

3rd KULI User Meeting North America



**drivetrain components
and systems**



**engines and
engine components**



**axle and
chassis modules**



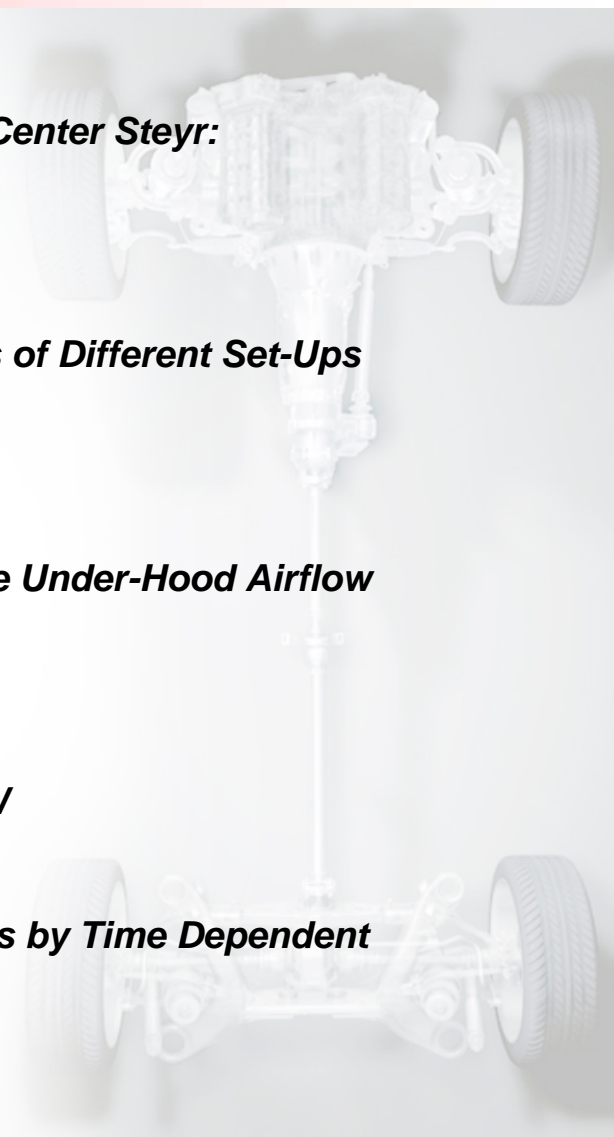
*Engineering Center Steyr
GmbH & Co KG*

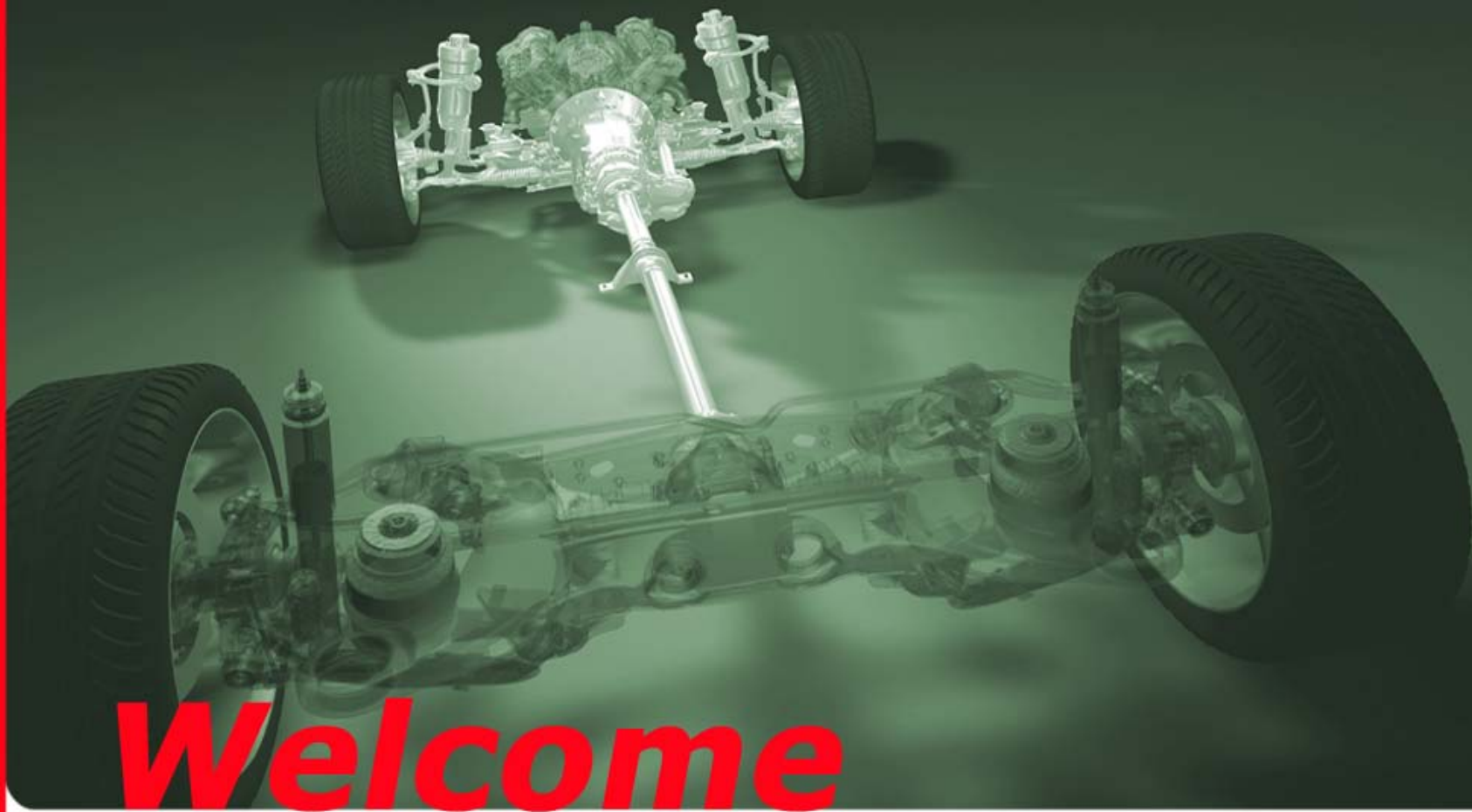
driven by passion

Program

www.magnapowertrain.com

- 8:30 am** **Welcome Reception**
- 9:00 am** **Welcome and Overview Magna Powertrain – Engineering Center Steyr:
New Organization Structure**
Magna Powertrain – ECS, Daniel Brandstaetter
- 9:15 am** **Improving Your Productivity with KULI 7.0 - New Features**
Magna Powertrain – ECS, Rolf Salomon
- 10:00 am** **R744 HVAC-System for Supplementary Heating – Analysis of Different Set-Ups**
Center of Excellence - Virtual Vehicle, Klaus Martin
- 10:30 am** **Coffee Break**
- 11:00 am** **The KULI Air Path - Theory & Recommendations**
Magna Powertrain – ECS, Dr. Christoph Stroh
- 11:45 am** **One Dimensional Analysis and KULI Simulation on Vehicle Under-Hood Airflow**
Valeo Engine Cooling, Ying Tang & John Savage
- 12:15 pm** **Lunch**
- 1:45 pm** **Why Coupling KULI with CFD?**
Magna Steyr, Dr. Thomas Moshhammer
- 2:15 pm** **Methodology for Direct Coupling of KULI with PowerFLOW
(Complete Integration of Air-Side Data from CFD)**
Exa Corporation – PowerFLOW, Raja Sengupta, Ph.D
- 2:45 pm** **Transient Co-Simulation of Comprehensive Vehicle Models by Time Dependent
Coupling**
Center of Excellence - Virtual Vehicle, Wolfgang Puntigam
- 3:15 pm** **Official End of the User Meeting**

