



# Obelix

## and the VisualAge Generator

5th VisualAge Generator Symposium  
LaGaude, 16.11.2001

Dr. J. Mütter, LDS NRW, Düsseldorf, Germany

<http://www.lds.nrw.de>

[jan.muetter@lds.nrw.de](mailto:jan.muetter@lds.nrw.de)



NRW

LDS NRW

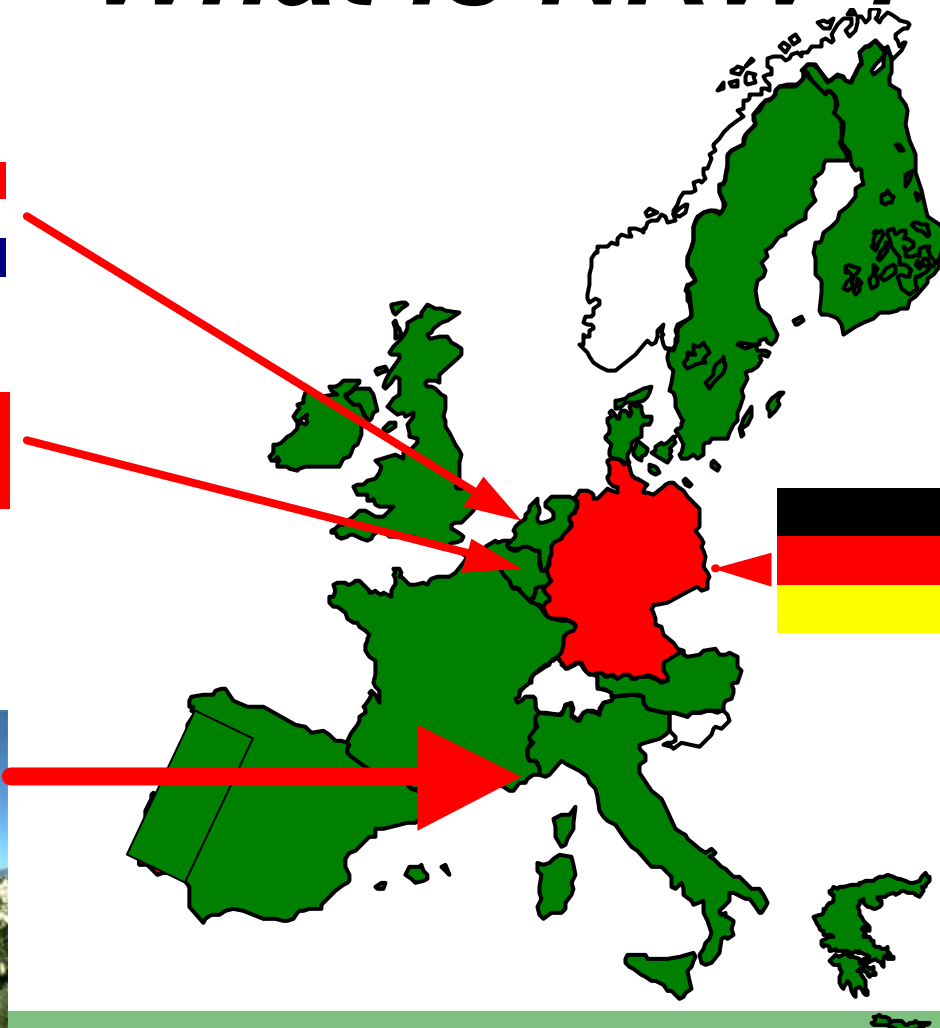
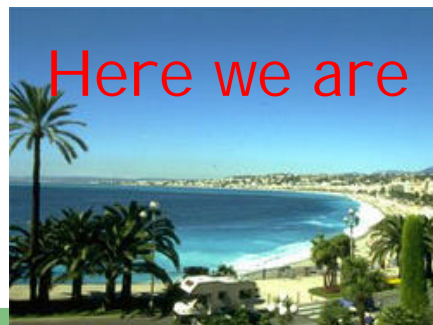
Obelix

VAGen

Infra-  
structure

dev.proc.

