Company Presentation

ecu-testing

- We provide services in the field of Testsystems and Testengineering.

- We focus on the Open- und Closedloop Testsystems for the electronic control units in the automotive field.

- We have expert knowhow in the application of HiL-Testsystems for engine and gear control units like EDC17, MED17 and 6HP..

- ecu-testing has two location

  - Engineering office in Garching by Munich (Germany).

  - Office in Tunis (Tunisia)

    * Worcking on Off-shore and Near-shore Projects
    * Training for jung Engineers

Consulting:

 - Consultancy in the selection of suitable test systems and testing tools.

 - Project management.

 - Support and Training.

Application Testsystems:

 - Specification, building, setting up and operation of HiL Testsystems.

 - Service and Upgrading of Testsystems.

Softwareengineering:

 - Software development in C, Matlab and Python
 - Modelling and Simulation in Simulink and Stateflow

 - Restbussimulation and test bed automation in CANAlyzer/CANoe and CAPL

We provide knowhow in the following tools:

 - HiL operation, test automation: ControlDesk, AutomationsDesk, Proovetech:TA, EXAM.
 - Application tools: INCA.
 - Diagnosis tools: EDIABAS, INPA, Diagra, VAG-Tester, Cesar.

 - Simulation: Matlab, Simulink, Stateflow.

 - HiL Platform: dSPACE, xPC-Target.

- HiL-Simulator for a EDC17 and MED17 engine ecu on a dSPACE Platform

- HiL-Simulator for a 6HP gier ecu on a dSPACE Platform

- HiL-Simulator for an ABS ecu on a xPC-Target Platform

- HiL-Simulator for a DELPHI engine ecu on a xPC-Target Platform

- Multiple Openloop test systems for the EDC17 and MED17 engine ecu

Project examples:
# test automation for a swinger test bed

The test bed has the following components:

- Swinger with its control system (Company TIRA).

- Power supply for charching and discharching (Company ERS).

- Climate chamber (Company CTS).

- Electrochemical Energy Storage System (EESS) including the Battery Management System (BMS)

- Laptop with CANAlyzer Software (Company Vector)

- PCAN-MIO (Company Peak)

- Watchdog (Including Siemens Logo)

- 2x CAN cards VN1630 (Company Vector)

● Main component is the swinger.

● Using the climate chamber the temperature can be changed during the vibration test.

● Using the ERS the EESS can be charged and discharged during the vibration test.

● The laptop with the CANAlyzer Software is the central control of the test bed.

● The PCAN-MIO is used as a gateway between the Watchdog and the CANAlyzer Software.

