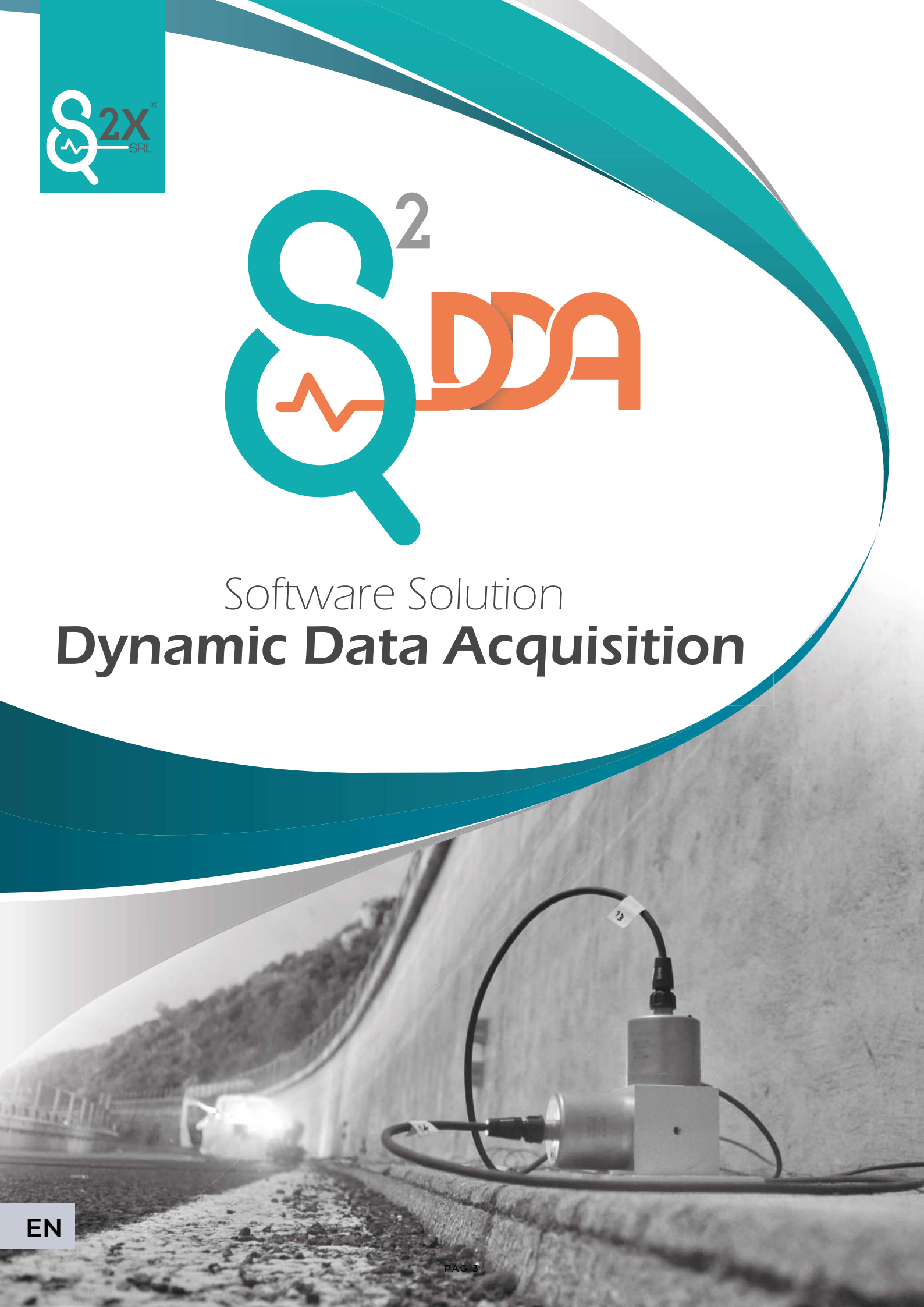
Q2X SRL

Q² DDA

Software Solution

Dynamic Data Acquisition



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S2-DDA

SIMPLIFY THE DATA ACQUISITION

S2-DDA is the software developed to simplify data acquisition for dynamic testing and permanent structural monitoring or seismic monitoring.