# ***What is NRW ?***





**NRW**

**LDS NRW**

**Obelix**

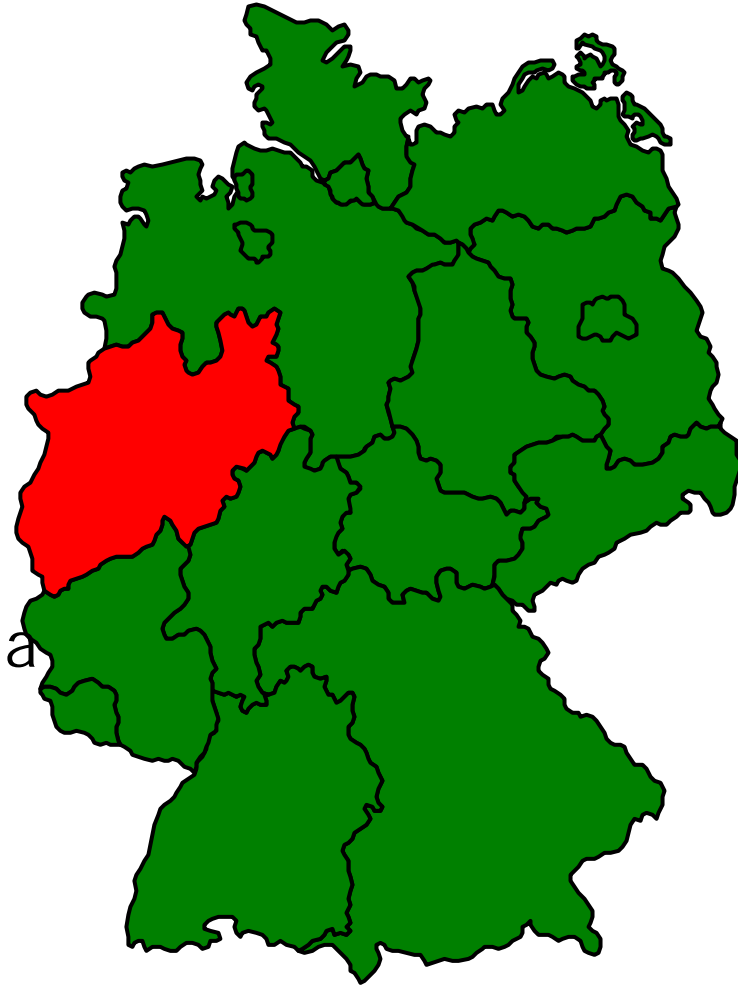
**VAGen**

**Infra-  
structure**

**dev.proc.**



# ***What is NRW ?***



- Northrhine-Westfalia
- 18 mio. inhabitants



NRW

LDS NRW

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structure

dev.proc.

***Main cities***

- cologne
- düsseldorf
- ruhr-area
- essen
- dortmund
- bonn

# ***What is NRW ?***





# ***What is LDS NRW ?***

NRW

- State authority in NRW

LDS NRW

- 1.430 employees

Obelix

## ***Responsibilities***

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Infra-  
structure

dev.proc.

**Official  
statistics**

**IT-Service  
provider**



NRW

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structure

dev.proc.

# ***What is LDS NRW ?***

## ***Official statistics***

- social, population and forecast
- finance and economy
- election data for state and municipal parliaments

***collection and preparation of any statistical data***



# ***What is LDS NRW ?***

NRW

LDS NRW

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Infra-  
structure

dev.proc.

***IT Service-provider for NRW's  
administration of state***

- Internet / Intranet-provider
- State administration network
- eMail-gateway and -server
- computer center
  - ***IBM, FSC, Unix, Microsoft, ...***
  - ***DB2, Oracle, Infomix, SQL-S, ...***



NRW

LDS NRW

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Infra-  
structure

dev.proc.

