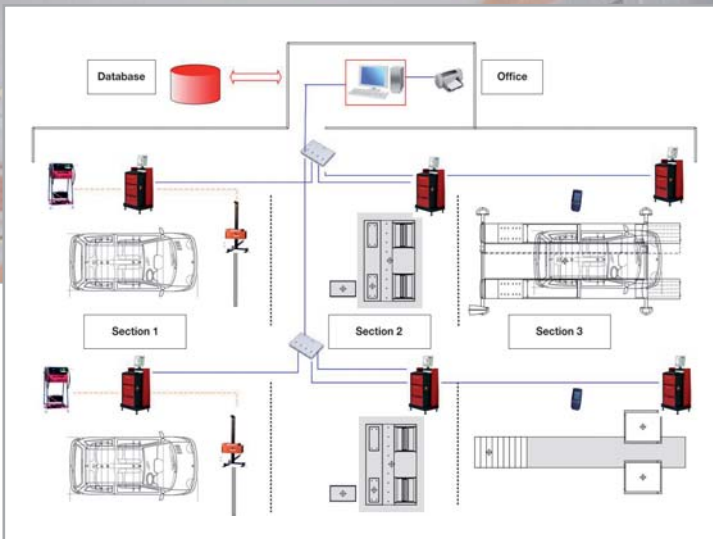




## Network for Testing Equipment



- PC-controlled network
- Automatic test sequences
- Tamper-proof
- Integrated check-in



LAN-based networking concept



***The intelligent networking concept***

### ■ Carl-@, the new networking concept for testing equipment

The LAN-based networking concept is open to accept an arbitrary number of PC-controlled testing equipment in an arbitrary number of test lines.

The test lines are subdivided into sections, with one PC assigned to each section. Depending on requirements at site a section comprises for example the PC-controlled test lane with side-slip meter, suspension tester and brake tester. A second section might comprise, for instance, headlight adjusting equipment, noise level testers, or other testing equipment.

The flexible structures of Carl-@ allow to add, or to remove, testing equipment to/from the LAN at any time as need arises. There is no problem either to connect additional office PCs for check-in or data handling.

The PC with the station manager software forms the core of Carl-@. Here all installations are made so that there is no need to make any installation on any of the other PCs. In addition every section has a PC with the section manager software where an order is chosen and executed. Of course, tests can also be carried out fully automatically.

Carl-@ is available in single-user, 5-user, or 10-user licenses and protected via dongle. It is also possible to obtain several licenses depending on requirements. Every PC (check-in or equipment PC) requires a separate license.

### ■ Tamper-proof

In every section only the test linked to this section can be chosen, which makes the system tamper-proof. This test order will then be blocked for all other sections.

The test results are encrypted and saved and cannot be modified afterwards. Furthermore data transmission to the station manager and to the back-up archive is cryptographically secured.



Main screen and database



*The intelligent networking concept*

## ■ Main screen and database

All necessary customer and vehicle data are entered into the main screen on the check-in PC. If a vehicle had been registered before, data simply need to be retrieved. If verification of a test is necessary, it is also possible to read out the results of the preceding tests.

Any of the PCs in the local area network can be configured to serve as check-in PC. The database integrated in the Carl-@ network has a dynamic structure which means new types of data can always be added to the existing data and modifications required in line with legal standards are easily integrated. Owing to the open gateway software module it is possible to have read and write access to the data in the database from an external database system.

## ■ Input of tests to be conducted

The following tests are standard:






- side-slip test
- suspension test
- brake test
- exhaust emission analysis
- visual inspection
- headlight inspection (manual, or fully automatic)
- noise level test
- velocity test

When checking in the customer will say which tests he wants to be accomplished, possibly in addition to tests which are mandatory in line with national/local standards.

Tests enabled are read out in the main screen, assigned to the relative test order.

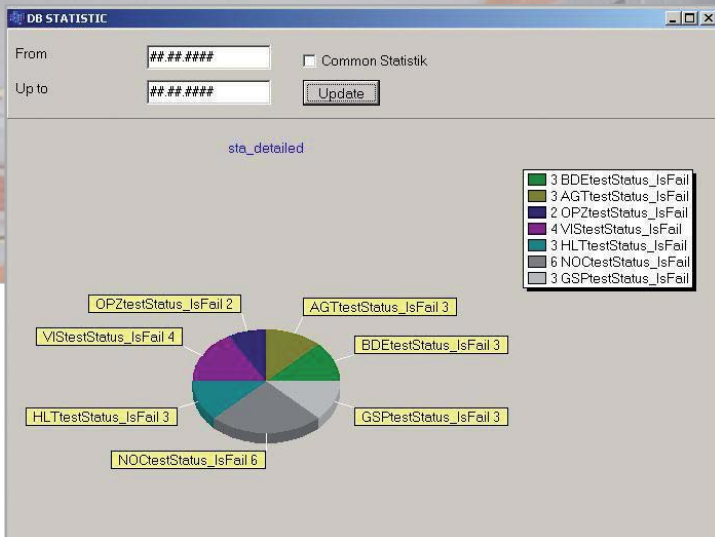
In case there are special national test requirements, they can be added and a relative symbol will come up.

## ■ Status display of test procedure

-  test to be conducted
-  order enabled
-  order enabled – testing equipment turned off
-  test completed and successfully passed
-  test completed and failed

## Output of test report

The results of the individual tests are transmitted to the station manager and printed out in a test report once all tests have been completed. The test results are saved in the database.



*The intelligent networking concept*

### Administration module

This module is used for searching, filtering or sorting of data.

## ■ Additional functions of the database

### Statistics module

For evaluations over a given period of time, or allocated to certain causes for defects/failures, operators, test lines.

## ■ Installation and maintenance

- The station manager software for the master PC and the section manager software for the testing equipment PCs as well as all test applications are installed on the master PC only.
- Configuration of the test sections and test applications is made on the master PC as well.
- The testing equipment PCs are linked via the network directory.
- The system can be set into operation by a trained technician.

## ■ PC requirements

- Standard PC with operating system Windows XP® or Vista®
- Ethernet card
- (W)LAN card
- USB ports, or RS-232

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Part of the machines is illustrated with optional extras available at extra cost.  
Technical modifications reserved.

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