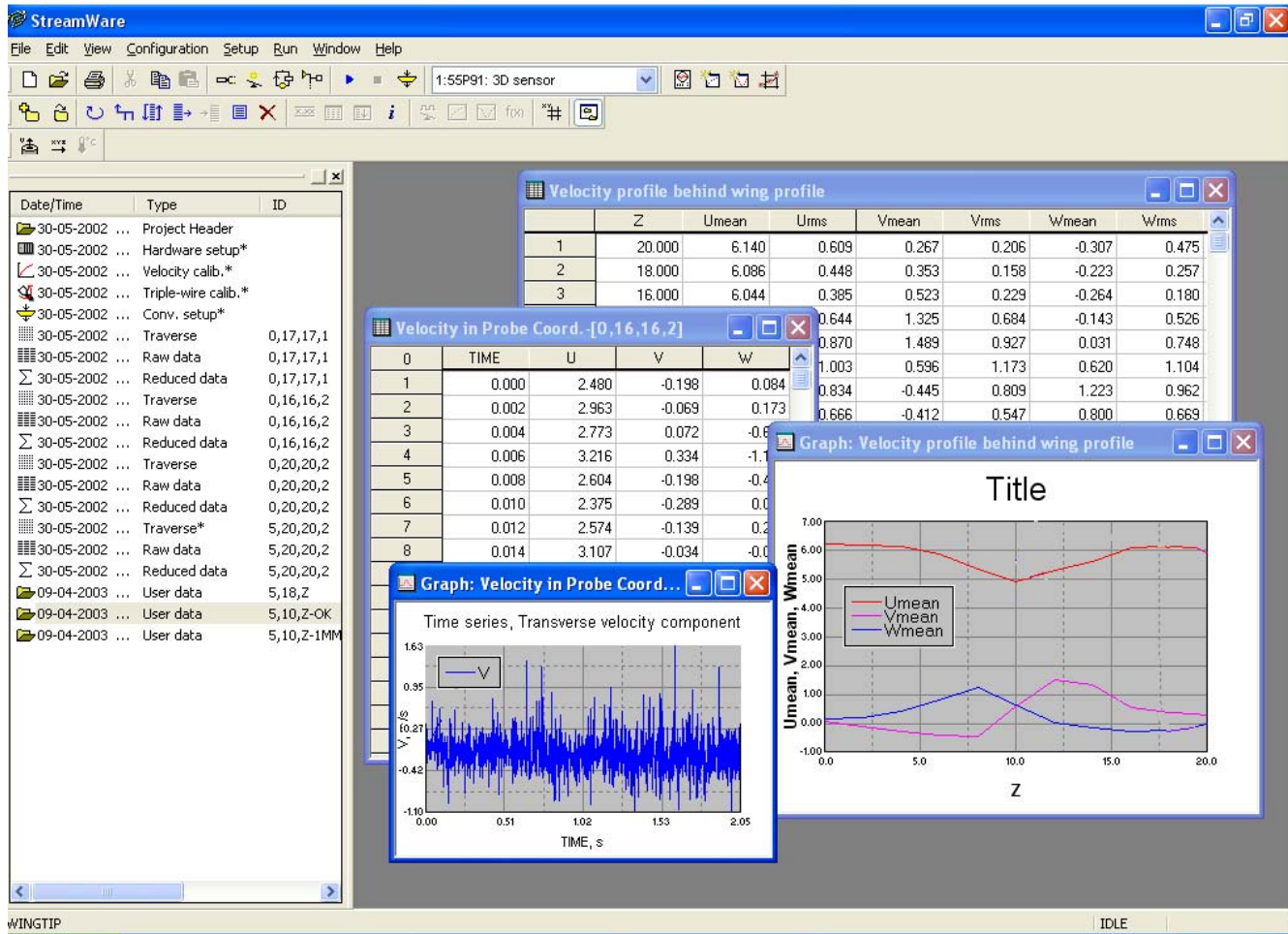


90S10 StreamWare, Version 3.1

An efficient and flexible application software for CTA measurements.



