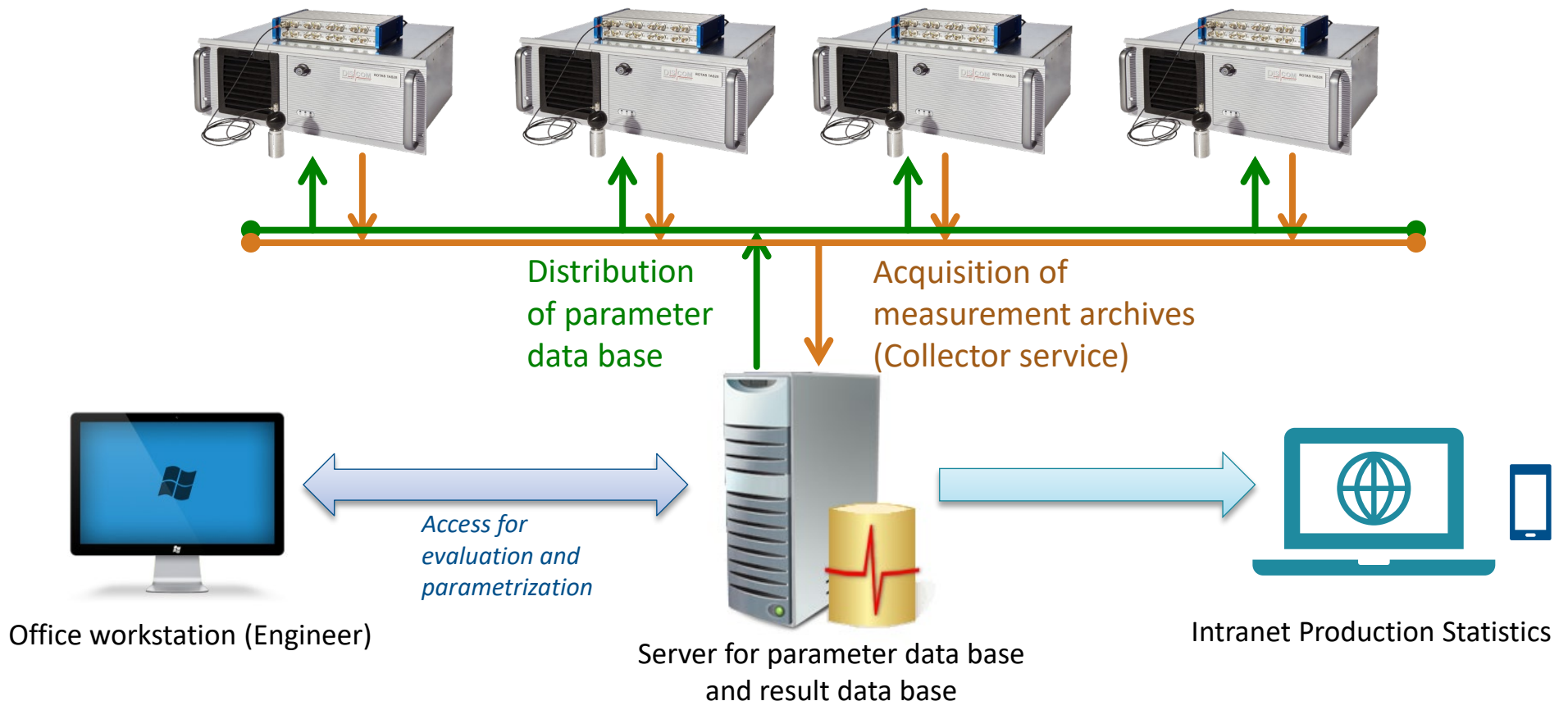# Discom Server Software

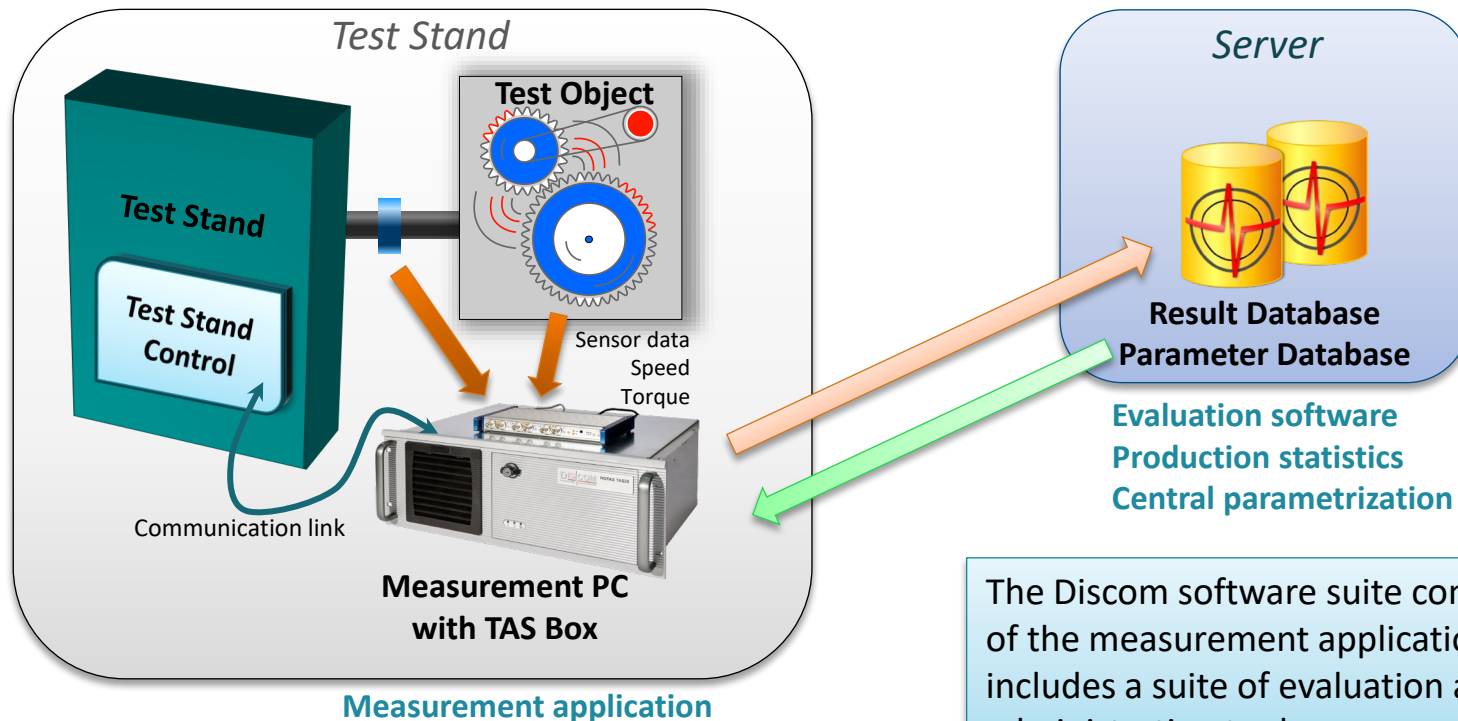Information for Administrators

General Concept

The Discom system is designed to be working on multiple test stands in parallel.

All test stands use the same parameter and result data base and are managed from the central server. Parameter setting and result evaluation is done remotely from the user's desktop. Network file exchange is used for data transfer.

Distribution of parameter data base

Acquisition of measurement archives (Collector service)

Access for evaluation and parametrization

Office workstation (Engineer)

Server for parameter data base and result data base

Intranet Production Statistics

Test Stand Environment

The measurement PC in the test stand processes the sensor data and communicates with test stand control.
All results are transferred into the central result database.
The Discom evaluation software tools can be used in any place.

Test Stand

Test Object

Test Stand

Test Stand Control

Sensor data
Speed
Torque

Communication link

**Measurement PC
with TAS Box**

Measurement application

Server

**Result Database
Parameter Database**

