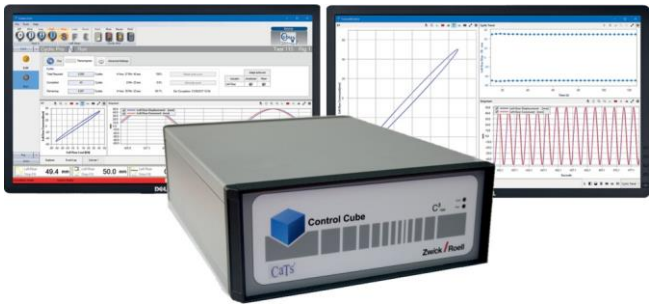
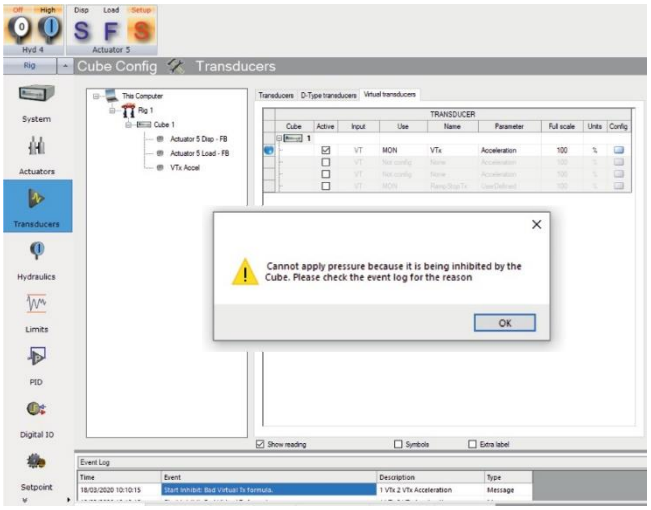
Product information
Cubus Software 2.1 update



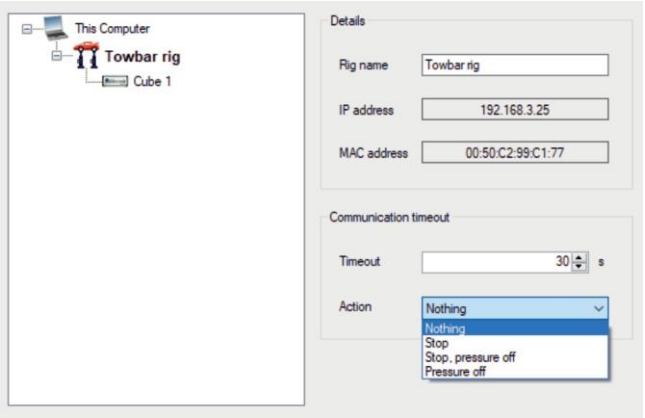
Flexibility and compatibility
We've made Cubus more flexible – Cyclic, Cyclic Pro, Block, Ramp and Dura tests are now compatible with DA drive channels – you can now interface to any test equipment, even electrically driven actuation systems. We have added support for digital transducers with quadrature encoder or SSI interfaces with up to 32-bit resolution.

Improved Performance
For faster processing and improved use of memory we've updated Cubus to a 64-bit application. We have added new network search functionality which allows your search to run on a single dedicated Ethernet adapter only - streamlining speed and reliability of the Ethernet connection. And our new Cubus Explorer is faster and easier to use. We have also increased the maximum number of Sequence Repeats to 1million – effectively removing the limit.

There is now a warning if an incorrect virtual TX formula is detected when trying to apply pressure: an explanation is provided in the event log so that you can adjust your settings.



Safety is our priority
We've made a range of enhancements that improve the safety of your Cube system. If there is a communication error or your PC stops working for some reason, the Cube can execute a user programmable action (e.g. stop the test, remove the pressure, or both). We have added customisable timeout actions that you can define according to your specific requirements.



The Seat Belt Anchorage Test now includes Rig validation – this checks that the limits and PID settings have not changed.

We have also added a notification to warn or prevent any test starting if no limits are enabled.

Exporting data
We have automated the export of data acquired during Cyclic elements in Block Program - making it more efficient and easier to use. In addition, there is automatic text data export in the Complex Cyclic element. These improvements mean that there's no more need to do manual exports – saving you time.

You can now export data into the RPCIII format for importing directly into your analysis software.

We have added a concatenate function for datafiles acquired in the periodic acquisition.

Organising your data
If you would like to organise all acquired files in one folder you now have the option to configure where your acquired data is located – file names are unique based on the names in the test – and we've improved the folder structure for acquisition files.

We've also added acquisition with unique file numbering - this optional feature (license required) allows for unique numbering of acquisition files.

