

jBEAM v5

Enterprise Services
the next generation of
data post-processing



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Wiki: “**Service Oriented Architecture (SOA)** is a computer systems architectural style for creating and using **business processes**, packaged as services, throughout their lifecycle. SOA also defines and provisions the IT infrastructure to allow **different applications to exchange data** and participate in business processes. These functions are loosely coupled with the operating systems and programming languages underlying the applications. SOA separates functions into distinct units (services), which can be **distributed over a network** and can be combined and **reused** to create business applications. These services communicate with each other by passing data from one service to another, or by coordinating an activity between two or more services. SOA concepts are often seen as built upon, and evolving from older concepts of a distributed computing and modular programming.”



Enterprise SOA

Enterprise Service-Oriented Architecture

SAP: “Enterprise SOA is a blueprint for an adaptable, flexible, and open IT architecture for developing services-based, enterprise-scale business solutions. An enterprise service is typically a series of Web services combined with business logic that can be accessed and used repeatedly to support a particular business process. ”

What does this mean for data postprocessing?

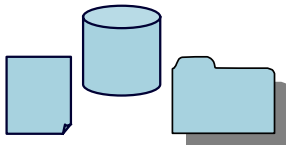
Offline Data Evaluation

Server based

Test Management System

Testdata Management System

Local



Online Acquisition

Acquisition Modules

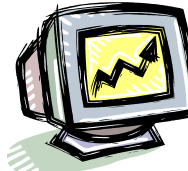
Import
Analyze
Visualize

Local, even offline:
Desktop
Global:
Webbased-Service

Reports



Screen



Printouts



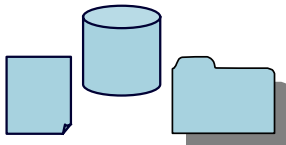
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jBEAM

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Supported IT-Architectures

1. Desktop Usage

Old but still important: High interactivity

2. Web based Static Reports

Especially for automated processes

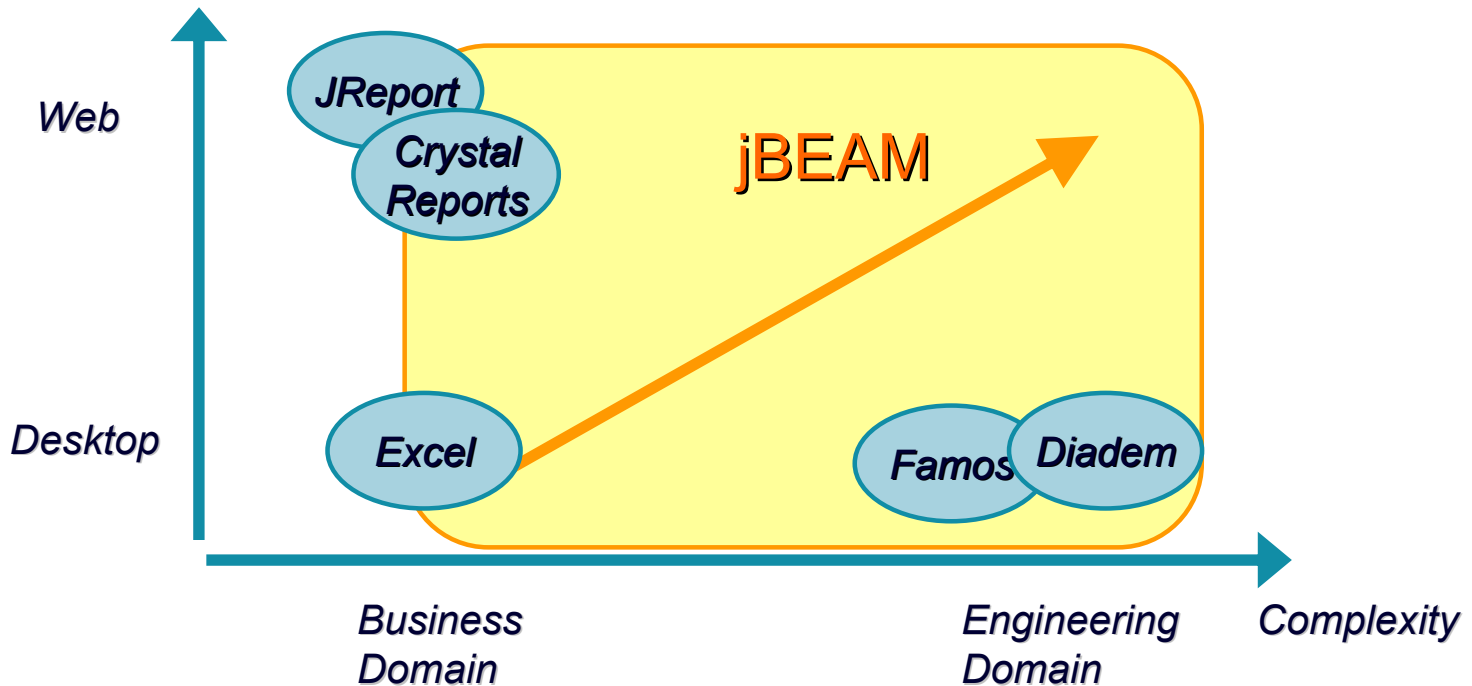
3. Web based Interactive Reports

Combining the advantages of web and desktop.

4. Enterprise Services

Web based services, combined with business logic.

Focus of jBEAM





E-SOA Requirements

Scalability

Platform Independence

Localization

Metadata Support

Adaptable

High Performance

Component based

Open



Scalability (I)

The different applications range from small visualization of 100 values up to analysis of Tera-Bytes of data.

jBEAM runs on:

1. small Windows 32 bit systems with only 1 GB RAM.
2. 64 bit Windows and Linux systems
3. SUN or HP workstations

Big data sets

Modern automation-systems create more and more data. Hard disk storage is inexpensive. So we are focused even today with Tera bytes of data.

1. RAM-based data access on 32 bit systems
2. Fast file storage on 1 GB systems working on >20 GB of data.
3. On 64 bit systems we support > 10 GB of RAM for fastest data access



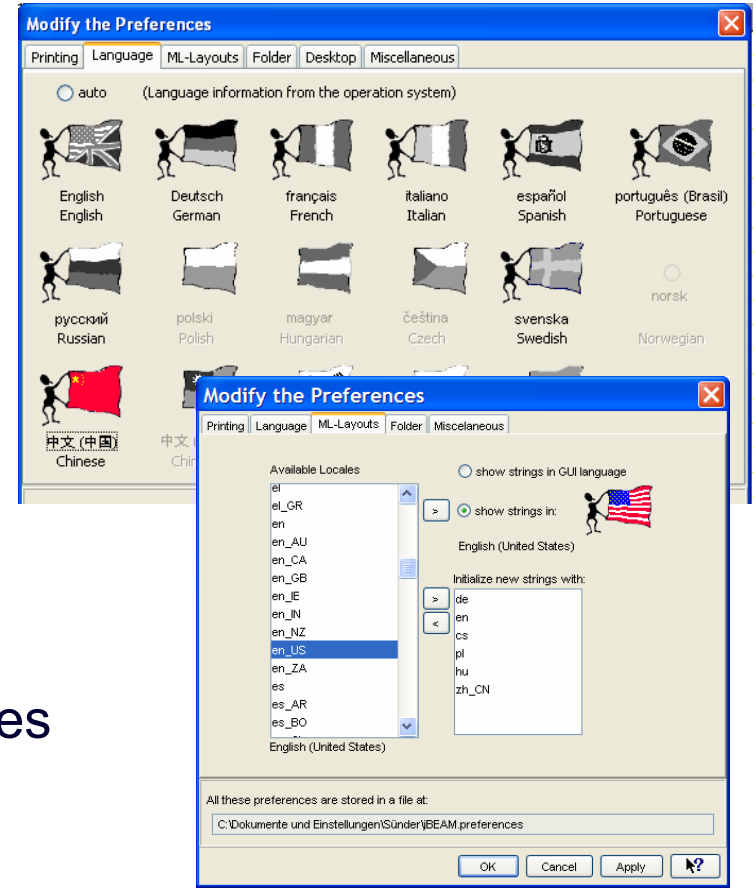
Platform Independence

Target: Support of different hardware and operation systems

Solution: **Java**
the standard in web based solutions

Required: High performance
Resource saving

- Graphical User Interface
 - English, German, French,
 - Italian, Chinese, Russian,
 - Spanish, Portuguese
- Multilanguage Layouts
 - Any language / country combination
 - One layout for all languages





Integration

Easy integration in data management systems.

