



SANASPRINT PLUS *REHA*

The innovative solution for telemetric
Cardio-pulmonary Rehabilitation

ergosana GmbH

over 30 years of experience in
designing and manufacturing
ergometers and rehabilitation
systems.



LUMED Srl

In 1999 installed the very first rehabilitation system in Italy. New installations, upgrades and updates followed over time.

So far more than 200 workplaces have been placed, in the whole Italy and abroad, e.g. Spain and China.



Some of our main references in Cardio-pulmonary Rehabilitation :

- 2000 - Az. Osp. Treviglio e Caravaggio, P.O. Romano di Lombardia (BG)
- 2000 - Centro Ortopedico e Fisioterapico - Lanzo d'Intelvi (CO)
- 2001 - ASL 2 Salerno PO S. Francesco d'Assisi - Oliveto Citra (SA)
- 2001 - Az. Osp. Salvini, P.O. di Rho e P.O. di Passirana (MI)
- 2001 - IRCCS Fondazione Salvatore Maugeri – Tradate
- 2001 - IRCCS Istituto Auxologico Italiano, Osp. San Luca - Milano
- 2003 - Ospedale S. Giuseppe, Dept. of Cardilogic Rehabilitation.- Milano
- 2004 - AUSL 6 Livorno, P.O. Cecina (LI)
- 2005 - AUSL 12 Viareggio, Ospedale della Versilia, Dept. Of Rehabilitative Medicine
- 2005 - ICP Istituti Clinici di Perfezionamento - Milano
- 2006 – A.S.P. Istituti Milanesi Martinitt, Stelline, Pio Albergo Trivulzio - Milano
- 2006 - IRCCS Centro Cardiologico Monzino – Milano: *approx. 170 patients selected for early dismissal after surgery and controlled in telemedicine (rehabilitation at home)*
- 2007 - IRCCS Fondazione Salvatore Maugeri – Montescano (PV)
- 2007 - Auxilium Vitae SpA c/o AUSL 5 Pisa, Spedali Riuniti di S. Maria Maddalena - Volterra (PI)
- 2007 - Istituti Clinici di Perfezionamento – Milano (extension)
- 2007 - Istituto Clinico Humanitas (MI), Cardilogic Rehabilitation
- 2007 - IRCCS Fondazione Salvatore Maugeri – Milano
- 2007 – IRCCS Fondazione Don Carlo Gnocchi – Milano: *system based on Smart Card programmed for each patient individually*
- 2007 – Az. Ospedaliera Universitaria Osp. S. Gerardo – Monza
- 2008 - Centro Medico di Diagnostica e Riabilitazione - S. Agata dei Goti.
- 2008 - Istituto Clinico Città Studi – Cardiology Dept.- Milano
- 2010 - CNR-ISTC Istituto di Scienze della Cognizione - Roma
- 2011 - Az. Osp. S. Carlo Borromeo – Milano
- 2011 - Istituto Juventus, Mercato S. Severino (SA)
- 2011 - IRCCS Fondazione Maugeri – Istituto Clinico di Veruno (Progetto SLA)
- 2011 - Azienda Ospedaliero Universitaria Pisana, Osp. Cisanello
- 2011 - IRCCS Istituto Auxologico Italiano - Osp. San Luca, Milano (extension and upgrade)
- 2012 – ASL Roma H, Polo Ospedaliero H1, Cardiology Dept.- Frascati
- 2012 – Casa di Cura Quarenghi – S. Pellegrino Terme (BG)
- 2012 - Istituto Clinico Humanitas (MI) (upgrade)
- 2013 - Az. Osp. S. Carlo Borromeo (MI) (upgrade)
- 2014 - IRCCS Fondazione Salvatore Maugeri (PV) (upgrade)
- 2015 – Azienda Ospedaliero-Universitaria Careggi (FI)
- 2016 – ASUR Marche, Poliambulatorio di Civitanova Marche (Civitanova)
- 2017 – Istituto S. Chiara, Lecce
- 2018 – Spoleto Hospital, S. Matteo degli Infermi Subs.. Spoleto (PG)
- 2018 – Casa di Cura l'Ulivo, Catania
- 2018 - Azienda Ospedaliero Universitaria Pisana, Osp. Cisanello (estensione e aggiornamento)
- 2019 - AUSL 12 Viareggio, Ospedale della Versilia, UOC Medicina Riabilitativa
- 2019 - USL Umbria 1, Centro Servizi Grocco, Cardiologia riabilitativa – Perugia
- 2020 - SinguPower, Beijing Cina
- ...

We proudly present the most efficient solution for cardiopulmonary rehabilitation:

SanaSprint Plus Reha



Why is ergometer / treadmill piloting so important?

The workload administered to the patient is in some way the medication, so accurate definition and administration are mandatory: this is why certified medical grade ergometers and treadmills are strictly necessary.

Why is recording the training sessions is essential?

Storing the data of each session allows the therapist to evaluate, in an organic way and over time, the effectiveness of the therapy and the proper recovery. These are the conditions that allow the patient to return to the everyday life.