● The Watchdog supervises the test bed and drives it in a secure state if any error occures.
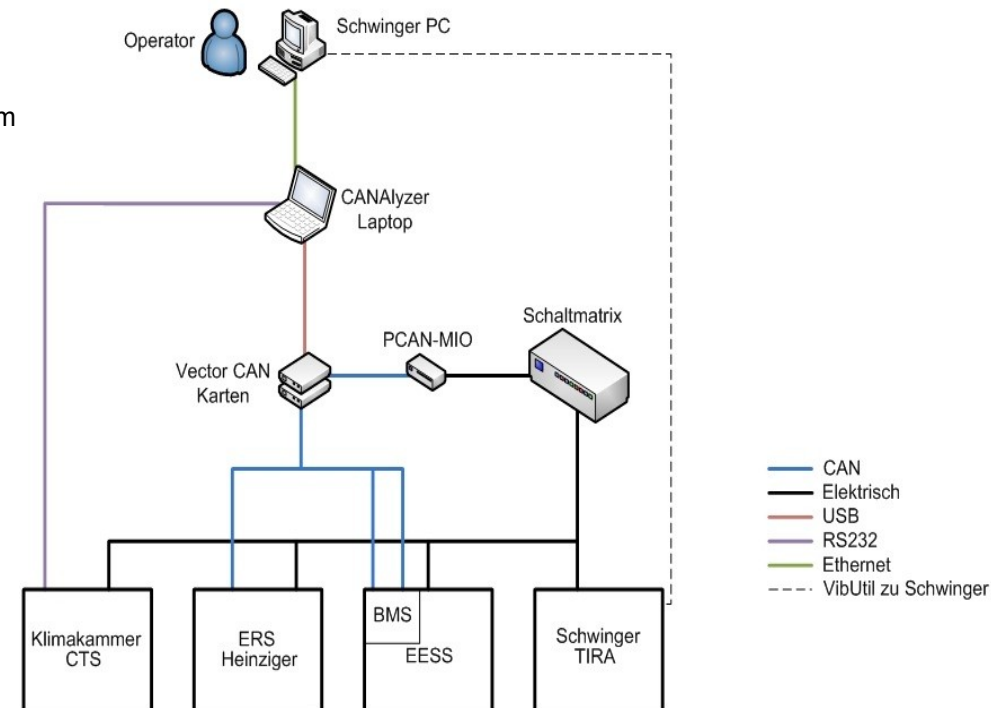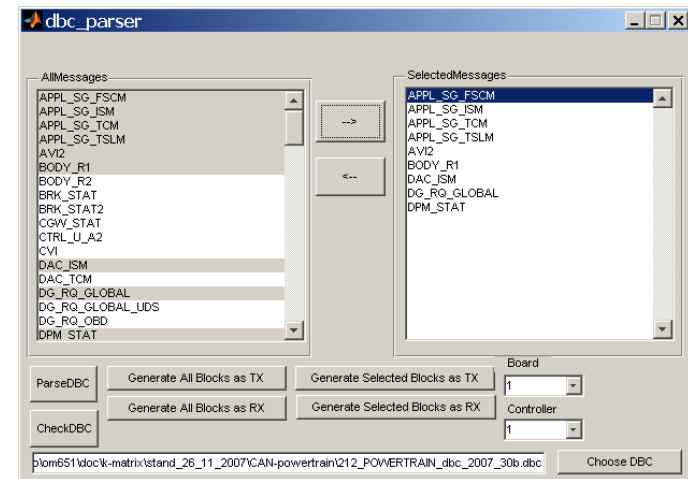
Project examples:
# Test automation tool for HiL test system

- Interface to the Diagnosis tool EDIABAS

- Interface to the simulation model on the dSPACE platform

- Standalone application in Python/wxPython.

