BİAS MÜHENDİSLİK

Yenilikçiler için Çözümler

Solutions for Innovators

Bias Engineering

Advanced Engineering Solutions

Vatan Özgül

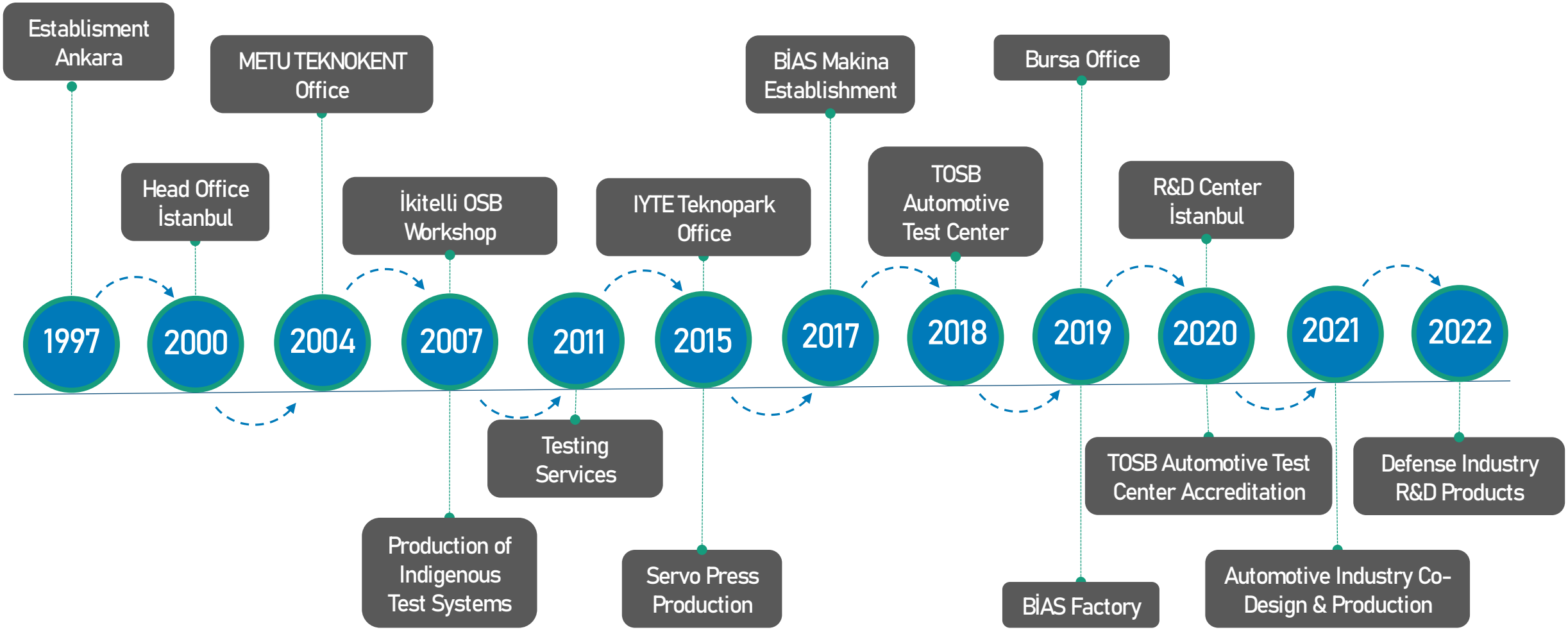
Business Development Manager

About

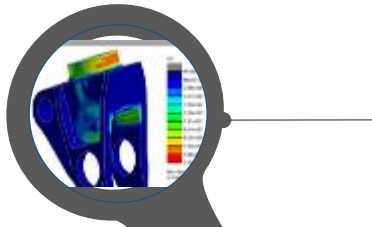
Advanced Engineering Solutions

- Founded in 1997.
- İstanbul, Ankara, Bursa and İzmir Offices.
- TOSB Bias Automotive Test Center
- Ankara Factory.
- +145 employees (%60 engineers)
- ISO 9001:2015; ISO 45001:2018; ISO 14001; ISO 17025

History


Establisment Ankara
1997
Head Office İstanbul
2000
METU TEKNOKENT Office
2004
İkitelli OSB Workshop
2007
Production of Indigenous Test Systems
Testing Services
2011
IYTE Teknopark Office
2015
Servo Press Production
BİAS Makina Establishment
2017
TOSB Automotive Test Center
2018
Bursa Office
2019
BİAS Factory
R&D Center İstanbul
2020
TOSB Automotive Test Center Accreditation
2021
Automotive Industry Co-Design & Production
2022
Defense Industry R&D Products

Fields of Activity



Product Development

- Defense
- Aerospace
- Automotive

Engineering Services

- Mechanical Design
- Analysis and Simulation
- Test and Measurement
- Design Verification

Testing Services

- Endurance Tests
- Vibration Tests
- Environmental Tests

Representation

- Engineering Software
- Sensors
- Data Collection Systems
- Test Systems

Product Development / Defense Industry Subsystem Solutions

Weapon systems electromechanical platforms

Satellite and missile transportation platforms

Ammunition loading mechanisms

Armored vehicle track design optimization

Power transmission systems

Canisters, Pods and Launcher structures.