# ***What is LDS NRW ?***

## ***IT Service-provider for state-administration***

- IT-support for all state authorities
  - parliament
  - election committee
  - Remote operating for authority LANs
- Host for states statistical database
- **Softwaredevelopment center**





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# ***What is Obelix ?***

***Application developement,  
maintanance and production  
of a payment system for all  
NRW's state employees***

- ***450.000 employees***
- ***approx 17 billion USD (in 2000)***



NRW

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dev.proc.

# ***That is Obelix !***

- Online **B**ezügeverfahren des Landes NRW mit **i**nternen und **e**xternen Ressourcen
- Redesign - Project for the payment-system of state employees
- including deployment and migration from existing system



# ***Obelix goals***

**NRW**

**LDS NRW**

**Obelix**

**VAGen**

**Infra-  
structure**

**dev.proc.**

- decoupling of dialog and batch
- ability to provide services for different clients (i.e. states), not only NRW.
- improvement of dialogs by modern means
- Use of web-technology
- open interfaces for future use...



# ***Obelix complexity***

NRW



20 Tasks / function blocks

LDS NRW

**Obelix**



560 Functionstructures

VAGen



2.000 functions

Infra-  
structure



360 Entity-Types

dev.proc.



2.000 Attributes / dataelements



# Why VisualAge Generator ?

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structure

dev.proc.

- Multiplatform development
  - *zOS, Unix, NT*
- utilize existing COBOL-skills for development of web-based systems
- integration with existing components :
  - *WebSphere, DB2, CICS, ...*



NRW

LDS NRW

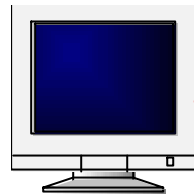
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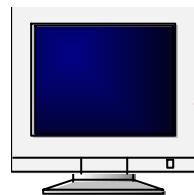
Infra-  
structure

dev.proc.

# Infrastructure today



3270-  
Terminal



3270-  
Terminal

• VM



S/390



zSeries  
Host

- ZOS
- DB2
- CICS TS



NRW

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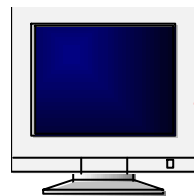
Infra-  
structure

dev.proc.

