

Compumedics vista

A COMPUMEDICS CLIENT UPDATE

[APRIL/MAY 2004]



WELCOME

Dear Vista Readers,

Welcome to the first edition of Compumedics Vista Newsletter for 2004. The staff at Compumedics would like to wish you and your organisations success for the coming year and look forward to continue working with you in improving your experiences with us.

I would like to introduce myself and share with you some of the activities that we are working on. Having now been in the role of Chief Operating Officer for just over 6 months, this period has seen much work done at Compumedics to improve the delivery of products and services to you.

The year 2004 will see the release of new and innovative products in our fields of expertise including Sleep Diagnostics, Clinical NeuroDiagnostics and Brain Research. The Neuromedical Supplies division will

continue to provide our users with competitive pricing, reliable supply and an even wider range of consumables.

During early 2004, Compumedics will receive and commission new manufacturing equipment, invested as part of our continued focus on improving the quality of products manufactured from our Melbourne facility. Over the next 12 months, you, our customers will experience our continued efforts to provide you with better products, service and support.

With kind regards,

Andrew Smith
Chief Operating Officer

COMPUMEDICS' NEW GERMAN OFFICE

As of the 23 March 2004, Compumedics' German office will be moving to new premises to allow for the future expansion of the office.

The office, which is located about 5km from the city centre in Hamburg, is 235 m² in size – nearly double that of the old premises.

The German office supports our growing European market and is currently dedicated to software development, technical support and service, customer support and administration.

With our expanding European market, we anticipate that the German office will become increasingly important to the success of this region.

For your information, please note the new address of our German office, as of 23 March 2004. All phone and fax numbers will remain the same.



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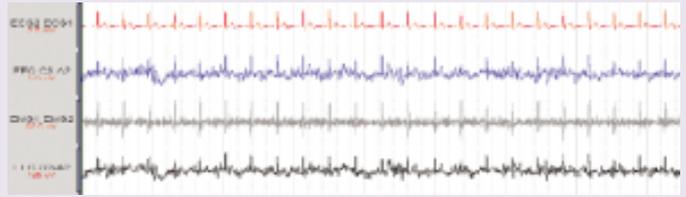
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ECGfree™

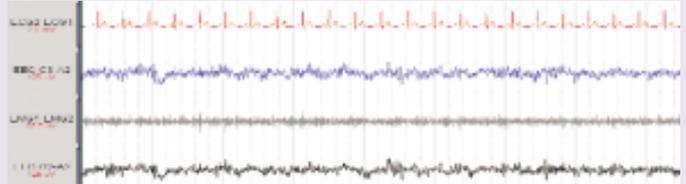
Compumedics has just released ECGFree – a patented signal extraction technology that quickly and easily removes ECG artifact. This technology identifies the ECG waveform component in each affected trace and removes this component without disturbing the underlying signal of interest. With ECGFree, all important frequency information in each channel is retained. Never again will signal quality need to be compromised by linking A1 with A2.

ECGFree is a software plug-in option that is available on all Compumedics Sleep systems using ProFusion PSG2. Now, ECG artifact can be removed from all your sleep recordings using ECGFree!

ECGFree is available for sale worldwide.



Now you see it...



Now you don't.



Compumedics PROFUSION² PSG2 – NOW SOMTÉ FRIENDLY

ProFusion PSG2 – Compumedics' premier reviewing, scoring, analysis and reporting software – is now available for use with the Compumedics Somté System. This functionality enables sleep labs already using Compumedics' E-Series or Siesta systems, to simply use the same software to score and report data from the Somté system. By doing so, it provides sleep labs with the flexibility to use the ProFusion PSG2 software in addition to or instead of using Somté's proprietary software. It also means that sleep specialists no longer need to be trained on two separate sets of software if they so choose to.

The ProFusion PSG2 is also enhanced by its integration with Compumedics ProFusion neXus Laboratory Management System (also referred to as neXus). As sleep studies are automatically stored, accessed and reported through neXus, its patient-centric environment serves to improve workflow and eliminate a lot of the mundane operations in the sleep lab. Furthermore, neXus has been foreseen to reduce costs, especially in larger labs, and is designed to provide sophisticated data management capabilities – a most useful research feature.

The latest ProFusion PSG2 software also caters to the German market by providing support for German language operations.

The latest release of ProFusion PSG2 is available for sale worldwide.

Summit IP™

The sleep profession has recognised in recent years that the quality and usefulness of physiologic signals in PSG studies are dramatically affected by the abilities of the sensor technology used to monitor respiratory effort.

