

2006 ESRI International User Conference

Migrating germany's third largest energy company

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Energy
needs Impulses

Migrating germany's third largest energy company

Content

› Who is the EnBW AG



› Starting points



› Target system & aims



› Tools & strategies

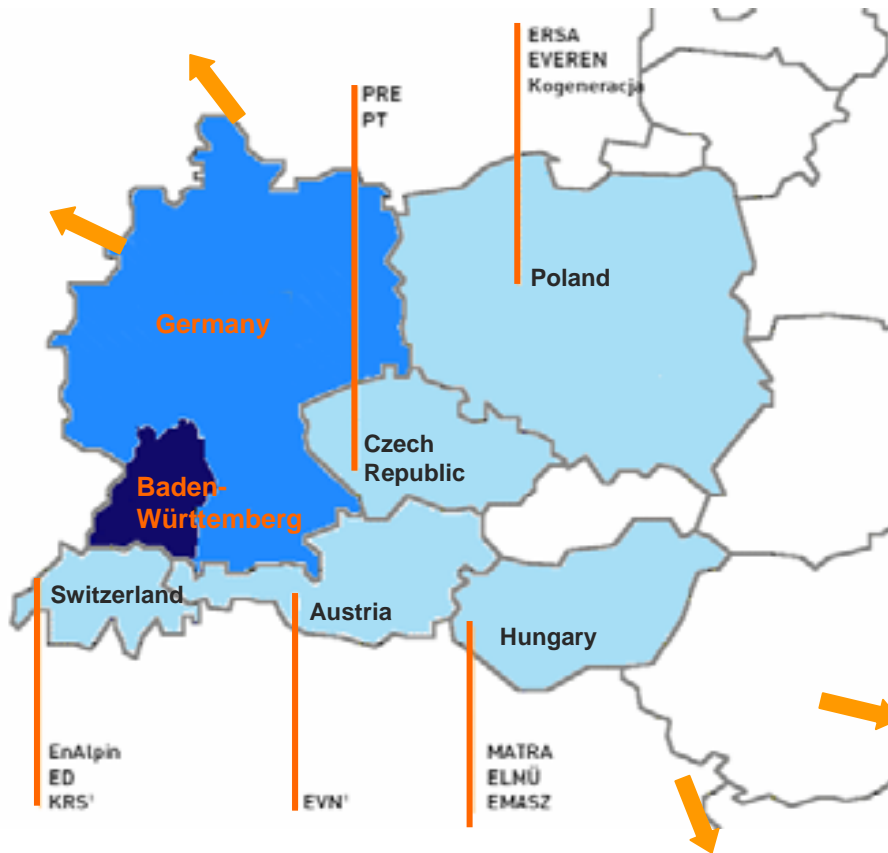


› Conclusion



Who is the EnBW AG?

› Key markets and regions



¹EnAlpin = EnAlpin AG
 ED = Energiedienst AG
 KRS = Kraftwerk Ryburg-Schwörstadt AG
 EVN = Energieversorgung Niederösterreich Aktiengesellschaft

Key markets/regions

- › remain strong position in Baden-Wuerttemberg*
- › Increase of market shares in Germany* e.g. in regions with existing shareholdings such as Düsseldorf (SWD) and Dresden (GESO/ENSO)
- › Further development of position in selective attractive European regions especially in Central and Eastern Europe

* Due to anti-trust legislation in Germany EnBW is unlikely to gain further market shares in Baden-Wuerttemberg, but has a favourable position in the rest of Germany

