correct licence renewal can be applied. Please contact Numed Healthcare Technical Support on 0114 399 0010 for assistance with changing the clinical system.



Select the **EMIS WEB server** address from the dropdown selection, or select Custom Server and enter the Server IP or URL. The **Organisation ID** must also be entered – this is usually the practice CDB number. If you do not know these, please contact your local IT helpdesk or EMIS support.

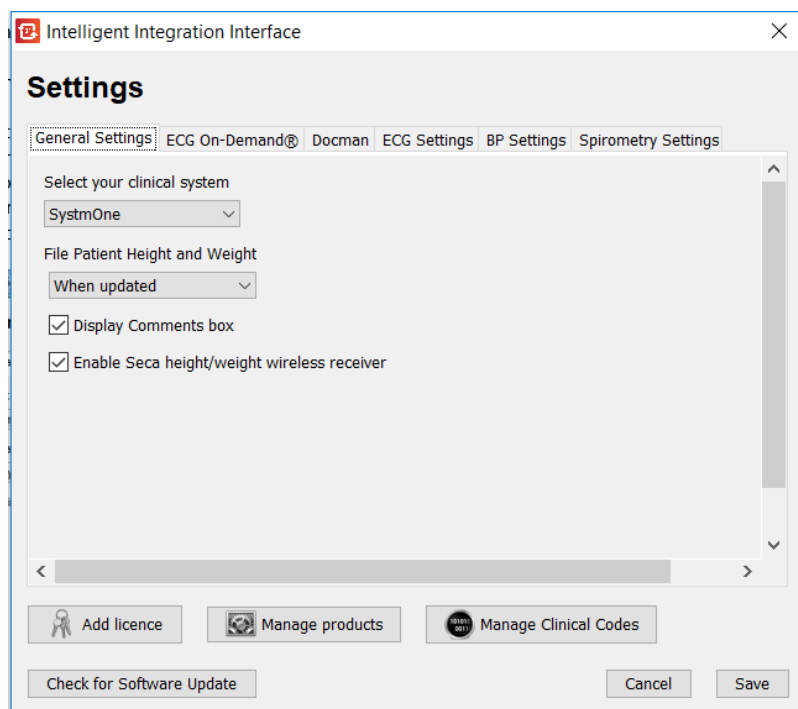
See the **Configuration Settings Common to all Clinical Systems** section for details of other settings.

TPP SystmOne Configuration

Start the I³ software from the desktop shortcut.

Click on the Settings icon in the top right corner of the first screen.  The Settings screen will appear.

When the software is first installed, the clinical system can be selected from the dropdown box. Select **SystmOne**. Once the clinical system has been selected, subsequent changes to the system type are protected by a password. The password changes on a daily basis. This is to ensure if the clinical system is altered, our technical support team can register the change of clinical system so the correct licence renewal can be applied. Please contact Numed Healthcare Technical Support on 0114 399 0010 for assistance with changing the clinical system.



See the **Configuration Settings Common to all Clinical Systems** section for details of other settings.

InPS Vision Configuration

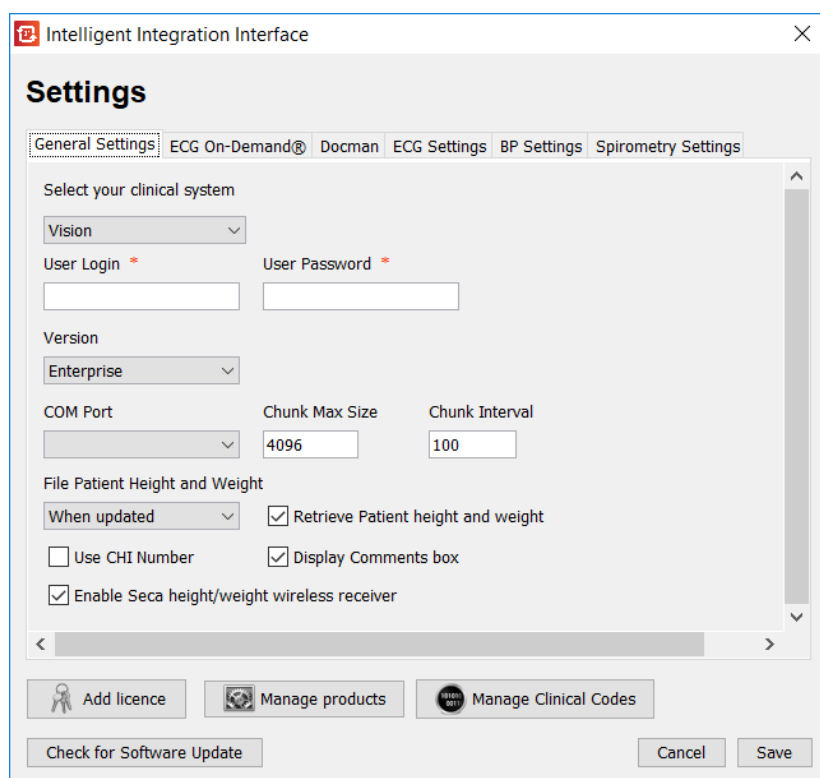
Start the I³ software from the desktop shortcut.

Click on the Settings icon in the top right corner of the first screen.  The Settings screen will appear.

When the software is first installed, the clinical system can be selected from the dropdown box. Select **Vision**. Once the clinical system has been selected, subsequent changes to the system type are protected by a password. The password changes on a daily basis. This is to ensure if the clinical system is altered, our technical support team can register the change of clinical system so the correct licence renewal can be applied. Please contact Numed Healthcare Technical Support on 0114 399 0010 for assistance with changing the clinical system.

A valid Vision username and password must be entered to allow I³ to gain access to the clinical system data.

The Vision version should then be selected – either LAN or Enterprise.



LAN should be selected for practices with their own server where the workstations are running the Vision client (fat client).

Enterprise should be selected for hosted systems including AEROS and VTS (Vision Terminal Services) systems where the Vision client runs on a remote desktop.

Systems running in Enterprise mode will require an additional software component to be installed on the server. This additional component, known as **Numed Enterprise Link**, is required to act as an interface between the Vision system running on the remote desktop and the medical equipment applications running on the local desktop. Installation of the Numed Enterprise Link on the server is completed by InPS for AEROS systems and either InPS or a local IT service provider for VTS systems. This will be discussed and arranged at the time of purchase of the I³ software. Customers migrating from LAN to Enterprise will need to contact Numed Technical Support ahead of the migration to facilitate enabling of the server side software.

Enterprise systems will also require separate installation of the com0com virtual com ports which are used to send and receive data securely to and from the remote desktop session. The installer for com0com is

included on the I³ installation CD. Numed Technical Support can assist with the set up and configuration of these ports if required.

When **Enterprise** is selected, some additional settings become enabled:

COM Port: this is the com0com port used by the I³ software. The default is COM8. The Numed Enterprise Link software on the server must be set to use the paired com0com port. Numed Technical Support will assist with this if required.

Chunk Max Size and Chunk Interval: these settings control the data flow between I³ and the remote desktop software. These settings should only be changed in consultation with Numed Technical Support.

To use the Community Health Index number in lieu of the NHS number, click the **Use CHI Number** box.

See the **Configuration Settings Common to all Clinical Systems** section for details of other settings.

GDT Interface Configuration

The GDT Interface is intended to work with clinical systems that do not have a formal Application Programming Interface but do allow the exporting and importing of data through the GDT protocol. When in GDT mode, the software must be initiated by the clinical system in normal use.

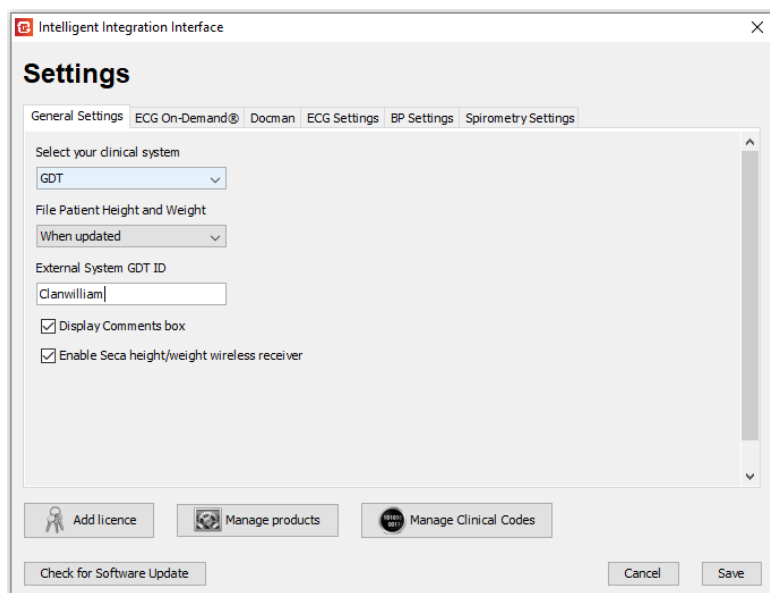
Details of compatible clinical systems can be obtained by contacting Numed Technical Support.

Click on the Settings icon in the top right corner of the first screen.



The Settings screen will appear.

When the software is first installed, the clinical system can be selected from the dropdown box. Select **GDT**. Once the clinical system has been selected, subsequent changes to the system type are protected by a password. The password changes on a daily basis. This is to ensure if the clinical system is altered, our technical support team can register the change of clinical system so the correct licence renewal can be applied. Please contact Numed Healthcare Technical Support on 0114 399 0010 for assistance with changing the clinical system.



External System GDT ID: This is the identifier the clinical system presents to i3 and expects to receive back in the GDT files produced. For the Socrates, Helix and HealthOne, this entry should be 'Clanwilliam'. If using other clinical systems, the system provider will be able to advise on this entry. Please contact Numed Technical Support if assistance is required.

See the **Configuration Settings Common to all Clinical Systems** section for details of other settings.

ECG On-Demand® Configuration Settings

The ECG On-Demand® service is an optional chargeable service offering rapid interpretation of the ECG by qualified cardiac physiologists. The service is offered by and in partnership with Technomed. The service is not owned or operated by Numed Healthcare and a separate agreement is required between the customer and Technomed. Details of registration for the service can be found by clicking on the links in the I³ software.



As part of the registration process, you will be provided with a Username and Password from Technomed to access the ECG On-Demand® service. Additionally, you also be provided with a licence code from Numed to activate the service within the I³ software.

The licence code must first be entered by clicking the 'Add Licence' button. Once activated, other settings will become available.

NHS customers who use the secure N3 network should tick the 'Connect through N3' box. This will connect to the ECG On-Demand® servers on the N3 network. Non-NHS users should remove the tick from this box to force connection to an alternative secure server.

Enter the ECG On-Demand® Username and Password details provided from Technomed and click on the 'Confirm Details' button. If the details are correct, a success message will be displayed and your unique site ID automatically populated in the Customer Site ID Code box. If the connection fails, check your details carefully and also ensure the status of the 'Connect through N3' box is correct for your network.

The service is now ready for use and completed ECGs will be available for upload at the filing stage.

Once uploaded to the ECG On-Demand® service, you will receive an emailed report from the cardiac physiologist within 1 working day of submission. If an urgent problem is detected in the ECG report, Technomed will contact the practice by telephone as soon as possible.

Configuration Settings Common to all Clinical Systems

General Settings Tab

File Patient Height and Weight: This affects the default behaviour of the filing of the height and weight data. Three options are available:

Never: The patient Height and Weight data will never be automatically selected by default for filing back to the clinical record.

Always: The patient Height and Weight data will always be automatically selected by default for filing back to the clinical record.

When updated: The patient Height and Weight data only be automatically selected for filing back to the clinical record if the values are updated on the patient details confirmation screen.

Retrieve Patient height and weight tick box (EMIS and Vision only): When enabled, I³ will attempt to retrieve previously recorded height and weight data from the patient record in the clinical system. However, on slow networks or if a patient has a large medical record, this type of data retrieval can be slow. De-selecting the tick box will speed up the retrieval of the patient data but will require the height and weight data to be entered manually in to the I³ patient data form. Patient Height and Weight is always retrieved when using other clinical systems, assuming the data values have previously been recorded in the patient record.

The **Display Comments box** allows a comment to be optionally filed alongside the consultation.

File Clinical Codes dropdown selection box allows the selection of Read/CTV3 codes or Snomed-CT codes to be displayed and filed to the clinical system. EMIS and Vision clinical systems use either Read or Snomed. TPP SystmOne uses either CTV3 or Snomed.

Enable Seca Height/Weight Wireless Receiver: When ticked, communications with the Seca USB Wireless Receiver will be activated, enabling direct transmission of height and/or weight measurements from compatible Seca measuring devices to the I³ software. If the wireless receiver is not found when the box is ticked, a warning message will be shown.

ECG Settings Tab

CardioSoft Settings:

CardioSoft executable path: If using the GE CAM-USB ECG cable with CardioSoft software, this is the directory in which the CardioSoft software is installed.

Import CardioSoft Option Codes File: This permits the text file containing the option codes for a particular CAM-USB device to be imported in to I³. Once imported, the device serial number will be available for selection when the 'Choose Product Serial Number' option described above is enabled. The imported text file name should be the serial number of the associated CAM-USB device, as this is what will appear in the dropdown selection box during use.

Choose Product Serial Number when using CardioSoft: When enabled and CardioSoft CAM-USB is in use, a pop-up window will appear during the ECG acquisition process allowing selection of the product serial number from a list of those I³ is aware of. Selecting a serial number will automatically import the correct option codes to CardioSoft for the associated device. This permits easy device selection when multiple devices are in use in the same practice, or when loan equipment is issued during routine servicing or repair.

GE Connectivity Server Mode: Tick this box when using a MAC ECG machine that uses the GE Connectivity Server to transfer data to the PC (currently only MAC600 and MAC2000). When ticked, I³ will restart the Connectivity Server software each time it starts, which enhances data transfer reliability between the MAC and the PC.

MAC PDF Filer PDFs Directory: If using a GE MAC ECG Machine, this should be set to the folder in which the PDF reports will be stored. This can either be a folder on the local drive, or a removable drive such as a card

reader. If the removable drive location is used, the removable drive must be connected before starting the i³ software.

Universal ECG / Biolog Settings

Software Package: Select the ECG software package installed. Office Medic must be selected when Windows 10 is in use, Cardioview 5 is not compatible with Windows 10. Biolog is not compatible with Office Medic.

CardioView / Office Medic executable path: The installation path of the Office Medic or Cardioview 5 software. If using CardioView 5 software, this is the path to the CardioView software 'bin' folder.

Include ECG SCP File in attachment: Tick this box to upload the raw ECG file as well as the PDF report. The SCP file attachment requires CardioView to be installed to view the attachment. If this box is unticked, only the PDF report will be uploaded. **NOTE:** This option is not available on Vision systems.

TouchECG Settings

TouchECG Database Path: This is the location of the TouchECG database that i³ will use. It should be a location available to all users of the PC. The recommended default is C:\Cardioline\TouchECG\

Use Simple User Interface: When enabled, the TouchECG software will hide many of the buttons not required for basic ECG acquisition. Less button clicks are required to acquire the ECG, but certain functions like the filter buttons are also hidden. Choose the interface that best suits your requirements.

Include ECG SCP File in attachment: Tick this box to upload the raw ECG file as well as the PDF report. The SCP file attachment requires a compatible SCP viewer to be installed to view the attachment (one is not installed by default). Note the SCP file format used by TouchECG is not compatible with the QRS CardioView software and vice versa. If this box is unticked, only the PDF report will be uploaded. It is recommended this box is unticked unless there are specific requirements to save the raw ECG file. **NOTE:** This option is not available on Vision systems.

Update Configuration Settings button: The user preferences for the way the TouchECG software looks and behaves are set up and saved from within the TouchECG software. Once this has been done, this button should be clicked to copy those settings to the i³ software.

Schiller CS-104 Settings

Schiller CS-104 executable Path: This is the directory in which the CS-104 software is installed.

Username: The i³ software requires a username and password to access the CS-104 software. This must be configured within the CS-104 software and the username entered here. This setting can be left blank, in which case the clinician will be required to log in to the ECG software when the acquisition begins.

Password: Enter the password for the associated username above. This setting can be left blank, in which case the clinician will be required to log in to the ECG software when the acquisition begins.

EMR Device Name: Four-digit alphanumeric code which must match the setting in the CS-104 software and is used for the data transfer between the applications.

Device ID: Four-digit alphanumeric code which must match the setting in the CS-104 software and is used for the data transfer between the applications.

BP Settings Tab

IEM Mobil-o-Graph executable path: If using the IEM Mobil-o-Graph Ambulatory BP Monitor with HMS-CS software, this is the directory in which the HMS-CS software is installed.

Update PDF Export Settings: This button copies the most recent PDF report configuration from the HMS-CS software and uses it for the exported report filed to the clinical system. The required report settings should be made from within the HMS-CS software before clicking this button to replicate the report to the I³ software. The button will be greyed out if no report settings have yet been saved in the HMS software.

Spirometry Settings Tab

SpiroConnect executable path: If using the MedChip SpiroConnect Spirometer and Data Manager software, this is the directory in which the SpiroConnect Data Manager software is installed.

Click **Save** to store the settings. If this is the first time the software has been used, it will now be necessary to enter the product licence keys. Please see the **Adding Product Licences** section.

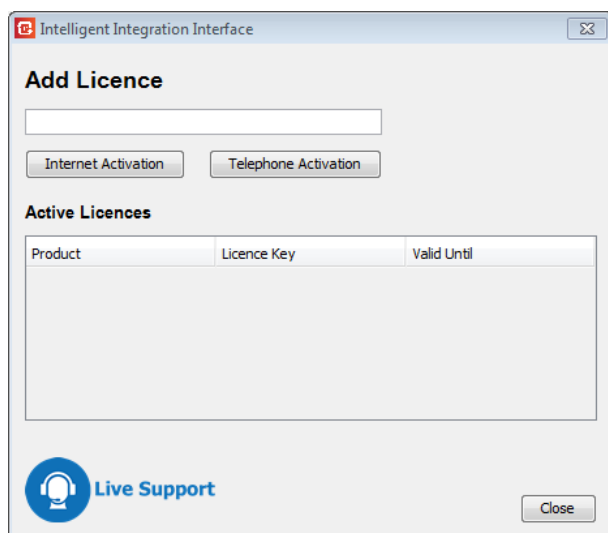
Adding Product Licences

Before the software can be used, one or more product licences must be added to enable the link to the relevant products.

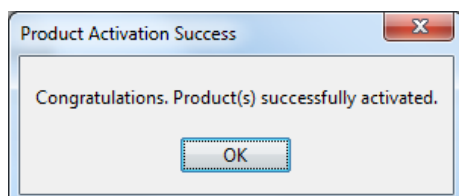
An individual licence code will enable one or more products depending on the code used.