According to the Report of an American Academy of Sleep Medicine Task Force, there is strong consensus supporting the use of Inductive Plethysmography (IP) as the preferred technology for the tracking of respiratory effort. The respiratory IP sensor provides a linear response to changes in breathing volume as well as providing an excellent indication of

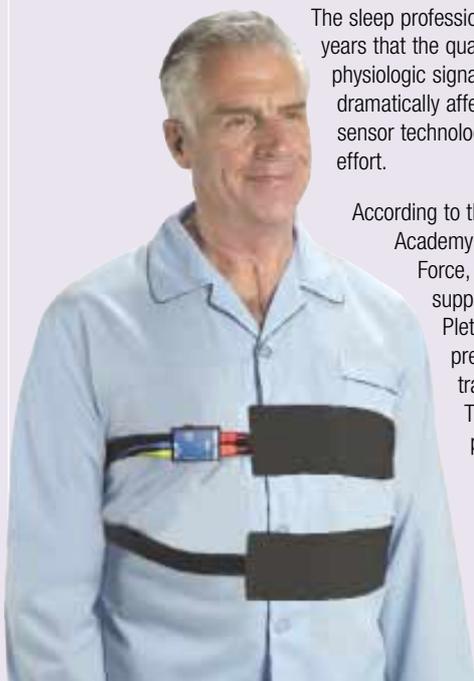
respiratory paradox, while consistently maintaining signal polarity.

Previously, selecting sensor technology was a compromise between signal quality, complexity, ease of use and cost – often resulting in the use of piezo-based sensors that could not provide a true physiologic response.

Now, the superior technology of Inductive Plethysmography is accessible to any sleep lab, with the use of Compumedics' Summit IP respiratory effort sensor system.

The Summit IP is small, battery-powered and easily connects to your sleep amplifier system with industry standard touch-proof connectors. More importantly, the Summit IP's built-in microprocessor automatically and continuously tracks the signals from the chest and abdominal sensor bands and produces a balanced SUM channel output, ideal for detecting hypopneas.

NB: Summit IP has TGA clearance and is currently available for sale in Australia only. For other regions, please contact your local Compumedics representative for the latest updates on this product.



COMPERIO DQ



The new Compumedics Comperio EMG/Neurophysiology system has been redesigned to make recording data even easier. This system is called the ComperioDQ – highlighting its unique Decomposition EMG feature.

The ComperioDQ hardware not only looks better, it has been updated to provide better practicality, ergonomics and durability. These changes have come in the form of:

- **Cables** – The number of cables from the Control Module has been reduced to two.
- **Handheld Electrical Stimulator:**
 - This can be connected to the back of the Control Module or conveniently connected to the amplifier for close proximity to the patient.
 - This has a more ergonomic design for a better feel.
- **Amplifier Cable** – This has a locking connector for greater durability.

Many software enhancements make the ComperioDQ easier to use and add important functionality. Features like:

- **Unlimited Traces** – Takes away unnecessary limits and allows better flow when recording neurophysiologic data.
- **Set-Ups** – Any set-up can be saved for future use including needle EMG protocols.
- **Split Mode** – Popular in F-wave recordings, split mode can be activated in Motor Nerve Conduction Studies for easy acquisition of F-wave data without changing screens.
- **Window Layout** – All windows can be docked, hidden or used as a floating window.
- **Free Run Screen** – This is available in all tests for easy identification of artifact or as an oscilloscope view.
- **User Configurability** – All choices are up to the user – from the screen colours to the footswitch functionality.

Finally, the enhanced Decomposition EMG makes recording and displaying all valuable EMG data easy. Using these sophisticated algorithms, users can record Motor Unit Potential information like duration, phases, firing rates and amplitude using the unique combination of Needle and Surface EMG. Add to these parameters, Motor Unit Number Estimates and Firing Patterns between trains, not to mention the graphic displays – and you have the fastest, most accurate way to expand your Needle Examinations.

Further information on ComperioDQ can be found on Compumedics' website at: www.compumedics.com.

NB: Please contact your local Compumedics representative for the latest updates on this product.

