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### **AEROSPACE SOLUTIONS**

WELCOME TO THE DEWESOFT EXPERIENCE. ONE SOFTWARE, ONE HARDWARE, YOUR SOLUTION.

20 years ago, as young engineers we dreamed of creating a revolution in the world of measurement. We dreamed of creating data acquisition software that was versatile and powerful - and yet easy to use - something that didn't exist.

We are who we are because of you - our customers - working in the most advanced labs around the world. You had the same dream: you introduced us to the challenge that drives our passion for constant improvement, keeping our minds sharp and our spirits free.

### IN PARTNERSHIP WITH YOU, WE BUILT SOLUTIONS THAT EXTENDED FAR BEYOND WHAT WE EVER IMAGINED WAS POSSIBLE TWO DECADES AGO. THANK YOU!

Today, we offer a variety of hardware and software solutions made just for you. And you're still our greatest asset. That will never change. Tell us what you need and we will continue to push the limits.

Dr. Jure Knez president and co-founder

### DEWESOFT IS MORE THAN A BUSINESS

# DEWESOFT IS OUR WAY OF LIFE

Dewesoft hardware and software forms a total solution for all test and measurement applications

### MODULAR AND

Systems can be gradually expanded from one to thousands of channels for any measurement challenge

# **NO HIDDEN COSTS** Free lifetime software upgrades, no maintenance fees

### **AWARD WINNING DEWESOFT X3**

One software for all measurement applications. Fast learning curve, no programming needed

### VERSATILE AND 0

Get your measurements in 30 seconds

### **PLUG AND PLAY**

Any device, sensor or signal

### **DEEP IN FUNCTIONALITY**

Used in the most advanced research labs around the world

# **FREE ONLINE COURSES** Learn how to measure and process data

with Pro Training





### **MEASURE SYNCHRONISED**

Analog, digital, vehicle buses, navigation, video, data bus systems, outputs...

### **STORE EVERYTHING**

High performance storing >500MB/sec, instant file loading, triggering, networked acquisition and cloud storage

### VISUALISE

Extensive visual control library, flexible displays, optimized graphics

### **PROCESS AND ANALYZE**

Extreme fast data review, advanced math libraries, power analysis, vehicle analysis, machinery diagnostics, acoustic

### **REPORTING AND EXPORT**

Inbuilt PDF and paper reporting tool, wide variety of export format, screen video export

**EXTEND** 

AND IT IT IT IN THE REPORT IN CO.

Sequencer, inbuilt C++ scripting, open interfaces for plugins, visual controls, export, DCOM, open network interface

# **SIRIUS®** MOST FLEXIBLE DATA ACQUISITION SYSTEM EVER

FLEXIBLE CONFIGURATIONS as the system is available in many form factors from four to thousands of channels HIGH DYNAMIC DualCoreADC<sup>®</sup> technology provides amazing dynamic range HIGH ISOLATION High channel-channel and channel-ground isolation prevents ground loops

#### **MODULAR**

Most flexible single distributable slices with USB and EtherCAT® interface

**SBOX** 

Synchronised, highly reliable data logger and powerful data processing computer

#### **R4**

Integrated solution with 4 SIRIUS slices and powerful SBOX computer in one unit with real time EtherCAT<sup>®</sup> slave interface







DualCoreADC<sup>®</sup> SLICES: dual 24 bit with 160 dB dynamic range, 200 kHz rate, each of 8 isolated amplifiers in a slice can be chosen from

HD SLICES: 24 bit, 200 kHz rate ADC; 16 channels per slice with



universal and strain gage amplifier





HV for high voltage up to ±1200 V

LV for powered sensor inputs





HD ACC for accelerometer/ microphone; HD LV BNC for 100 V voltage input



HS SLICES: with 16 bit, 1 MHz rate ADC, each of eight isolated amplifiers in a slice can be chosen from



STG or STGM universal and strain gage amplifier ACC for dynamic pressure sensors CHG for combustion pressure



HV for high voltage up to ±1600 V



#### **OPTIONAL INPUTS/OUTPUTS**

**Counter/encoder/digital IO** with SuperCounter® patented technology perfectly synchronizes analog and counter angle data **Analog out** 24 bit analog outputs, as a multi-channel function generator, can act as real time signal conditioning, as analog replay of data in analysis or as manual or automated control output, with output voltage levels of up to ±10V **CAN bus** interface

# **KRYPTON®** RUGGED SYSTEMS FOR HARSHEST ENVIRONMENTS

DISTRIBUTABLE DEVICES will bring data acquisition directly to the sensors

SINGLE CABLE with EtherCAT<sup>®</sup> interface up to 100m between devices for power, data and synchronization

MADE TO BE EXTREME IP67, dust proof, waterproof, 100g shock and vibration resistant, wide temperature operating range

#### **KRYPTON®**



Ultra rugged and distributable data acquisition devices from -40 to +85 °C operating range

