CSK - CAD Systeme Kluwetasch

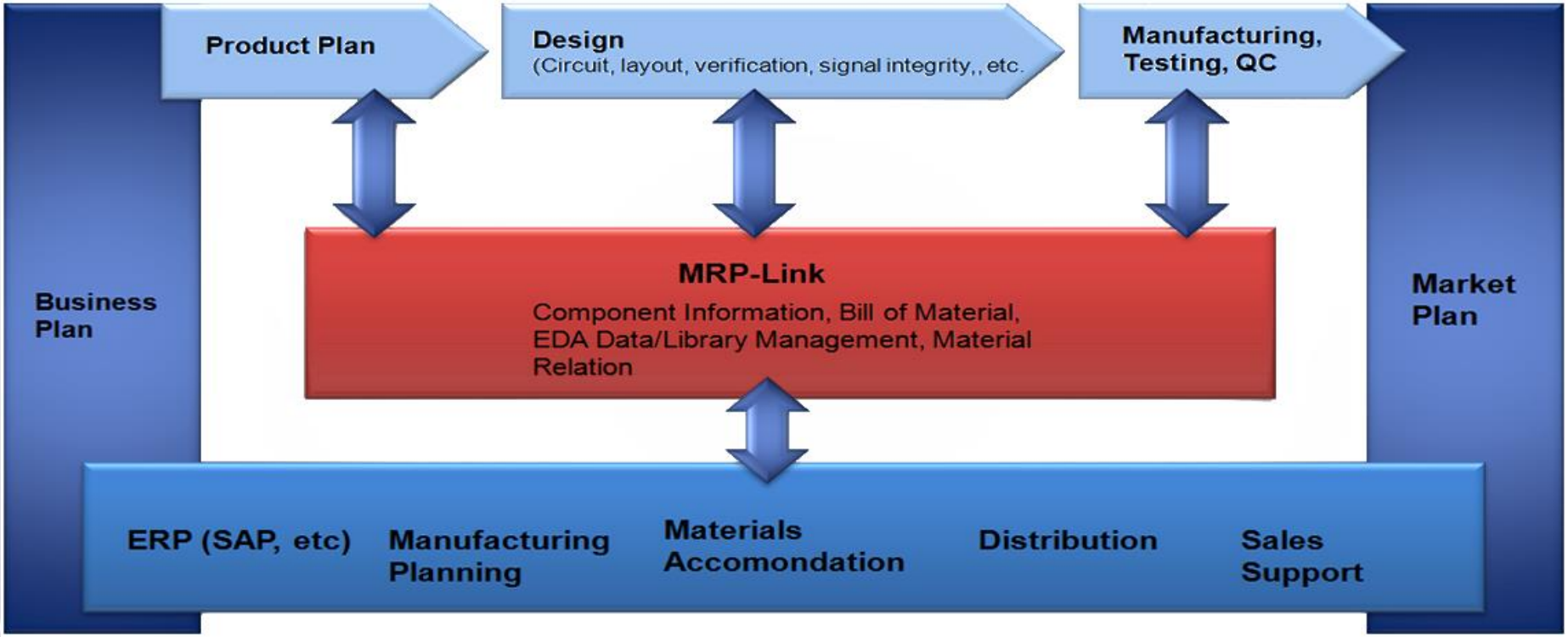
MRP-Link Internal Communication with CADSTAR

Agenda

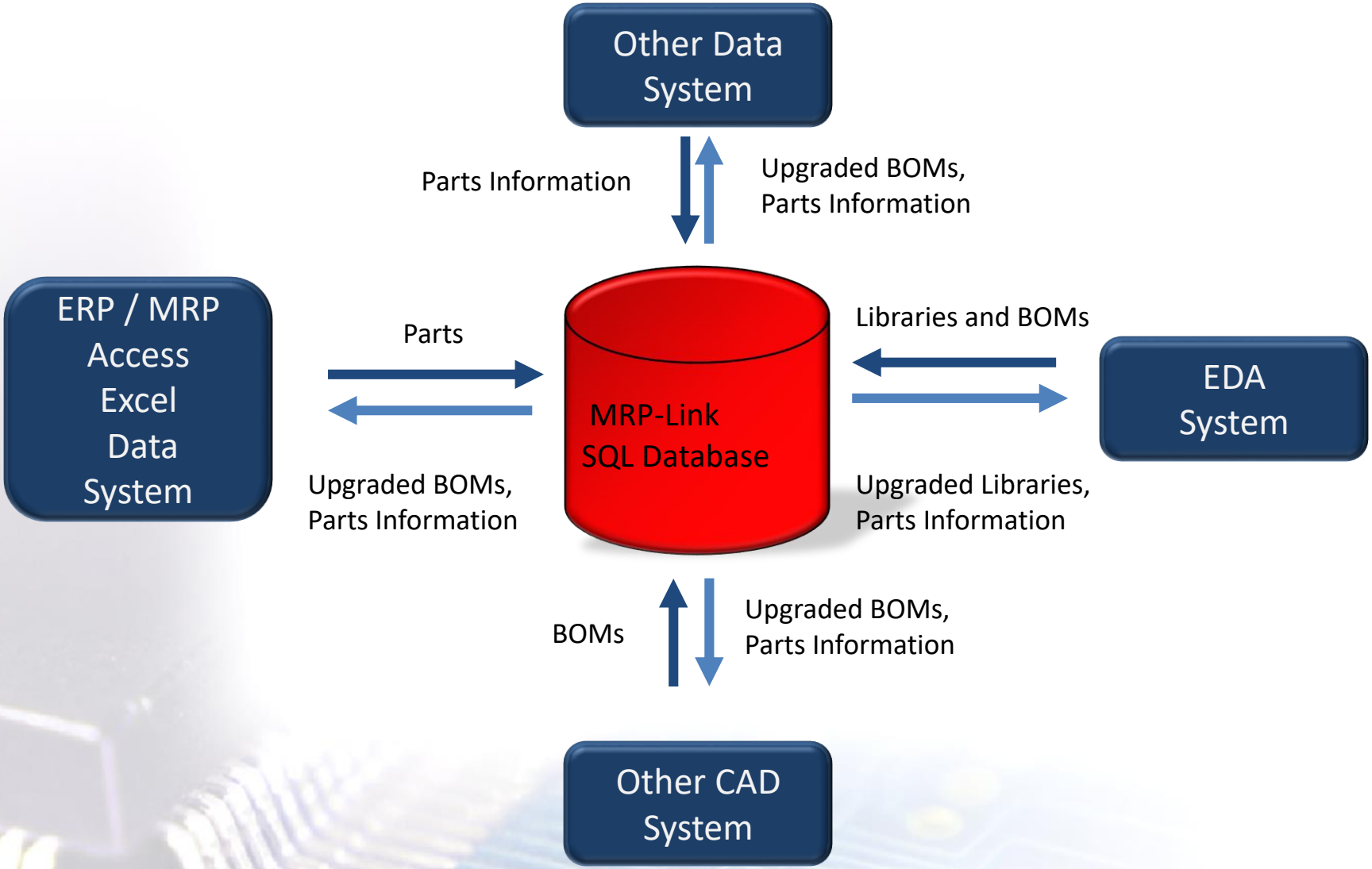
- MRP-Link
- Area of operations
- List of benefits
- Physical realize and theatrical data structure
- Some important key functions
- Inter tool communication between CADSTAR and MRP-Link
- Zuken CADSTAR and CSK MRP-Link User
- Maintenance revenues from CADSTAR & MRP-Link User
- Impact to customer lose the csa/cpa OLE Functions
- Necessary communication requirements
- Current CADSTAR – MRP-Link Evaluation
- Overview of available Module Prices

MRP-Link Business Process flow

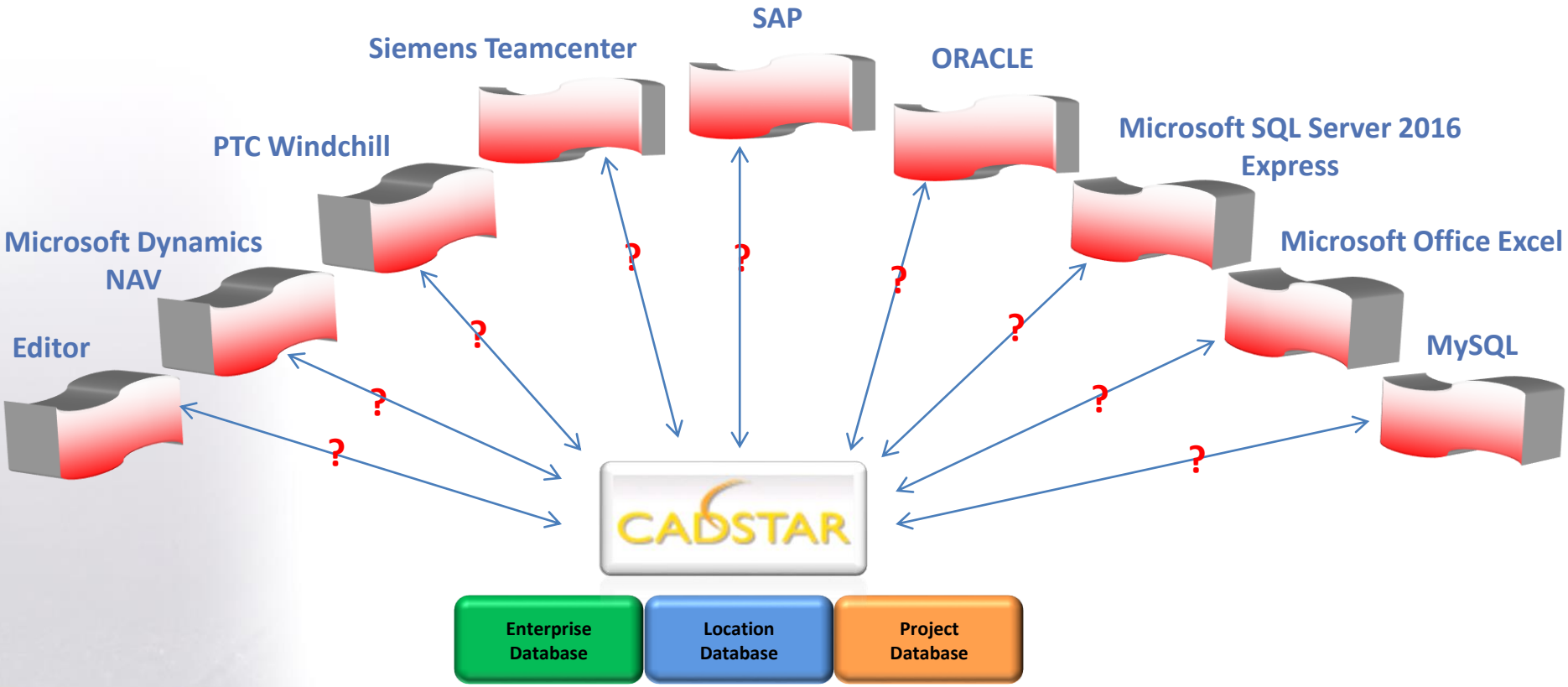
Providing a collaborative environment to assist you during the development process.