Feature	Benefit
EMG can be heard through the ComperioDQ Speaker or through Computer Multimedia Speakers	Use any set of multimedia speaker(s) you wish to hear the EMG data on, or use the convenient built-in speaker
Unlimited number of traces	With no artificial limits, you have the full ability to record the way you want to record
Easy to define muscle and nerve lists	Make the Muscle list appropriate for your examination while keeping full flexibility when unusual or unexpected results appear
The same powerful report generation tools now available in Microsoft Word	Makes adding text easy as well as giving you all of the built-in features of Microsoft Word
"Dockable" Windows	Make the display window appear as you wish by moving various portions to your ideal location
	
Easy to Score EMG data	Predefine your muscle lists or pick your muscles one at a time, either way scoring the results is a click or two.
One Button Press Quantitative EMG	Whether you subjectively score your motor unit potentials or want the computerised analysis, it's easy! – Just one click and the data is available for review.
	
DQEMG	Accurately calculate the various quantitative EMG parameters of interest even though superimposed MUAPs were not resolved
Fully customisable	Do procedures your way, from the functions of the footswitch to the colours of the waveforms. There are no built-in limits

COMPUMEDICS CHOSEN FOR MANNHEIM – EUROPE'S SECOND LARGEST SLEEP CENTRE

Compumedics has completed its largest installation of Sleep Diagnostics systems in Germany to date. The installation, which took place over December and January 2003/2004, saw 22 units of Compumedics' E-Series Sleep Systems installed at the University Hospital Mannheim – making it the second largest Sleep Lab in Europe.

With 100 beds available in its Ear Nose & Throat (ENT) Department, the University Hospital Mannheim is one of the largest leading hospitals in Germany. Head of the Hospital is Prof. K. Hörmann and Head of the Sleep Lab is Dr. J.T. Maurer.

The University Hospital Mannheim's Sleep Lab treats up to 6000 patients per year. The Sleep Lab offers a wide range of treatments, including the provision of ventilation therapy (CPAP, BiPAP, BIPAP-ST), oral devices as well as surgery (pharyngeal, nasal, head and neck).

The ENT Department performs 2000 operations per year on their own patients as well as patients referred to them by other Sleep Labs. Educational courses being run by the University Hospital include:

- Diagnosis and Treatment of Sleep Disordered Breathing (SDB)
- Radiofrequency Treatment
- and Surgery for SDB

The Hospital opened its Sleep Lab 10 years ago with 1 bed and within 6 years had expanded to 16 beds. With the Compumedics installation just completed, the center consists of 18 fixed sleep beds and 4 mobile monitoring systems to enable the patient monitoring in wards and other hospital departments.

All 18 fixed beds have audio video monitoring incorporated in the sleep system, with manned monitoring stations located at the central nurse's center of the main ENT floor of the hospital.

The site was uniquely configured and installed by Compumedics' distributor – Dräger Medical Germany, a Dräger and Siemens company – so that the main sleep monitoring room does not contain computers. This is done by having all sleep workstations/servers located in a dedicated server room, away from the monitoring center. To enable full control of the sleep



The uniquely configured monitoring room at the University Hospital Mannheim Sleep Lab.

workstations, audio video data is transmitted via CAT 5 cabling to the monitoring room, where the keyboard, mouse and monitoring displays are located.

The monitoring room is fitted out with eighteen 15" flat screen displays, one for each of the fixed sleep beds, along with three main 20" screens. Each of the 3 main monitoring screens may be used as record monitors as well as analysis screens.

To see how Compumedics can assist you with your Sleep Diagnostic requirements, please contact your local Compumedics representative.

For information on services and courses provided by the University Hospital Mannheim Sleep Lab, please contact:

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COMPUMEDICS ENTERS RESEARCH ALLIANCE – SMA CLINICAL TRIALS

Compumedics' EMG System, the Comperio, has been selected for use in upcoming clinical trials focused on pediatric spinal muscular atrophy by two groups: AmSMART and Project Cure SMA.

Spinal muscular atrophy (SMA) is a genetic disease of the anterior horn cell with a frequency of 8 per 100,000 live births with a high mortality during infancy. There is no known treatment for SMA. As SMA is a muscle denervating disorder, users in these studies will record Motor Unit Number Estimates (MUNE) using specially designed software to facilitate application of the Multipoint Stimulation (MPS) technique. The clinical trial goals of the AmSMART group are to perform short term, open label pilot trials of riluzole (Rilutek™) in infants with SMA and to correlate biological markers (MUNE and other genetic tests) with clinical phenotype and response to therapy.