Why NOT to use a generic telemetry:

- definition of personalized programs for each patient NO
- start of training sessions for patient or group NO
- archive of patients and training sessions NO
- use of wireless ECG transmitters YES
- piloting of ergometers and treadmills, via wired or wireless connection NO
- Blood Pressure and SpO₂ monitoring POSSIBLE BUT VERY EXPANSIVE
- comparison between sessions and summary display of sessions NO
- advanced analysis and evaluation tools NO
- specialized algorithm to define patient performance NO
- rapid and comprehensive reporting NO
- modest hardware and software requirements NO
- simple and quick installation NO

Why use SanaSprint Plus Reha:

- definition of customized programs for each patient YES
- start of training sessions for patient or group YES
- archive of patients and training sessions YES
- use of wireless ECG transmitters YES
- piloting of ergometers and treadmills, via cable or wireless YES
- monitoring of Blood Pressure and SpO₂ YES
- comparison between sessions and summary display of sessions YES
- advanced analysis and evaluation tools YES
- specialized algorithm for defining the performance of the patient YES
- rapid and comprehensive reporting YES
- modest hardware and software requirements YES
- simple and quick installation YES

SanaSprint Plus means compatibility. Budget saving and investment planning: the Owner can continue to use its ergometers and treadmills (compatible with standard P10 and Trackmaster protocols) and replace them over time.

SanaSprint Plus is modular and scalable. The number of workstations can increase after the installation. Additional diagnostic tools can be added to ergometers (eg PA and SPO₂ modules).

SanaSprint Plus is a data exchange oriented system. All the information obtained during a session are collected and stored. Patient data, ECG, Heart-Rate etc.: all these data are used to monitor how the patient response to training evolves. The User can always accede to the archive.

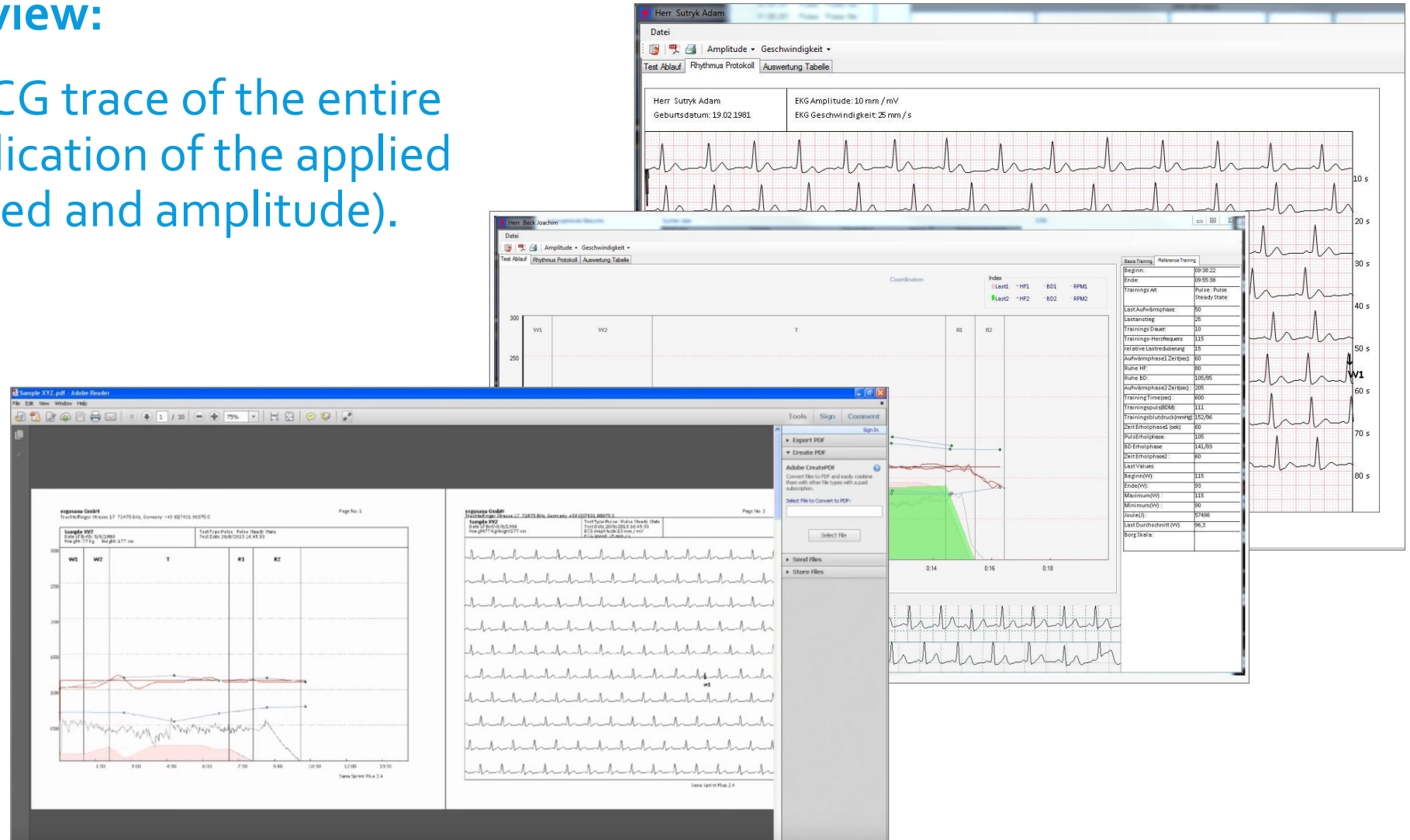
Monitoring:

Overview of all active patients or **SmartVIEW**, a detail display of the selected patient, with a compact view of the remaining patients.
Always in real-time !