- Sequential tests

- Test programming through GUI

Project examples:
Automatic generation of CAN simulation
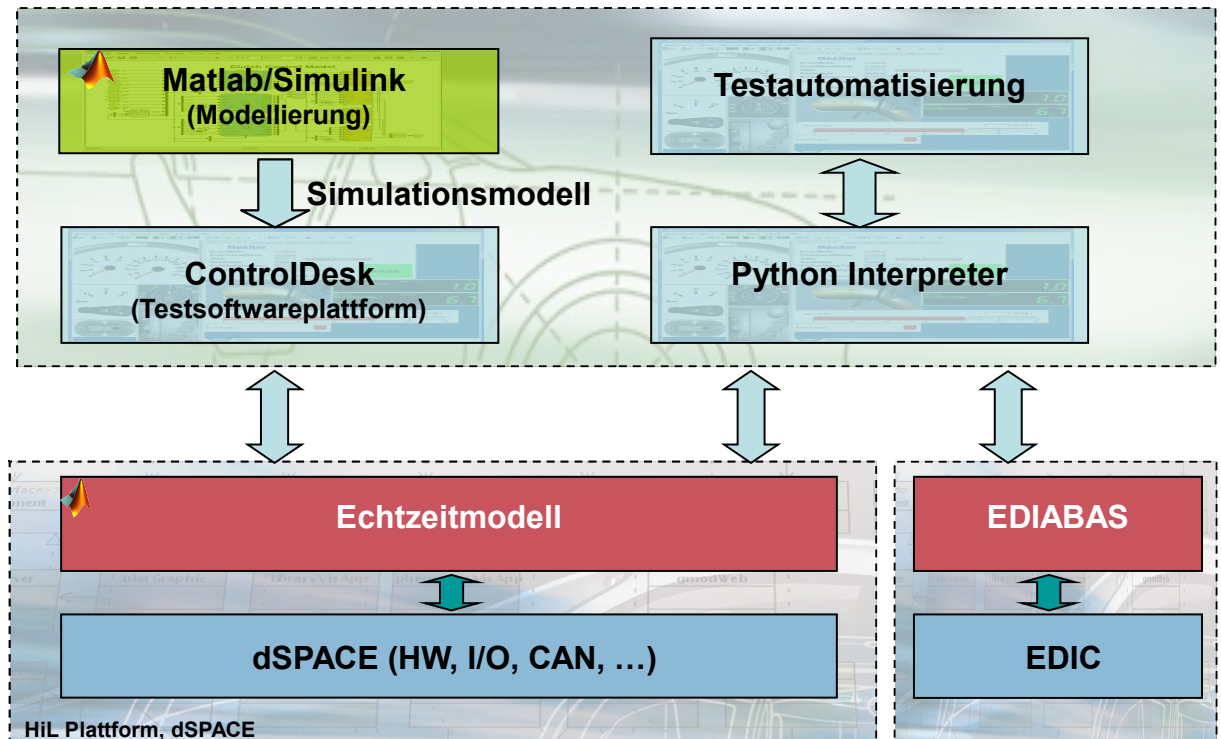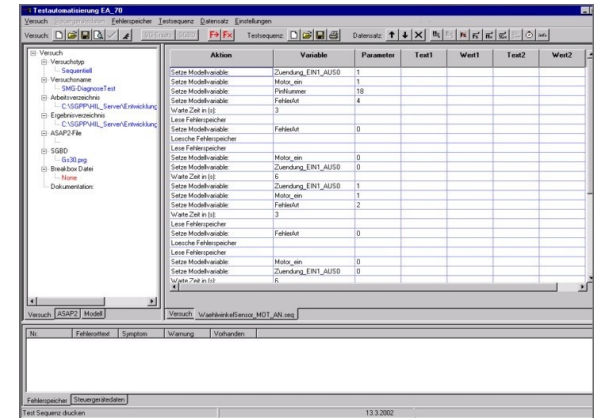
- Check of the DBC files

- Parsing of the DBC files

- Choosing the needed CAN messages for the ECU to be tested

- Automatic generation of the needed TX- and RXBlocks for the choosen CAN messages

- Generated Simulink blocks include:

  - Cycle times

  - Alive counter

  - Checksum calculation

  - Configured CAN driver blocks

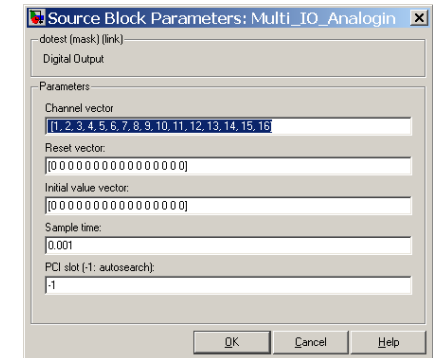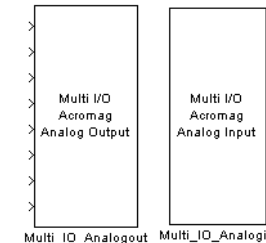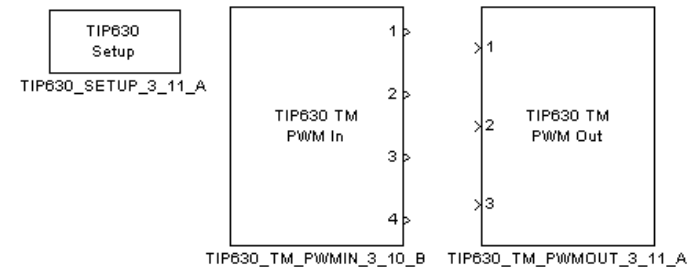**Automatic generation of CAN simulation**
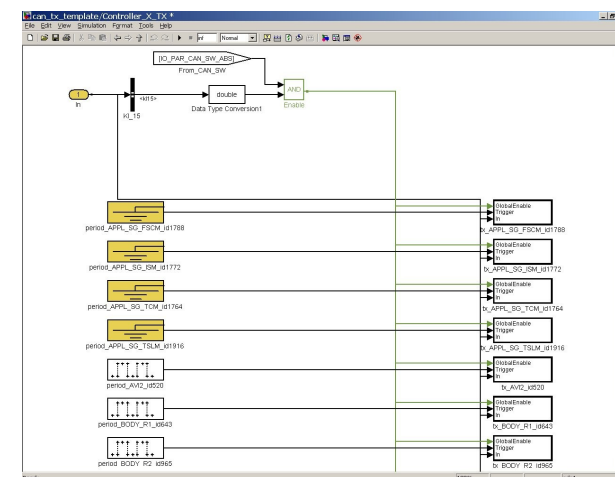
Acromag AcPC730