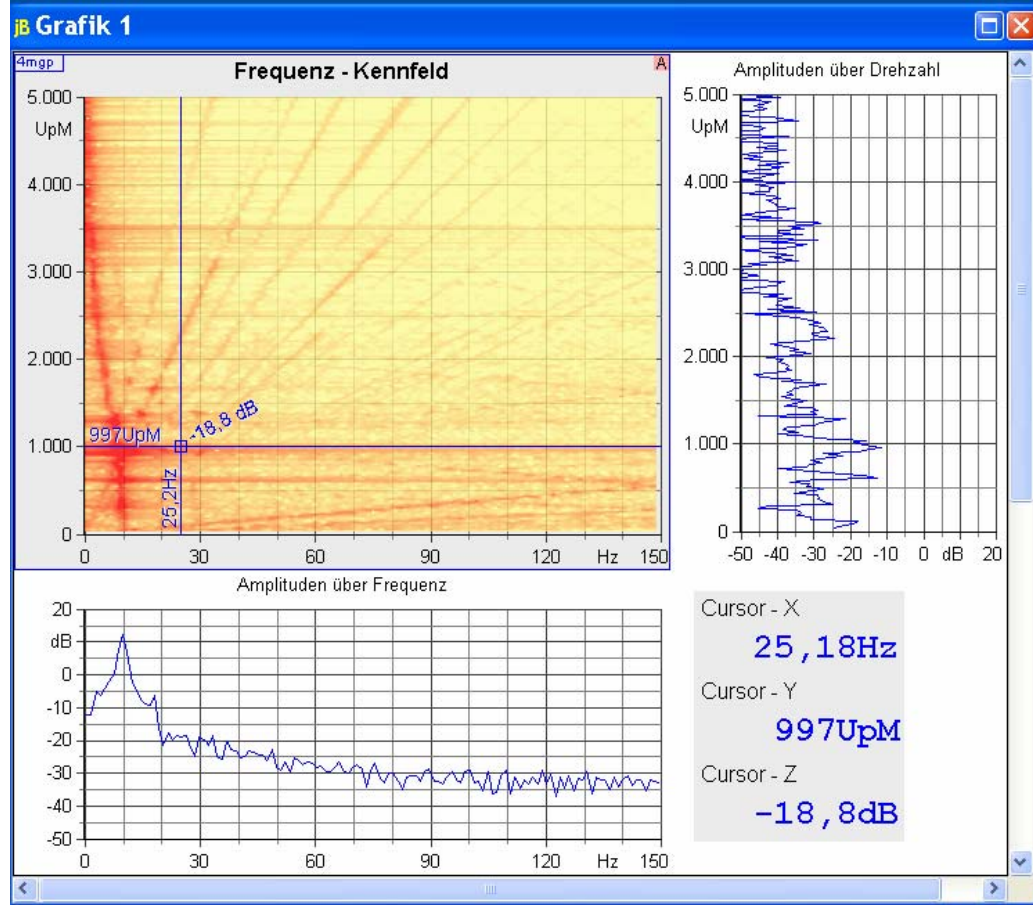
For example jBEAM is integrated smoothly in the
PAtools of Kratzer.

See booth 1724

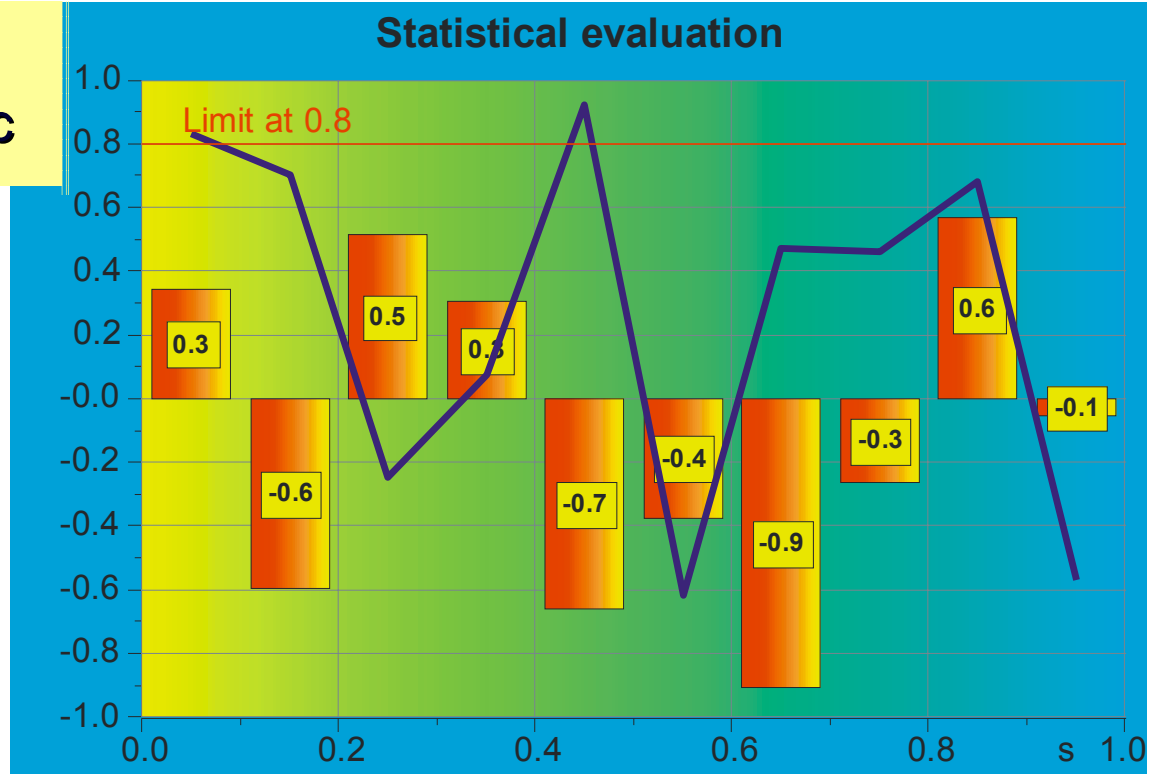
Sample: Crash Analysis



Sample: Vibration Analysis



Sample:
Business Graphic





Based on Standards

Active participation on designing new standards.

Active implementation of standards in **jBEAM**.

- **ASAM** (Member of the TAB)
 - **CEA** - Components for **E**valuation and **A**nalysis
 - Standardized Interfaces and Events
 - Extendable by third party components
 - **ODS**: Open Data Service
 - Database connections
 - ATF(x) File Import/Export with comprehensive checking
- **ISO**
 - 13499: MME test data.
 - 16100: Description of Software Components (Editor)

