

**Evaluierung der MapGuide Software  
hinsichtlich der  
Bereitstellung von AutoCAD Daten  
als Web Map Service**

Jan Berghoff-Flüel

# Überblick

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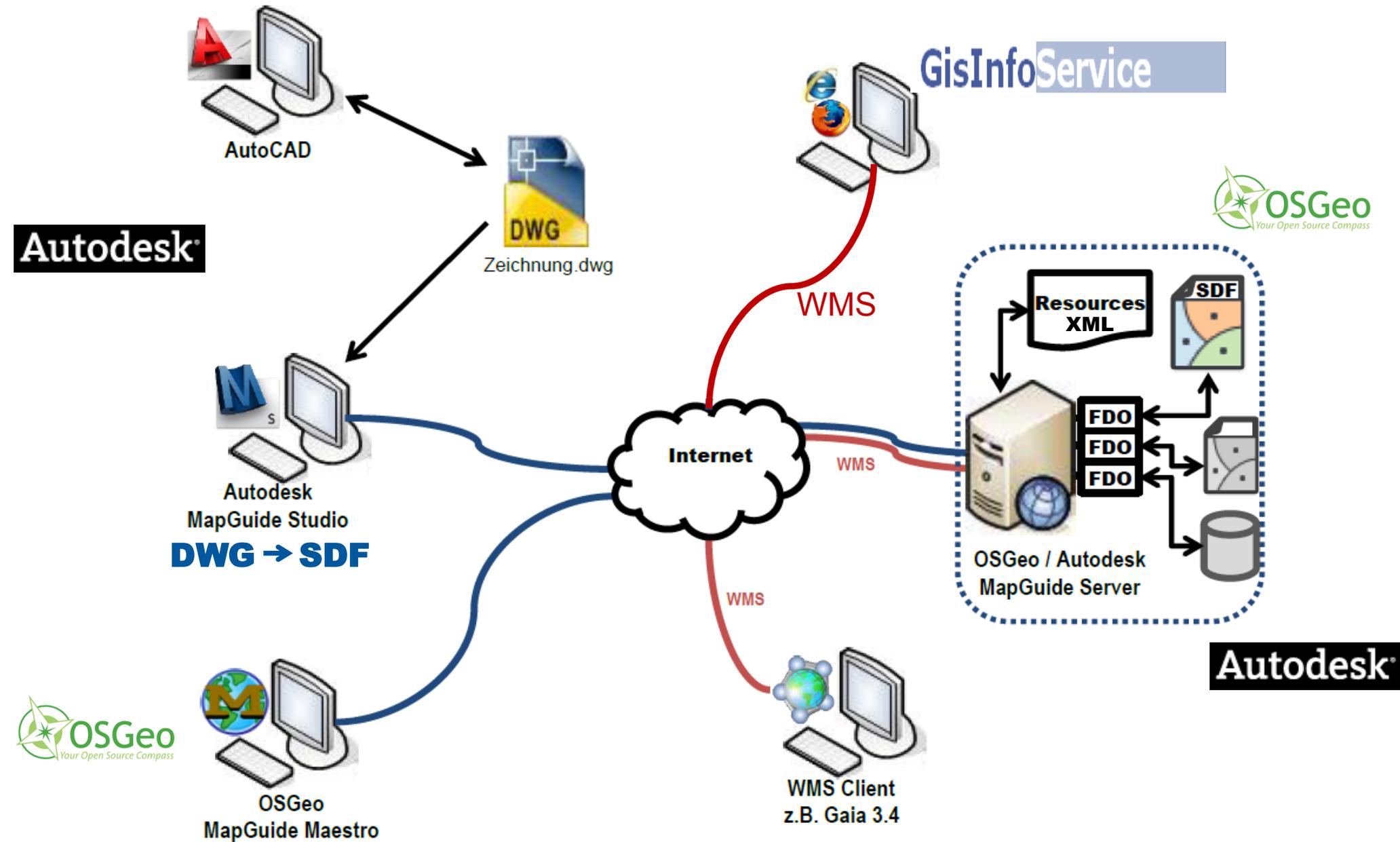
- Hintergrund / Motivation
- MapGuide Software
- Herausforderungen und Lösungen
- Beispiel
- Fazit
- Fragen

- Informationsplattform für Geoinformationen und Geodienste
- WEB-basiert
- Open-Source-Software
- OGC Standards & Spezifikationen
  - WMS (Web Map Service)
- **Einbindung von Daten aus AutoCAD / DWG Quellen**
  - Bisher: Konvertierung DWG nach SHP (ESRI / ArcView)
    - aufwändig, verlustbehaftet, kaum verifizierbar

## ➤ MapGuide Software

- MapGuide Server mit WMS Dienst nach OGC Standard
- Liest SDF (Spatial Data File) Format
- Konvertierung DWG nach SDF mit Autodesk MapGuide Studio

# MapGuide Software



# Verifikation der DWG nach SDF Konvertierung

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# Verifikation der DWG nach SDF Konvertierung

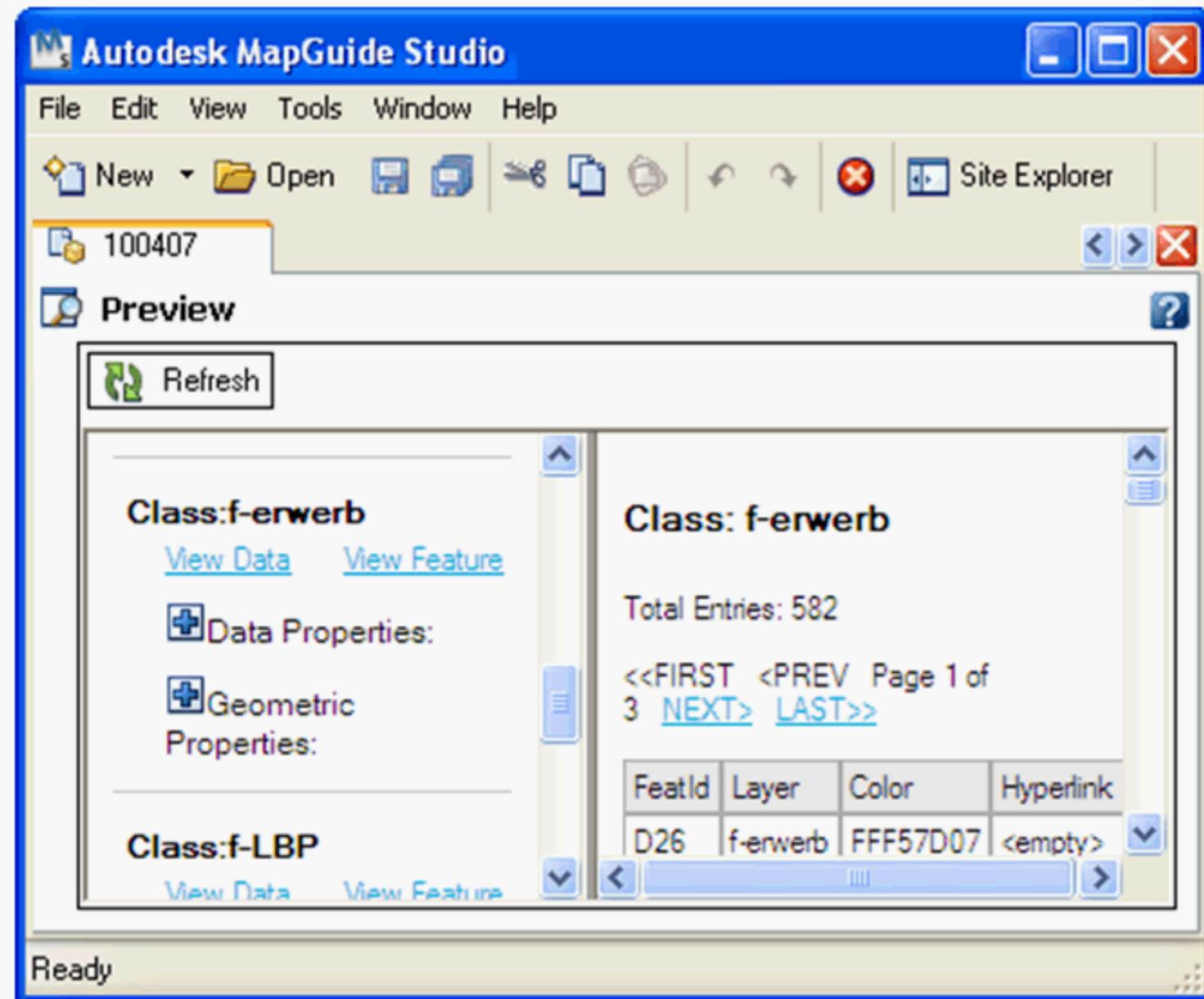
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**Keine Protokoll-/Logdatei zur DWG nach SDF Konvertierung !**

