AMS

jBEAM v5

Enterprise Services
the next generation of data post-processing

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Service-Oriented Architecture (SOA)

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."

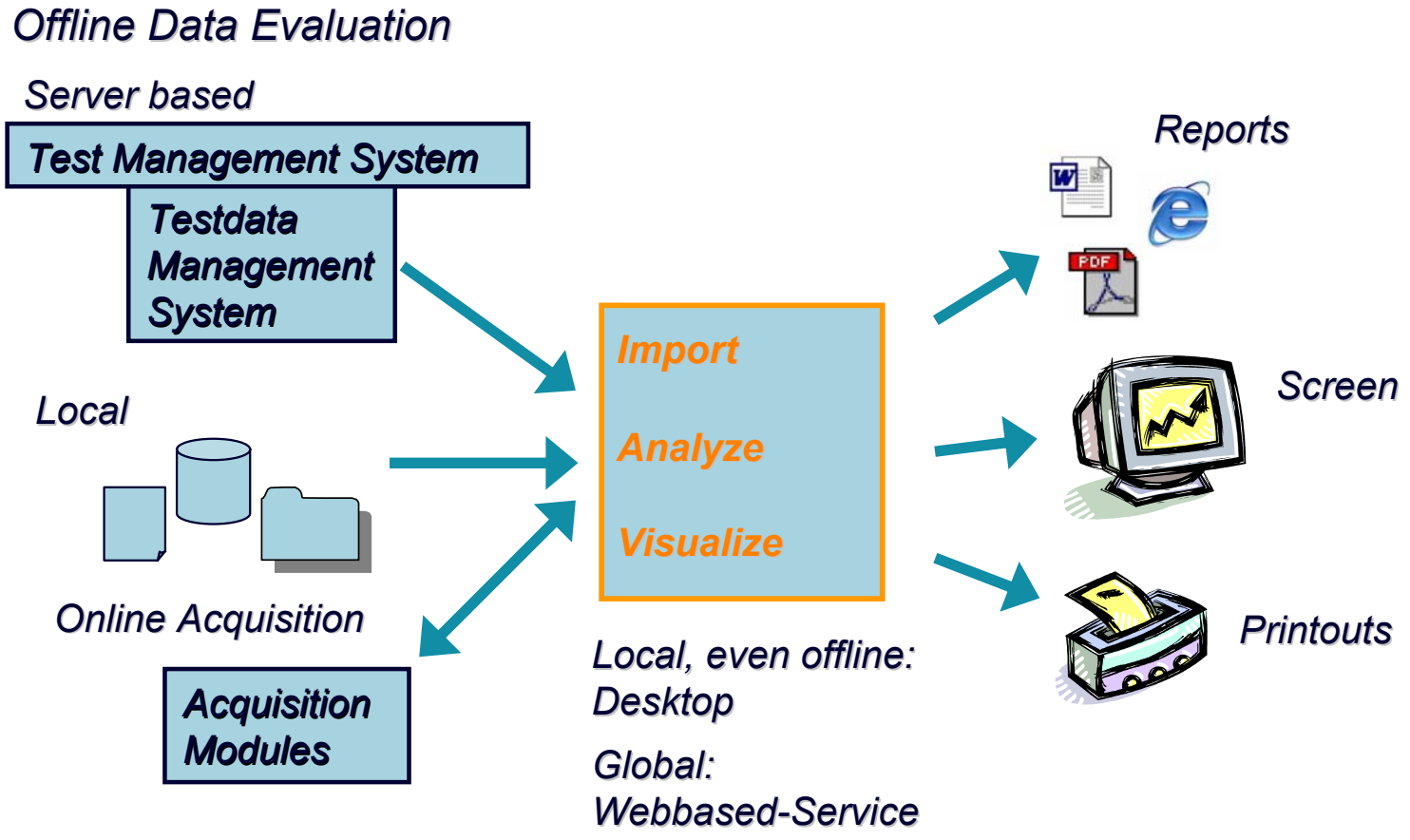
Enterprise SOA

Enterprise Service-Oriented Architecture

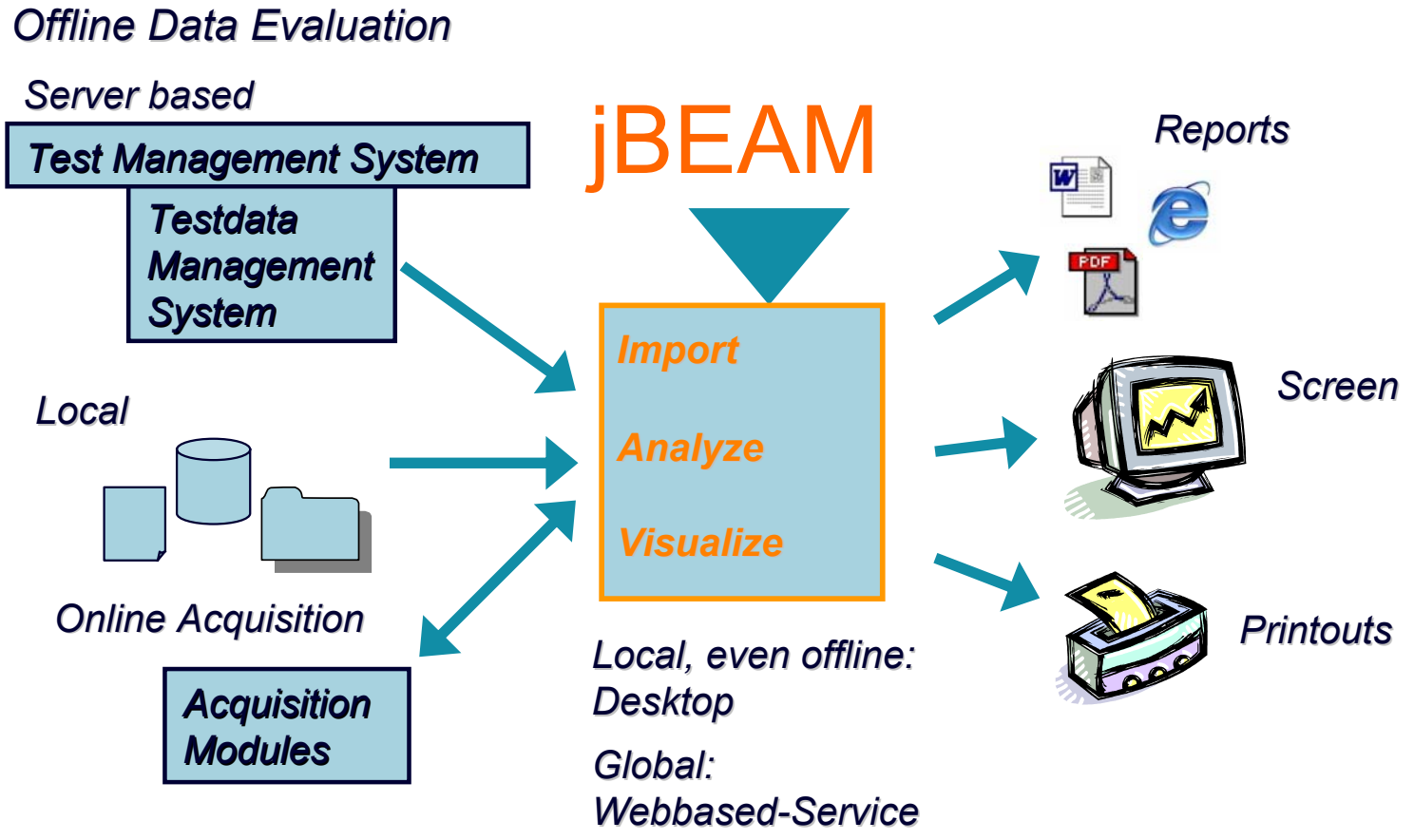
SAP: "Enterprise SOA is a blueprint for an adaptable, flexible, and open IT architecture for developing services-based, enterprise-scale business solutions. An enterprise service is typically a series of Web services combined with business logic that can be accessed and used repeatedly to support a particular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

What does this mean for data postprocessing?