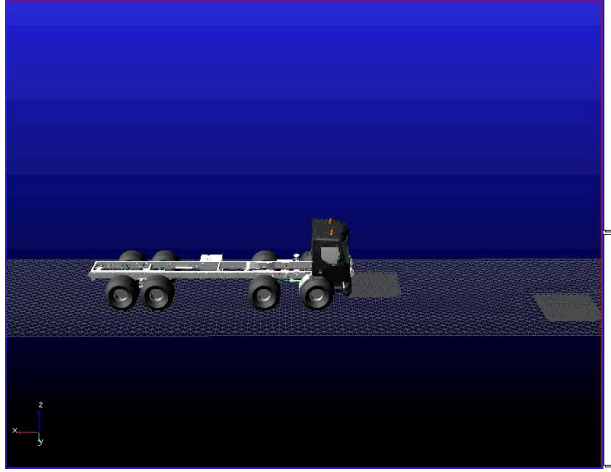
Test Platforms

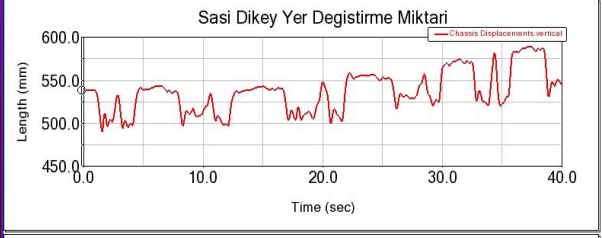
- Gun Fire Test System
- Pyro shock Test System
- Structural Test Rig
- Acoustic Characterization

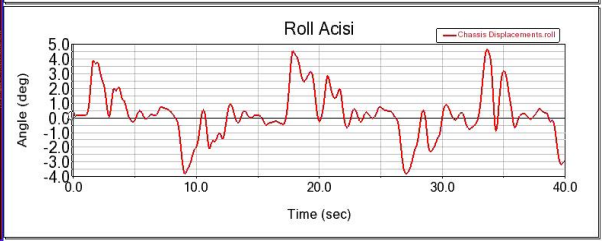
Engineering Services

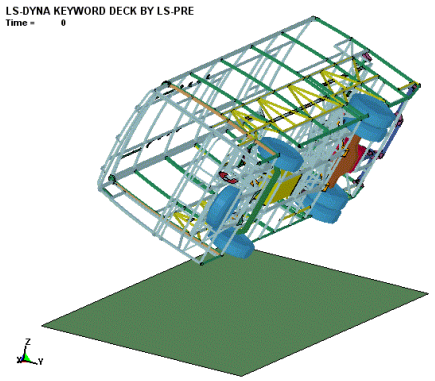
Analysis and Simulation

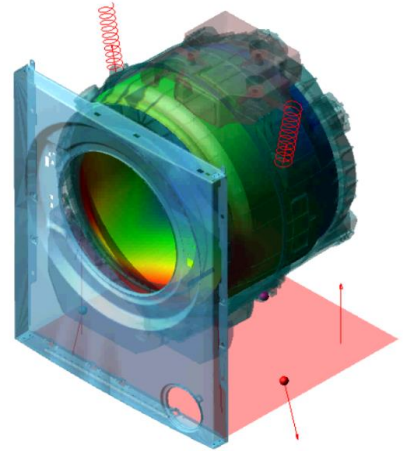
- Endurance, Fatigue
- Vibration & Shock, NVH
- Vehicle Dynamics, Machine Dynamics
- CFD, Thermal
- Explicit Analysis (Explosion, Drop etc.)
- Composite Structures, Rubber
- Metal Forming