MRP-Link information flow

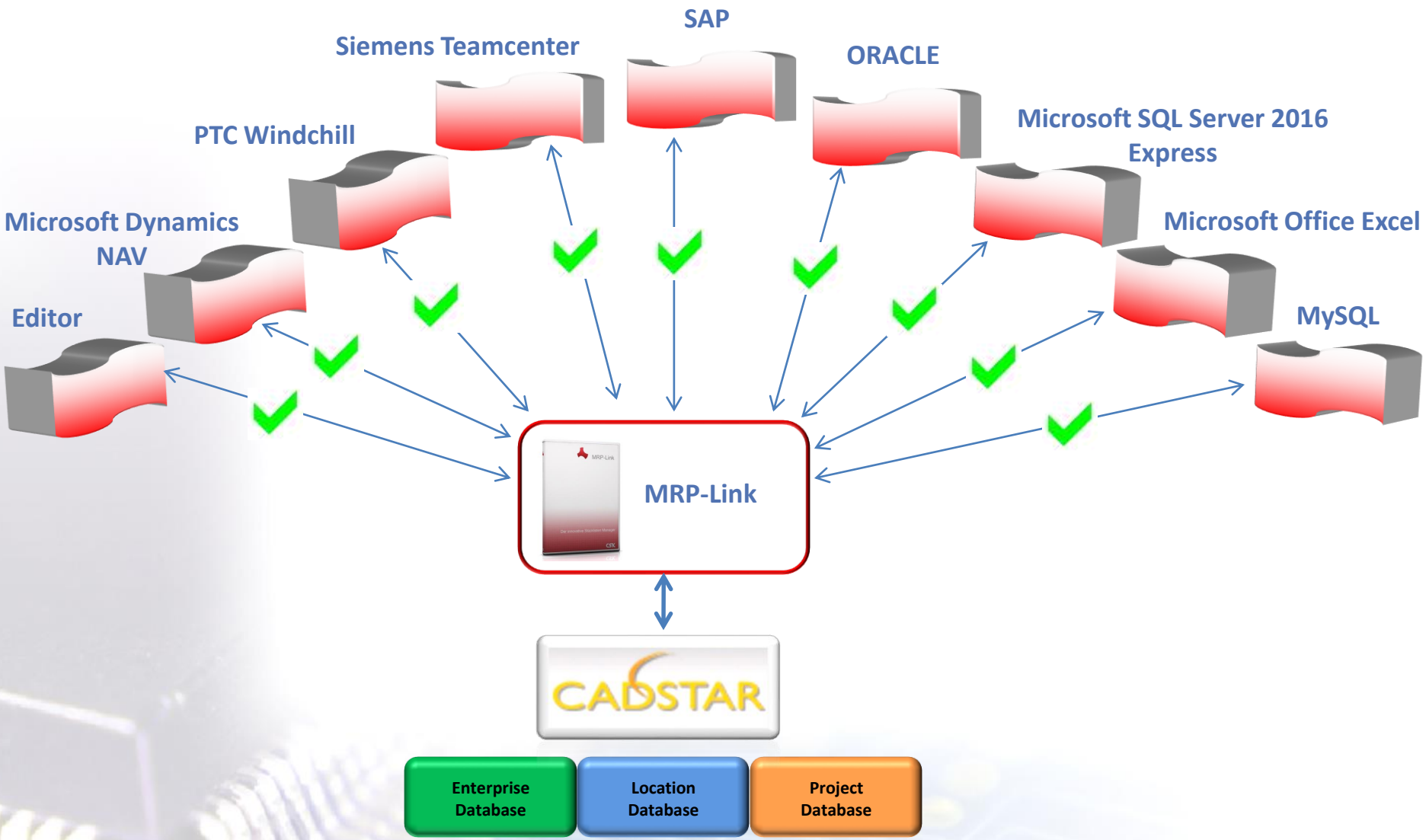


Each software will need its individual interface to work with CADSTAR



For each external system a complex software interface is necessary which follows the data schema from CADSTAR.
In the real world the CAD relevant information is distributed in different software programs and storages.

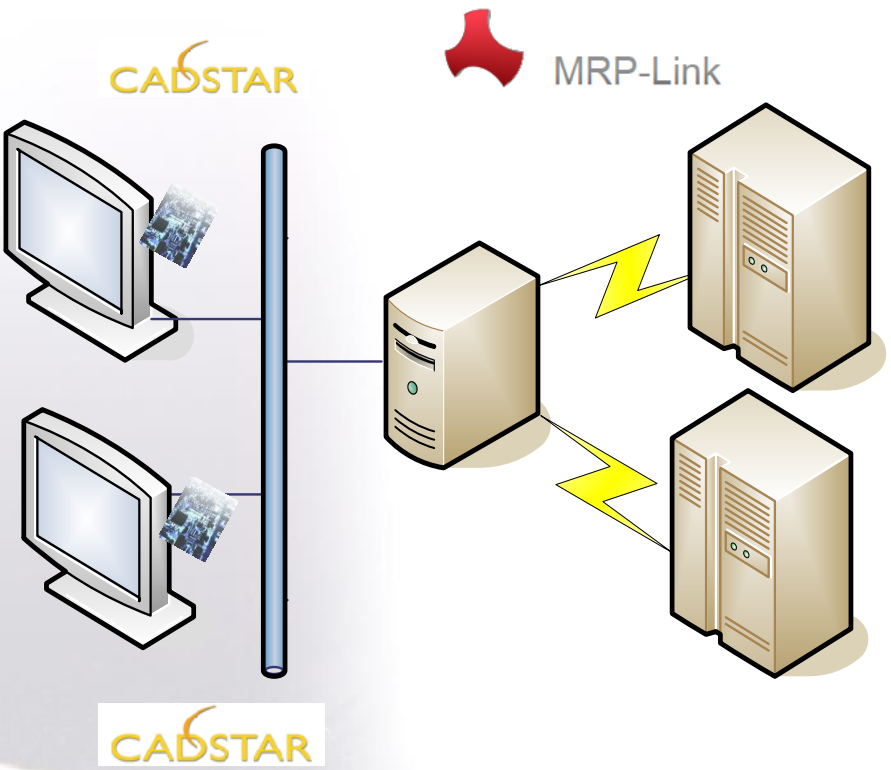
MRP-Link will ensure this connectivity



Key benefits of the MRP-Link

- Software **out of the box** self customizing functions and process flow automations
- In view of its **modular expansion** options, the MRP-Link is flexible and versatile in use
- Processing rules can be custom-controlled with the **Constraint Manager** and the users **execution rights**
- Cross-site **data replication** safeguards data consistency
- The **Parts Stock**, the central element, can be expanded on a customised basis with **further modules**
- The **CADSTAR Attribute synchronising** minimizes errors when creating designs
- The usage of **CSV-files** ensures **connectivity** with almost all used business applications
- The automatic **column name translation** systematic enables unlimited communication

Single-Tier or Multiple-Tier Configuration



- Application
- Driver Manager
- Driver

- Middleware Server

- Data access software
- Data Storage

The Application, Driver and Driver Manager reside on one system, typically called the CADTSTAR client.

Between client and server we could have **more powerful** query builder like **MRP-Link**.

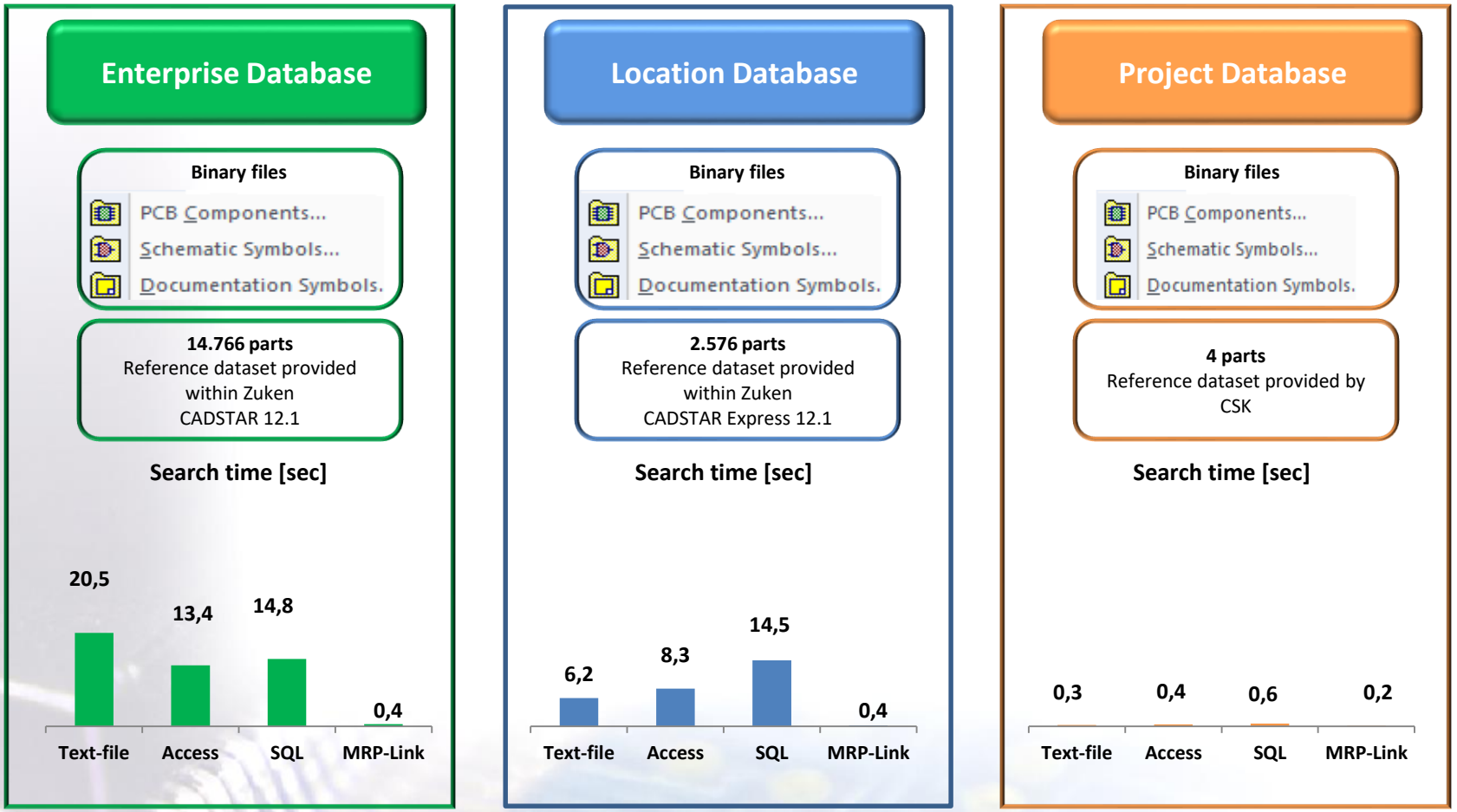
This part optimizes, controls and manages the client request to one or several database systems. It collaborates the results in a single answer to the clients.

The database and the software, which controls access to the database resides on another system, is typically called the database server.

This implies query resolution intelligence resides on the middleware server.

Typical Enterprise Company Installation

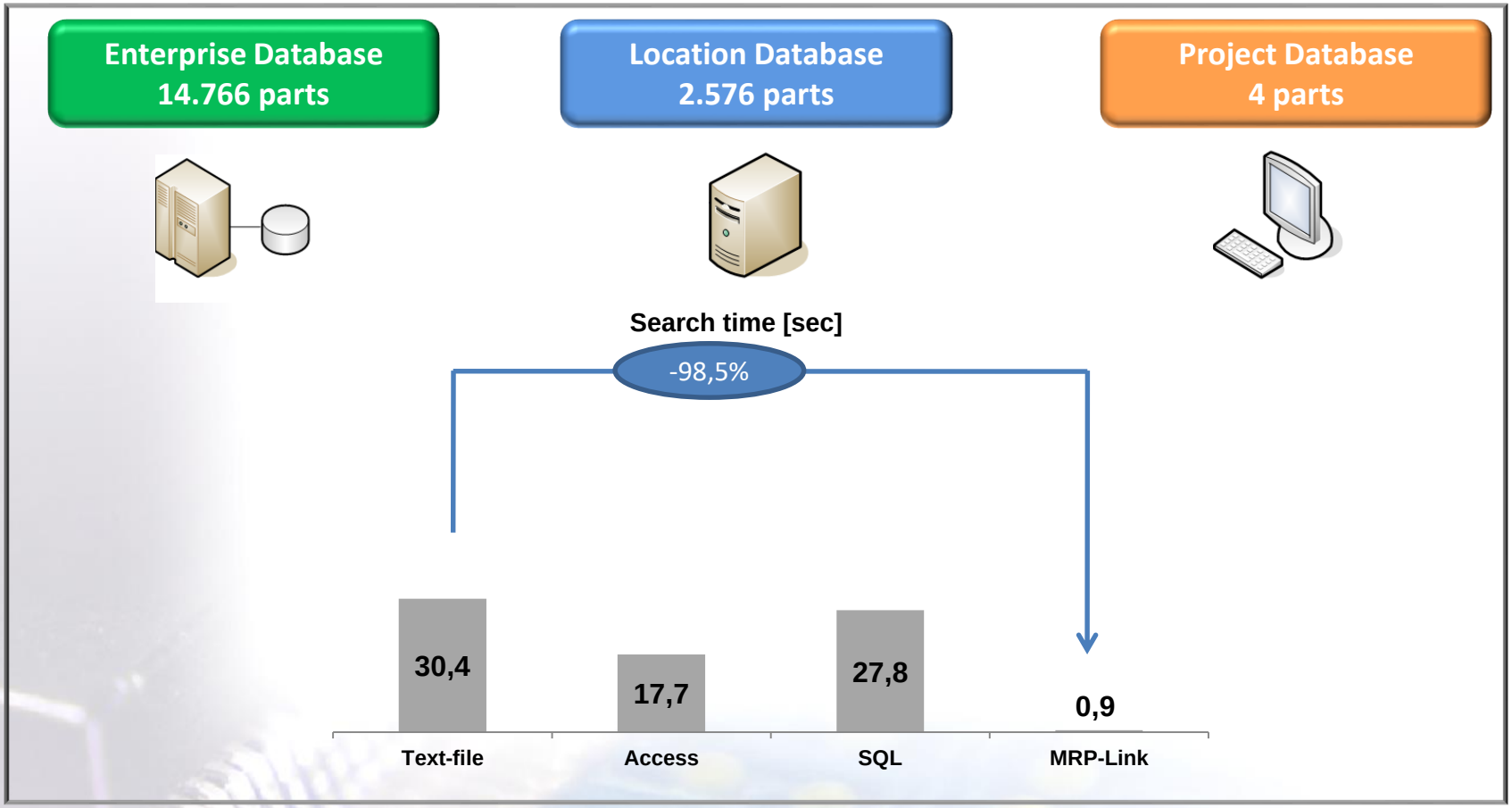
Within local environments, the usage of MRP-Link could already save most of the search time.