Data Processing



Data Processing



Supported IT-Architectures

1. Desktop Usage

   Old but still important: High interactivity

2. Web based Static Reports

   Especially for automated processes

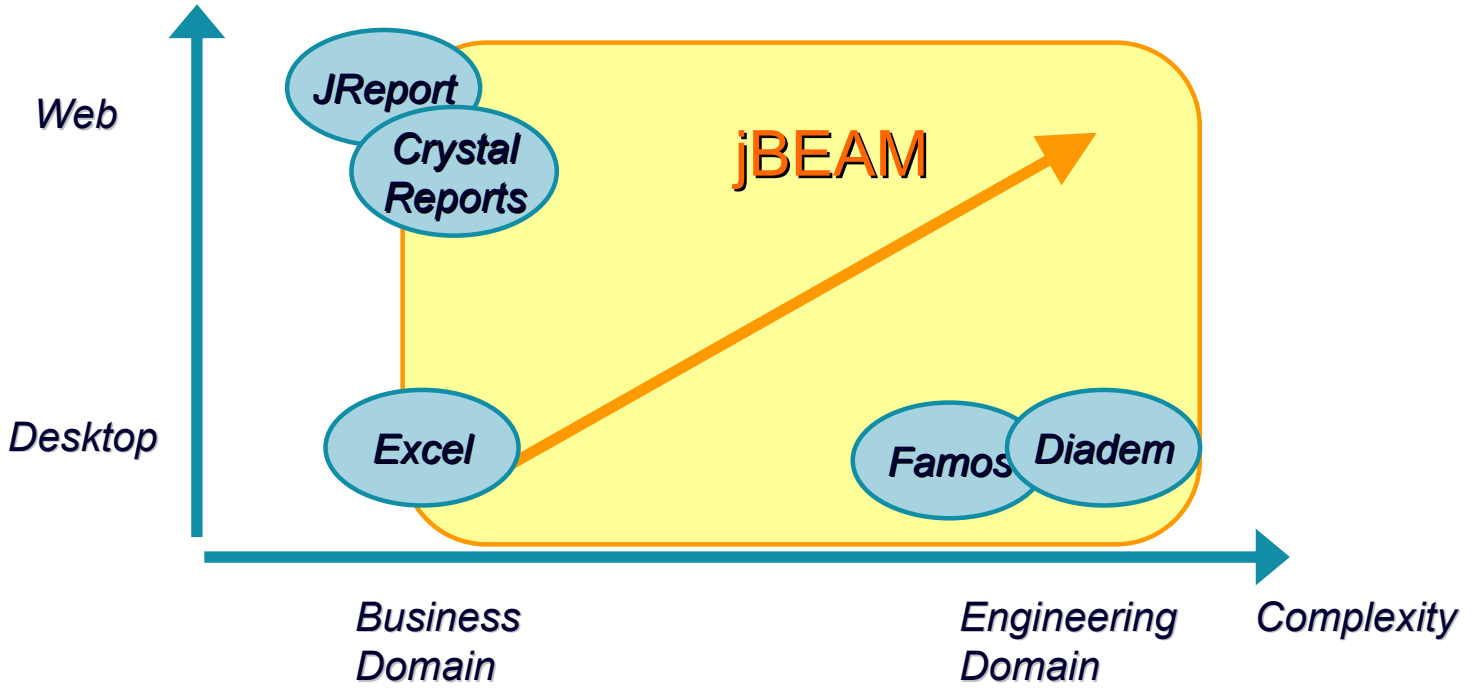
3. Web based Interactive Reports

   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 Independance
- 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

Scalability (II)

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 acess 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 Independance

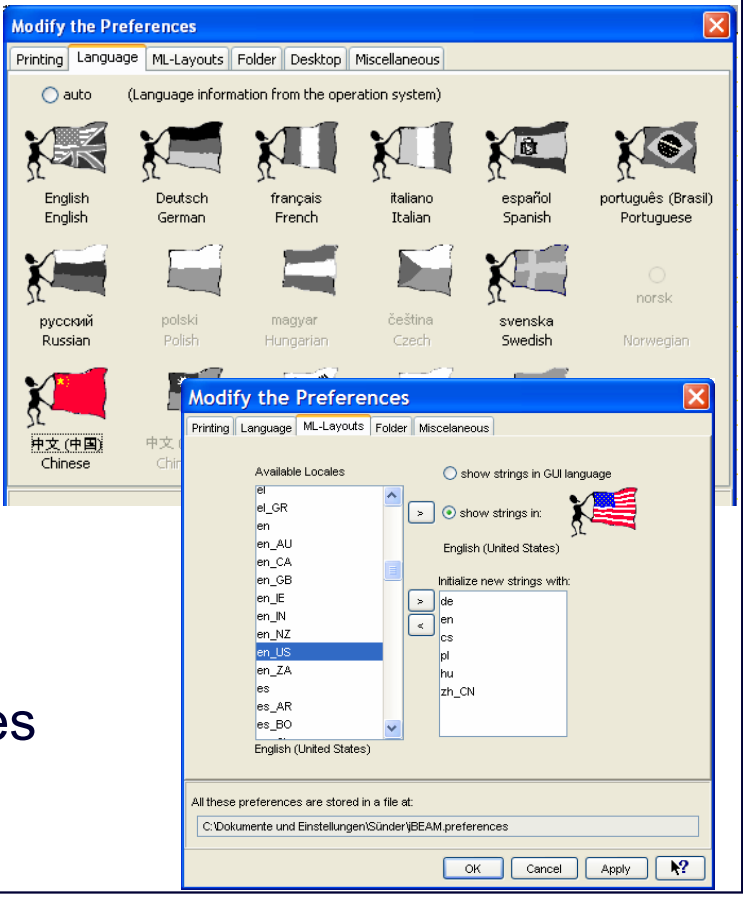
Target: Support of different hardware and operation systems

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

Required: High performance
Resource saving

Global Focus - Localization

- 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.

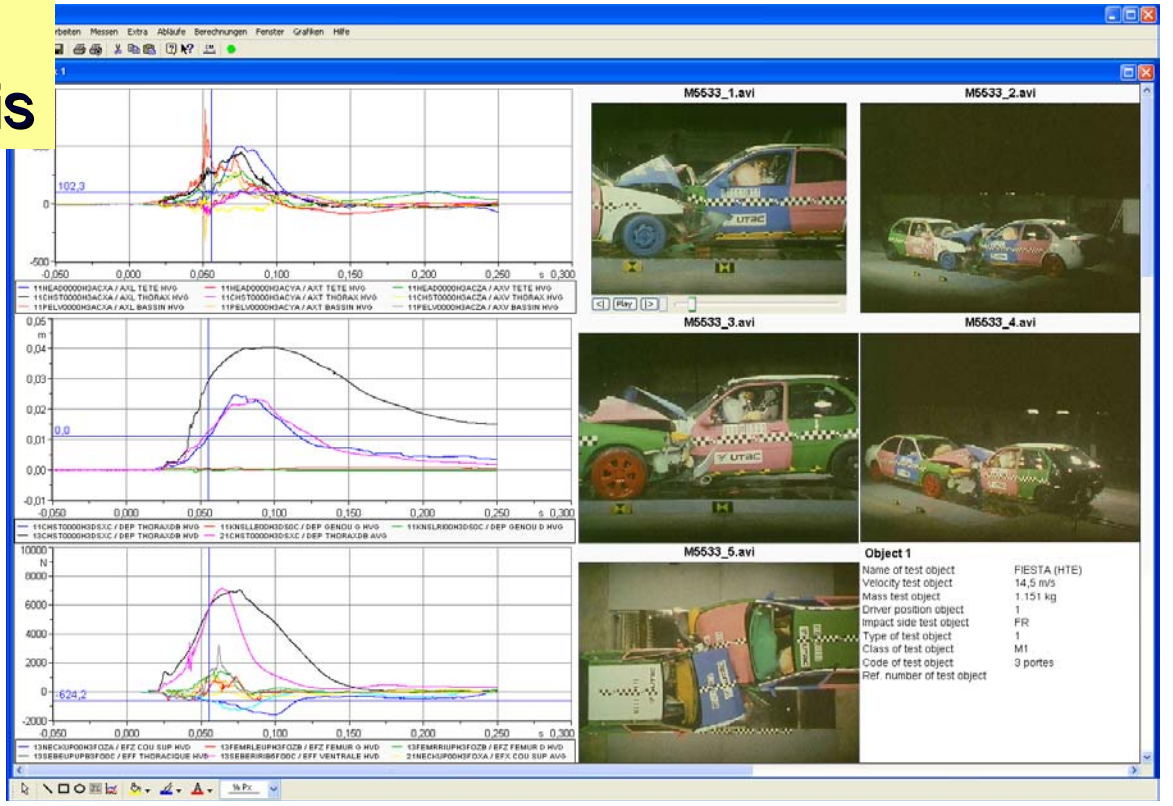
For example jBEAM is integrated smoothly in the PAtools of Kratzer.

