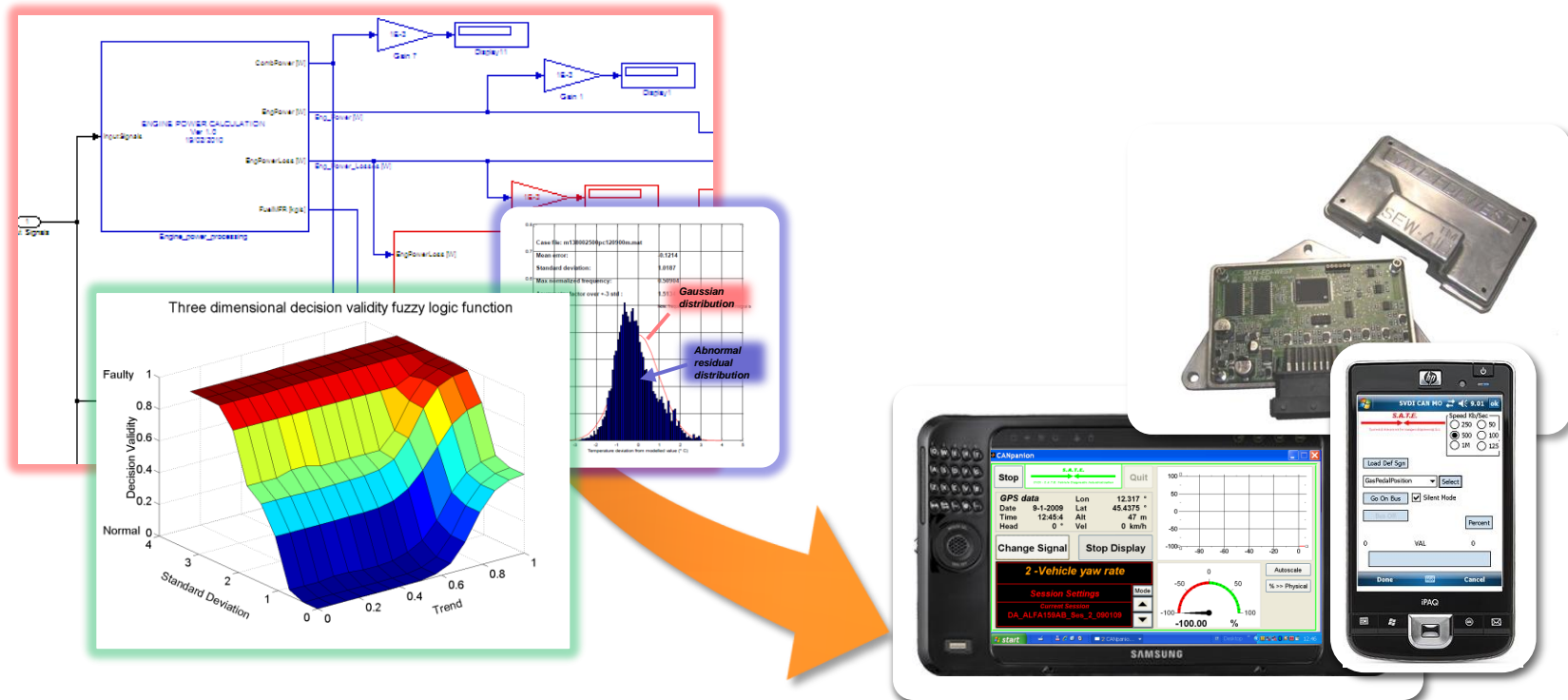


MBD – Model-Based Diagnostics CAPABILITIES AND EXPERIENCE



SDS – SATE Diagnostic Solutions

From simulation experience: Model-Based Diagnostic technologies

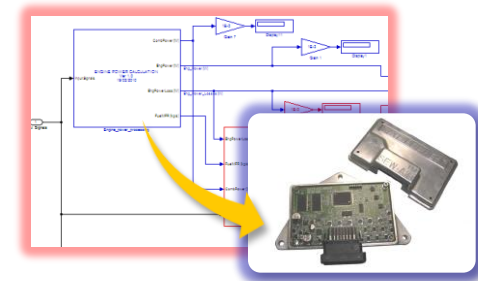
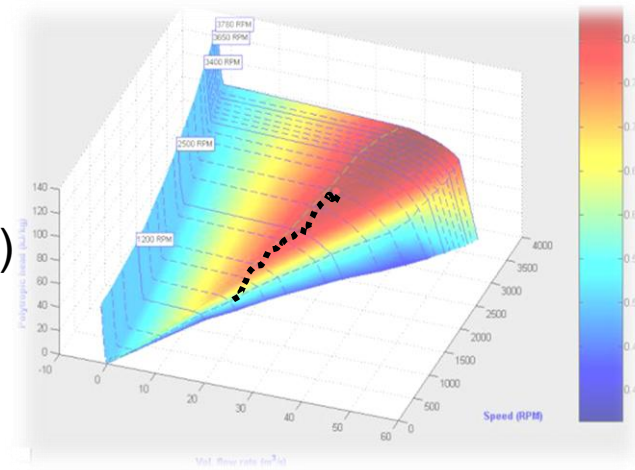
Background:

- Dynamic simulation of mechanical systems (fluid processes, turbo-machines, engines and vehicles)

help to engineering