Add a licence code by following the steps below:

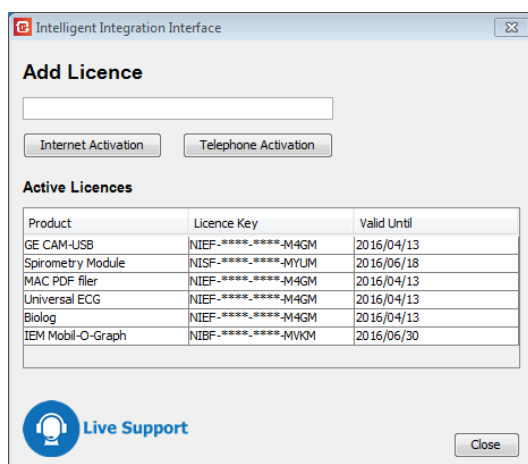
1. Start the I³ software from the desktop shortcut
2. Click on the **Settings** button
3. Click the Add Licence button. The following screen will be shown:



Type in the licence code provided with the software and click **Internet Activation**. If the licence code registers successfully a message will be shown:



The enabled products, licence keys, and expiry dates will then be shown:



If Internet activation fails, double check the correct licence code has been entered. If problems persist please call Numed Healthcare Technical Support on **0114 399 0010** for assistance, or click the Live Support button. Live Support is available between 8am and 5:30pm, Monday to Friday.

Note: Live Support is not available when using the GDT interface (Eg. Socrates, Helix, HEALTHone)

If telephone activation is required, the support technician will guide you through the process.

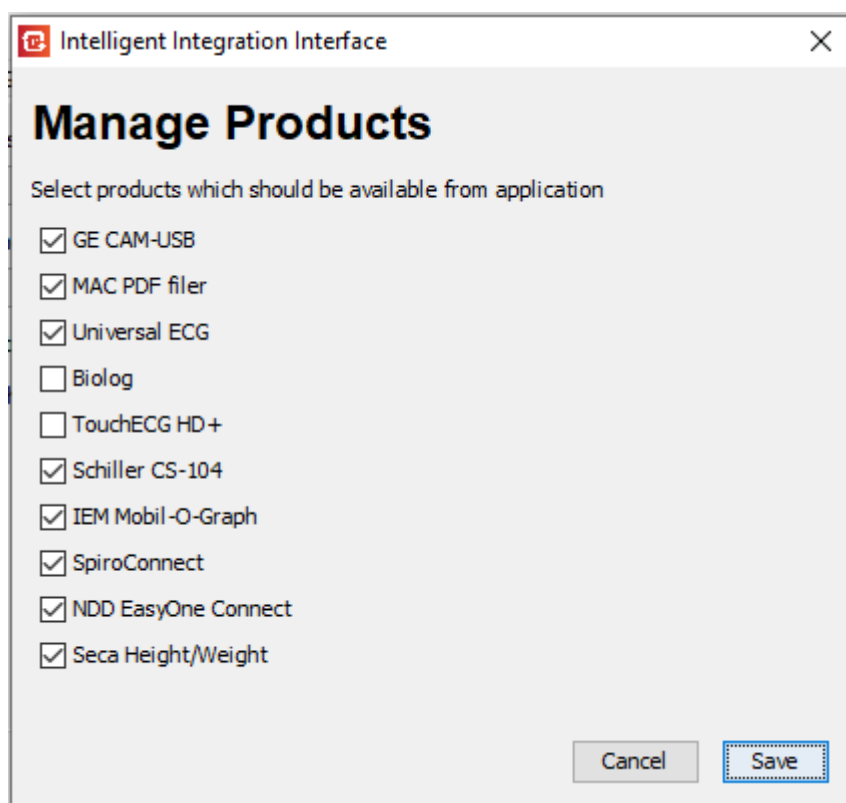
IMPORTANT:

- The licence codes supplied are **practice specific** and must not be used or shared at other sites (except branch sites that use the same clinical system database).
- If the licence code is used on an unauthorised site or is installed on a high volume of PCs, this may result in the licence code becoming locked, which will ultimately result in the software locking out the licensed product. Where there are legitimate requirements for installation on a high number of PCs in the same practice, please contact Numed Technical Support for assistance.
- When the licence renewal date approaches, the software will display warnings of the imminent expiry. The software will continue to function normally until a few days after the expiry date. Renewal notices will be issued by post. When the licence is renewed, the software will automatically pick up the updated renewal date from the Internet server. If the software licence is not renewed, the software will cease to function a few days after the expiry date.
- If no licence codes are entered, or all licence codes have expired, the Add Licence screen will open as the software is started.
- There is no individual licence code for the Seca Height and Weight integration. This is an add-on to existing diagnostic products. Therefore, one or more diagnostic products must be licensed for the Seca Height and Weight integration to be enabled.

Managing Products

As product licences are added, the associated product links become enabled. However, for ease of use, it is possible to disable a licensed product from the user interface so only the products that are in regular daily use are available to be selected.

1. Start the I³ software from the desktop shortcut
2. Click on the **Settings** button
3. Click the **Manage Products** button
4. Tick the products to enable them on the user interface or remove the tick to make the product unavailable. Up to 4 ECG products can be enabled at any one time. If a product is greyed out, no licence is currently active for that product. See [Adding Product Licences](#) section.



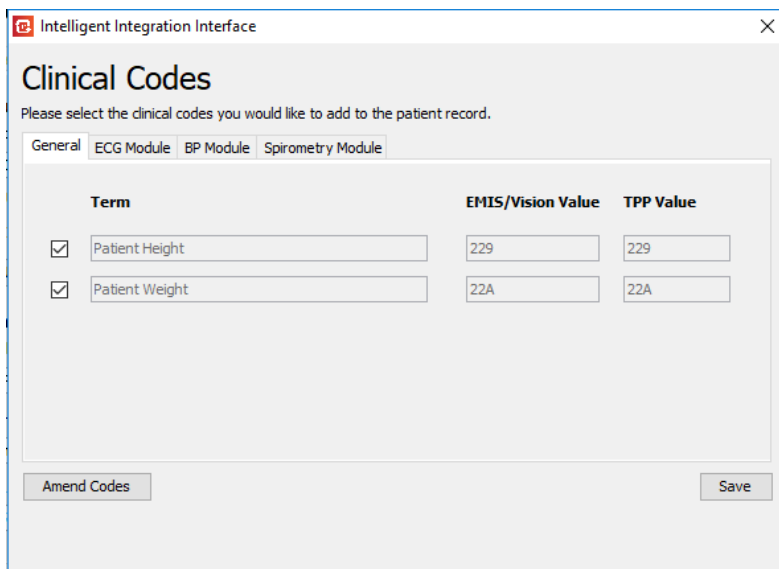
Managing Clinical Codes

Clinical Terms and Codes can be filed alongside the results of the test. Clinical code filing is enabled by default, but can be disabled if required. It is possible to choose which Clinical codes are available for filing from a selection of the data available from the diagnostic product.

The actual Clinical code(s) filed can be amended on written request. Please contact Numed Healthcare Technical Support for assistance on 0114 399 0010.

Follow the steps below to select which Clinical codes are filed.

1. Start the I³ software from the desktop shortcut.
2. Click on the **Settings** button.
3. Click the **Manage Clinical Codes** button.
4. Click the tab of the product whose Clinical codes need amending. BP and Spirometry integration allow selection of individual Clinical codes for filing.
5. Use the tick boxes to select or deselect whether a Clinical code is available for filing. The SpiroConnect Spirometry software has many Clinical codes available. It is not anticipated that all users will require the filing of all codes – users should select those they require from the list of available codes. When using the GDT Interface as the clinical system, the data values are exported when the values are ticked, but the Clinical codes are not applicable.
6. The actual Clinical code filed for a specific data value can be amended (EMIS, Vision and SystmOne only). However, amending of Clinical codes is password protected and must be requested in writing. Numed Healthcare Technical Support will assist with this.



Term	EMIS/Vision Value	TPP Value
<input checked="" type="checkbox"/> Patient Height	229	229
<input checked="" type="checkbox"/> Patient Weight	22A	22A

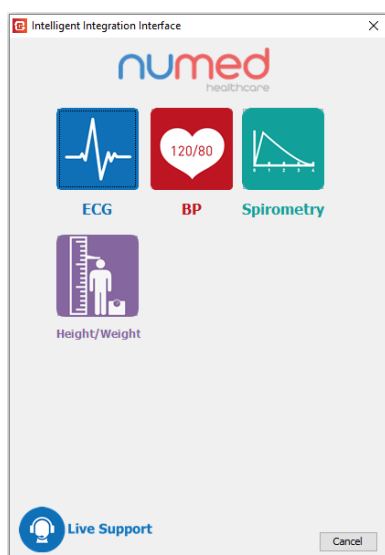
Using I³ with GE Healthcare CAM-USB and CardioSoft

To acquire an ECG from the GE Healthcare CAM-USB cable and store as a PDF in the patient's notes, follow the steps below:

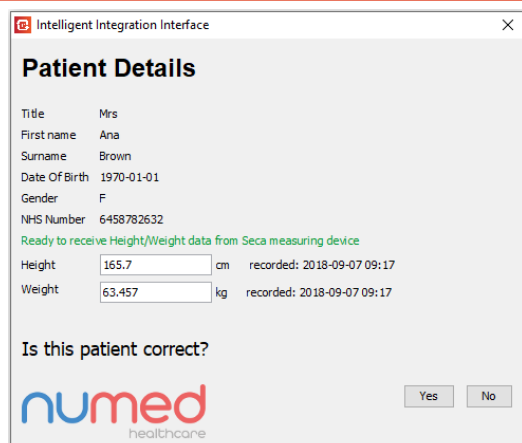
1. Find and select the patient within the clinical system.
2. Start the I³ software from the desktop shortcut.
3. As the software starts, the following screen will be shown:



4. Click the **Start** button. The Select Product screen will appear.



5. Click the **ECG** button. If multiple ECG products are enabled, a sub-menu will be shown – select the **GE CAM-USB** from the list of products and click the **Start** button.
6. If product serial number selection is enabled in the Settings, a drop-down box will appear allowing the serial number of the device in use to be chosen. Select the correct serial number and click OK.
7. After a second or two, the current patient's details should be shown in a window like the one below:



Intelligent Integration Interface

Patient Details

Title Mrs
First name Ana
Surname Brown
Date Of Birth 1970-01-01
Gender F
NHS Number 6458782632
Ready to receive Height/Weight data from Seca measuring device
Height 165.7 cm recorded: 2018-09-07 09:17
Weight 63.457 kg recorded: 2018-09-07 09:17

Is this patient correct?

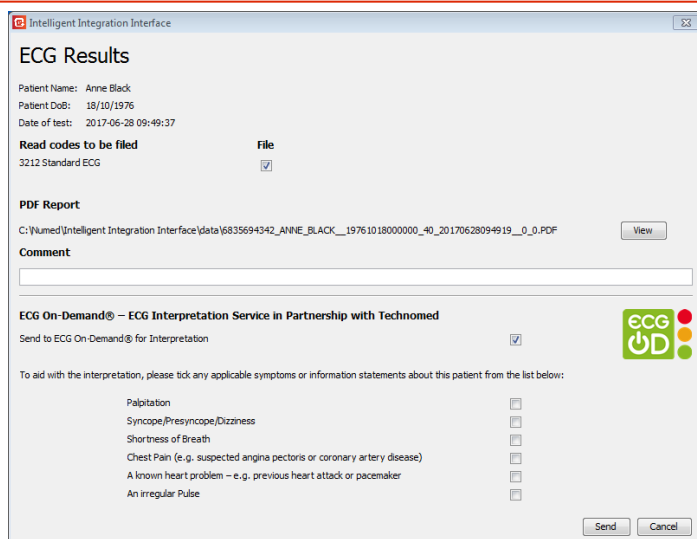
numed
healthcare

Yes No

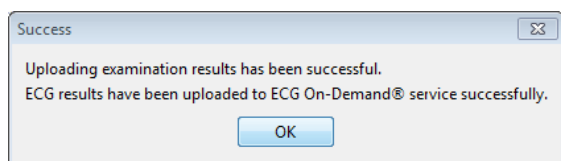
8. If Seca Height/Weight transmission is enabled, the software will then display it is ready to receive the height/weight data. Press the 'Send' button on the Seca measuring device. Any new values received will be displayed and the time the data was received will be shown. Verify the data is correct. Data can be re-sent from the Seca device if required.
9. Click **Yes** to confirm the patient details are correct. If the patient details are not correct click **No** and ensure you only have one copy of the clinical system software open.
10. CardioSoft will initialise and the ECG monitoring screen should appear as shown below.



11. The connection indicator in the top right corner should show all ten leads as green, indicating good patient contact. If any of the lead positions show yellow or red, the lead contact requires attention.
12. When the quality of the ECG is satisfactory, click the **ECG Acquisition** button. There may be a delay of up to 10 seconds whilst the ECG is acquired. 'ECG Analysis' will appear briefly in the top section of the screen as the acquisition completes.
13. As the Acquisition completes, the **Post Test Review** button will become available – click this to review the Test Summary (Measurements, Automatic Interpretation etc.).
14. After reviewing the data, close the Post Review Window by clicking the cross in the top right corner of the window to exit CardioSoft.
15. The integration software will display the patient details and a Clinical code under which these results will be filed. The PDF report of the ECG recording can be previewed by clicking the **View** button. A comment can also optionally be added, which will be filed alongside the PDF attachment. If you are subscribing to the ECG On-Demand® service, this will also be available for selection.



16. Click the **Send** button to send the results to the clinical system and if selected, the ECG On-Demand® Service. Clicking **Cancel** will discard the results.
17. After a few seconds, a message showing successful filing should be displayed. If an upload to the ECG On-Demand® service was selected, the status of the upload will also be shown. If filing or upload is not successful, an error message will be shown.



It is recommended the result is then viewed in the clinical system to verify correct filing before the patient leaves.

Using I³ with MAC PDF Filer

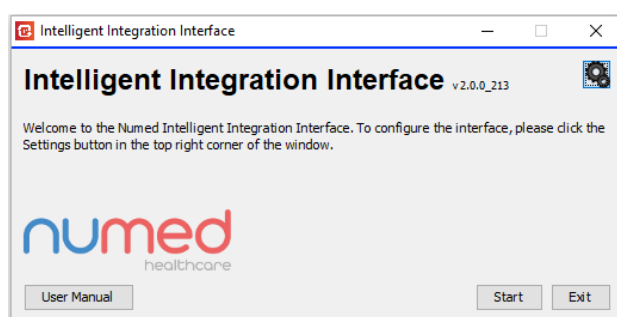
The MAC PDF Filer is designed to quickly and easily attach the PDF reports from the GE range of MAC ECG machines in to the clinical system. The process of actually transferring the PDFs from the MAC ECG machine to the PC varies between machines – please refer to the product manual for the machine in use.

Note for SystmOne Users: Due to limitations within the SystmOne interface, MAC PDF filer cannot perform the batch processing of ECG reports from different patients. When using SystmOne, PDF reports can only be filed to the currently loaded patient.

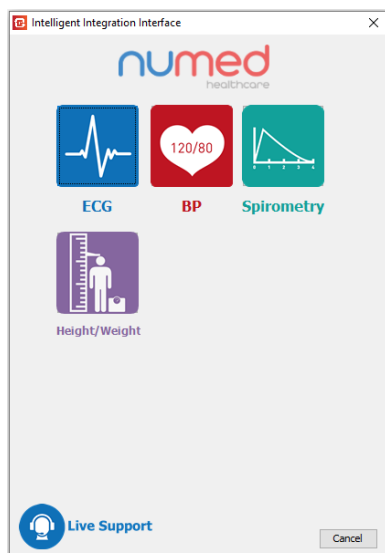
Note for GDT Interface Users: MAC PDF filer is not available when using the GDT interface as the clinical system. This includes Socrates, Helix and HEALTHone.

Once the PDFs have been transferred to the PC, follow the steps below to file the reports into the patient record.

1. Start the I³ software from the desktop shortcut.
2. As the software starts, the following screen will be shown:



3. Click the **Start** button. The Select Product screen will appear.

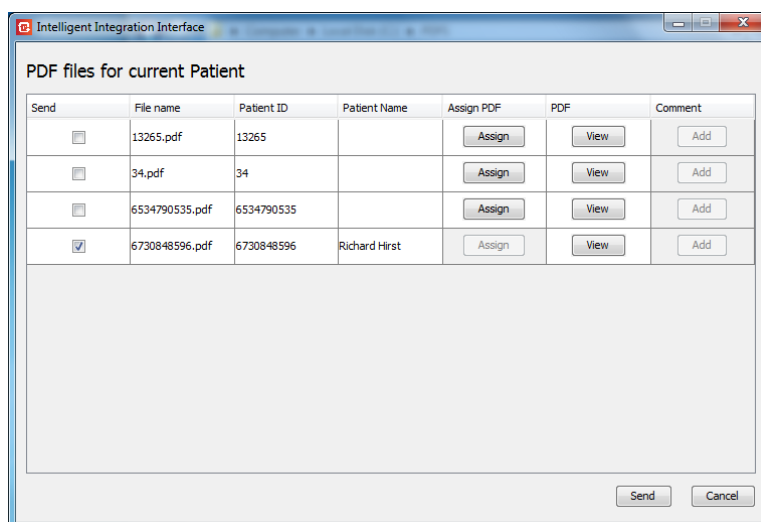


4. Select the **ECG** icon. If multiple ECG products are enabled, a sub-menu will be shown – select **MAC PDF filer** from the list of products and click the **Start** button.
5. A list of PDF files found in the PDF directory (specified in Settings) will be shown.
EMIS users: I³ will attempt to look up the correct patient ID based on the filename of each of the PDFs.
SystmOne users: I³ will try and match any PDFs whose filename matches the NHS number of the currently selected patient.

Successfully matched patients will be shown in the list and selected ready for sending to the clinical system.

SystmOne users: Filenames that are not automatically matched to a patient can be manually associated with the currently loaded patient in SystmOne as follows:

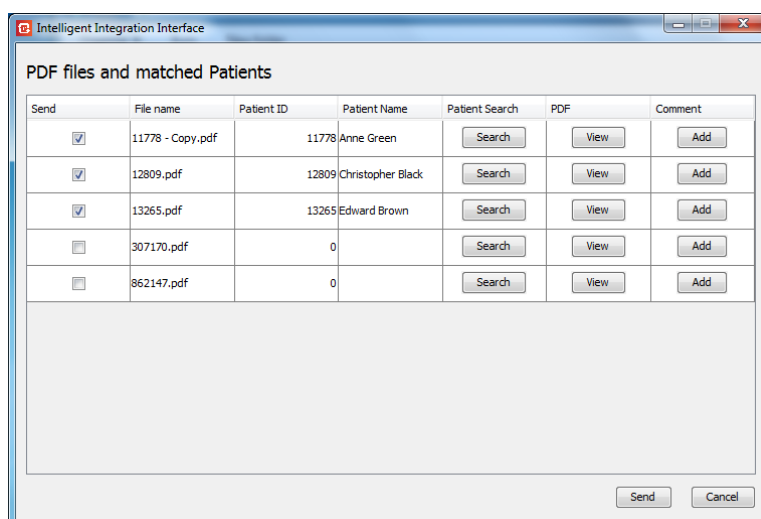
- If necessary, click the **View** button to see the details of the PDF report.
- To associate an unmatched PDF with the currently loaded patient in SystmOne, click the **Assign** button.
- PDF files for patients other than the currently loaded one will remain un-ticked. Once the current patient's reports are filed, change the patient in SystmOne and repeat the process.