See booth 1724

Applications

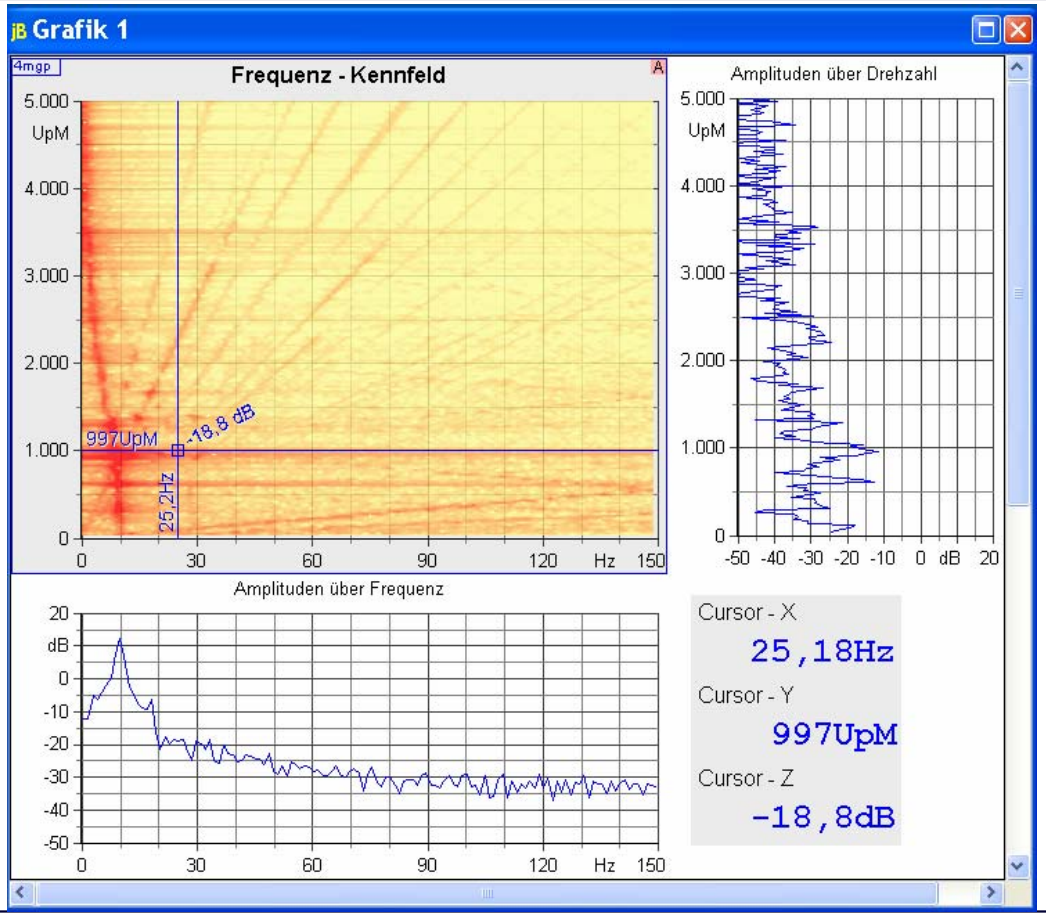
Sample:

Crash Analysis



Applications

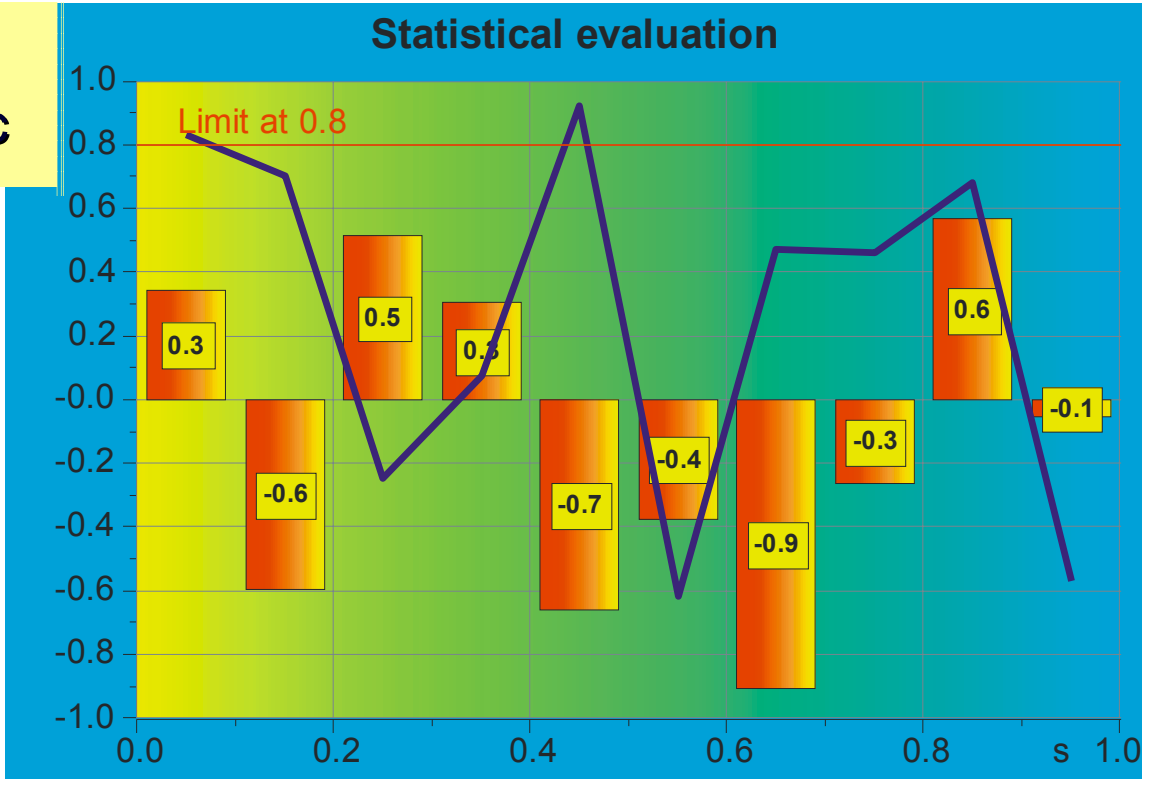
Sample:
Vibration Analysis



Applications

Sample:

Business Graphic



Based on Standards

Active participation on designing new standards.

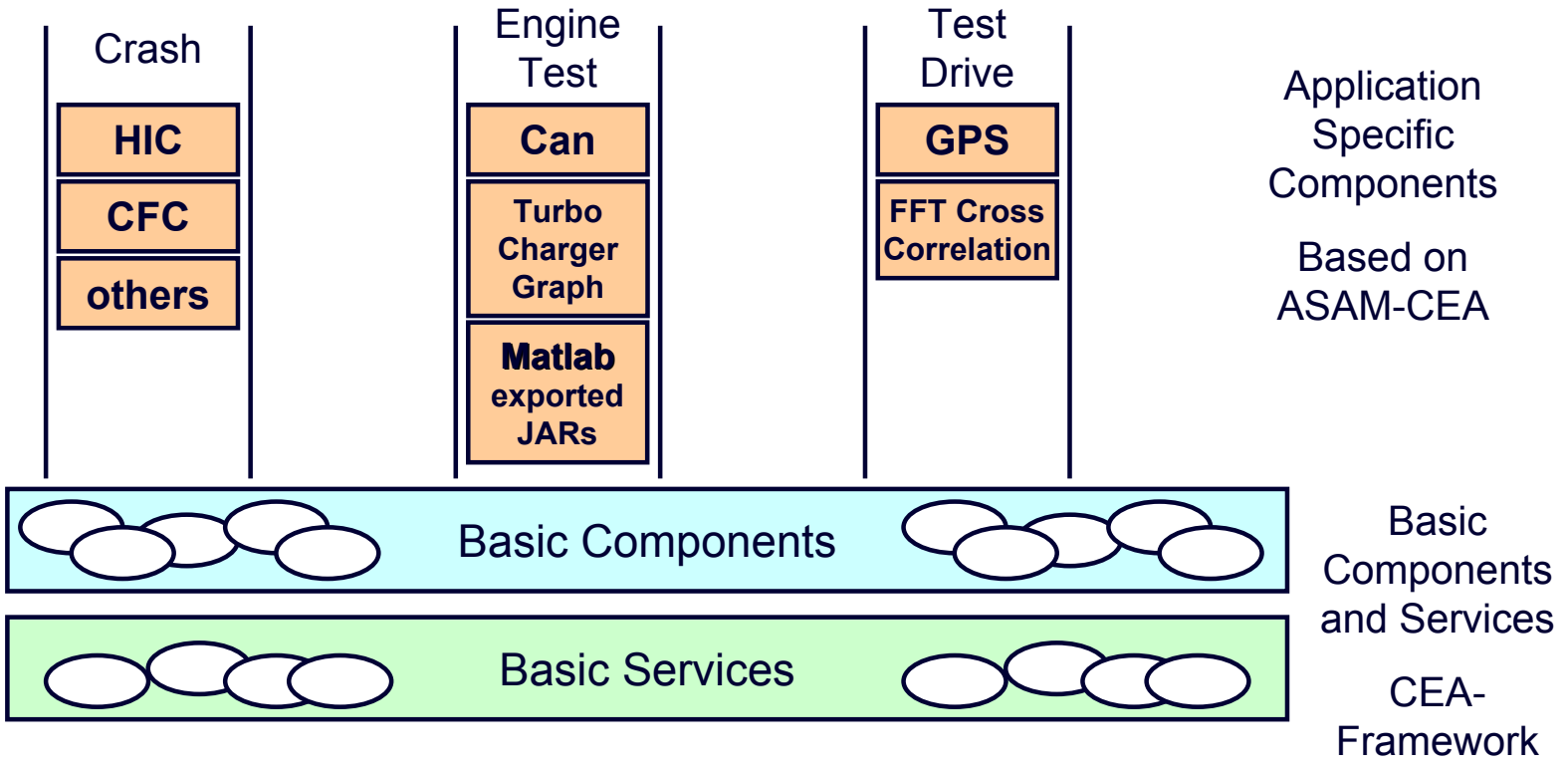
Active implementation of standards in jBEAM.