Applications

StreamWare is an application software developed for measurement of velocity and turbulence with the Dantec StreamLine CTA anemometers.

Version 3.1 has by and large same functionality as the earlier StreamWare versions (1.xx, 2.xx, ...) but is modernised to run on a 32 bit platform under Windows NT/2000/XP.

Features

- Automatic setup of StreamLine Anemometer modules.
- Automatic probe calibration.
- Automatic execution of experiments with probe traverse.
- Data conversion and data reduction.
- Spectra and correlations.
- Data export.
- Data management via Project explorer.

User-friendly Windows facilities

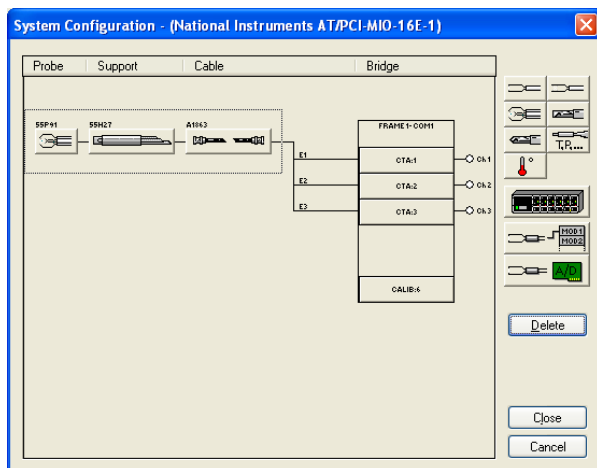
StreamWare fully utilises the facilities available in Windows:

- 32-bit multi-tasking.
- Tabulated dialogs, activity bars, detachable toolbars etc.
- Flexible screen-layout with movable and resizable frames and windows.
- Context menus simplify operations.

Project and data handling with project manager

A main feature in StreamWare is the project manager which keeps track of hardware setup, calibrations, conversion/reduction setup, experiments, and raw and reduced data. Having data placed in a project data base complicated file handling is eliminated.

Visual system configuration and automatic hardware setup

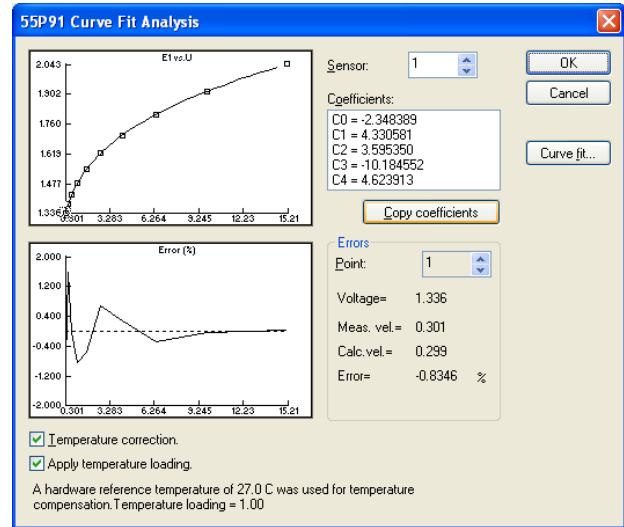


System configuration

The system configuration is defined by linking hardware icons together in a configuration view. The hardware setup is done on basis of a Probe Library containing setup parameters for all Dantec standard CTA probes. Once a probe is selected, the CTA module(s) is adjusted accordingly. The setup includes resistance measurement, setting of overheat ratio, square wave test and signal conditioner setup (filter, gain and offset). Custom probes may be added to the library.

Automatic probe calibration

StreamWare performs automatic probe calibration when combined with the StreamLine Calibrator and provides a transfer function (polynomial or power law) for converting voltages into velocities.