The Comperio system was selected for this study primarily because of the unique analysis software available on the product. Compumedics is also the only company to offer the software application: Enhanced Decomposition

Based Quantitative EMG. This software technique is designed to obtain clinically applicable information to aid in the diagnosis of diseases affecting the motor system and in particular the motor unit potential (MUP). DQEMG simultaneously measures multiple MUP's and MUP Trains which achieves significant time savings over any other known method. All measurements are immediately available for review with this powerful processing tool.

To find out more on clinical trials currently in progress, please see their respective websites.

AmSMART: <http://acsresearch.swmed.edu/amsmart/>

Project Cure SMA: <http://www.fsma.org/curesma.shtml/>

AmSMART is currently recruiting patients for NIH funded clinical trials to be performed at more than a dozen pediatric medical centres in the U.S. and Canada.

PROFILE

JEFF KUZNIA



Jeff Kuznia is the International Product Manager for the Marketing Group of Compumedics Ltd. Jeff works with all departments of Compumedics' divisions, providing marketing direction to product development and supporting numerous customers involved with Sleep and Neurology research. Jeff also mentors Sales and Customer Service personnel in their dealings with Compumedics' new and more advanced products.

Jeff's technological background in Sleep and Cardio-Respiratory Diagnostics goes back more than 25 years, having organised his first sleep lab in 1984. His business experience in product and marketing management, sales and customer service, has given him a unique set of skills.

Jeff lives in Minneapolis Minnesota, USA and when he is not travelling the world for Compumedics, he buys and restores old homes, and listens to Blues and 'Cajun music.

CHOICE SLEEP PAPERS

Elizabeth Kealy – Clinical Applications Specialist

- Charles F.P. George, "Driving simulators in clinical practice", *Sleep Medicine Reviews*, Vol. 7, No. 4, pp. 311-320, 2003
- George W. Rodway and Mark H. Sanders, "The efficacy of split-night sleep studies", *Sleep Medicine Reviews*, Vol. 7, No. 5, pp. 391-401, 2003
- Nagel C.; Markie M.; Richards K.; Taylor J.; Beverly C., "Sleep promotion in hospitalized elders", *Medsurg Nursing*; Oct 2003; 12, 5; 279-290
- Constanze Leineweber, Göran Kecklund, Torbjörn Åkerstedt, Imre Janszky, Kristina Orth-Gomér, "Snoring and the metabolic syndrome in women", *Sleep Medicine* 4 (2003) 531-536
- Hiroyoshi Adachi, Akira Mikami, Takayuki Kumano-go, Nakamori Sugauma, Hideyuki Matsumoto, Yoshihisa Shigedo, Yoshiro Sugita, Masatoshi Takeda, "Clinical significance of pulse rate rise during sleep as a screening marker for the assessment of sleep fragmentation in sleep-disordered breathing", *Sleep Medicine* 4 (2003) 537-542
- Vahid Mohsenin, "Effects of gender on upper airway collapsibility and severity of obstructive sleep apnea", *Sleep Medicine* 4 (2003) 523-529
- Mar J., Rueda J.R., Durán-Cantolla J., Schechter C., Chilcott J., "The cost-effectiveness of nCPAP treatment in patients with moderate-to-severe obstructive sleep apnea", *Eur Respir J* 2003; 21: 515-522
- Roche F., Pichot V., Sforza E., Court-Fortune I., Duverney D., Costes F., Garet M., Barthélémy J.C., "Predicting sleep apnoea syndrome from heart period: a time-frequency wavelet analysis", *Eur Respir J* 2003; 22: 937-942.
- Harry Teichtahl, David Cunnington, Gaye Cherry, David Wang, "Scoring polysomnography respiratory events: the utility of nasal pressure and oro-nasal thermal sensor recordings", *Sleep Medicine* 4 (2003) 419-425
- Dingli K., Assimakopoulos T., Wraith P.K., Fietze I., Witt C., Douglas N.J., "Spectral oscillations of RR intervals in sleep apnoea/hypopnoea syndrome patients", *Eur Respir J* 2003; 22: 943-950

JEFF KUZNIA'S TIPS & HINTS

FOR MAINTAINING THE COMPUTERS IN YOUR LAB

1 Security

Make sure you are running **Virus Scan** software with up-to-date virus signature files (McAfee VirusScan and Symantec Norton AntiVirus are two popular and effective packages)

Keep up with **Microsoft Updates** (especially Security patches). If you are running Windows 2000 or Windows XP, setup for Automatic Updates via your Internet connection.

2 Performance

Routinely run **Disk Clean-Up** and **Defragment** your hard drives. The standard defragmentation tool included in Windows 2000 and XP can be replaced and improved by installing Norton's Speed Disk or Diskeeper from Executive Software. Use a program such as Norton Utilities to clean up the Windows registry and improve operation.