# Verifikation der DWG nach SDF Konvertierung

Keine Protokoll-/Logdatei zur DWG nach SDF Konvertierung !

Info zu SDF Daten in MapGuide Studio



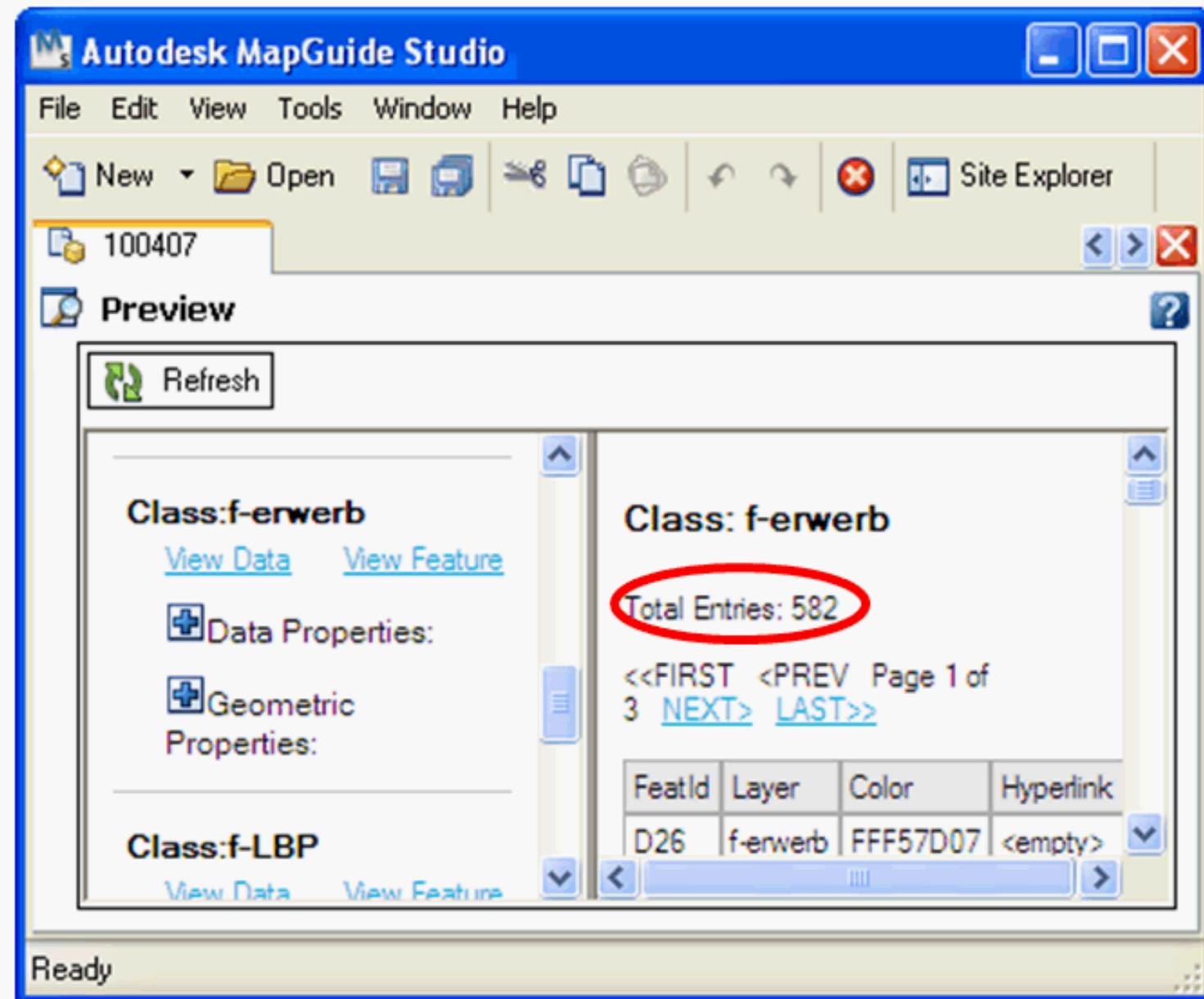
The screenshot shows the Autodesk MapGuide Studio interface. The main window displays a data table for the class 'f-erwerb'. The table has four columns: FeatId, Layer, Color, and Hyperlink. The first row shows the value 'D26' for FeatId, 'f-erwerb' for Layer, 'FFF57D07' for Color, and '<empty>' for Hyperlink. The interface also shows a 'Preview' pane with a 'Refresh' button and a 'Class:f-erwerb' section with 'View Data' and 'View Feature' links. The status bar at the bottom indicates 'Ready'.

FeatId	Layer	Color	Hyperlink
D26	f-erwerb	FFF57D07	<empty>

# Verifikation der DWG nach SDF Konvertierung

Keine Protokoll-/Logdatei zur DWG nach SDF Konvertierung !

Info zu SDF Daten in MapGuide Studio



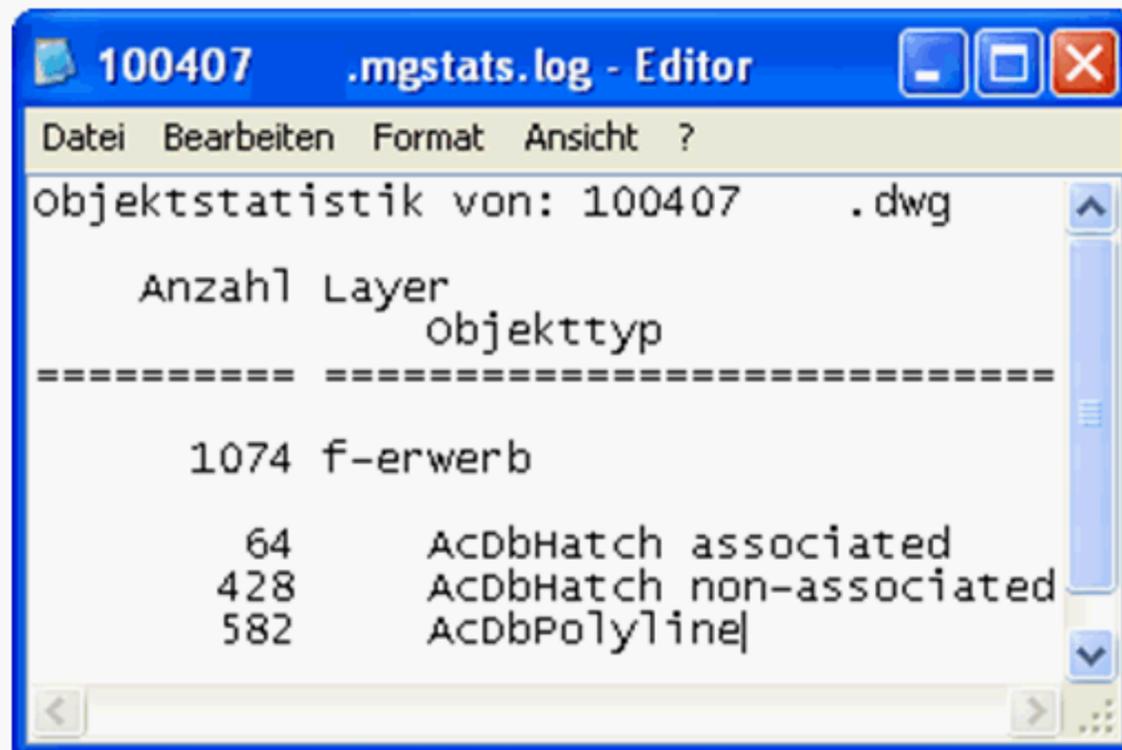
The screenshot shows the Autodesk MapGuide Studio interface. The main window displays a preview of SDF data for a class named 'f-erwerb'. The 'Total Entries: 582' is circled in red. Below this, there is a table with columns for 'FeatId', 'Layer', 'Color', and 'Hyperlink'. The first row shows 'D26', 'f-erwerb', 'FFF57D07', and '<empty>'. The status bar at the bottom indicates 'Ready'.