- ASAM (Member of the TAB)
  - **CEA** - **C**omponents 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)

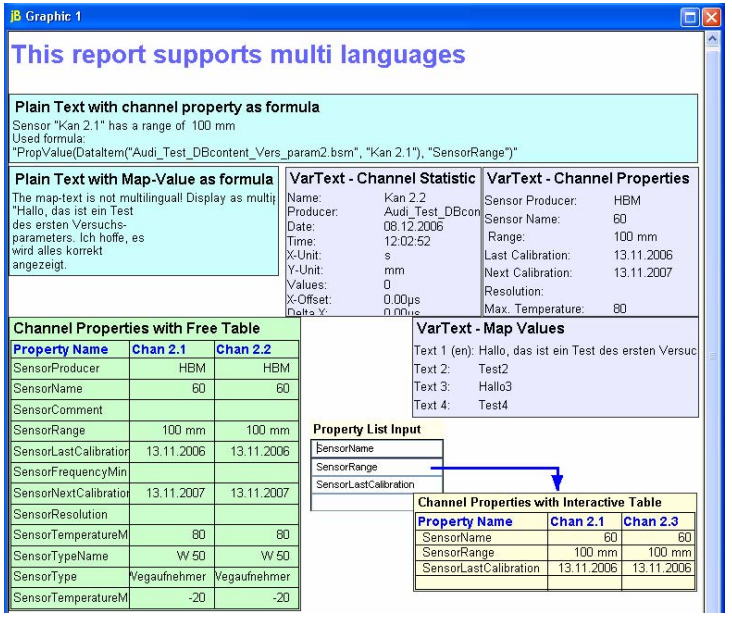
Open Component based Software

- ASAM-CEA
  - **C**omponents for **E**valuation and **A**nalysis
  - 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.

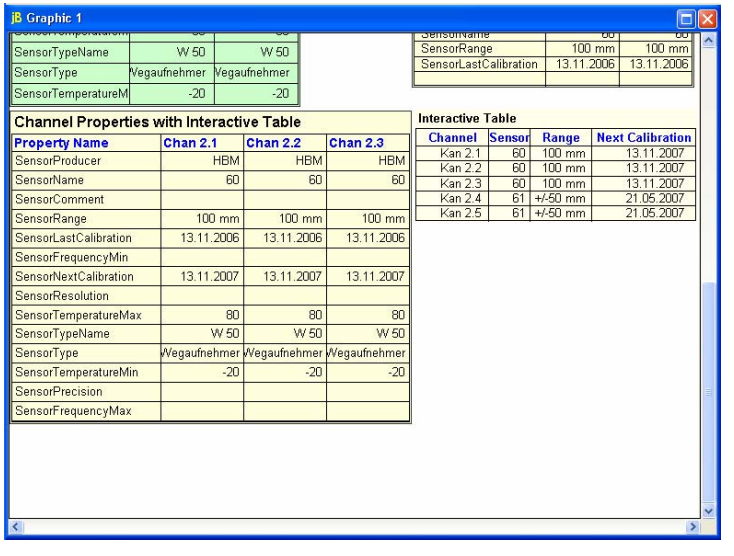
ASAM-CEA Component World



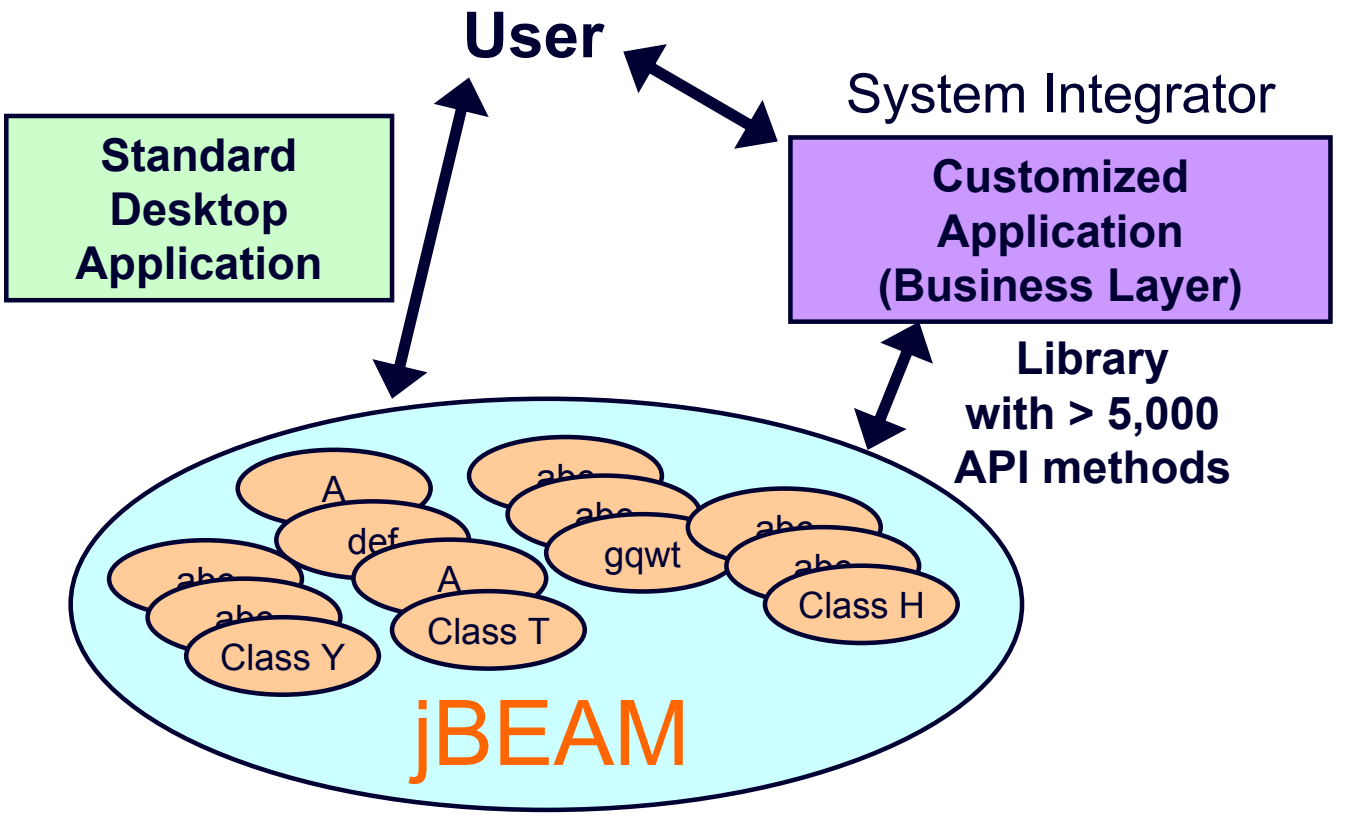
Support of Meta Data



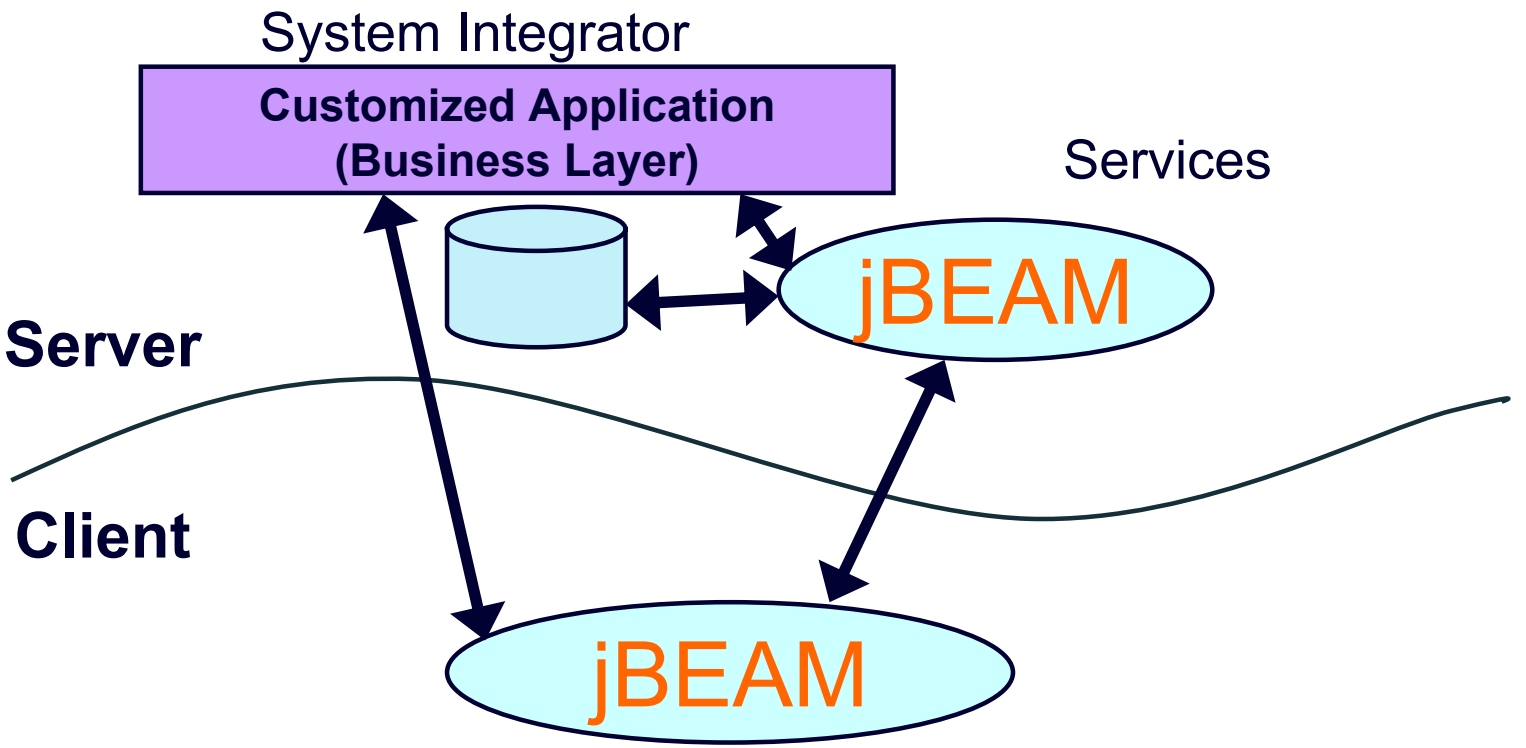
A comprehensive set of functions is available in jBEAM, to include meta data / properties in reports