- 16 differential or 32 single-ended
  Analog Inputs, A/D Resolution 16 bits
- 8 Analog Output Channels
  D/A Resolution 16 bits
  Output range -10 to 10 V
- 16 Digital Input/Output Channels
  (direction slectable)

Multi I/O Acromag Analog Output   Multi I/O Acromag Analog Input

Multi_IO_Analogout   Multi_IO_Analogin

Source Block Parameters: Multi_IO_Analogin

dotest (mask) (link)
Digital Output

Parameters

Channel vector:
[1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16]

Reset vector:
[0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0]

Initial value vector:
[0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0]

Sample time:
0.001

PCI slot (-1: autosearch):
-1

OK   Cancel   Help

Acromag IP231

- 16 Analog Output
- D/A Resolution 16 bits
- Output range: -10 to 10 V

TIP630 Setup

TIP630_SETUP_3_11_A

TIP630 TM PWM In

TIP630 TM PWM Out

TIP630_TM_PWMIN_3_10_B   TIP630_TM_PWMOUT_3_11_A

Tews TIP710

- IndustryPack
- 16 Digital Outputs
- includes optocouplers
  for galvanic isolation

Source Block Parameters: TIP630_...

TIP630 TM PWM In (mask)

PWM / pulse measurement

Available channels: 1 .. 4
Output vector: [freq dc pwu pcnt]

Parameters

Base Clock: 1MHz

Channel vector:
[1 2 3 4]

IP Module Slot: A

Carrier PCI Slot:
[3,10]

