



**THE
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“Bevölkern” von MS- Excel Formularen mit SAS Daten

Datentransfer von SAS zu MS-Excel
mittels ‘dynamic data exchange’ (DDE)

Bernadette Fabits

Agenda

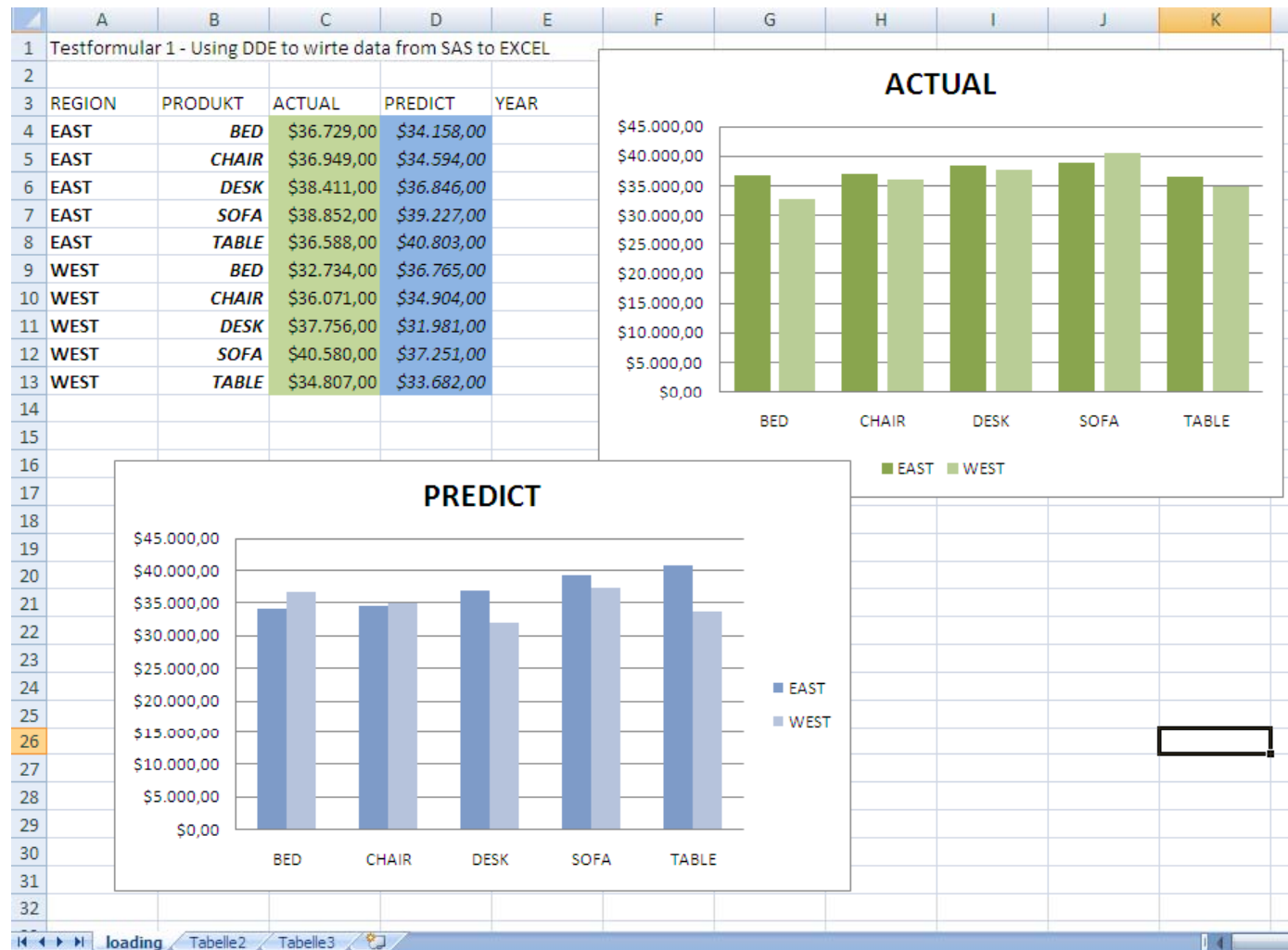
Das Ziel

Die Zutaten

So wirds gemacht

Alternative zu DDE

Das Ziel: hübsche Berichte in Excel



Das Ziel ist ...