jBEAM – a Classlibrary



jBEAM – Enterprise Service



Data-Management Systems

Data-Management Systems from IT-specialists

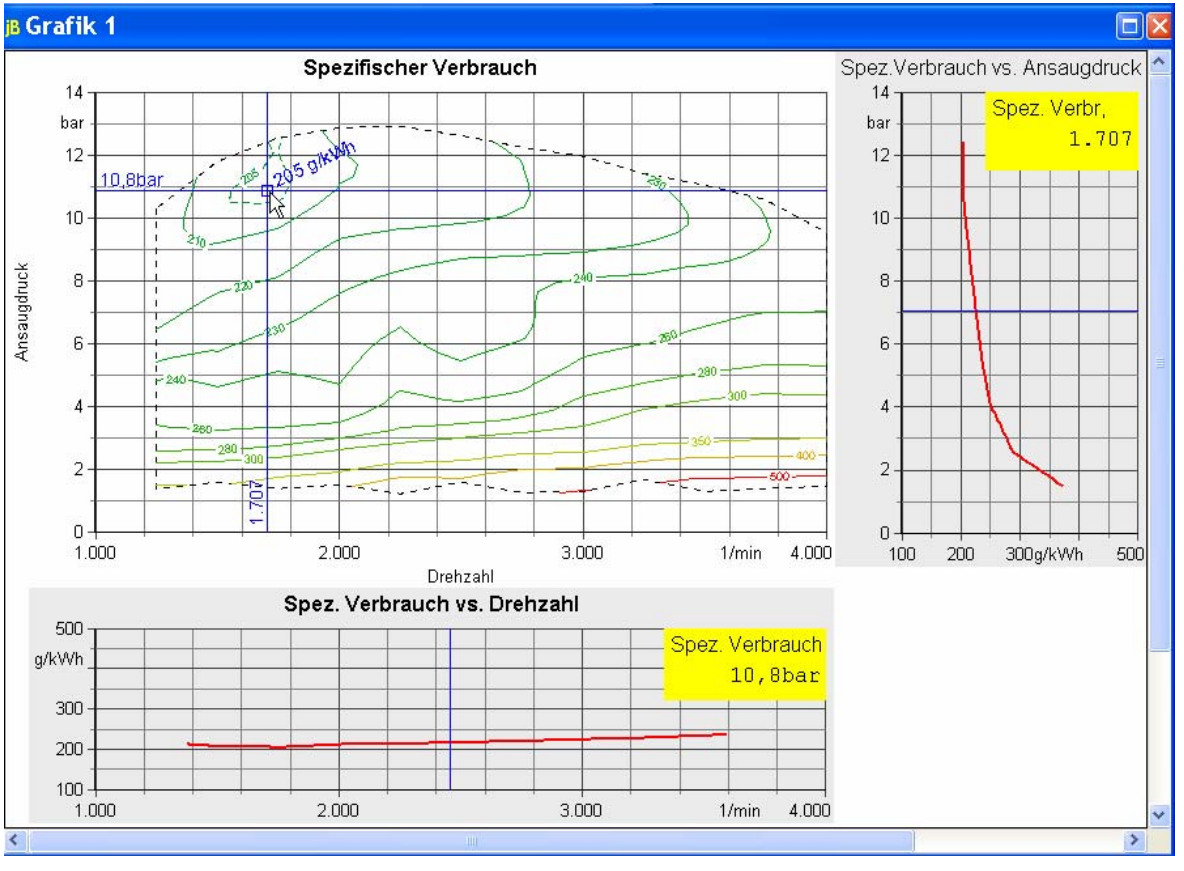
jBEAM is integrated as a frontend for data analysis and visualization

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

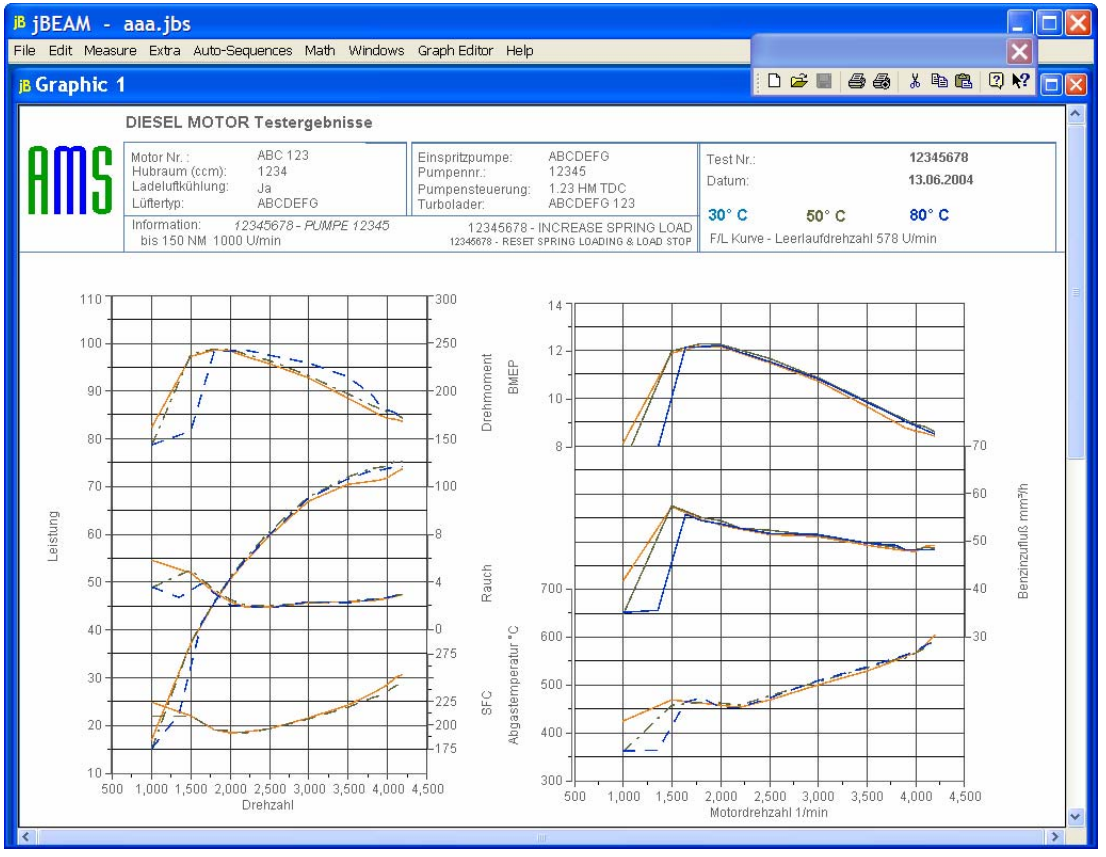
jBEAM – Visualization

Some Samples of use cases.