# *Infrastructure Obelix*

- zVM / Linux
- HTTP
- WebSphere
- JSP
- CTG

- ZOS
- DB2
- CICS TS
- VAGen



Browser



**zSeries**

Web-Application-Server



**zSeries**

Host



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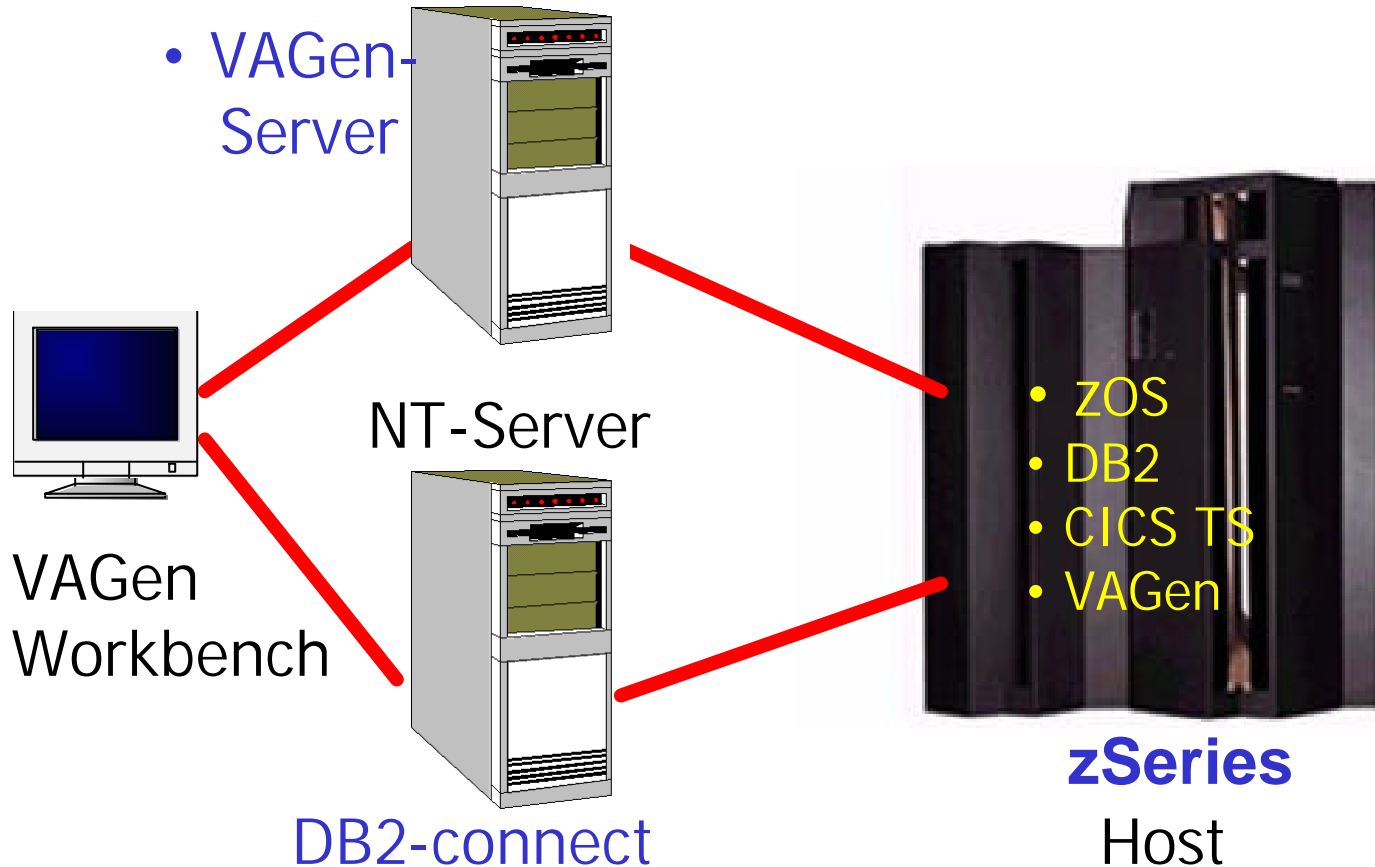
VAGen

Infra-  
structure

dev.proc.