Hardware: DELL M4300, 4GB RAM, Windows 7 64 Bit & CADSTAR

Comparison of global search times

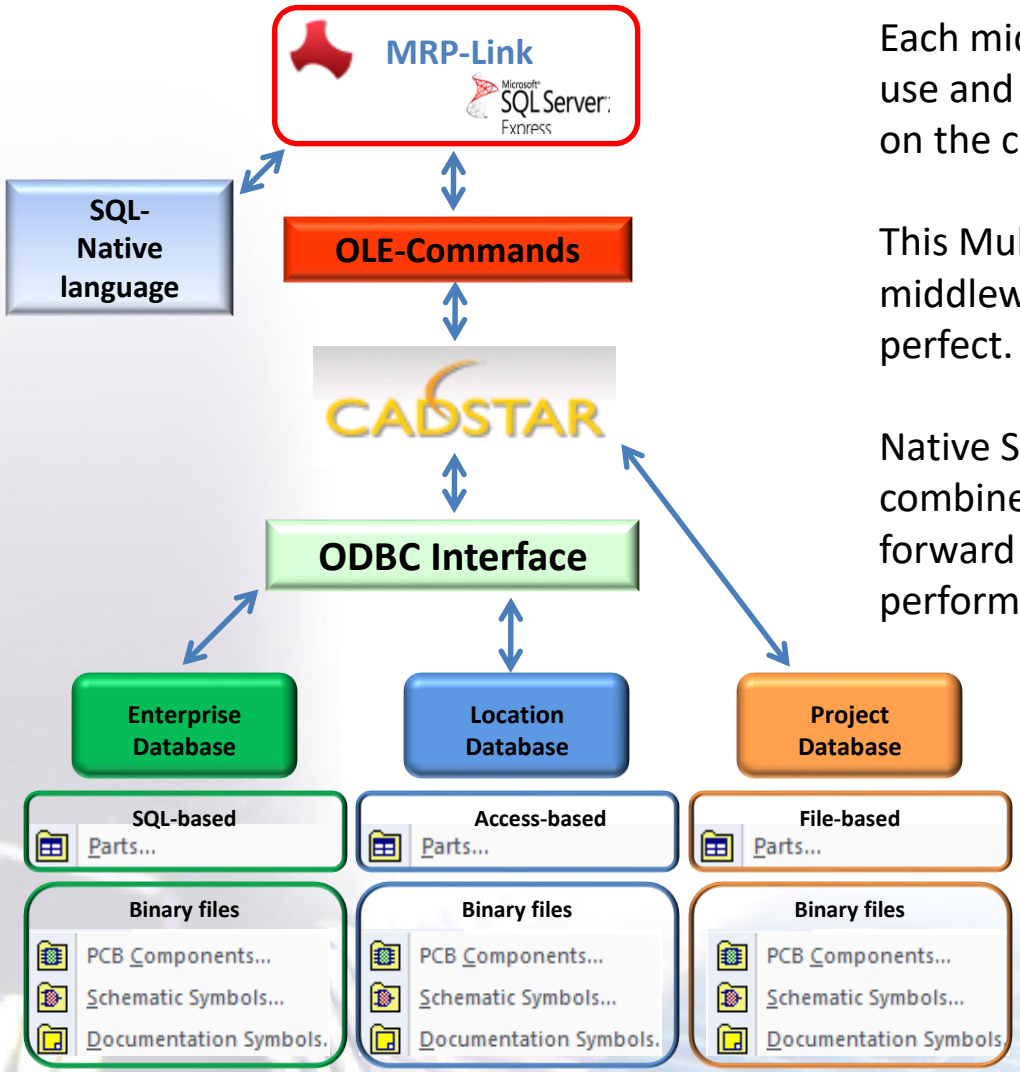
…when looking for parts **globally** in all implemented databases, MRP-Link could save up to **99%** of search time.



Hardware: DELL M4300, 4GB RAM, Windows 7 64 Bit, & CADSTAR
all database running on the same machine

MRP-Link will communicate via the native SQL language directly

The open structure is the foundation for any integration with PLM / Corporate Databases.



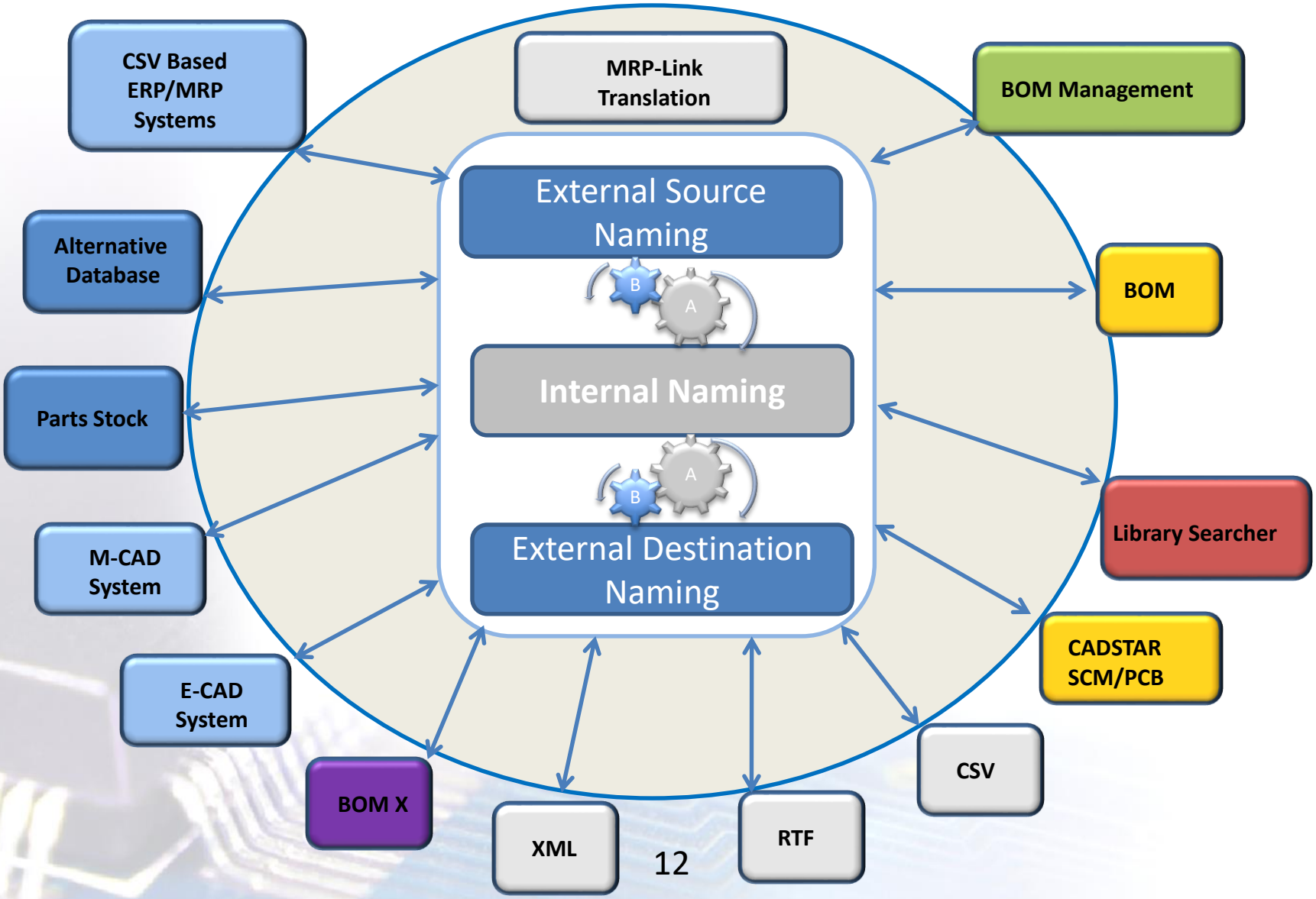
Each middleware software has now the chance to use and introduce the best fit techniques depending on the current situation.

This Multiple-Tier implementation with the middleware **MRP-Link** demonstrate this technique perfect.

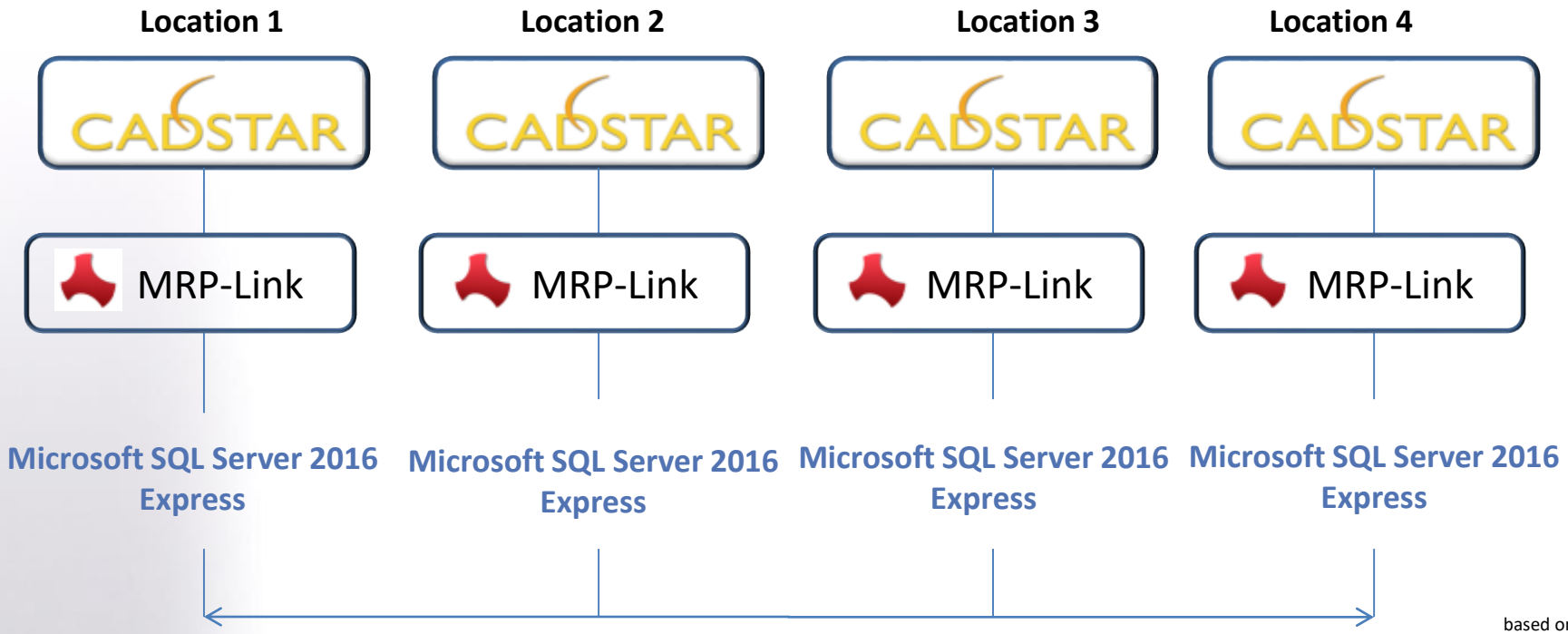
Native SQL language direct on a SQL-Server combined with direct online OLE-communication forward to CADSTAR results in a unique performance.

It is well-known that ODBC interfaces are limiting the performance of data bases and thus of CADSTAR as well.