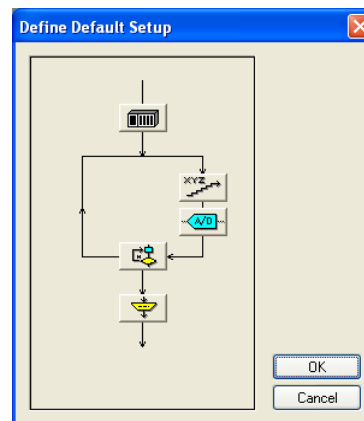


Probe velocity calibration

Yaw and pitch coefficients for X-probes and Tri-axial probes are determined on basis of directional calibrations and used to calculate velocity components in two- and three-dimensional flows.

All calibration coefficients are saved in the project manager.

Defining and running experiments



Default setup

Experiments are defined as a chain of events basically being: Hardware startup, probe traverse and data acquisition. Once defined they can be called and started at any time from the project manager.

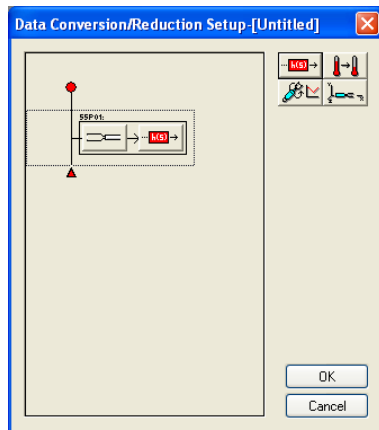
Data acquisition via A/D boards

Probe signals are acquired via A/D boards mounted in the PC and saved in digitized form as raw data. StreamWare support a number of A/D converters from National Instruments® and United Electronics Industries. Communication with these third-party boards is done via translation drivers placed in a Device drivers library included in StreamWare. Dantec aims at keeping the device library updated with drivers for relevant new boards.

Automatic probe traverse

The probe(s) may be moved in a 3-D grid with rotation, if need be, to cover the interrogation space of interest. The grid is defined as a Traverse event and called from the Experiment event. StreamWare has a standard driver for the Dantec Lightweight traverse in its Device drivers library.

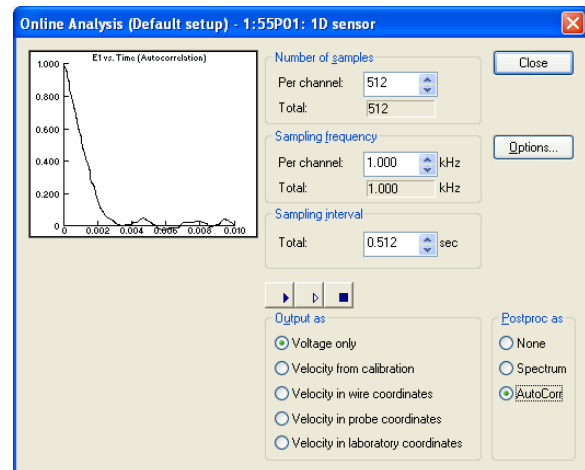
Data conversion and reduction



Acquired raw data are converted into velocity components and reduced in the amplitude and/or time domain (moments, correlations and spectra). If temperature is acquired together with velocity, the probe voltages are corrected for possible changes in ambient temperature prior to linearisation. Conversion/reduction is defined as an event in the Project manager independent of the data acquisition. This allows the same raw data to be reprocessed if need be. Raw and reduced data can be presented in graphs.

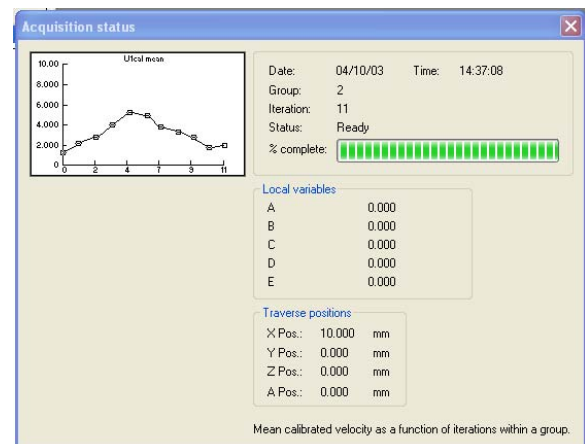
Online analysis and graphics update during experiment

This two new features allow the user to define data acquisition sequences before running an experiment and to follow the results during experiment execution.



