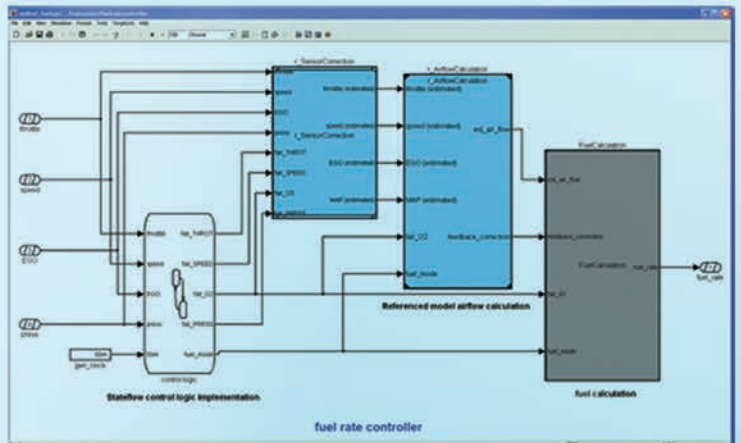# DynaFusion

An ISO 9001:2008 Certified Company

About DynaFusion Technologies Private Limited

- Incorporated in 2009
- Headquartered in Bangalore with regional offices in Delhi-NCR, Chennai and Kolkata
- Specialization in Mathematical Modelling, Rapid Control Prototyping, ECU Autocoding, HIL Testing, and Test Automation
- Industries Addressed: Automotive, Commercial Vehicles, Aerospace, Defence, Energy & Power, Industrial Automation, Electric Drives, Medical Engineering, Robotics, Manufacturing sectors and Academia
- Sole authorized distributor of dSPACE GmbH in India
- Authorized distributor of BTC Embedded Systems AG and Model Engineers Solutions GmbH products in India
- ISO 9001:2008 Certified by TUV Nord

About dSPACE

Embedded Success **dSPACE**

dSPACE is the world's leading provider of hardware and software tools for developing and testing sophisticated electronic control systems. For over 25 years, dSPACE's high-quality, off-the-shelf software and hardware tools have empowered engineers to design and innovate, while dramatically reducing development time and cost. dSPACE's pioneering products such as the MicroAutoBox rapid prototyping systems, hardware-in-the-loop (HIL) simulators, and the automatic production code generator TargetLink have become de-facto standards for developing electronics in automotives. They are also having a great impact in aerospace, medical engineering, industrial automation, electric drives technology and other industries. Academia uses dSPACE technology to nurture engineering talent. Through its headquarters in Paderborn Germany, as well as its global network of project centers, subsidiaries and distributors, dSPACE staff of around 1200 supports innovations all over the world. To learn more, visit www.dspace.com.

Our Strengths

- Sr. Engineers with over 15 years of experience in technical support of dSPACE, engineering services and training
- Forte in technologies such as Rapid Control Prototyping, ECU Autocoding, HIL Testing, Modelling and Test Automation
- Regular monthly trainings on dSPACE tools to Corporate, R&D and Academic Users. Course content from dSPACE GmbH
- Experienced in providing Engineering Services to various OEM's and Tire I/II companies
- In-house advanced dSPACE Lab for R&D, Pilot Projects & Proof of Concept.

Training & Engineering Services

DynaFusion offers engineering and consulting services in all development phases, be it the integration of dSPACE tools into your development process or the application of new products and methods. We offer the following services;

- Modeling - Plant modeling, customization & controller development
- ECU Autocoding
- HIL/ECU System integration
- HIL Testing – Stimulus Test & Open Loop test
- Test Automation – Framework & Test scripts
- HIL/ECU Wiring harness solutions
- Customized hardware solutions
- Resident engineer model

CUSTOMER BENEFITS: LOW COSTS, TRAINED MANPOWER & TIMELY DELIVERY

dSPACE Product Training

DynaFusion offers training courses for the following dSPACE tools;