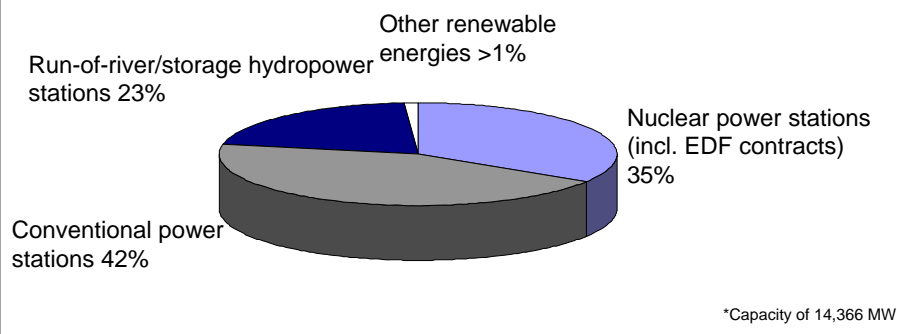


Who is the EnBW AG?

> Facts about EnBW



Generation mix* - key data EnBW 2005



Electricity – key data EnBW 2005*

- > Sales volume: 106,7 TWh
- > External sales: EUR 8,150m
- > Generation: 73,6 TWh
- > Grid:
 - > Very high voltage 3,609 km
 - > High voltage 9,802 km
 - > Medium voltage 43,931 km
 - > Low voltage 95,131 km

Gas – Key data EnBW 2005**

- > Sales volume: 88,6 TWh
- > External sales: EUR 2,102m



* sales from electricity trading are reported net of cost of materials for the first time (net disclosure)

Starting points

› SICAD AKOSIC VL

- › based on SICAD/open on UNIX
- › alpha-data is stored in so called “descriptors” attached to each graphic-element
- › generalization tools / plans

› SICAD UT 3.2

- › based on SICAD/open on UNIX
- › separate alpha-data-model
- › forerunner of ArcFM UT



Starting points

› Microstation

- › CAD-system
- › external database with alpha-data



› sisNET

- › based on Microstation
- › GIS for electricity and gas
- › well adapted for the requirements of EnBW



› AutoCAD

- › CAD-System
- › Electricity for small areas
- › Data-view in the information-system of EnBW



EnBW



AED SICAD
www.aed-sicad.com

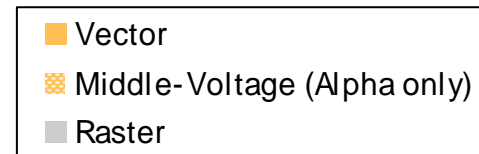
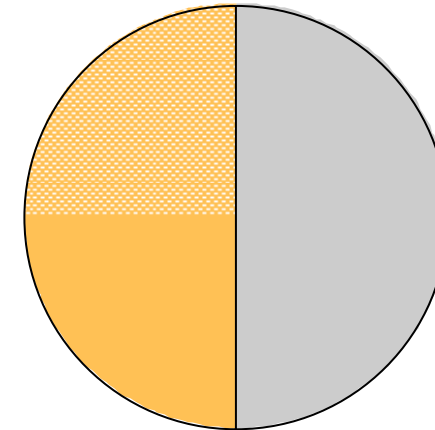
Starting points

› Data

- › Alpha-data
 - › separate alpha-data only application
 - › mostly middle-voltage

- › Vector-data
 - › varying on source system
 - › from simple graphic to complex GIS-objects

- › Raster-data
 - › about 50000 scanned operation plans
 - › about 3 TB aerial views
 - › stored in SICAD-internal file-format and tif-files



Target system & Aims

Target System ArcFM™ UT

- › Integrated multi-utility solution
 - › electricity, gas, water, sewage, telco
- › Ready-to-use, fully customizable solution with extremely short implementation duration
- › Extensive functionality covering network documentation, outage management, maintenance, customer information and planning
- › Efficient support of the initial collection, update, analysis and presentation of spatial and technical information
- › Based on strong data models and databases, transaction protected
- › Uniform handling of common objects across utility branches
- › Interoperability with ERP and other business and technical systems