The software allows to control data acquisition systems based on programmable hardware to collect data from sensors (accelerometers, thermocouples) usually applied for dynamic testing and monitoring. The software is already compliant with the Italian D.M. 204/2022 issued by the Ministry of Infrastructure and Transport.

A common application requirement involves the installation of numerous sensors over large distances. S2-DDA allows for the management of multiple synchronized acquisition systems, organized in a distributed architecture.

DISTRIBUTED ARCHITECTURE

S2-DDA was designed and developed to be natively interoperable with other S2X software including: S2-SHM for Structural Health Monitoring and S2-OMA for Operational Modal Analysis.

NATIVELY INTEROPERABLE

USER-FRIENDLY INTERFACE

The user-friendly interface makes the data acquisition setup very simple, enabling the quick startup of field measurements and an initial assessment of the quality of the acquired data.

AUTOMATIC MODULE DETECTION

The software automatically detects the types of sensor module and loads the appropriate interface to setup the measurement channels.

CUSTOM SENSOR DATABASE

The software allows the creation of a customized sensor database (including IEPE accelerometers, thermocouples, and an impact hammer for input-output modal tests) and/or user-defined hardware configurations to speed up the tedious initial setup phase.

WATCHDOG

For structural monitoring applications, it is possible to enable the “watchdog” feature to automatically restart data acquisition in the event of an unexpected system shutdown such as a power failure.

OPERATING MODES

The software can operate continuously, at scheduled intervals, or in trigger mode. In trigger mode, acquisition can be activated based on custom threshold settings or by using the STA/LTA algorithm, ensuring precise event detection tailored to your monitoring needs.

REAL-TIME FIELD MEASUREMENT VISUALIZATION

Acquired data is displayed in real time, along with the power spectral density of a selected channel, enabling immediate assessment of measurement quality.

TECHNICAL ASSISTANCE AND UPDATES

Technical assistance is available in Italian and English, via phone, e-mail or video call. Technical assistance and updates for one year are included for all licenses. Video tutorials are also available on the S2X YouTube channel.

(*) Note: To enable the automatic restart of the computer/server in the event of an unexpected shut down, its motherboard must support the WATCHDOG function.