verschiedene Aspekte

- ...**ein hübscher Bericht**: SAS Daten in **existierende** formatierte Excel Arbeitsblätter bringen
- ... **mit Daten in definierten Zellenformaten**: Einfügen von SAS Daten in Zellen mit **definierte Formate**
- ... **an definierten Stellen im Arbeitsblatt**: SAS Daten an **definierte Bereiche** im Arbeitsblatt einfügen
- ... möglichst **automatisierte Aktualisierung** der Daten

Agenda

Das Ziel





Die Zutaten

So wirds gemacht

Alternative zu DDE

Die Zutaten: SAS

- Analyseergebnis: gebrauchsfertiges SAS Dataset (Tabelle) I

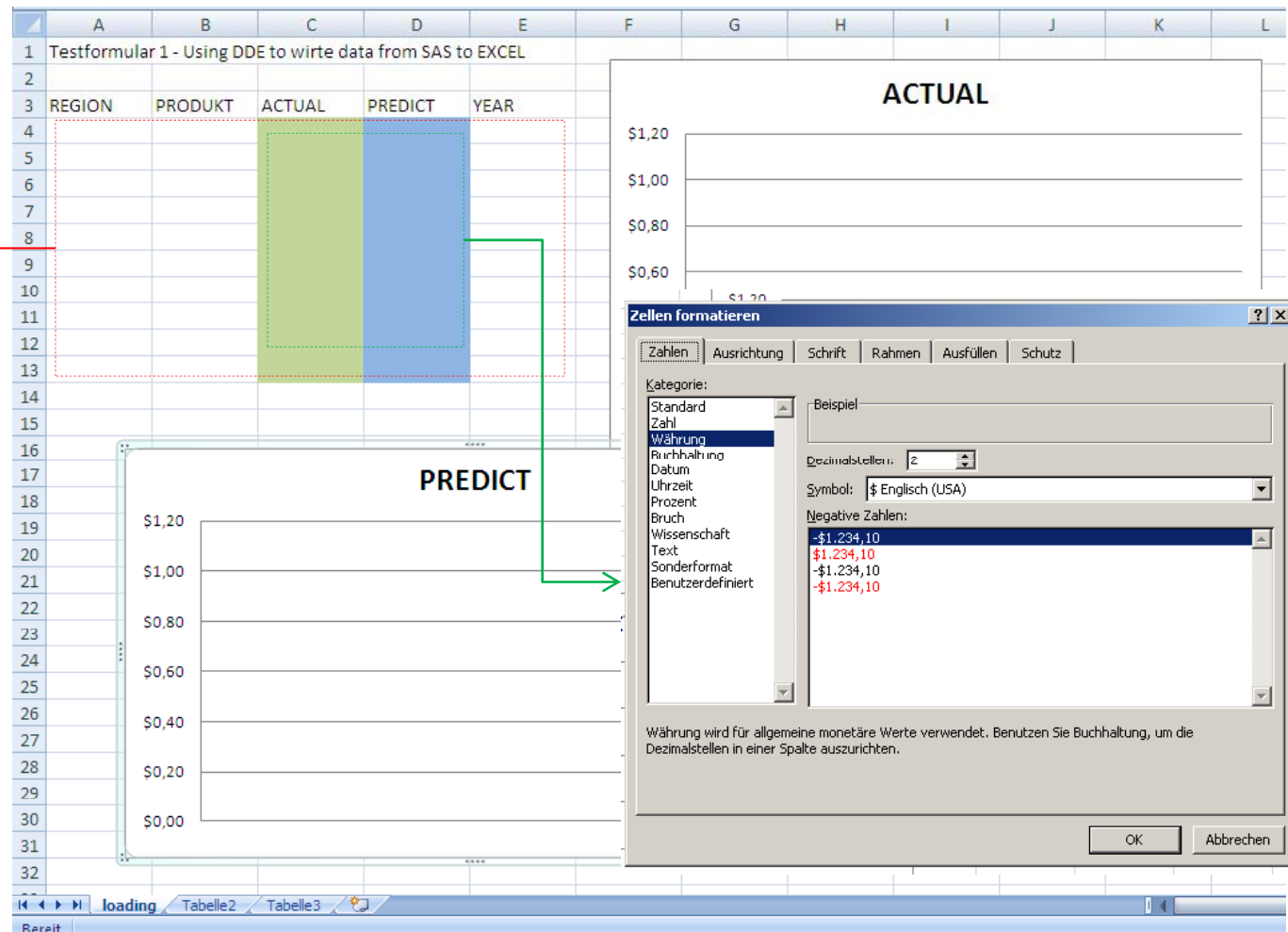
 REGION	 PRODUCT	 ACT	 PRED
EAST	BED	36729	34158
EAST	CHAIR	36949	34594
EAST	DESK	38411	36846
EAST	SOFA	38852	39227
EAST	TABLE	36588	40803
WEST	BED	32734	36765
WEST	CHAIR	36071	34904
WEST	DESK	37756	31981
WEST	SOFA	40580	37251
WEST	TABLE	34807	33682