MRP-Link Column Name Translation Systematic



MRP-Link Data Replication

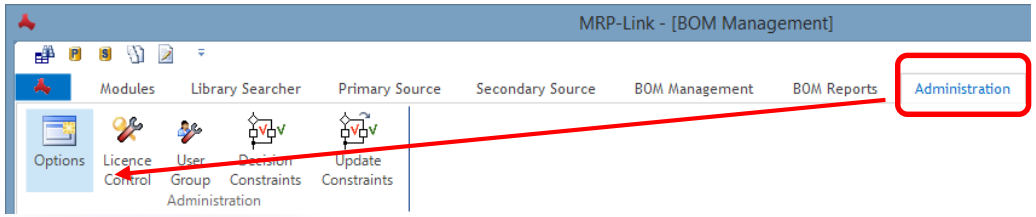


based on Microsoft Visual Studio

SQL-Server is not part of MRP-Link

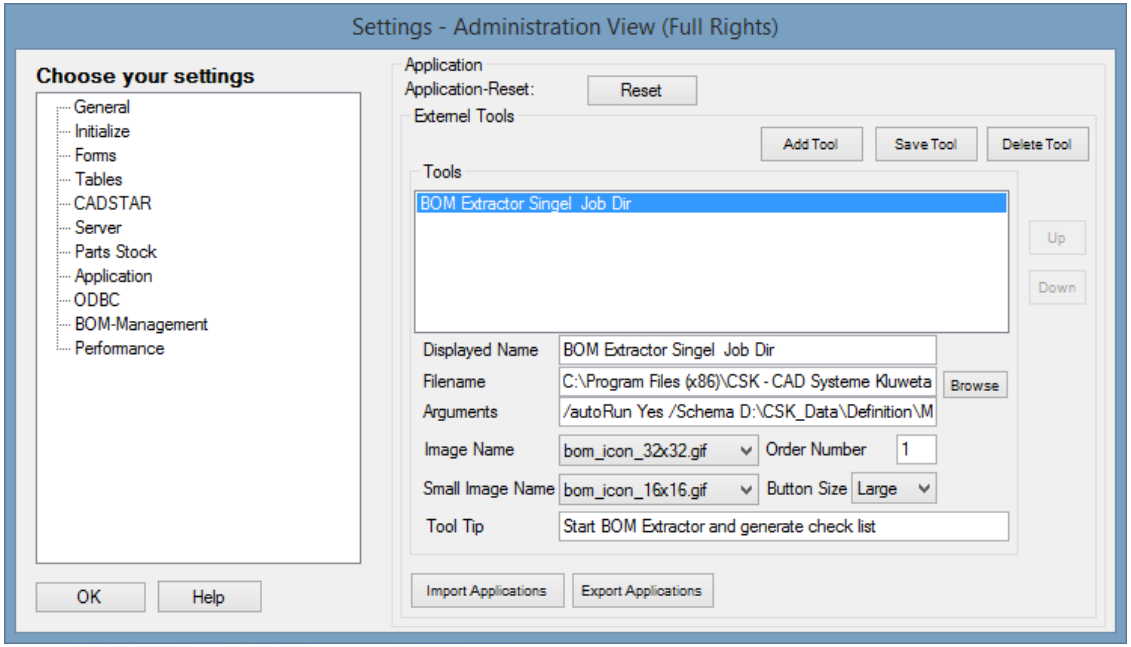
- Each site is able to work independently from the other site.
- If an internet connection becomes available, it is possible that asynchronous data will be synchronized between the sites.
- The technology of merge replication is used.

MRP-Link Add Point in Customer Menu



The CADSTAR menu shows the user to generate a defined BOM - or check list from the current design.

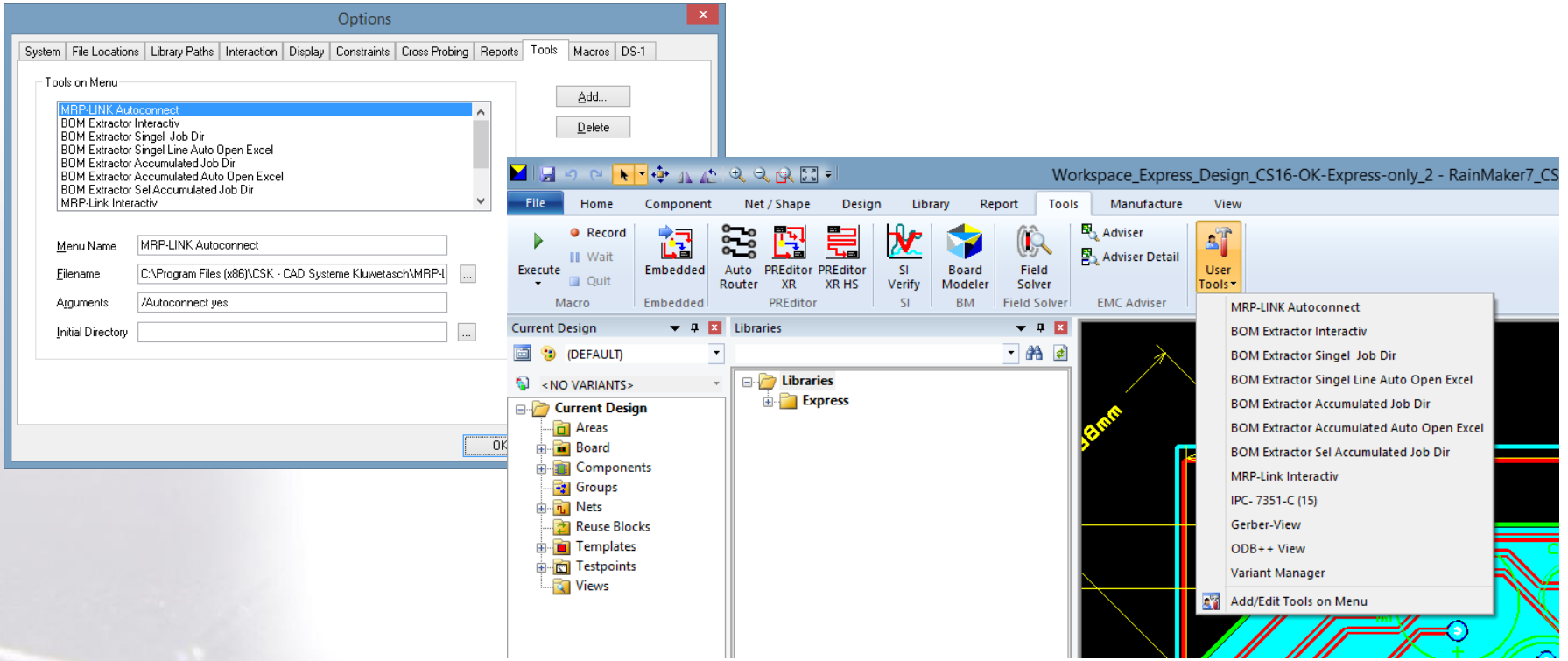
In the application hierarchy is a very similar menu, which is well know from CADSTAR.
The difference are necessary because we work with a Database to populate the new lines and values.



The BOM Extractor will now start with “/AutoRun Yes” as first parameter.
The second parameter “/Schema Filename.xml” will point to a BOM Schema. Which include the option- and view setting for the file export, RTF, xml od CSV.

MRP-Link Remote Computing via CMD Line from CADSTAR or other tools

The customized menu bottoms are placed inside the CADSTAR menu.



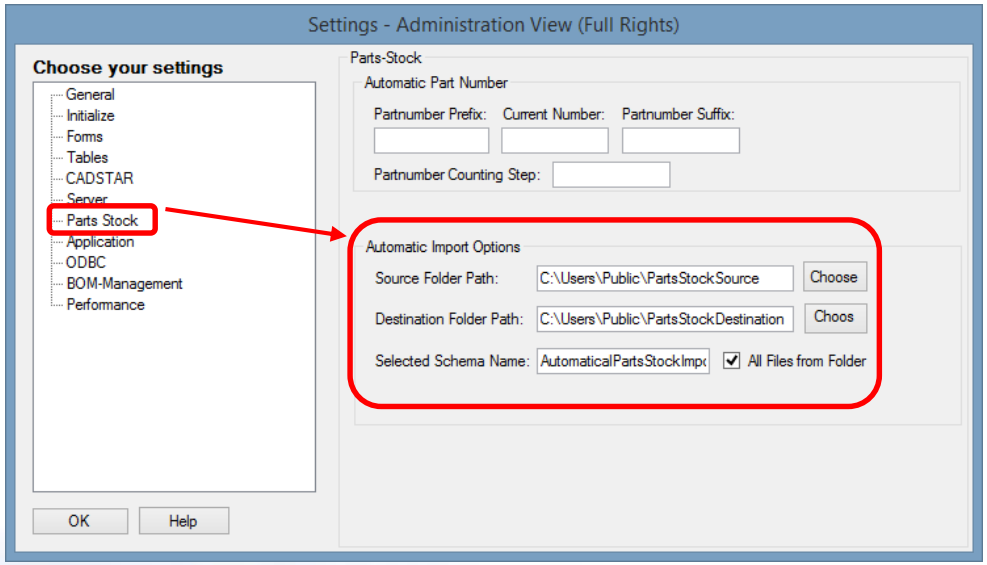
With a single simple mouse click the user is able to carry out a series of functions with different user defined results.
Like an auto open of any BOM direct online from CADSTAR into Excel.

Functions in detail: MRP-Link Batch Processing

With the MRP-Link we offers you the opportunity to carry out a lot of batch processing.

- Auto start other applications
  - Like CADSTAR, BOM Extractor, Excel
  - And other…
- Auto Import via Windows scheduler PLM/ERP Attribute Values in to the CADSTAR Parts Stock
- Auto create new Part numbers
- Reload Menu
- Reset locks
- Auto Run BOM Extractor
- Auto Connect to a database and a much more functions.

MRP-Link



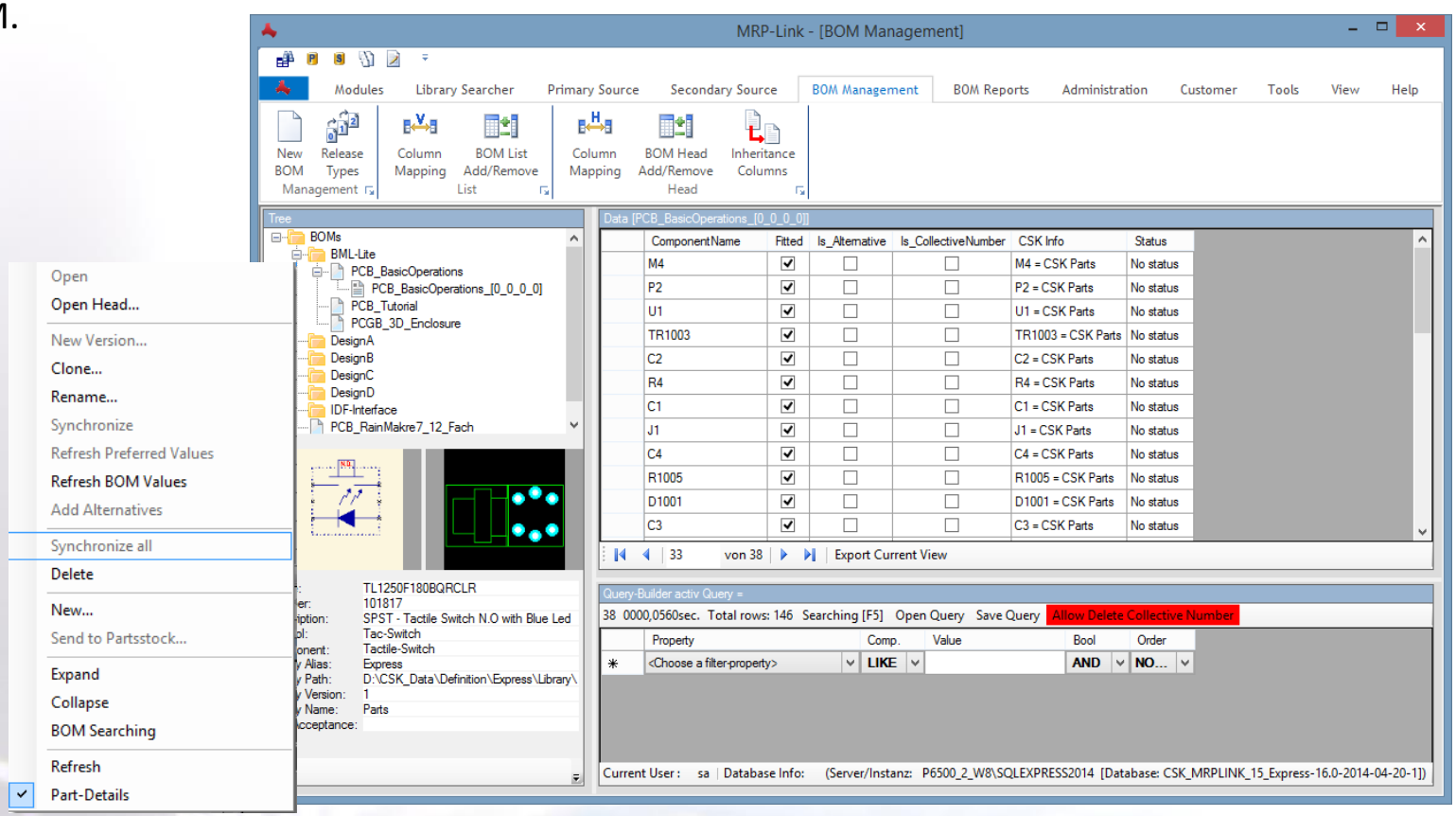
MRP-Link Auto Start Info:

/DatabaseSystem MS SQL Server 2014/ServerInstanz P6500-2\SQLEXPRESS2014/LoginName sa/Passwort Sql2014/DatabaseName CSK_MRPLINK_16_CADSTAR_Express_16

/AutoConnect Yes

MRP-Link – BOM Management View

Inside the MRP-Link we have the option to synchronize or to do any other manipulation with the BOM.