#### **KRYPTON® 1 SERIES**

Distributable measurements down to a single channel



Wide variety of KRYPTON amplifiers:

8xTH, 16xTH isolated universal thermocouples module
4xLV, 8xLV isolated voltage input module
3xSTG, 6xSTG differential universal and strain module
8xRTD amplifier for temperature

4xACC, 8xACC IEPE accelerometer amplifier Sync junction with optional GPS
8x, 16x DI / DO Digital I/O module
8x LA Isolated low current amplifier

1xSTG isolated universal and strain amplifier
1xACC isolated IEPE accelerometer amplifier
1xLV DSUB powered sensor input
1xHV isolated high voltage module
4xDI, 4xDO four channel digital I/O amplifier
1xAO analog output
1xCNT SuperCounterADC® module
1xTH-HV Isolated thermocouple module (CATII 1000 V)

## WATERPROOF SIRIUS® AND SBOX

SIRIUS DAQ technology in rugged chassis, DualCoreADC®, high dynamic range 160 dB, high isolation, SuperCounter®



Configuration examples:

SIRIUSiwe 8xSTGM 8-channel, universal strain gage amplifiers SIRIUSiwe 6xSTGM,2xSTGM+ 8-channel universal strain gage amplifier with two counter inputs SIRIUSiwe 16xHD STGS 16 channel universal strain gage input

# **IOLITE<sup>®</sup>** DATA ACQUISITION AND CONTROL FRONT-END FOR INDUSTRIAL APPLICATIONS

DUAL EtherCAT® INTERFACE buffered data acquisition bus and real time control bus - at the same time REAL TIME CONTROL AND FEEDBACK MONITORING for troubleshooting of real time applications GREAT PRICE/PERFORMANCE RATIO for measurement, test bed and production applications REDUNDANT POWER SUPPLY together with dual interface provides maximum system reliability

#### IOLITEr

supply

#### **IOLITEs**

Sirius style chassis with up to eight slots, dual EtherCAT<sup>®</sup> interface and redundant power supply

19" rack version with up to twelve slots, dual

EtherCAT<sup>®</sup> interface and redundant power

IOLITEI 8xRTD	8 channel-channel isolated PTx temperature, resistance and voltage with Lemo 0B connector.	I
IOLITEI 8xTH	8 channel-channel isolated universal thermocouple input module with mini TC connector. Accepts K, J, T, R, S, N , E, C, B thermocouple types.	I
IOLITE 6xSTG	Universal 6 channel differential voltage, current and Full/Half/ Quarter bridge input with DSUB9 connector. Compatible with DSI adapters for IEPE, CHG, 200V, RTD, TH measurements.	I

	IOLITEi 32xDI	32 channel isolated digital input module with screw terminal connection.
	IOLITEI 32xDO	32 channel digital output module with screw terminal connections and integrated watchdog function.
	IOLITEI 8xLV	8 channel-channel isolated voltage inputs with BNC or screw terminal connectors



# **INSTRUMENTS AND ADAPTERS**



#### **MINITAURs**

Versatile mixed signal data acquisition instrument and multichannel data logger with cutting edge technology at an attractive price.



DEWE-43A Award winning versatile data acquisition device with unmatched price/ performance ratio.



**SIRIUS MINI** 4 channel ACC Sirius module, perfect for mobile DSA/NVH applications.



PCM FS2 Dual frame sync IRIG Class II decommutator with up to 40 MBit data rates.



**CAN INTERFACES** 2, 4 and 8 channel USB CAN interfaces with support for XCP/CCP, OBDII, J1939, DBC and CAN transmit.



Rugged, high resolution LED

display for mobile, in-vehicle

test and measurement

DS-DISP12

applications.



**DS-BP2I, DS-BP4I** Hot swappable Li-ion battery solutions with least weight per power (90 Wh for BP2i and 180 Wh for BP4i).



**DSI ADAPTERS** Will turn your channel in truly universal amplifier for 200V, thermocouple, RTD, IEPE, charge, current or LVDT.



**DS-CAM** A wide choice of GigE video cameras acquires high speed video fully synchronized with other data.



**GPS/IMU DEVICES** High accuracy positioning systems provide time, position and velocity information.

### SENSORS

**ACCELEROMETERS:** Single axis, triaxial accelerometers and impulse hammers for vibration measurement and structural modal analysis.

**CURRENT CLAMPS:** High-accuracy sensors for AC and DC current measurement. From current clamps, Rogowski coils to high-precision zero flux current transducers. **ANGLE SENSORS:** A range of tacho and tape angle sensors can be used in applications like order tracking, rotational and torsional vibrations.