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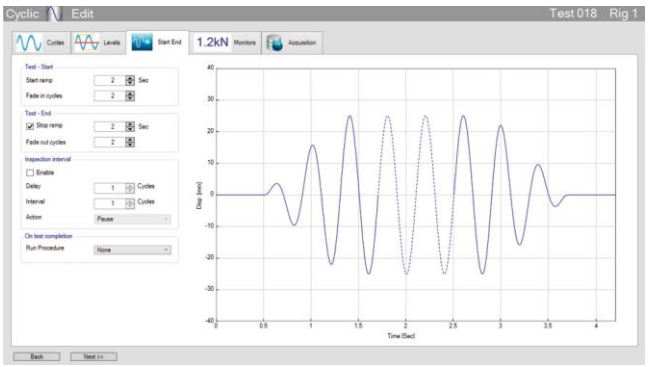
User management
When employing the User Management feature, we have added “Username” to the event log so an administrator can have visibility of which users were runningtests.

Configuring your Cube system
We have improved the configuration process by adding a Configure Stress/Strain procedure – all you need to do is enter the variables. We have added a new Modulus Check Procedure to calculate the Young's modulus of the specimen – thereby verifying proper configuration and operation of the extensometer and the system.

Simple Acquisition allows you to measure/log what is happening when you are tuning / configuring the system. This is an Optional extra – licence required.

For Signal Cube configuration, we have added monitor transducer zeroing to the simple acquisition plug-in.

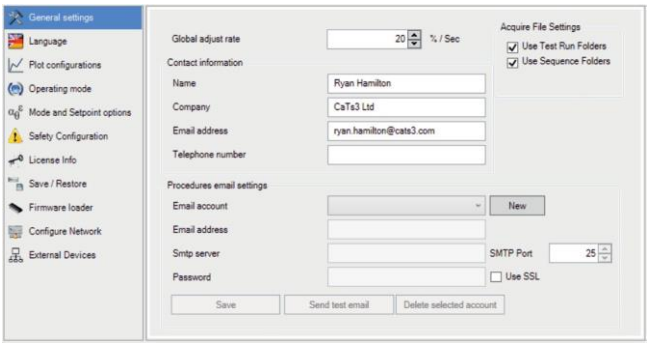
Usability improvements
Cyclic Test now shares the same user interface as Cyclic Pro and we have updated the preferences window interface with an improved layout.



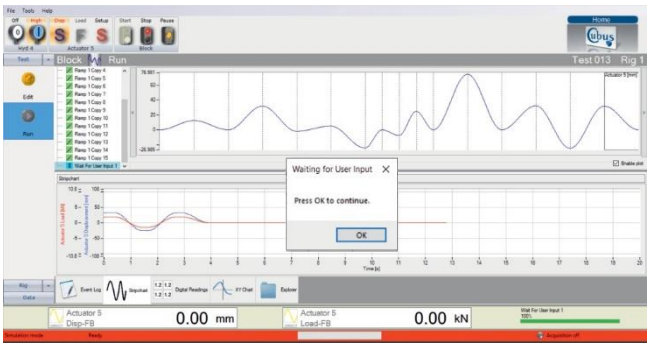
Turning Point data reduction can skip "N" turning points when exporting, improving flexibility in defining export data.

Traceability
You can now invert the Y Axis in the live XY-chart and in TX Linearisation we have added the ability to sort the table by Ascending/Descending values, providing more flexibility.

There are now keyboard shortcuts for element insertion in Block, Ramp and Dura – helping to improve efficiency and speed.

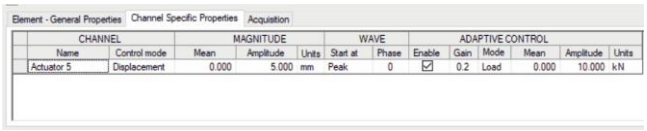


Do you need to suspend a test? The new *Wait-For-User-Input* Element in Block, Ramp and Dura allows the test to be suspended, for example if the operator has to take some action such as inspecting thespecimen.



Cyclic Pro has a similar *Inspection Interval feature* where a test can be paused at specified intervals for specimen inspection.

Cross control mode in the Block program cyclic element – you can now have multiple mode adaptation e.g. displacement control achieving load peaks.



When you make changes to limits this is now added to the event log notifications. Failed execution of procedures and successful procedure calls have also been added to the event log. We've added live trend turning point files to data export providing improve quality of data and traceability.

Cube Rig Auto-Backup - when you change configuration settings the system automatically saves a copy of the configuration – so you have a history of changes.

