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CrashDesigner

Type KKT-CDE...

Crash test control software

CrashDesigner is an easy software application for data acquisition purposes of crash tests. The CrashDesigner client software is separated into two parts. The first part covers the following functions:

- Master data administration
- Sensor management
- Measurement device and measurement channel administration
- Measurement location database
- Test template administration
- Crash test administration
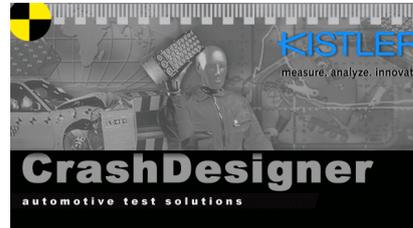- Test setup export (XML and other formats)

The second part of the CrashDesigner client software is called CrashDesigner Lite. This part is a separate module in CrashDesigner that allows the execution of tests. It can also be used as a standalone application using XML files generated by CrashDesigner containing the definition of the complete test.

Test preparation
CrashDesigner is designed to work in a network environment or on a single computer. For larger organisations the client/server concept allows users to work on the preparation of tests in parallel on several client computers. All clients store and receive their information on a central database server. Due to the unique concept CrashDesigner works with any existing SQL compliant data base (e.g. Oracle, MySQL). This means, CrashDesigner can be easily integrated into existing sensor and test database environments.

CrashDesigner is truly platform independent since it is completely written in Java. It will run on any operating system that is supported by the Java runtime environment (Linux, Unix, Windows, etc.). Network administrators will be happy to hear that there are basically zero administration needs for client installation since CrashDesigner is based on Java's WebStart technology. Due to its modular framework design CrashDesigner can be tailored to fulfill specific customer requirements.
The intuitive state-of-the-art graphical user interface of CrashDesigner makes crash test preparation extremely easy. For example, sensors from the sensor database can be added to the measurement location list by using drag and drop. The sensor database supports the handling of individual sensors, sensor groups (such as dummies), and sensor sub-groups (dummy legs, arms, heads).

CrashDesigner
automotive test solutions

Technical data

Requirements client	
Hardware	pentium computer 1 GHz, memory 1 GB, TCP/IP, HDD 40 GB or more
Software	Java Virtual Machine 1.8; the setup of CrashDesigner 2.9.2 contains Java JRE 1.8.0_152 (only 32-bit versions of Java are supported). OS: Windows® 7/Windows® 10[1]
Requirements server	depends on number of simultaneous users Windows®/Linux
Supported database	Oracle, MySQL, SQL Server, Hypersonic, PostgreSQL...
Supported hardware	• nxt32 in-dummy DAS systems • KiDAU Basic, Classic and Advanced and KiTimer systems • DTI in-dummy DAS systems (recorders Types DTI304, DTI327, DTI375 and 20 kHz DiMods Type DTI307; DTI Boardinterface Type DTI335.30; DTI Airbagtimer Type DTI328.16; DTI Free Motion Heads Type DTI323), DTI smart barrier charge amplifier DiMods Type KLVAMP20 • Minidau® Classic and Minidau® Advanced (mobile and stationary versions, Dig48) with 8 ... 96 channel systems • Type K3789 / K3789R Airbag timer 8 or 12 chan. (with and without recorder module) • TNA3889 stationary airbag timer 4 channels with recorder module • Microdau® based nxt in-dummy DAS systems • Kistler smart barriers • K3981B Trigger Star Points • Boxboro RibEye (licensed via selected option): 50th Male Hybrid III, 5th Female Hybrid III, WorldSID 50th Male, WorldSID 5th Female
Licensing	via USB hardlock key or license file

[1] Tested with Windows10 Version 1607, Build 14393.1198

Test preparation (continuation)

Within the sensor database the customer can assign all sensor or sensor group specific parameters including calibration information. Test can be created from scratch or by using test templates or older tests that can be easily modified.
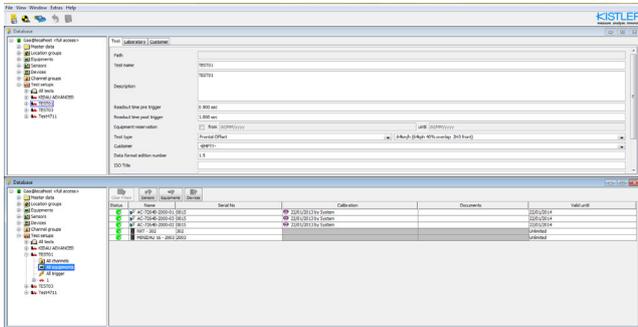

Fig. 1:   Test preparation main window

CrashDesigner handles measurement locations with company specific and ISO codes. Once all the measurement locations for a specific test are defined the data acquisition systems can be assigned. After the complete test is ready for execution CrashDesigner can export the test setup to different file formats. If the customer uses CrashDesigner Lite the test execution is handled from within the same environment. In this case all the setup information is written to an XML file.