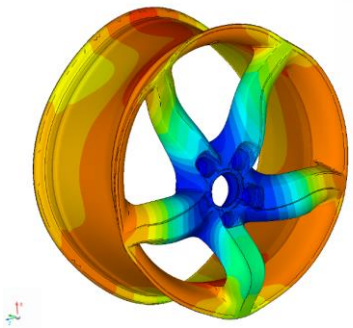


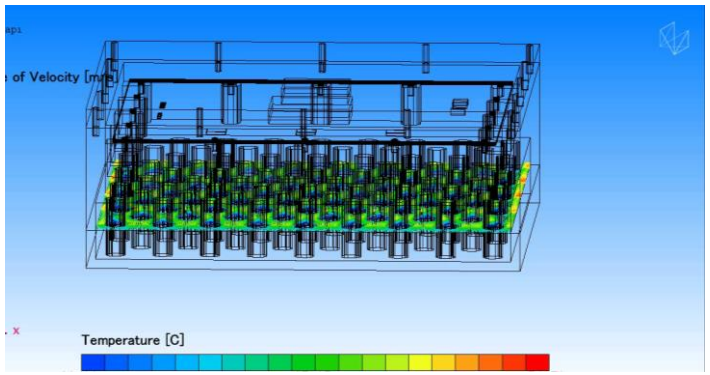


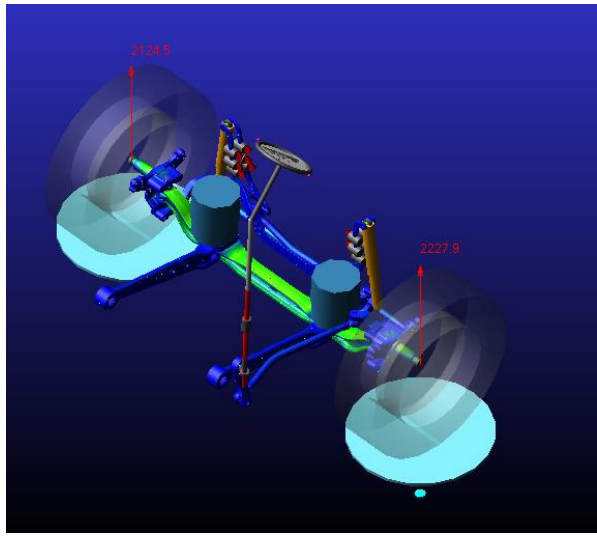










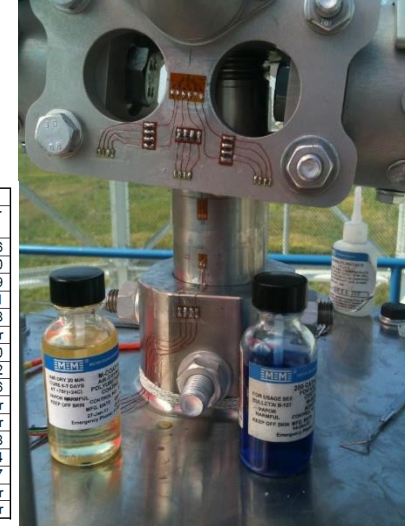


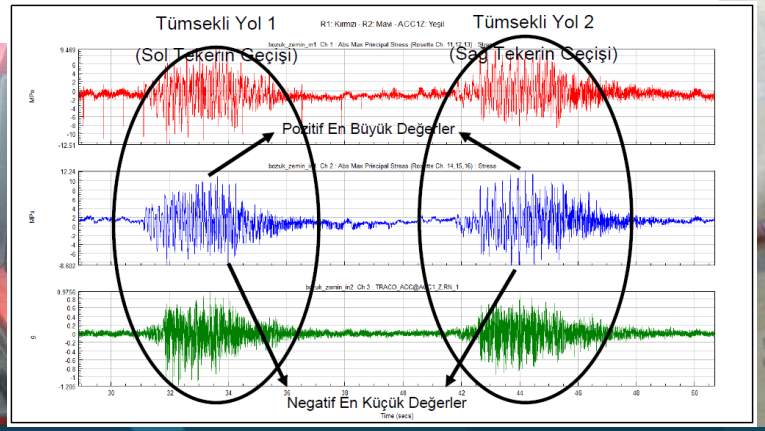
Engineering Services

Test & Measurement, Design Verification

- Field Measurements (Strain, Force, Torque etc.)
- Vibration and Noise Measurements
- Data (RLD) processing
- Modal Test
- Vibration & Shock Tests
- Accelerometer Calibration
- Motor Tests
- Durability and Life

km	200000	350000	200000	150000	50000	50000	1.0E+06	
Yol Tipi	1. Kalite	2. Kalite	3. Kalite	4. Kalite	5. Kalite	6. Kalite	Toplam Hasar	Toplam Ömür [Milyon km]
R1_dik	8.60E-02	8.92E-02	5.11E-01	1.74E+00	1.58E-01	1.76E-01	2.7584	0.36
R1_paralel	0.00E+00	0.00E+00	0.00E+00	1.02E-03	0.00E+00	0.00E+00	0.0010	982.10
R2_dik	1.60E-02	4.25E-02	1.98E-01	1.02E+00	6.99E-02	1.00E-01	1.4483	0.69
R2_paralel	0.00E+00	0.00E+00	0.00E+00	1.83E-03	0.00E+00	0.00E+00	0.0018	546.31
R3_dik	2.82E-01	1.44E-01	6.90E-01	1.92E+00	3.34E-01	1.61E-01	3.5283	0.28
R3_paralel	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.0000	Sonsuz Ömür
R4_dik	2.69E-01	1.10E-01	6.11E-01	1.92E+00	2.68E-01	1.54E-01	3.3304	0.30
R4_paralel	0.00E+00	0.00E+00	0.00E+00	1.21E-04	0.00E+00	0.00E+00	0.0001	8238.82
L1	0.00E+00	0.00E+00	0.00E+00	2.14E-03	0.00E+00	0.00E+00	0.0021	466.76
L2	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.0000	Sonsuz Ömür
L3	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.0000	Sonsuz Ömür
L4	0.00E+00	0.00E+00	0.00E+00	2.12E-02	9.53E-04	5.06E-04	0.0226	44.18
L5	0.00E+00	0.00E+00	0.00E+00	1.38E-02	0.00E+00	0.00E+00	0.0138	72.54
L6	0.00E+00	0.00E+00	0.00E+00	4.37E-03	0.00E+00	0.00E+00	0.0044	229.07
L7	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.0000	Sonsuz Ömür
L8	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.0000	Sonsuz Ömür