- Transferring models to operations
design of experiments and prototype tests

- Integrating model SW with hardware
on-board / in-field performance analysis & diagnostics



Predictive diagnostics goals

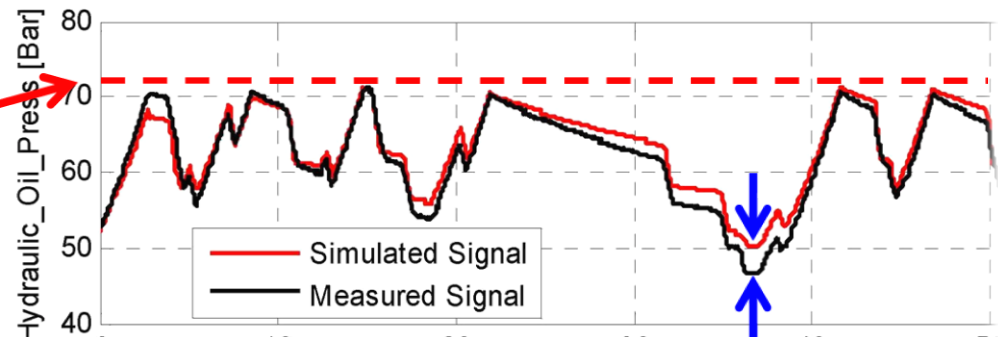


WHY MBD?

In many systems the diagnostics is based on:

- static thresholds (Threshold Based Diagnostics)
- rationality: checking inconsistent signals