Datenquelle: sashelp.prdsale

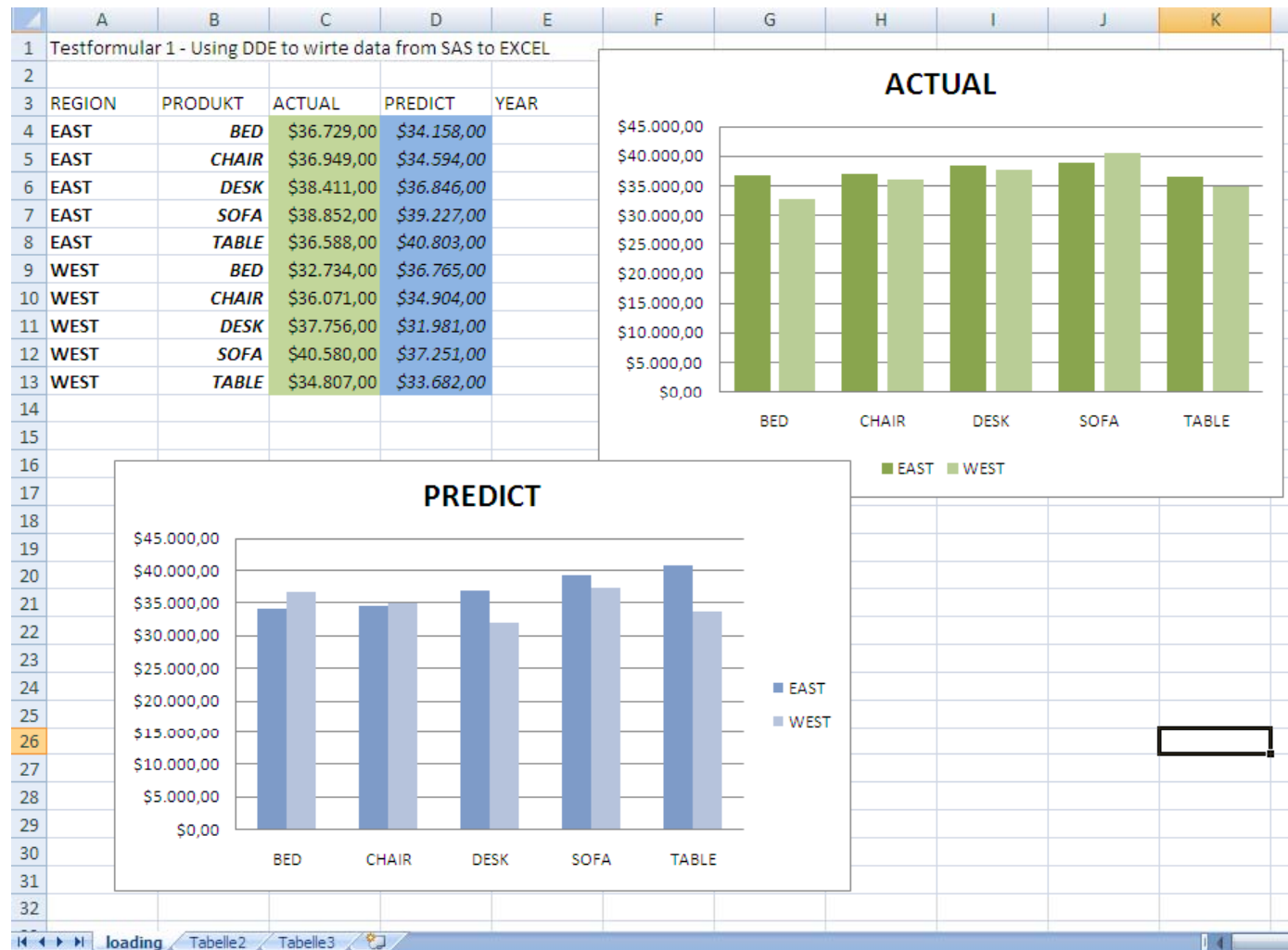
Die Zutaten: Excel

- Formatierte Arbeitsmappe

Einfügen der Daten
in definierten
Bereich



SAS + Excel = hübscher Bericht



Was ist DDE?

Dynamic Data Exchange (engl., Abk. **DDE**) bedeutet dynamischer Datenaustausch.

Es ist ein von der Firma Microsoft definierter Standard für den programmübergreifenden Datenaustausch unter MS-Windows. DDE ermöglicht eine Verknüpfung von Dateien oder Teilen von Dateien zwischen zwei Anwendungen, die den DDE-Standard unterstützen.

Agenda

Das Ziel

Die Zutaten

So wirds gemacht - Beispiel

Alternative zu DDE

So wirds gemacht: Excel

- Erstellen eines Excel Bericht
 - Title
 - Formatierte Zellen
 - Weiterverarbeiten der Daten zu Graphiken etc.



Microsoft Office
Excel Worksheet

MS Excel Dokument: C:\tmp\sample.xlsx

So wirds gemacht: SAS

- Setzen von SAS Optionen
- Verwenden eines X Befehl um Excel zu öffnen
- Verwenden FILENAME Statement mit DDE Option zum Datenaustausch
- Verwenden von FILENAME Statement mit Option DDE und SYSTEM um Änderungen in Excel zu speichern und Excel zu schließen

Beispiel

1. Schritt: Erzeugen der Ergebnisse mit SAS Enterprise Guide