Sample time:
0.001

OK   Cancel   Help

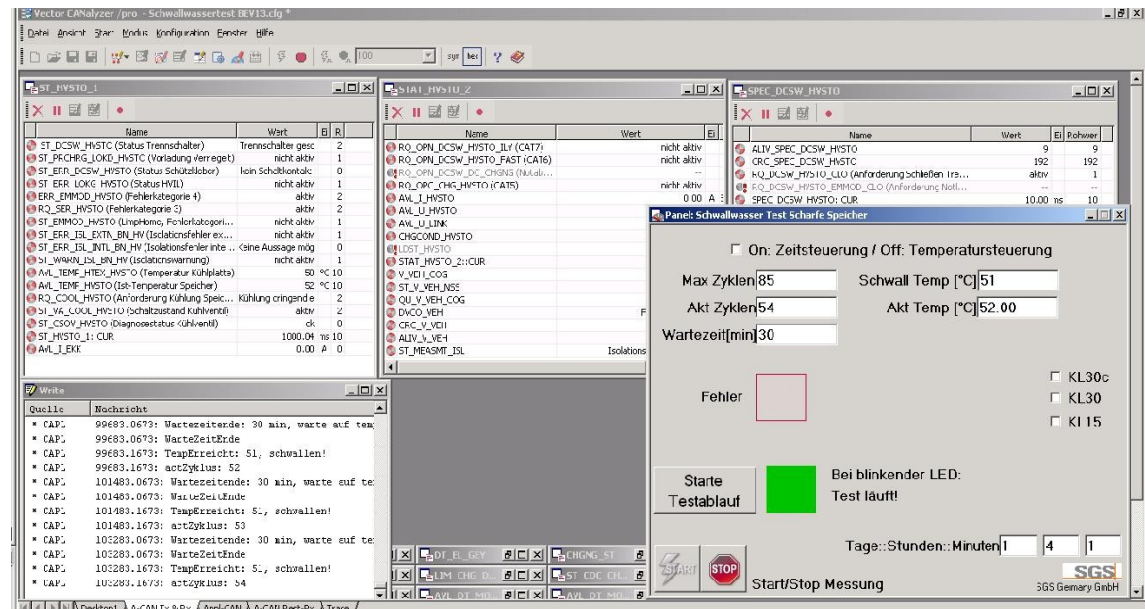**Tews TIP605**

- IndustryPack
- 16 Digital Inputs
- includes optocouplers
  for galvanic isolation
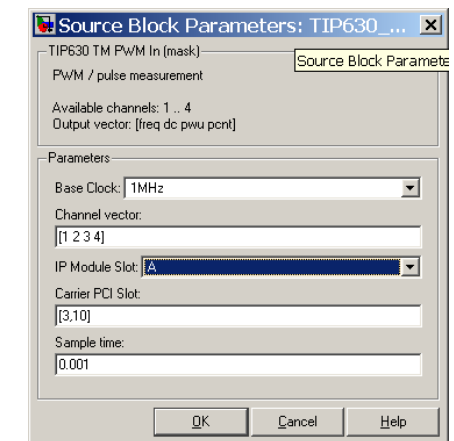
- Test automation in CANAlyzer through