Testing Services

Yapısal Dayanım ve Ömür Testleri

Motor Test Dinamometresi

Air Conditioning Cabinets

Electrodynamic Shaker

Accelerometer Calibration System

Standards
MIL STD 810, NAVMART, RTCA, ISO
TÜRKAK ISO 17025 accreditation

TOSB BİAS Video

Pressure-Vacuum Cyclic Test System

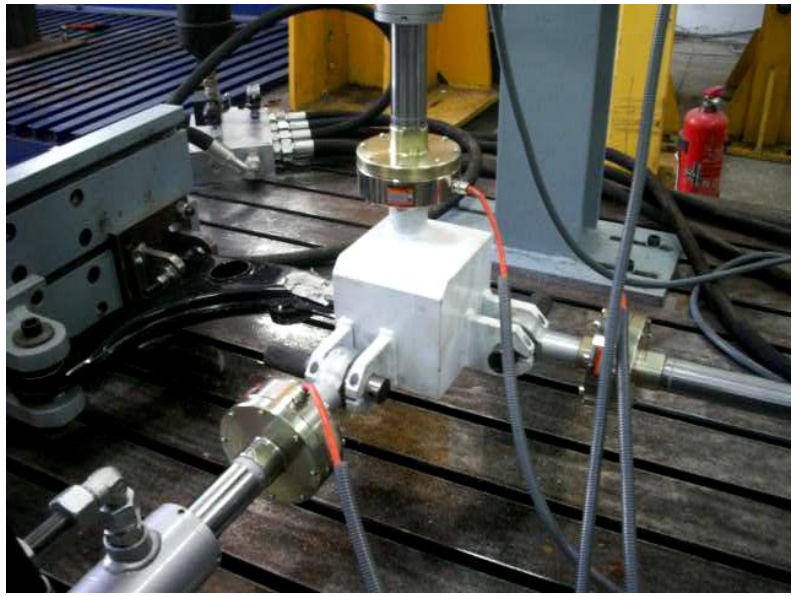
Cyclic Salt-Corrosion Test Cabinet

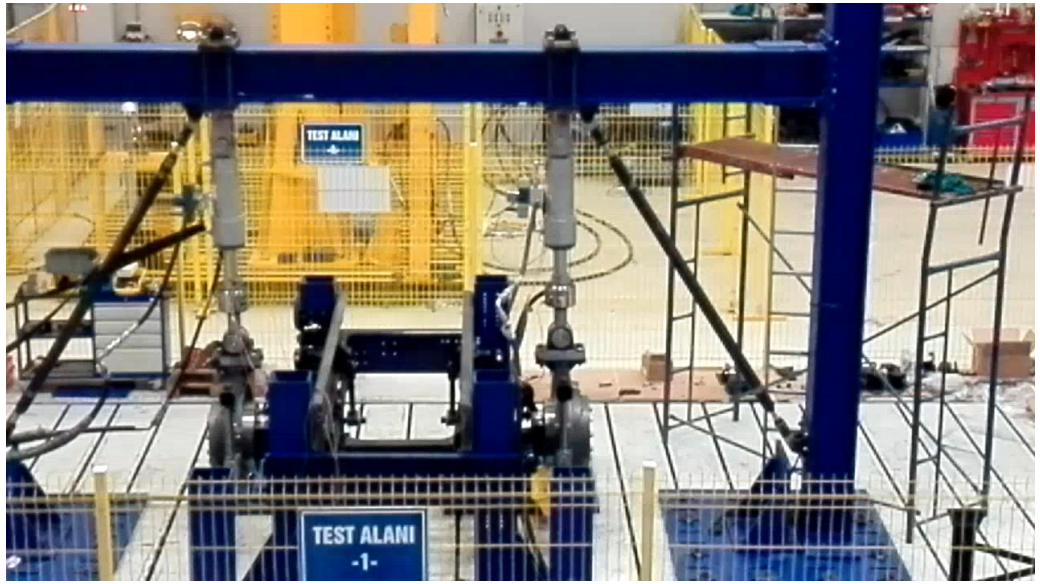
Hydraulic Vibration Test System

Testing Services

Click for Test Services Video:

Testing Services

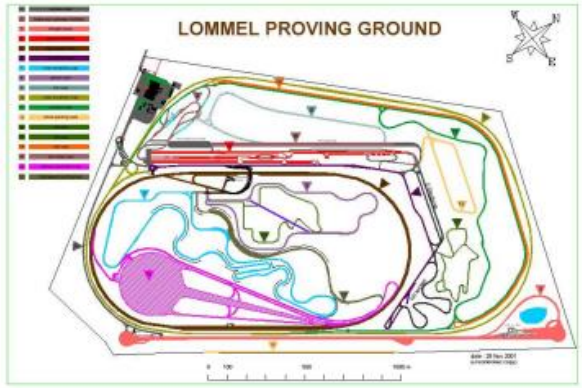


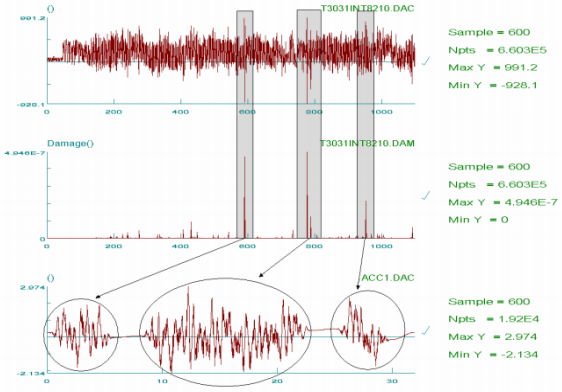


Examples from Projects

Ammunition Transport Unit

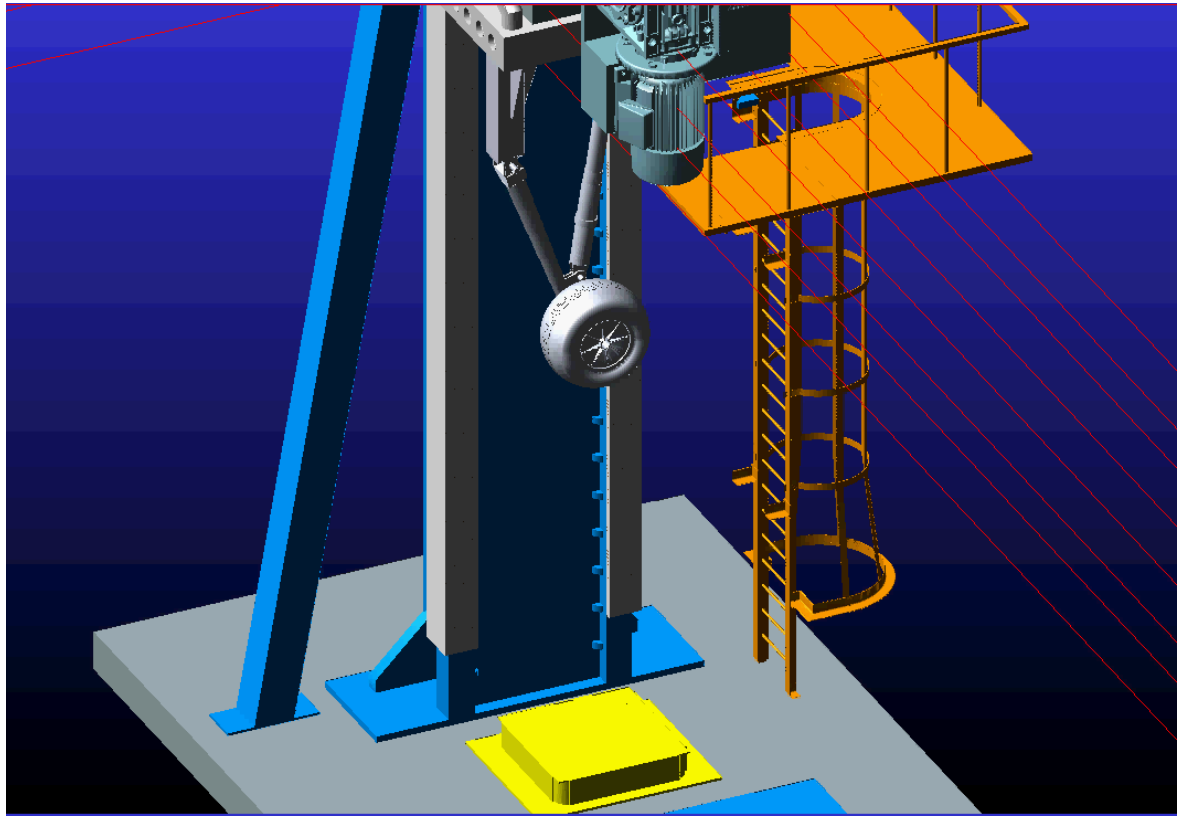
Accelerated Life Test





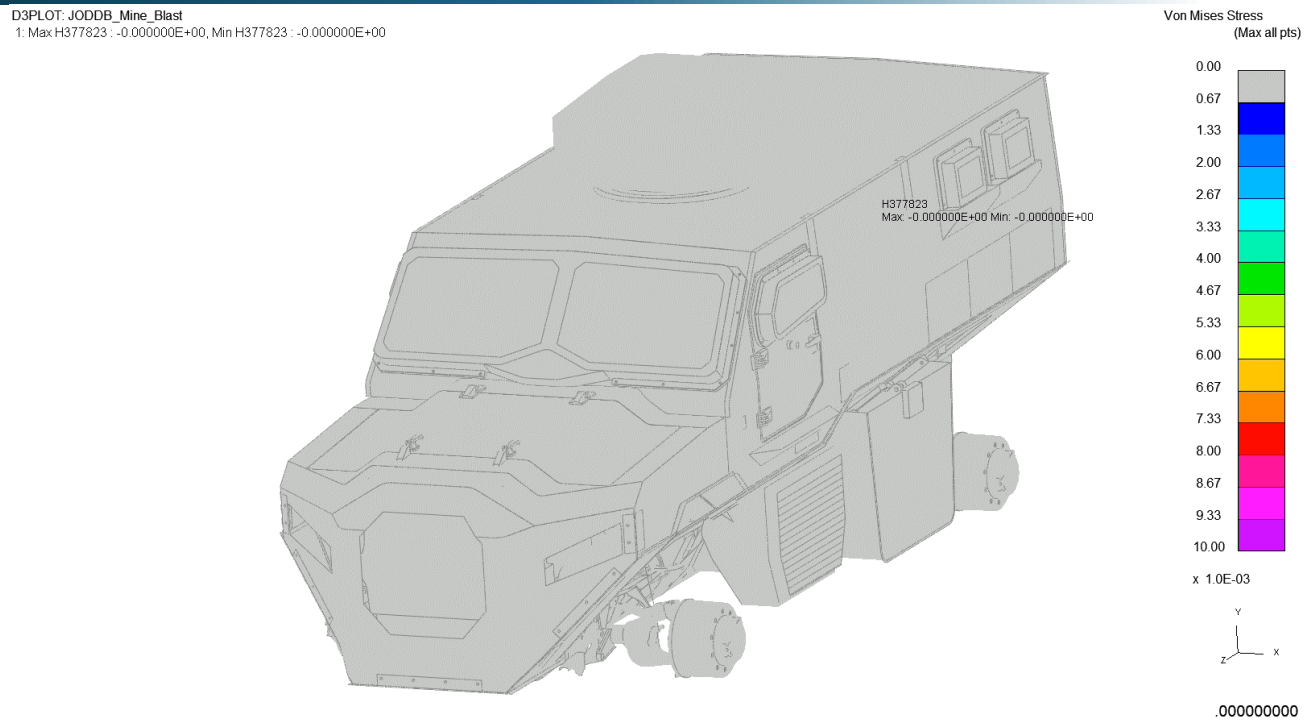
Examples from Projects

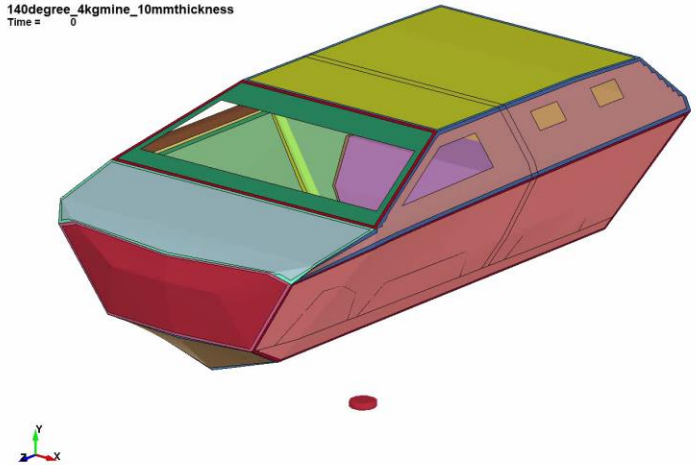
Landing Gear Drop Test Tower
Design, Analysis, Manufacturing

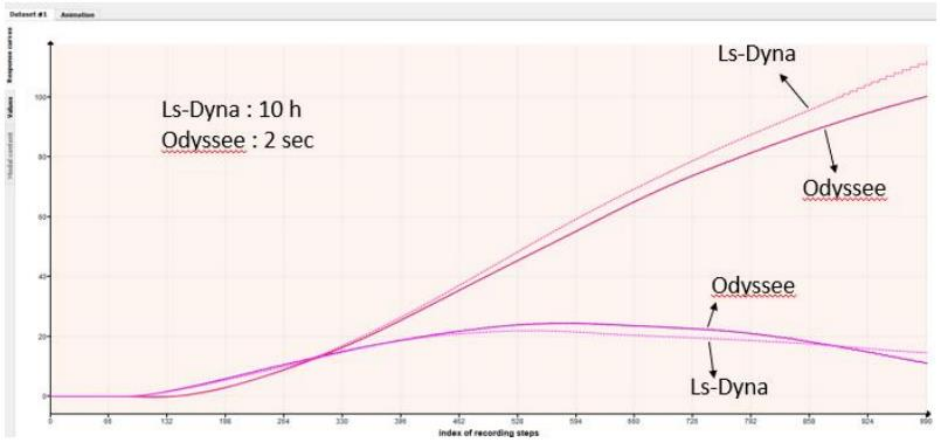


Examples from Projects