FeatId	Layer	Color	Hyperlink
D26	f-erwerb	FFF57D07	<empty>

# Verifikation der DWG nach SDF Konvertierung

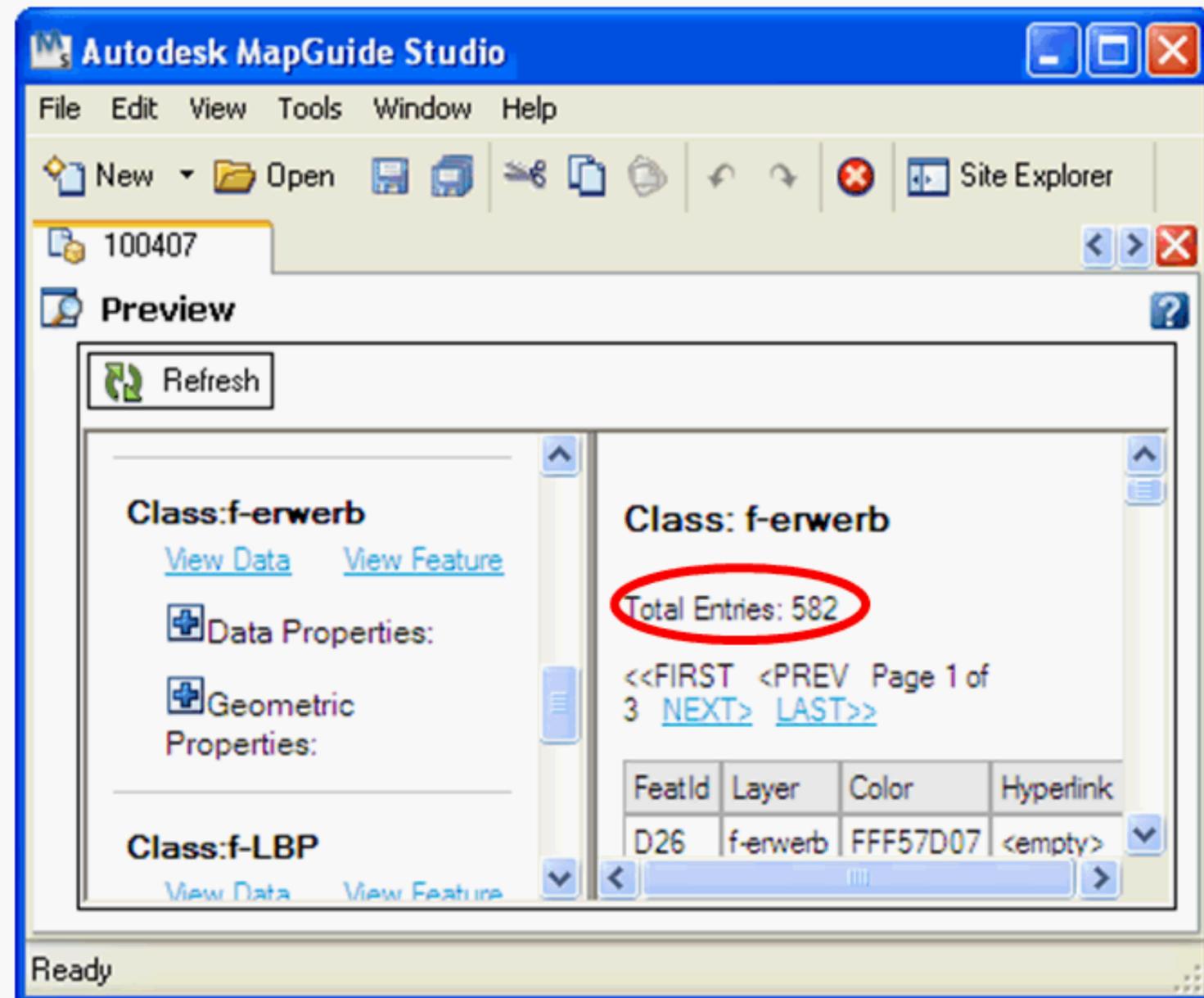
**Keine Protokoll-/Logdatei zur DWG nach SDF Konvertierung !**

**Analyseprogramm (AutoLisp)  
für DWG Daten**



```
100407 .mgstats.log - Editor
Datei Bearbeiten Format Ansicht ?
Objektstatistik von: 100407 .dwg
Anzahl Layer
----- objekttyp
-----
1074 f-erwerb
64 AcDbHatch associated
428 AcDbHatch non-associated
582 AcDbPolyline
```

**Info zu SDF Daten in MapGuide Studio**



Autodesk MapGuide Studio

File Edit View Tools Window Help

New Open Site Explorer

100407

Preview

Refresh

**Class:f-erwerb**  
[View Data](#) [View Feature](#)

+ Data Properties:  
+ Geometric Properties:

**Class:f-erwerb**  
**Total Entries: 582**

<<FIRST <PREV Page 1 of 3 NEXT> LAST>>

FeatId	Layer	Color	Hyperlink
D26	f-erwerb	FFF57D07	<empty>

Ready

# Verifikation der DWG nach SDF Konvertierung

## Keine Protokoll-/Logdatei zur DWG nach SDF Konvertierung !

Analyseprogramm (AutoLisp)  
für DWG Daten

Info zu SDF Daten in MapGuide Studio

```
100407 .mgstats.log - Editor
Datei Bearbeiten Format Ansicht ?
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```

Autodesk MapGuide Studio

File Edit View Tools Window Help

New Open Site Explorer

100407

Preview

Refresh

Class: f-erwerb

[View Data](#) [View Feature](#)

Data Properties:

Geometric Properties:

Class: f-LBP

[View Data](#) [View Feature](#)

Total Entries: 582

<<FIRST <PREV Page 1 of 3 NEXT> LAST>>

FeatId	Layer	Color	Hyperlink
D26	f-erwerb	FFF57D07	<empty>

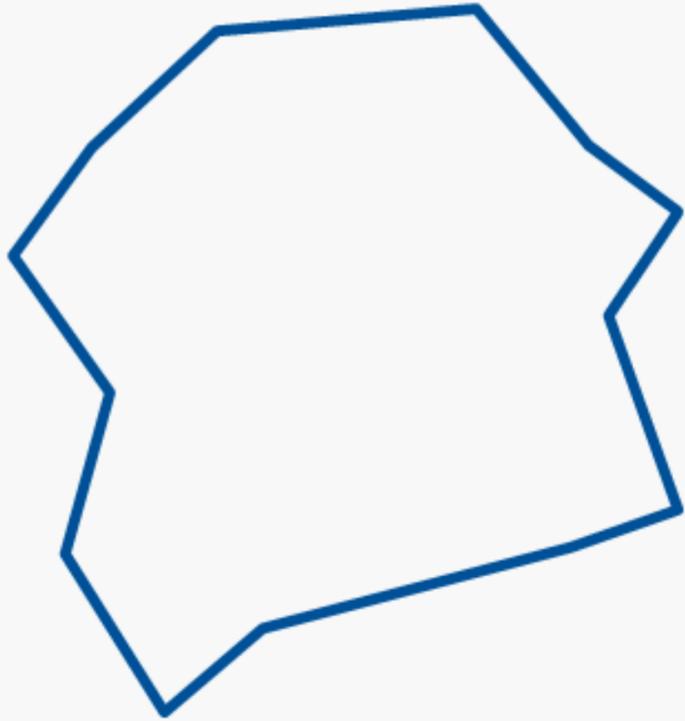
Ready

# Schraffur (hatch)

---

# Schraffur (hatch)

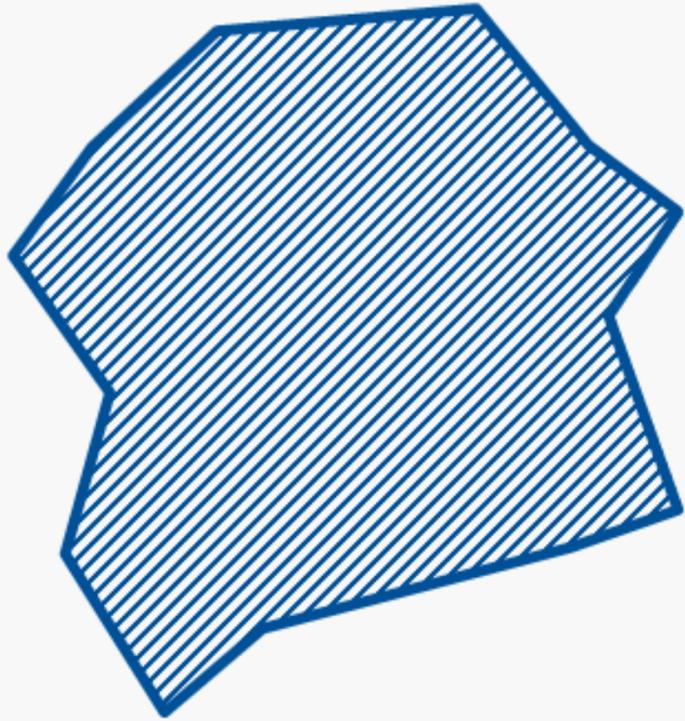
---



1. geschlossene Umrandungslinie

# Schraffur (hatch)

---



Assoziativ = Ja

1. geschlossene Umrandungslinie
2. Füllung mit Schraffur

# Schraffur (hatch)

---



Assoziativ = Nein

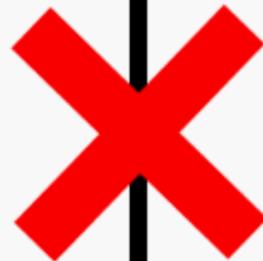
1. geschlossene Umrandungslinie
2. Füllung mit Schraffur
3. Umrandungslinie gelöscht

# Schraffur (hatch)



Assoziativ = Nein

1. geschlossene Umrandungslinie
2. Füllung mit Schraffur
3. Umrandungslinie gelöscht



**SDF (Spatial Data File):**

# Schraffur (hatch)

---



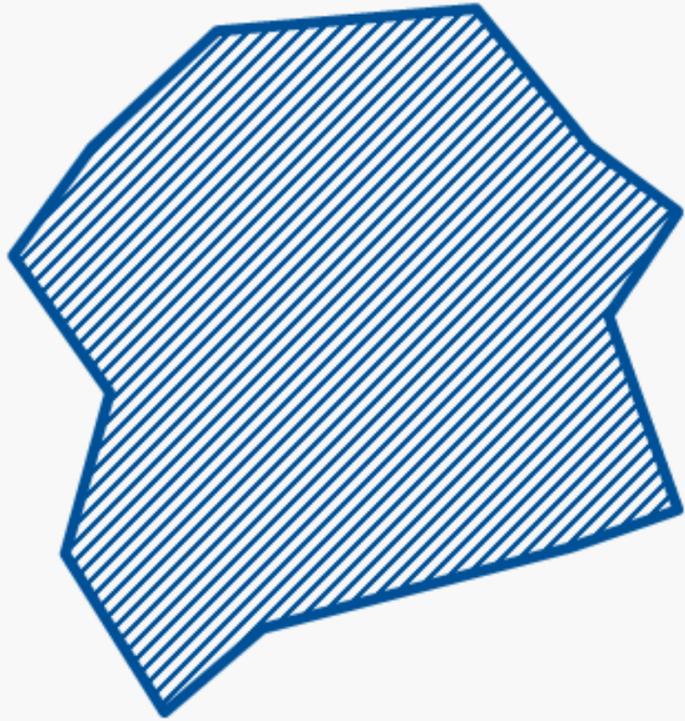
Assoziativ = Nein

1. geschlossene Umrandungslinie
2. Füllung mit Schraffur
3. Umrandungslinie gelöscht

**Lösung:**

```
_ -HATCHEDIT
```

# Schraffur (hatch)



Assoziativ = Ja

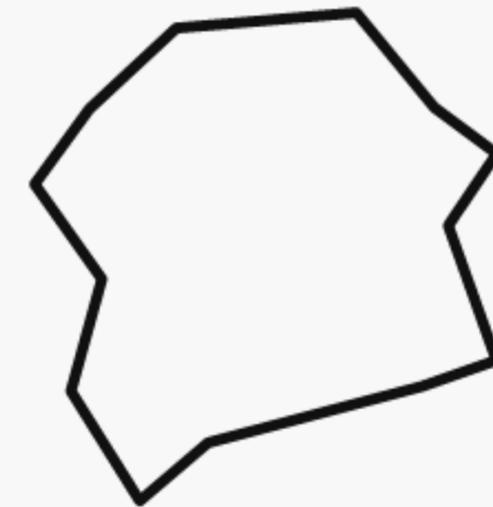
1. geschlossene Umrandungslinie
2. Füllung mit Schraffur
3. Umrandungslinie gelöscht

**Lösung:**