### GROUND TELEMETRY

Chapter 4 PCM, Chapter 10, iNET support, full software decom, fully synchronized with ground measurements

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### **COMPONENT TESTING**

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Data recording, FFT analysis, power analysis, order tracking, balancing, modal testing, fatigue analysis

### SATELLITE TESTING

Modal analysis, sine reduction, fatigue analysis, temperature stress testing

### WIND TUNNEL TESTING

Large channel counts, 24-bit resolution, integration with realtime systems, synchronized video recording

# YOUR SOLUTION FOR COUNTLESS

### **ENGINE TESTING**

Large number of channels >1000, extreme storing speeds, real time data for test bed control systems

### EXPERIMENTAL FLIGHT TESTING

Data recording, multiple vehicle tracking, Arinc 429, MIL-STD 1553, vibration analysis, PCM output

> **INSTRUMENTATIC** Rugged systems for extreme environment, distributed data acquisition, perfect synchronization

# AEROSPACE APPLICATIONS

PCM TELEMETRY FRAME SYNC

The SIRIUS PCM-FS2 instrument is a dual

frame sync IRIG Class II decommutator

with up to 40 MBit/s data rates.

# **TELEMETRY** IRIG CHAPTER 4 PCM

#### DECODE AND VISUALIZE DATA FROM TELEMETRY IRIG CHAPTER 4 PCM COMPLIANT DATA INTERFACES



#### SOFTWARE DECOM

A software decommutator offers full range of decoding for normal commutated, super and sub commutated parameters, embedded frames, fast switching of decommutator.

#### **PCM ENCODER**

Dual PCM output up to 40 MBit/s in real time from Dewesoft analog data, Chapter 10, simulated data and other sources.

#### **INDUSTRY STANDARD**

Dewesoft decom is widely used in most advanced telemetry labs around the world working closely together with major vendors of flight recorders and ground equipment.

YOUR SOLUTION.

## IRIG CHAPTER 10 AND INET TELEMETRY

COMPLETE IRIG-106 CHAPTER 10 ACQUISITION AND ANALYSIS SOLUTION FOR ANY KIND OF DATA SOURCE IN THE MARKET



#### **IRIG-106 CHAPTER 10**

Dewesoft X can fully decode, visualize and analyze Chapter 10 data from PCM, analog, Video, MIL-STD-1553, ARINC-429, serial, Ethernet, CAN and GPS streams inside the CH10.

#### **iNET**

Data decoding from up-to-date telemetry standards.

#### **ONLINE AND OFFLINE MODE**

Dewesoft X can read and process stored CH10 files as well as connect live to Ethernet CH10 stream during the mission.

#### **ONE SYSTEM SOLUTION**

A single system solution with the integrated digital receiver and PCM processing.

#### **RAW DATA**

Raw data are always stored - providing optimal possibilities for offline data processing.

#### SYNCHRONIZED ACQUISITION

All data sources are synchronized down to microsecond accuracy using GPS or IRIG time.

#### YOUR SOLUTION.

# **TELEMETRY** REAL-TIME FLIGHT DISPLAYS

#### REAL TIME DISPLAYS IN DEWESOFT FOR ALL DATA COMING INTO MISSION WORKSTATIONS



#### **NET OPTION INTERFACE**

Client/Server configuration to allow an unlimited number of workstations to connect to one server.

#### **STANDARD VISUAL DISPLAYS**

Real time horizontal and vertical recorders, scopes, FFT, Digital Meter, Analog meter, bar graphs, XY Plots, Overload indicators.

#### **ADVANCED AEROSPACE WIDGETS**

Attitude indicator, Discrete text displays, Discrete and static image displays, 3D model and terrain mapping, video, gps 2D mapping and telemetry video displays.

#### **ONLINE AND OFFLINE MODE**

DEWESoft X allows for same display capabilities in real time and post analysis.

#### **GROUND STATION DISPLAYS**

Single computer can run multiple monitors, multiple view clients can visualise the data.

# **EXPERIMENTAL FLIGHT AND GROUND TESTING**

#### DEWESOFT OFFERS HARDWARE AND SOFTWARE FOR TO TEST ANY VEHICLE



#### **VERSATILE HARDWARE**

Synchronous acquisition of analog voltage, strain, acceleration, temperature, digital, counter, video, 2 cm RTK GPS and IMU sensor, ARINC-429 and MIL-STD-1553, CAN and many others – fully synchronized.

#### **REAL TIME ANALYSIS**

A wide variety of data analysis tools provide real-time and post-mission capabilities. Among other applications, Dewesoft offers human body vibration analysis according to ISO 5349, ISO 8041, ISO 2631-1 and ISO 2631-5.

#### **AVIONICS AND 3D MAP TOOL**

Extremely powerful map and vehicle visualization tool supports mapping with satellite and height maps, vehicle visualization with yaw, pitch and row, different view angles and path tracking.

#### UNIVERSAL

Suitable for ground and experimental air (high G testing, performance testing) applications.