**Evaluation software
Production statistics
Central parametrization**

The Discom software suite consists not only of the measurement application, but also includes a suite of evaluation and administration tools.

# Result Database and Production Analysis

The **result database** holds measured values (including curves), limits, defect messages and evaluation results for every test run from every test stand in the line. It can be accessed with the 'Presentation' evaluation software or the WebPalViewer application.

WebPal is a server-based service. Using the **WebPalViewer** app, you can check production statistics, NOK rates, top N defect reasons, value statistics, trend analysis and more.

The WebPal back end runs on a server computer, which is in many cases identical to the result database server.

The starting point for different ways of analysis is the production statistics, which displays for all test stands and types the production numbers and fault rates. From there, you can proceed to top N defect statistics, time series and other types of analysis.
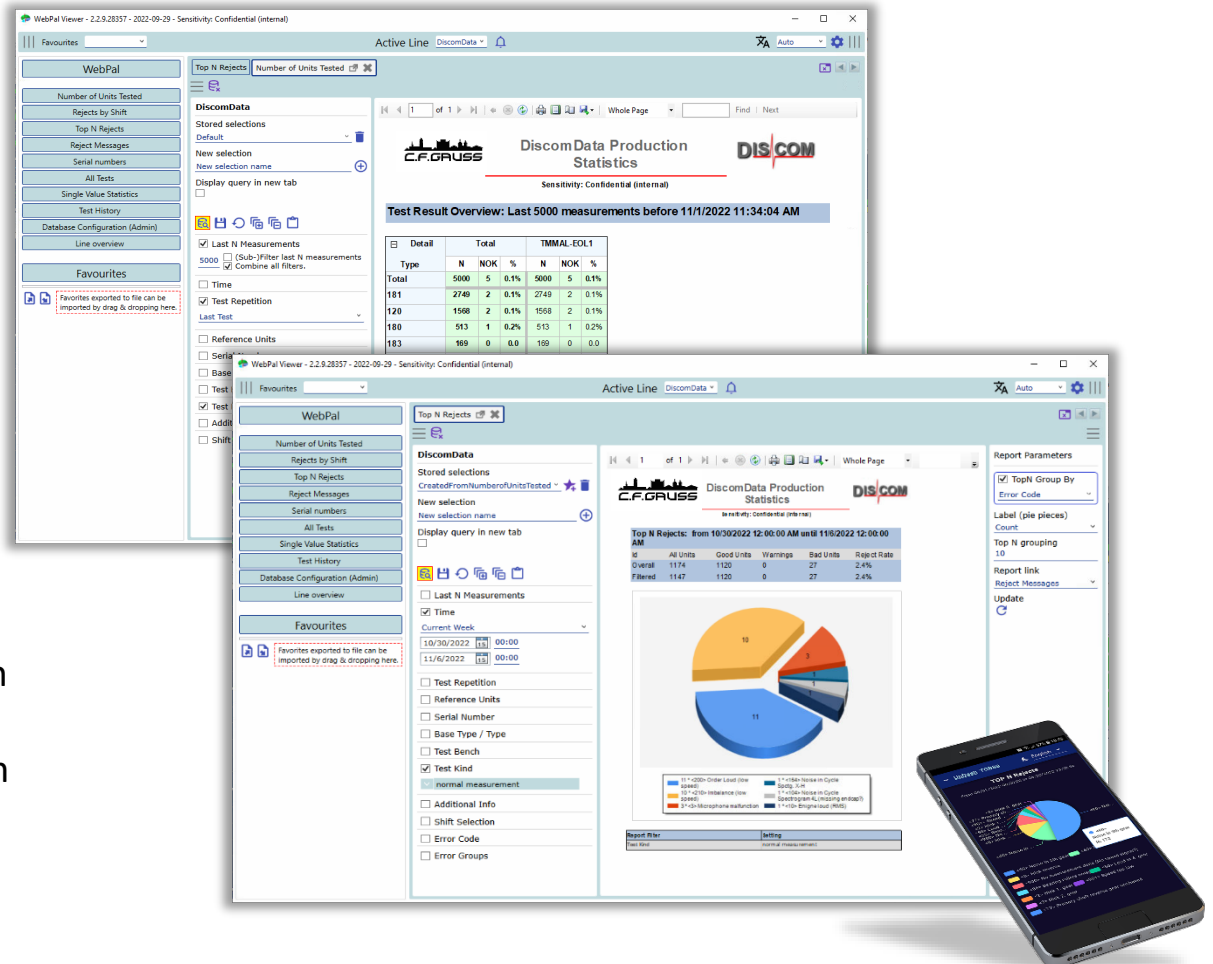
Discom Applications on the Server