```
_ -HATCHEDIT
```

- Umrandungslinie rekonstruiert

**SDF (Spatial Data File):**

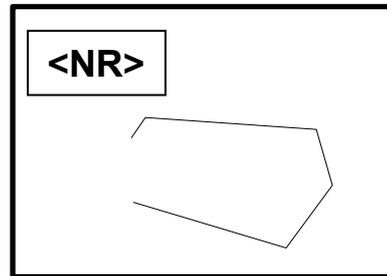


## Korrekturen mit `_EXPLODE`

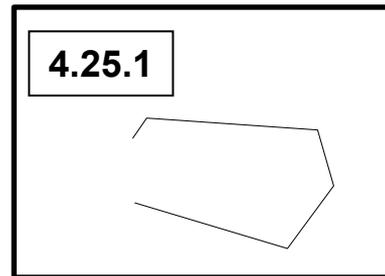
- „AcDbRegion“ in geschlossene Umrandungslinie
- Mehrzeilentexte in mehrere Einzeilentexte

## Auflösung von Blöcken mit (burst ...) (AutoLisp)

Blockdefinition:

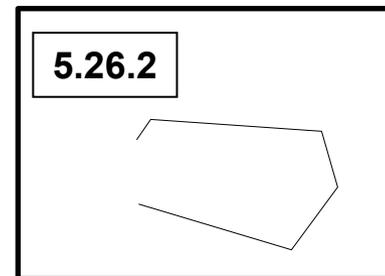


Blockinstanz:



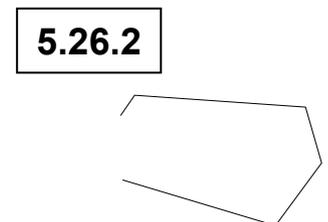
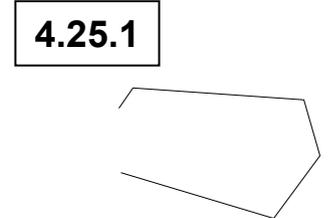
NR = 4.25.1

Blockinstanz:

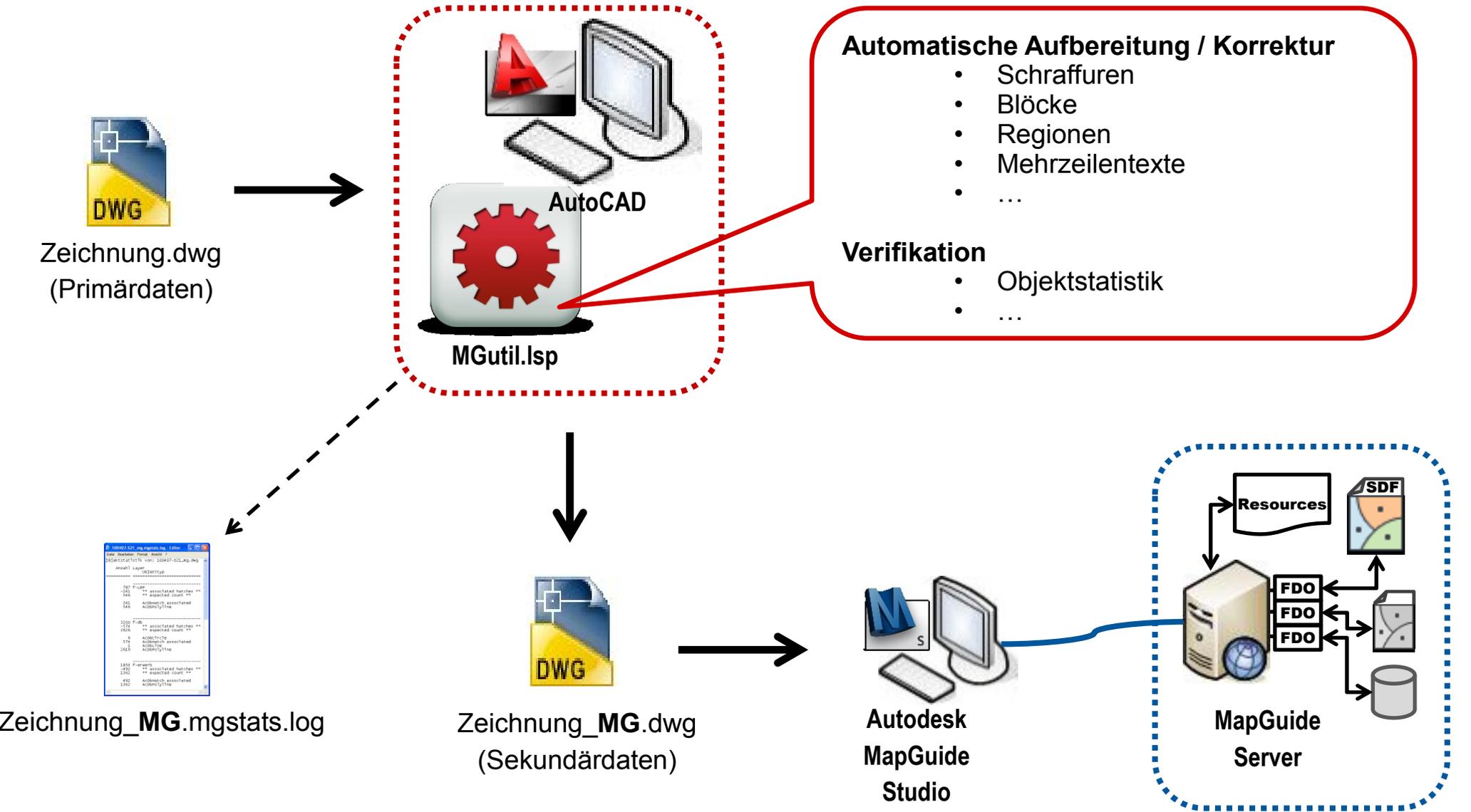


NR = 5.26.2

(burst ...)



# Aufbereitung / Korrektur der AutoCAD Daten



# Verifikation DWG / SDF nach Aufbereitung

```
100407 _mg.mgstats.log - Editor
Datei Bearbeiten Format Ansicht ?
Objektstatistik von: 100407 _mg.dwg
-----
Anzahl Layer
Objektyp
-----
787 f-LBP
-241 ** associated hatches **
546 ** expected count **
241 AcDbHatch associated
546 AcDbPolyline
-----
3200 f-db
-574 ** associated hatches **
2626 ** expected count **
6 AcDbCircle
574 AcDbHatch associated
1 AcDbLine
2619 AcDbPolyline
-----
1854 f-erwerb
-492 ** associated hatches **
1362 ** expected count **
492 AcDbHatch associated
1362 AcDbPolyline
```

Autodesk MapGuide Studio

File Edit View Tools Window Help

New Open Site Explorer

100407 \_mg

Preview

Refresh

**Class: f-erwerb**  
[View Data](#) [View Feature](#)  
+ Data Properties:  
+ Geometric Properties:

**Class: f-LBP**  
[View Data](#) [View Feature](#)  
+ Data Properties:  
+ Geometric Properties:

Total Entries: 1362  
<<FIRST <PREV Page 1 of 6 NEXT> LAST>>

FeatId	Layer	Color	Hyperlink
D26	f-erwerb	C2FFFFFF	<empty>
D38	f-erwerb	C2FFFFFF	<empty>
830B	f-erwerb	C2CC9966	<empty>
020F	f-erwerb	C2CC9966	<empty>

Ready

# Verifikation DWG / SDF nach Aufbereitung