The Database option gives the opportunity to enlarge capabilities from the actual management of all measuring devices to a comprehensive and more detailed hardware handling because all the sensors, dummies, instrumentations, and devices are included into a unique database. That also includes the calibration data and the complete calibration histories of equipment (due date, validation, etc.). Moreover new reports are provided, with information about the use of the items. A new feature of the option gives the opportunity to reserve sensors for the test, so other users will get warned if the same sensors are to be used for the same time. In this way it is possible to avoid any kind of double booking. Moreover the users are also able to plan the use of the sensor according to their recalibration due date.

Test execution

The test execution part of CrashDesigner Lite reads the XML file that was generated by the test preparation and displays a detailed channel list.

All crash test related functions such as programming of the data acquisition units, offset adjustment, sensor identification, shunt test, arming of the systems, triggering, and data readout are handled either in a step-by-step mode or an automatic mode where a single button can start a complete test. CrashDesigner Lite has a built in script language. This makes

the creation of customer specific test execution sequences very easy. During the test execution CrashDesigner Lite adds important information to the XML configuration file such as measured offset values and shunt values, remaining offsets, or gain settings. At the end of each test the data can be stored
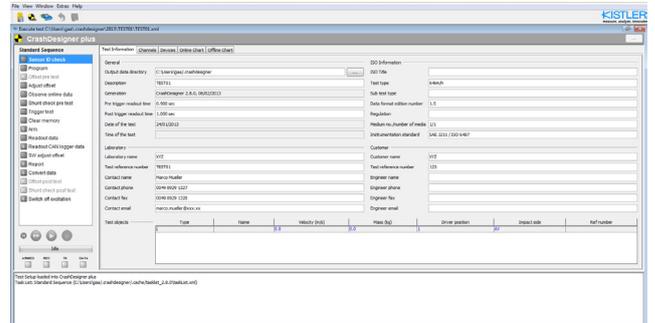

Fig. 2:   Test execution main window

in either DIAdem®, ISO or ISO MME format. The XML file contains all test related information and can be easily viewed with any browser.

Options

The package software can be provided with different options, according to customer specific needs. All these options are set into the dongle provided together with the CrashDesigner license. And these options can be confirmed in the pop-up menu that you can find in Help->About:
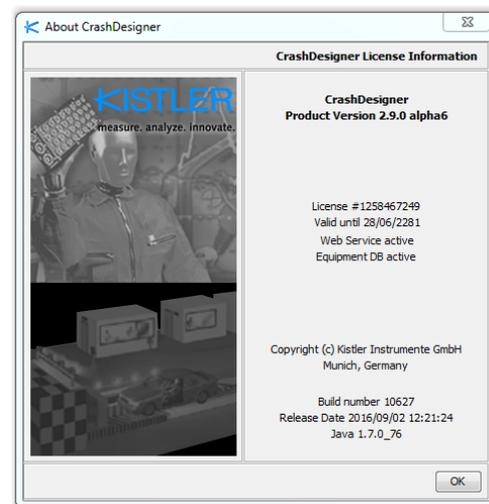

Fig. 3:   About CrashDesigner window

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Web service

One of the main benefits of this feature is the possibility to share and edit data on the web, allowing third party calibration programs to update the CrashDesigner database directly on this way. The partners company can automatically edit and update the information into the database. In this way the amount of jobs for the user is reduced, providing to him the two following advantages: saving time and reducing the risk of mistakes.

Equipment database

This feature allows to relate to each test not only all the instrumentation installed during the crash, but also all the equipment used to prepare it, such as sensors for temperature and humidity, mounting tools, etc. All those devices will be selected, reserved and visible on the final report of the crash test. As all the instrumentation mounted and used on the vehicles under test. This paves the way for a full control and coordination of the crash tests. All the equipment involved in preparation, set-up, arrangement and accomplishment of the test are controlled, checked, prepared. And so all the data are saved and printed into the final report of the test.

Moreover, it is possible to set groups of users that are automatically notified by email about calibration date. Widely extending the information provided by CrashDesigner standard database.

RibEye

This option allows to add RibEye devices from Boxboro to a test setup and allows test execution together with other device types in the same test setup, including programming, offset measurement, numerical and graphical online data access, arming, status observation, data readout and conversions. Supported are 50th Male Hybrid III, 5th Female Hybrid III, WorldSID 50th Male and WorldSID 5th Female systems with serial number > 100.

Ordering key

Type KKT-CDE ☐

License number

First license	C1
Second license	C2
Third license	C3
Fourth license	C4
Fifth license (company-site license)	C5

License updates number

First license update	U1
Second license update	U2
Third license update	U3
Fourth license update	U4
Fifth license (company-site license) update	U5

Options

Type KKT-CDOP ☐

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