DIS COM

Discom applications

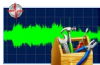Collector Service fills content into the result database

DbControl is used for result database maintenance

WebPalViewer is the application for production statistics

Presentation is the measurement evaluation application

Big Data Server is a service which connects to external applications

TasWavEditor for analysis of the recorded sensor data

MS Access Runtime necessary for the parameter database

Additional tools

Navigator for easy access to the measurement PCs

DistributeParamDb to copy the master parameter database to the test stands

Discom databases

ProductionDb

AceWebPersistance

## Office/Client PC applications

Presentation

TasWavEditor

WebPalViewer

(optional: TasAlyser)

Network File Exchange and Collector
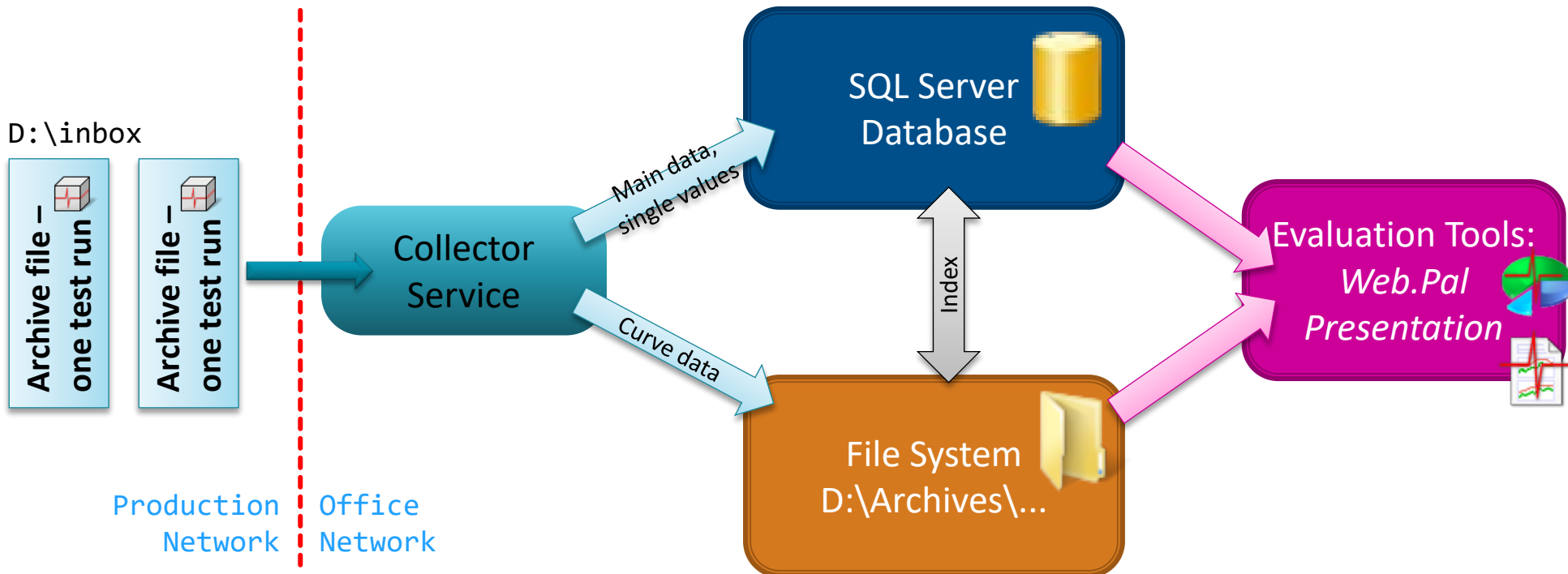
DIS|COM