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Cubus Base Software

We have combined all previously optional Add-ins into our ***Cubus Base Software*** giving you a range of useful and powerful features. This V2.1 Update now includes all of these features.

Already included - Cubus Cyclic for conducting simple cyclic tests. Data Acquisition (continuous, periodic, turning points capture), Data Export and Data Plot plus Integrated PID Tuning facility with Auto Tuning.

What's also included?

Procedures and Event Action – this powerful functionality allows you to create customised scripts to control a wide range of procedures, actions and events – saving time and adding flexibility. Easily write procedures by dragging and dropping to create a sequence of steps. Execute procedures on the user defined toolbar button click or on system events. Procedure elements include:

- Request failure
- Digital input
- Digital output
- Send email
- Strip chart control
- Transducer zero
- Stop acquisition
- Hydraulic control
- Control mode
- Delay
- Event log entry
- Message dialogue
- Setpoint control
- Test control
- Conditional dialogue
- Modulus check

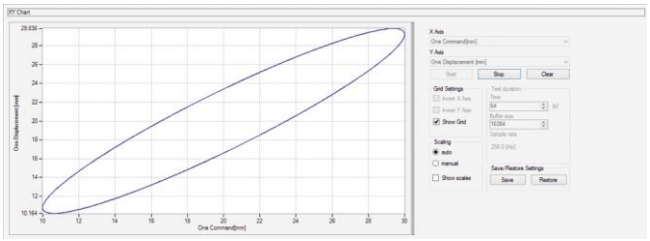
The Event / Action matrix triggers the procedure execution for various events including items such as user-defined button click, changed hydraulic pressure, limit trips, test control events and hand controller events.

Complex Cyclic element – allows custom cyclic waveshapes to be defined in the Block program. Also supports adaptive control.

Transducer linearisation - 256 point transducer linearisation facility is available on all signals including virtual transducers.

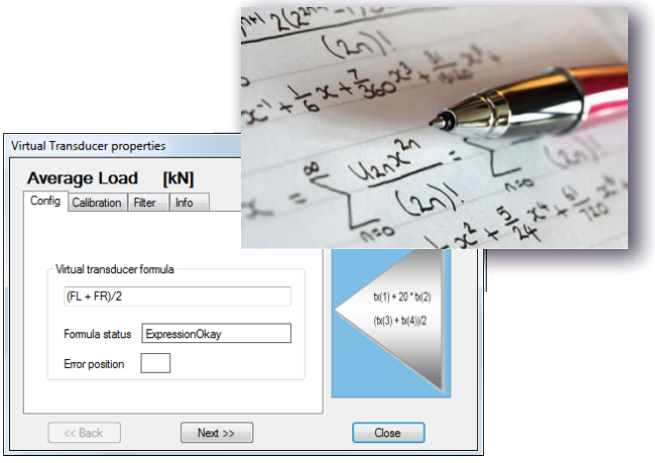
Configuration Save/Restore - save or restore all Cube settings to a disc file.

Real-time graphics - Live XY-Chart with a real-time display of two parameters, e.g. Load vs. Displacement, manual or auto scaling – simply drag to resize. Also includes stripchart / oscilloscope.



Digital Displays with Direct, Mean, Amp, Max, Min, Range, Peak, Trough, Cycle count - allows you to configure up to 6 panels to accommodate a high number of digital displays, with signal selection and number of decimal places etc.

Virtual Transducers - allows you to enter a mathematical equation for computed (virtual) channels, which may be applied as monitor or control loop feedbacks. Features such as digital display, strip chart, acquisition, limits etc. are also supported with virtual channels. Runs at full 4096 Hz system rate.



Upgrade now to benefit from all these new features.
Contact sales@zwickroell.co.uk