Mine Explosion Sim. Result Estimation with ML







Şekil 5. Dikey Deplasman Sonucu Doğrulama Analizleri

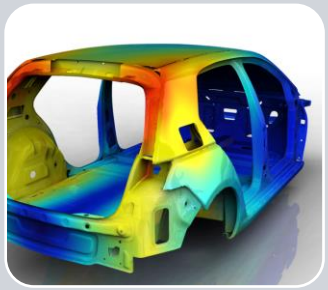
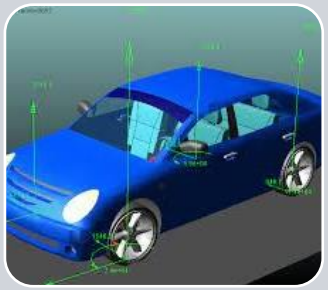
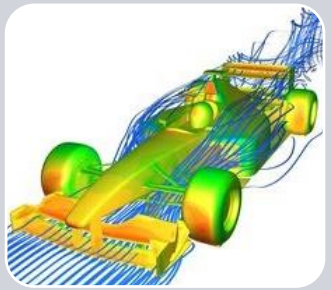
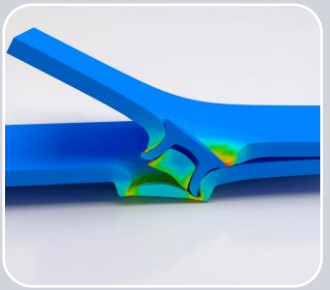
SAVTEK 2022, 10. SAVUNMA TEKNOLOJİLERİ KONGRESİ
13-15 Eylül 2022, ODTÜ, Ankara

MAYIN PATLAMA SİMÜLASYONUNUN SONUÇ TAHMİNİ İLE OPTİMİZASYONU

Umut Can SALMAN [a], Namık KILIÇ [b], Sercan DEVRİM [c]