As example, we know two different types of constraints:

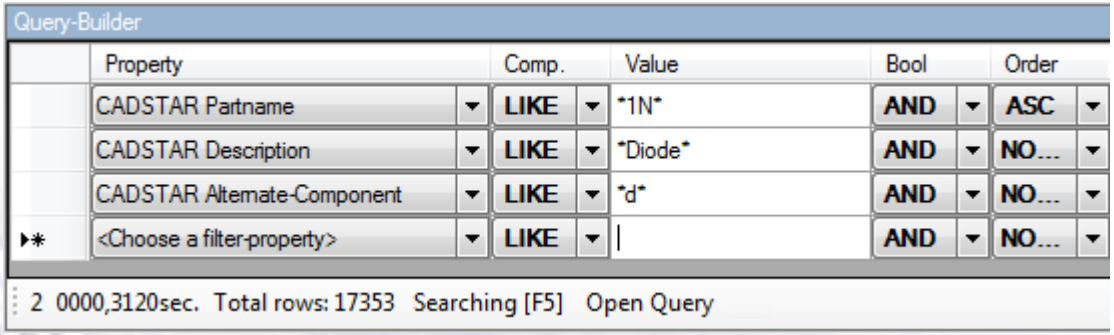
- Simple Report constraint
- Update constraint

Modules in detail: Library Searcher for CADSTAR

Key functions:

Library Searcher

- Fast searching (find any part in 1 second or less)
- Direct communication with CADSTAR (drag & drop,…)
- Define unlimited search criteria by combine by “AND” and “OR”
- Compare values on different ways
- Reuse of queries by saving often used queries
- Bidirectional synchronizing of Parts Stock and CADSTAR

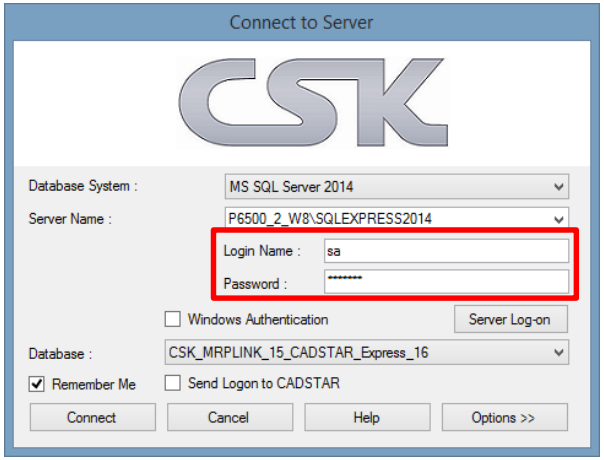


Functions in detail: User/Group Administration

Key functions:

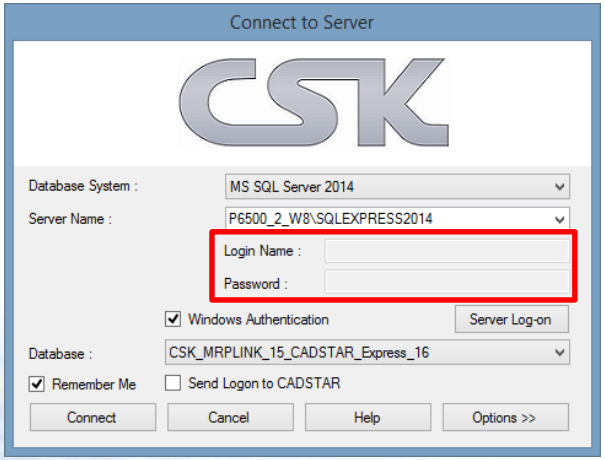
- Define and administrate users
- Define groups and assign access rights
- Assign user to groups
- Add representatives to user
- No group → no access rights
- Hide forbidden areas
  (see only what‘s important)

SQL



or

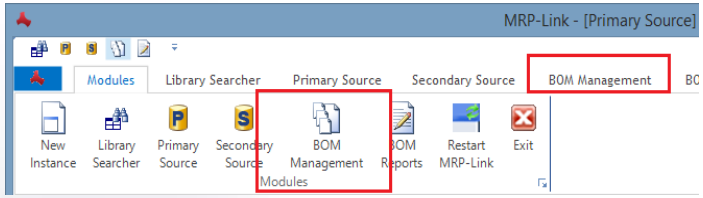
Windows Authentication



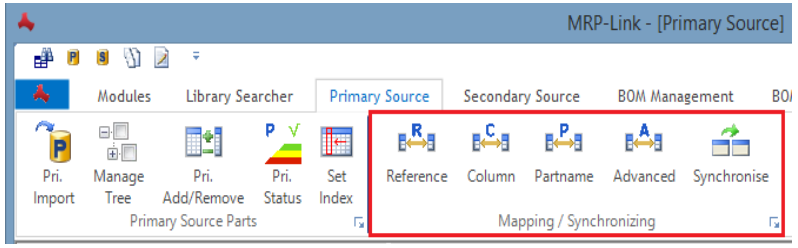
Functions in detail: User/Group Administration 2

All access rights = all view

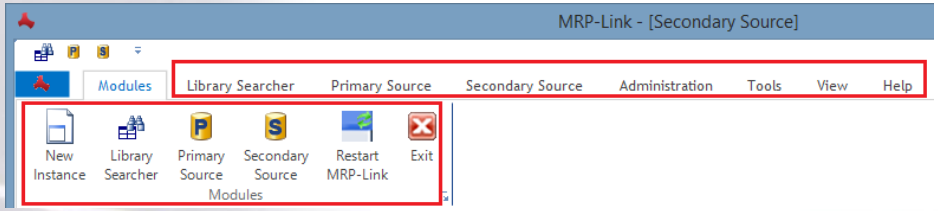
BOM Management Module

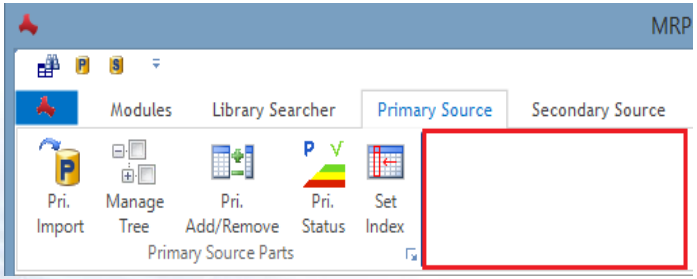


Parts Stock / Primary Source Synchronize Function



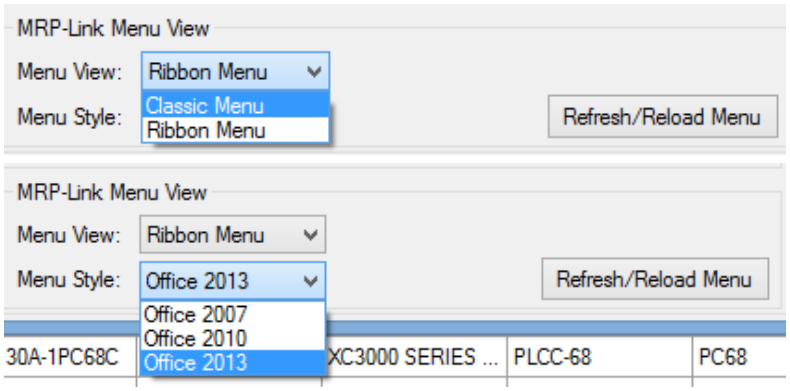
Limited access rights = limited view



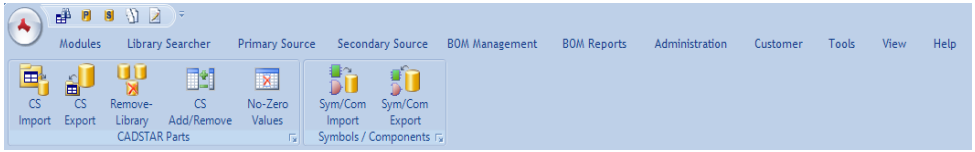


Functions in detail: Self customizing Classic- or Ribbon Menus

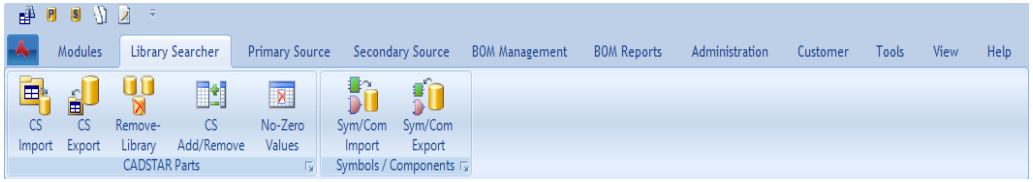
Online change between
Classic Menu View
&
Ribbon Menu View
with different office styles.



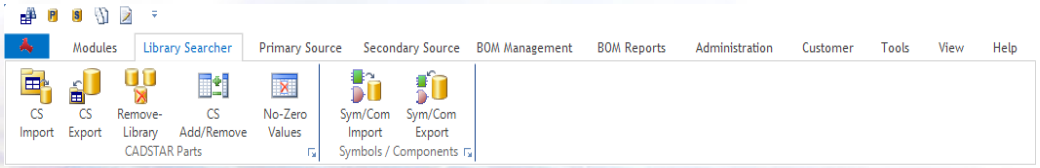
Office 2007



Office 2010



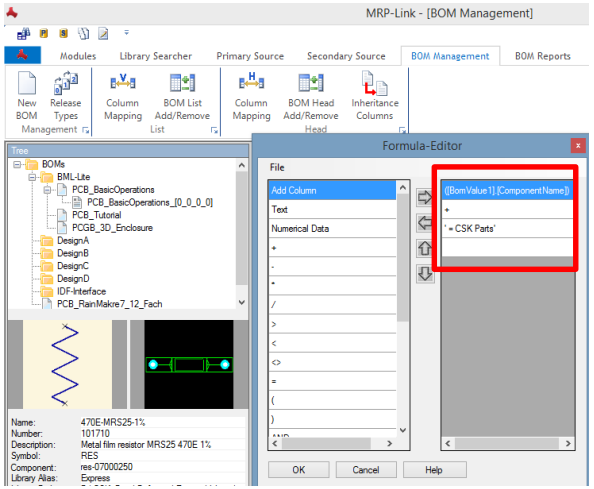
Office 2013



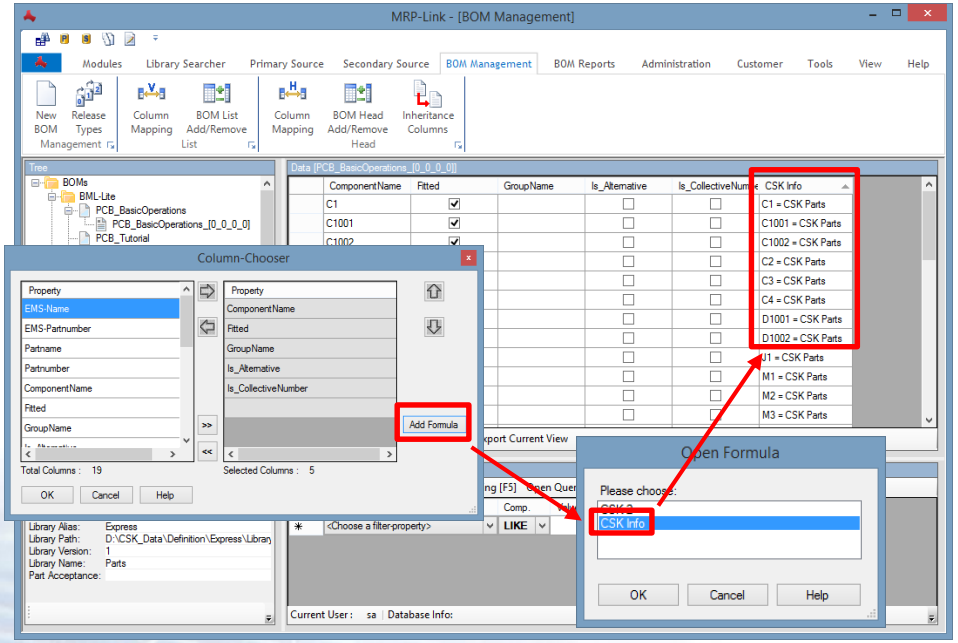
Functions in detail: Formular Editor

Work with virtual columns in your spread view to:

- Calculate
- Merge column values
- Create virtual values
- Add to BOMs, Parts Stock and BOM-Heads
- Realized with SQL aggregate function



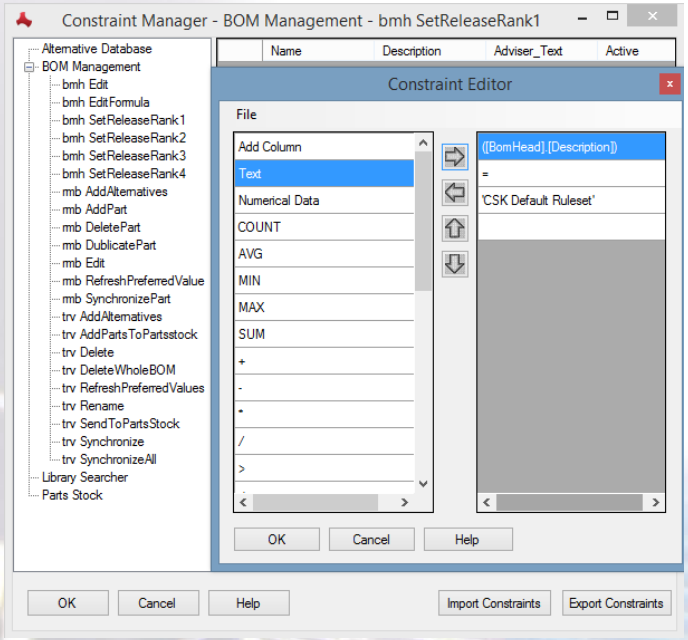
Add a formula base column like a real physical column into your personal view.