Send	File name	Patient ID	Patient Name	Assign PDF	PDF	Comment
<input type="checkbox"/>	13265.pdf	13265		Assign	View	Add
<input type="checkbox"/>	34.pdf	34		Assign	View	Add
<input type="checkbox"/>	6534790535.pdf	6534790535		Assign	View	Add
<input checked="" type="checkbox"/>	6730848596.pdf	6730848596	Richard Hirst	Assign	View	Add

Go to step 6 below to continue the process.

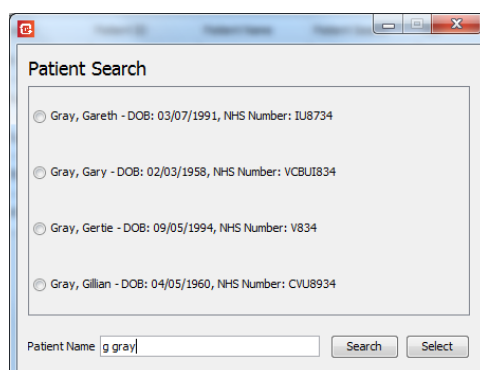
EMIS & Vision users: Filenames that are not automatically matched to a patient can be manually associated with the correct patient as follows:



Send	File name	Patient ID	Patient Name	Patient Search	PDF	Comment
<input checked="" type="checkbox"/>	11778 - Copy.pdf	11778	Anne Green	Search	View	Add
<input checked="" type="checkbox"/>	12809.pdf	12809	Christopher Black	Search	View	Add
<input checked="" type="checkbox"/>	13265.pdf	13265	Edward Brown	Search	View	Add
<input type="checkbox"/>	307170.pdf	0		Search	View	Add
<input type="checkbox"/>	862147.pdf	0		Search	View	Add

- If necessary, click the **View** button to see the details of the PDF report.

- e. Click the Search button and enter the name of the patient. The surname only or the first name **and** surname can be entered separated with a space. Either the full name(s) or the first few letters of the name(s) can be entered.

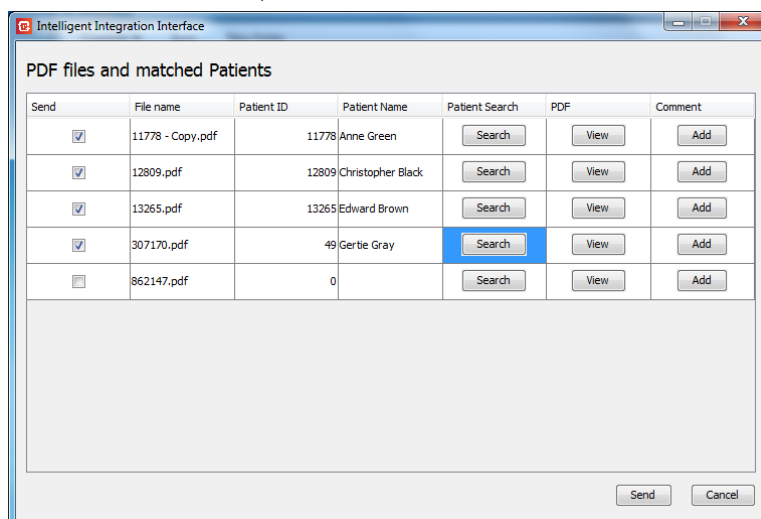


The 'Patient Search' dialog box shows a list of search results. The 'Patient Name' field contains 'g gray'. The 'Search' button is highlighted.

In this example 'g gray' has been entered in the patient name box, so the results have found anyone whose first name starts with a 'g' and whose surname also starts with 'gray', so surnames like 'grayson' and 'grayden' would be found as well 'gray'.

The search is not case sensitive.

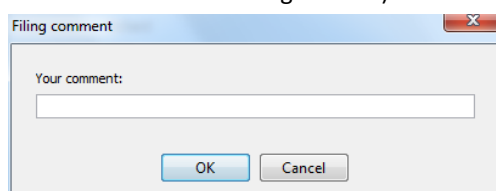
- f. Click on the patient required from the search results and click the **Select** button.
- g. The selected patient will then be associated with the PDF file ready for sending to the clinical system. To remove the association, click the **Cancel** button at the bottom of the screen.



The 'Intelligent Integration Interface' window shows a table of PDF files and matched patients. The 'Send' column has checkboxes for each row. The 'Patient Name' column shows the patient's name. The 'PDF' column shows the PDF file name. The 'Comment' column has an 'Add' button for each row. The 'Search' button is highlighted in the 'Patient Search' column.

Send	File name	Patient ID	Patient Name	Patient Search	PDF	Comment
<input checked="" type="checkbox"/>	11778 - Copy.pdf	11778	Anne Green	Search	View	Add
<input checked="" type="checkbox"/>	12809.pdf	12809	Christopher Black	Search	View	Add
<input checked="" type="checkbox"/>	13265.pdf	13265	Edward Brown	Search	View	Add
<input checked="" type="checkbox"/>	307170.pdf	49	Gertie Gray	Search	View	Add
<input type="checkbox"/>	862147.pdf	0		Search	View	Add

6. If the 'Display Comments box' option is selected in the Settings menu, click the **Add** button next to a PDF to allow an optional comment to be filed alongside the consultation. Enter the comment in the box and click OK, or click Cancel to file without a comment. (Note the Add button will be greyed out if the 'Display Comments box' is not selected in the Settings screen)



The 'Filing comment' dialog box shows a text input field for 'Your comment:'. The 'OK' button is highlighted.

7. When all the required PDFs are associated with the correct patients, click the **Send** button. The files with the Send tick box checked will be sent to the associated patient records. To prevent filing, remove the tick from the Send box next to the file.

Important Notes: see next page

Important Notes:

- PDF files sent to the clinical system will be deleted from the folder
- Conversely, PDF files not sent to the clinical system will remain in the folder and will appear in the list again the next time the software is started.
- PDFs that are automatically linked to a patient from the filename cannot be associated with a different patient. Once a patient is associated with a PDF file, the Search button becomes inactive.
- To edit a comment before filing, click the **Add** button again.
- To remove a PDF file from the list without sending to the clinical system, delete the PDF file from the folder in Windows Explorer.

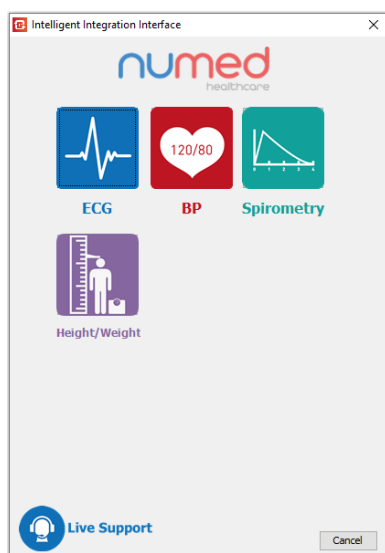
Using I³ with QRS Diagnostic Universal ECG

To acquire an ECG from the QRS Diagnostic Universal ECG cable and store as a PDF in the patient's notes, follow the steps below:

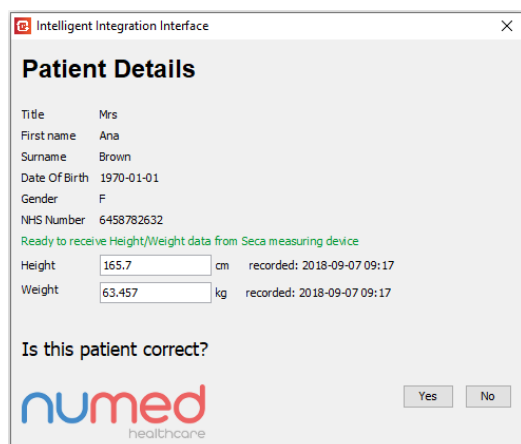
1. Find and select the patient within the clinical system.
2. Start the I³ software from the desktop shortcut.
3. As the software starts, the following screen will be shown:



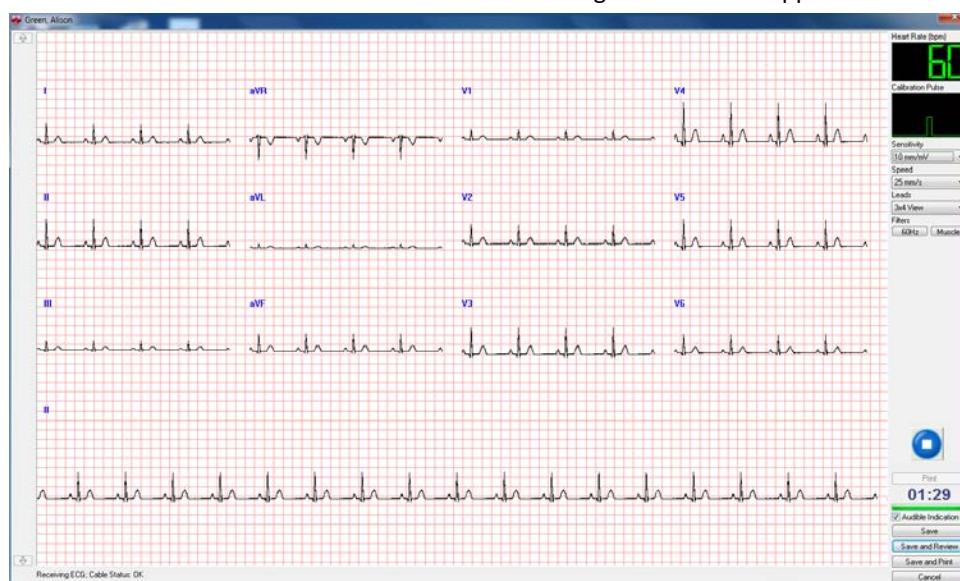
4. Click the **Start** button. The Select Product screen will appear.



5. Select the **ECG** icon. If multiple ECG products are enabled, a sub-menu will be shown – select **Universal ECG** from the list of products and click the **Start** button.
6. After a second or two, the current patient's details should be shown in a window like the one below:



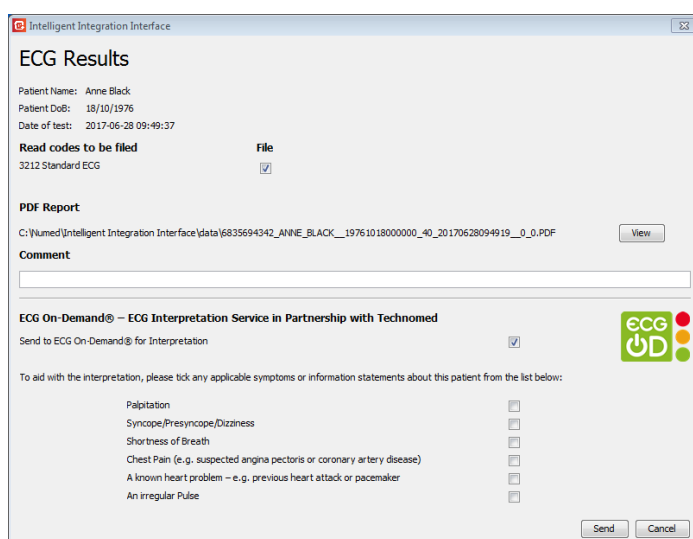
7. Click **Yes** to confirm the patient details are correct. If the patient details are not correct click **No** and ensure you only have one copy of the clinical system software open.
8. The ECG software will initialise and the ECG monitoring screen should appear as shown below.



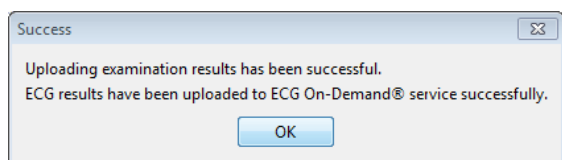
9. If any of the lead positions show the leads off indicator shown below, the lead contact requires attention.



10. When the quality of the ECG is satisfactory, click the **Save** button. There may be a delay of up to 10 seconds whilst the ECG is acquired. CardioView will exit as the acquisition completes.
18. The integration software will display the patient details and a Clinical code under which these results will be filed. The PDF report of the ECG recording can be previewed by clicking the **View** button. A comment can also optionally be added, which will be filed alongside the PDF attachment. If you are subscribing to the ECG On-Demand® service, this will also be available for selection.



19. Click the **Send** button to send the results to the clinical system and if selected, the ECG On-Demand® Service. Clicking **Cancel** will discard the results.
20. After a few seconds, a message showing successful filing should be displayed. If an upload to the ECG On-Demand® service was selected, the status of the upload will also be shown. If filing or upload is not successful, an error message will be shown.



It is recommended the result is then viewed in the clinical system to verify correct filing before the patient leaves.

Using I³ with QRS Diagnostic Biolog ECG

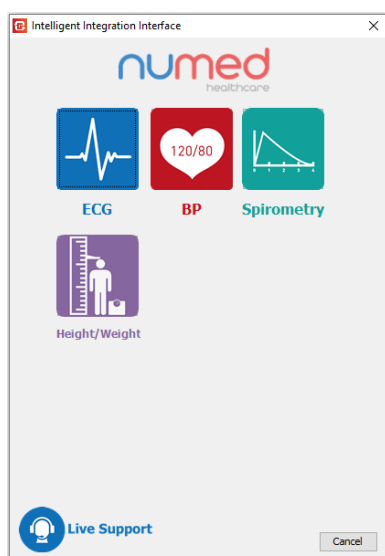
Note: The Biolog ECG System has been out of production for several years and is not compatible with PCs operating on Windows 10. Please contact our sales team for upgrade and trade-in details.

To transfer a recorded ECG from the QRS Diagnostic Biolog ECG machine and store as a PDF in the patient's notes, follow the steps below:

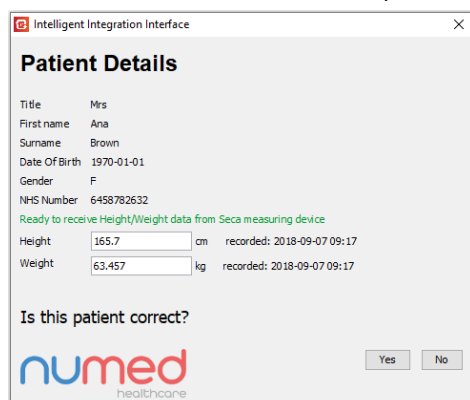
1. Find and select the patient within the clinical system.
2. Start the I³ software from the desktop shortcut.
3. As the software starts, the following screen will be shown:



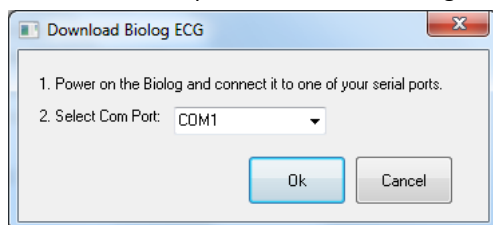
4. Click the **Start** button. The Select Product screen will appear.



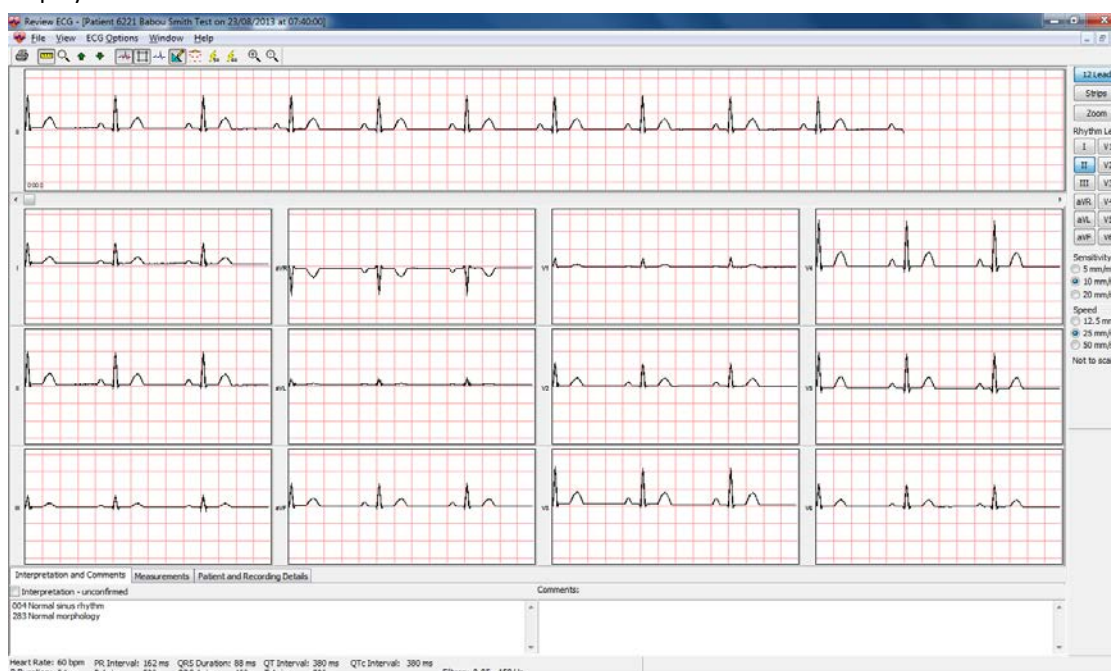
5. Select the **ECG** icon. If multiple ECG products are enabled, a sub-menu will be shown – select **Biolog** from the list of products and click the **Start** button.
6. After a second or two, the current patient's details should be shown in a window like the one below:



7. Click **Yes** to confirm the patient details are correct. If the patient details are not correct click **No** and ensure you only have one copy of the clinical system software open.
8. The following window will be seen. Power on the Biolog and connect to the computer. Select the communications port to which the Biolog is connected and click **OK**.



9. The data transfer should begin and a progress bar be shown. As the transfer completes, the ECG will be displayed in CardioView as seen below.



10. Close CardioView with the cross in the top right corner of the window.
11. The integration software will display the patient details and a Clinical code under which these results will be filed. The PDF report of the ECG recording can be previewed by clicking the **View** button. A comment can also optionally be added, which will be filed alongside the PDF attachment. If you are subscribing to the ECG On-Demand® service, this will also be available for selection.