The screenshot displays the SAS Enterprise Guide interface. The 'Projektbaum' (Project Tree) on the left shows the workflow: PRDSALE -> Abfrage erstellen (Query Create) -> SUM_REP. The 'Abfrage erstellen für LocalSASHELP.PRDSALE' dialog box is open, showing the 'Berechnete Spalten' (Computed Columns) list with 'ACTUAL' and 'PREDICT' selected. The 'Vorschau' (Preview) tab is active, showing the resulting data table.

Tabelle: SUM_REP in Library: WORK

	REGION	PRODUCT	SUM_of_ACTUAL	SUM_of_PREDICT
1	EAST	BED	\$36,729.00	\$34,158.00
2	EAST	CHAIR	\$36,949.00	\$34,594.00
3	EAST	DESK	\$38,411.00	\$36,846.00
4	EAST	SOFA	\$38,852.00	\$39,227.00
5	EAST	TABLE	\$36,598.00	\$40,803.00
6	WEST	BED	\$32,734.00	\$36,765.00
7	WEST	CHAIR	\$36,071.00	\$34,904.00
8	WEST	DESK	\$37,756.00	\$31,981.00
9	WEST	SOFA	\$40,580.00	\$37,251.00
10	WEST	TABLE	\$34,807.00	\$33,682.00

The 'Vorschau' (Preview) tab also displays the following SAS code:

```

1 % eg_conditional_drops(WORK.SUM_REP);
2
3 PROC SQL;
4   CREATE TABLE WORK.SUM_REP AS
5   SELECT t1.REGION,
6          t1.PRODUCT,
7          /* SUM_of_ACTUAL */
8          (SUM(t1.ACTUAL)) FORMAT=DOLLAR12.2 AS SUM_of_ACTUAL,
9          /* SUM_of_PREDICT */
10         (SUM(t1.PREDICT)) FORMAT=DOLLAR12.2 AS SUM_of_PREDICT
11   FROM SASHELP.PRDSALE AS t1
12  WHERE t1.YEAR = 1993
13  GROUP BY t1.REGION, t1.PRODUCT;
14 QUIT;
15