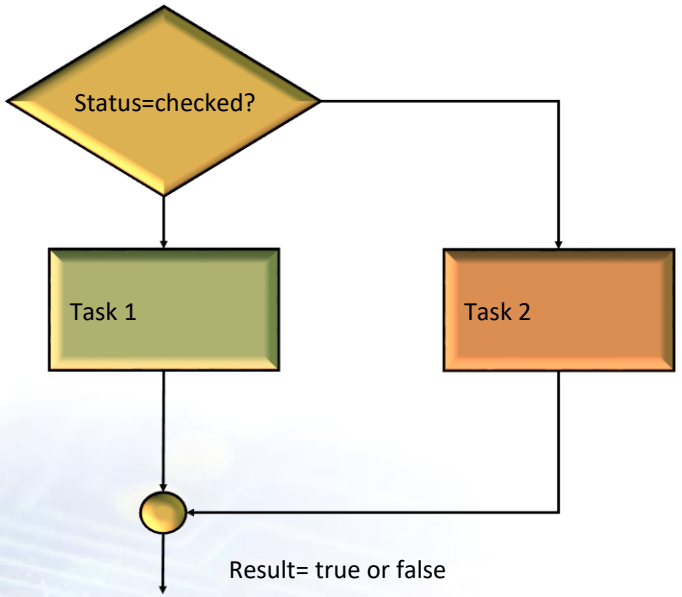


Functions in detail: Constraint Manager

Key functions:

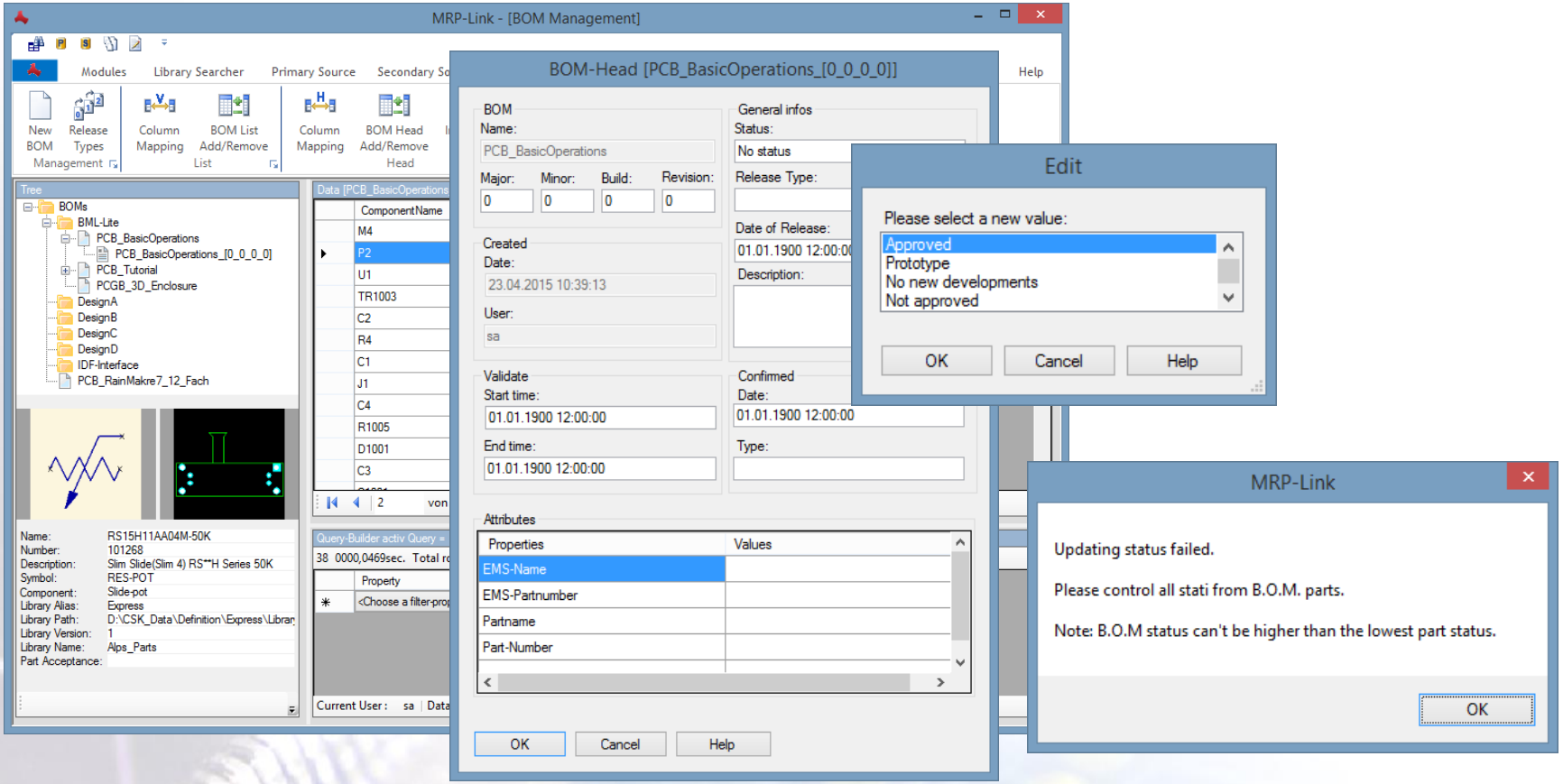
- Assign company workflows into MRP-Link
- Define individual rules based on companies requirements
- Add rules to user actions
- Easy adapting of rules when workflows have to be altered





MRP-Link - Constraint Manager

The BOM should be released, but only if all Parts have the status “Approved”.
This will be controlled with a user defined constraint.

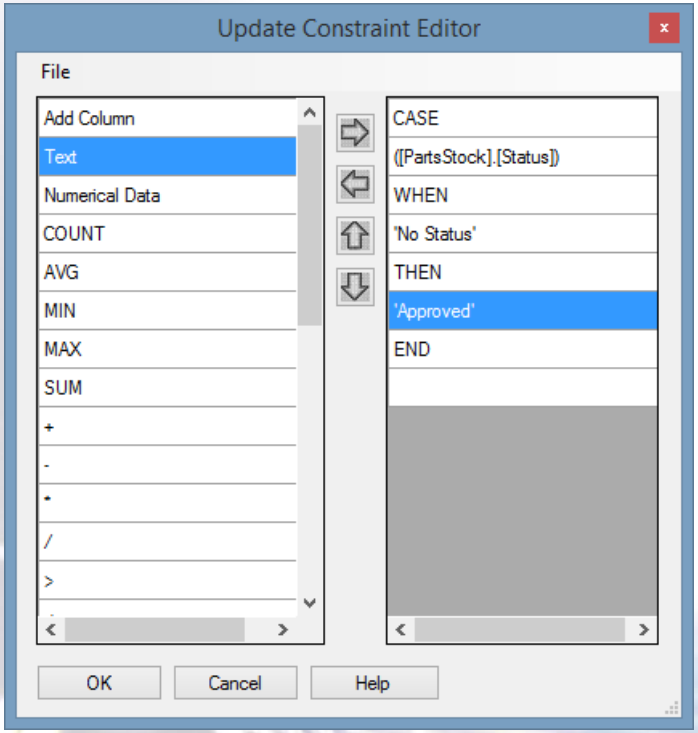


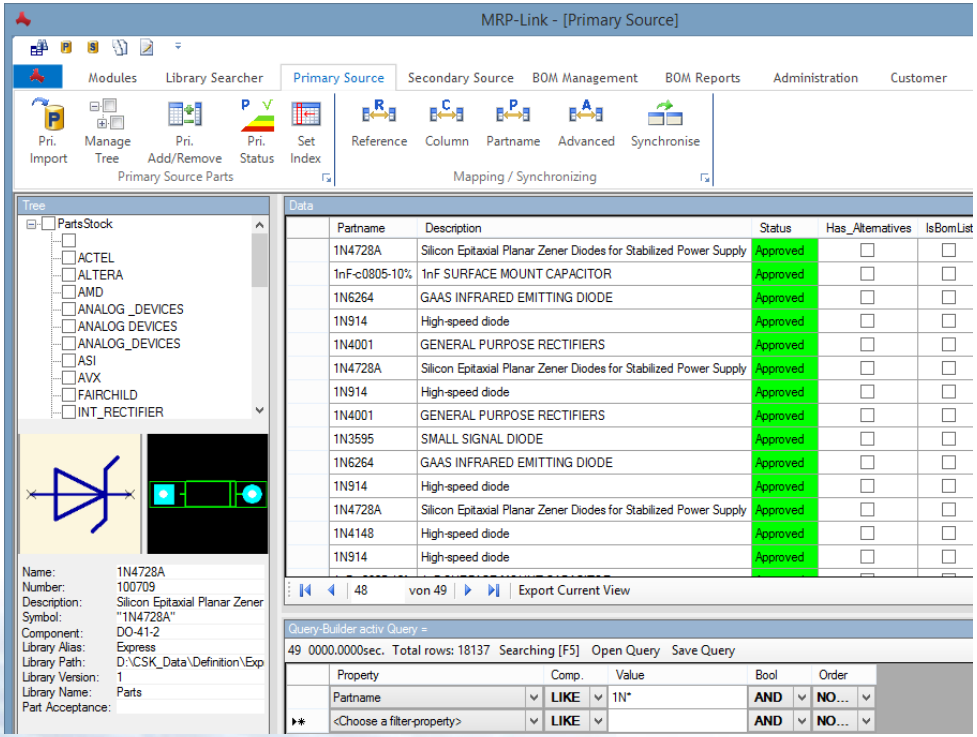
The check will be done after the “Edit Function”. If the result will break the constraint rule, a customized Adviser Message will appear.

Update Constraint Manager

Key functions:

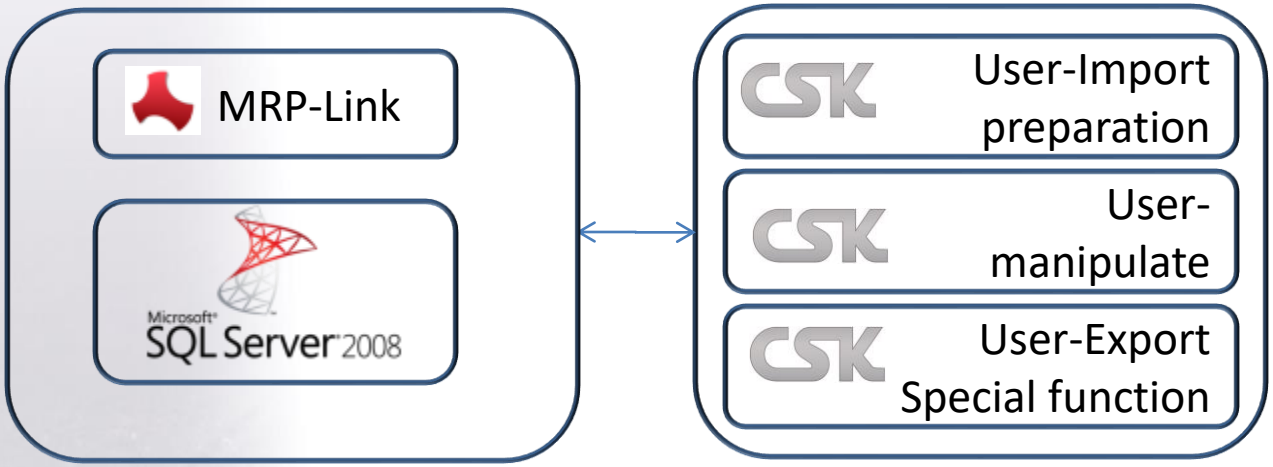
- Assign company workflows into MRP-Link
- Define individual rules based on companies requirements
- Update rule based columns with calculated values
- Based on T-SQL language with additional functions





MRP-Link Remote Computing

MRP-Link offers you the opportunity to carry out fully automated internal processes.
With a new interface, which is disclosed to you.
You get the option from MRP-Link to integrate your own developed programs and run them as automated processes.