Intelligent Integration Interface


ECG Results

Patient Name: Anne Black
 Patient DoB: 18/10/1976
 Date of test: 2017-06-28 09:49:37

Read codes to be filed **File**
 3212 Standard ECG ☒

PDF Report
 C:\numed\Intelligent Integration Interface\data\6835694342_ANNIE_BLACK__19761018000000_40_20170628094919__0_0.PDF

Comment

ECG On-Demand® – ECG Interpretation Service in Partnership with Technomed
 Send to ECG On-Demand® for Interpretation ☒ 

To aid with the interpretation, please tick any applicable symptoms or information statements about this patient from the list below:

Palpitation	<input type="checkbox"/>
Syncope/Presyncope/Dizziness	<input type="checkbox"/>
Shortness of Breath	<input type="checkbox"/>
Chest Pain (e.g. suspected angina pectoris or coronary artery disease)	<input type="checkbox"/>
A known heart problem – e.g. previous heart attack or pacemaker	<input type="checkbox"/>
An irregular Pulse	<input type="checkbox"/>

12. Click the **Send** button to send the results to the clinical system and if selected, the ECG On-Demand® Service. Clicking **Cancel** will discard the results.
13. After a few seconds, a message showing successful filing should be displayed. If an upload to the ECG On-Demand® service was selected, the status of the upload will also be shown. If filing or upload is not successful, an error message will be shown.

Success

Uploading examination results has been successful.
 ECG results have been uploaded to ECG On-Demand® service successfully.

It is recommended the result is then viewed in the clinical system to verify correct filing before the patient leaves.

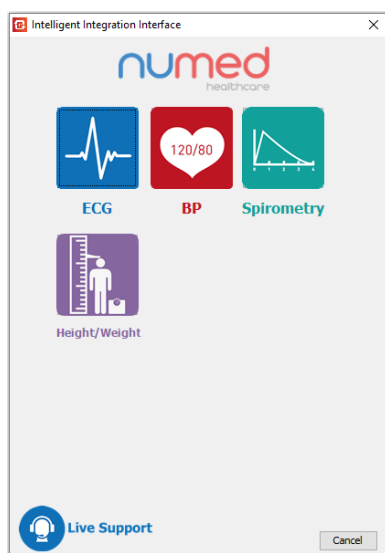
Using I³ with Cardioline HD+ Bluetooth ECG

To acquire an ECG from the Cardioline HD+ Bluetooth ECG cable and store as a PDF in the patient's notes, follow the steps below:

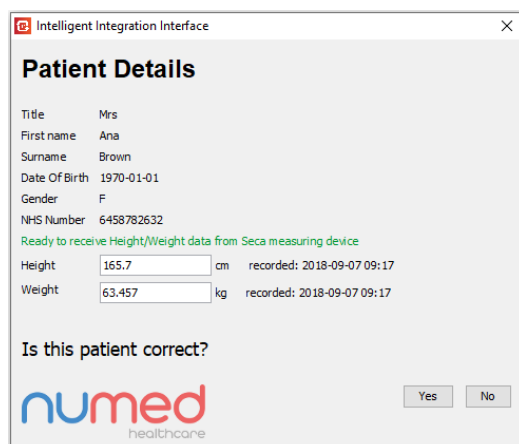
1. Find and select the patient within the clinical system.
2. Start the I³ software from the desktop shortcut.
3. As the software starts, the following screen will be shown:



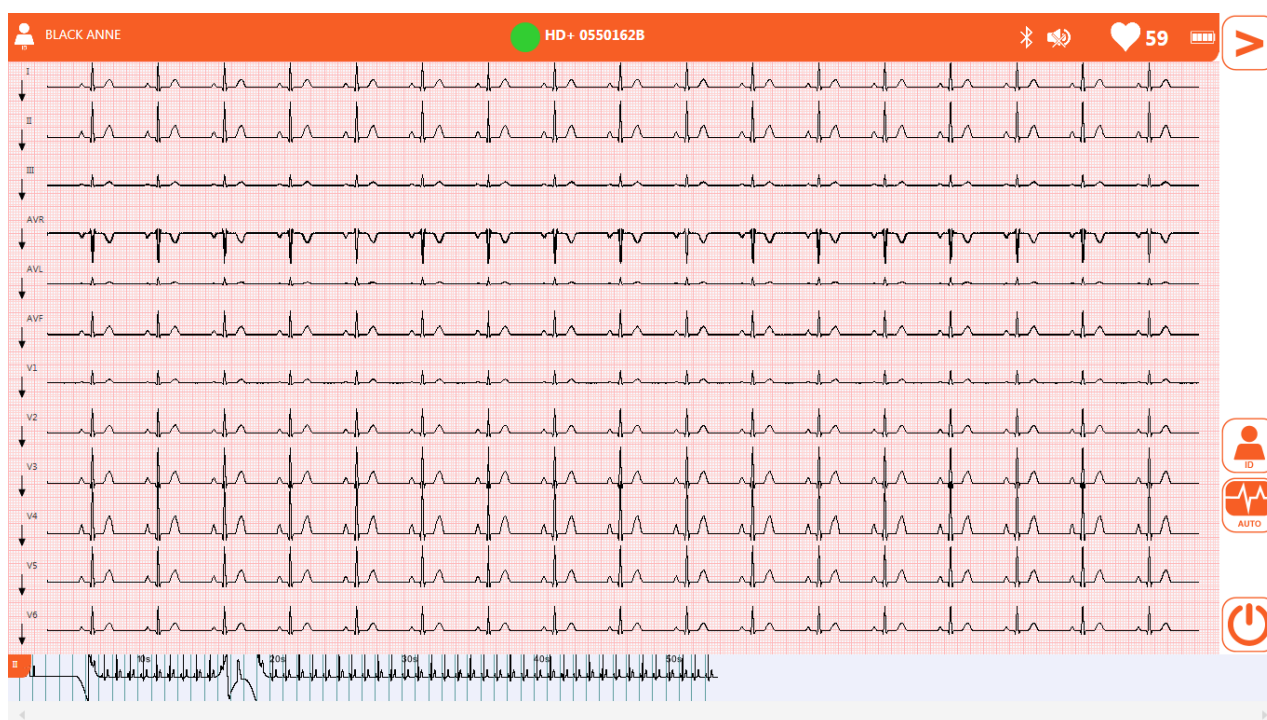
4. Click the **Start** button. The Select Product screen will appear.



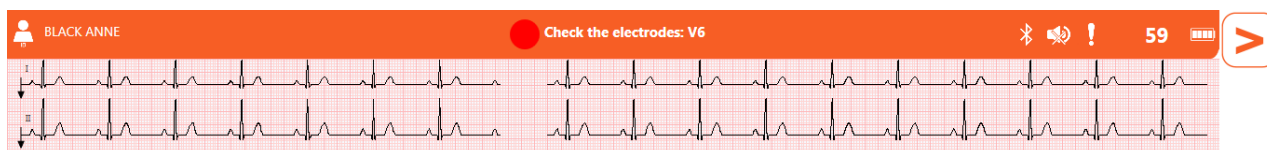
5. Select the **ECG** icon. If multiple ECG products are enabled, a sub-menu will be shown – select **TouchECG HD+** from the list of products and click the **Start** button.
6. After a second or two, the current patient's details should be shown in a window like the one below:

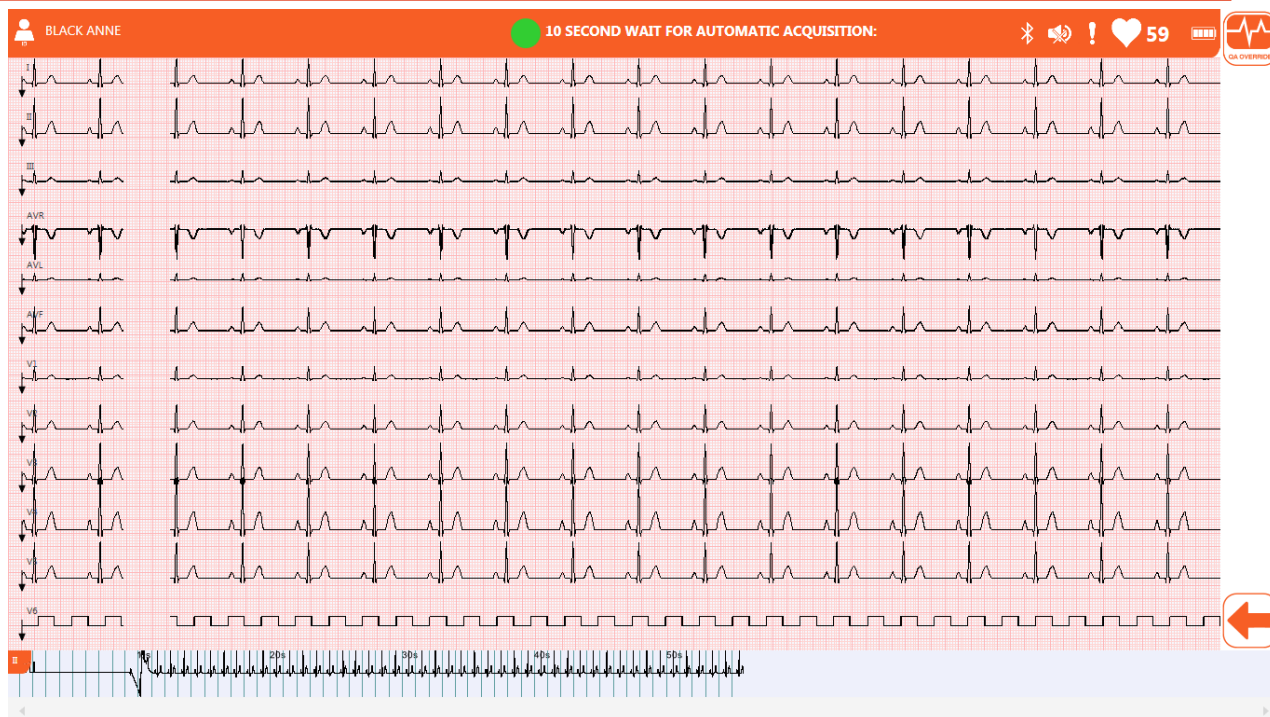


7. Click **Yes** to confirm the patient details are correct. If the patient details are not correct click **No** and ensure you only have one copy of the clinical system software open.
8. The serial number of the device to be used for the ECG acquisition will be shown. Confirm the serial number displayed matches the one on the rear of the device. If not, choose the correct serial number from the dropdown list of available devices. If the device serial number is not listed, click the **Add** button and enter the serial number exactly as shown on the rear of the recorder.
9. TouchECG will initialise and the ECG monitoring screen should appear as shown below. There are two user interfaces available, Standard and Simple. The Simple interface is shown below. This has the minimum number of buttons required to capture an ECG. The Standard user interface has more options available, including buttons to adjust the gain, speed and filters. You can switch between the two interfaces in the I³ settings – see **Configuration Settings Common to all Clinical Systems**.

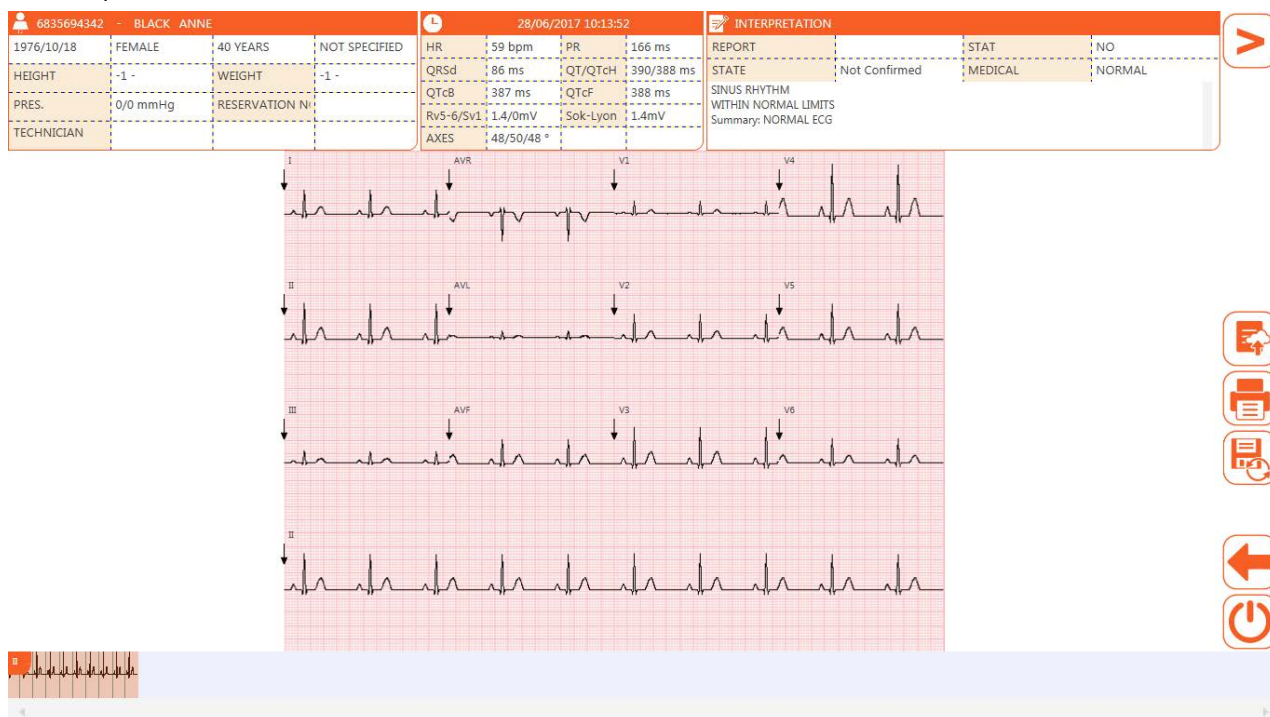


10. If any of the lead wires are disconnected, a message will be displayed at the top of screen indicating the problematic lead.



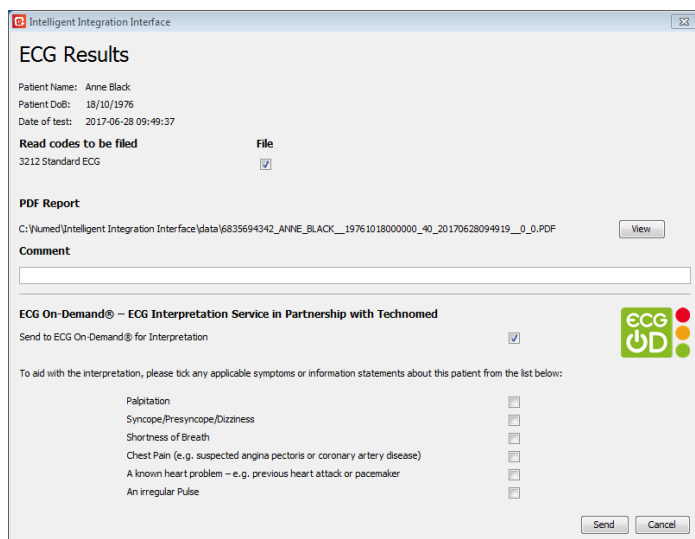


21. When the quality of the ECG is satisfactory, click the **Auto** button on the screen, or press the button on the device. There may be a delay of up to 10 seconds whilst the ECG is acquired. Note the ECG will not acquire if a lead wire is disconnected. To acquire with the disconnected lead wire, click the **QA Override** button in the top right corner of the screen. This is not generally recommended as the quality of the ECG and interpretation will be compromised.
22. Once acquired, a results screen will be shown.

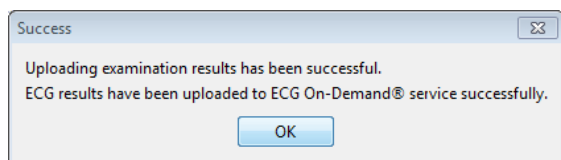


If the ECG is unsatisfactory, click the back button to re-acquire. Once the recording is satisfactory, click the Standby button. If using the Simple User Interface, this is shown on the summary screen. If using the Standard User Interface, click the **Back** button (left arrow), then the **Next** button (right arrow) to access the Standby button.

23. The integration software will display the patient details and a Clinical code under which these results will be filed. The PDF report of the ECG recording can be previewed by clicking the **View** button. A comment can also optionally be added, which will be filed alongside the PDF attachment. If you are subscribing to the ECG On-Demand® service, this will also be available for selection.



24. Click the **Send** button to send the results to the clinical system and if selected, the ECG On-Demand® Service. Clicking **Cancel** will discard the results.
25. After a few seconds, a message showing successful filing should be displayed. If an upload to the ECG On-Demand® service was selected, the status of the upload will also be shown. If filing or upload is not successful, an error message will be shown.



It is recommended the result is then viewed in the clinical system to verify correct filing before the patient leaves.