#### POLYGON

Easy definition of test with math analysis polygon with multiple vehicles, track, cones, gates and other static objects for all kinds of handling and flight dynamic testing.

### LAUNCH PAD INSTRUMENTATION REAL-TIME MONITORING & RECORDING

#### DEWESOFT SYSTEM ARE WIDELY USED FOR DATA ACQUISITION FOR LAUNCH PLATFORMS ALL AROUND THE WORLD



#### **UNLIMITED CHANNEL COUNT**

Dewesoft systems can acquire data from thousands of channels from any combination of sensors – even at extremely high sample rates.

#### **RUGGED SYSTEMS**

Dewesoft systems are qualified to be used in most rugged conditions with high temperature, shock and vibration.

#### **REAL TIME VIEW CLIENTS**

Data can be observed in real time by any number of view clients, located anywhere on the network.

### RECORDING

Virtually unlimited number of channels, synchronized to any external time source. Example: install systems with small or large channel counts at different locations (launch gantry, control room, etc.) and stream data in real time to a central client. Data are also stored locally in case of network fault, and can be resynchronized with the central data.

## AIRCRAFT AND ROCKET ENGINE TESTING

DEWESOFT PROVIDES DATA ACQUISITION, CONTROL SYSTEM FRONT-END FOR ROCKET AND AIRCRAFT PROTOTYPE AND PRODUCTION TESTING



#### UNIT UNDER TEST



#### **REAL TIME OUTPUT**

Measured data can be transmitted in real time to test bench control systems (such as the Syclone from Clemessy) with latencies below 1 ms using a second EtherCAT<sup>®</sup> output, fully parallel to data acquisition. This greatly reduces system complexity and costs - and improves results.

#### **COST SAVING**

Conditioned data are sent digitally, reducing complexity and eliminating potential errors compared to the oldfashioned "sensor input > analog output > analog input" method.

#### **FLEXIBLE CONFIGURATION**

More than 1000 simultaneous channels and with extreme storage speeds.

#### **TIME SAVING**

By using one system for data acquisition and control, the time required to setup test bench is reduced typically by 40% compared to traditional methods.

#### **ALL-IN-ONE SYSTEM**

Performance testing, vibration, noise, order tracking, balancing, power analysis, thermal and stress testing – these are just a few Dewesoft application areas.

#### **DATA MONITORING**

Test operators can monitor the tests from a safe distance using Dewesoft NET distributed technology.

#### YOUR SOLUTION.

# HIGH SPEED AND TRANSIENT RECORDING

### DEWESOFT CAN ACQUIRE HIGH SPEED DATA FROM TRANSIENT EVENT INCLUDING LIGHTNING, POWER SUPPLY INTERRUPTION, BLAST AND EXPLOSION TESTING





#### **STREAMING**

When there's no way to predict the trigger event in advance, data can be streamed continuously to disk, at speeds up to and beyond 500 MB/sec! This is also ideal for unrepeatable events like spacecraft launch.

#### ROBUST, ISOLATED CONDITIONING

Dewesoft signal conditioners acquire voltage, IEPE, charge, strain, high voltage or current signals – and all fully isolated from other channels and ground.

### BALLISTICS AND MUNITIONS TESTING

These applications typically require synchronization of a variety of data sources, including pressure sensors, and other sensors distributed at the impact site. Dewesoft can synchronize remote and local measurements, and even integrate high-speed video with the data.

#### **TRANSIENT RECORDING**

Advanced triggering capabilities in every Dewesoft system allow you to capture any event.

#### **VARIOUS SOURCES**

Dewesoft can acquire high speed video and other data sources with perfect synchronization.

# COMPONENT AND WIND TUNNEL TESTING

#### DEWESOFT OFFERS WIDE VARIETY OF SOLUTIONS FOR COMPONENT TESTING.





#### **BUS SYSTEM TESTS**

Analysis of data from vehicle bus systems (ARINC, etc.).

#### ONE SYSTEM FOR FIELD AND LAB TESTING

The same system can be used in your test bench AND for troubleshooting in the field. No one else offers this kind of flexibility in the same instrument.

#### PORTABLE, RACK AND HIGH SHOCK SYSTEMS

Built to last, Dewesoft hardware works where other systems simply don't.

#### MECHANICAL PARAMETERS

Measurements of deformation, fatigue, vibration, torque, RPM, displacement, and much more.

#### ADVANCED PROCESSING

NVH, Sound analysis, Rotating machinery analysis, Structural dynamics, Power analysis and much more.

#### WIND TUNNEL TESTING

large channel count systems perfectly synchronized, applications in subsonic, transonic, supersonic and hypersonic applications

#### **ELECTRICAL PARAMETERS**

Measurement of high voltage, current, resistance, power, energy, efficiency.

#### **TEST BED INTEGRATION**

The EtherCAT<sup>®</sup> slave port can feed the data to any EtherCAT<sup>®</sup> master controller in real-time. Dewesoft offers very easy integration with any control system using a single Ethernet interface.