Information exchange between measurement PCs and server uses shared folders and file transfer. The Collector Service retrieves the result files from the test stands, moves them to the local inbox folder and then inserts them into the result database.
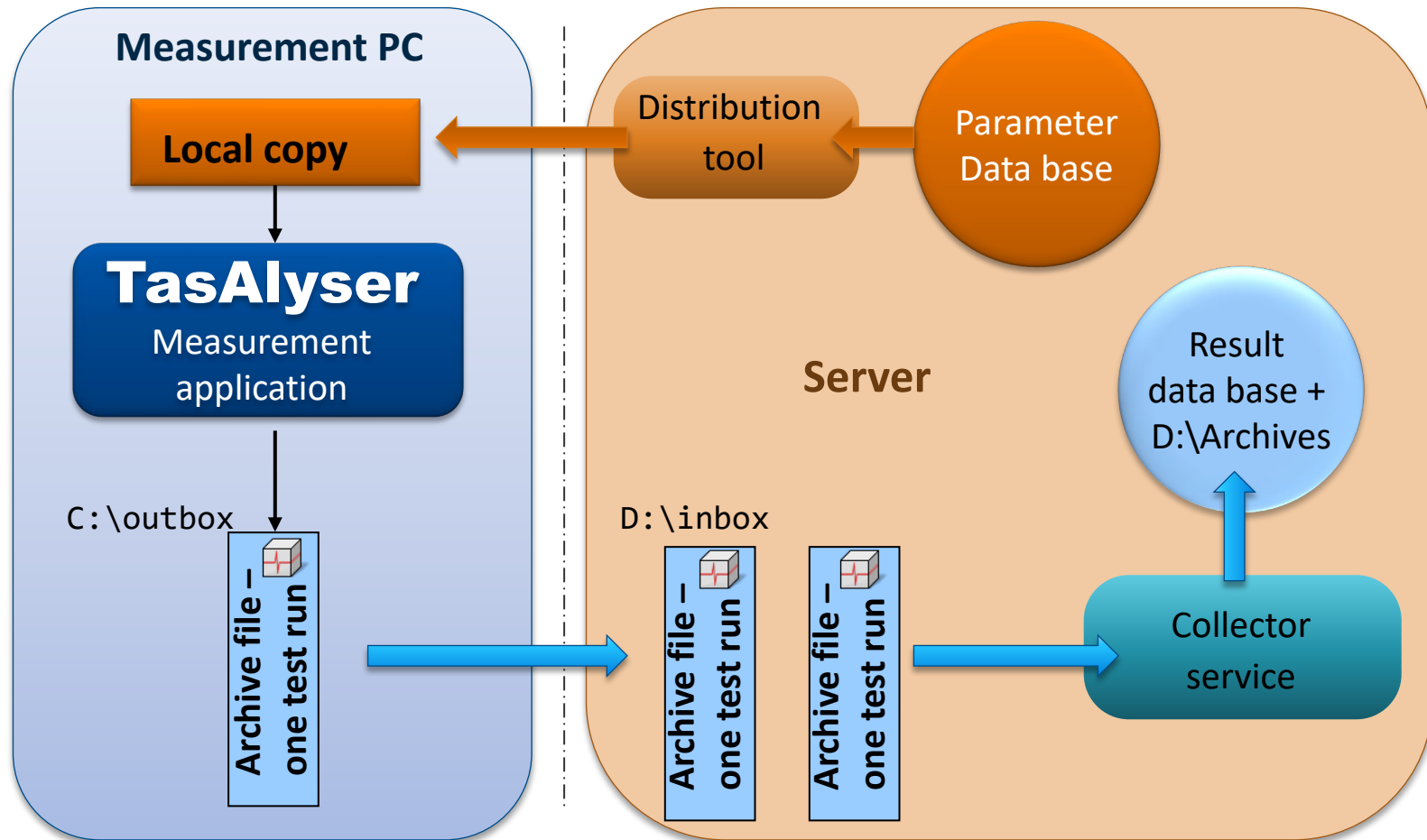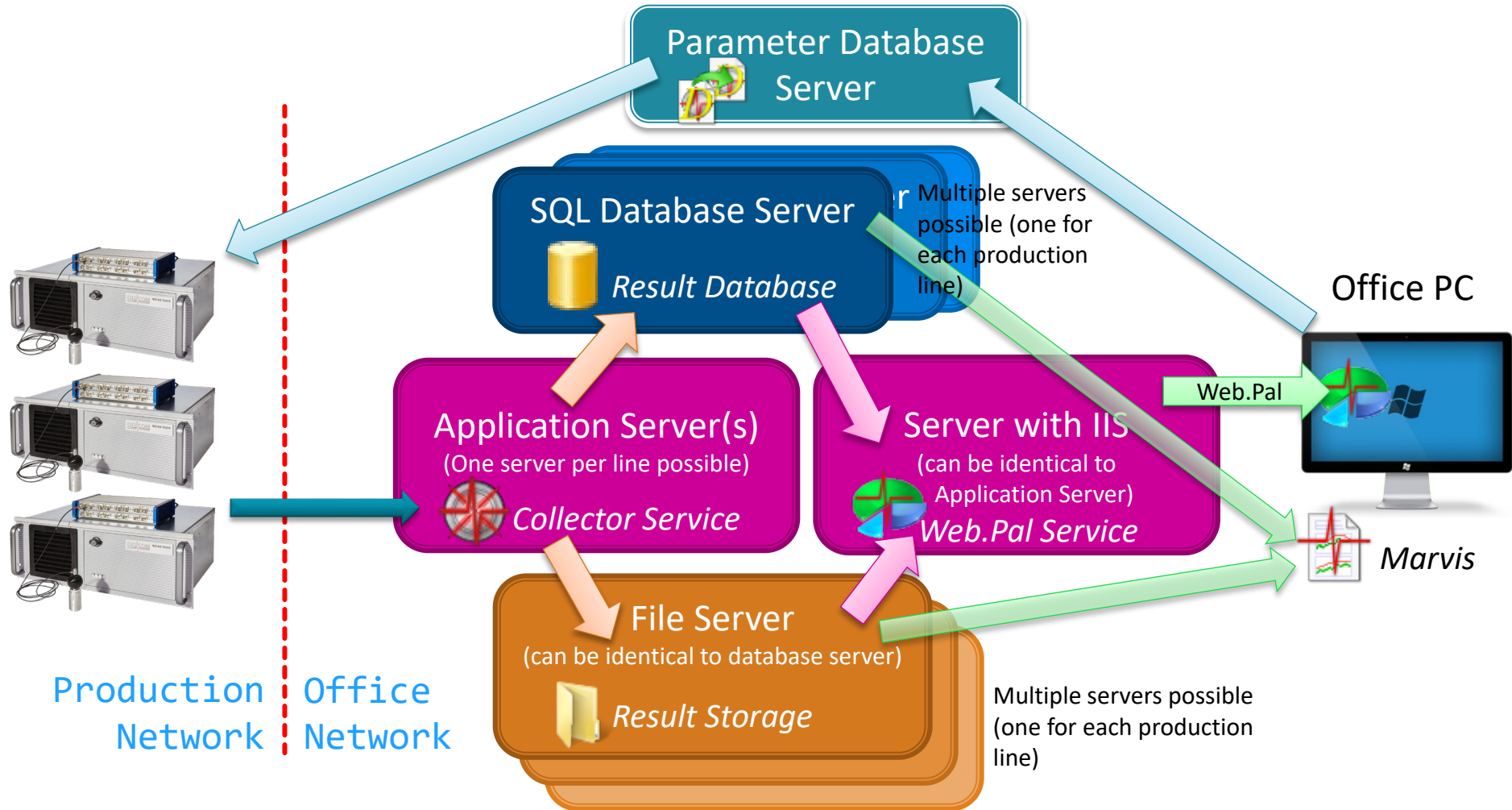
Result Database + File System