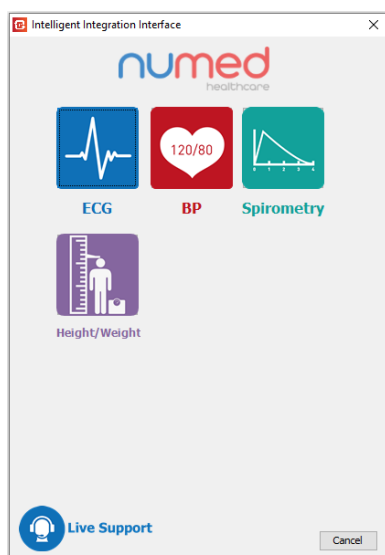
Using I³ with Schiller MS12-USB ECG

To acquire an ECG from the Schiller MS12-USB ECG cable and store as a PDF in the patient's notes, follow the steps below:

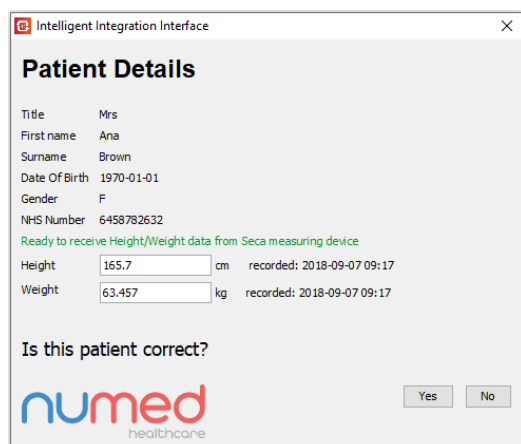
1. Find and select the patient within the clinical system.
2. Start the I³ software from the desktop shortcut.
3. As the software starts, the following screen will be shown:



4. Click the **Start** button. The Select Product screen will appear.



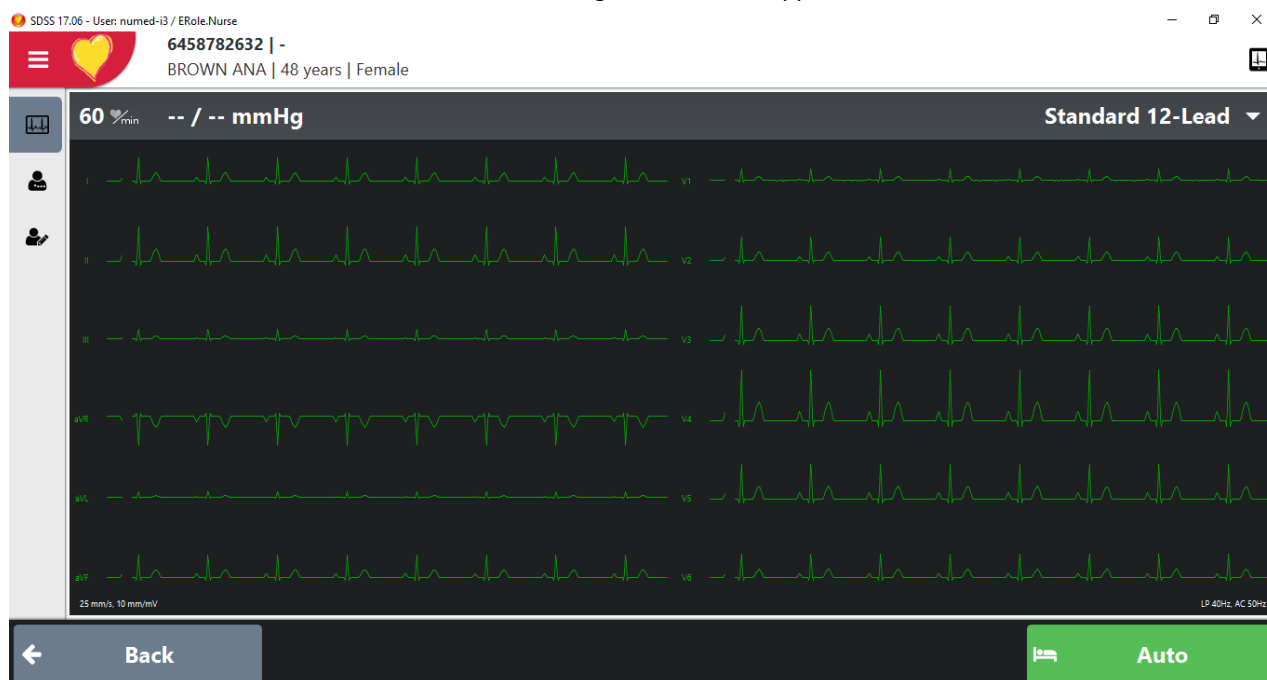
5. Select the **ECG** icon. If multiple ECG products are enabled, a sub-menu will be shown – select **Schiller CS-104** from the list of products and click the **Start** button.
6. After a second or two, the current patient's details should be shown in a window like the one below:



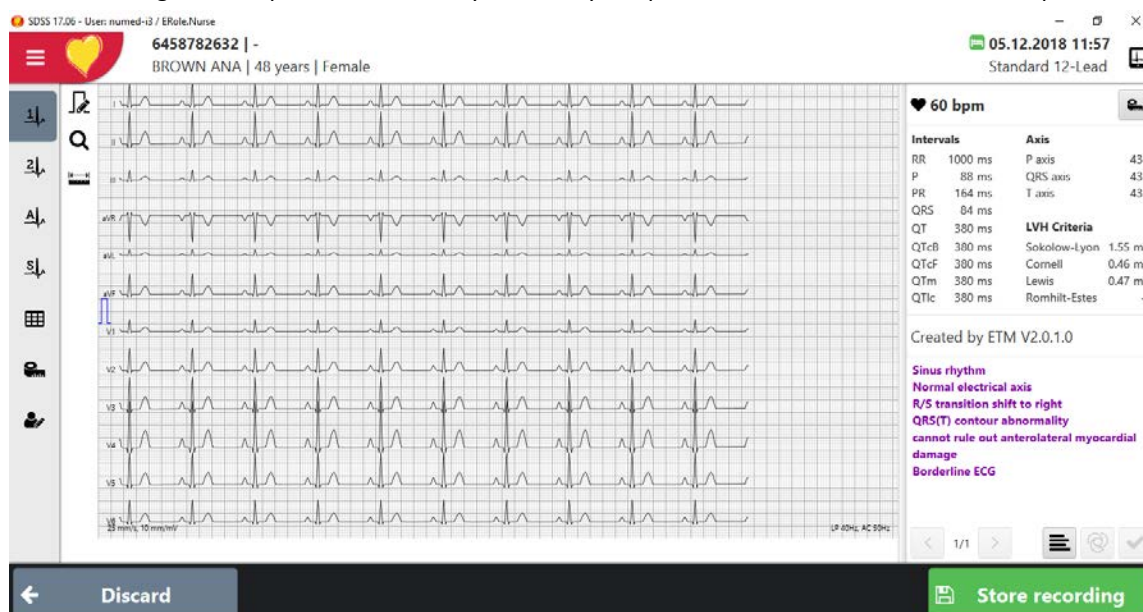
7. If Seca Height/Weight integration is in use, transmit the data from the scales now.
8. Click **Yes** to confirm the patient details are correct. If the patient details are not correct click **No** and ensure you only have one copy of the clinical system software open.
9. Select the type of ECG to be acquired, Rhythm Strip or standard Resting ECG.

Resting ECG Acquisition:

1. The ECG software will initialise and the ECG monitoring screen should appear as shown below.



2. A poor lead connection will be shown by a yellow trace. A very poor lead connection will be shown by a red trace. A disconnected lead will show 'Lead off' in red text next to the affected lead.
3. When the quality of the ECG is satisfactory, click the **Auto** button. The blue **Start** button the ECG cable can also be used to begin the acquisition. There may be a delay of up to 10 seconds whilst the ECG is acquired.



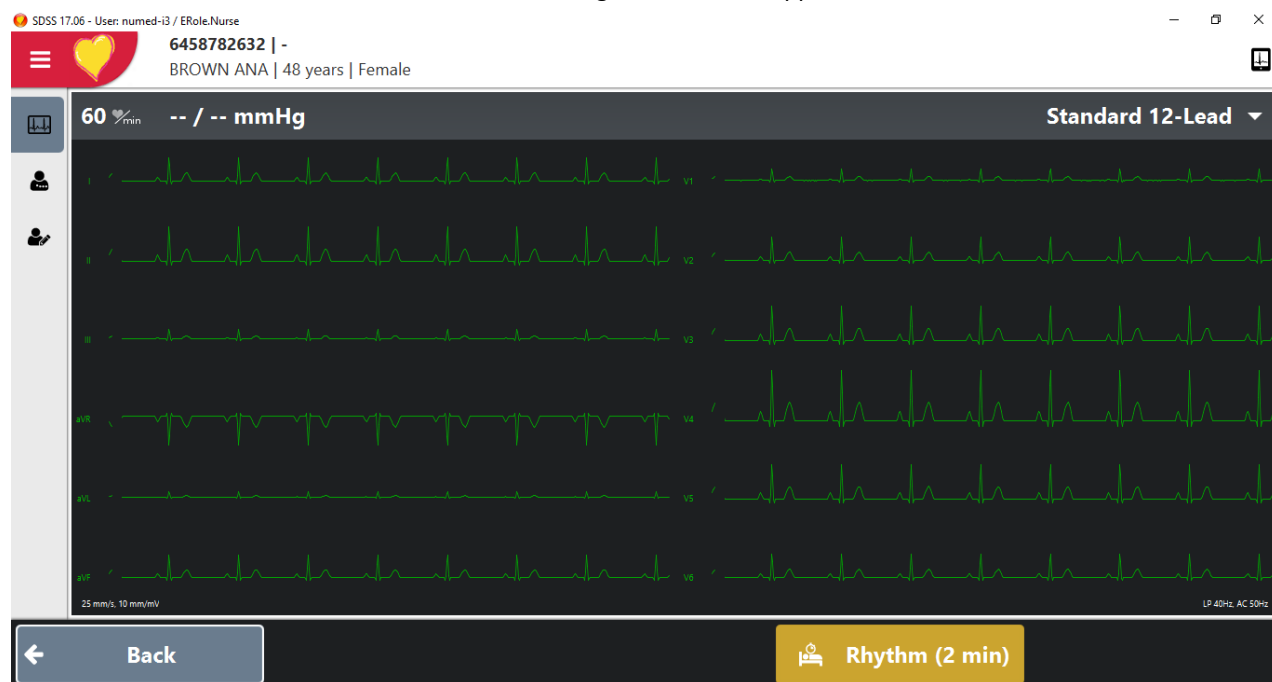
4. The ECG acquisition summary will be shown, where the quality and interpretation can be checked. Different views are available by clicking the icons down the left side of the screen. If the quality is poor and the acquisition

needs to be repeated, click the **Discard** button to return to the monitoring screen. Click **Auto** again to repeat the acquisition process.

- Click **Store recording** to save the ECG and exit the software. Jump to **Filing the ECG** section below for details on saving the report to the patient record.

Rhythm Strip ECG Acquisition:

- The ECG software will initialise and the ECG monitoring screen should appear as shown below.



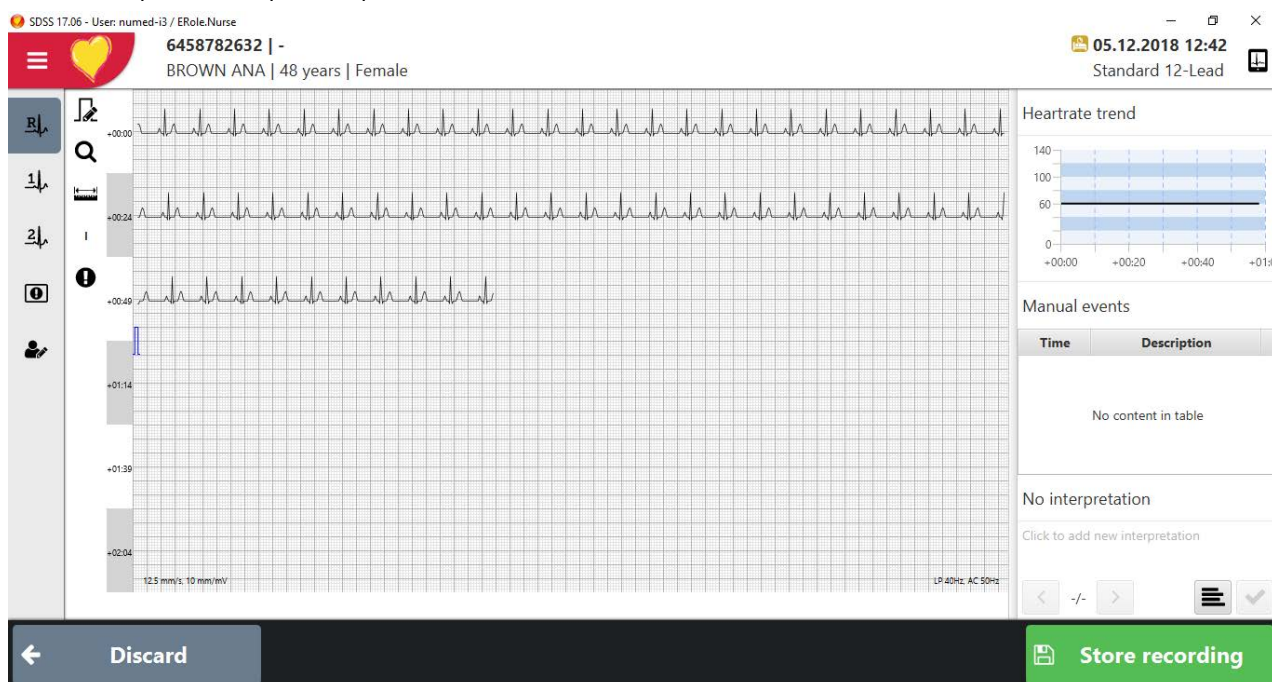
- Click the **Rhythm** button and select the required duration of the rhythm strip.
- Click the **Start** button to commence rhythm strip acquisition.
- During the acquisition process a countdown timer is displayed at the top of the screen.



- The **Manual Event** button can be clicked to record an event with a comment during the acquisition.
- The **Stop** button can be clicked to terminate the acquisition before the pre-defined period.



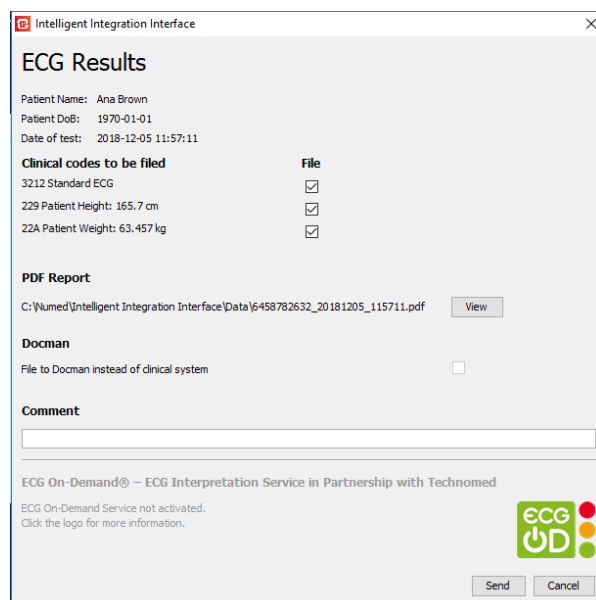
7. At the end of the acquisition, the summary page will be shown where the quality and events can be checked. Different views are available by clicking the icons down the left side of the screen. If the quality is poor and the acquisition needs to be repeated, click the **Discard** button to return to the monitoring screen. Click Rhythm button to repeat the acquisition process.



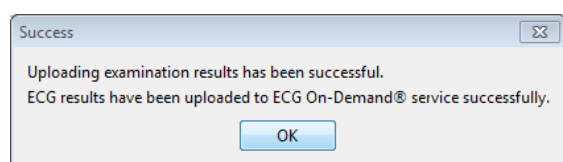
8. Click **Store recording** to save the ECG and exit the software.

Filing the ECG

1. The integration software will display the patient details and a Clinical code under which these results will be filed. The PDF report of the ECG recording can be previewed by clicking the **View** button. A comment can also optionally be added, which will be filed alongside the PDF attachment. If you are subscribing to the ECG On-Demand® service, this will also be available for selection.



2. Click the **Send** button to send the results to the clinical system and if selected, the ECG On-Demand® Service. Clicking **Cancel** will discard the results.
3. After a few seconds, a message showing successful filing should be displayed. If an upload to the ECG On-Demand® service was selected, the status of the upload will also be shown. If filing or upload is not successful, an error message will be shown.



It is recommended the result is then viewed in the clinical system to verify correct filing before the patient leaves.

Using I³ with IEM Mobil-o-Graph Ambulatory BP Monitor

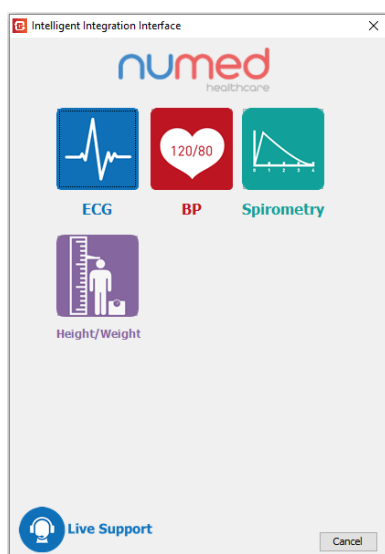
There are two distinct stages in using the Mobil-o-Graph Ambulatory Blood Pressure Monitoring system. The first is the preparation of the recorder before fitting to the patient and the second is the reading of the measurement data from the recorder after the patient returns.

Preparation of the Mobil-o-Graph

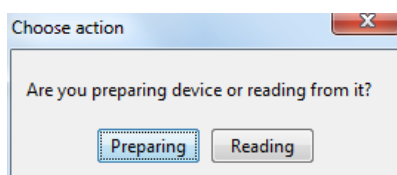
1. Find and select the patient within the clinical system.
2. Start the I³ software from the desktop shortcut.
3. As the software starts, the following screen will be shown:



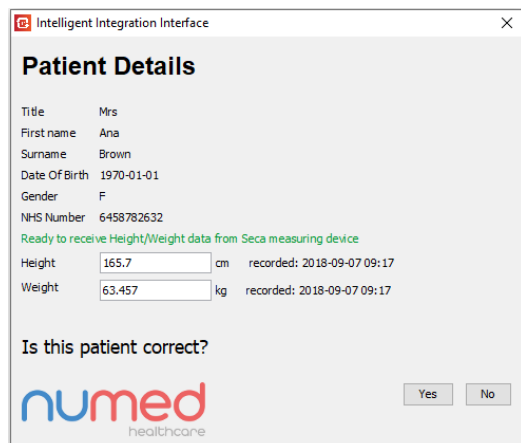
4. Click the **Start** button. The Select Product screen will appear.




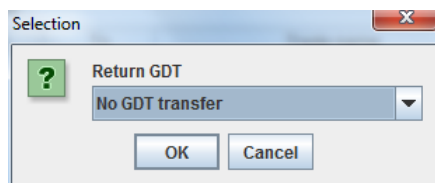
5. Select the IEM Mobil-o-Graph from the list of products and click the **Start** button.
6. After a second or two, the following screen will appear asking to confirm whether you are preparing or reading data from the recorder. Choose '**Preparing**'.



7. The current patient's details will then be shown in a window like the one below:



8. Click **Yes** to confirm the patient details are correct. If the patient details are not correct click **No** and ensure you only have one copy of the clinical system software open.
9. The HMS-CS BP software will open with the correct patient details loaded.
10. Connect the Mobil-o-Graph recorder to the PC and power on the device. CO should appear on the display to indicate communication mode.
11. Click on the Prepare Recorder icon .
12. Select the protocol required and set the date time of the device.
13. Send the Patient ID and the protocol to the device.
14. Exit the HMS-CS BP software. You will be presented with a GDT export window as shown below. Select no GDT export and click OK.



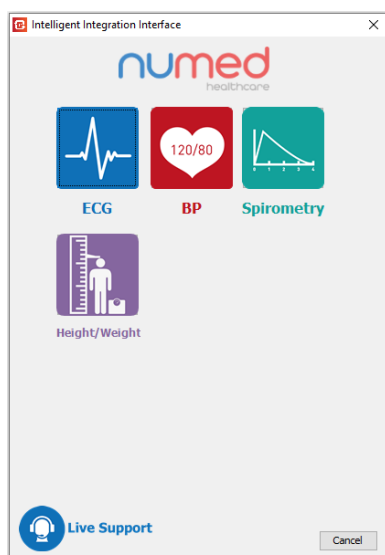
15. The preparation of the device is now complete. The device is ready for fitting to the patient and the first manual test performing to initiate the automatic readings.