# FFT / OCTAVE ANALYZER

#### FREQUENCY AND OCTAVE ANALYSIS IS THE BASIS OF ANY NVH TASK. THE FFT AND OCTAVE ANALYZER IN DEWESOFT SOFTWARE IS THE IDEAL TOOL FOR PREDICTIVE MAINTENANCE, STRUCTURAL ANALYSIS, AND SOUND & VIBRATION ANALYSIS



#### **RESOLUTION UP TO 1/24 OCTAVE**

For deep analysis of data, we provide narrow band analysis down to 1/24th octave.

#### FFT WITH ANY LINE RESOLUTION

Selectable line resolution up to 64,000 lines for most demanding tasks.

#### FREQUENCY SOUND WEIGHTING

Standard frequency weighting curves (A, B, C, D and Z) can be applied directly in the frequency domain for sound analysis.

#### **FFT CURSORS AND MARKERS**

Dewesoft FFT display includes maximum marker, free marker, zoom marker, sideband marker, and harmonic marker.

#### **ADVANCED MATH**

Autospectrum, cross spectrum, complex spectrum, waterfall spectrum, cepstrum (for bearing faults, speech processing), two sided full FFT (for rotor whirl analysis), STFT (for non-stationary signals), envelope detection with bearing database (for bearing fault analysis).

#### **FREQUENCY AVERAGING**

Block history with linear, peak, exponential averaging or overall calculation is available.

#### **TRUE OCTAVE ANALYSIS**

True octave filters exactly represents the filter sets defined by the IEC 61260 standards and give the user real time response for vivid live visualization of data, crucial for advanced acoustic analysis.

# SOUND LEVEL METER

#### ACOUSTICS

COMPLIANCE WITH INTERNATIONAL STANDARDS. MAXIMUM ACCURACY AND HIGH DYNAMIC RANGE HAVE BEEN RE-IMAGINED WITH THE DEWESOFT APPROACH. REGARDLESS OF THE ACOUSTICS MEASUREMENT, SLM PLUGIN IS ALWAYS AT THE HEART OF IT.

#### SUPPORTED STANDARD

IEC 61672 Class 1 sound level meter

#### **UNMATCHED FLEXIBILITY**

SLM supports measurements in either air or water and can be combined with all other physical measurement parameters, vehicle bus systems, video, GPS and other math to build a thorough image of your entire measurement.

#### ADVANCED MATHEMATICS -ALL AT THE SAME TIME

Predefined standard frequency weighting A, B, C, D, and Z), time weighting (Fast, Slow or Impulse), sound pressure level, equivalent, peak, minimum & maximum sound pressure levels, sound energy, impulsivity of sound, statistical noise level (LAF1, 5, 10, 50, 90, 95 and 99 % classes of values) are all available at the same time.

#### **RICH VISUALIZATION**

Flexible displays offering digital meters, analog bars, time domain recorders, narrow band FFT and octave analyzers can be freely combined to show your SLM data in real time as well as in post processing.

#### **HIGH DYNAMIC RANGE**

Our top-of-the-class data acquisition hardware with 160 dB dynamic range in the time and frequency domain allows direct input of IEPE compatible microphones. Supported automatic recognition of microphones with TEDS. Dewesoft data acquisition system can be scaled for any number of microphones which can be effortlessly calibrated with a calibrator.





# SOUND INTENSITY

#### ACOUSTICS

NOISE SOURCE DETERMINATION BROUGHT TO AN ENTIRELY NEW LEVEL. SOUND INTENSITY MEASUREMENTS IN A SIMPLE AND INTUITIVE WAY WITH PRECISION AND FLEXIBILITY UNMATCHED IN THE INDUSTRY. FOR EXAMPLE: MEASURING PROCESS PARAMETERS AND RECORDING VIDEO IN PARALLEL.





#### **PHASE CALIBRATION**

Straightforward, automated phase calibration and correction with a single button click.

#### **IEC 61672 CALIBRATED**

Complete measurement chain of sound intensity solution can be calibrated according to **IEC 61672.** 

### QUICK SOUND SOURCE IDENTIFICATION

Effortlessly identify noise sources with an easy-to-use interface.

#### **ADAPTED FOR INDUSTRY**

No need for a special environment perfect for measuring on big chillers, transformers and other large-scale industrial applications.

#### **SUPPORTED STANDARDS**

Complies to Sound Intensity-based Sound Power calculation - **Discrete points method (ISO 9614-1)** and **Scanning method (ISO 9614-2).** 

#### **UNMATCHED FLEXIBILITY**

Measurement of additional process parameters like vibration, video and others, everything perfectly synchronized.

#### **SUPPORTED HARDWARE**

Plug and play support for different intensity probes from all major manufacturers, integrating full remote control functionality.