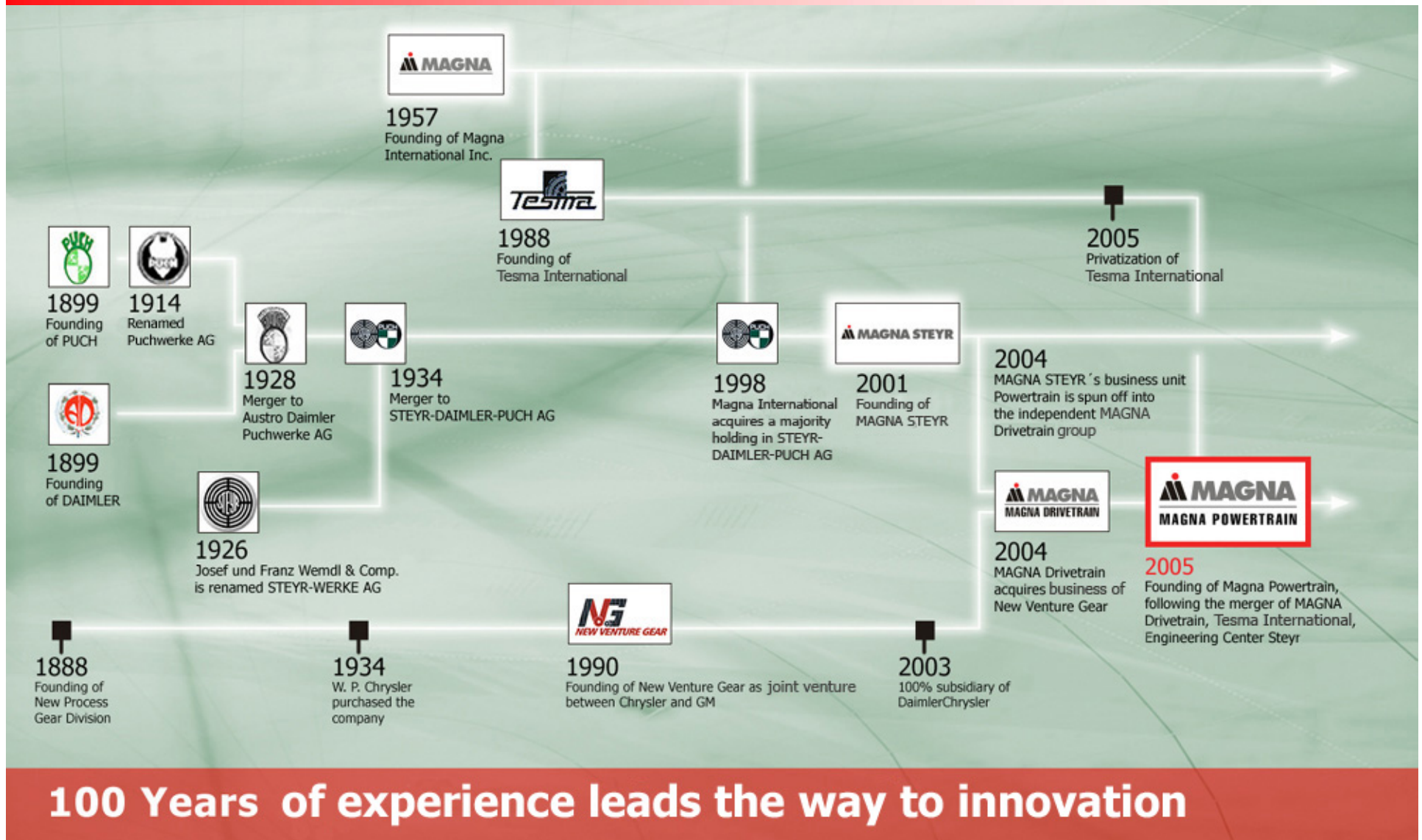




Welcome

to Magna Powertrain
Engineering Center Steyr

History



100 Years of experience leads the way to innovation

Magna International at a glance



COSMA

MAGNA
STEYR

MAGNA
POWERTRAIN

DECOMA

MAGNA
DONNELLY

MAGNA
CLOSURES

INTIER
INTERIORS

INTIER
SEATING

Magna international Inc. which is the most diversified automotive supplier in the world designs, develops and manufactures automotive systems, assemblies, modules and components, and engineers and assembles complete vehicles, primarily for sale to Original Equipment Manufacturers (OEMs) of cars and light trucks in North America, South America, Mexico, Europe and Asia.