```

Enterprise Guide Project: C:\data\SAS Club Mai 2010\ExportSAS2Excel.egp

Datenaustausch mittels dynamic data transfer

2. Setzen von SAS Optionen noxwait und noxsync

- **option noxwait:** Üblicherweise muss nach dem Ausführen des X-Command EXIT eingegeben werden damit SAS Session wieder aktiv wird. Option noxwait übergibt nach dem Ausführen sofort an die SAS Session.
- **option noxsync:** Ist noxsync spezifiziert, ist es möglich nach dem Start einer Windows Applikation mittels X-Befehl zur SAS Session zurückzukehren ohne die Applikation zu schließen.

```
options noxwait noxsync;
```

3. Öffnen eines vordefinierten MS Excel Formular mittels X-Command

```
x "path\data-file-name";
```

Beispiel: `x "C:\tmp\sample.xlsx";`

Datenaustausch mittels dynamic data transfer

4. Warten bis MS Excel gestartet ist

- Aussetzen der Verarbeitung mittels DATA _NULL_ und Funktion SLEEP bis MS Excel gestartet ist
- Verzögerungszeit in Sekunden angeben

```
data _null_;  
rc = sleep(5);  
run;
```

Datenaustausch mittels dynamic data transfer I

5.SAS Daten mittels DDE Option im Filename Statement lesen und in Excel schreiben

- Um “dynamic data exchange” in SAS zu verwenden, setzt man FILENAME Statement mit der DDE Option ein

```
FILENAME fileref DDE 'DDE-triplet' <DDE-options>;
```

Fileref : ein gültige fileref-Name

DDE: Schlüsselwort, welches SAS mitteilt es soll
Dynamic Data Exchange verwendet werden.

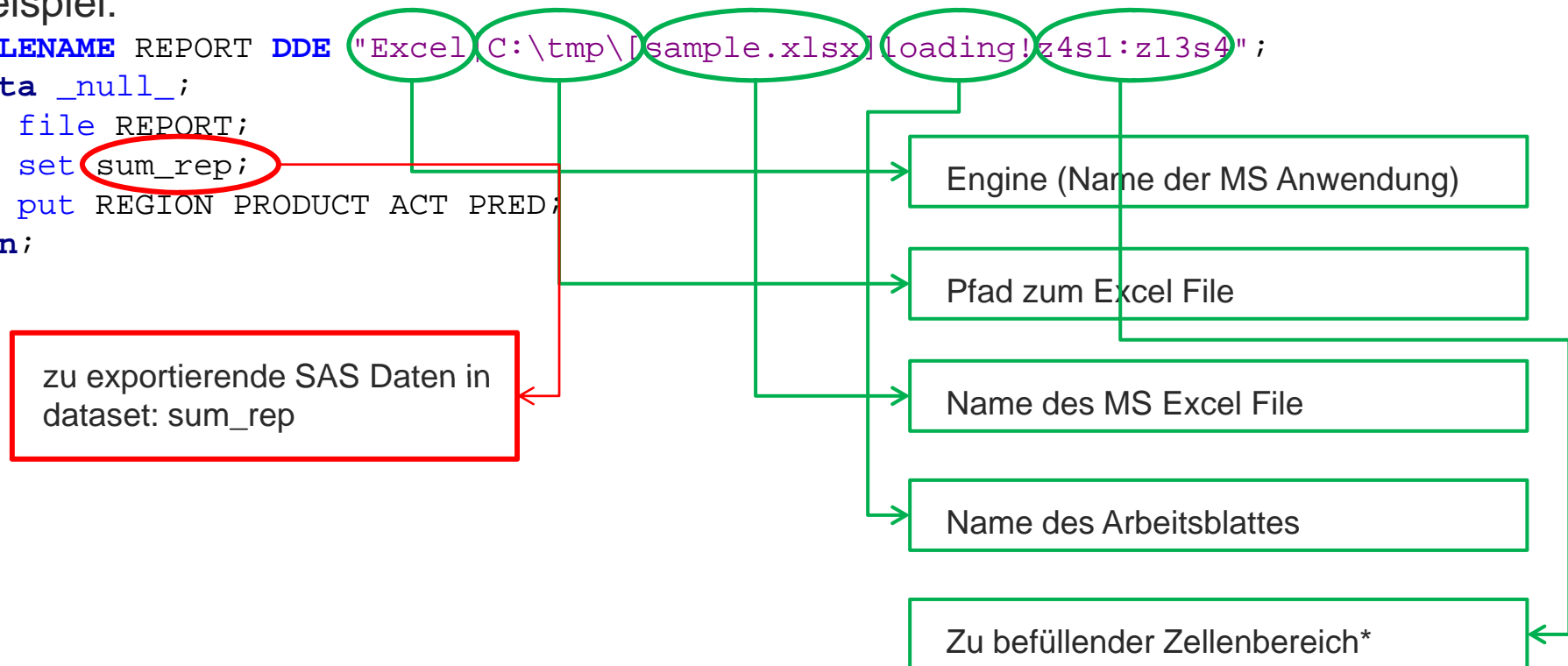
DDE-triplet: engine-name, Pfad, Name, Arbeitsblatt
der externen Datei, Bereich