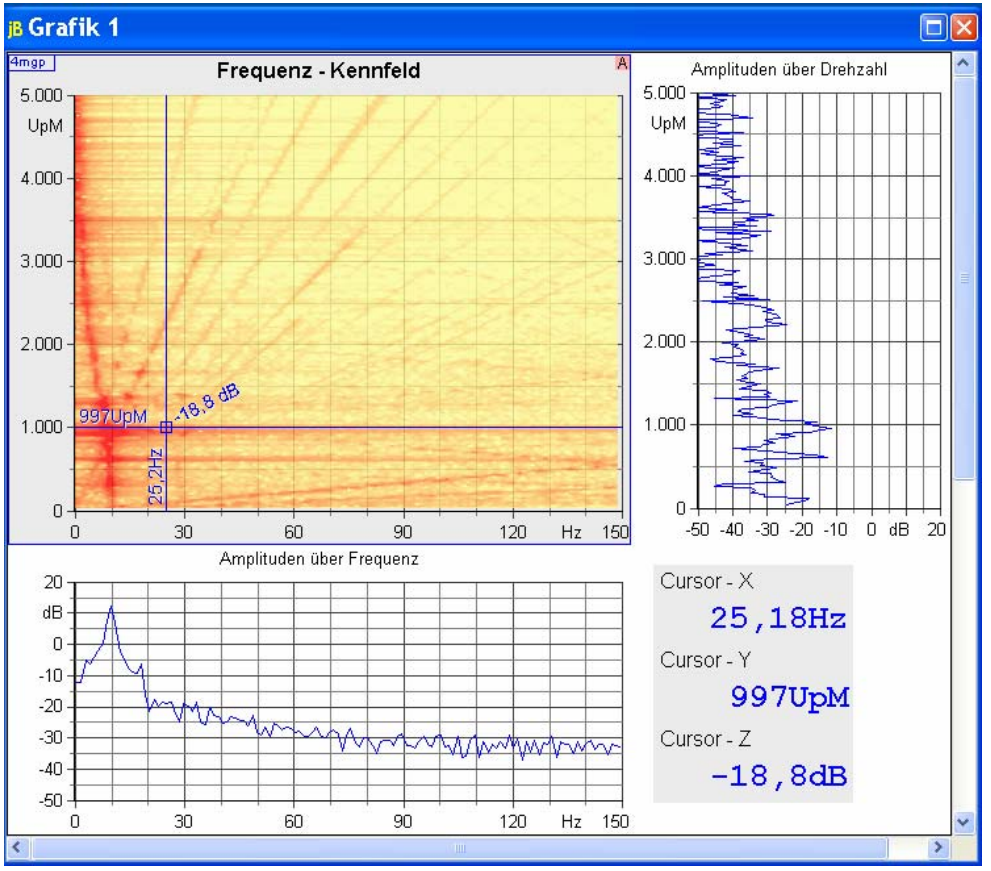
Interactive Desktop



Test Protocols

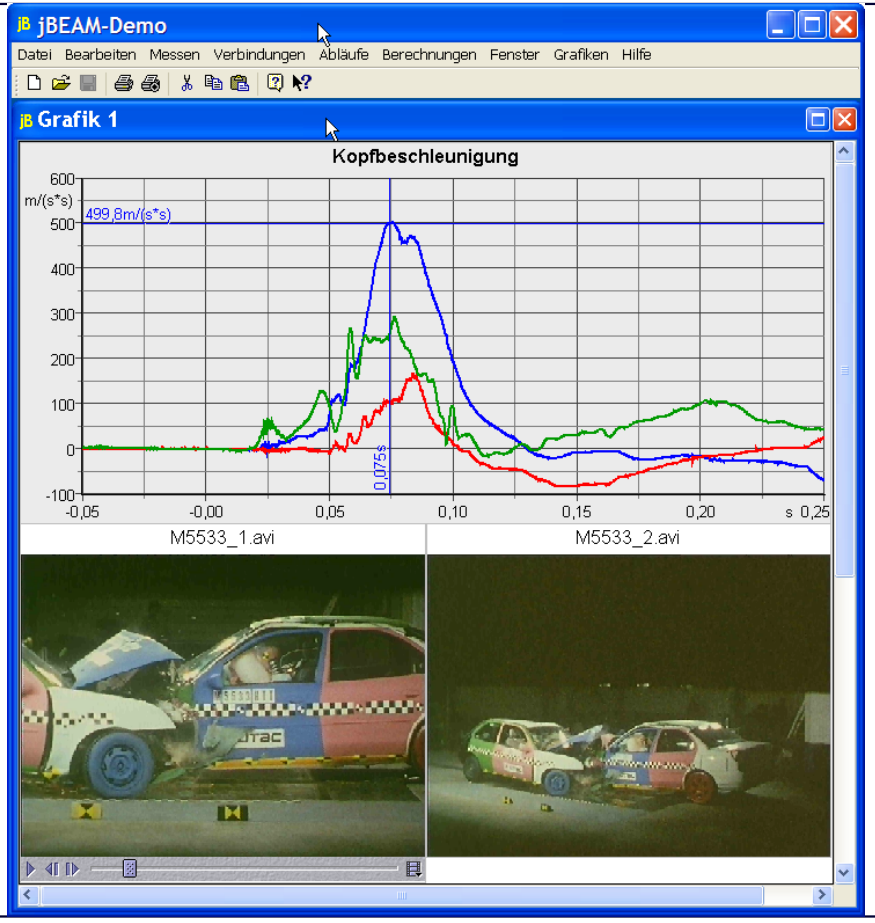


jBEAM Spectrumanalysis



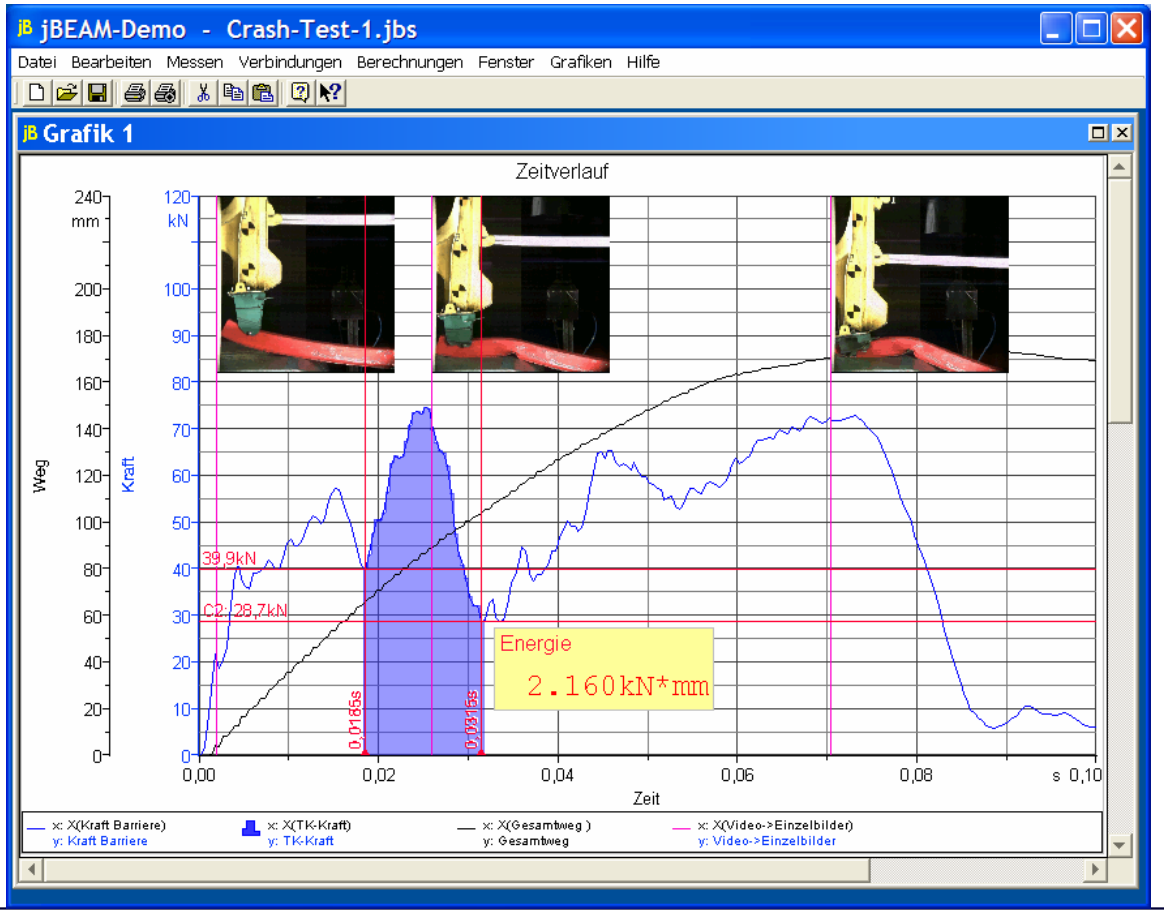
Mouse controlled xy-cursor defines a cross-section, which is displayed in line charts.

Safety - Crash

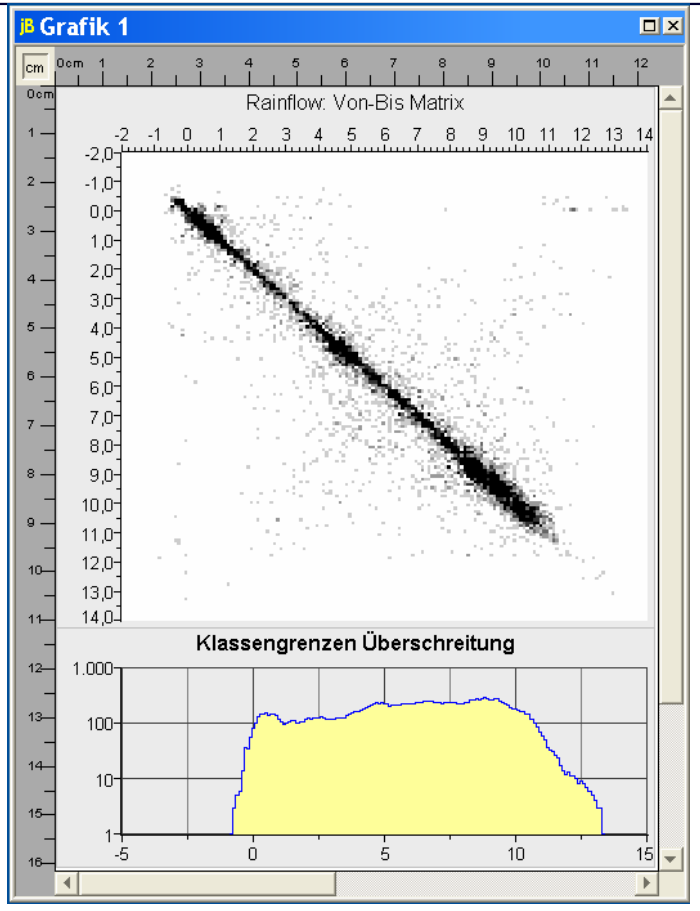


Synchronized display of numerical and video data.