Online autocorrelation.

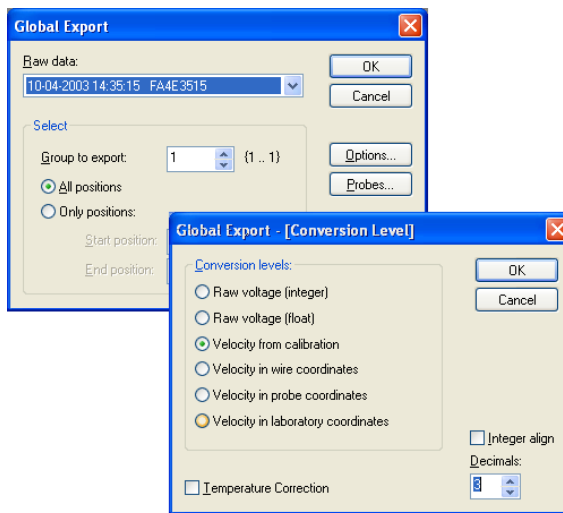
The online analysis displays mean velocity, autocorrelation or power spectrum in a point with update after each sampling sequence.



Status window displaying velocity profile mapped during traverse

When executing an experiment the velocity is plotted in a diagram after each data acquisition, so that the user can follow for example the building of a velocity profile while the probe is traversed.

Fully traceable data export



Raw and reduced data can be exported to other programs (Excel, Matlab, TechPlot etc) for further processing and presentation. They can either be exported point by point in ASII format or globally with headers containing full project information like setup parameters, calibration constants etc., so that data traceability is maintained in the new software environment.

System Requirements

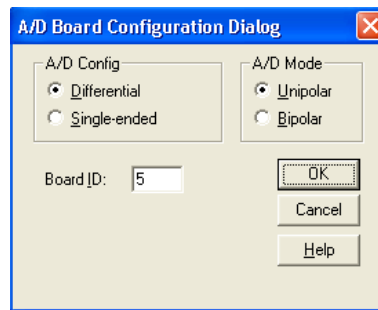
- PC with a Pentium (or similar) 500 MHz processor.
- Microsoft® Windows© NT 4.0 with Service Pack 6 or later operating system -or-
- Microsoft® Windows© 2000 with Service Pack 6 or later operating system -or-
- Microsoft® Windows© XP with latest updates.
- Microsoft® Internet Explorer 5 or later with latest security updates.
- 256 MB of RAM minimum.

- 50 MB of available hard-disk space minimum; 500 MB for running acquisitions.
- CD-ROM drive.
- Super VGA (800x600) or higher-resolution monitor with 65,000 colors or more.
- Mouse or compatible pointing device.

A/D converters supported: Contact Dantec or visit Dantec's website for further information.

Note that Microsoft® Windows© 95, 98, 98SE and Me are not supported

Writing your own device drivers



If you want to use A/D boards or traverse systems not supported by StreamWare, you can write your own translation drivers utilizing the Programmer's Toolkit for StreamWare.

It is a collection of templates where you can enter the commands for your specific device. It should be noted, however, that it requires programming skills and that you will have to compile the code yourself after completion of the template.

The toolkit is not part of StreamWare and must be ordered separately.

Dantec Dynamics undertakes a continuous and intensive product development program to ensure that its instruments perform to the highest technical standards. As a result the specifications in this document are subject to changes without notice.



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Dantec Dynamics A/S, Tonsbakken 16-18, P.O. Box 121 - DK-2740 Skovlunde - Denmark - Phone: +45 44 57 80 00 - Fax: +45 44 57 80 01
UNITED KINGDOM and IRELAND: +44 (0) 1275 375333 - FRANCE: +33 1 64 49 68 30 - GERMANY: +49 9131 777 60 - USA AND CANADA: +1 201 512 00 37

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