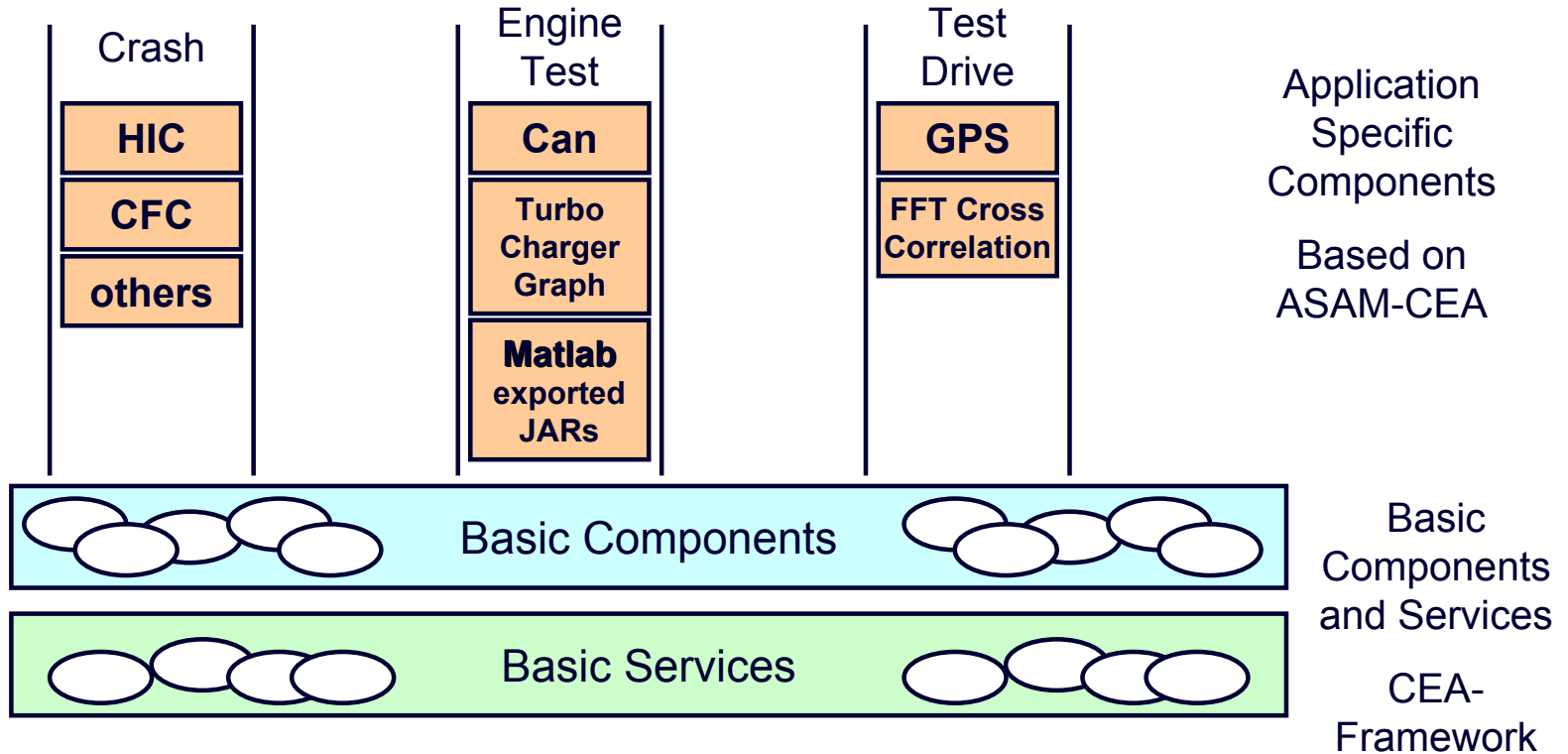


Open Component based Software

- **ASAM-CEA**
 - **Components for Evaluation and Analysis**
 - **Standardized Interfaces and Events**
 - **Extendable by third party components**
- **User: Select specific features from a market of CEA-Components**
- **Provider: Generate high quality solutions by adding knowledge as components sharing the basic features.**



ASAM-CEA Component World



Graphic 1

This report supports multi languages

Plain Text with channel property as formula
 Sensor "Kan 2.1" has a range of 100 mm
 Used formula:
 "PropValue(DataItem("Audi_Test_DBcontent_Vers_param2.bsm", "Kan 2.1"), "SensorRange")"

Plain Text with Map-Value as formula
 The map-text is not multilingual! Display as multi:
 "Hallo, das ist ein Test des ersten Versuchs-parameters. Ich hoffe, es wird alles korrekt angezeigt."

VarText - Channel Statistic	VarText - Channel Properties
Name: Kan 2.2	Sensor Producer: HBM
Producer: Audi_Test_DBcontent	Sensor Name: 60
Date: 06.12.2006	Range: 100 mm
Time: 12:02:52	Last Calibration: 13.11.2006
X-Unit: s	Next Calibration: 13.11.2007
Y-Unit: mm	Resolution:
Values: 0	Max. Temperature: 80
X-Offset: 0.00µs	
Delta Y: 0.00µs	

Channel Properties with Free Table

Property Name	Chan 2.1	Chan 2.2
SensorProducer	HBM	HBM
SensorName	60	60
SensorComment		
SensorRange	100 mm	100 mm
SensorLastCalibration	13.11.2006	13.11.2006
SensorFrequencyMin		
SensorNextCalibration	13.11.2007	13.11.2007
SensorResolution		
SensorTemperatureM	80	80
SensorTypeName	W 50	W 50
SensorType	Wegaufnehmer	Wegaufnehmer
SensorTemperatureM	-20	-20

VarText - Map Values

Text 1 (en): Hallo, das ist ein Test des ersten Versuch
 Text 2: Test2
 Text 3: Hallo3
 Text 4: Test4

Property List Input

SensorName
 SensorRange
 SensorLastCalibration

Channel Properties with Interactive Table

Property Name	Chan 2.1	Chan 2.3
SensorName	60	60
SensorRange	100 mm	100 mm
SensorLastCalibration	13.11.2006	13.11.2006

A comprehensive set of functions is available in **jBEAM**, to include meta data / properties in reports

Graphic 1

SensorName	60	60
SensorRange	100 mm	100 mm
SensorLastCalibration	13.11.2006	13.11.2006

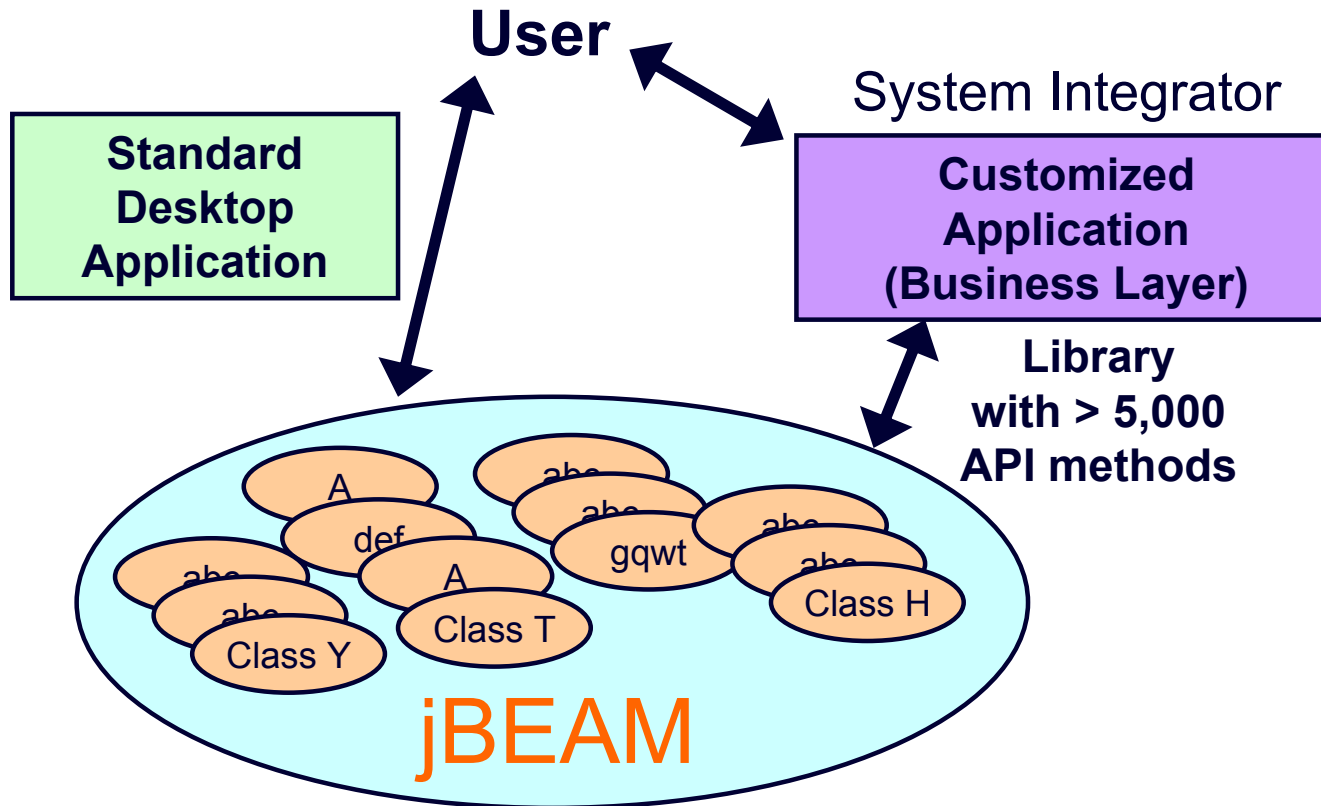
Channel Properties with Interactive Table