Feature	Version	Released	WIN7	WIN10
The set point will now freeze when the value exceeds a threshold limit. Freeze can be programmed to be directional, to allow the set point to be moved away from the limit.	2.1.06	31/03/2016	✓	✗
New ***Wait-For-User-Input*** Element in Block, Ramp and Dura allows the test to be suspended, for example if the operator has to take some action such as inspecting the specimen. Cyclic Pro has a similar ***Inspection Interval feature*** where a test can be paused at specified intervals for specimen inspection.	2.1.06	31/03/2016	✓	✗
Cube Rig Auto-Backup - when changing configuration settings, the system automatically saves a copy of the configuration.	2.1.06	31/03/2016	✓	✗
New keyboard shortcuts for element insertion in Block, Ramp and Dura.	2.1.07	19/04/2016	✓	✗
Cross control mode in Block program cyclic element – ability to have multiple mode adaptation e.g. displacement control achieving load peaks	2.1.07	19/04/2016	✓	✗
Improved the folder structure for acquisition files.	2.1.08	23/05/2016	✓	✗
Enhanced External Test functionality. No longer need to adjust the command source - this is now automatic. A new check box automatically sets the test mode to the current control mode - choose whether to use the test bias or ignore it and work around the set point. Added new button to set the bias to the start position and ability to change the decimal places for values in the grids.	2.1.14	11/07/2016	✓	✗
Added support for digital transducers with quadrature encoder or SSI interfaces with up to 32-bit resolution.	2.1.18	15/11/2016	✓	✗
Cyclic Test now shares the same user interface as Cyclic Pro. Updated preferences window interface with an improved layout.	2.1.20	27/04/2017	✓	✗
Added ability to invert the Y Axis in the live XY-chart.	2.1.20	27/04/2017	✓	✗
In TX Linearisation added the ability to sort the table by Ascending / Descending values.	2.1.20	27/04/2017	✓	✗
Failed execution of procedures and successful procedure calls added to the event log.	2.1.20	27/04/2017	✓	✗
Added a new Modulus Check Procedure to calculate the Young's modulus of the specimen **–** thereby verifying proper configuration and operation of the extensometer and the system**.**	2.1.22	09/05/2017	✓	✗
Ability to export data into the RPCIII format for importing directly into analysis software.	2.1.25	26/09/2017	✓	✗

Feature	Version	Released	WIN7	WIN10
Improved the configuration process by adding a Configure Stress/Strain procedure by entering the variables.	2.1.25	26/09/2017	✓	✗
Added live trend turning point files to data export improving quality of data and traceability.	2.1.35	16/01/2018	✓	✗
Added automatic text data export in the Complex Cyclic element.	2.1.39	16/03/2018	✓	✗
Option to configure where acquired data is saved – file names are unique based on the names in the test.	2.1.45	07/08/2018	✓	✗
For Signal Cube configuration, added monitor transducer zeroing to the simple acquisition plug-in.	2.1.48	25/09/2018	✓	✓
Support for the number of ramps in script sequence has been increased tenfold typically from 50 to 500 ramps on a two- channel test.	2.1.49	18/12/2018	✓	✓
Simple Acquisition to measure/log what is happening when tuning / configuring the system. This is an Optional extra – licence required.	2.1.55	23/04/2019	✓	✓
Updated Cubus to a 64-bit application.	2.1.56	07/06/2019	✓	✓
Added a notification to prevent any test starting if no limits are enabled.	2.1.56	07/06/2019	✓	✓
Changes to limits are now added to the event log notifications.	2.1.56	07/06/2019	✓	✓
Improved performance of Cubus Explorer: faster and easier to use.	2.1.60	31/07/2019	✓	✓
Increased the maximum number of Sequence Repeats to 1million – effectively removing the limit.	2.1.60	31/07/2019	✓	✓
Cube can stop the test and remove the pressure if a communication error is detected or the system stops working. Added customisable timeout actions defined according to requirements.	2.1.60	31/07/2019	✓	✓
Added a warning if an incorrect virtual TX formula is detected when trying to apply pressure: an explanation is provided in the event log.	2.1.60	31/07/2019	✓	✓
In the User Management feature, added “Username” to events so an administrator can have visibility of which users were running tests.	2.1.60	31/07/2019	✓	✓
Turning Point data reduction can skip "N" turning points when exporting, improving flexibility in defining export data.	2.1.60	31/07/2019	✓	✓

Feature	Version	Released	WIN7	WIN10
Added acquisition with unique file numbering - this optional feature (license required) allows for unique numbering of acquisition files.	2.1.61	08/08/2019	✓	✓
Automated the export of data acquired during Cyclic elements in Block Program.	2.1.62	28/10/2019	✗	✓
Cyclic, Cyclic Pro, Block, Ramp and Dura tests are now compatible with DA drive channels – can interface to any test equipment, even electrically driven actuation systems.	2.1.65	17/01/2020	✗	✓
The Seat Belt Anchorage Test now includes Rig validation – this checks that the limits and PID settings have not changed.	2.1.65	17/01/2020	✗	✓
The test speed during tensile test execution can now be logged by acquiring the strain rate as part of the test results. This can be used to prove that the test was executed within the required tolerance	2.1.67	10/03/2020	✗	✓
When selecting *Motor-off* on pump systems, the new *Soft-Stop* feature now dampens the sudden pressure change through a change in the hydraulic sequence.	2.1.68	30/06/2020	✗	✓
Seat Belt Anchorage now performs calculations and analysis of seat anchorage point X and Z displacement for up to 3 seats.	2.1.68	30/06/2020	✗	✓