# *Infrastructure Obelix development*

- ENVY
- VAGen-  
Server







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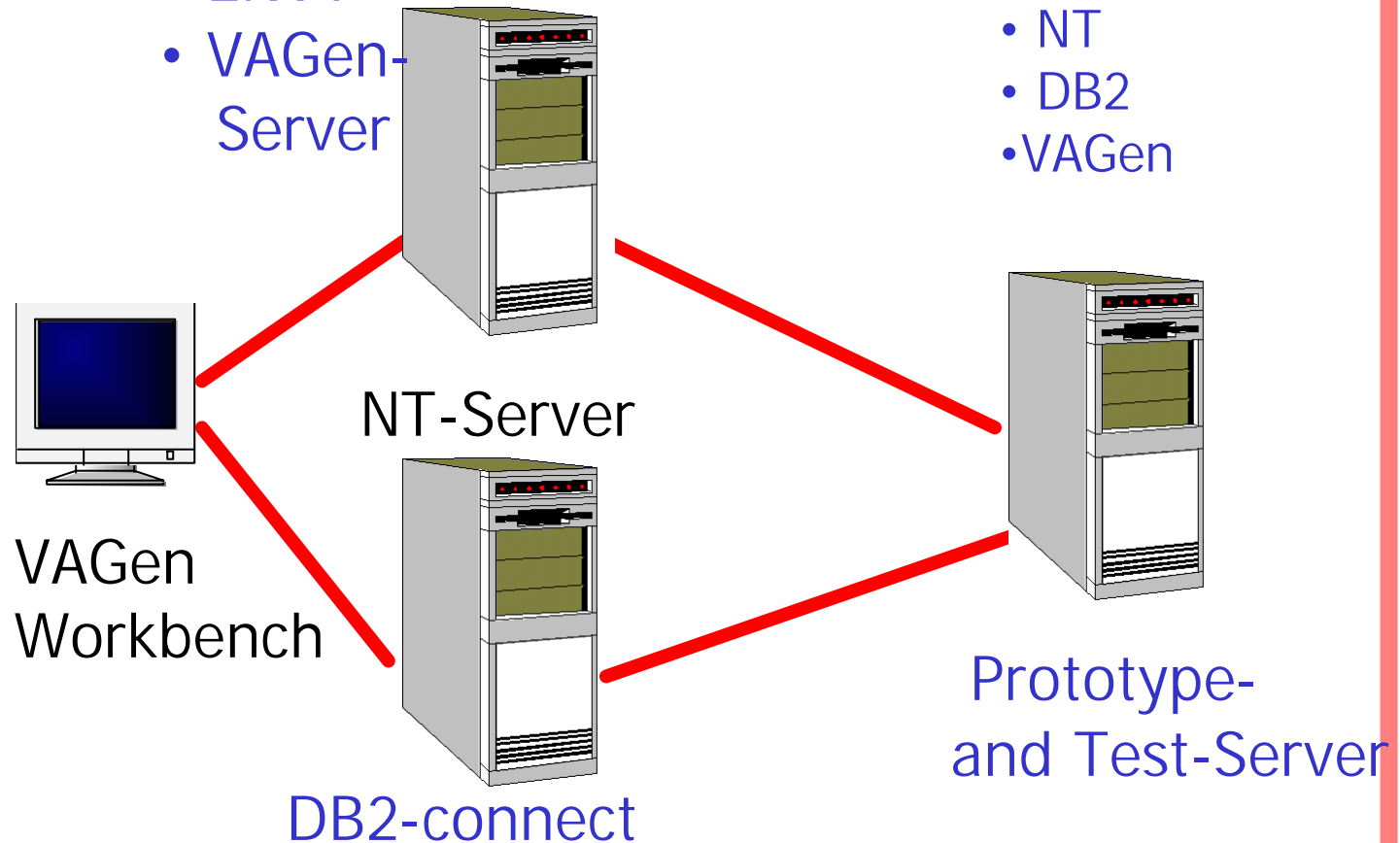
**Infra-  
structure**

dev.proc.

# ***Infrastructure Obelix development***

- ENVY
- VAGen-  
Server

- NT
- DB2
- VAGen





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dev.proc.

# ***development process***

Specifications : *structured analysis*



*functionmodelling, ER-Modelling*  
**case /4/0 V 5.0a (microTOOL)**



SW-Design : *structured design*



*modulstructures, relationmodels, DDL*  
**case /4/0 V 5.0a (microTOOL)**



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# ***development process***

SW-Design : *structured design*



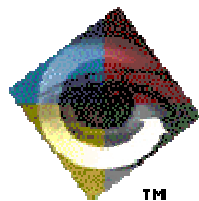
*modulstructures, relationmodels, DDL  
case /4/0 V 5.0a (microTOOL)*

***ESF-code***

***tasks***

***ddl-scripts***

programming



***Visual Age Generator V4.5 (IBM)***



# *development process*

NRW

programming

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*Visual Age Generator V4.5 (IBM)*

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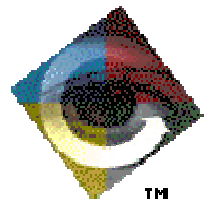
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*Load modules*

*DB2 testdata*

*driver*

Infra-  
structure



test : *modul-, integration-, loadtest*

*ITF*

*Rational Robot (Rational)*

dev.proc.