```
100407 _mg.mgstats.log - Editor
Datei Bearbeiten Format Ansicht ?
Objektstatistik von: 100407 _mg.dwg
-----
Anzahl Layer
objektyp
-----
787 f-LBP
-241 ** associated hatches **
546 ** expected count **
241 AcDbHatch associated
546 AcDbPolyline
-----
3200 f-db
-574 ** associated hatches **
2626 ** expected count **
6 AcDbCircle
574 AcDbHatch associated
1 AcDbLine
2619 AcDbPolyline
-----
1854 f-erwerb
-492 ** associated hatches **
1362 ** expected count **
492 AcDbHatch associated
1362 AcDbPolyline
```

Autodesk MapGuide Studio

File Edit View Tools Window Help

New Open Site Explorer

100407 \_mg

Preview

Refresh

Class: f-erwerb  
[View Data](#) [View Feature](#)  
+ Data Properties:  
+ Geometric Properties:

Class: f-LBP  
[View Data](#) [View Feature](#)  
+ Data Properties:  
+ Geometric Properties:

Total Entries: 1362  
<<FIRST <PREV Page 1 of 6 NEXT> LAST>>

FeatId	Layer	Color	Hyperlink
D26	f-erwerb	C2FFFFFF	<empty>
D38	f-erwerb	C2FFFFFF	<empty>
830B	f-erwerb	C2CC9966	<empty>
020F	f-erwerb	C2CC9966	<empty>

Ready

# <Bounds .../> String für WMS

## Konfiguration WMS Dienst in MapGuide Studio

Planung\_Achse Properties

General Permissions References Referenced By Service Properties

Publish via Web Mapping Service

Title: Planung\_Achse

Abstract:

Keywords:

Extended Metadata:

Bounds: <Bounds SRS="EPSG:4326" north="49.7871" west="9.5619" south="49.7512" east="9.6725" default="false" abstract="true" /> <Bounds SRS="EPSG:31468"

Other SRS:

Attributes

Opaque  Queryable

OK Cancel Apply

# <Bounds .../> String für WMS

## Konfiguration WMS Dienst in MapGuide Studio

Planung\_Achse Properties

General Permissions References Referenced By Service Properties

Publish via Web Mapping Service

Title: Planung\_Achse

Abstract:

Keywords:

Extended Metadata:

Bounds: <Bounds SRS="EPSG:4326" north="49.7871" west="9.5619" south="49.7512" east="9.6725" default="false" abstract="true" /> <Bounds SRS="EPSG:31468"

Other SRS:

Attributes

Opaque  Queryable

Apply

```
<Bounds SRS="EPSG:31468" north="5519206.7226" west="4324324.9429" south="5515467.9451" east="4332419.7352" default="true" abstract="false" />
```

# <Bounds .../> String für WMS

## Konfiguration WMS Dienst in MapGuide Studio

Planung\_Achse Properties

General Permissions References Referenced By Service Properties

Publish via Web Mapping Service

Title: Planung\_Achse

Abstract:

Keywords:

Extended Metadata:

Bounds: <Bounds SRS="EPSG:4326" north="49.7871" west="9.5619" south="49.7512" east="9.6725" default="false" abstract="true" /> <Bounds SRS="EPSG:31468" north="5519206.7226" west="4324324.9429" south="5515467.9451" east="4332419.7352" default="true" abstract="false" /> <Bounds SRS="EPSG:31466" north="5523081.7420" west="2756626.3815" south="5518706.1001" east="2764400.2406" default="false" abstract="false" /> <Bounds SRS="EPSG:31467" north="5516823.7648" west="3540484.8025" south="5512765.7854" east="3548421.0037" default="false" abstract="false" /> <Bounds SRS="EPSG:31469" north="5530240.4801" west="5108244.8528" south="5526823.7924" east="5116495.0902" default="false" abstract="false" />

Other SRS:

Attributes

Opaque  Queryable

Apply

```
<Bounds SRS="EPSG:4326" north="49.7871" west="9.5619" south="49.7512" east="9.6725" default="false" abstract="true" /> <Bounds SRS="EPSG:31468" north="5519206.7226" west="4324324.9429" south="5515467.9451" east="4332419.7352" default="true" abstract="false" /> <Bounds SRS="EPSG:31466" north="5523081.7420" west="2756626.3815" south="5518706.1001" east="2764400.2406" default="false" abstract="false" /> <Bounds SRS="EPSG:31467" north="5516823.7648" west="3540484.8025" south="5512765.7854" east="3548421.0037" default="false" abstract="false" /> <Bounds SRS="EPSG:31469" north="5530240.4801" west="5108244.8528" south="5526823.7924" east="5116495.0902" default="false" abstract="false" />
```

# MapGuide Bounds Generator

Extent (lower-left / upper-right):

```
3484496.1527,5732679.2243
3484950.4269,5732956.4809
```

Source CS:

MapGuide Bounds:

```
<Bounds SRS="EPSG:4326" north="51.7320" west="8.7756" south="51.7295" east="8.7821"
default="false" abstract="true" /> <Bounds SRS="EPSG:31467" north="5732956.4809"
west="3484496.1527" south="5732679.2243" east="3484950.4269" default="true"
abstract="false" /> <Bounds SRS="EPSG:31466" north="5736598.3922"
west="2691727.0398" south="5736302.5627" east="2692169.7313" default="false"
abstract="false" /> <Bounds SRS="EPSG:31468" north="5737836.4803"
west="4277275.1477" south="5737577.9792" east="4277740.7185" default="false"
```

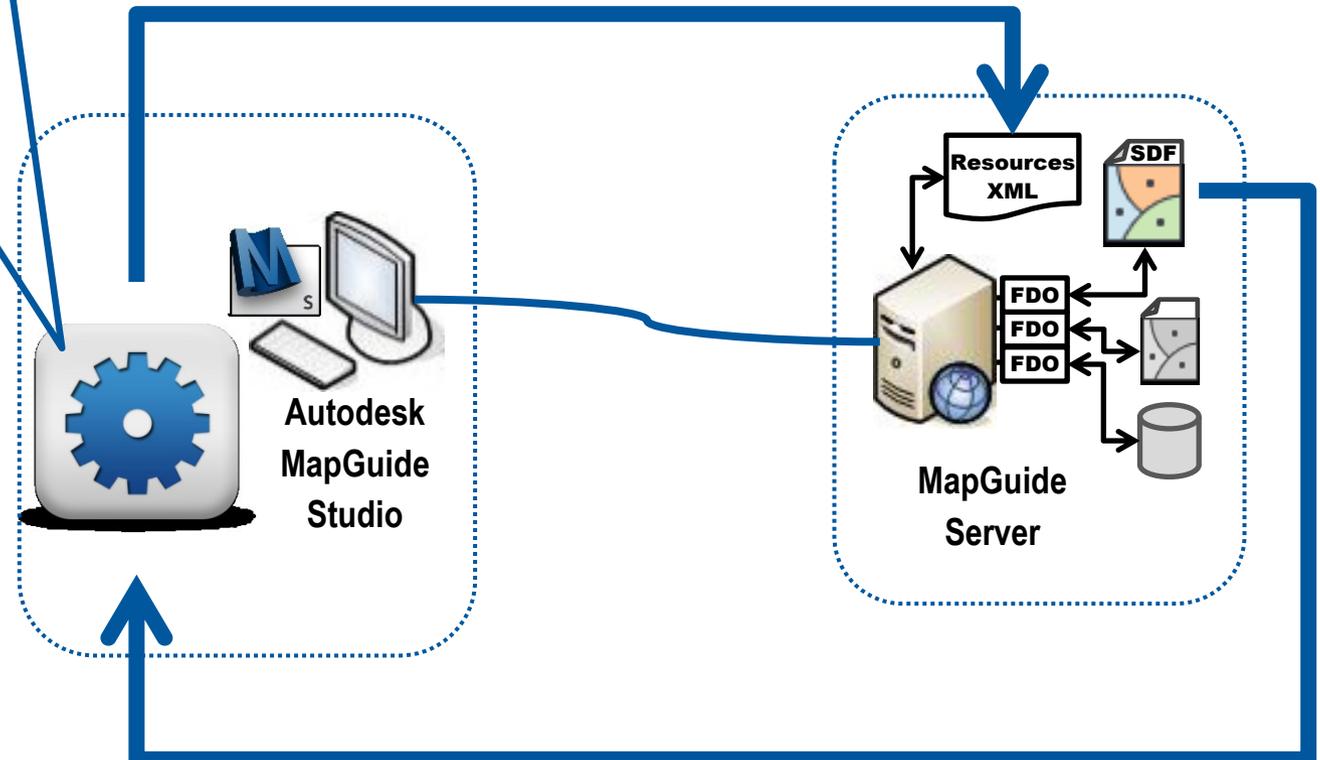
cs2cs.exe (Proj.4) + GUI

# Layer-Gestaltung

## Automatische initiale Layer-Gestaltung

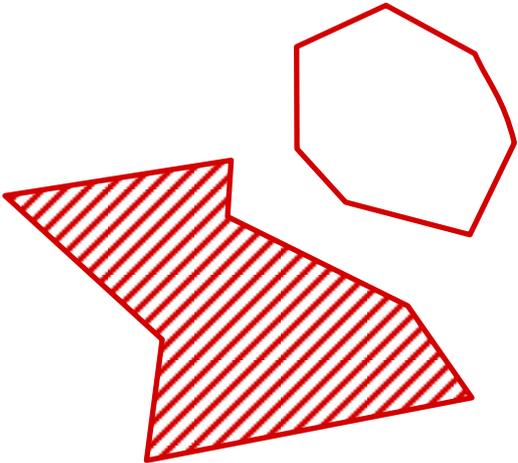
- Thematisierung
- Farben
- Füllmuster
- Texte
- ...

## Layer-Resource (z.Zt. XML Bearbeitung mit Script)



Color, TextString

# Umrandung / Fläche Problem



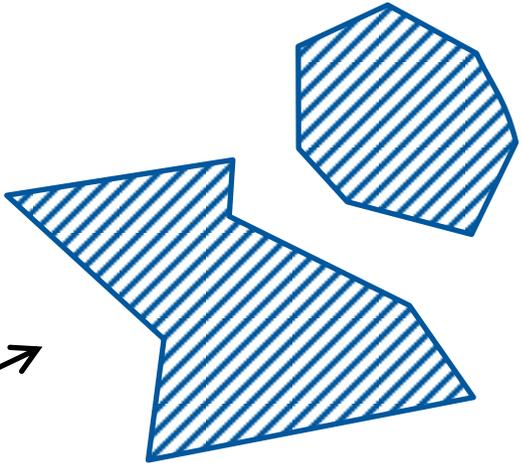
AutoCAD / DWG



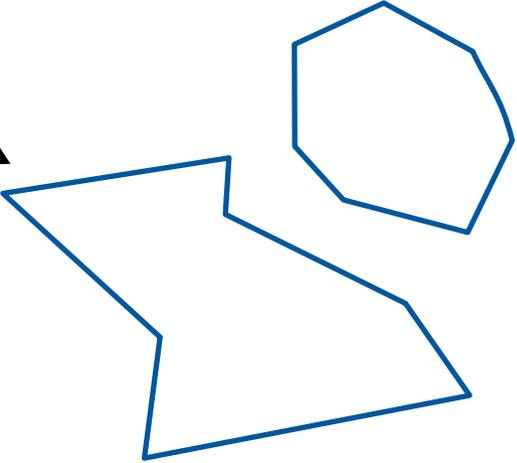
Autodesk  