Reading the Measurement Results from the Mobil-o-Graph

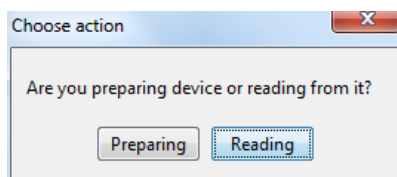
1. Find and select the patient within the clinical system.
2. Start the I³ software from the desktop shortcut.
3. As the software starts, the following screen will be shown:



4. Click the **Start** button. The Select Product screen will appear.

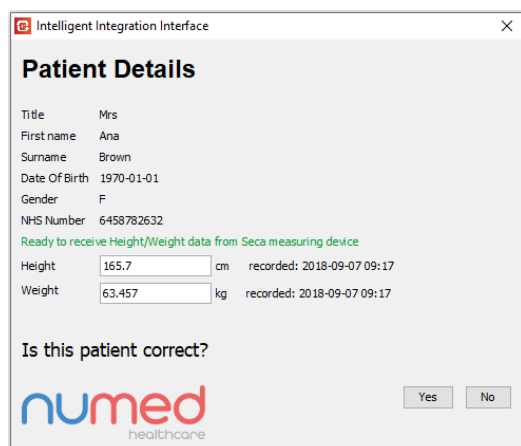


5. Click on the **BP** button from the list of products and click the **Start** button.
6. After a second or two, the following screen will appear asking to confirm whether you are preparing or reading data from the recorder. Choose '**Reading**'.



7. Click **Yes** to confirm the patient details are correct. If the patient details are not correct click **No** and ensure you only have one copy of the clinical system software open.

8. The current patient's details should be shown in a window like the one below:



Intelligent Integration Interface

Patient Details

Title Mrs
First name Ana
Surname Brown
Date Of Birth 1970-01-01
Gender F
NHS Number 6458782632


Ready to receive Height/Weight data from Seca measuring device

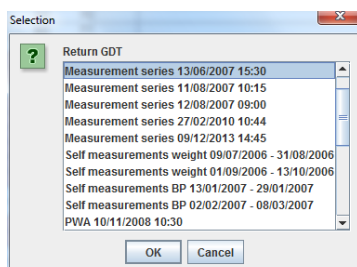
Height 165.7 cm recorded: 2018-09-07 09:17
Weight 63.457 kg recorded: 2018-09-07 09:17

Is this patient correct?

numed
healthcare

Yes No

9. The HMS-CS BP software will open with the correct patient details loaded.
10. Connect the Mobil-o-Graph recorder to the PC and power on the device. CO should appear on the display to indicate communication mode.
11. Click on the Read Data from Recorder icon 
12. When the transfer of the results is complete, exit the HMS-CS BP software.
13. If the newly downloaded results are selected these will be exported automatically. If any other previous results have been viewed, you will be offered a list of available results to export in a window like the one below. Click on the results you would like to export and click OK. **Note:** this window will only be seen if other historic results are viewed after the results are transferred from the Mobil-o-Graph.



Selection

Return GDT

Measurement series 13/06/2007 15:30
Measurement series 11/08/2007 10:15
Measurement series 12/08/2007 09:00
Measurement series 27/02/2010 10:44
Measurement series 09/12/2013 14:45
Self measurements weight 09/07/2006 - 31/08/2006
Self measurements weight 01/09/2006 - 13/10/2006
Self measurements BP 13/01/2007 - 29/01/2007
Self measurements BP 02/02/2007 - 08/03/2007
PWA 10/11/2008 10:30

OK Cancel

14. The integration software will display a list of available results and the Clinical codes under which these results will be filed. Any available results can be selected or deselected for filing. Also available for selection and previewing is the associated PDF report of the BP measurements. All available values will be selected by default unless altered in the program settings menu. A comment can also optionally be added, which will be filed alongside the PDF attachment.

Intelligent Integration Interface

Ambulatory Blood Pressure Monitoring Results

Patient Name: Maria Black
 Patient DuB: 1957-11-01
 Start date: 2007-06-13 16:30
 Duration: 23 hours 30 minutes

Average Ambulatory BP Measurements	Reading	Read Code	File
Application of ABPM	13/06/2007 16:30	XaXGs	<input checked="" type="checkbox"/>
Removal of ABPM	14/06/2007 16:00	XaXGt	<input checked="" type="checkbox"/>
Overall - Systolic	126 mmHg	XaF4O	<input checked="" type="checkbox"/>
Overall - Diastolic	86 mmHg	XaF4b	<input checked="" type="checkbox"/>
Day interval - Systolic	129 mmHg	XaF4L	<input checked="" type="checkbox"/>
Day interval - Diastolic	89 mmHg	XaF4a	<input checked="" type="checkbox"/>
Night interval - Systolic	120 mmHg	XaF4K	<input checked="" type="checkbox"/>
Night interval - Diastolic	81 mmHg	XaF4Z	<input checked="" type="checkbox"/>

PDF Report
 2007-06-13-16-30_MB_16110_2-HABDM.pdf ☒

Comment

- Click the **File** button to begin the uploading of the results to the clinical system. This could take a few seconds depending upon network speed. A successful message will be displayed when the process completes successfully.

Success

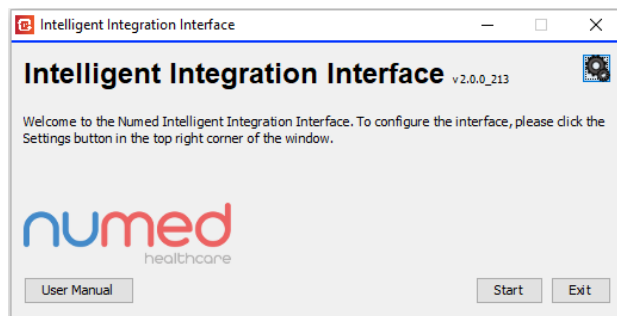
Uploading examination results has been successful!

- It is recommended the results are viewed in the clinical system to confirm success. Depending on the clinical system, this may require the patient record to be deselected and reselected in order to refresh the data.

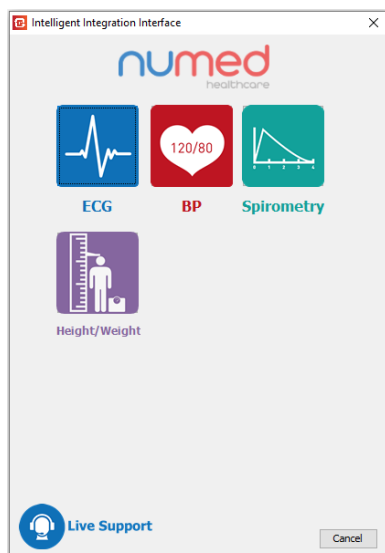
Using I³ with MedChip SpiroConnect Spirometer

To perform a spirometry test using the MedChip SpiroConnect Spirometer and store a PDF report of the results in the patient's notes along with a selection of Clinical coded measurement data, follow the steps below.

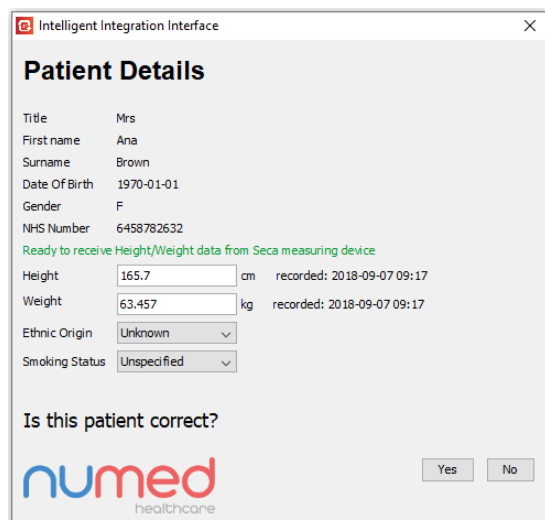
1. Find and select the patient within the clinical system.
2. Start the I³ software from the desktop shortcut.
3. As the software starts, the following screen will be shown:



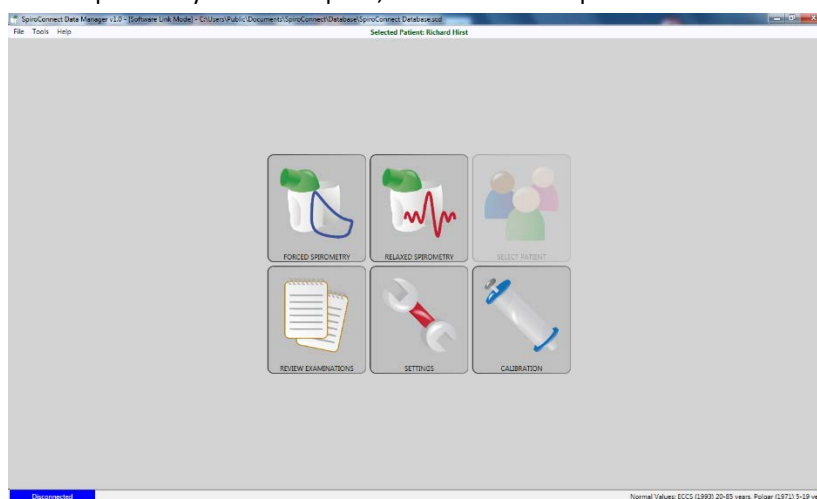
4. Click the **Start** button. The Select Product screen will appear.



5. Select the **Spirometry** icon.
6. After a second or two, the current patient's details should be shown in a window like the one below:



7. Check the **Height** and **Weight** details are correct. If previously recorded in the clinical system, the most recent recordings will be displayed and the date those recordings were taken, provided this setting is enabled in the **Configuration Settings**
8. Select the **Ethnicity** and the **Smoking Status** of the patient. Depending on the clinical system in use, these may be retrieved from the clinical system.
9. Click **Yes** to confirm the patient details are correct. If the patient details are not correct click **No** and ensure you only have one copy of the clinical system software open.
10. As the Spirometry software opens, select the test required.



11. Perform the tests required. When complete, exit the Spirometry software by clicking the cross in the top right corner.
12. A list of the results available for filing to the patient record in the clinical system will then be displayed (see next page). It may be necessary to scroll to see all the results.

To prevent the filing of any particular data, de-select the relevant tick box.

Data showing as **n/a** is not available to be filed in the clinical system in use. Data with a greyed out tick box is either not available in the clinical system in use, or has not had the data value measured by the Spirometry software.

Optional additional codes are available for user selection, such as COPD and Asthma monitoring codes. To file a COPD Clinical code for **Oxygen Saturation at Periphery**, the percent oxygen saturation value must first be entered in the box provided.

Intelligent Integration Interface

Spirometry Test Results

Patient Name: Richard Hirst
Patient DoB: 1967-10-06
Test Date: 04/03/2015 18:09

Height: 180.0 cm ☐
Weight: 80.1 kg ☐

Relaxed Blow			
Data Value	Reading	Read Code	File
SVC	4.68 L	XE1P0	<input checked="" type="checkbox"/>

Forced Blow			
Data Value	Reading	Read Code	File
FVC	4.55 L	3396	<input checked="" type="checkbox"/>
Predicted FVC	4.81 L	XaC3L	<input checked="" type="checkbox"/>
% Predicted FVC	95 %	XaJ5w	<input checked="" type="checkbox"/>
FEV1	3.74 L	X77Qu	<input checked="" type="checkbox"/>
Predicted FEV1	3.89 L	XaC3K	<input checked="" type="checkbox"/>

Post Blow		
Reading	Read Code	File
L	XaJ3K	<input type="checkbox"/>
L	XaIxR	<input type="checkbox"/>

PDF Report
C:\Numed\Intelligent Integration Interface\Data\6730848596_150304_188-SDMARESLT.pdf

☒ **File**

Comment

The PDF report can be previewed by clicking the **View** button. The PDF must be closed before the data can be filed.

A comment can be added to be filed alongside the attachment by typing in the **Comment** box.

If no Post BD test data is detected, the user is given the option of filing the results immediately or filing later after the Post BD tests are performed. This permits the full set of readings to be filed in to one entry in the patient record. Post BD readings must be performed **within 1 hour** of the forced spirometry tests for the results to be combined.

If Post BD data is detected, then only the **File** and **Cancel** options are available. Click the **File** button to send all selected results to the patient record in the clinical system. A confirmation message will be displayed upon successful filing. The length of time taken to file the results will vary depending on the clinical system in use, the speed of the network and the number of data values selected for filing (the more data values, the longer it will to file).

Please note that any Clinical codes that are disabled in the **Configuration Settings** will not be shown on the Test Results screen.

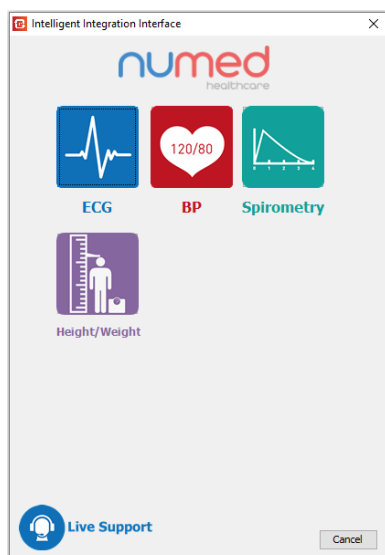
Filing Historic Results

It is possible to retrospectively file spirometry results previously saved in the Spirometry software but not sent to the clinical system. This feature is useful if, for example, the clinical system was temporarily unavailable at the time of performing the test. Follow the steps below to file historic results.

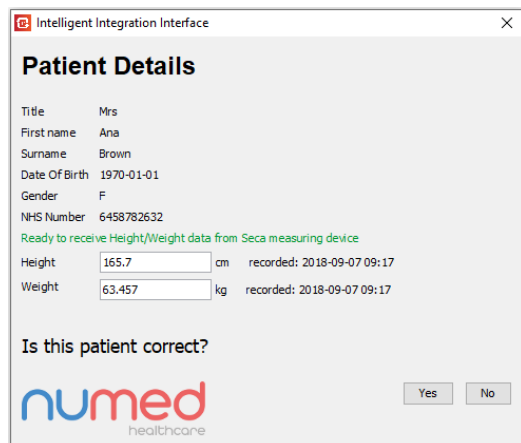
1. Find and select the patient within the clinical system.
2. Start the I³ software from the desktop shortcut.
3. As the software starts, the following screen will be shown:



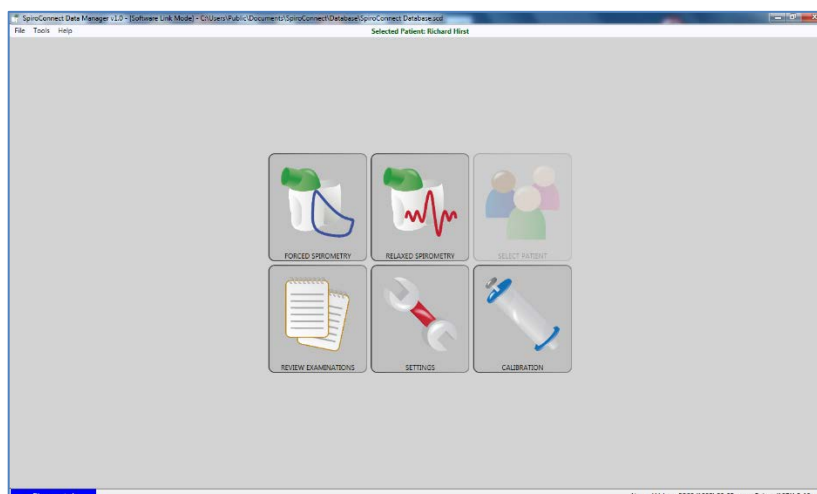
4. Click the **Start** button. The Select Product screen will appear.



5. Select the **Spirometry** icon.
6. After a second or two, the current patient's details should be shown in a window like the one below:



7. Check the **Height** and **Weight** details are correct. If previously recorded in the clinical system, the most recent recordings will be displayed and the date those recordings were taken, provided this setting is enabled in the **Configuration Settings**
8. Select the **Ethnicity** and the **Smoking Status** of the patient. Depending on the clinical system in use, these may be retrieved from the clinical system.
9. Click **Yes** to confirm the patient details are correct. If the patient details are not correct click **No** and ensure you only have one copy of the clinical system software open.
10. As the Spirometry software opens, select the **Review Examinations** button.



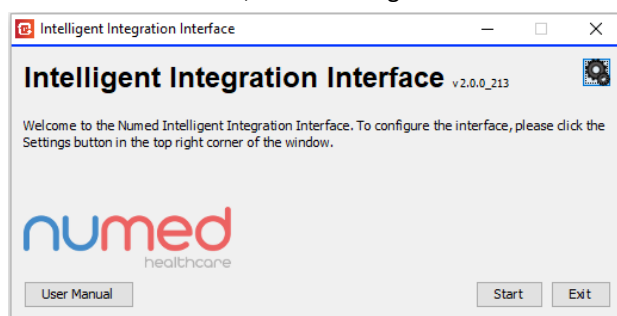
11. A list of available test results for the patient will be shown. Click on the test results to be filed and click the **Mark for I3 Export** button in the bottom right corner.
12. Exit the Spirometry software.
13. A list of the results available for filing to the patient record in the clinical system will then be displayed (as shown in the previous section). It may be necessary to scroll to see all the results.
14. Send the results to the clinical system by clicking the **File** button.

Using I³ with NDD EasyOne Connect and Trueflow Spirometer

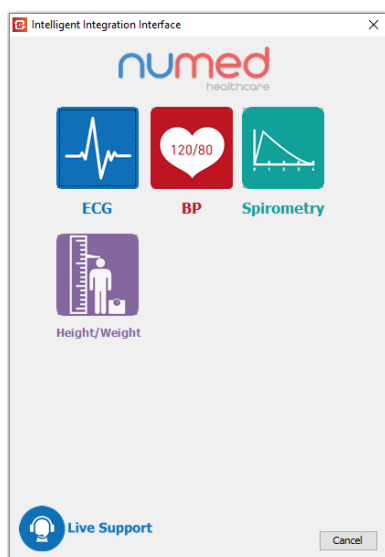
Note: The NDD EasyOne Connect with Trueflow Spirometer integration is currently only available for use with the Vision clinical system.