   CAPL Programming

- GUI for test control and monitoring

- Monitoring of the test component (EESS

   with BMS) and breakup by error

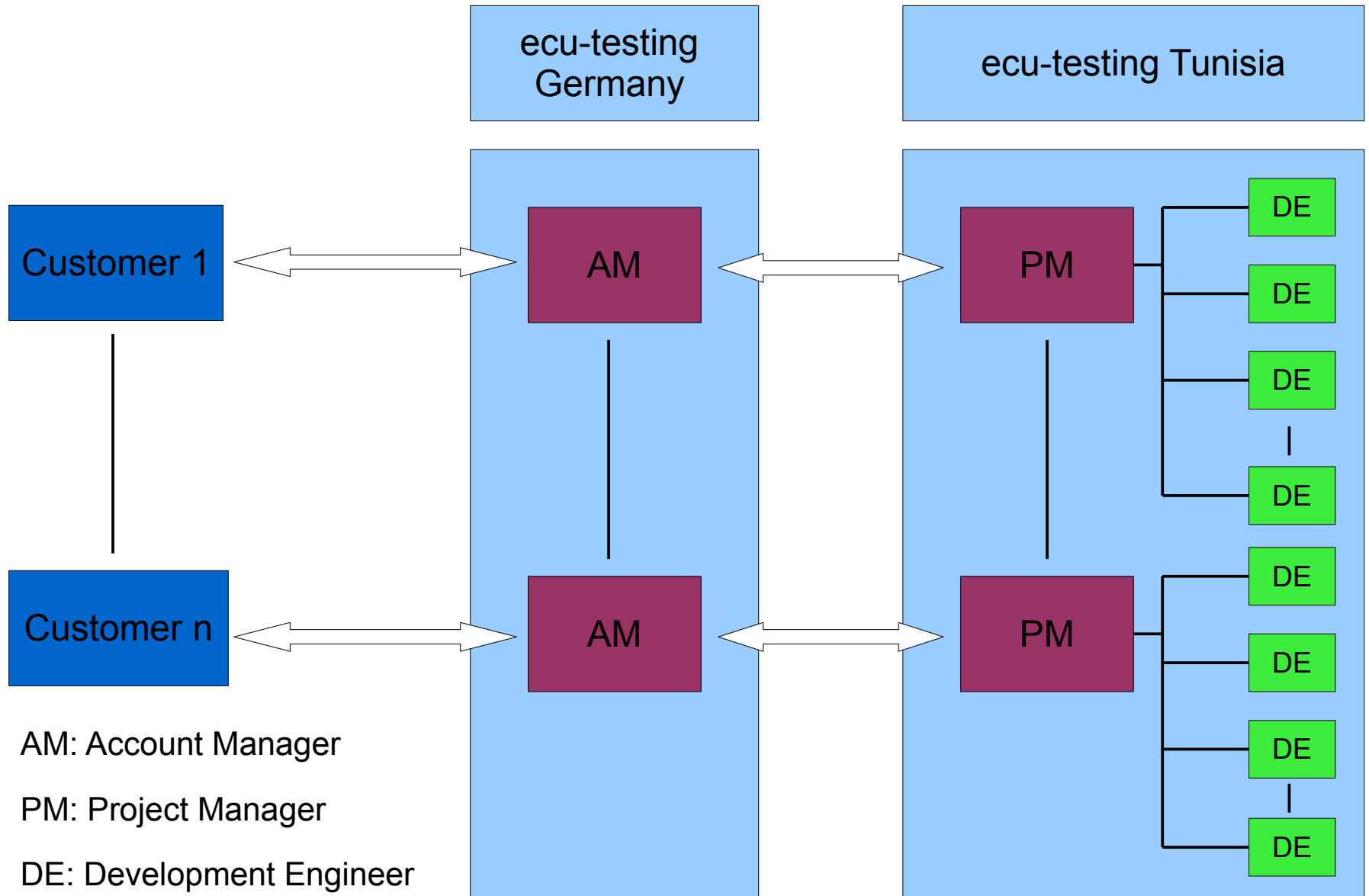- Alerting the operator by Email and SMS

- Test report

- **Off-Shore and Near-Shore Projects**

  - Softwareengineering in C/C++, Python and Matlab.

  - Simulation in Simulink, Stateflow, Dymola and Modelica.

  - 1st Level Support for choosen tools

- **Training for jung engineers in the field of Testsystems and Testengineering**

  - Choosing jung engineers from the best technical universities in Tunisia

  - Theoretical and practical Training in

    * Learning the german language (Niveau B1)

    * Basics in the elektronic in the automotive field

    * Testsystems for the elektronic in the automotive field (Focus HiL Testsystems)