[a] Mekanik Simülasyon Mühendisi, BİAS MÜHENDİSLİK, İstanbul, ucsalman@bias.com.tr
[b] AR-GE Direktörü, BİAS MÜHENDİSLİK, İstanbul, nkilic@bias.com.tr
[c] Yapısal Analiz Mühendisi, BİAS MÜHENDİSLİK, İstanbul, sdevrim@bias.com.tr

Representation Services / CAE – Engineering Software

Structural	System Dynamics	CFD	Manufacturing Simulations	Optimization
				
▪ MSC.Nastran ▪ Marc ▪ MSC.Apex ▪ CAEFatigue ▪ Ls-Dyna	▪ Adams ▪ Romax ▪ Actran ▪ Elements	▪ Cradle CFD ▪ Picles	▪ Simufact AM ▪ Simufact Weld. ▪ FTI Forming ▪ Apex Gen. Des.	▪ Odyssee ▪ P7

DYNA MORE

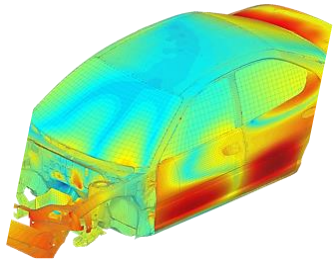
HEXAGON

Authorised Hexagon Partner

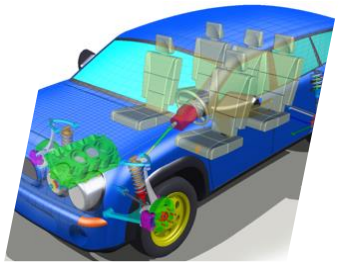
pSeven

CAE Solutions / Disciplines

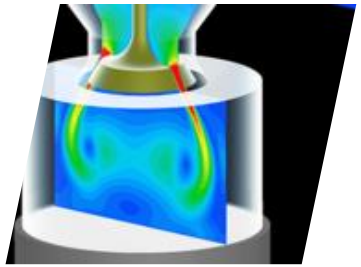
Structural Analysis and Durability



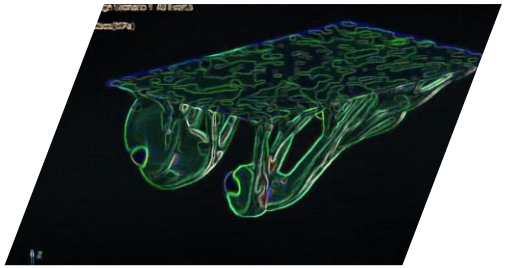
System and Vehicle Dynamics



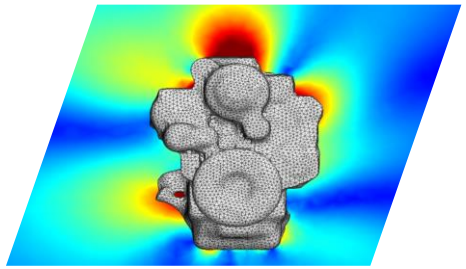
Thermal and Fluid Dynamics



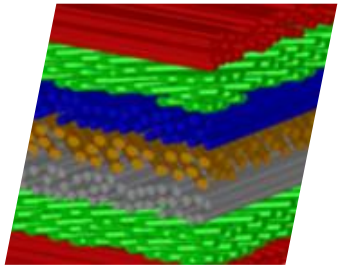
Optimization and Machine Learning



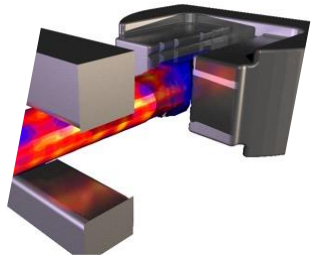
Acoustic



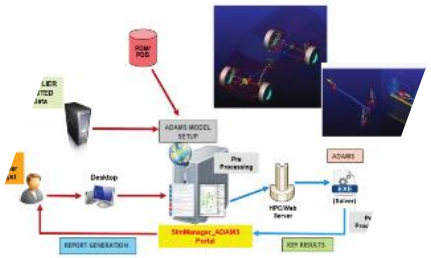
Computational Material



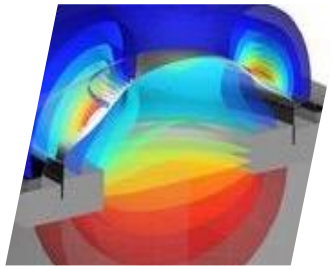
Manufacturing Simulations



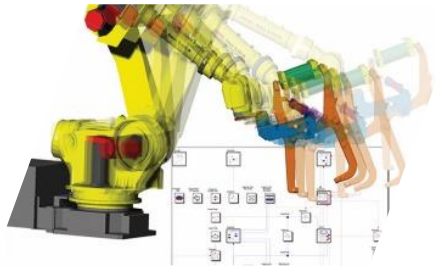
Workflow Automation



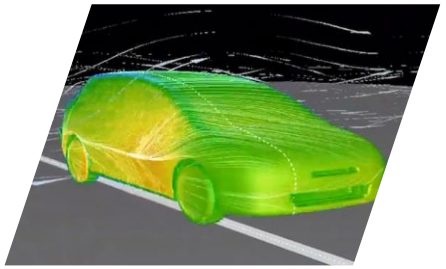
Noise and Vibration, NVH



System and Control



Co-Simulation



... and more!