**Rational**  
unifying software teams



# *From Design to Generator*

NRW

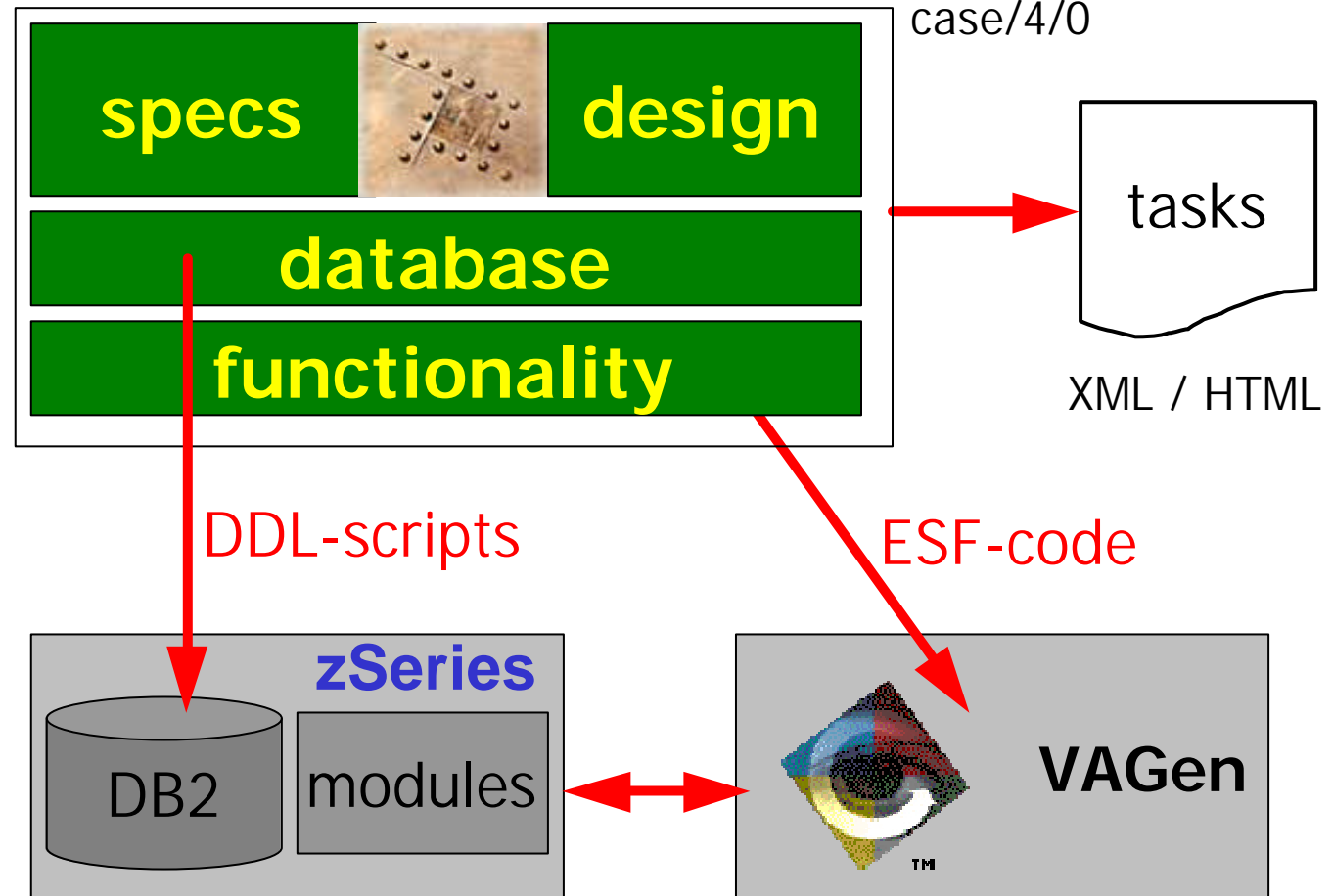
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structure

dev.proc.





NRW

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dev.proc.