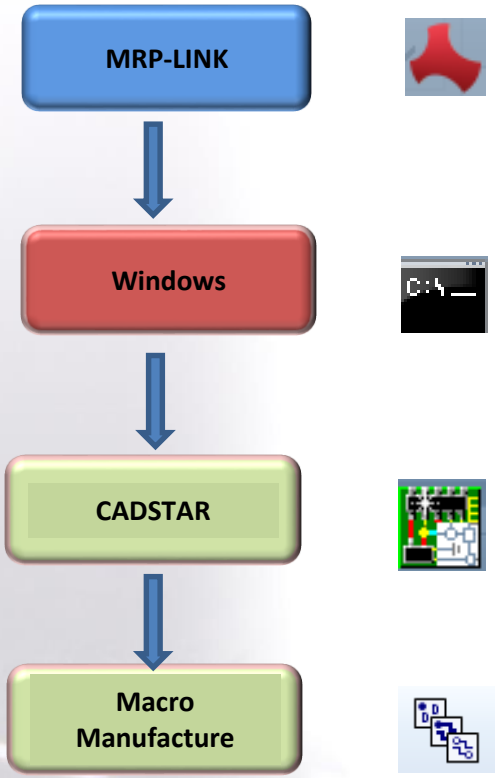
Is to be programmed with Visual Studio.

We will program individual routines as service, too.
The customer will get the source code of “customer.Class.”
The user rights belong to the whole “customer.Class.” and not to the MRP-Link toolkit.

SQL-Server is not part of MRP-Link

Communication via CMD Line

CADSTAR and a lot of other software programs are able to work with an enhanced CMD command line with parameters.



Example of a batch file with CMD command for CADSTAR:

REM BATCH file to start from CADSTAR

call "C:\Program Files (x86)\Zuken\CADSTAR 15.0\Programs\cadstar.exe"

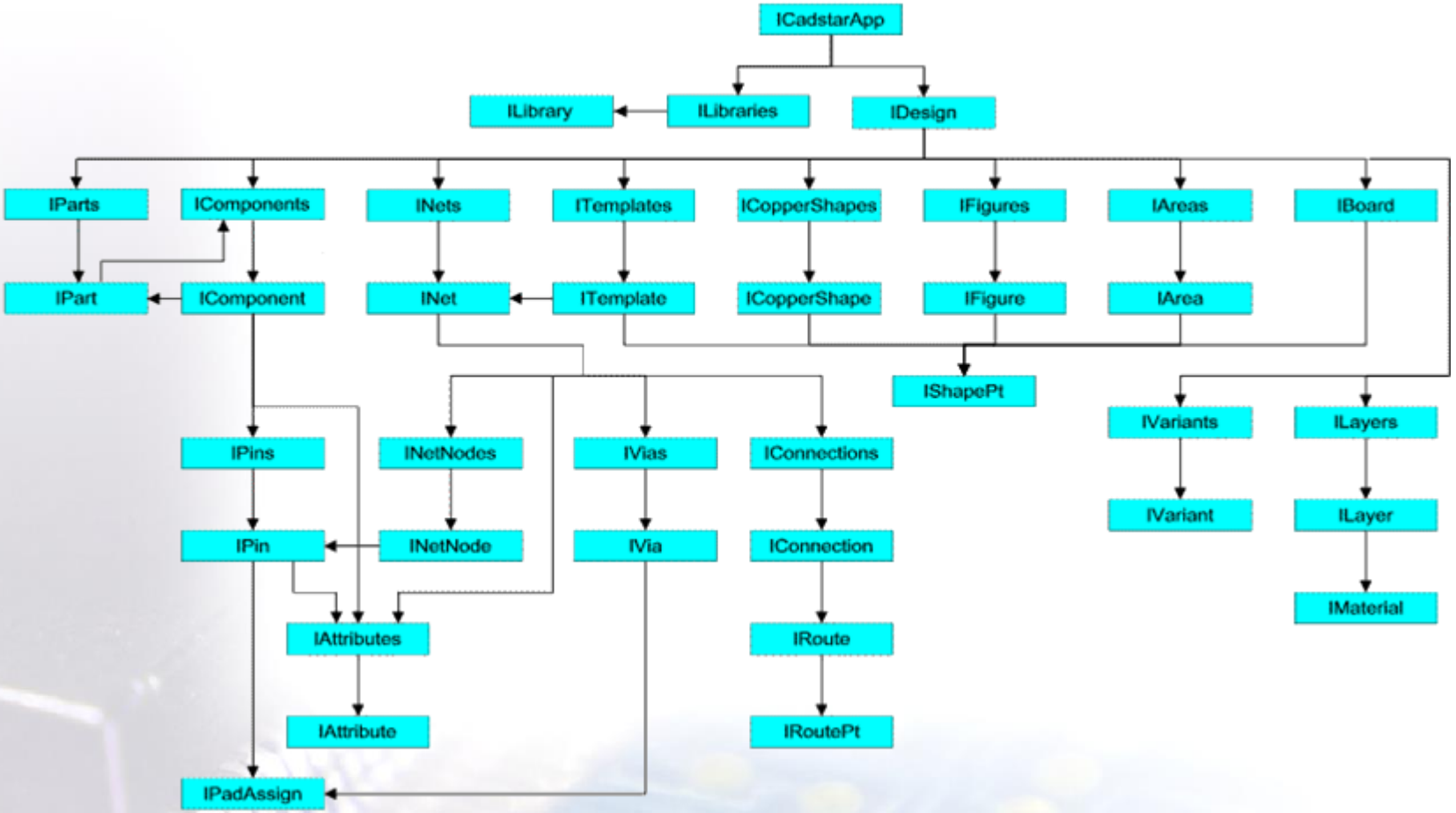
"D:\CSK_Hotline\2014\Zuken_CS15\CADSTAR_Projekte\Job_1\EXPRESS_Example1.pcb„

-E:Auto_PDP

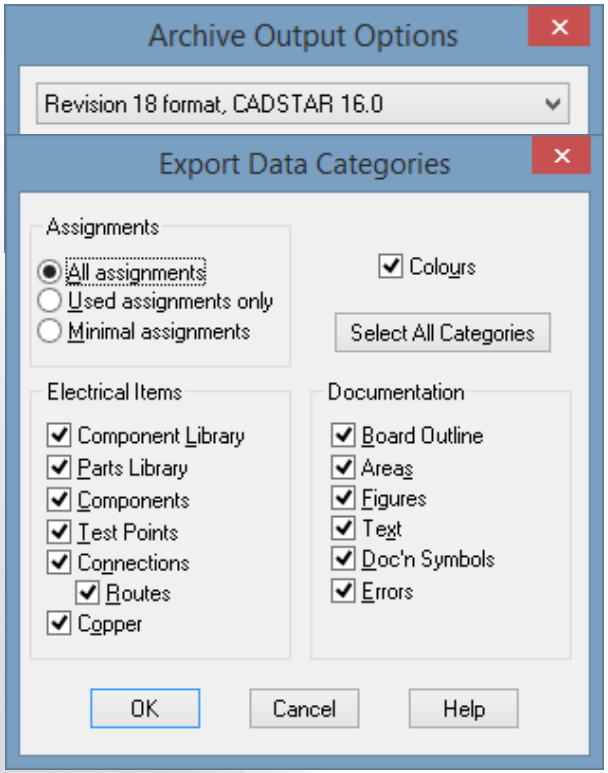
Just to create current valid set of manufacturing data. In PLM system we often use the name “HOOK Command” instead of CMD line command.

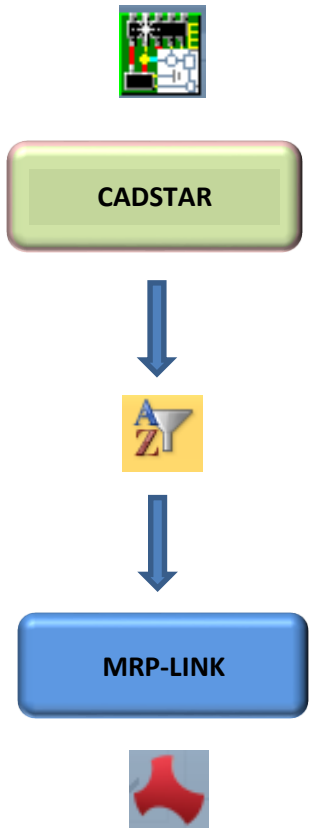
Communication via Object Linking and Embedding (OLE)

Most of the communication between the MRP-Link and CADSTAR is realized via the OLE function or combination of several functions.



Communication via csa/cpa and/or OLE Functions





If there is no OLE function available to get any specified information from the design, then MRP-Link uses simple OLE Archive Outputs with the filter option.

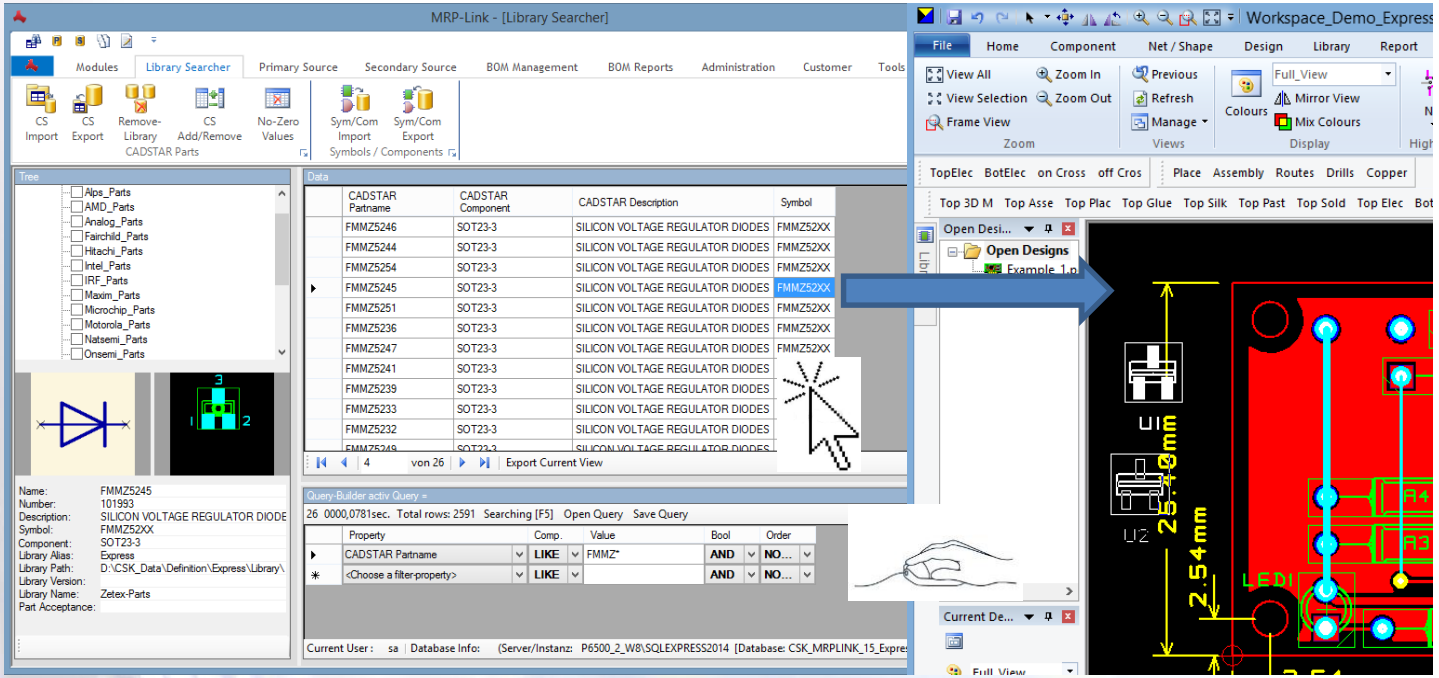
In a second step all necessary information will be collected with an intelligent parser together.

With the third step the user is able to work with this information inside the MRP-Link tools.