- dSPACE Real-Time Systems
- TargetLink Basic & Advanced
- ControlDesk Next Generation
- AutomationDesk
- RTI CAN MultiMessage Blockset
- dSPACE SCALEXIO System
- Hardware in-the-loop Simulation
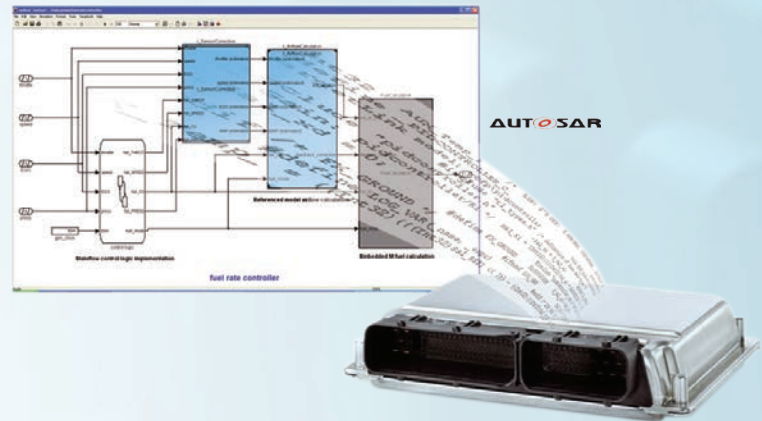
Benefits:

- Course content from dSPACE GmbH
- Training conducted by dSPACE trained engineers
- Access to advanced dSPACE hardware & software
- Competitive training fees

Engineering Services Overview

Rapid Prototyping

Customer-specific solutions

- Customer-specific I/O interfaces
- Modification and design of signal conditioning and power stage modules for RapidPro hardware
- Integration of third-party software and hardware

Turn-key prototyping systems

- System configuration
- Signal list / wiring harness specification
- Wiring harness assembly
- I/O model and system tests
- On-site commissioning
- Hands-on training

ECU Autocoding

Tool Introduction

- Hands-on support during introduction of TargetLink
- Support during evaluations and pilot projects
- TargetLink training

Integrating TargetLink into the customer's development processes

- Definition of interfaces to other tools used in the project
- Definition of project configurations (project template / dSPACE Data Dictionary)
- Connection to existing data bases, import/export of variable files (e.g. XLS, .m)
- Linking model and dSPACE Data Dictionary
- Creation of customer-specific utilities and scripts
- Adaptation of documentation generation or A2L file generation to customers' needs

ECU integration

- Support for integrating the generated code in the ECU's software environment

Tool chain maintenance

- Maintenance of tool chains
- Migration to new versions

HIL Testing

Turn-key HIL systems

- Hardware planning
- Signal list / wiring harness specification
- Development of customer-specific software (e.g. Simulink® models)
- Open- and closed-loop HIL system tests
- On-site commissioning
- Hands-on training
- Resident engineers

Simulation models

- Adaptation of plant models
- Test automation Development of Test Automation Sequences

Modeling

Model parameterization/ calibration and model validation

- Parameterization and evaluation of ASM (Automotive Simulation Models) Engine and ASM VehicleDynamics models, based on measurements taken on a test bench or a test track.
- Adaptation of models and model parameters for closed-loop HIL tests

Model integration

- Integration of ASM, customer, and third-party models into HIL test benches
- Integration or special maneuvers, roads, vehicles, etc. in the ASM Vehicle Dynamics
- Combined integration of the aforementioned models, for example for virtual vehicle applications (full vehicle simulation)
- Variant handling of different models in a superset model

Model development and model adaptation

- Development and adaptation of model components for ASM Engine
- Development and adaptation of model components for ASM Vehicle Dynamics (e.g. for air suspension, park assistant systems, special differentials)
- Development of customer-specific import and export filters
- Development and adaptation of model components for customer models