- Total Revenues 2004: 20.7 (\$ Billion)
- Ranking in Revenues: No. 3
- Total employees: over 82,000 (as of March 2005)
- 223 manufacturing divisions and 56 product and engineering centers
- Stock listed
 - NYSE: MGE
 - TSX: MG.SV.A, MG.MV.B

Global Footprint



Connected to the Customer around the World

Engineering Organization

Magna Powertrain employs over 1,000 engineers providing know-how for innovation, concepts and design - in 5 Design & Engineering Centers across the U.S., Canada and Europe.

Toronto, ON / Canada:

Engine Systems and
Components

Transmission Systems and
Components

St. Valentin, Austria:

Engineering Services for
Drivetrain, Engine, Chassis,
Commercial vehicles,
Engineering Software

Troy, MI / USA:

Drivetrain AWD / 4WD

Syracuse, NY / USA:

Drivetrain AWD / 4WD,
Transmission

Lannach, Austria:

Drivetrain AWD / 4WD,
Transmission

Engineering Center Steyr (ECS)



- **Commercial Vehicle Engineering**
- **Engine Engineering**
- **Drivetrain Engineering**
- **Low Volume Component Production**
- **Software Development and Simulation Services**
- **Laboratories and Test Benches**



Engineering Center Steyr (ECS) is a full-service engineering partner, offering a full range of engineering, simulation and testing as well as engineering software.

TZS - Technology for the Vehicle Development Process

Concept, design
DMU, load data



Verified prototype

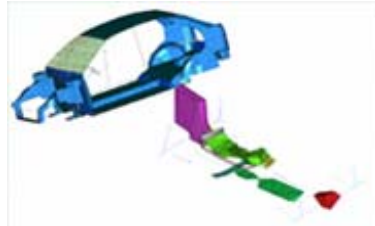


Dynamics - MBS



- E-TIS Tech. Info Systems
- E-TB Simulation/Software
- E-TF Structural Analysis
- E-TH Fatigue Testing
- E-TM Load Data Measur.
- E-TA Acoustics

Comfort & acoustics



FEA & fatigue

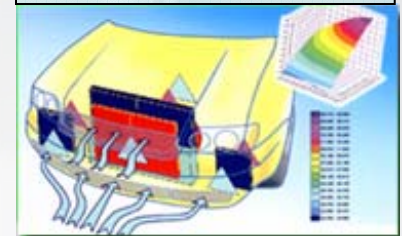


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|--------------|----|
| J.Reichweger | 20 |
| R.Reitbauer | 21 |
| H.Dannbauer | 31 |
| P.Pühringer | 11 |
| J.Traunbauer | 12 |
| A.Wieser | 7 |

Fatigue laboratory



Vehicle thermal
management

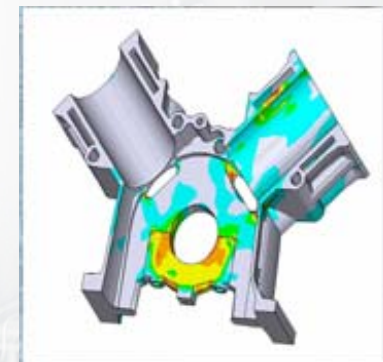
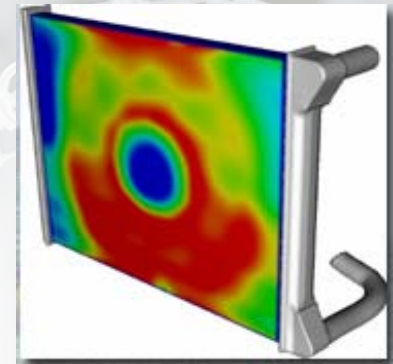


First prototype



Staff 102

- Engineering services for vehicle, modules and components
 - Dynamic simulation
 - FEA & durability
 - Vehicle thermal management
-
- Software development
 - durability
FEMFAT (www.femfat.com)
 - complete vehicle thermal management
KULI (www.kuli.at)
 - Electric / Electronics
KABI (www.ecs-software.com)



KULI References



www.magnapowertrain.com



Thank you for your attention!



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