S2-FFT

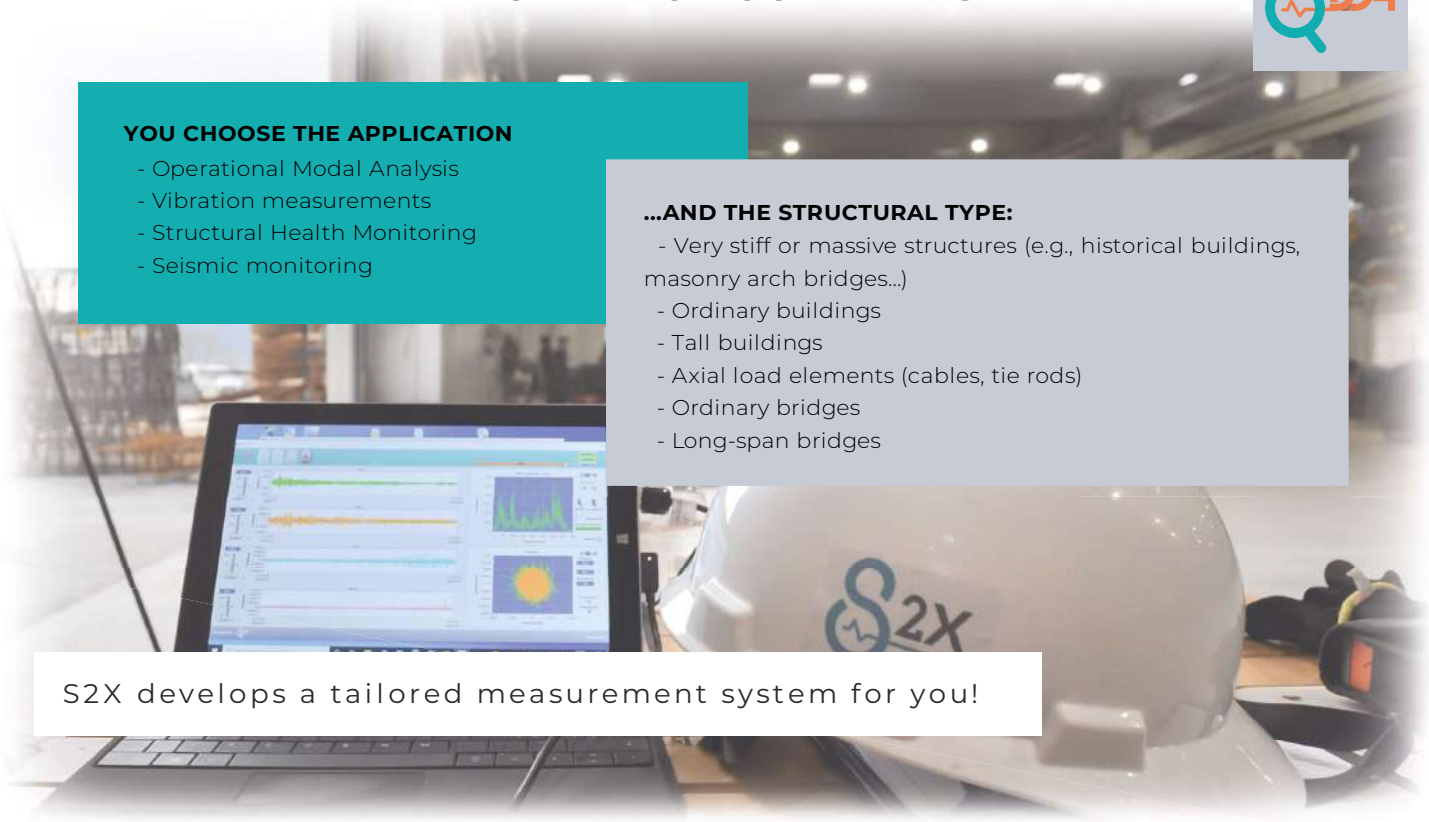
S2-FFT is an add-on for the S2-DDA software (also available as a stand-alone version) for immediate as well as effective analysis and manipulation of recorded signals.

The software allows users to inspect time series, apply windows, compute the Fourier Transform, and represent signals in terms of amplitude and phase in the frequency domain. It identifies dominant frequency components and checks signal stationarity. Therefore, it is a versatile and comprehensive tool for the field evaluation of measurement quality, particularly useful for structural monitoring applications and vibration measurements.

THE PERFECT MEASUREMENT SYSTEM TAILORED TO YOUR NEEDS

YOU CHOOSE THE APPLICATION
- Operational Modal Analysis
- Vibration measurements
- Structural Health Monitoring
- Seismic monitoring

...AND THE STRUCTURAL TYPE:
- Very stiff or massive structures (e.g., historical buildings, masonry arch bridges...)
- Ordinary buildings
- Tall buildings
- Axial load elements (cables, tie rods)
- Ordinary bridges
- Long-span bridges



S2X develops a tailored measurement system for you!

SOME EXAMPLES
All acquisition systems include a user license for the S2-DDA software.

AXIAL LOAD IN CABLES

DATA ACQUISITION SYSTEM

Numbers of channel	4
ADC Resolution	24 bit
Anti-aliasing filter	Integrated
Dynamic Range	120 dB

SENSORS

Tipology	Accelerometer
Sensitivity	1000 mV/g
Full scale range	± 5 g
Weight	7.5 g

OMA OF TYPICAL CIVIL STRUCTURES

DATA ACQUISITION SYSTEM

Numbers of channel	8
ADC Resolution	24 bit
Anti-aliasing filter	Integrated
Dynamic Range	120 dB

SENSORS

Tipology	Accelerometer
Sensitivity	10 V/g
Full scale range	± 0.5 g
Weight	210 g

STRUCTURAL MONITORING OF TYPICAL BUILDINGS

DATA ACQUISITION SYSTEM

Numbers of channel	12
ADC Resolution	24 bit
Anti-aliasing filter	Integrated
Dynamic Range	120 dB

SENSORS

Tipology	Accelerometer
Sensitivity	10 V/g
Full scale range	± 0.5 g
Weight	210 g

SCAN ME

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