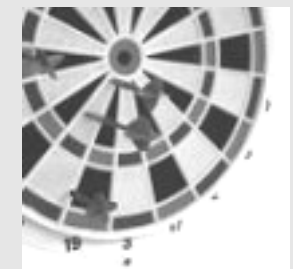
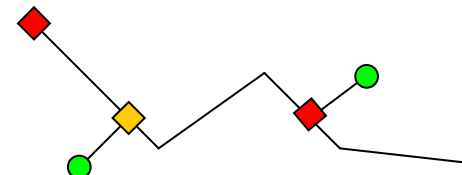
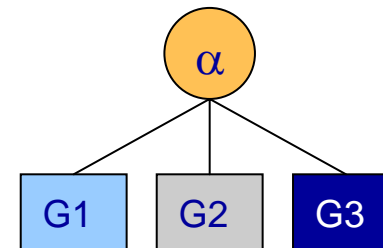
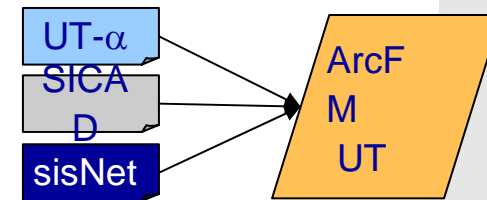
EnBW



Target system & Aims

› Aims

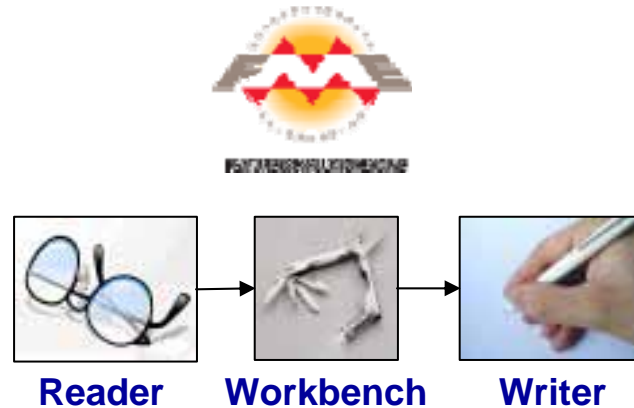
- › consort data to the target data model
- › integrated data
 - › unique alpha-object with multiple graphic representations
- › lossless migration
 - › “not migratable” data is stored in special feature-classes
- › calculated topology (“geometric network”)



Tools & Strategies

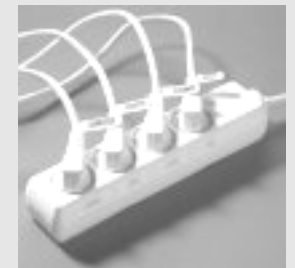
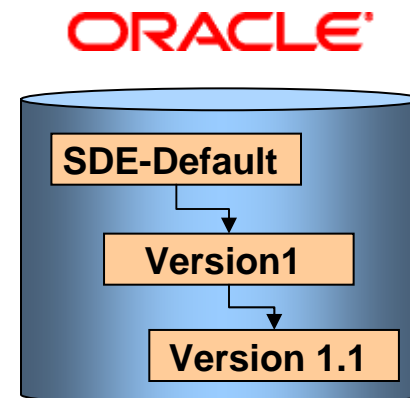
› Feature Manipulation Engine (FME)

- › module based tool
- › reader and writer concept
- › flexible, efficient



› SQL

- › SDE based on Oracle
- › "set_current_version" method to access multi-versioned-data
- › fast standard tool