Report and preview:

Display of the ECG trace of the entire session, with indication of the applied parameters (speed and amplitude).



SanaBlue 1000: wireless ECG scanner

- _ single-channel ECG transmitter
- _ band with incorporated electrodes
- _ traditional disposable electrodes are available
- _ Bluetooth connection up to 100 m
- _ rechargeable battery
- _ lasts up to 14 hours





SanaBlue 1000 mounted on its chest belt



Sanabelt chest belt for *Sanablue 1000*

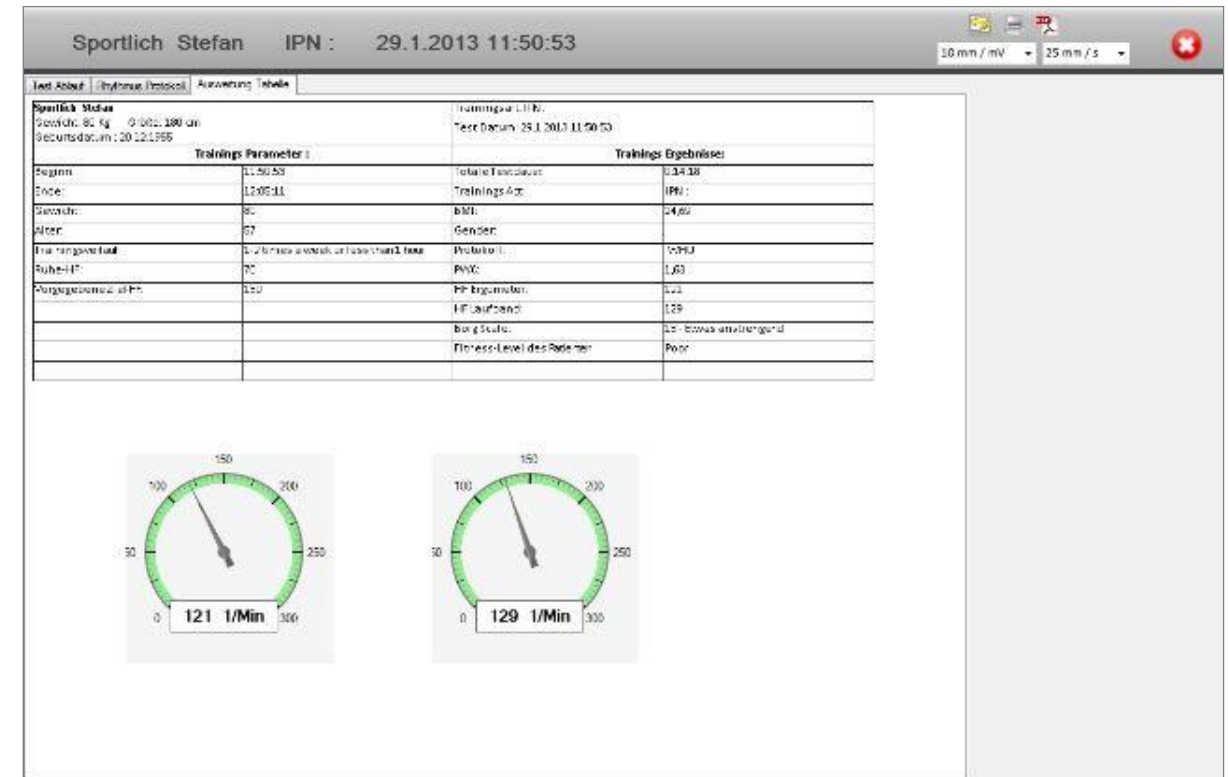


8-seat battery recharger for *SanaBlue 1000*

Choice of training strategy based on the patient's situation:

Training protocols specifically defined for the patient:

- _ Frequency-controlled load
- _ Free protocol
- _ Steady-state
- _ Ramp
- _ Step Interval
- _ ...



SanaSprint Plus Reha offers many options for patient monitoring:

- _ wireless interface between ergometer or treadmill and the central
- _ automatic blood pressure monitor, integrated in the ergometer head
- _ automatic SpO₂ monitor, integrated in the ergometer head
- _ saddle with motorized adjustment