    * Usefull tools and technics in the HiL field

ecu-testing Tunisia:
Off-shore / Near-shore concept 1

ecu-testing
Germany

ecu-testing Tunisia

Customer 1

AM

PM

DE

DE

DE

DE

Customer n

AM

PM

DE

DE

DE

DE
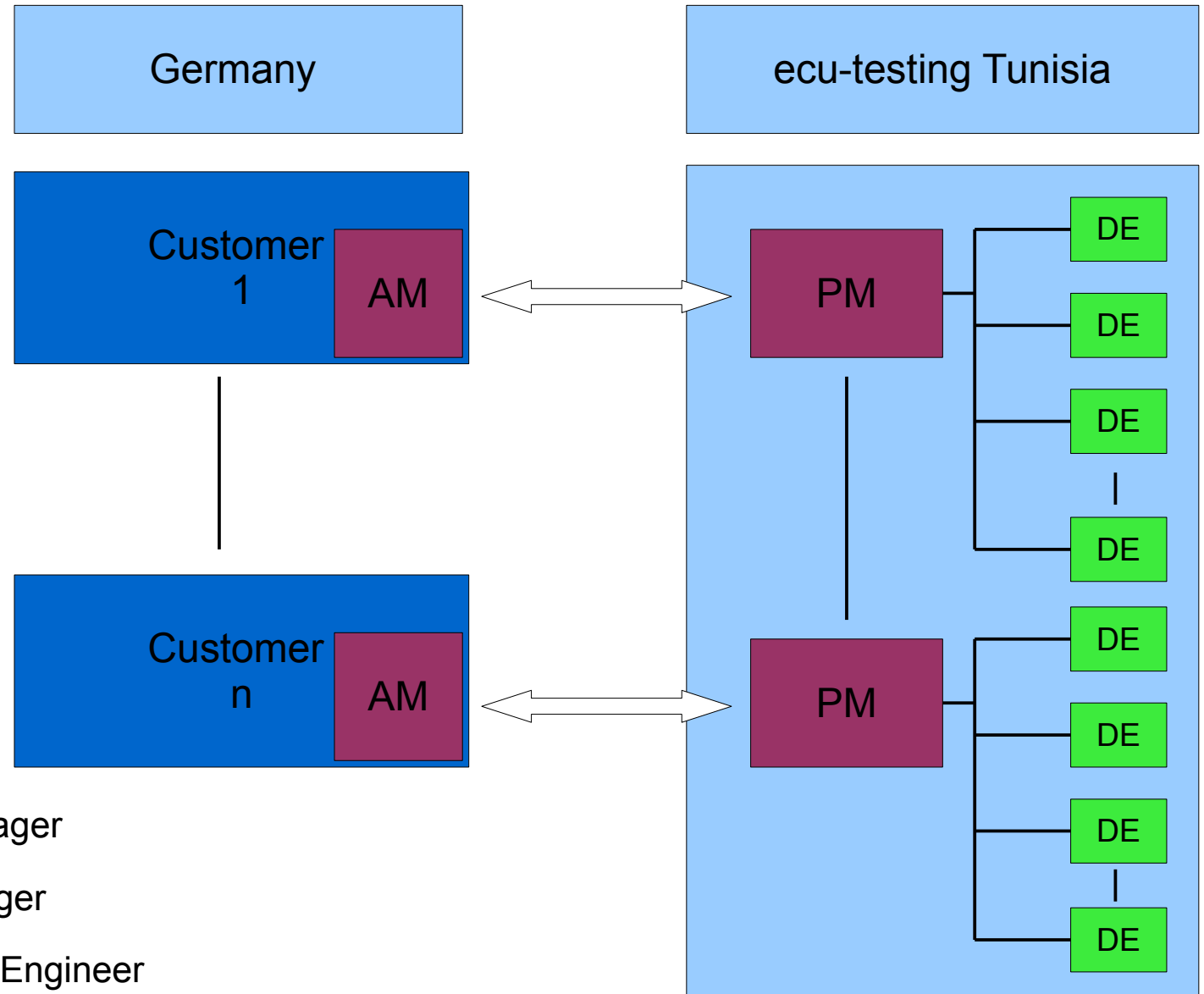
- AM: Account Manager
- PM: Project Manager
- DE: Development Engineer

ecu-testing Tunisia:
Off-shore / Near-shore concept 2

Germany

ecu-testing Tunisia

Customer 1 — AM ⟷ PM — DE, DE, DE, DE

Customer n — AM ⟷ PM — DE, DE, DE, DE

- AM: Account Manager
- PM: Project Manager
- DE: Development Engineer

- **Account Manager (AM):**

– Minimum of 5 years experience in the field of embedded software

development and software project management

– English fluently speaking

– Experience in requirements specification

- **Project Manager (PM):**

– Minimum of 4 years experience in the field of software

development and project management

– English, French and Arabic fluently speaking

- **Development Engineer (DE):**

– Engineer Degree (5 years study)

– Minimum of 2 years experience in software development

– French, Arabic fluently speaking, English speaking

• A defined and a clear interface to the final client (In general it is one Account Manager).

• The AM clears all requirement specifications with the client and transfer them to the development in Tunis

• The PM distributes the tasks to his development team according to the project needs

• No time difference between the two platforms permits a high productivity and availability

• A good internet connection and shared disc spaces fasten document transfer

• High skilled engineers chosen from the best Tunisian universities

MERCI
pour votre attention

ecu-testing