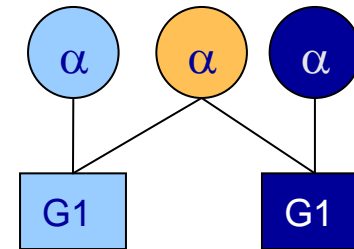


Tools & Strategies



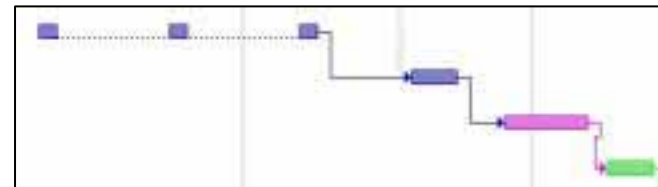
› Integration

- › find identical alpha-objects
- › join them to one unique object

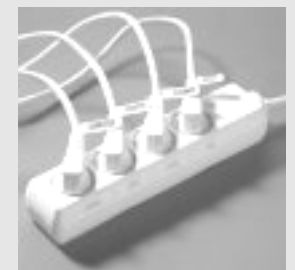


› Quality assurance

- › cascading test-runs finished by “dress rehearsal”
- › statistics
- › spot tests

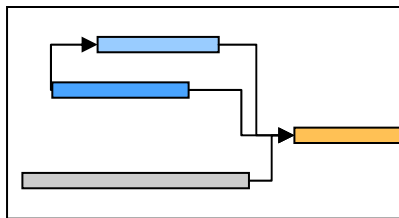


Eigenschaften des Messverfahrens 2007									
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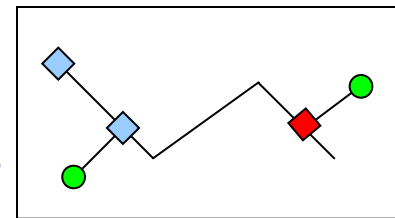
Conclusion

› Main traps



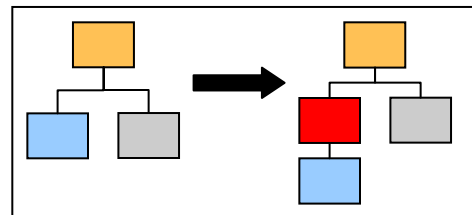
- › well coordinated main project-plan
- › stable CR process

dependencies inhomogeneous to other subprojectsource-data



- › precise analyze of source data
- › strong statistics

changing data-model



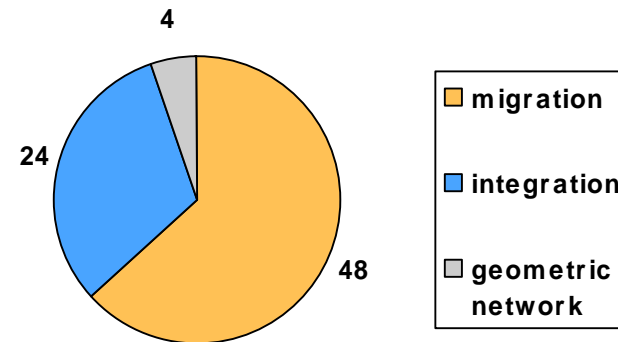
- › clear defined milestones
- › stable CR process



Conclusion

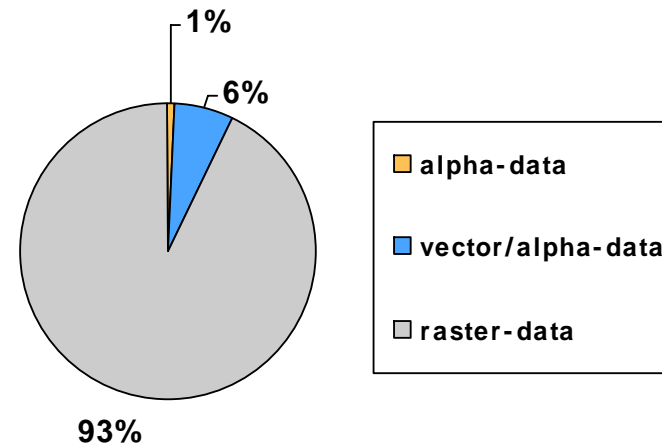
› Expected runtime

- › migrating data with FME
- › intergration
- › building geometric network
- › → very large range, depending on source-data



› Expected data volume

- › alpha-data
- › vector/alpha-data
- › raster-data



Questions

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