Training management

view up to 8 patients per monitor, for a maximum of 16 patients and 2 monitors



Training management

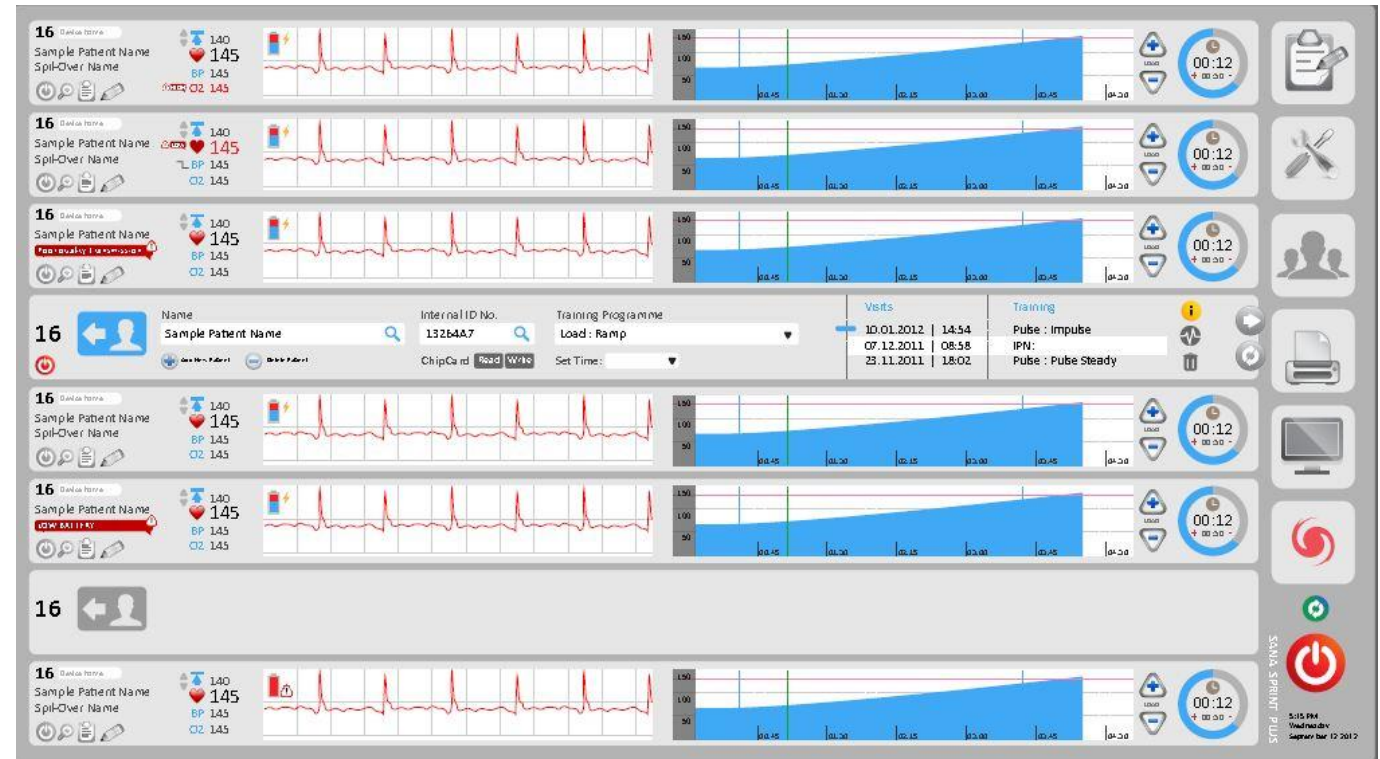
SmartVIEW: a detailed display for the selected patient, along with a compact real-time view of the remaining patients.



Graphic interface

The User interface is freely selectable between 3 possible schemes, 2 predefined and one custom scheme.

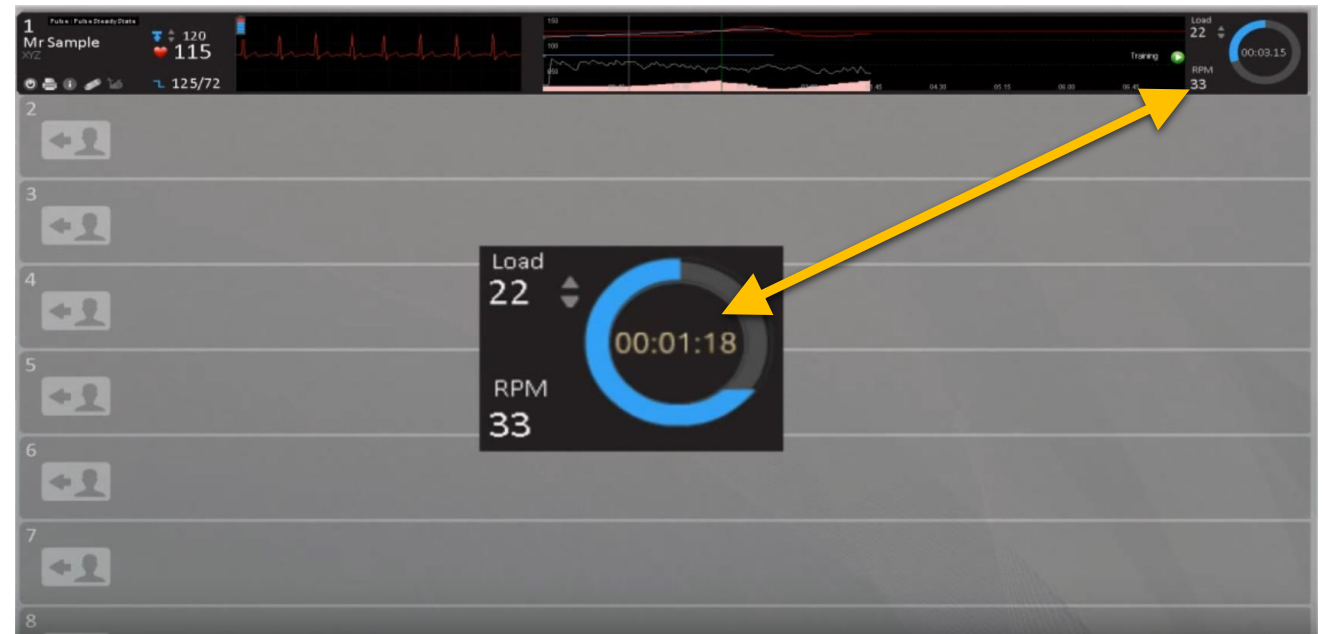
A fast command in the main screen rotates the three schemes in seconds.