Datenaustausch mittels dynamic data transfer II

6.SAS Daten mittels DDE Option im Filename Statement lesen und in Excel schreiben

Beispiel:

```
FILENAME REPORT DDE "Excel C:\tmp\[sample.xlsx]Loading!z4s1:z13s4";
data _null_;
  file REPORT;
  set sum_rep;
  put REGION PRODUCT ACT PRED;
run;
```



* Bei Verwendung von MS Excel in Deutsch sind Zeilen mit z und Spalten mit s anzugeben, bei der Verwendung von MS Excel in Englisch ist r für rows und c für columns anzugeben!

Datenaustausch mittels dynamic data transfer

7. Aus der SAS Session heraus: Änderungen im MS Excel speichern und schließen

- Verwendung von SYSTEM erlaubt die Ausführung von Befehlen in MS Excel
- PUT Statement führen MS Excel Macro-Befehle aus: Speichern und Schließen

Beispiel:

```
FILENAME CMDS DDE 'EXCEL|SYSTEM' ;
DATA _NULL_ ;
FILE CMDS ;
PUT '[SAVE( )]' ;
PUT '[QUIT( )]' ;
RUN ;
```

Datenaustausch mittels dynamic data transfer

8. Kopieren des MS Excel Formular mit aktuellen Daten in einen Report-Folder

- Verwendung von X Commands zum Kopieren, Ändern des Verzeichnis, Umbenennen und DOS Beenden

Beispiel:

```
/** Copy the report to Report folder ;**/
X "COPY C:\tmp\sample.xlsx C:\tmp\report" ;
X "CD C:\tmp\report" ;
/** Wait for 5 seconds for DOS prompt;**/
DATA _NULL_ ;
X=SLEEP(5) ;
RUN ;
/** Rename SAMPLE.XLSX **/
X "RENAME C:\tmp\report\sample.xlsx SAMPLE_&SYSDATE..XLSX" ;
DATA _NULL_ ;
X=SLEEP(5) ;
RUN ;
/** Exit DOS **/
X "EXIT" ;
```

Allgemeines DDE

- Kann auch verwendet werden um aus MS Excel zu lesen
- Kann auch verwendet werden um Daten in MS Word zu exportieren und von MS Word lesen
- Um DDE aus dem Enterprise Guide verwenden zu können, muss vorher „NOCMD Startup“ ausgeschaltet werden.