To perform a spirometry test using the NDD Trueflow Spirometer and store a PDF report of the results in the patient's notes along with a selection of clinically coded measurement data, follow the steps below. *Please note the following instructions give a brief overview of the use of the EasyOne Connect software. Full operational details can be found in the separate operator's manual for that software.*

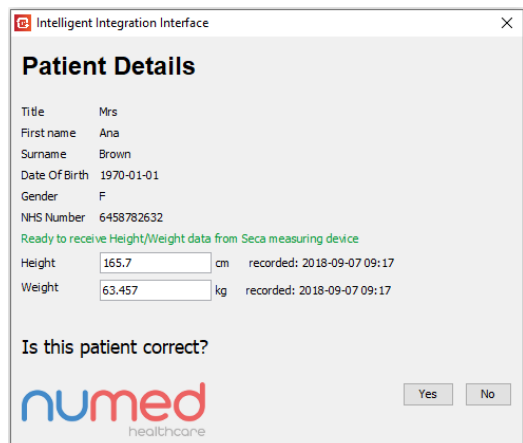
1. Find and select the patient within the clinical system.
2. Start the I³ software from the desktop shortcut.
3. As the software starts, the following screen will be shown:



4. Click the **Start** button. The Select Product screen will appear.



5. Select the **Spirometry** icon.
6. After a second or two, the current patient's details should be shown in a window like the one below:



Intelligent Integration Interface

Patient Details

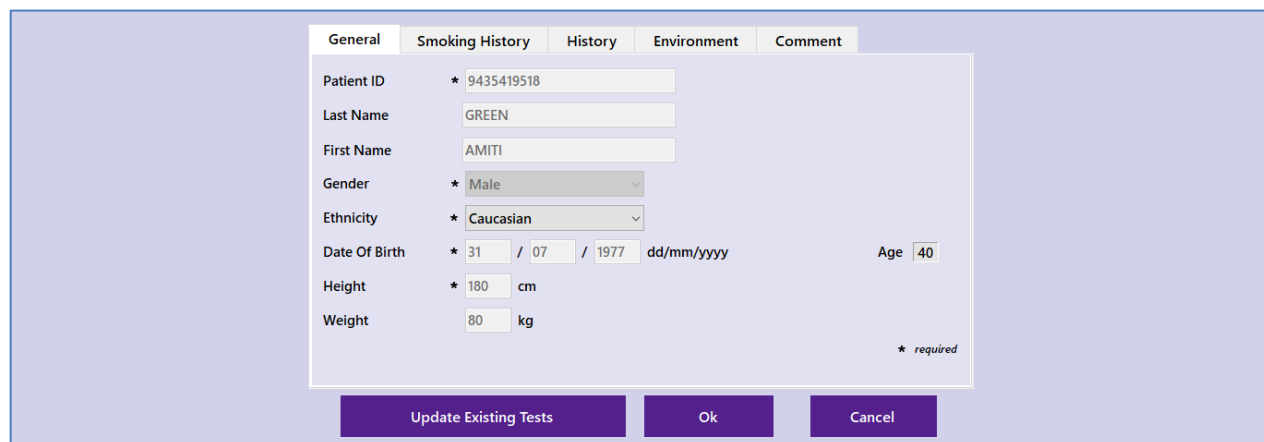
Title Mrs
First name Ana
Surname Brown
Date Of Birth 1970-01-01
Gender F
NHS Number 6458782632
Ready to receive Height/Weight data from Seca measuring device
Height 165.7 cm recorded: 2018-09-07 09:17
Weight 63.457 kg recorded: 2018-09-07 09:17

Is this patient correct?

numed
healthcare

Yes No

7. Check the **Height** and **Weight** details are correct. If previously recorded in the clinical system, the most recent recordings will be displayed and the date those recordings were taken, provided this setting is enabled in the **Configuration Settings**
8. Click **Yes** to confirm the patient details are correct. If the patient details are not correct click **No** and ensure you have only one copy of the clinical system software open.
9. As the Spirometry software opens, select the **Ethnicity** and the **Smoking Status** (under Smoking History tab) for the patient. Mandatory fields are marked with an asterisk. You cannot proceed until all mandatory fields are completed. Most of these will be completed automatically.
10. Click OK when all fields are completed.



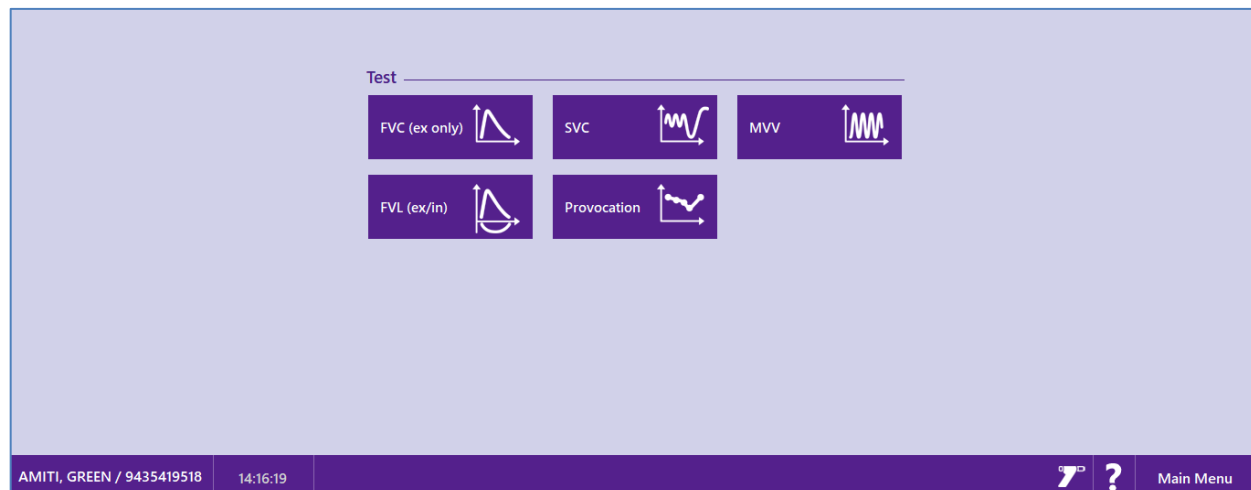
General Smoking History History Environment Comment

Patient ID * 9435419518
Last Name GREEN
First Name AMITI
Gender * Male
Ethnicity * Caucasian
Date Of Birth * 31 / 07 / 1977 dd/mm/yyyy Age 40
Height * 180 cm
Weight 80 kg

* required

Update Existing Tests Ok Cancel

11. Select the test required.



Test

FVC (ex only) SVC MVV
FVL (ex/in) Provocation

AMITI, GREEN / 9435419518 14:16:19 ? Main Menu

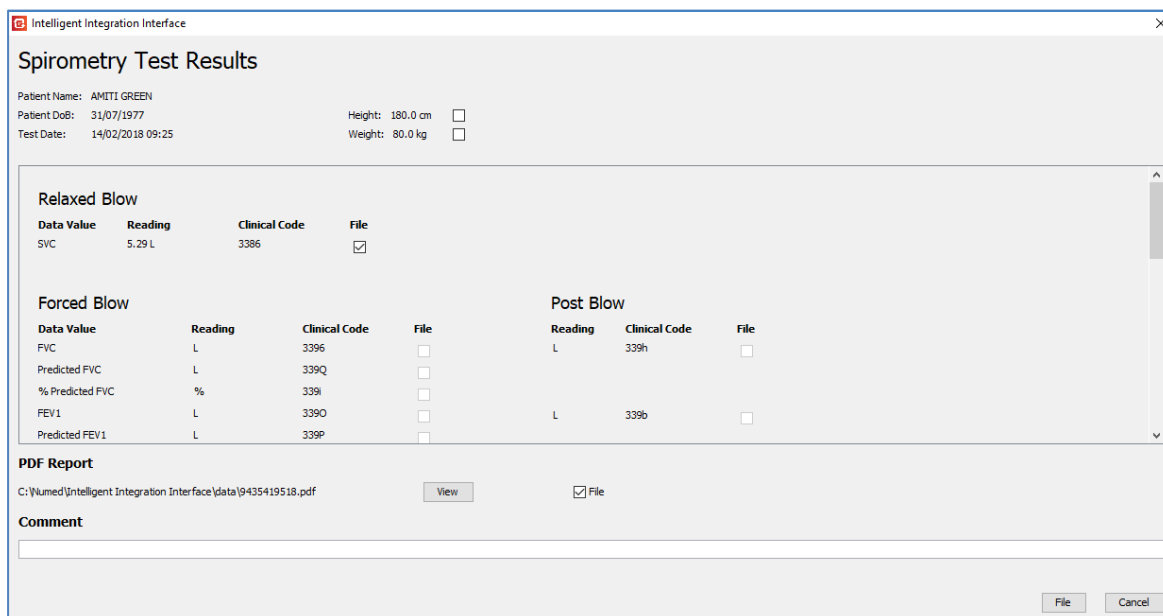
To perform a relaxed blow (also known as Slow Vital Capacity (SVC) or just Vital Capacity (VC)), click the **SVC** button.

To perform a forced blow, click the **FVC** button.

To perform a Maximum Voluntary Ventilation, click the **MVV** button. *Note: Maximum Voluntary Ventilation (MVV) is a measure of the maximum amount of air that can be inhaled and exhaled within one minute. This test is not generally performed in the UK. See product full user manual for further details of other test types.*

12. Relaxed Blow (SVC) Skip this section if not performing a relaxed blow

- Follow the on-screen instructions to perform the spirometry measurements.
- When the tests are completed, click the **Finish** button in the bottom right corner of the screen.
- The Spirometry software will exit and a PDF report of the relaxed blow will now be created in the background. After a few seconds, the following screen will appear.



On this screen, you have the option to perform the following actions:

View: Allows the PDF report to be previewed prior to filing.

Comment: You can enter your own comment to be filed alongside the Spirometry attachment in the patient record.

File: This sends the PDF Spirometry report to Vision and attaches it to the medical record of the patient. The software should report back after a few seconds that the Spirometry has been sent successfully. Any relevant Clinical Codes selected in the software options will also be filed in to the patient record.

Cancel: Discards the PDF Spirometry Report and exits the program without saving anything to the patient record. A message will be displayed asking for confirmation of exit without filing.

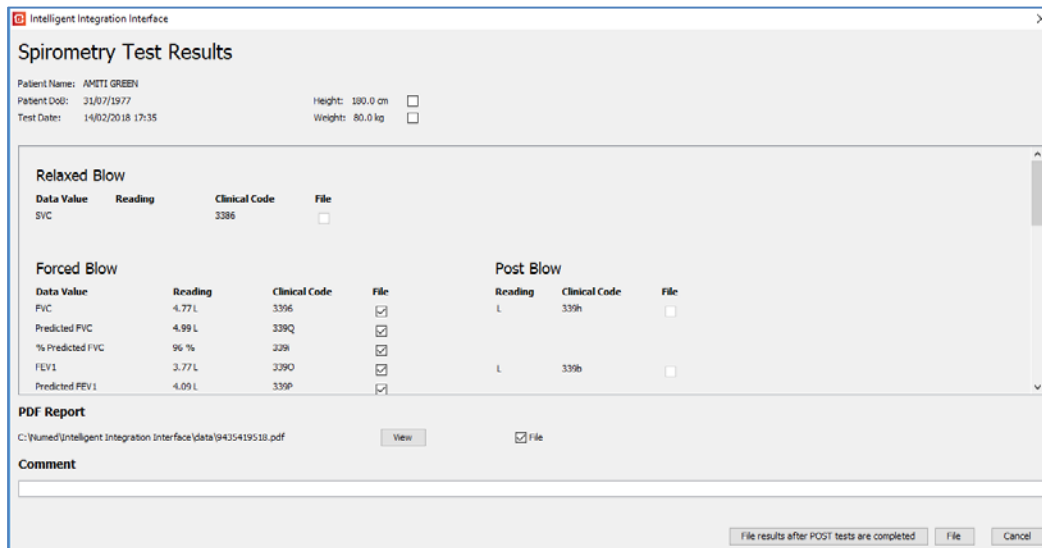
If you attempt to close this window with the cross in the top right corner, you will receive a warning that the Spirometry Report has not been sent to Vision and the option to exit without saving or return to this window and Send.

IMPORTANT NOTE: Once the Spirometry has been sent, to view the attached Spirometry and Clinical Code(s) in Vision it will be necessary deselect and re-select the patient in the Vision system. This is a limitation of the Vision system and not a malfunction of the I³ software.

- The software will return to the I³ patient details confirmation window. To continue and perform a Forced test, click the **Yes** button to confirm the details and start the Spirometry software again. If you do not wish to perform any further tests, click the **No** button.

14. Forced Blow (FVC)

- Follow the on-screen instructions to perform the spirometry measurements.
- When the tests are completed, click the **Finish** button in the bottom right corner of the screen.
- The Spirometry software will exit and a PDF report will now be created in the background. After a few seconds, the following screen will appear.



Spirometry Test Results

Patient Name: AMETI GREEN
 Patient DOB: 31/07/1977
 Test Date: 14/02/2018 17:35
 Height: 100.0 cm
 Weight: 80.0 kg

Relaxed Blow			
Data Value	Reading	Clinical Code	File
SVC		3386	<input type="checkbox"/>

Forced Blow			
Data Value	Reading	Clinical Code	File
FVC	4.77 L	3396	<input checked="" type="checkbox"/>
Predicted FVC	4.99 L	339Q	<input checked="" type="checkbox"/>
% Predicted FVC	96 %	339	<input checked="" type="checkbox"/>
FEV1	3.77 L	339O	<input checked="" type="checkbox"/>
Predicted FEV1	4.09 L	339P	<input checked="" type="checkbox"/>

Post Blow		
Reading	Clinical Code	File
L	339h	<input type="checkbox"/>
L	339b	<input type="checkbox"/>

PDF Report
 C:\numed\Intelligent Integration Interface\data\9435419518.pdf
 View ☒ File

Comment

File results after POST tests are completed

- On this screen, you have the option to perform the following actions:

Comment: You can enter your own comment to be filed alongside the Spirometry attachment in the patient record.

File: This sends the PDF Spirometry report to Vision and attaches it to the medical record of the patient. The software should report back after a few seconds that the Spirometry has been sent successfully. Data values available for filing to the medical record are shown. Any values ticked will be filed as Clinical Codes in the patient record.

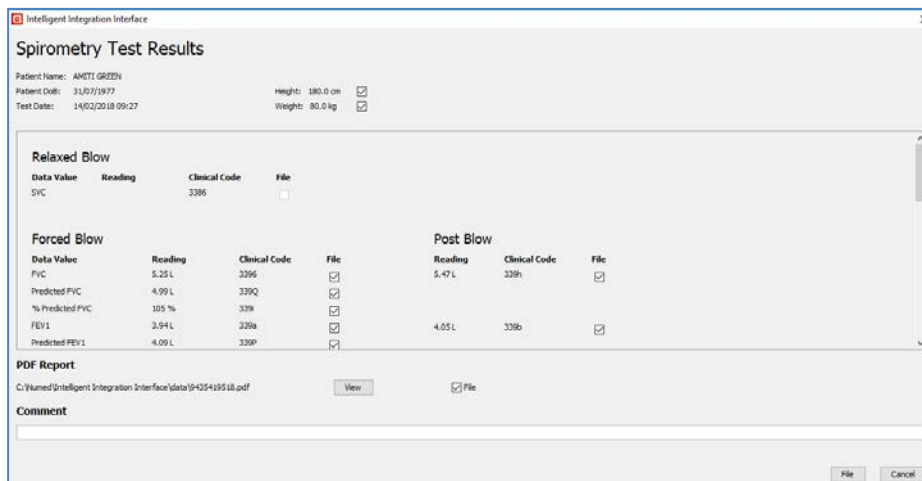
File results after Post Tests are completed: If you will be performing POST-BD tests, select this option to the results after the POST-BD tests are completed. Note: This button is only visible if no POST-BD tests are detected in the results. **IMPORTANT NOTE: POST BD tests *MUST* be performed on the same day as the initial test; otherwise this will be regarded as a completely new test.**

Cancel: Discards the PDF Spirometry Report and exits the program without saving anything to the patient record. A message will be displayed asking for confirmation of exit without filing.

If you attempt to close this window with the cross in the top right corner, you will receive a warning that the Spirometry Report has not been sent to Vision and the option to exit without saving or return to this window to File.

15. Forced Blow (POST BD)

- When performing a POST BD test on the same day as the initial test was done, find the patient in the clinical system start the I³ software.
- When the EasyOne Connect software opens, select the FVC test. You will then be presented with a dialogue box giving various options for the test. Choose **Add Post** test.
- Follow the on-screen instructions to perform the spirometry measurements.
- When the tests are completed, click the **Finish** button in the bottom right corner of the screen.
- A PDF report will now be created in the background. After a few seconds, the following screen will appear.



Data showing as **n/a** is not available to be filed in the clinical system in use. Data with a greyed-out tick box is either not available in the clinical system in use, or has not had the data value measured by the Spirometry software.

Optional additional codes are available for user selection, such as COPD and Asthma monitoring codes. To file a COPD Clinical code for **Oxygen Saturation at Periphery**, the percent oxygen saturation value must first be entered in the box provided.

- Click the **File** button to send the results to the clinical system. You can optionally add a **Comment** to file with the report attachment. Clicking **Cancel** will exit the software without making any attachment to the patient record in the clinical system.

IMPORTANT NOTE: Once the Spirometry has been sent, to view the attached Spirometry and Read Code in Vision it will be necessary to come out of the consultation and go back in. This is a limitation of the Vision system and not a malfunction of the I³ software.

Please note that any Clinical codes that are disabled in the **Configuration Settings** will not be shown on the Test Results screen.

Docman Integration - Settings

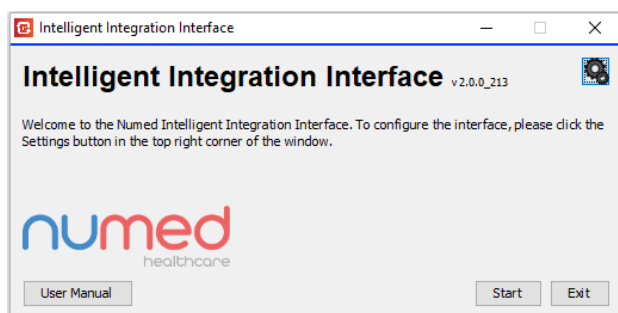
Users of Docman 10 can optionally send test results data and reports directly to Docman instead of filing to the clinical system.

Docman 10 will need to be installed and correctly configured for this functionality to be available. Please contact Numed Technical Support for assistance with configuration.

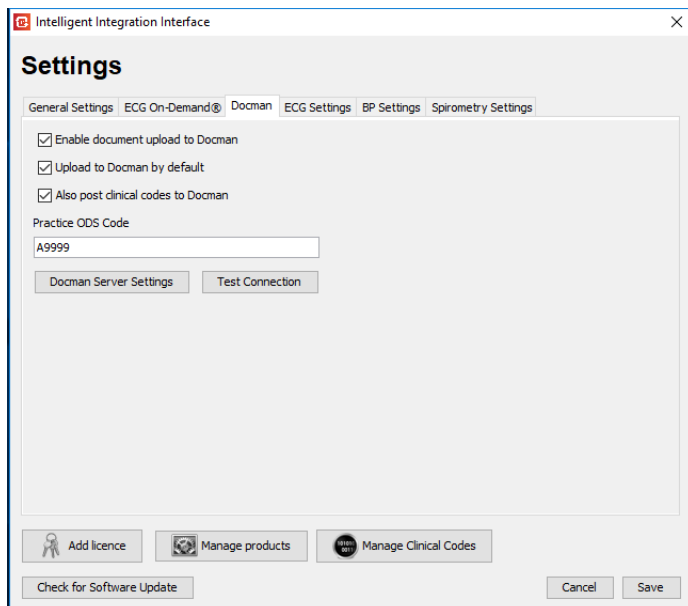
It should be noted that the test results data and reports will be filed to **either** Docman 10 **or** the clinical system, but **not both**. This is to prevent potential duplication of data within the clinical system. Results filed to Docman 10 can subsequently be sent to the clinical system through the Docman workflows, but this outside the scope of the integration software.

Note: If only the height and weight are measured (via the purple button on the products screen), the data will still be filed to the clinical system. Docman filing only takes place when a document is selected for filing.