Ensure you have the latest BIOS and drivers for your computers by checking the Support page of the computer manufacture's website. (Eg. www.hp.com, www.dell.com).

3 Utilities

Screen capture software such as SnagIt! (from TechSmith Software) allow you to capture portions of a screen or even a video clip from the Compumedics Digital Video window and place the image into a document, a PowerPoint presentation or an email.

RECENT EVENTS

American Epilepsy Society Meeting

Compumedics USA, Ltd. was pleased to exhibit at the American Epilepsy Society (AES) Meeting in Boston, December 7-9, 2003 which featured demonstrations on the Neuroscan SynAmps2, Scan and Source software as well as presentations on the E-Series, Siesta and Safiro EEG diagnostic systems. Also previewed was the new design and upgraded feature of the ComperioDQ system.

The meeting was marked by a storm that lasted from Friday evening to Sunday evening, giving way to approximately 16.9 inches of snowfall. This was the second greatest December snowstorm on record, with the number one being a snowstorm that hit the Boston area on December 20-22, 1975 with a total of 18.2 inches. Needless to say, this will be a memorable meeting for all of those who attended.

Attendees at AES experienced another momentous occasion while visiting the Compumedic's booth. Each visitor had an opportunity to register to win a bottle of Australian Penfolds Grange Shiraz, rated #1 in U.S. Food and Wine Magazine. We are pleased to announce that our winner was Dr. Michael Miles of the Cincinnati Children's Hospital. Congratulations Dr. Miles from all of us at Compumedics!



Mike Olmstead from Electramed (Compumedics Distributor) presenting winning bottle of wine to Dr. Michael Miles

EVENTS DIARY

- Sleep
- Neuroscan
- Neuroscience

25-26 March
Carolina Sleep Society 2004 Spring Meeting
Spartanburg, SC, USA

26-27 March
NESS 2004 (North East Sleep Society)
Lehigh Valley, PA, USA

11-15 April
15th World Congress ISBET (International Society of Brain Electromagnetic Topography)
Urayasu, Tokyo Disney Sea, Japan

15-16 April
SSET (Southern Society of Electroneurodiagnostic Technologists)
Unicoi Lodge, Helen, GA, USA

18-20 April
CNS (Cognitive Neuroscience Society)
San Francisco, CA, USA

22-23 April
Focus on Resp. Care & Sleep Medicine Conference
Baltimore, MD, USA

26-29 April
AAN (American Academy of Neurology)
San Francisco, CA, USA

29 April – 1 May
ANTA (Association of Neurophysiology Technicians of Australia)
Novotel Hotel, Adelaide, Australia

10-14 May
AAN (Australian Association of Neurologists)
Burswood Convention Centre, Perth, Australia

15-21 May
ISMRM (International Society for Magnetic Resonance in Medicine)
Kyoto International Conference Hall, Japan

17-21 May
Scan School Summer Session
El Paso, TX, USA

23-25 May
ATS- American Thoracic Society 2004
Orlando, FL, USA

30 May – 3 June
6th European Congress on Epileptology
Austria Center, Vienna, Austria

5-10 June
APSS Annual Meeting (Associated Professional Sleep Societies)
Philadelphia, PA, USA

8-12 June
CCNS (Canadian Congress of Neuro. Sciences)
Calgary, Canada

13-17 June
Human Brain Mapping Conference
Budapest, Hungary

THE COMPUMEDICS DIVISIONS

Defining Life's Signals

Compumedics' operations consist of four divisions – each with its own product focus:



Compumedics Sleep
Clinical Diagnostic Systems for Sleep Disorders



Compumedics Neuroscience
Clinical Diagnostic Systems for Neurophysiology



Compumedics Neuroscan
World-leading Research EEG/ERP systems



Compumedics Neuromedical Supplies
Electrodes, sensors and supplies for Neurology and Sleep laboratories

If you would like to receive the Compumedics Vista Update via Email, please send your details and email address to marketing@compumedics.com.au

SUGGESTION BOX

The Compumedics Vista Update is for you – our valued customers. Any comments, suggestions or feedback you may have on Compumedics Vista would be greatly appreciated.

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READER CONTRIBUTIONS:

Compumedics welcomes any article contributions made by our readers. Two Movie Passes will be given to the contributor of any article used in the Compumedics Vista Update.

Please forward all contributions to:

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