Representation / Test & Measurement

Environmental Test Systems

- Electro-Dynamic Shakers
- Climate Chambers
- Salt-Rain-Dust and Solar Test Chambers
- Viration & Shock Controller

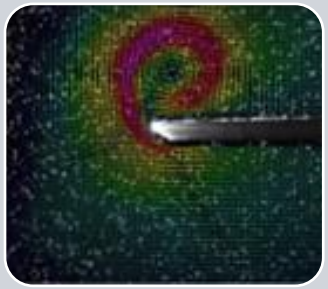
Structural Test Systems

- Data Acquisition Systems
- Sensor (Strain gage, Loadcell, Tork Sensor)
- DIC and Fiber Optic Strain Measure.
- Residual Stress Measure. Systems
- Rezonance Fatigue Test Systems

Noise, Vibration

- NVH Analizer
- Sensor (Acceloremeter, Microphone, Pressure Sensor)
- Acoustic Camera
- Modal Shaker

Flow Measurement Systems



- PIV -Particle Image Velocimetry
- LDA - Laser Doppler Anemometry
- CTA – Constrant Temp. Anemometri
- LIF – Laser Induced Fluorescence
- Multi-hole Probe, Pitot-Static Probe

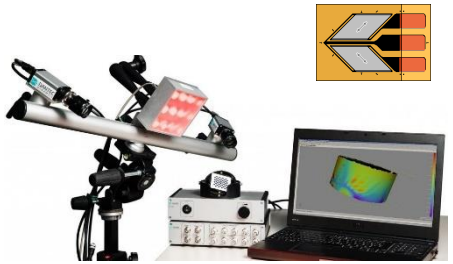
ADAS & OTONOMY

- INS Measure. Systems
- LIDAR
- ADAS Targets
- Driving Robots
- Ground Truth Referance Measure. Systems

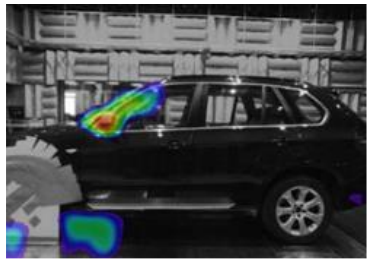
GRAS An Axiometrix Solutions Brand
ZUNDAR TECHNOLOGY
CAE Software & Systems
VIBRATION RESEARCH
imc An Axiometrix Solutions Brand
DONGLING
interface FORCE MEASUREMENT SOLUTIONS
VISHAY PRECISION GROUP
DTS
stresstech
DYTRAN INSTRUMENTS, INC.
DANTEC DYNAMICS
OXTS
MOOG

Test & Measurement Solutions

Strain Applications

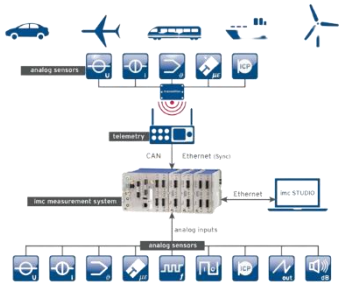


Noise and Vibration



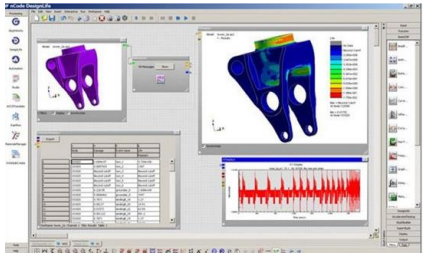
Force and Torque Sensors

Data Collection Systems



ADAS and Autonomous Vehicle

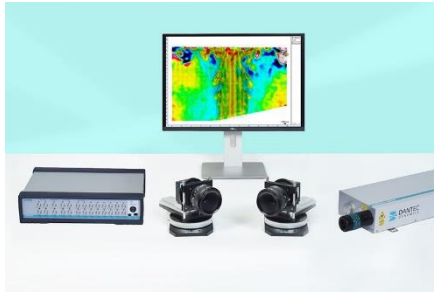
Fatigue Applications



Environmental Test Systems

Residual Stress, Heat Treatment Defect, NDT

Flow Measurement Systems



Vehicle Test Systems

Bias R&D Measurement Systems

Education, Consulting

Man Power

91 ENGINEERS																	
ADAS Software Engineer	Maintenance Manager	CAE Engineer	Hardware Design Engineer	R&D Engineer	Quality Engineer	Project Engineer	Purchasing	Sales Engineer	Health Environment Manager	System Design Engineer	Design Engineer	Test Engineer	Test-Measurement Engineer	Incentive Management	Manifacturing Engineer	Senior Management	Software Engineer
7	1	24	1	2	5	5	1	9	1	2	10	11	6	1	1	3	1

Solution and Collaboration

- Product Development (from conceptual design -> production)
  - Electro-Mechanical Systems
  - Test Systems
- Environmental Testing Services
- Mechanical Testing Services
- Measurement Services
- Field Applications
  - Road Data Collection and Processing
  - Vehicle Instrumentation
- Analysis and Simulation Services
- Joint R&D Project Development
- Solution Supply
  - CAE Software
  - Measurement Systems, Analyzer, Sensor
  - Environmental Test Systems
  - Electrodynamic Shakers

BİAS MÜHENDİSLİK

Yenilikçiler için Çözümler

Solutions for Innovators

Thank you!

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