DIS|COM

The result database contains for each test run all general information (serial number, time stamp, result, defect messages etc.) and all single value measurement data.

Curve data (spectra, order tracks) and spectrogram data are stored in files in rdt format, which are sorted into week folders and daily files. The database contains an index into these files, so that any specific curve can be found and loaded directly.

D:\inbox

Archive file – one test run

Archive file – one test run

Collector Service

Main data, single values

SQL Server Database

Curve data

Index

File System D:\Archives\...

Evaluation Tools: *Web.Pal Presentation*

Production Network | Office Network

Advanced Server Structure

Result database, file storage and Web.Pal service can be distributed among servers.
The Collector can serve as the bridge between production network and office network.

Parameter Database Server

SQL Database Server

Result Database

Multiple servers possible (one for each production line)

Office PC

Application Server(s)
(One server per line possible)

Collector Service

Server with IIS
(can be identical to Application Server)

Web.Pal Service

Web.Pal

Marvis

File Server
(can be identical to database server)

Result Storage

Multiple servers possible (one for each production line)

Production Network | Office Network

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About WebPal

WebPal is a web service running on the server (using Microsoft IIS) and accessing the result database. The WebPalViewer application connects with the web service to retrieve data and display them.

Users from within the Intranet can use the WebPalViewer app to check production statistics, trend analysis and top N error evaluations.

The web services allow for different authentication models.