# SOUND POWER

#### ACOUSTICS

WIDELY ESTABLISHED SOUND POWER MEASUREMENTS WITH FAMILIAR, DISTINCTIVE USER INTERFACE AND INDUSTRY UNMATCHED FLEXIBILITY. RATING AND COMPARISON OF DIFFERENT NOISE SOURCES WITH EASE AND EXACTNESS WHILE SIMULTANEOUSLY MONITORING ANY NUMBER OF ADDITIONAL PROCESS PARAMETERS.





HEAVY MACHINERY

Includes measurement procedures for testing heavy machinery.

#### **SUPPORTED STANDARDS**

Fully compliant with relevant sound power standards ISO 3741,ISO 3743-1, 3743-2, ISO 3744, ISO 3745, ISO 6393, ISO 6394, ISO 6395 and ISO 6396.

#### RAPID REAL-TIME AND OFFLINE CALCULATION

All calculated parameters are available during measurement as well as offline; rapid calculation of correction factors K1 (background noise measurement), K2 (room correction with integrated RT60 module), C1, C2 and C3 (deviations due to meteorological reasons - temperature and barometric pressure); support for raw time domain data storing and offline sound power calculation.

#### **PREDEFINED REPORT**

After testing, present your results using our pre-defined and yet flexible report templates.

#### GUIDED STEP-BY-STEP PROCEDURE

You will be guided step by step through the entire measurement procedure, with our clear and comprehensive user interface.

#### **REVERBERATION TIME RT60**

Expand your measurement with RT60 and perform room ratings yourself, using the same software interface. Template for absorption coefficient included!

\*RT60 plugin sold separately.

**PROXIMITY PROBES** 

# ORDER TRACKING/TORSIONAL VIBRATION

#### ROTATING MACHINERY

**RPM SENSOR** 

ORDER TRACKING IS THE PERFECT TOOL FOR ANALYZING THE CONDITION OF ROTATING MACHINES: RESONANCES, STABLE OPERATION POINTS, DETERMINING CAUSE OF VIBRATIONS – IT DOES IT ALL. YOU CAN COMBINE ORDER TRACKING WITH OUR POWERFUL TORSIONAL VIBRATION MODULE, AS WELL AS OTHER MATH MODULES SUCH AS OUR ENGINE COMBUSTION ANALYZER AND OUR ELECTRICAL POWER ANALYZER

#### TORSIONAL VIBRATION INTEGRATED

Reference angles, individual sensor rotational angles, speeds and acceleration, torsional angle and velocity are readily available for advanced analysis.

### TIME, FREQUENCY AND ORDER DOMAIN - AT ONCE

High sample rates and our advanced alias-free resampling technique ensures that data is available in all three domains (time, frequency and order) – everything at the same time in one screen and data file, perfectly synchronized.

#### ANGLE SENSOR SUPPORT

All angle sensors from tacho, encoder, geartooth, gear tooth with missing or double teeth, tape sensors and others are supported to perfectly determine angle and rotational speed with 10 nsec resolution using Dewesoft's patented SuperCounter® technology.

### ADVANCED ORDER TRACKING MATH

Order and time domain harmonics can be extracted with amplitude and phase, available versus rotational speed or time in run-up or coast-down modes.

#### **RICH VISUALIZATION**

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3D frequency and order plots provide you with the tools to determine the health of the machine under test. Nyquist, Bode and Campbell plots are available for data presentation. Orbit analysis with raw or order view is ideal for turbo-machinery analysis.

# **BALANCING**

ROTATING MACHINERY

BALANCED ROTORS ARE ESSENTIAL FOR THE SMOOTH OPERATION OF ROTATING MACHINERY, IMBALANCE WILL CREATE HIGH VIBRATIONS, REDUCING MACHINE LIFE AND CAUSING MATERIAL DEFECTS. WITH OUR EASY-TO-USE TOOL YOU CAN BALANCE YOUR SYSTEM IN PLACE. **ELIMINATING DOWN-TIME** 



### **PLANE BALANCING ON SITE**

Perform single plane (narrow disc) or dual plane (long shaft) balancing.

#### **RICH VISUALIZATION**

Results from all runs are displayed to support decision for the next steps. Live visualization of unbalance vector for judging the stability of the measurement. RPM display has color indicator to determine in-out range.

#### **SIMPLE STEP-BY-STEP PROCEDURE**

Guidance through the balancing steps for flawless operation including setup of angle sensor with live preview. Multiple modules can be combined for multi axis balancing to save time and improve the guality of balancing.

#### WEIGHT SPLITTING

Adds possibility to split needed balancing weight into equidistantly spaced points, for example holes on the rotor.

#### **STORAGE OF INFLUENCE** VECTOR

Influence vectors can be stored that the test run is not needed for repetitive balancing of the same machine.