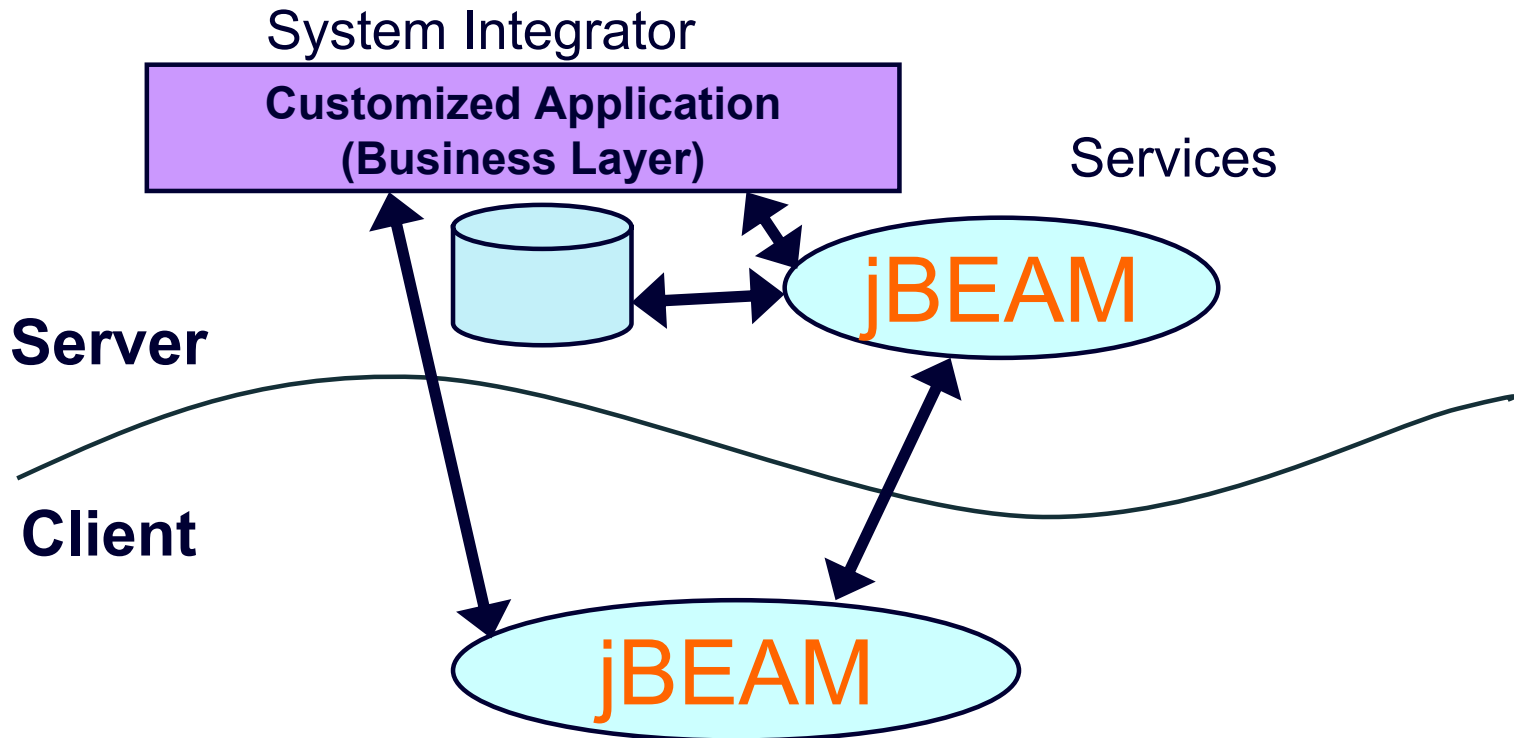
Property Name	Chan 2.1	Chan 2.2	Chan 2.3
SensorProducer	HBM	HBM	HBM
SensorName	60	60	60
SensorComment			
SensorRange	100 mm	100 mm	100 mm
SensorLastCalibration	13.11.2006	13.11.2006	13.11.2006
SensorFrequencyMin			
SensorNextCalibration	13.11.2007	13.11.2007	13.11.2007
SensorResolution			
SensorTemperatureMax	80	80	80
SensorTypeName	W 50	W 50	W 50
SensorType	Wegaufnehmer	Wegaufnehmer	Wegaufnehmer
SensorTemperatureMin	-20	-20	-20
SensorPrecision			
SensorFrequencyMax			

Interactive Table

Channel	Sensor	Range	Next Calibration
Kan 2.1	60	100 mm	13.11.2007
Kan 2.2	60	100 mm	13.11.2007
Kan 2.3	60	100 mm	13.11.2007
Kan 2.4	61	+/-50 mm	21.05.2007
Kan 2.5	61	+/-50 mm	21.05.2007

AMS jBEAM – a Classlibrary







Data-Management Systems

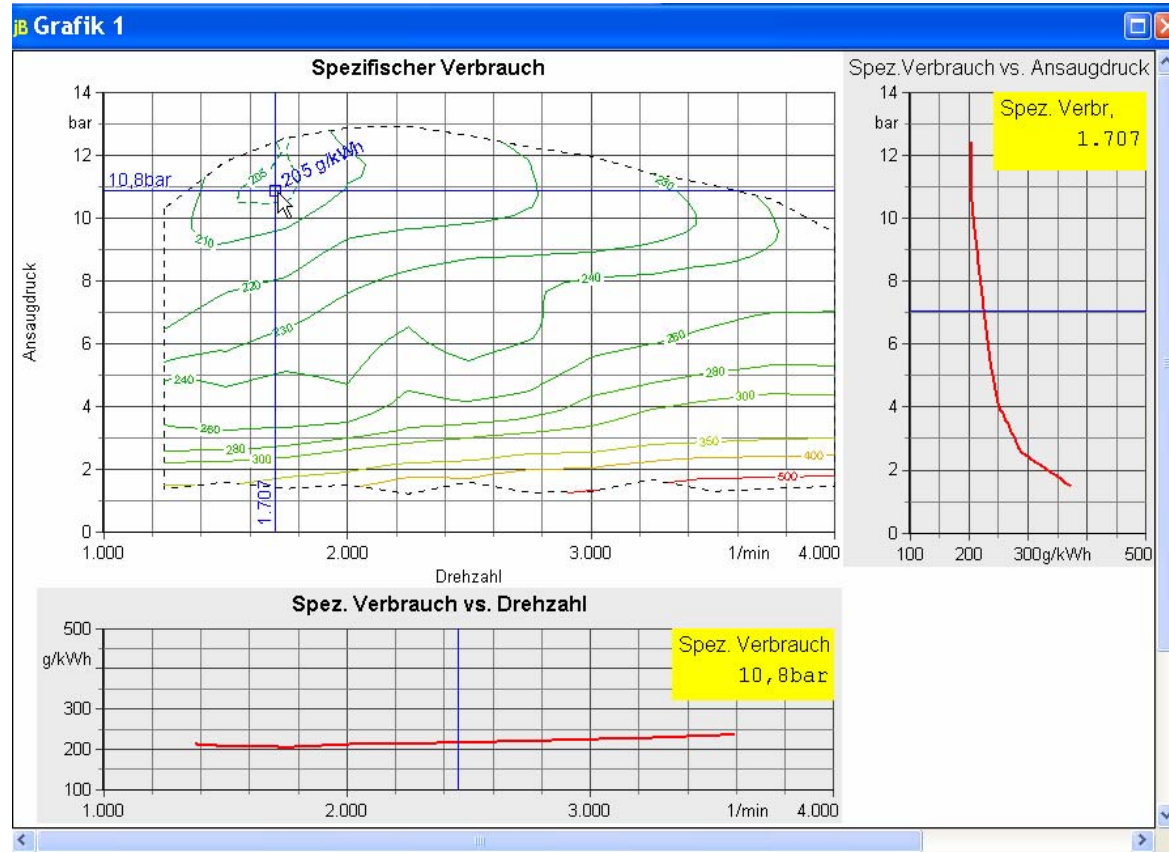
Data-Management Systems from IT-specialists