Patient monitoring

In addition to the alarm indicators, the compact display shows: current and target Heart Rate, Blood Pressure, ECG, trend, current load and pedaling rhythm.

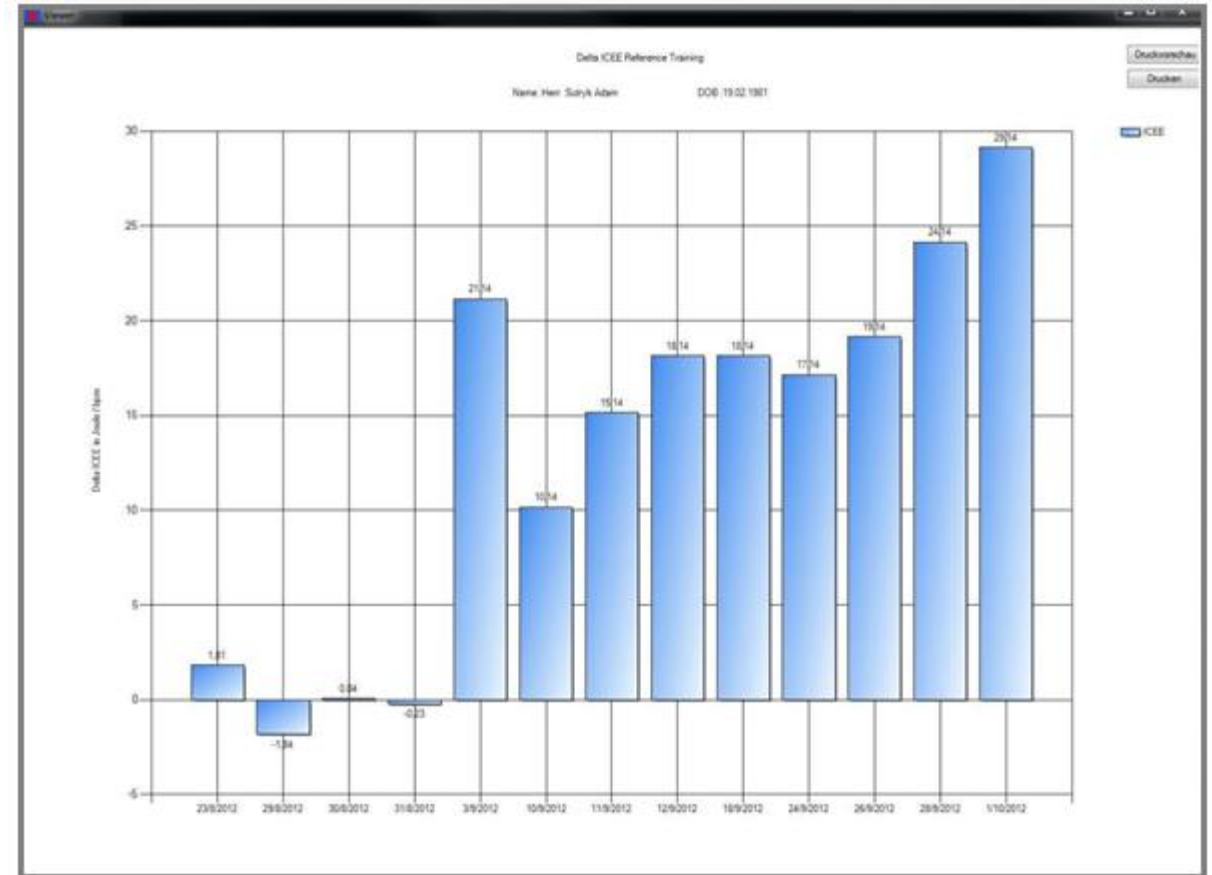
There is also a watch, that quickly indicates the time elapsed and the remaining time!



Effectiveness check, during and at the end of the rehabilitation period

To verify with certainty and quickly the effectiveness of rehabilitation therapy, as the sessions are carried out and recorded.

The ICEE index (Individual Cardiological Energy Equivalent) is a precise criteria for assessing the performance provided by the patient in terms of energy expenditure.



