IAT supports customer development programs providing experience, expert knowledge & development tools for automotive safety applications

Research
- Solution Research
- Parameter Studies
- Advanced Methods

Concept
- Concept Definition
- Concept Studies
- Proof of Concept

Pre Development
- System and Component Specification

Development
- System and Component Validation
IAT is an expert in occupant safety

IAT has more than 20 years of experience in automotive safety

IAT is one of the biggest service providers for occupant crash simulation

IAT supplementary to numerical simulation provides sub-system and component testing and design and build of specific test equipment

IAT develops software for planning, conduction and evaluation of safety tests

IAT products and services are applied world-wide

OEMs trust in IAT for more than 20 years

In cooperation partnership with TU Berlin, IAT has access to latest research and technology knowledge, facilities and a pool of junior engineers

IAT employs 65 colleagues with an annual turnover of 4 Mio. Euro
# IAT Milestones

<table>
<thead>
<tr>
<th>Year</th>
<th>Event</th>
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<tbody>
<tr>
<td>1991</td>
<td>Foundation of IAT Ingenieurgesellschaft für Automobiltechnik mbH. Start as Spin-Off of TU Berlin to conduct full scale vehicle crash tests.</td>
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<tr>
<td>1994</td>
<td>Start development, design and build of testing devices: Barriers, Rubberband-Crash facilities, velocity measurement devices...</td>
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<td>1997</td>
<td>Start software development for test planning and evaluation: EVA, ISOVERTER, etc.</td>
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<td>1997</td>
<td>Start numerical simulation: Occupant crash simulation (Madymo, PamCrash).</td>
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<td>2004</td>
<td>Partnership mit PDB, pdb - Partnership for Dummy Technology and Biomechanics.</td>
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<td>2006</td>
<td>Opening office Munich (Karlsfeld).</td>
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<tr>
<td>2009</td>
<td>Opening office Stuttgart (Brackenheim).</td>
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<tr>
<td>2011</td>
<td>Start meshing service &amp; structural analysis.</td>
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<tr>
<td>2013</td>
<td>Start IAT-Vietnam.</td>
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<td>2014</td>
<td>...</td>
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Scope of Services

Next to standardized Services, IAT provides customer specific solutions

- Specialized Test Rigs
- Modification of Test facilities
- Software Development
- CAE Process Tools
- New Methods
- DOE / Optimization
Scope of Services – Numerical Simulation

- IAT Services Occupant Crash Simulation
  - Occupant Simulation from Concept to development with state of the art tools PAM-SAFE®, ABAQUS®, LS-DYNA®
  - Systemdesign/-optimization based on DOE and statistical Methods
  - Generation of validated models for tier 1 components in front and side impact (airbag, IP, steering wheel, steering column, seat,...)
  - Creation of validated models for child restraint systems
  - Out of Position-Simulation
  - Development, evaluation and modification of dummy models
Scope of Services – Numerical Simulation

- IAT Services Structural Analysis
  - Linear static computation
  - Linear dynamic computation
  - Nonlinear computation (explicit, implicit)
  - Rotordynamics
  - Durability and Endurance strength
  - Stiffness, natural frequencies and –forms
  - Optimization (Topology, thickness)
  - Preprocessing with Hypermesh® and ANSA®
  - Tires (RMOD-K)
Scope of Services – Meshing

- IAT Services Meshing

- Our service includes mesh generation as well as the creation of „ready to compute“ input decks. Models of complex assemblies will be delivered free of penetrations and intersections, connections are also included.

- Altair Hypermesh® or ANSA® are used for meshing. Further software can be installed as required. A secured server is available for data exchange.

- User-to-user-connections are installed to various customers. Encoded data exchange can be handled with the existing infrastructure.
Scope of Services – Numerical Simulation

- IAT Software Installations
- Pre-/ Post-Processing
  - ANSA, HYPERWORKS, SFE-Concept, LOCO 2, CBx, Primer, ANIMATOR, META
- Solver
  - ABAQUS, LS-DYNA, PAM CRASH, NASTRAN
- IAT Hardware Resources
  - 64 CPUs
  - 100Mbit – 1Gbit data connections to customers
IAT Software Development

We are developing software products for standardized and automated evaluation of testing data, utilizing the advantages of ISO MME (ISO 13499).

IAT products enable you to...

- Planning of test and resources
- Transfer measurement data to valid ISO formats
- Analyse measurement data
- Automated creation of reports
- File movies and pictures in accordance with MME

We adjust our products to your needs.
Scope of Services – Software

EVALuation NCAP / ISOVerter
Turn-key solution for crash testing
Scope of Services – Testing

- IAT Services Testing
  - Standardized test rigs
  - Customer specific test rigs
  - Sled and component testing
  - Drop tower tests
  - Pendulum tests
  - Tests with fast hydraulic cylinders
    - in cooperation with external partners
  - Validation tests
  - Tests according to customer definition
Scope of Services – Test Rigs

- IAT Services Design and Build of test Rigs:
- Testing facilities / Test rigs
  - Sled test facilities (e.g. ECE R16, ECE R44)
  - Low speed test facilities
  - Customer specific test devices (e.g. door-test system, static and dynamic B-pillar test rig,...)
  - Drop towers
- Testing equipment
  - Sleds, Bases and Trolleys
  - Barriers (AZT, EuroNCAP, Side Impact)
  - Barrier sleds (ECE, FMVSS 214, IIHS)
  - Euro NCAP "Flying Floor"
  - Angle adjustment for sled systems
  - Brake systems / emergency brake systems
  - Measurement systems for Dummy-Positioning
  - Dummy joints „1g-Joint“
Project Topics CAE

- Occupant protection for automated driving
- Human Model during PreCrash phase
- Ideal Restraint System
- Adaptive Crash structures

- System design frontal occupant protection
- System design side impact occupant protection
- System design back-seat passenger protection
- System design for child protection

- Car body design to meet Small Overlap
- Struktural design B-pillar in side crashes
- Design of door trim
- Evaluation and modification seat structures
- Modelling of steering columns

- Modelling / Design of child restraint systems
- Optimization of CAE processes
Customers
Customers
Certificates

Quality Management
ISO 9001

Information Security Management
ISO 27001
Customer Satisfaction

Survey 2012

Would you recommend IAT to others?

- yes ✓
- maybe
- maybe not
- no
- n/a

100% of our partners do recommend IAT

Survey 2013
Contact

IAT
Ingenieurgesellschaft für Automobiltechnik mbH

TIB 13
Gustav-Meyer-Allee 25
13355 Berlin
Deutschland / Germany

Phone: +49 30 467 765 0
Fax: +49 30 467 765 18
E-Mail: info@IATmbH.com

Visit our Website: http://www.iatmbh.com
IAT Customers World Wide