jBEAM is integrated as a frontend for data analysis and visualization

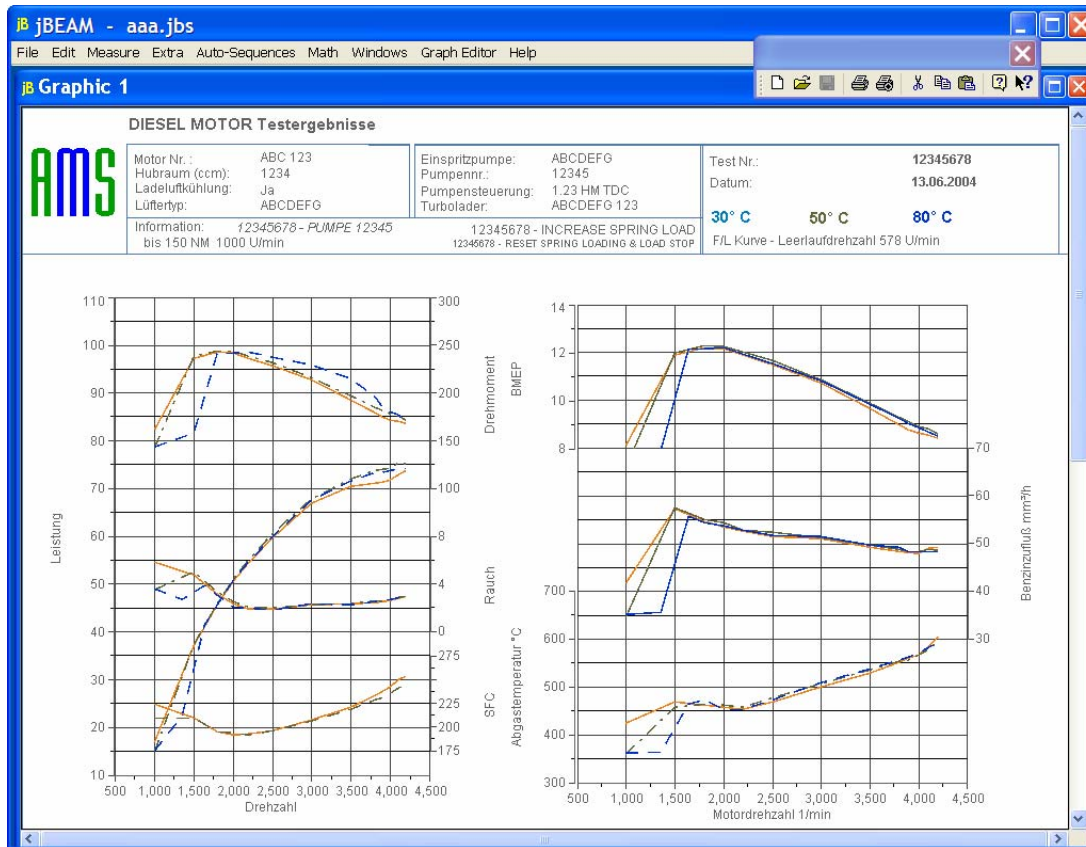
- **Kratzer Automation – part of the TestExplorer (Daimler, Volkswagen, ...)**
- **T-Systems – MODIS (Volkswagen)**
- **WIPRO – Brake Test System (GM-Vehicle)**

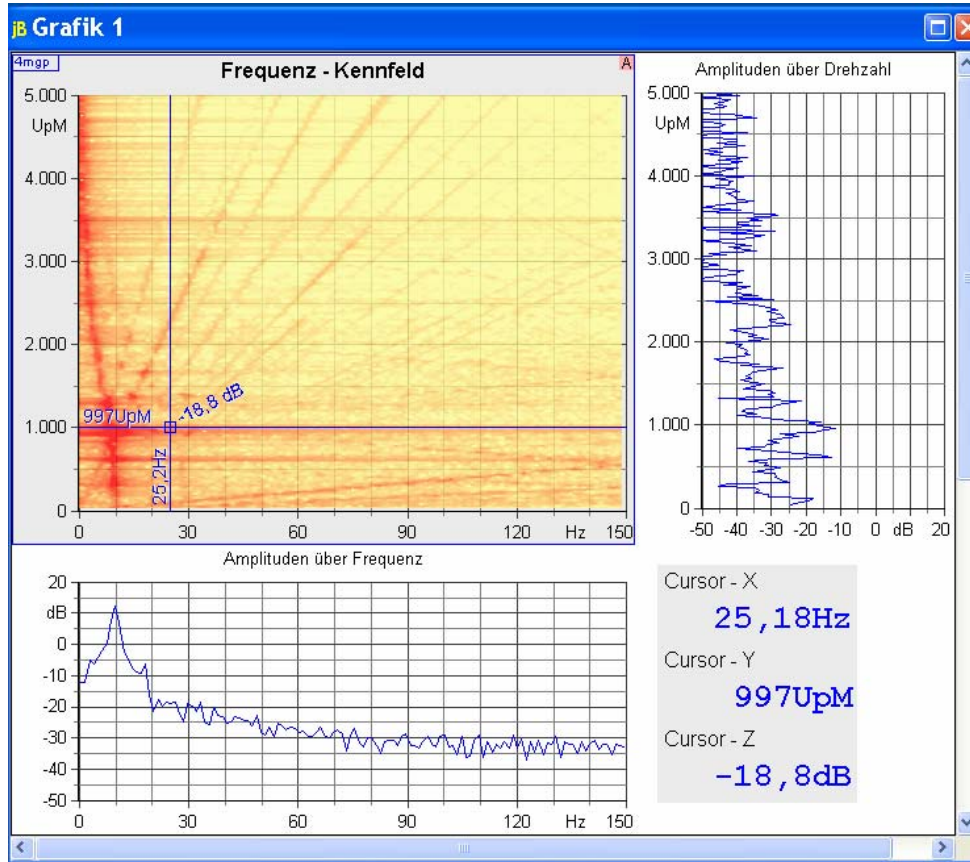
AMS jBEAM – Visualization

Some Samples of use cases.