On the application server, two web services are installed. One connects to the result database and provides the requested data, the other implements the selected authentication model and saves individual user settings.
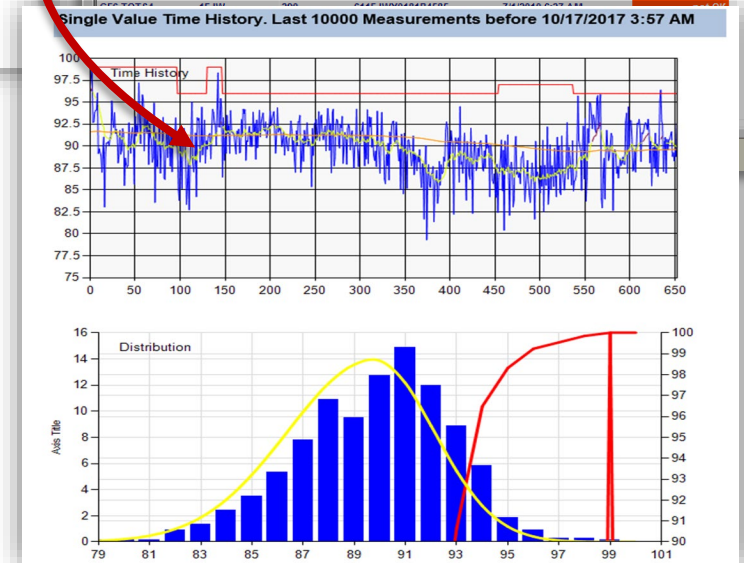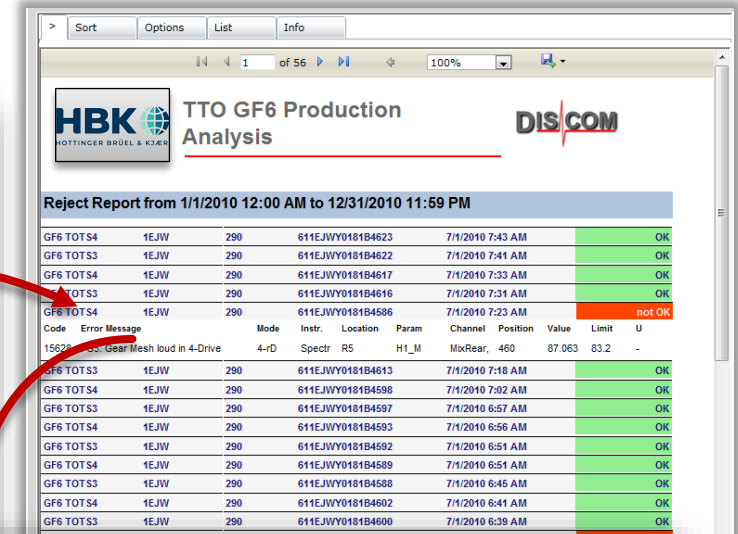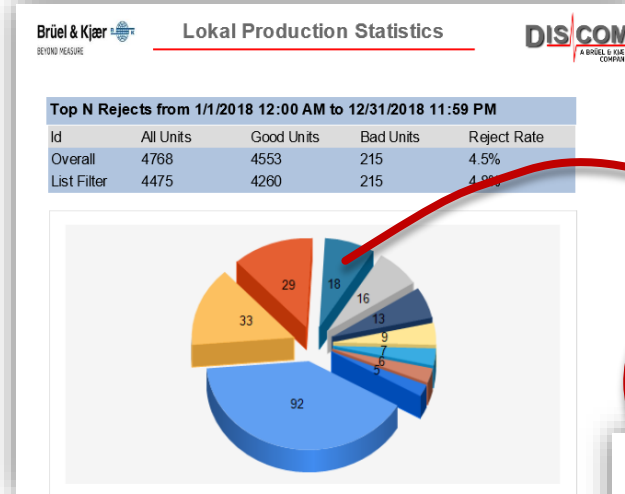
The Navigator

The Navigator is a simple web page containing information about and access links to all test stands.
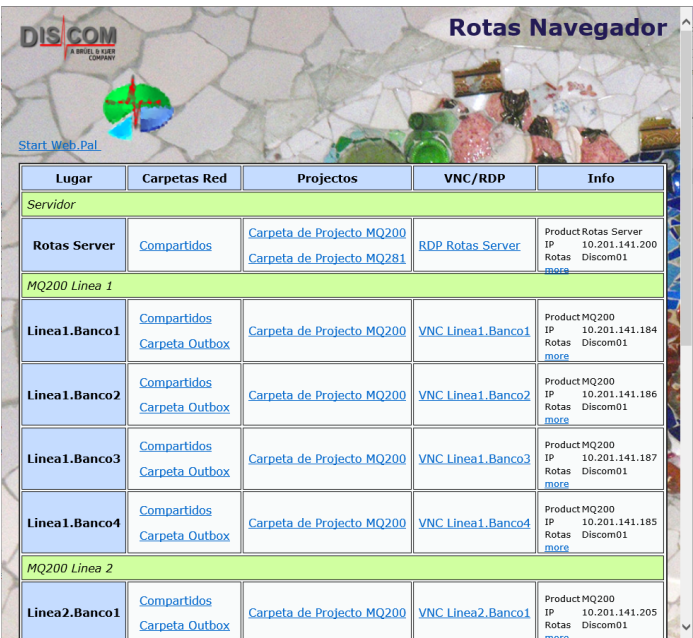
With the Navigator, a user can easily open the shared folders of any test stand or open a VNC connection to the measurement PC. It is an indispensable tool for efficient test stand management.
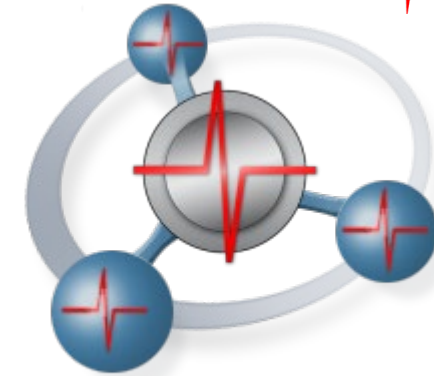
📁 `C:\Discom\Analysis\Navigator\(Project Name)\Rotas-SystemLinks.xml`

The start page of the Navigator is a simple xml file, which is transformed into the web page using a xsl style sheet in the sub-folder `data`. That sub-folder also contains stored VNC and remote desktop connections.