# MODAL ANALYSIS/SINE REDUCTION ANALYSIS

#### STRUCTURAL DYNAMICS

MODAL TEST IS AN INDISPENSABLE TOOL TO DETERMINE THE NATURAL FREQUENCIES AND MODE SHAPES OF ANY STRUCTURE - OFFERS EASY TO USE OPERATION WITH FAST SETUP WHILE PROVIDING RICH VISUALIZATION AND ANIMATION OF RESULTS.



#### **IMPACT HAMMER MODE**

Allows grouping, rejecting and repeating measurement points; multiple reference and excitation points are supported. Ability to move excitation and response points ensures full flexibility when performing measurements.

#### **SHAKER MODE**

In combination with built-in function generator module, the system allows any type of excitation; Sine, Noise, Burst and Chirp.

#### **ADVANCED MATH**

Operating deflection shapes (ODS), mode indicator functions (MIF) and COLA analysis are fully implemented while operational modal analysis (OMA) and time domain ODS are available with close integration in connection to external software package.



#### **RICH VISUALIZATION**

Animation of structures in all three axes, and with different projections is available - both in real time and after measurement. This allows real time quality analysis, as well as the repetition of any measurement at any point. The Modal Circle tool determines the exact resonance, and calculates the viscous or structural damping factor.

#### **UNV IMPORT/EXPORT**

Geometry can be created using either the built-in editor, or imported from a UNV file. All data, from raw time domain to auto spectrum and FRFs can be exported using standard UNV file format.

# SINE PROCESSING

#### STRUCTURAL DYNAMICS

STRUCTURAL DYNAMICS CHARACTERIZATION, DURABILITY AND FATIGUE TESTING, DESIGN VALIDATION AND QUALIFICATION.



### Supports

Lifetime fre

Data can be exported in virtually any data format used for NVH analysis.

#### ONLINE AND OFFLINE ANIMATION

**DATA EXPORT** 

Determine the quality of results animation of structure in all three directions with different projections during (and after) measurement.

#### **FUTURE-PROOF APPLICATION**

Lifetime free upgrades and support.

#### **STORE AUTOMATICALLY**

Automatic storing on desired trigger conditions.

#### **TEDS SUPPORT**

Save time by using teds accelerometers which are supported by Dewesoft X3 and on all Dewesoft hardware.

#### UNLIMITED NUMBER OF CHANNELS

Supports real-time calculation on an unlimited number of channels.

#### COMPLETE SINE PROCESSING TESTS

Directly integrates with your existing shaker and controller, needing only the COLA signal to sync perfectly.

#### EASY TO SET UP AND USE

Simply connect the accelerometers and COLA signal, assign the correct channels and start measuring.

Zero crossing and Hilbert transform for detecting the exact frequency of the sweep produced by the shaker controller and driving the shaker through an amplifier.

### UNMATCHED POWER OF CALCULATION

Runs octave and FFTs simultaneously on all channels and all in real-time.

### DEWESOFT QUALITY AND FLEXIBILITY

Simply add additional parameters to the same measurement system and expand your measurement chain in seconds.

# HUMAN BODY VIBRATION

MEASURE THE EFFECT OF VIBRATION ON THE BODY OF A HUMAN BEING. THE EXTRACTED PARAMETERS ALLOW THE JUDGMENT OF RISKS FOR WORKERS EXPOSED TO VIBRATION. WHOLE-BODY AND HAND-ARM MEASUREMENT IS SUPPORTED ACCORDING TO INTERNATIONAL STANDARDS.



SUPPORTED STANDARDS

ISO 5349, ISO 8041, ISO 2631-1 and ISO 2631-5.

#### **ADVANCED MATH**

All data like RMS, Peak, Crest, VDV, MSDV, MTVV, Weighted raw, al (ISO 2631-5), al and D (ISO 2631-5) are available.

#### **DATA ANALYSIS**

Dewesoft X is the basis for R&D work related to reduction of the vibration due to its deep data analysis functionality.

#### **WHOLE BODY VIBRATION**

Applicable to motions transmitted from workplace machines and vehicles to a person's body through a supporting surface.

#### HAND ARM VIBRATION

Sensors are installed on special adapters for fixing on a handle or between fingers.

# SHOCK RESPONSE SPECTRUM (SRS)

#### STRUCTURAL DYNAMICS

MECHANICAL SHOCK PULSES ARE OFTEN ANALYZED IN TERMS OF THE SHOCK RESPONSE SPECTRUM. THE SHOCK RESPONSE SPECTRUM ASSUMES THAT THE SHOCK PULSE IS APPLIED AS A BASE INPUT TO AN ARRAY OF INDEPENDENT SINGLE-DEGREE-OF-FREEDOM SYSTEMS





#### **DAMPING/QUALITY FACTOR**

Selection of damping ratio or quality factor can be easily updated also in offline mode.