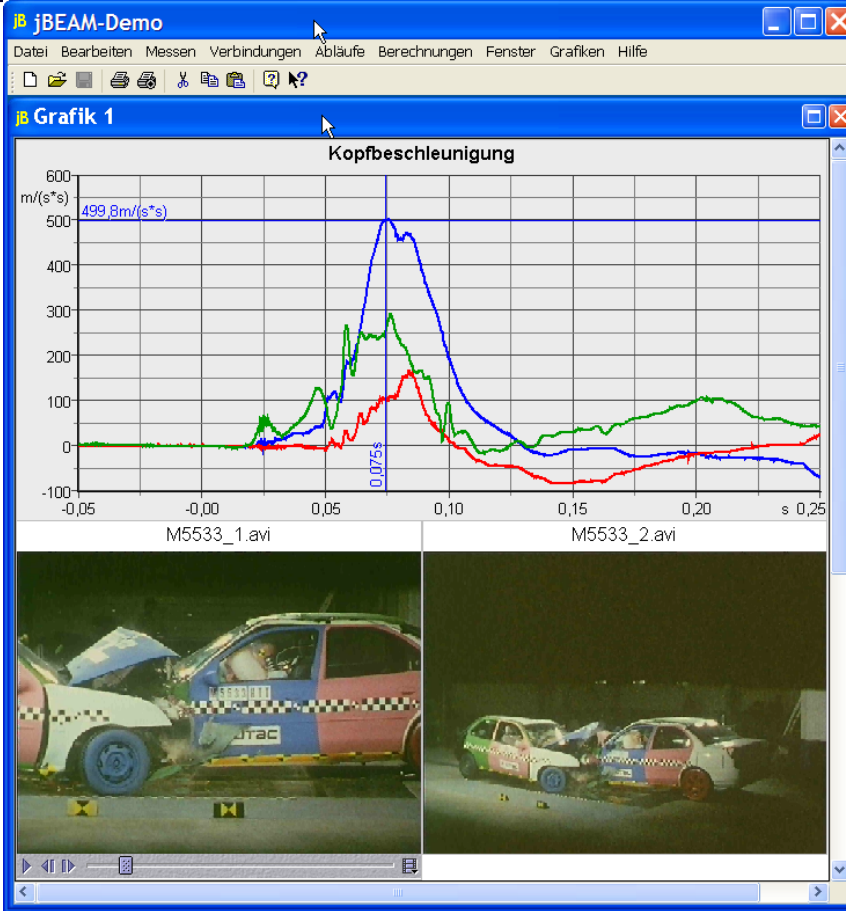


AMS Test Protocols

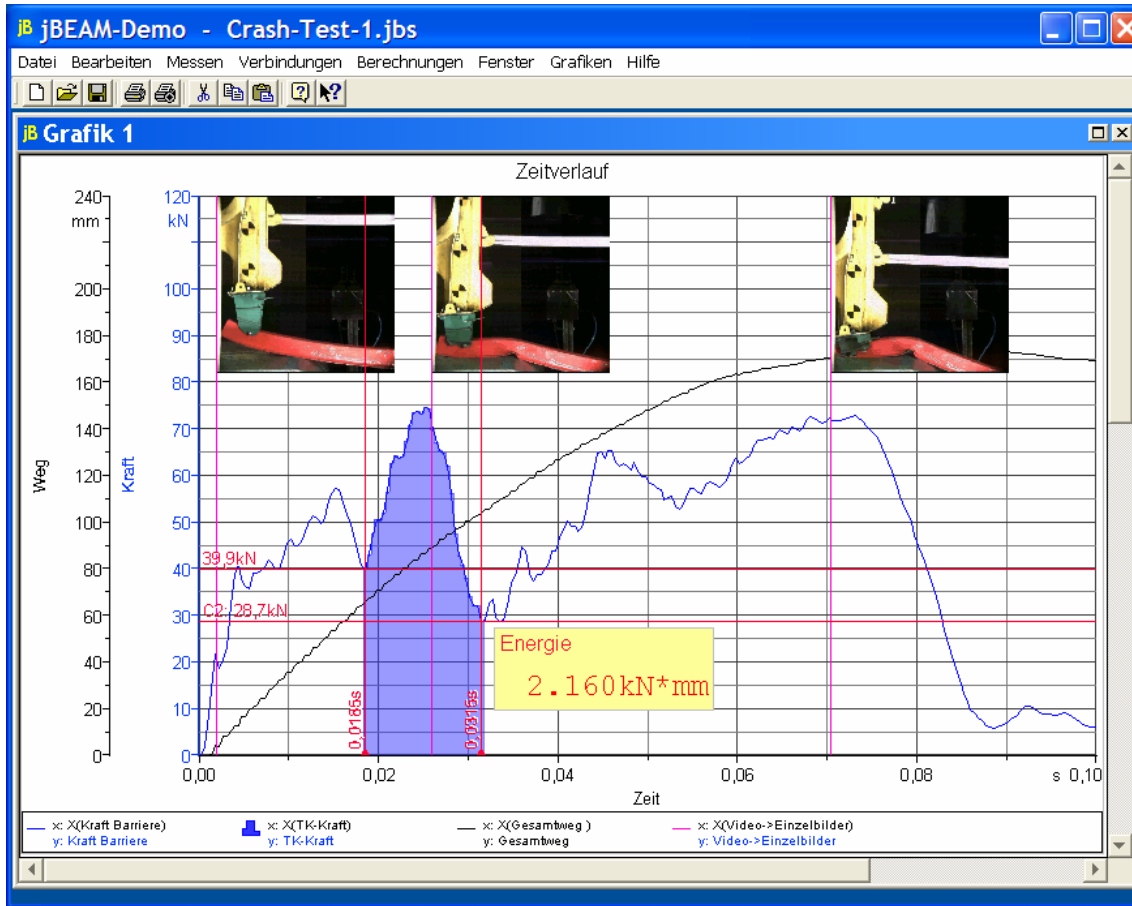


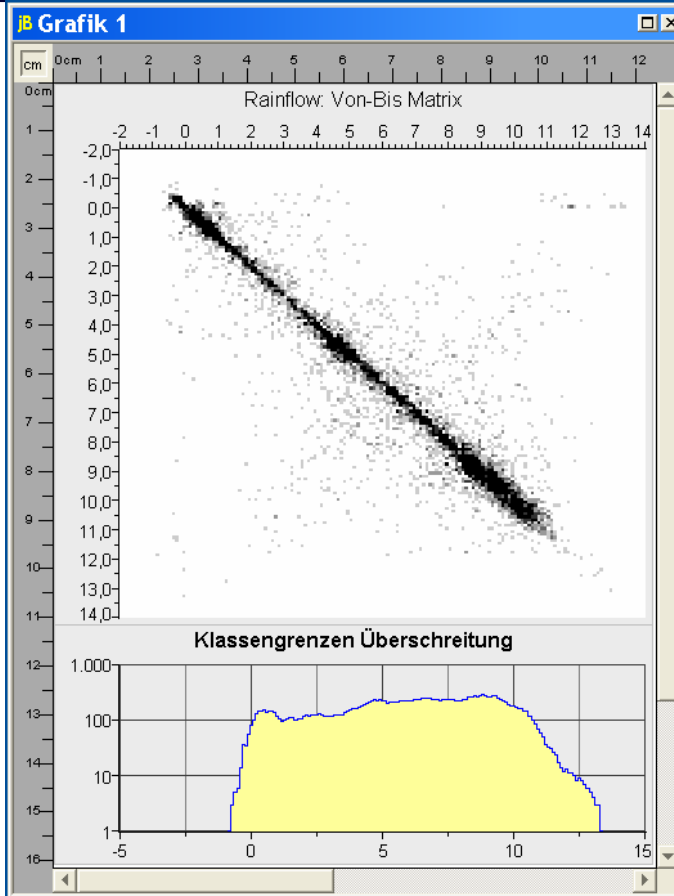


Mouse controlled xy-cursor defines a cross-section, which is displayed in line charts.