Report - Comparison of different sessions

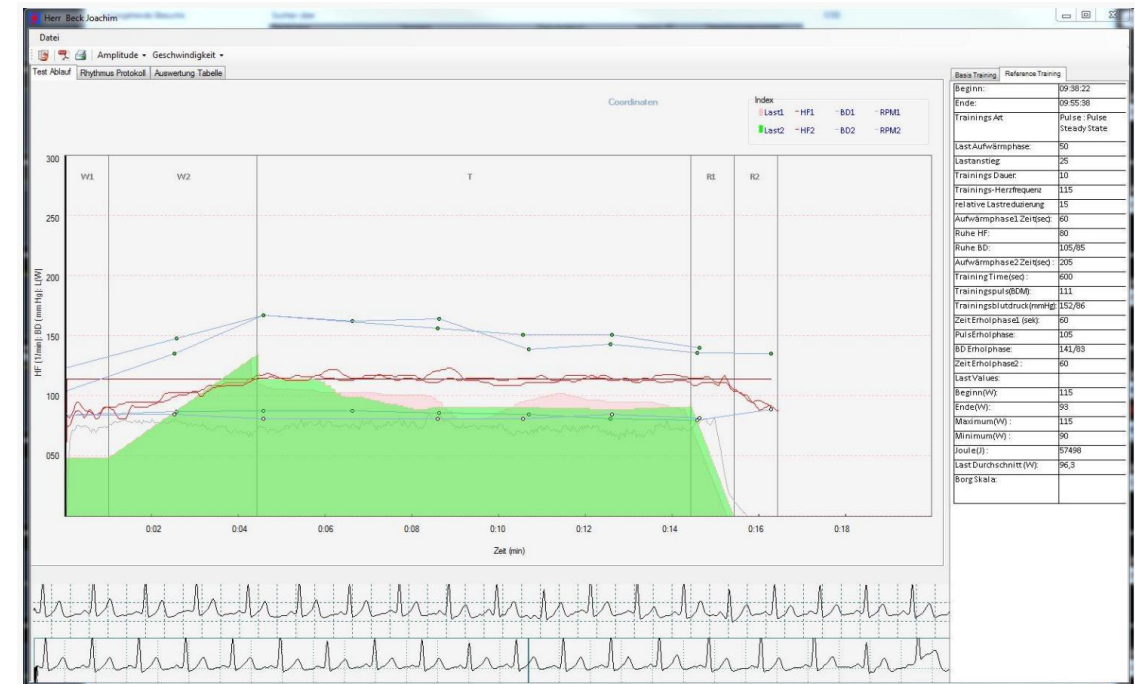
All the patient's sessions are displayed

With the respective summary data:

_trend

_summary

_ECG



The graph parameters are selectable.

Report – individual summary

Screen showing the respective summary data of the chosen session:

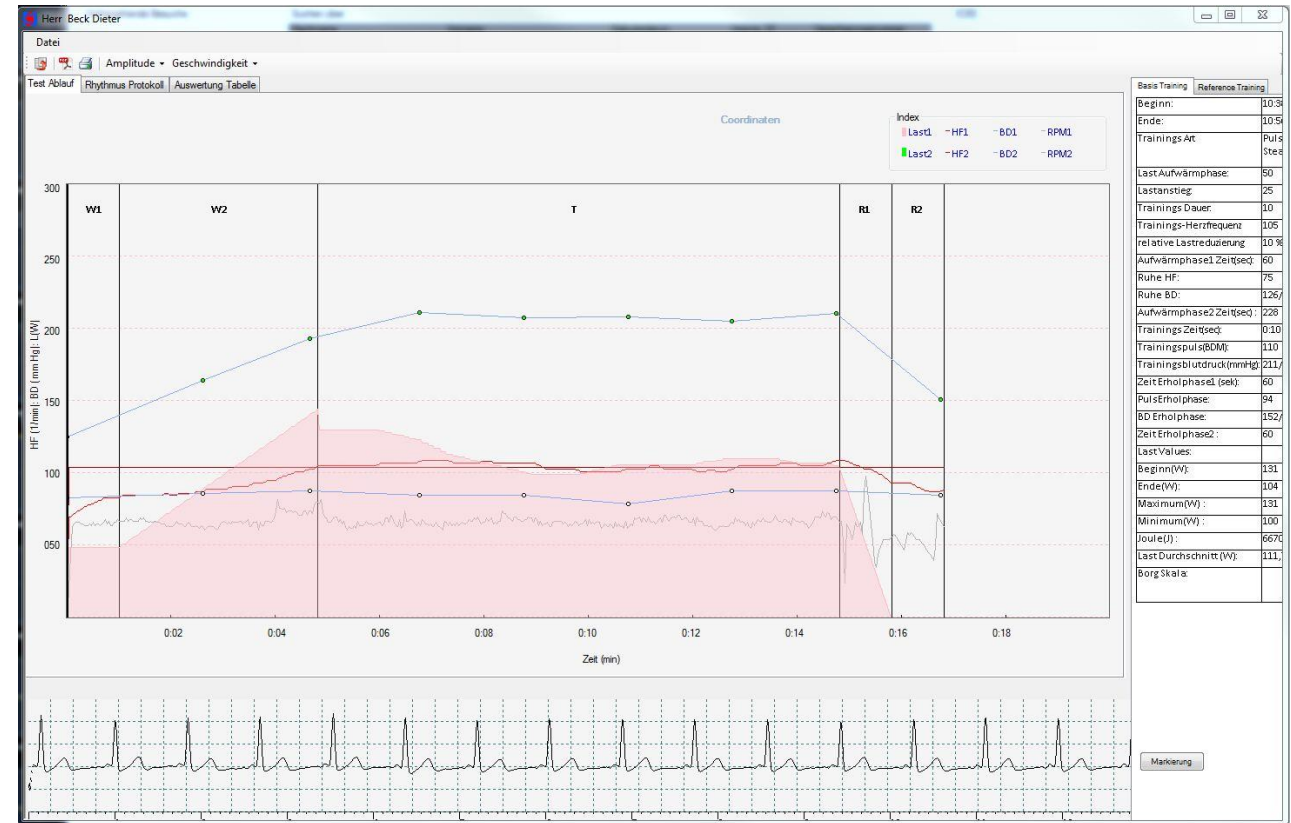
_trend

_summary

_ECG

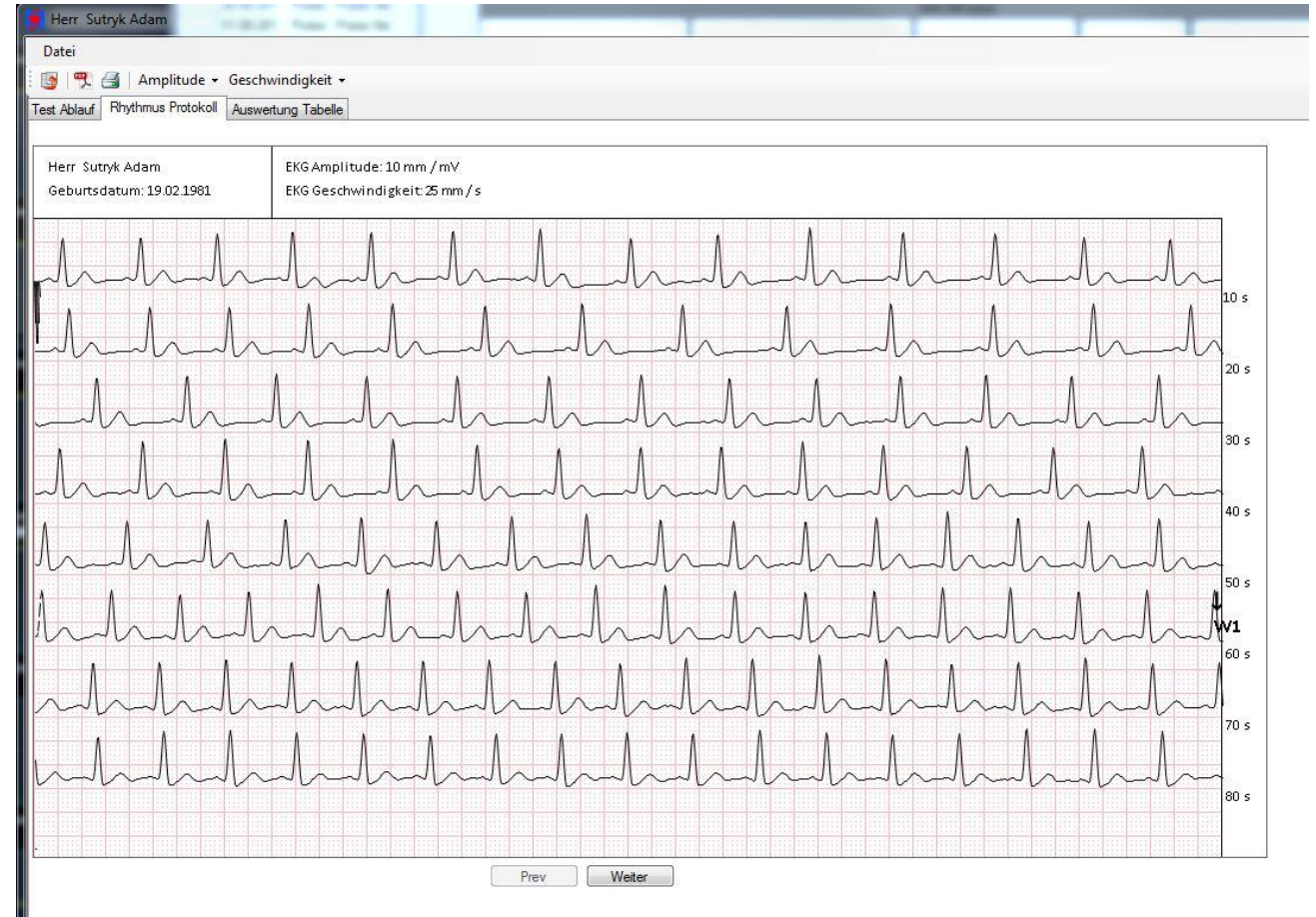
- ...

The parameters are selectable.



Report - ECG Full Disclosure

Display of the ECG trace of the entire session, with indication of the applied parameters (speed and amplitude).