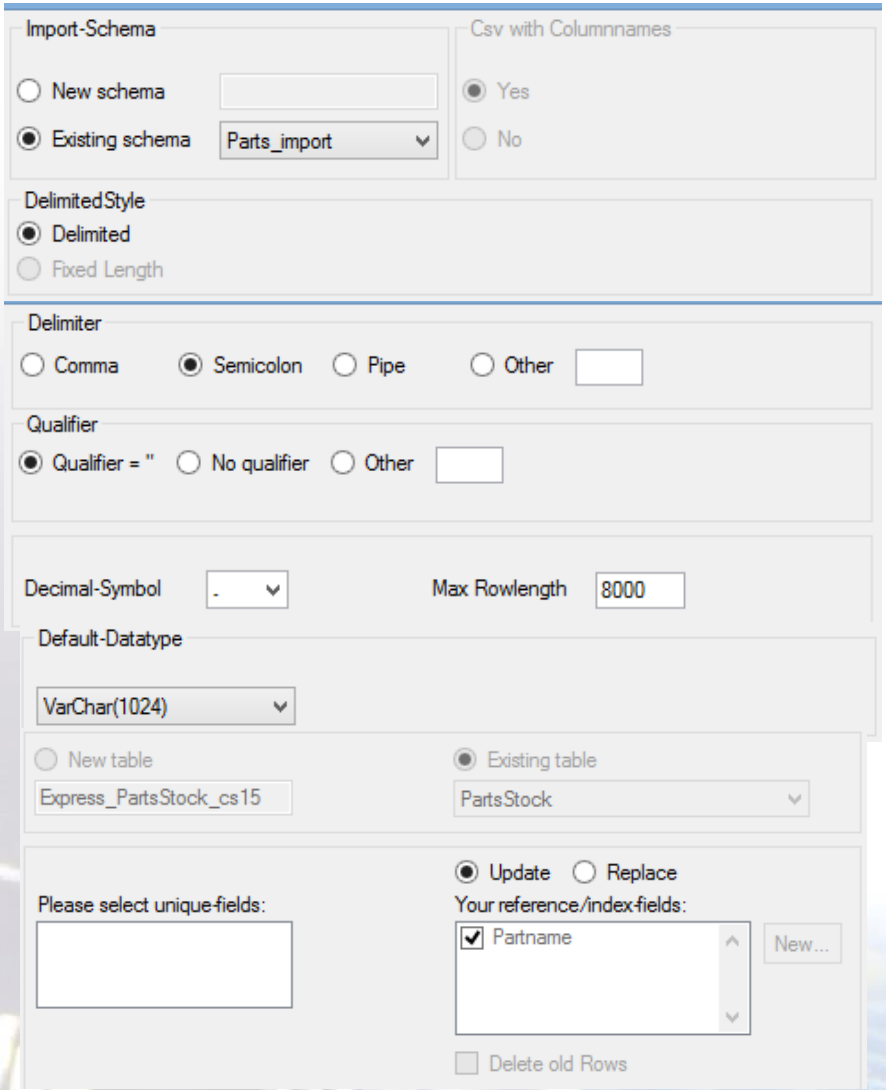
Communication via Drag & Drop

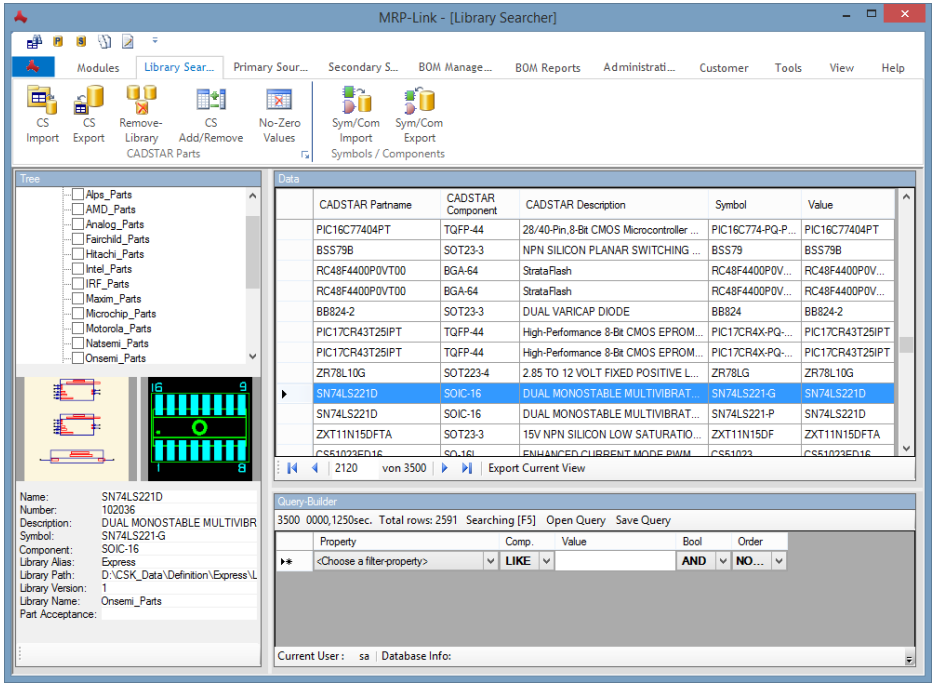
After finding a part, it is possible to use Drag & Drop inside the SQL Client and move this part directly into the CADSTAR screen.

Realized with Windows API functional and OLE functions.



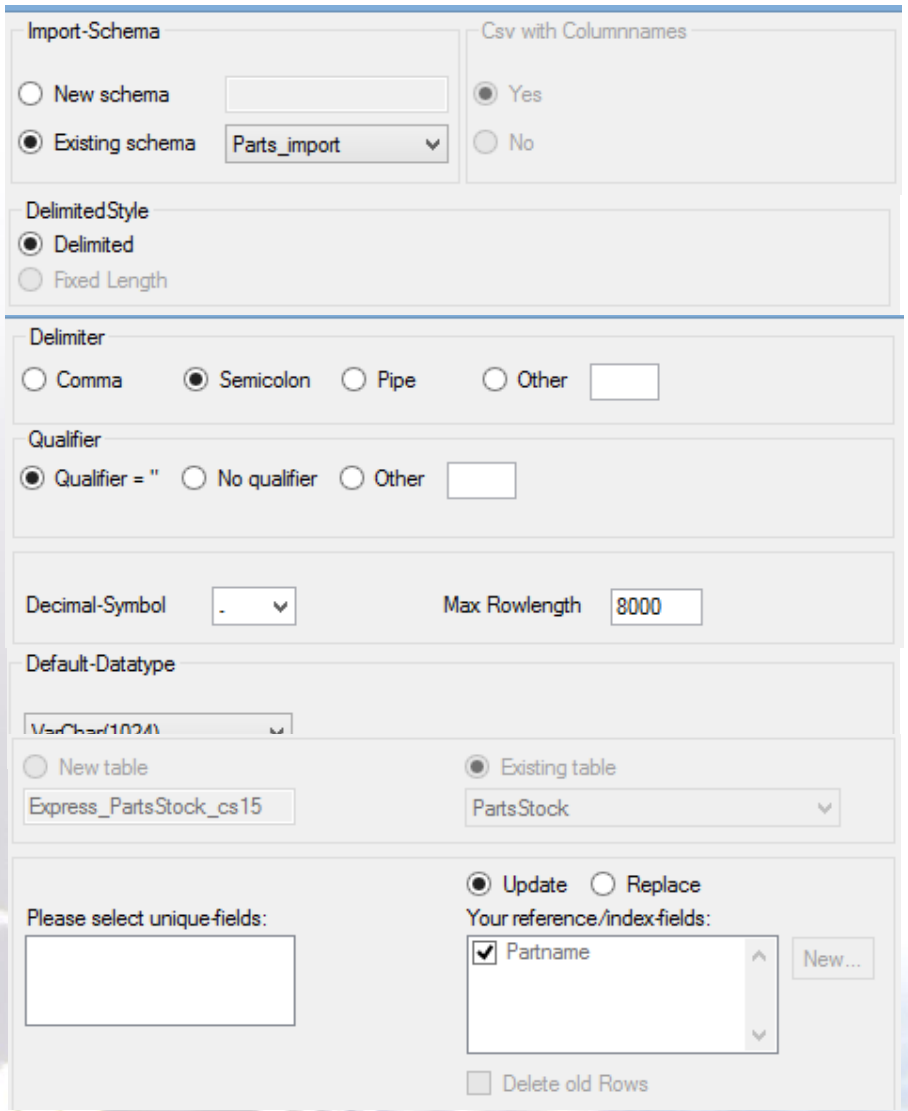
Communication via CMD Line and OLE Functions





Alternate-Compone	Component	Description	Partname	Pa
3E	5062_DTSt5P_T...	csk 1.25mm Pitc...	005062301005000	232
Varicon_x0.1in	7022_StgDR_17P	Series 7022 - 0.1...	007022017000001	932
6E	8289_EJSH_St1...	Ejector Style Hea...	008289010002011	232
0254	9155_MOBO_3P	9155 MOBO Batt...	009155003001001	232

Communication via CMD Line and OLE Functions



The default standard import and export to all other systems is based on CSV-Format.

The system supplies the wide range of conversion options.

All import or export definitions are stored in a schema for reuse during any automatic functions.

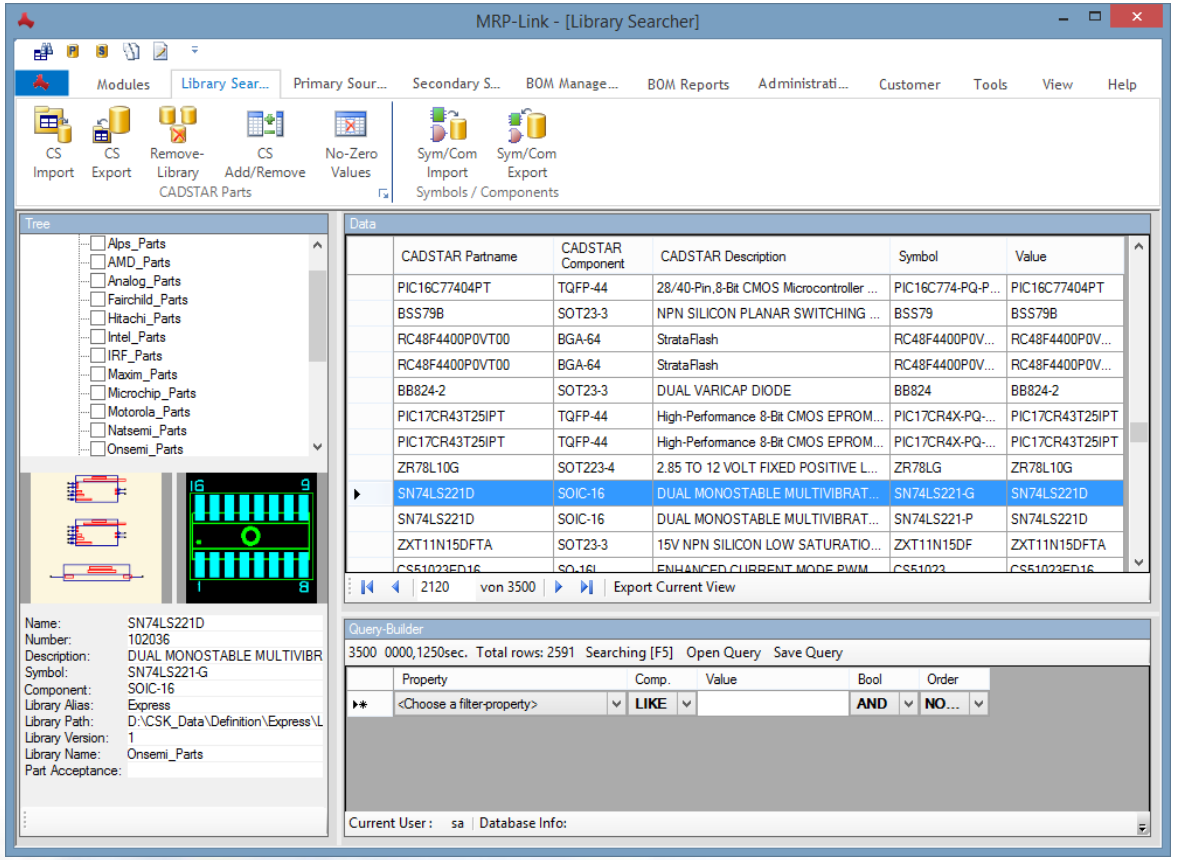
Alternate-Compone	Component	Description	Partname	Pa
3E	5062_DTSt5P_T...	csk 1.25mm Pitc...	005062301005000	232
Varicon_x0.1in	7022_StgDR_17P	Series 7022 - 0.1...	007022017000001	932
6E	8289_EJSH_St1...	Ejector Style Hea...	008289010002011	232
0254	9155_MOBO_3P	9155 MOBO Batt...	009155003001001	232

Synchronizing PLM data and CADSTAR designs

Synchronize MRP-Link & CADSTAR with ERP-DATA in less than 2 minutes.

Synchronize in only three steps:

1. Update Parts Stock with ERP-Data
2. Synchronize Library Searcher
3. Export to CADSTAR



New:
Synchronize in only one step with MRP-Link Batch Processing

Necessary communication requirements

MRP-Link

Microsoft Dynamics NAV

SAP

PTC

Windchill

RFC Remote Procedure Call

CS TBL OLE Functions

CSV TXT or XML File Format

CMD Command Line Functions

CADSTAR

Microsoft SQL Server

Necessary communication requirements

MRP-Link

Microsoft Dynamics NAV

SAP

PTC

Windchill

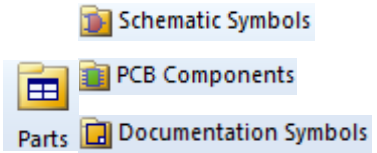
???

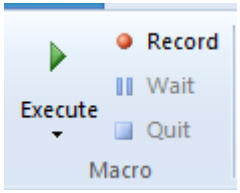
???

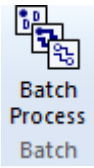
???

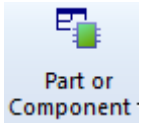
?RFC Remote Procedure Call?

Microsoft SQL Server









CSK MRP-Link

Official German Distributor

Für Rückfragen und weitere Informationen steht Ihnen das CSK Team gerne zur Verfügung.

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MRP-Link

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