Interactive Energy Calculation

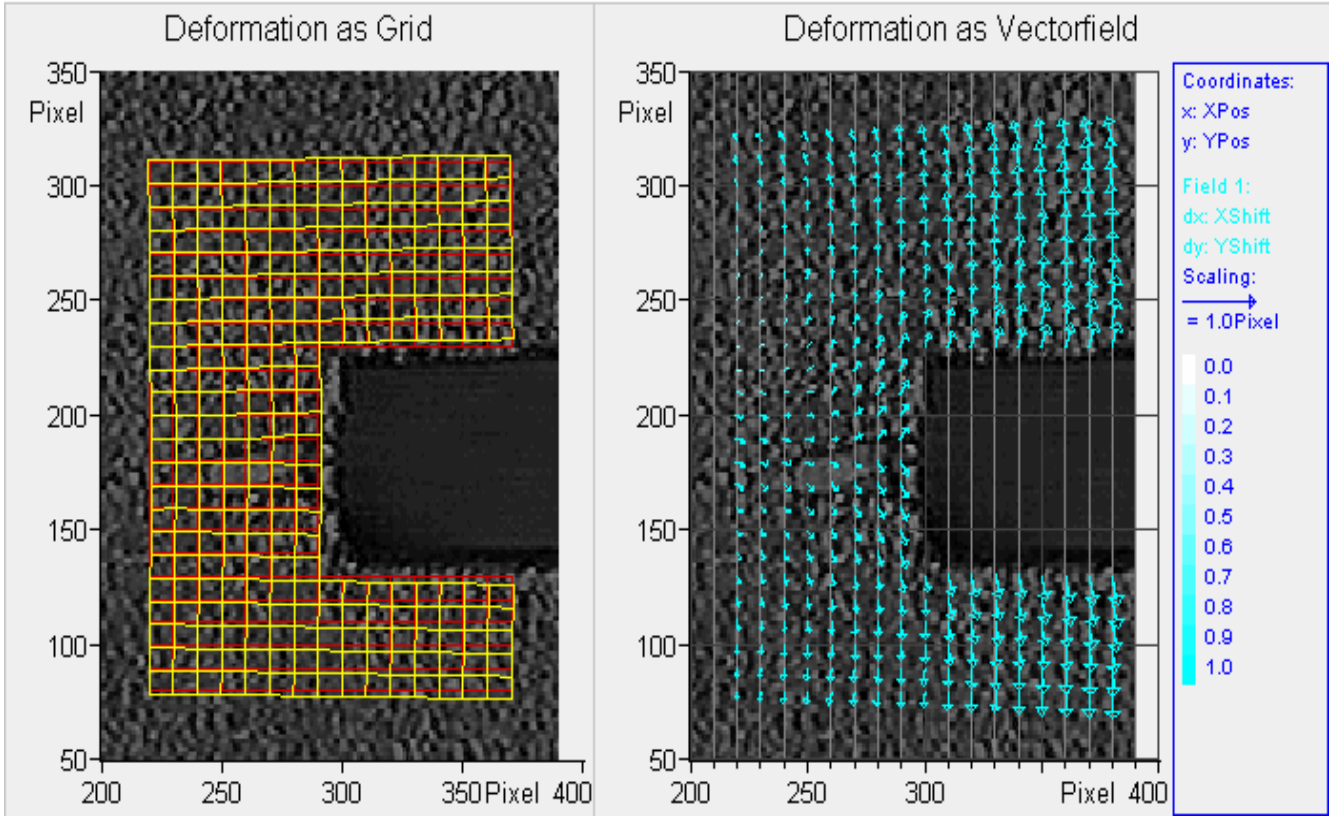


Counting Methods



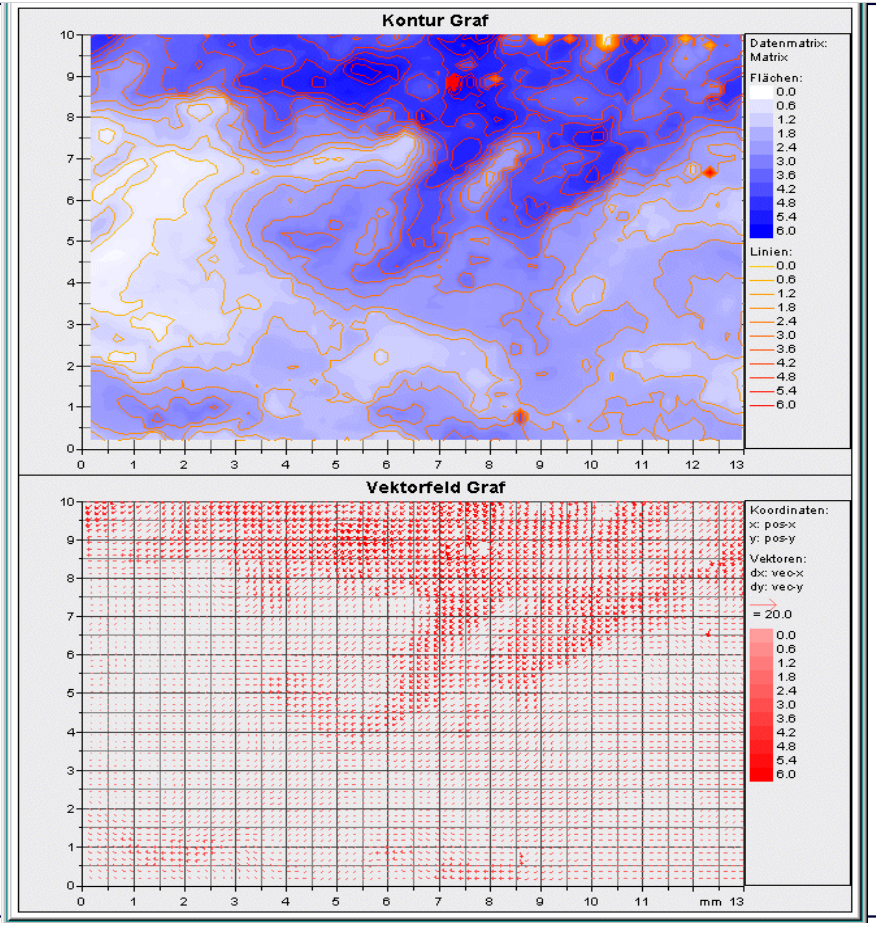
- *Different Rainflow Methods*
- *Level Crossing*
- *Range Pair*
- *Interactive Cuts*

Material Deformation

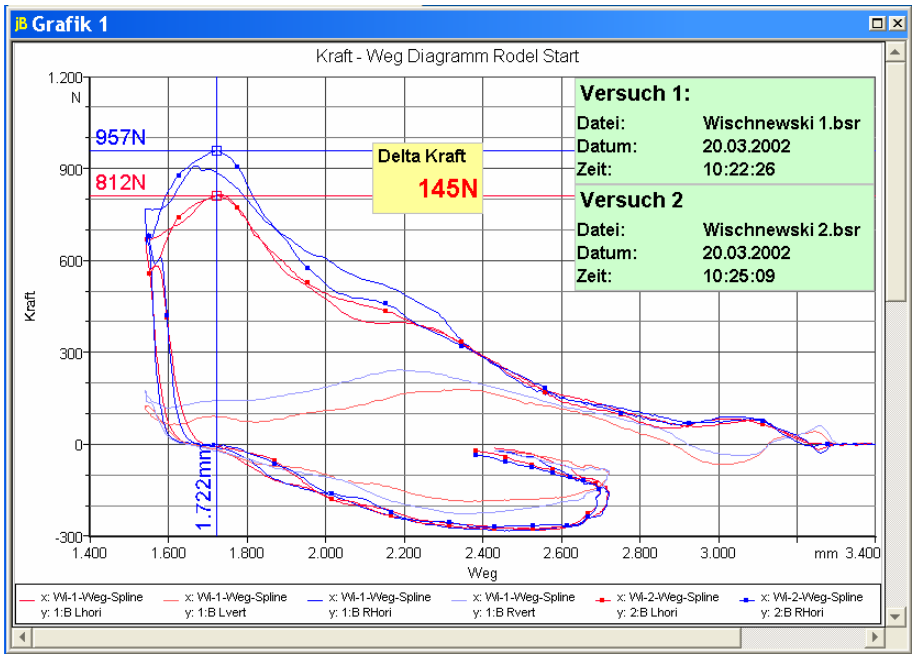


Flow fields

Double angular jet



Sport (Ludge – Bob)