Docman filing must be enabled through the software settings. Open the I³ software from the desktop shortcut.



Click on the Settings icon  in the top right corner. The Settings screen will appear. Click the Docman tab.



Enable document upload to Docman: When ticked, the software will attempt to contact the Docman server using the connection details supplied in the Docman Server Settings. If successful, the test results will be available for uploading to the Docman system in lieu of the clinical system.

Upload to Docman by default: When ticked, the results will be selected for filing to Docman by default. If unticked, results will be filed by default to the clinical system. The filing location can be changed on a per results basis on the results filing screen.

Also post clinical codes to Docman: When ticked, the clinically coded data values will be sent to Docman along with the test report. When unticked, only the report will be sent to Docman.

Practice ODS Code: This is the ODS (formerly known as NACS) code for your practice. It is used to contact the Docman server.

Docman Server Settings button: This is used by our technical support team to enter the connection details for the Docman server. These settings are password protected and are not available to users.

Test Connection button: This button checks the Docman server can be contacted using the settings and ODS code entered.

Using Docman Integration

When the software is started, the connection to the Docman server will be checked. If connection is successful, filing to Docman will be available once the diagnostic tests have been completed.

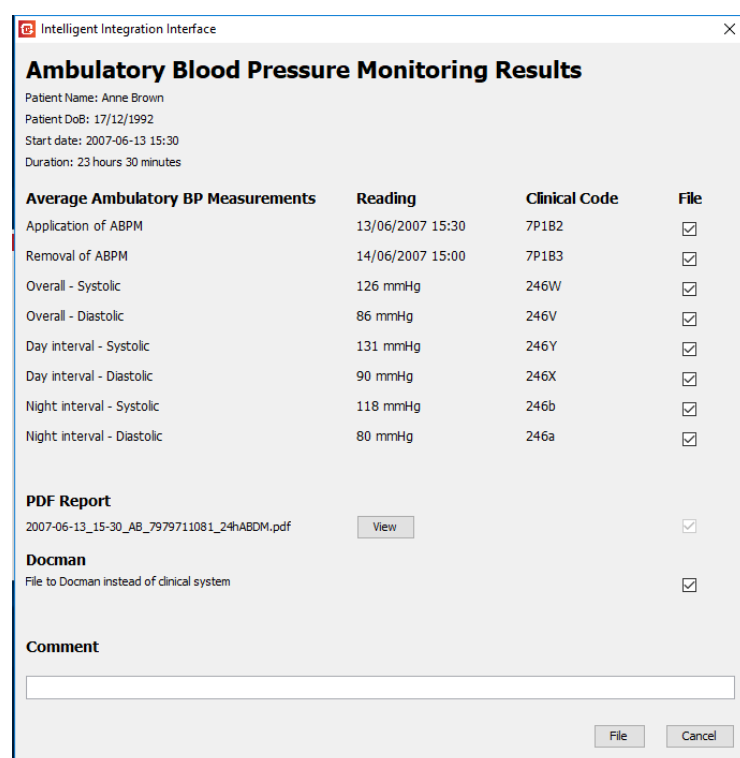
The patient details are obtained from the clinical system prior to the commencement of the test in the usual way.

On completion of the tests, the filing screen will be displayed (BP results shown below). The option to file to Docman is available and can be selected/de-selected as required.

Selecting file to Docman will send the results and report to Docman, not the clinical system. De-selecting file to Docman will file the results to the clinical system, not Docman.

Note: If only the height and weight are measured (via the purple button on the products screen), the data will still be filed to the clinical system. Docman filing only takes place when a document is selected for filing.

Results posted to Docman will not appear in the clinical system until this action is requested from within the Docman system. This is outside the scope and functionality of this software.



Intelligent Integration Interface

Ambulatory Blood Pressure Monitoring Results

Patient Name: Anne Brown
 Patient DoB: 17/12/1992
 Start date: 2007-06-13 15:30
 Duration: 23 hours 30 minutes

Average Ambulatory BP Measurements	Reading	Clinical Code	File
Application of ABPM	13/06/2007 15:30	7P182	<input checked="" type="checkbox"/>
Removal of ABPM	14/06/2007 15:00	7P183	<input checked="" type="checkbox"/>
Overall - Systolic	126 mmHg	246W	<input checked="" type="checkbox"/>
Overall - Diastolic	86 mmHg	246V	<input checked="" type="checkbox"/>
Day interval - Systolic	131 mmHg	246Y	<input checked="" type="checkbox"/>
Day interval - Diastolic	90 mmHg	246X	<input checked="" type="checkbox"/>
Night interval - Systolic	118 mmHg	246b	<input checked="" type="checkbox"/>
Night interval - Diastolic	80 mmHg	246a	<input checked="" type="checkbox"/>

PDF Report

2007-06-13_15-30_AB_7979711081_24hABDM.pdf ☒

Docman

File to Docman instead of clinical system ☒

Comment

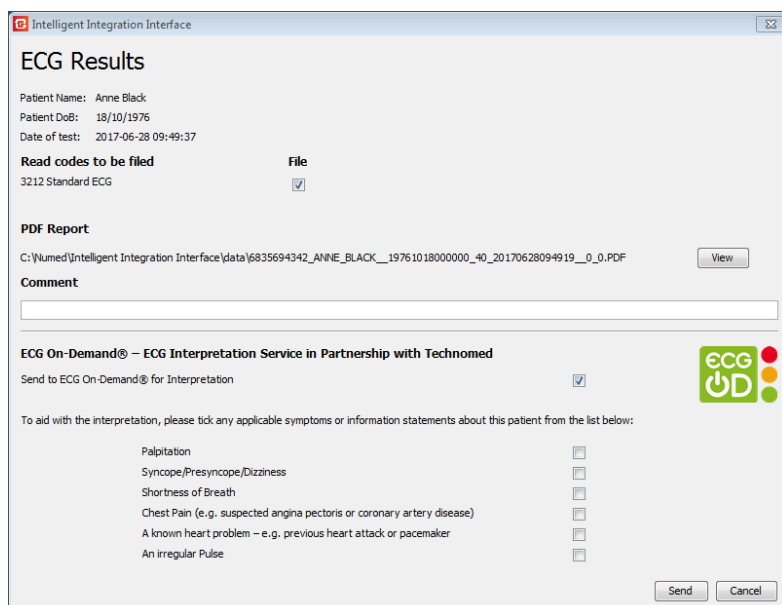
Using the ECG On-Demand® Service

The ECG On-Demand® service is an optional chargeable service offering rapid interpretation of the ECG by qualified cardiac physiologists. The objective of the service is to reduce the number of secondary care referrals and therefore reduce costs to the practice, as well as increasing the speed of interpretation and improving the patient pathway. The service is offered by and in partnership with Technomed.

The I³ software offers a quick and easy way to upload ECG reports to the ECG On-Demand® service. The service is not owned or operated by Numed Healthcare and a separate agreement is required between the customer and Technomed. Details of registration for the service can be found by clicking on the links in the I³ software.

The ECG On-Demand® service is currently available for use with the GE Cam-USB, Universal ECG, Biolog ECG and Cardioline HD+ ECG machines.

Once enabled (see **ECG On-Demand® Configuration Settings**), the ECG On-Demand® service will be shown on the ECG filing screen, as shown below.



ECG Results


Patient Name: Anne Black
 Patient DoB: 18/10/1976
 Date of test: 2017-06-28 09:49:37

Read codes to be filed **File**
 3212 Standard ECG ☒

PDF Report
 C:\Numed\Intelligent Integration Interface\data\6835694342_ANNIE_BLACK__19761018000000_40_20170628094919_0_0.PDF **View**

Comment

ECG On-Demand® – ECG Interpretation Service in Partnership with Technomed

Send to ECG On-Demand® for Interpretation ☒ 

To aid with the interpretation, please tick any applicable symptoms or information statements about this patient from the list below:

Palpitation	<input type="checkbox"/>
Syncope/Presyncope/Dizziness	<input type="checkbox"/>
Shortness of Breath	<input type="checkbox"/>
Chest Pain (e.g. suspected angina pectoris or coronary artery disease)	<input type="checkbox"/>
A known heart problem – e.g. previous heart attack or pacemaker	<input type="checkbox"/>
An irregular Pulse	<input type="checkbox"/>

Send **Cancel**

To upload the ECG for interpretation, ensure the tick-box is selected and tick any of the additional information boxes as appropriate. A confirmation message will be displayed upon successful upload.

Technomed will respond directly to the practice by either email or telephone within 1 working day of receiving the ECG report. If you have any queries about the ECG On-Demand® service, please contact Technomed directly on 0345 5212992 or cardiology@ecgod.co.uk

Seca Height / Weight Integration

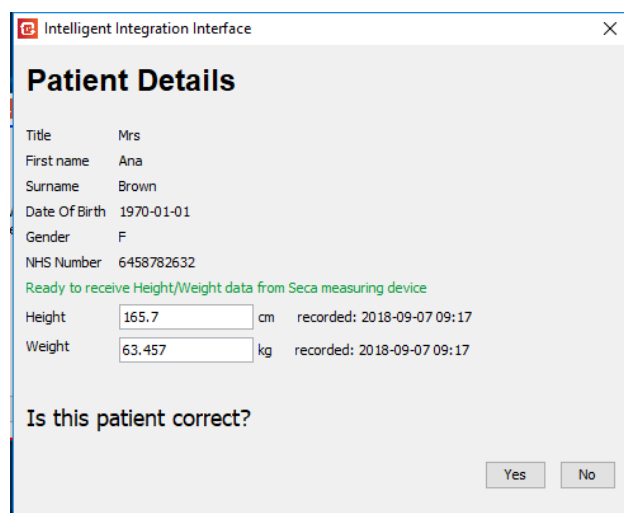
It is possible to receive height and weight data wirelessly from compatible Seca measuring devices. The devices must be **Seca 360° Wireless** compliant – contact our sales team or see the Seca website for full details of compatible systems.

Data is received on the PC through the Seca 456 USB Wireless Receiver. Once connected, the wireless receiver must be enabled in the I³ configuration settings – see **Configuration Settings Common to all Clinical Systems** section. The Seca 360° Wireless group must then be correctly configured; please refer to the Seca user manuals for details or contact Numed Technical Support for assistance.

The height and/or weight data can be received as part of a diagnostic test (ECG, BP or Spirometry). Additionally, the height and/or weight data can be received and filed to the clinical system independently of a diagnostic test. To use the latter function, an active licence must exist for one or more of the diagnostic products.

Receiving Height and Weight Data prior to a Diagnostic Test

When using the diagnostic products, green text will be displayed notifying the user when the I³ software is ready to receive data from the Seca measuring devices. Pressing the **Send** button on the Seca device will transmit the data. As I³ receives the data, the reading will update and green text next to the measurement will show the time of receipt. The data can be re-sent from the Seca device any number of times whilst this screen is displayed.



The screenshot shows a window titled "Intelligent Integration Interface" with a close button (X) in the top right corner. The main heading is "Patient Details". Below this, the following information is displayed:

- Title: Mrs
- First name: Ana
- Surname: Brown
- Date Of Birth: 1970-01-01
- Gender: F
- NHS Number: 6458782632

Below the patient details, a green message states: "Ready to receive Height/Weight data from Seca measuring device".

Two data entry fields are shown:

- Height: 165.7 cm, recorded: 2018-09-07 09:17
- Weight: 63.457 kg, recorded: 2018-09-07 09:17

At the bottom, the question "Is this patient correct?" is displayed, with "Yes" and "No" buttons.

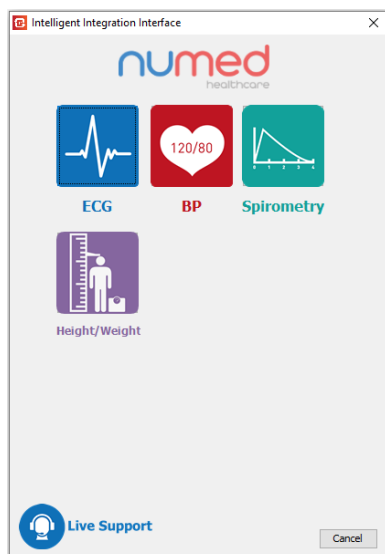
Receiving and filing Height and Weight Data without a Diagnostic Test

To acquire Height and or Weight readings from the Seca measuring device and file the data in the patient's notes, follow the steps below:

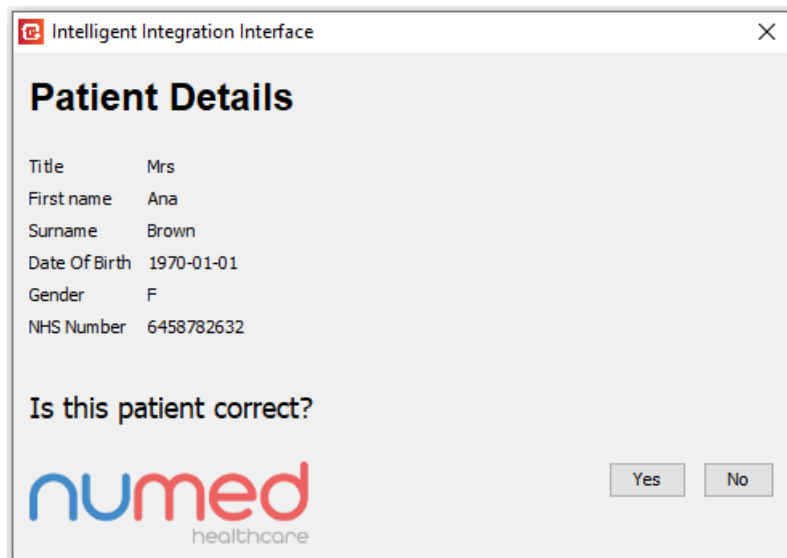
1. Find and select the patient within the clinical system.
2. Start the I³ software from the desktop shortcut.
3. As the software starts, the following screen will be shown:



4. Click the **Start** button. The Select Product screen will appear.

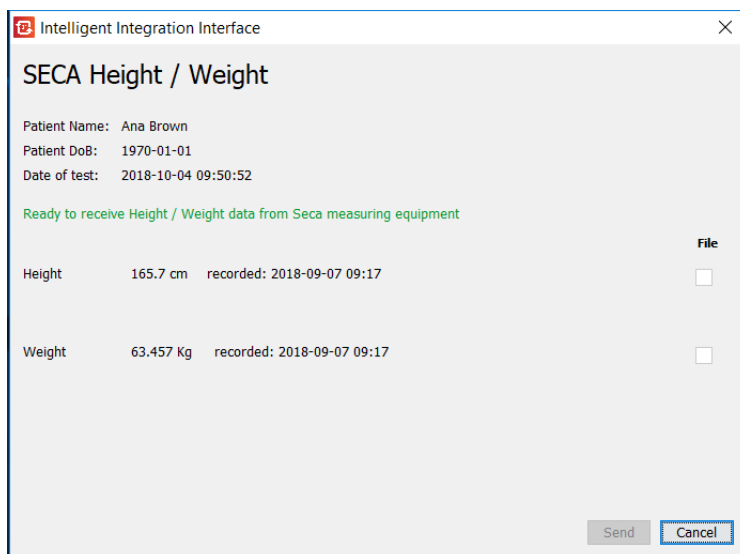


5. Click the **Height/Weight** button.
6. After a second or two, the current patient's details should be shown in a window like the one below:



7. Verify the patient details are correct and click the **Yes** button.

8. The following screen will appear, showing the most recent measurements from the patient record (if available).



Intelligent Integration Interface

SECA Height / Weight

Patient Name: Ana Brown
 Patient DoB: 1970-01-01
 Date of test: 2018-10-04 09:50:52

Ready to receive Height / Weight data from Seca measuring equipment

		recorded: 2018-09-07 09:17	File
Height	165.7 cm		<input type="checkbox"/>
Weight	63.457 Kg		<input type="checkbox"/>

Send Cancel

9. The software is now ready to receive data from the measuring device. Weigh and/or measure the patient and press the **Send** button on the **Seca measuring device**. (Note the send button within the software will not be available until new data is received).
10. The measurement data received will be shown. Green text next to the data will show the time the data was received and the type of device from which it came.



Intelligent Integration Interface

SECA Height / Weight

Patient Name: Ana Brown
 Patient DoB: 1970-01-01
 Date of test: 2018-10-17 14:48:41

Ready to receive Height / Weight data from Seca measuring equipment

		received from Personal Scale at 14:48.	File
Height	165.8 cm		<input checked="" type="checkbox"/>
Weight	63.4 Kg	received from Personal Scale at 14:48. Hold active.	<input checked="" type="checkbox"/>

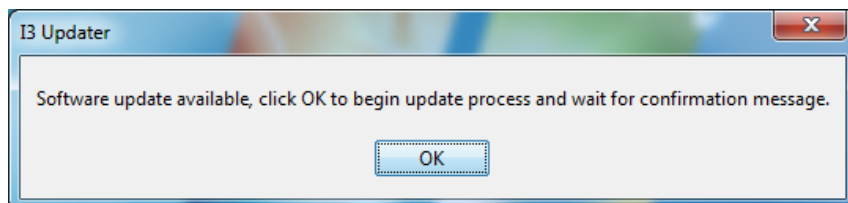
Send Cancel

11. The data can be transmitted again from the Seca device if necessary any number of times.
12. To accept the data displayed and file to the patient record, click the **Send** button on the software results window. To discard the measurements, click the **Cancel** button.

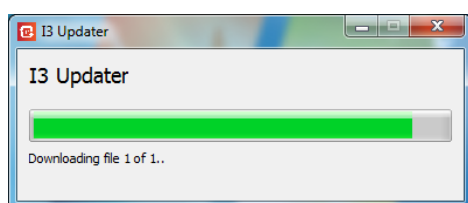
Software Updates

Software updates are automatically detected and installed over the Internet when the software is started. If the update server cannot be contacted, a message will be displayed notifying of this.

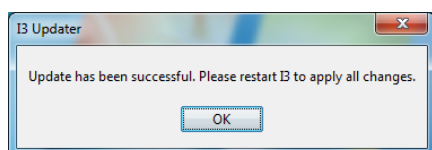
If a software update is detected, the following message will be seen.



Click **OK**. The update will begin and a progress bar will be shown.



As the update completes, the following message should be shown:



Click **OK** and start the software again to apply the update. In the event of a software update failure message, please contact Numed Healthcare Technical Support for advice and assistance.

Help and Support

Numed Healthcare offers assistance with product training and technical support.

For **technical support** or **training advice**, please contact:

0114 399 0010 or support@numed.co.uk

Opening hours: 8am – 5:30pm, Monday – Friday



Live Support is available 8am – 5:30pm, Monday – Friday. Click on the Live Support button on the Product Selection screen or the Product Licensing screen to initiate the session.

Live Support is not available when using the GDT Interface (Eg. Socrates, Helix, HEALTHone clinical systems). Please contact your local distributor in the first instance for technical support.

Our support lines will be closed on public holidays in England.