Report - Tabular summary

Page No: 1

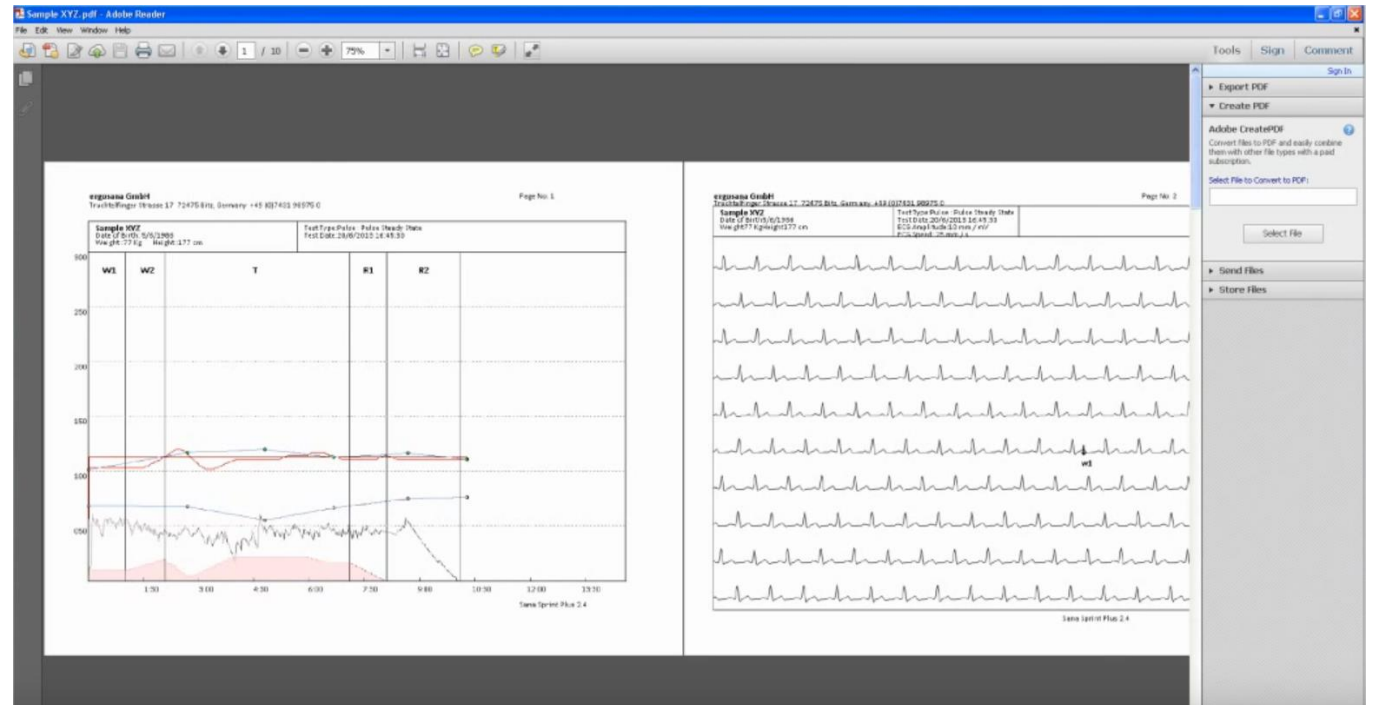
Beck Dieter Geburtsdatum: 14.05.1943 Gewicht: 90 Kg Größe: 185 cm			
Trainings Parameter:		Trainings Ergebnisse:	
Beginn:	13.02.07	Aufwärmphase1 Zeit(sec):	60
Ende:	13.26.18	Ruhe HF:	85
Trainingsart:	Puls: Puls Steady State	Ruhe BD:	113/70
Last Aufwärmphase:	60	Aufwärmphase2 Zeit(sec):	222
Lastanstieg (W/min):	20	Trainings Zeit(sec):	0:15:0
Trainings Dauer:	15	Trainings Ende: HF:	102
Training HF:	105	Durchschnitt Trainings- HF:	106
relative Lastreduzierung:	15 %	Durchschnitt Trainings- BD:	164/76
		Zeit Erholphase1 (sek):	60
		Puls Erholphase:	90
		BD Erholphase:	118/86
		Zeit Erholphase2:	137
		Last Values:	
		Beginn(W):	114
		Ende(W):	85
		Maximum (W):	114
		Minimum (W):	76
		Joule (J):	81138
		Last Durchschnitt (W):	90.6
		Borg Skala:	14 - Etwas anstrengend
		VO2Max:	19.6

Sana Sprint Plus 2.8

Report - preview

All recorded or calculated data is made available for printing.

SanaSprint Plus has a native PDF printer.



LUMED® EURObike

SanaSprint Plus pairs up with LUMED® bike-ergometers:

EURObike 3200

EURObike 3500.

Optional Blood Pressure and
SPO₂ measurements are available.

Choose wired or wireless communication.



SanaSprint Plus also drives other **LUMED® EURO** ergometers :



EUROsedeo
arm ergometer



EUROcomfort
recline ergometer



EUROcouch
ergometer for
Imaging



EUROcardio
ergometer for
Echostress

Optional Blood Pressure and SPO₂ measurements are available.
Choose wired or wireless communication.

SanaSprint Plus also drives medical grade Treadmills:



SanaSprint Plus Reha is available in many languages:

Italian

Polish

German

Russian

English

Spanish

Chinese

Turkish

French

...

Dutch