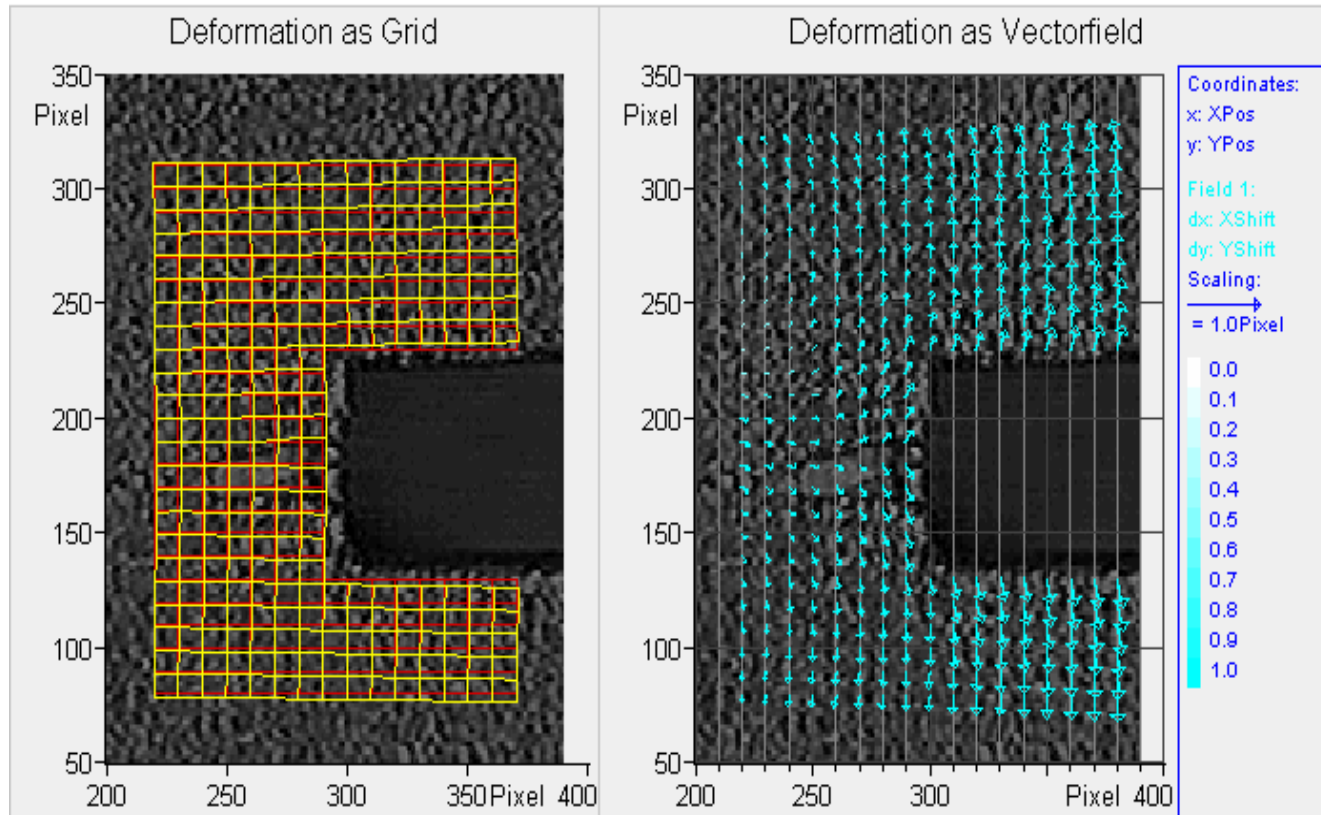


Synchronized display of numerical and video data.

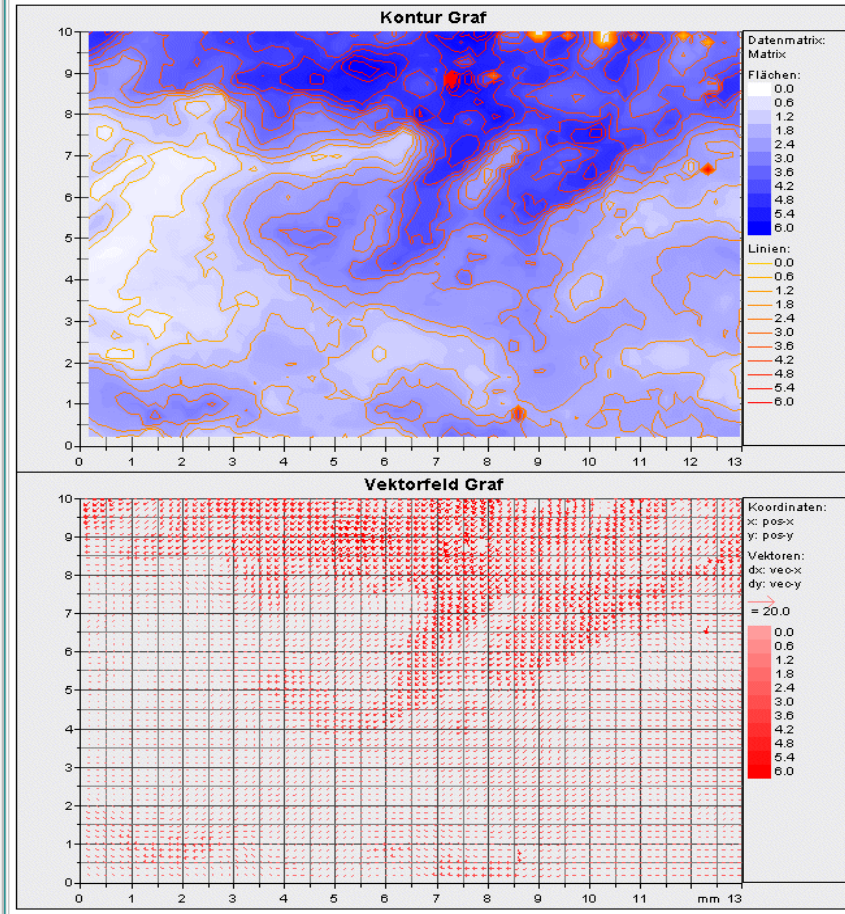


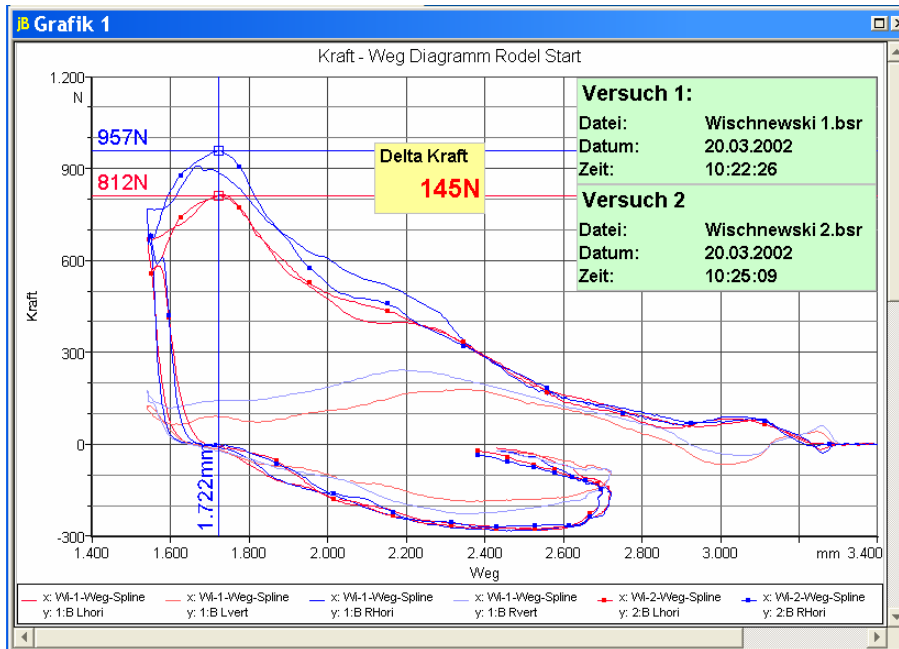


- *Different Rainflow Methods*
- *Level Crossing*
- *Range Pair*
- *Interactive Cuts*