Further support

- Open- and closed-loop HIL tests
- Integration of ASM into your development process
- On-site support and resident engineers
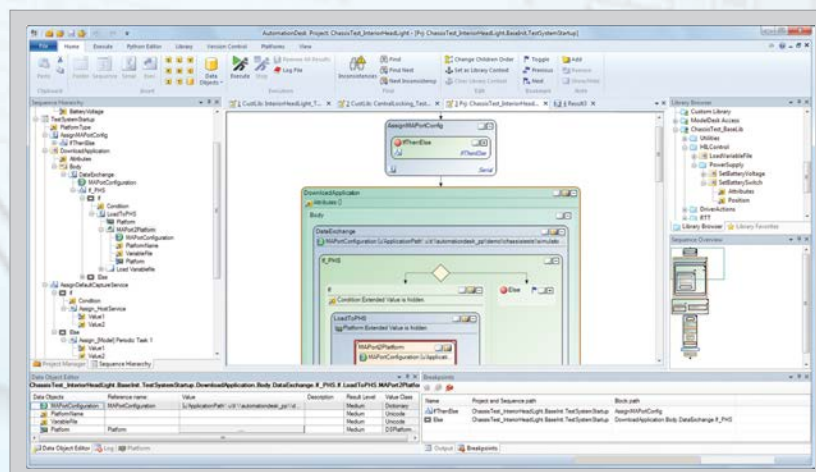- Training classes for ASM users
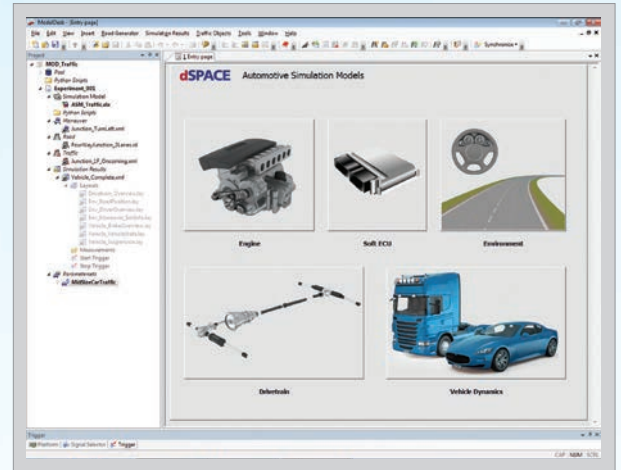
ModelDesk

Test Automation

AutomationDesk jump start

- Concept design of test scenarios and test cases
- Implementation of examples
- Hands-on training

Testing process support and test automation engineering

- Set up testing process from test specification to test results
- Integration of AutomationDesk into your development and test process
- Design of test scenarios and test cases
- Development of test automation frameworks according to your needs (e.g., project and library structure, test development process)
- Hands-on training
- On-site services for tool support; resident engineers for covering the whole test process

AutomationDesk

BTC Embedded Systems AG provides products and services for Formal Verification, Validation, and Automated Testing of Embedded Systems. BTC-ES products significantly reduce efforts required for testing and validation of Embedded Systems, and considerably increase the quality of the developed system.

The products EmbeddedValidator and EmbeddedTester have been developed in close cooperation with dSPACE GmbH.

EmbeddedValidator: Allows verifying TargetLink models against formally specified requirements on the basis of TargetLink AutoCode.

EmbeddedTester: Provides capabilities to automatically generate and execute test cases for TargetLink AutoCode. Furthermore, specific standard problems like dead code, division by zero, etc. are automatically analyzed. Additionally, code validation activities and coverage analysis can be performed during the model-based development of control functions in the Simulink®/TargetLink tool environment.

For more product information please visit: www.btc-es.de

Model Engineering Solutions GmbH is a high-technology company specializing in integrated quality assurance of embedded software for the automotive sector. They are experts in sophisticated solutions for the model-based development of embedded control software on the basis of MATLAB®, Simulink®, Stateflow®, TargetLink, and ASCET® models. Their clients are major OEMs and suppliers from the automotive, avionics, and transportation industries. Moreover, MES is a TargetLink Strategic Partner of dSPACE GmbH.

Their products Model Examiner (MXAM) and M-XRAY work closely with Simulink® and TargetLink:

Model Examiner (MXAM): Automated guideline checking and model repair for Simulink®, Stateflow®, TargetLink, and ASCET® models.

M-XRAY: Model structure analysis and complexity measurement for Simulink® and TargetLink models.

For more product information please visit: www.model-engineers.com

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