Agenda

Das Ziel

Die Zutaten

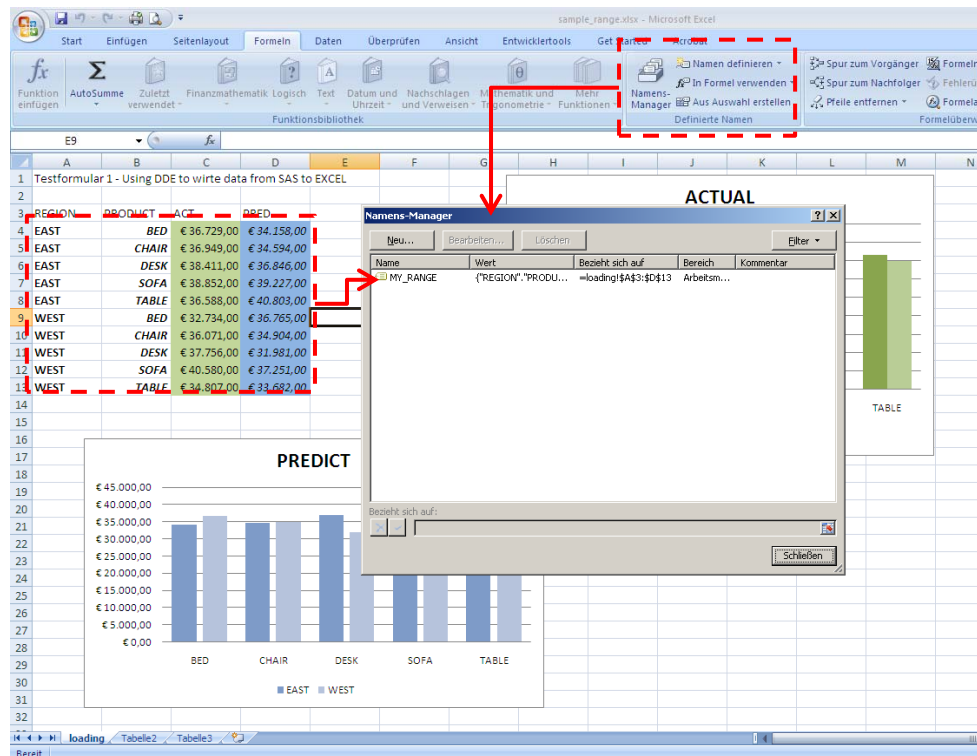
So wirds gemacht - Beispiel

Alternative zu DDE

Alternative: Einsatz von Excel Bereiche (range)

So wird's gemacht

- Definition eines Bereichs für die SAS Daten in MS EXCEL



Microsoft Office
Excel Worksheet

Alternative: Einsatz von Excel Bereiche (range)

So wird's gemacht - SAS

1. Verbinden mit MS Excel Arbeitsblatt mittels SAS/ACCESS LIBNAME Anweisung*

```
LIBNAME libref <engine-name> 'physical-file-name' <options>;
```

Beispiel: `libname` workbook EXCEL path="C:\tmp\sample_range.xlsx";

2. Löschen der definierten Bereiche mittels PROC DATASETS

Beispiel:

```
PROC DATASETS library=workbook nolist;  
delete MY_RANGE;  
quit;
```

Anmerkung: Beim definierte Bereichsname (MY_RANGE) wird zwischen Groß- und Kleinschreibung unterschieden!

Alternative: Einsatz von Excel Bereiche (range)

So wird's gemacht

3. ... ein einfacher „datastep“ ermöglich den Export

Beispiel: `data` workbook.MY_RANGE;
 `set` sum_rep (keep= REGION PRODUCT ACT PRED);
 `run`;

4. Trennen der Verbindung zum Arbeitsblatt – notwendig!

Beispiel: `libname` workbook `clear`;



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Allgemeine Informationen

Dr. Gerhard Svolba

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<p>• SAS Macro Facility, Data Step and SAS Language Elements This forum consists of questions or ideas concerning SAS language elements such as the Macro facility, DATA step programming, using PROC SQL with Macro, SAS Options, etc.</p>	110,528	1,232 / 5,979	May 6, 2010 3:47 AM by: Peter.C »
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Thank you, Lauren Haworth, [2010 SAS® Global Forum Chair](#) »

This year's conference was a huge success, all made possible through Lauren Haworth's unwavering leadership and commitment to creating an outstanding event. On behalf of all attendees and SAS staff members, thank you, Lauren. A big thank you also goes out to Lauren's [section chairs](#) for the hundreds of volunteer hours they put in to make SAS Global Forum 2010 a reality.

We would also like to gratefully acknowledge our [2010 sponsors](#) and thank them for their support.

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Maura Stokes
R & D DIRECTOR, STATISTICAL APPLICATIONS

Dear Reader,

I'm writing this copy on St. Patrick's Day, so I wish you all the luck of the Irish. I'm hoping that your programs are all working and your data are behaving. Here in North Carolina, we didn't see the snow this winter that other regions saw, but we had enough white stuff for me to regain my New Hampshire-bred shoveling form!

Anyway, spring is here, and so [SAS® Global Forum](#) must be around the corner. This newsletter issue provides a preview of some SAS Global Forum presentations at the upcoming conference in Seattle from April 11-14. In addition, I point out new information on the support.sas.com Web site that might be useful for you.

Enjoy the spring weather, and please say hello if you see me at SAS Global Forum!

[Maura](#)