Double angular jet





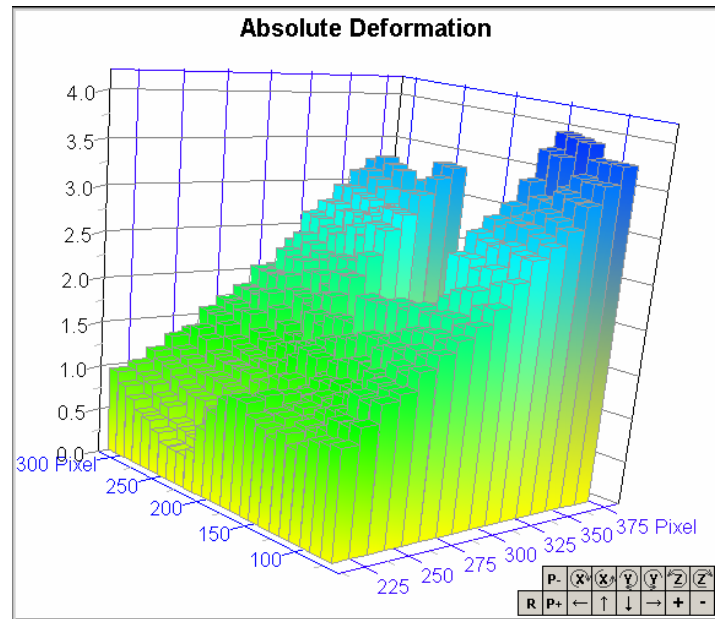
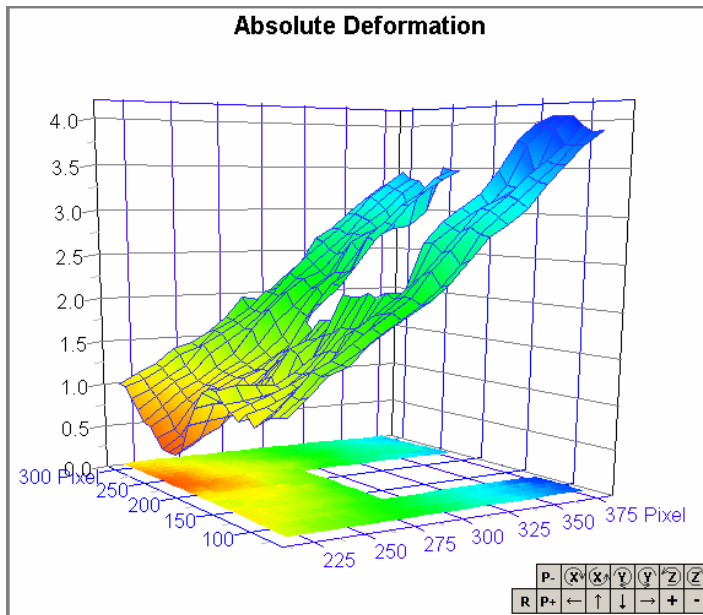
Training optimization:

Comparing handle forces of different starts.

Movement control by video.

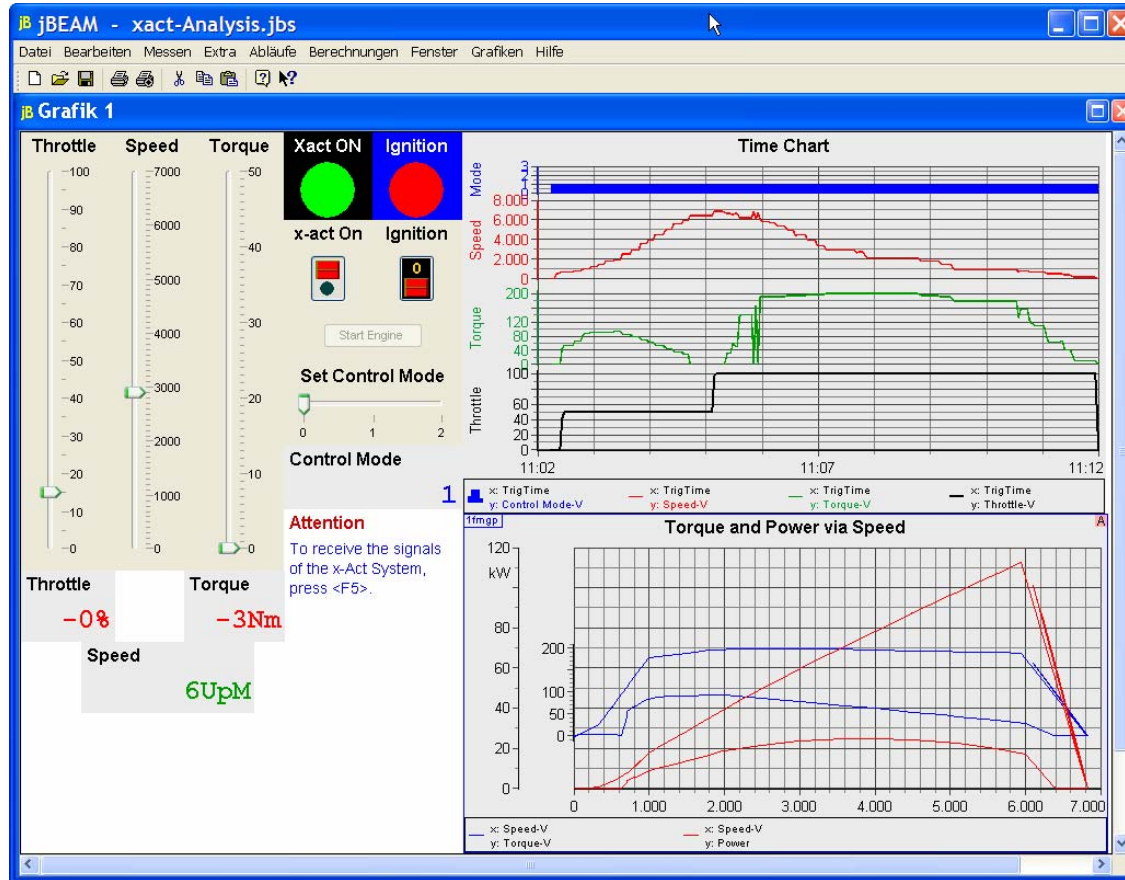
Gold Medal for Sylke Otto in Salt Lake City 2002 and at World Championships 2004





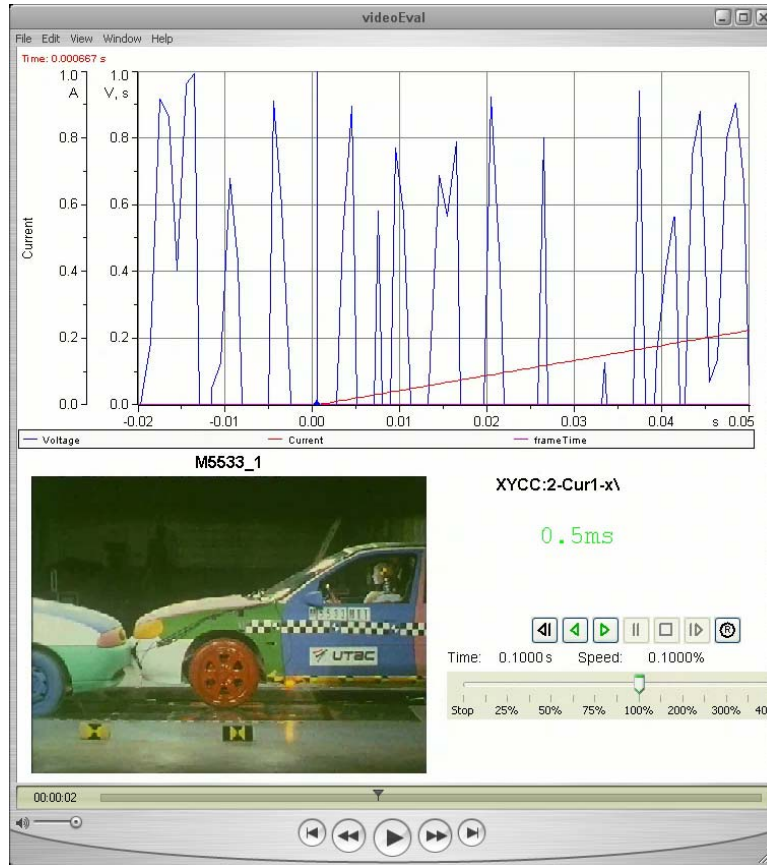


Online Monitoring





This may also be a Report



Create a video from your dynamic test

Play it with every video player



May 2008: jBEAM Version 5

- **Enterprise Communication for Client-Server Systems**
- **Selective Imports for Big Datafiles**
- **Page and Canvas View**
- **new Interactivity with 2D-Graphs**
- **Different Curvetypes in one 2D-Graph**

- **jBEAM**'s functionality fits exactly in the engineering domain.
- The **ASAM-CEA** Standard is the basis for open software solutions in data evaluation.
- **jBEAM** is a new generation software for desktop- (offline) and enterprise web-operation (online).
- **jBEAM** - the tool for company wide data post-processing solutions.



jBEAM is developed and distributed by:

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