# *From Design to Generator*

```
Code: TBBEVL
Code  Bearbeiten  Extras  Optionen

--
-- DDL for Table TBBEVL (Besoldungs/Vergütungs/Lohngruppe Z)
CREATE TABLE TBBEVL
(MNR          CHAR(004)          NOT NULL,
XNR          CHAR(008)          NOT NULL,
ZFNR        CHAR(003)          NOT NULL,
LFDNR       SMALLINT           NOT NULL,
BEGINN_DT   DATE               NOT NULL,
ENDE_DT     DATE               NOT NULL,
GRUPPE      CHAR(004)          NOT NULL,
AMTSBEZEINGR_SL CHAR(004)      NOT NULL,
STATUS      CHAR(001)          NOT NULL,
HERKUNFT    CHAR(001)          NOT NULL,
VERAEND_KZ  CHAR(001)          NOT NULL,
JID         INTEGER            NOT NULL,
PRIMARY KEY
(MNR,
XNR,
ZFNR,
LFDNR) )
IN DATABASE TBBEVL
DATA CAPTURE NONE
AUDIT      NONE;
GRANT ALL ON TABLE TBBEVL TO DEOBPRG;
--
```

DDL-Script generated  
from case/4/0



# From Design to Generator

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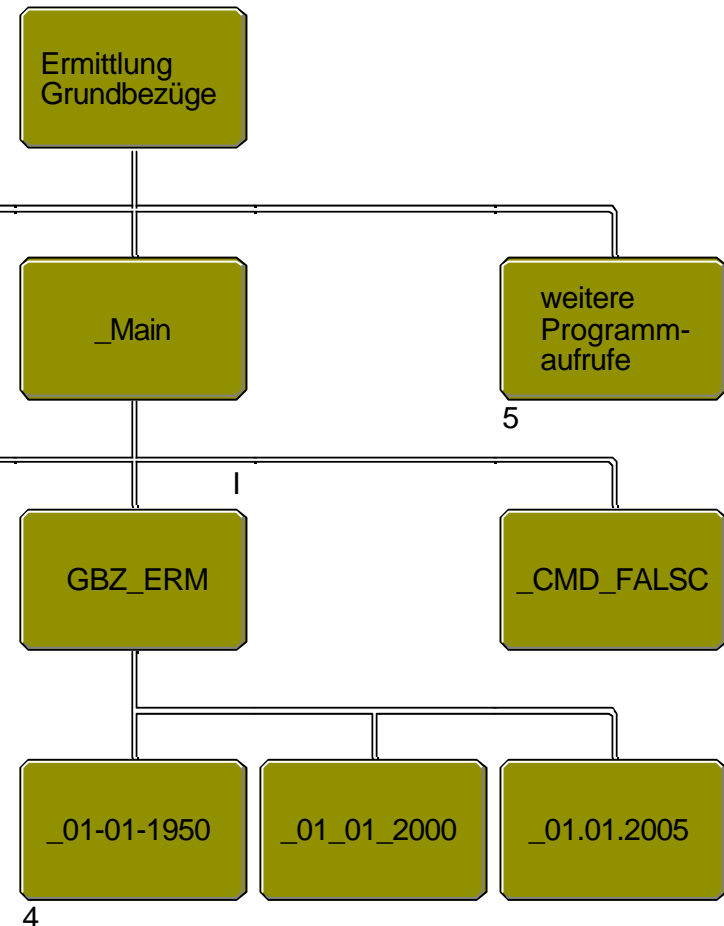
Obj

VAGen

Infra-  
structure

dev.proc.

modulstructure  
in case/4/0





# *From Design to Generator*

```
CODE : Ermittlung Grundbezüge
Code Bearbeiten Extras Optionen

:EZEE 440          09/19/01 14:05:00
:program          name      = BEFAA01
                  type      = CALLBATCH
                  pfeguate   = Y
                  implicit   = N

:mainfun name = BEFAA01_MAIN
:emainfun.

:prol.
:eprol.

:eprogram.
:func name        = BEFAA01_MAIN
      option      = EXECUTE
      desc        = 'Hauptsteuerung'
      refine      = N
:storage name     = FKIAKT
      stortype    = ITEM
      usage       = NONSHARED
      type        = CHA
      bytes       = 00018
      decimals    = 00
:before.
```

```
CODE : Ermittlung Grundbezüge
Code Bearbeiten Extras Optionen

FKIAKT = 'BEFAA01_MAIN';
BZWSESSION.FKIAKT = FKIAKT;

BEFAA01_MAIN_IN();
BZWSESSION.FKIAKT = FKIAKT;

IF BZWSESSION.CMD = 'GBZ_ERM';
  BEFAA01_01-01-1950();
  BEFAA01_01_01_2000();
  BEFAA01_01.01.2005();
  BZWSESSION.FKIAKT = FKIAKT;

  IF BZWRETURN.RC = 'E';
    EZERTIN();
  END;

  EZERTIN();

END;

BZF9901__CMD_FALSCH();
BZWSESSION.FKIAKT = FKIAKT;

:ebefore.
:efunc.
```

ESF-Script generated  
from case/4/0





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dev.proc.