**EASY SETUP** The sensors and the system setup is fast and simple.

#### **ADVANCED MATH**

All relevant composite/maximax, primary, residual are calculated; results in frequency domain spectrum can be shown as acceleration, velocity or displacement.

#### SELECTABLE FREQUENCY SPAN

Freely definable calculation range for the frequency spectrum.

#### **DATA EXPORT**

Data can be exported in virtually any data format used for NVH analysis.

#### YOUR SOLUTION.

# **POWER ANALYSIS** SYSTEM TESTING

#### DEWESOFT POWER ANALYZERS ARE USED IN A WIDE RANGE OF APPLICATIONS. ANY KIND OF ELECTRICAL EQUIPMENT CAN BE TESTED



#### **AIRCRAFT SYSTEM ANALYSIS**

Aircraft are usually operated at 400 Hz or 800 Hz and have standard 50 Hz and DC systems. PQ (power quality) Analysis with Harmonic Measurement up to 150 kHz according to ABD or EUROCAE standards, Fault and Transient Recording and Generator testing, are a few of the applications that Dewesoft supports.

#### 0,03 % ACCURACY

Dewesoft makes high accuracy amplifiers and sensors for voltage and current measurement, with accuracy down to 0.03%.

#### **FULLY ISOLATED**

We provide isolation on the sensor side (channel-to-ground), as well as channelto-channel isolation, and even isolated sensor excitation.

#### 1600 V DC /CAT II 1000 V/CAT III 600 V

Direct input and acquisition of high voltage signals is one of our strengths.

#### **CURRENT SENSORS**

We offer high accuracy current sensors such as zero-flux current transducers, AC/ DC current clamps, Rogowsky coils and shunts with the power supply out of the box, are available.

### ELECTRIC/HYBRID ENGINE ANALYSIS POWER ANALYSIS

ADVANCED AND EASY-TO-USE SOLUTIONS FOR COMPLETE ELECTRIC AND HYBRID VEHICLE DEVELOPMENT, VALIDATION AND PRODUCTION - PLUS ELECTRIC MOTOR AND INVERTER TESTING, BATTERY AND BATTERY CHARGE TESTING, COMBUSTION ANALYSIS, HYDROGEN TESTING AND MORE



#### **MOTOR & INVERTER**

Any kind of motor (1 to 12 phase AC) and any kind of inverter (DC-AC, AC-AC, switching frequencies up to some 100 kHz), are measured and analyzed with the power module.

### TOTAL POWERTRAIN TESTING SOLUTION

Vibration analysis, torsional analysis, order tracking, combustion noise and many other modules can be used simultaneously with the combustion and power analyzer.

#### SYNCHRONIZED ACQUISITION OF MULTIPLE SOURCES

Additional synchronized acquisition of other time sources is possible within the same Dewesoft system, including ARINC 429, MIL-STD-1553, CAN, video, inertial systems, and more.

#### **HIGH ISOLATION**

Specially designed Dewesoft signal conditioning amplifiers allow you to measure voltages and temperatures at high potentials up to 1.6kV DC.

#### COMBUSTION AND ELECTRIC POWER IN ONE SINGLE SYSTEM

A single Dewesoft system performs both combustion and electrical power analysis – at the same time, perfectly synchronized.

#### **BATTERY TEST**

As the central element in the electrical powertrain, the battery needs extensive testing. For dynamic tests (misuse tests, overcharge, short-circuit...) our HS series modules with 1 MS/s sampling are the perfect fit. For static tests (voltage, current, temperature, monitoring...) our flexible and scalable IOLITE and Krypton series are ideal.

# OUR COMPANY

# BUILT WITH YOU AND FOR YOU

The best solutions can be made only by a motivated team of people who love their work – those who design and build instruments with a spark in their eyes, and those who light up when they have an idea for improvement. Working with you, we are creating Dewesoft together.

BUILD TO

Dewesoft is built to last, strongly investing in people, our technology and our own sales network. Dewesoft is owned by the employees – selffinanced, and with a AAA credit rating.

# EVERYTHING IN HOUSE

Everything is made in our headquarters in the EU. We own our key technologies, like our software and hardware development labs, chassis manufacturing, pick & place, assembly and testing. It's all done in-house with our own committed employees.

# HIGHEST QUALITY

Quality certificates are only the tip of the iceberg of our commitment to quality in all our processes. We are extremely proud that our work had been recognized for excellence with a variety of international and local awards, including NASA TECH award "PRODUCT OF THE YEAR" and Automotive Testing International magazine "SOFTWARE INNOVATION OF THE YEAR".



TECH BRIEFS

2009 Readers' Choice Product of the Year



















DEWESOFT® WORLDWIDE: SLOVENIA, Austria, Belgium, Brazil, China, Denmark, France, Germany, Hong Kong, India, Italy, Mexico, Russia, Singapore, Sweden, UK, USA and PARTNERS IN MORE THAN 50 COUNTRIES

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