MapGuide  
Studio

Transform  
closed polylines  
to polygons ?

yes

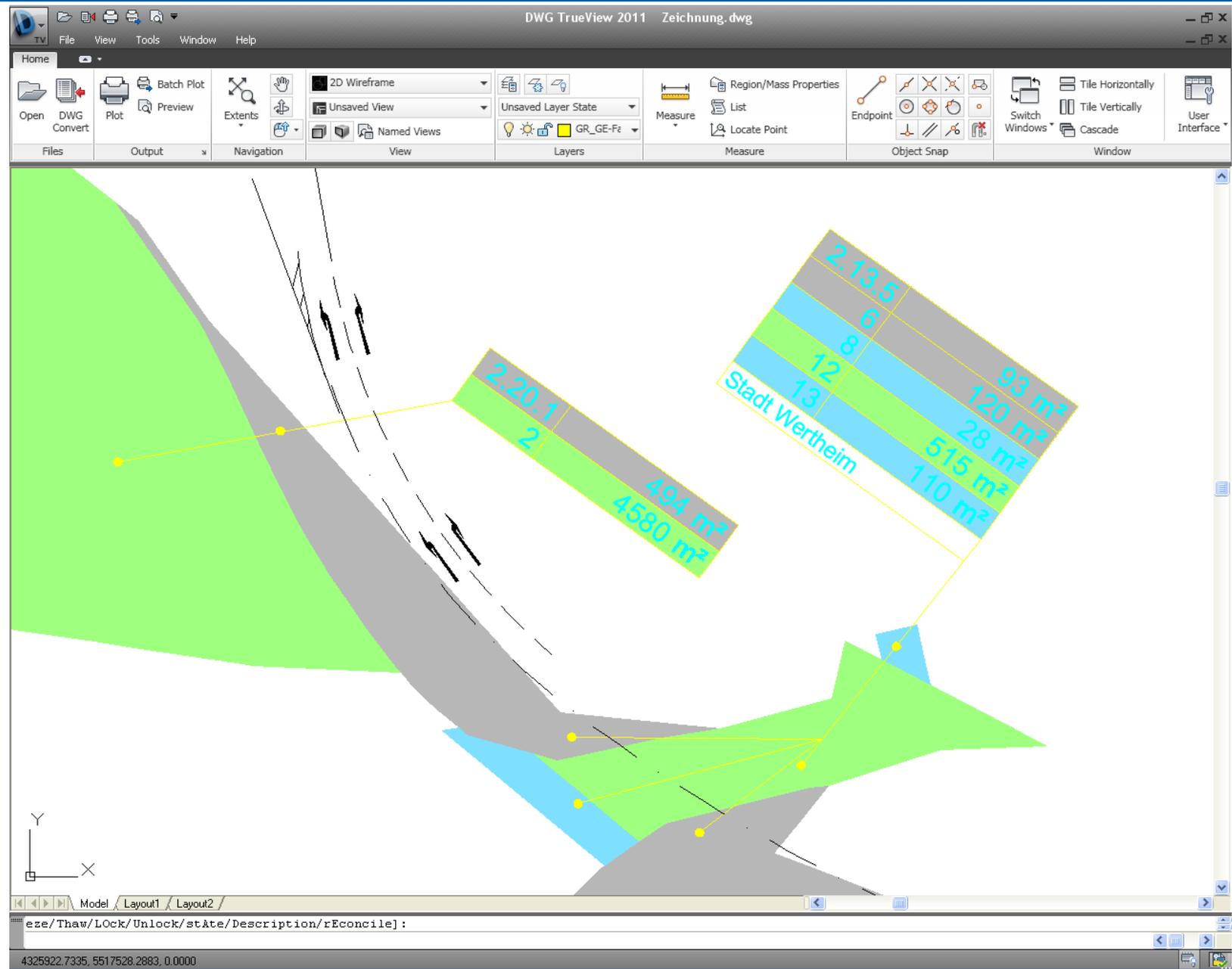


no



MapGuide / SDF

# Beispiel: Original in AutoCAD

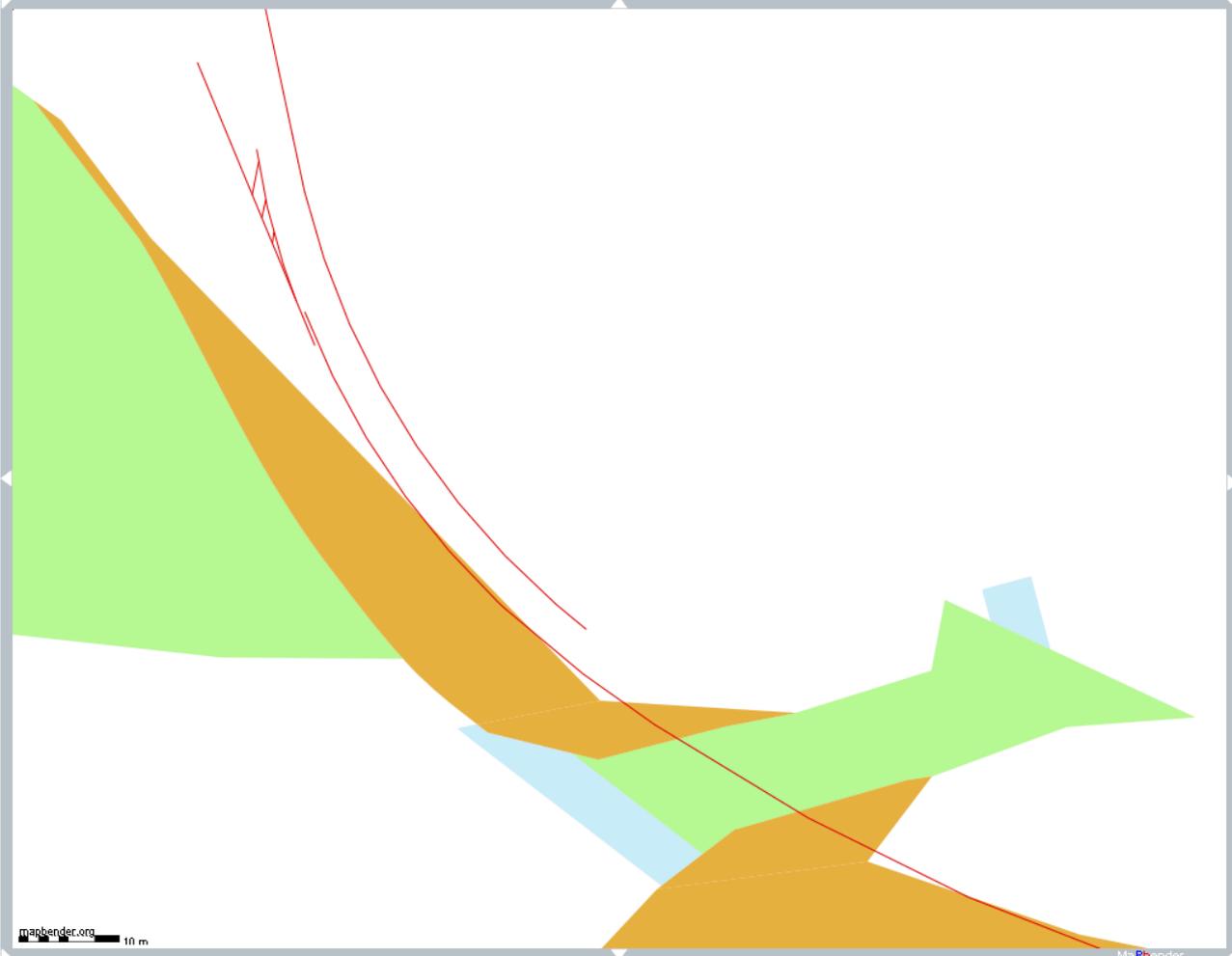


# Beispiel: WMS bisher

Grundstücks-Datenbank

Sachdaten Karte Hilfe

Longitude: Latitude:    EPSG:31467 1 : 341



**Karten**

- LUM - Liegenschaften
- ALK-Daten - WMS lol
- Schutzgebiete
- BAB
- Grunderwerb
- LBP
- Planung\_Boesch
- Planung\_trasse

**Legende**

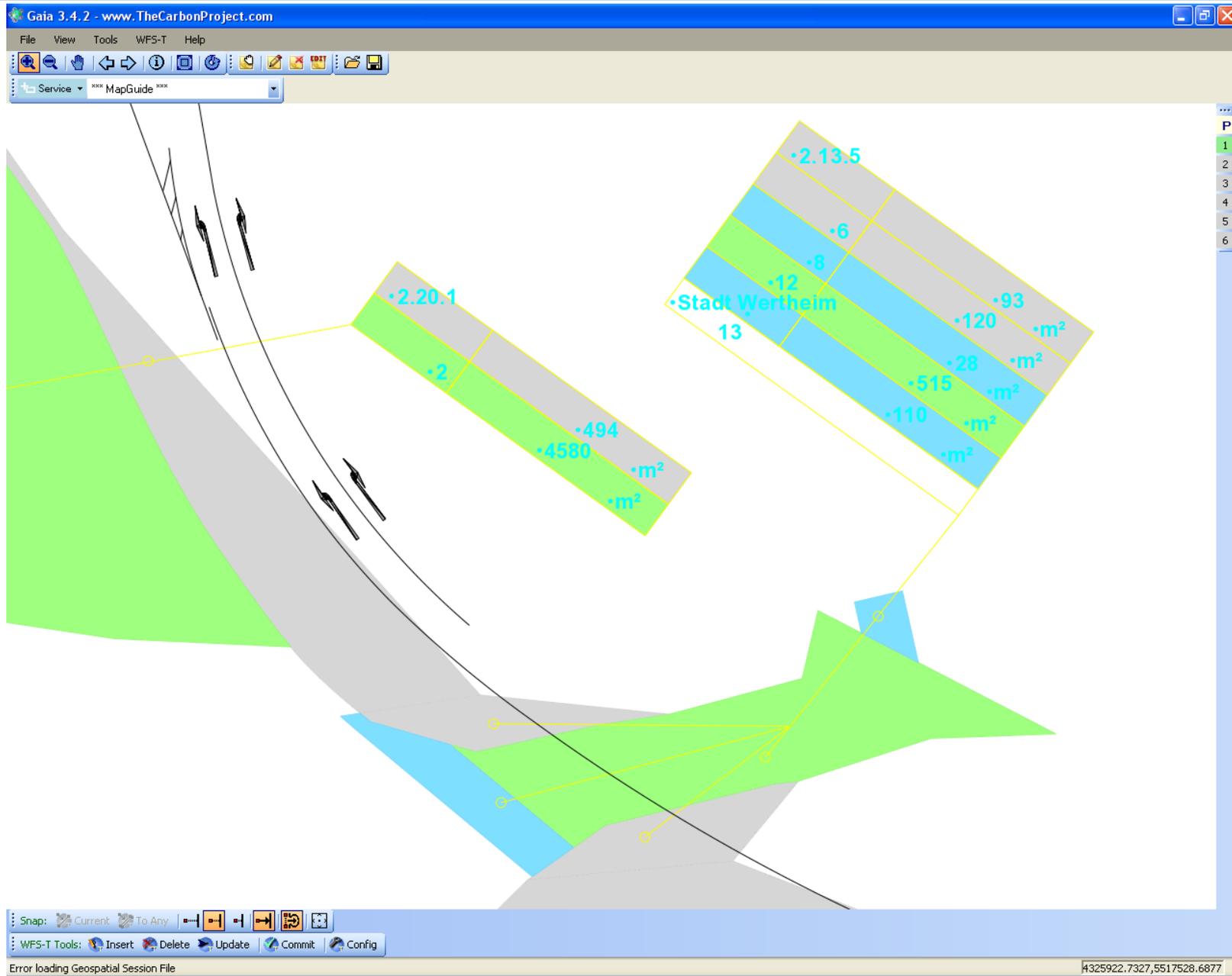
**Druck**

**Suche**

mapbender.org 10 m

Suchen:      Groß-/Kleinschreibung

# Beispiel: WMS vom MapGuide Server



- Die MapGuide Software funktioniert - stabil
- Bedingungen für die Bereitstellung von AutoCAD Daten:
  - Aufbereitung / Korrektur der Daten in AutoCAD per Programm
  - Ergänzende Funktionalität und Werkzeuge für effizienten Einsatz

# Vielen Dank

- Fragen -

Jan Berghoff-Flüel

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