A copy of the Navigator also is located on each measurement PC (for easy access to the server and to other measurement PCs) and can be placed on user PCs within the same network.
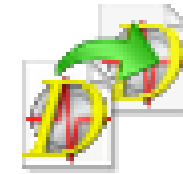
Parameter Database Distribution

Parameter database distribution is triggered manually by the engineer after making changes to the master copy (e.g. limit settings).

The Distribution tool uses a set of batch scripts for these steps:

- Make a temporary copy of the parameter database mdb file

- For each test stand:

    - Copy the temporary file via network into the target folder on the measurement PC

    - Replace the actual parameter database on the measurement PC by renaming the temporary file

- Delete the temporary file

By using a temporary file, the possibly slow operation of file copy via network will not block the measurement application.

Execution of the DistributeParamDb tool requires entering a password blindly.

Distribution of parameter data base

Discom Folders on a Server

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On a typical server, you will find a reference copy of the project folder which holds the master version of the parameter data base.
On the data partition there are additional folders for the result data base.

System partition C:

`C:\Discom\` Same as on a measurement system.
Contains master copy of parameter data base

`C:\Program Files (x86)\Discom\` Installation folder for all Discom software components.

Data partition D:

`D:\Inbox` Intermediate storage location for measurement archives on their way into the result data base.

`D:\Archives\` Final storage location for measurement archives (week directories, day files)

`D:\Database\` Storage location of result data base (SQL database file)

`D:\Backup\` For backup copies made with "TasBackupTool"

`D:\Documentation\` Optional: General and computer specific documentation

`D:\Discom-Installation\` Optional: Source for installation of Discom software and additional tools. Shared as "Discom-Installation"

Checking Archive File Management

The Collector Service moves rdt files from the Outbox folders on the measurement PCs to the Inbox folder (or a sub-folder of D:\Inbox) on the server.

Network connection issues or missing access rights can block this processing.
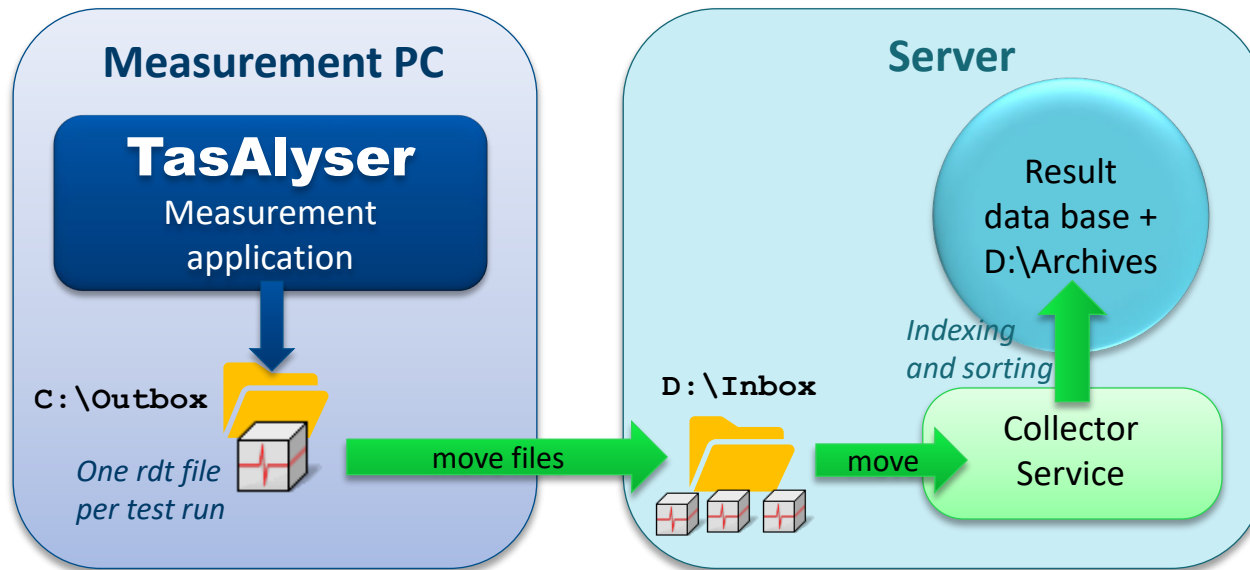
Things to check:

- Is the Collector Service running?
  (Open the Computer Management console and check the services.)
- Can all Outbox folders on the measurement PCs be accessed from the server?
  (Each network folder which cannot be accessed will slow down Collector operation considerably.)
- Are the Outbox folders mostly empty while Collector is running?
  (If files assemble in the Outboxes, the Collector might not have the rights to really move them.)
- Do you see a lot of files of type .rdt or .rd$ in the Inbox?

Ask your IT team for support in resolving network connection and access rights issues!

How to Track Collector Problems

The Collector Service writes some records of problems into the Windows System Event log. Since it is not easy to read messages there, and only important messages are logged there, it is much easier to track Collector problems using the "Collector App" instead of the Service.

For a fast problem check, you may first want to have a look into the text file

C:\Discom\Analysis\DbCollector\(ProjectName)*\Status.sea

In that file you can read the time stamp and message text
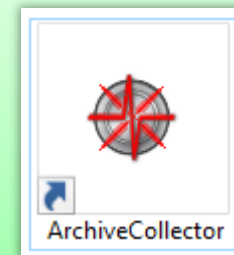of the last database error which occurred.