TBD considers only static or zone based limits

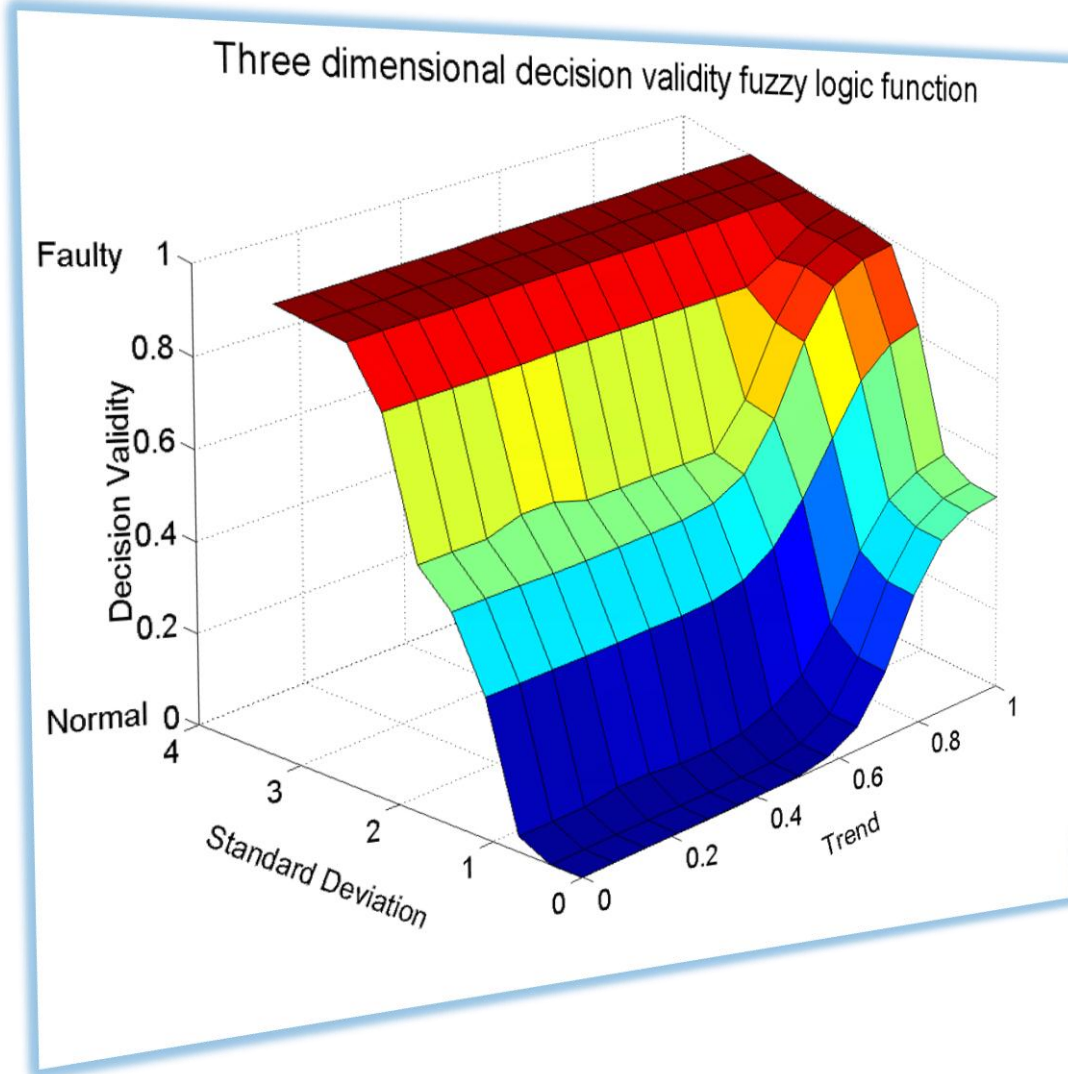


Model-Based approach:

- is based on dynamic equations
- predicts the behavior of the system
- provides redundancy which cannot be achieved through HW

MBD looks for this difference

MBD PROs



Decrease in false alarms

Decrease in missed alarms

Increase in diagnostic quality

The SDS technology: services & products suite

**S.A.T.E. knowledge
Hardware implementation**

- Win CE
- Win XP
- Embedded target



**CANpanion™
Signals acquisition
and processing**



- CAN bus
- GPS
- HSDPA

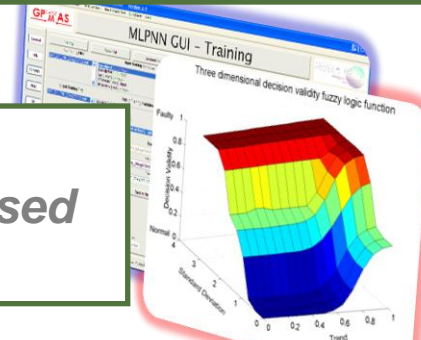
**Complete /
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Diagnostic
Solutions**

**GPMAS™
System models identification
& parameters optimization**

**Models code generation
and embedding
by MATLAB/RTWEC®**



**GPMAS™
Setup of model based
diagnostics**



Case study examples

CLICK ON THE
BUTTONS TO VIEW
IN GREATER DETAILS



[Engine cooling system diagnostic](#)

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