# From Design to Generator

```
H:\Eigen\VAGen\RG4711.xml - Microsoft Internet Explorer von LDS NRW
Datei Bearbeiten Ansicht Favoriten Extras ?
Adresse H:\Eigen\VAGen\RG4711.xml Wechseln zu
Links DTM Elektronische Formulare LAN-Meldungen LDS NRW UserHelpDesk OBELIX - Portal OBELIX - LDS intern Modulstrukturen

<?xml-stylesheet href="PgmProlog.css" type="text/css"?>
<!-- !DOCTYPE PgmProlog SYSTEM "PgmProlog.dtd" -->
- <Dokumentation>
- <Programm>
  <ProgrammName>RG4711</ProgrammName>
  <fachlich>Vorlage für eine Modulstruktur</fachlich>
  <PgmTitel>Kopf der Modulstruktur als Kurzbeschreibung</PgmTitel>
  <Kurzbeschreibung>Hier steht die allgemeine Programmbeschreibung.</Kurzbeschreibung>
  <Autor>Große Stoltenberg, Roland</Autor>
</Programm>
- <Parameterbereich>
- <ParamElement>
  <Parameter>BDW9102_INT</Parameter>
  <Parmdesc>ÄD Dialograhmen WS-intern</Parmdesc>
</ParamElement>
- <ParamElement>
  <Parameter>WI techn.</Parameter>
  <Parmdesc>WI Eingruppierung</Parmdesc>
</ParamElement>
- <ParamElement>
  <Parameter>ÄD techn.</Parameter>
  <Parmdesc>ÄD Eingruppierung</Parmdesc>
</ParamElement>
</Parameterbereich>
- <Funktionsbeschreibungen>
  <Funktion>RGF4711Programmaufrufe</Funktion>
  <Beschreibung />
  <Funktion>RGF4711_FKT(10)</Funktion>
  <Beschreibung>Hier steht die Funktionsbeschreibung von _fkt(10).</Beschreibung>
  <Funktion>RGF4711_IN_MAIN</Funktion>
  <Beschreibung>Hier steht die Funktionsbeschreibung von _in_main.</Beschreibung>
</Funktionsbeschreibungen>
- <Programmaufrufe>
  <Programm>KHPZZAA</Programm>
  <fachlich>KHPZZAA</fachlich>
</Programmaufrufe>
</Dokumentation>
```

XML-task description  
generated from  
case/4/0



NRW

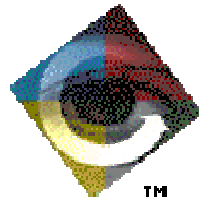
LDS NRW



case/4/0

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VisualAge  
Generator

Infra-  
structure

**Rational**  
unifying software teams

dev.proc.

RationalRobot

## ***Summary***

integrated development  
process

consistant from specs to  
generated software

generating  
DDL-scripts, ESF-code, XML-  
descriptions, programs, web-  
transactions



NRW

LDS NRW

Obelix

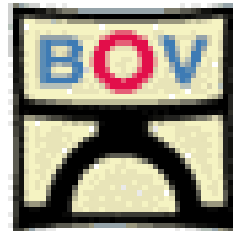
VAGen

Infra-  
structure

dev.proc.

- From generated JSP to WUI

- Obelix demo



Frank Berger  
BOV Software AG  
Essen, Germany

# Outlook





NRW

LDS NRW

Obelix

VAGen

Infra-  
structure

dev.proc.

Any questions ?

Thank you  
for your attention

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