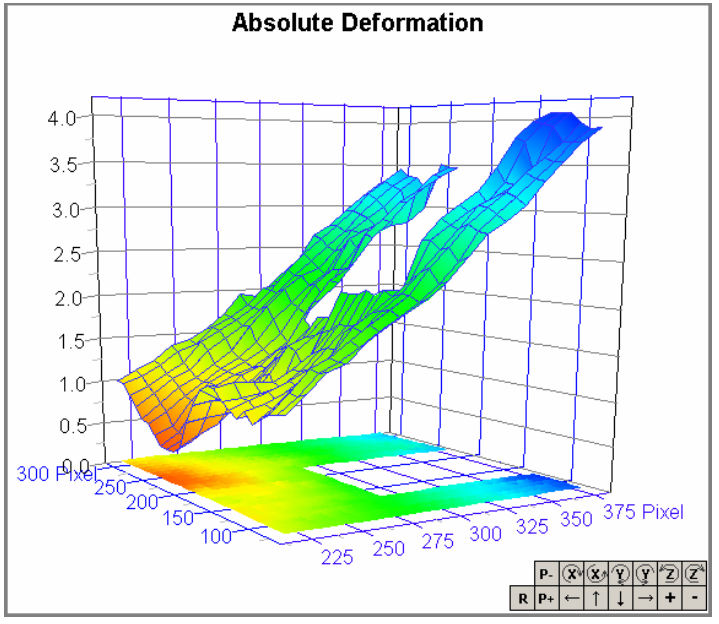


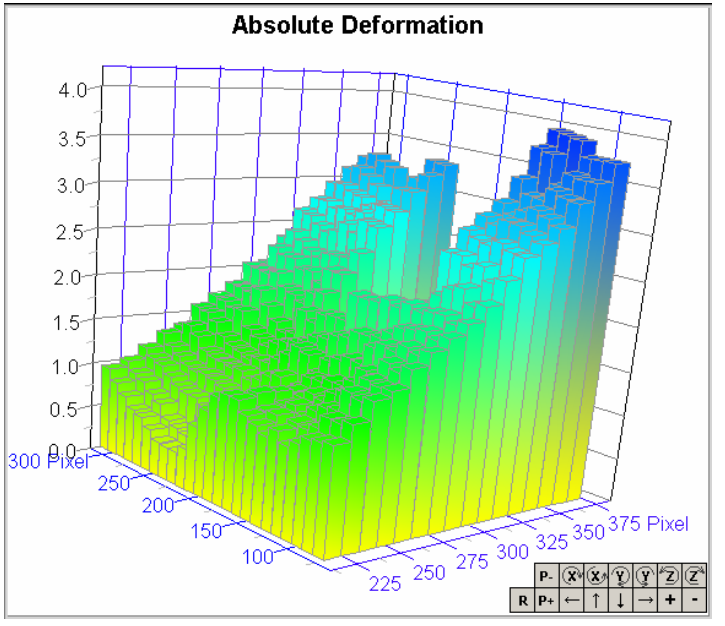
Training optimization:

Comparing handle forces of different starts.
Movement control by video.

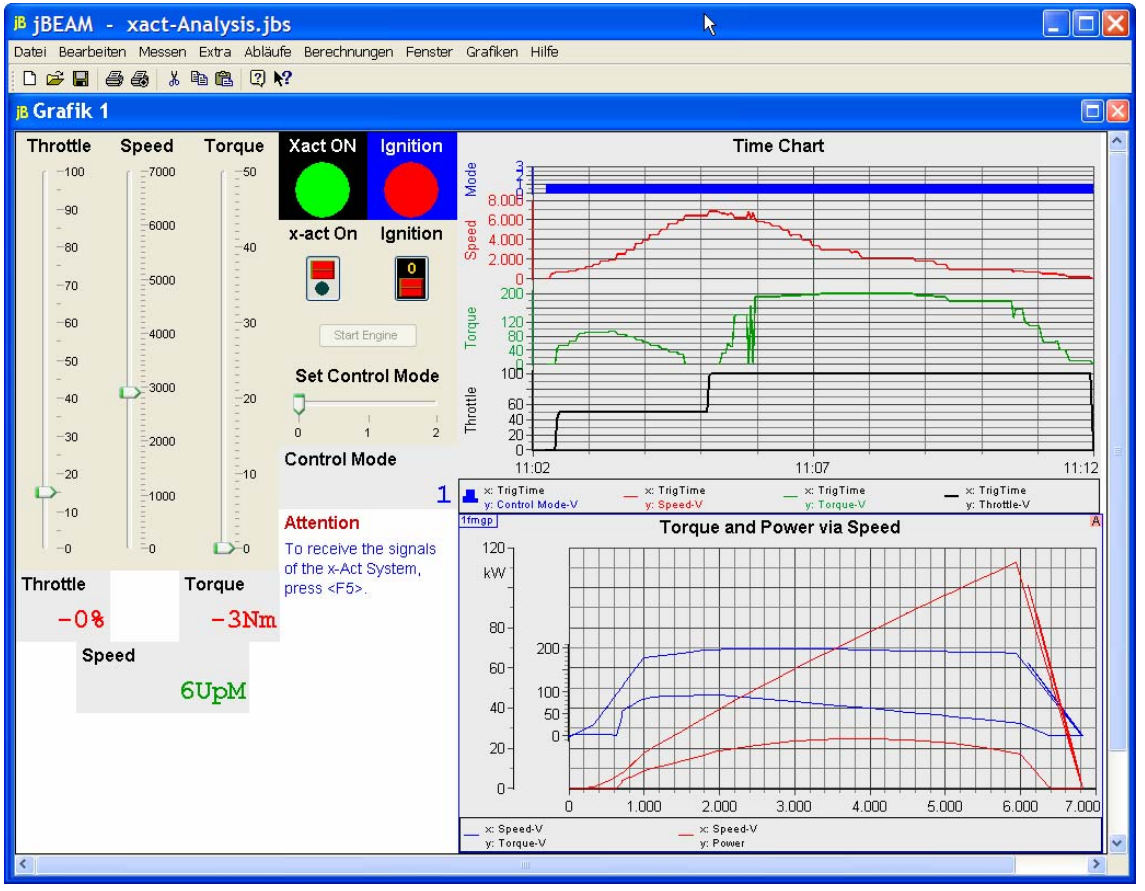
Gold Medal for Sylke Otto in Salt Lake City 2002 and at World Championships 2004

Interactive 3D-Graphs

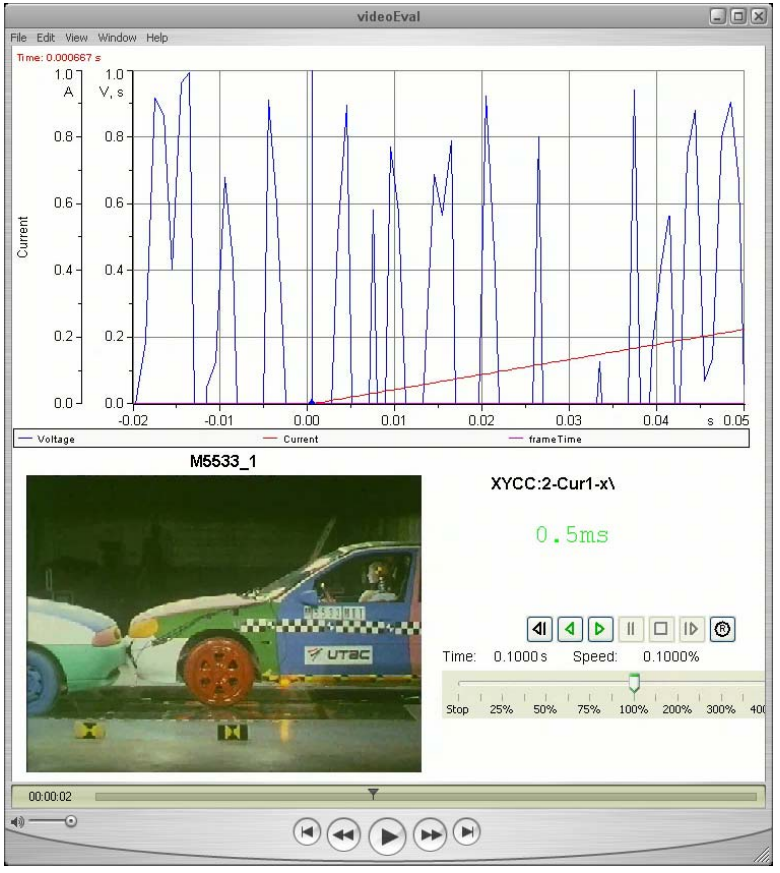




Online Monitoring



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 Cavas View**
- **new Interactivity with 2D-Graphs**
- **Different Curvetypes in one 2D-Graph**

Conclusion

- 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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