Here is how to switch to the Collector App:

1. Open Computer Management and stop the Collector Service

2. Go to C:\Discom\Analysis\DbCollector\(ProjectName)*

3. Start the Collector App using the shortcut.

Close the App before you re-start the Service.
Running App and Service in parallel may cause confusion!

ArchiveCollector

*(ProjectName): the default name is "DiscomData", but you might have a different project name in your installation.

About the Collector App

The Collector App does the same job as the Collector Service, but in addition it provides access to settings and reports.

Double-Click "Event Log" or press toolbar button to get the output window.

Copy log output to Clipboard or save as a file for further analysis.

Double-Click "Data base connection" to check the connection settings.

Double-Click "Collector" to get to the settings for adding measurements to the database.

Double-Click "Timer" to change the interval.

With the standard settings, the Collector will look for new archives every 31 seconds.

For manual tests, it may be convenient to stop the automatic operation (switch to "Stop") and trigger it manually by pressing [Send signal now].

Extended Report Logs

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Right-Click on "Collector" and switch on "Debug Verbose" to get additional messages in the Output window. Use "SQL Command Verbose" to have all database commands printed to Output log.

Note: Verbose options may not be available in older software versions.

Recommended strategy for problem documentation and analysis:
1. Switch to Collector App (see page 1).
2. Stop the Timer (see previous page).
3. Open the Output window, check the messages, then press the [Clear] button.
4. Switch on first or both Verbose options.
5. Press [Send signal now] in the Timer.
6. Read the messages in Output window (and send the text to Discom).
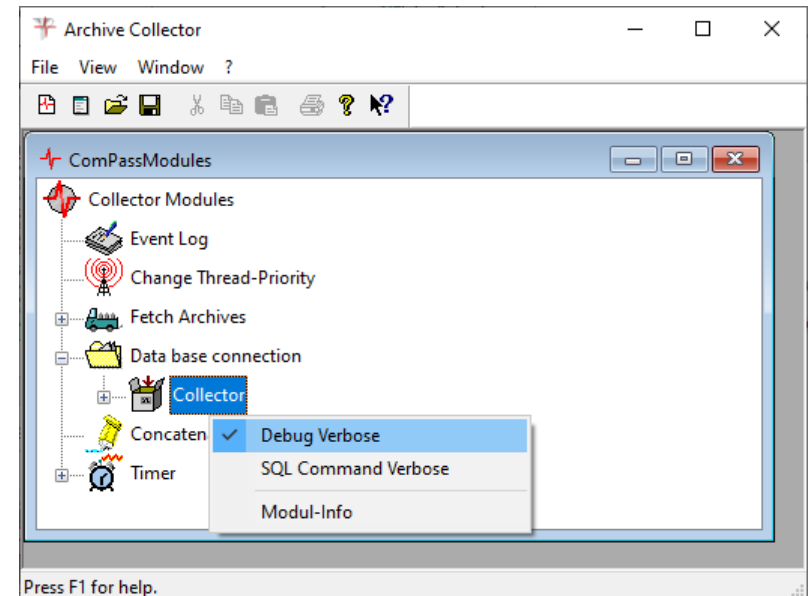
In case of database connection problems:

- In step 3, don't clear the output window.

- Instead of pressing [Send signal now] in step 5 double-click on "Data base connection" and press the [Test] button there.

Don't forget to switch on the Timer again before you close the Collector App and re-start the Service!

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Checking Result Database Size

Some result database installations use Microsoft SQL Server Express Edition, which does not cost extra license fee. The Express Edition limits database size to 10 GB.

Therefore, you should check from time to time the current database size with the DbControl tool and use the cleanup function (see next page) if the database size reaches 8 GB.

DbControl

Start DbControl from the shortcut collection in "Rotas for Experts".

1. Press "View Database Statistics" button.
2. Select "DiscomData_ProdDb" in the dropdown list
3. Press the "Update" button
4. Check used and free space.

See next page for details on how to shrink the database by deleting old content.

Cleaning Up the Result Database

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DbControl has a built in Cleanup function which helps you to delete old data and shrink the database size. (Even when you delete data from the database, as long as you keep the archive files the data are not lost completely.)

DbControl

1. Press "Cleanup Database" button.
2. Select "DiscomData_ProdDb" in the dropdown list at the bottom.
3. Select the time range you want to delete. Optionally, you can limit deletion to certain types or test benches.
4. You can specify to only delete the single value data for the selected measurements. (Single value data are the major contribution to the database size.)
5. Press the "blue arrow" button to make DbControl check how many measurements will be affected. The lower part of the window is filled with the list of affected measurements. Then, press the "red X" button to actually delete these measurements.

Discom Database Control Center

Cleanup Database

Manual Deletion

Type: * From 1/1/2020 Serial N°
Bench: * Until 11/30/2020

Delete only single values' data N° 0

Id   Serial   Time   Type Bench Result Test Kind

CleanupDb Deletion

Total N° units to delete
0

Remaining delete duration
00:00:00

Login
Please confirm the deletion.
Password: Confirm

Database DiscomData_ProdDb

When you press the "Delete" button, you will first see a confirmation question and then a window asking for a password.
The default password is 'discom'.

Database cleanup makes SQL server busy. It is recommended that you either stop the Collector Service while the cleanup task is running or choose a time with low production.

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