Summer Internship Program 2014
Continental Automotive Systems Sibiu

Summer Internship Program 2014
Continental Automotive Systems Sibiu

› **Pozitii disponibile:**

    › Centrul de Cercetare – Dezvoltare (R&D) – 61

        › HW – 11

        › SW - 35

        › Mech - 15

    › Productie (Plant) – 25

        › HW – 5

        › SW – 15

        › Altele - 5

Summer Internship Program 2014
Continental Automotive Systems Sibiu

› **Program implementare:**

    › Perioada aplicare: 1 Februarie – 20 Martie

    › Perioada selectii: 21 Martie – 31 Martie

    › Perioada practica:

        › 1 iulie – 30 septembrie

        › 4 august – 30 septembrie

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Summer Internship Program 2014
Continental Automotive Systems Sibiu

› **Pachet de beneficii:**

  › Salar

  › Tichete de masa: 1 tichet valoric 9.35 RON pentru fiecare zi lucrata

  › Program de lucru: 8h + 30 min pauza de masa

  › Vacanta (21 zile pe an => pentru 2/3 luni conform perioadei)

  › Cazare in Sibiu pentru studentii din alte orase

Summer Internship Program 2014
Continental Automotive Systems Sibiu – ADAS SW Group

Activities:
- embedded development for base and customer projects
- software validation of base and customer projects

Themes for summer:
- SW development and testing for radar and camera technology based systems
- implementation of generic testcases for diagnosis in application projects
- implementation of applications designed for improvement of sw release process
- unit test implementation using Cantata

Knowledge needed:
- ANSI C, uC basic knowledge
- C# or scripting language (optional)

City Safety – low-speed auto brake

Infrared sensor
- Autonomous Braking

24 GHz Radar
- Blind Spot Detection
- Lane Change Assist

** Continental**

Summer Internship Program 2014
Continental Automotive Systems Sibiu – B&S Group

Activities:

1. **Generic SW tool development** - develop or upgrade generic tools that support the development process.

Themes for summer:
- Implementation of file handling scripts (create, update, copy, parse)
- Implementation of scripts to extract data from various formats (xlsx, xml, dbc ..)
- Implementation of generator scripts for test case template and content
- Update the functionality or user interface for existing scripts
- Implementation of scripts for handling of requirements database (DOORS)
- Update the existing scripts for DOORs

Knowledge needed:
- ANSI C
- Excel
- VBA/VBScript is a plus
- XML and HTML is a plus

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Summer Internship Program 2014
Continental Automotive Systems Sibiu – B&S Group

Activities:

2. **Test equipment development** - build test benches or further upgrade the existing ones

Themes for summer:

- Develop automatic test benches
- Adapt the design based on the specific project needs
- Build or extend automatic test equipment
- Develop and extend existing test benches
- Building of the wiring harness
- Mounting of the loads, connectors, switches, LEDs, …
- Develop and extend extension boxes
- Breakout boxes, switch boxes

Knowledge needed:

- ANSI C
- Electronics
- Microcontroller general architecture know how is a plus
- Automotive knowhow is a plus

Summer Internship Program 2014
Continental Automotive Systems Sibiu – B&S Group

Activities:

3. **Diagnostic test generator** - tool development for automatic generation Diagnostic test cases

Themes for summer:
- Implementation of scripts to extract data from various formats (xlsx, xml, dbc ..)
- Implementation of generator script for test case template (jScript or C#)
- Implementation of UDS and ISOTP standard requirements
- Integration of additional existing scripts for DOORs
- Design and implementation or update of a User Interface for generators
- Analysis and debug of the generated test code

Knowledge needed:
- ANSI C
- C# and/or jscript is a plus
- Electronics is a plus
- Know how of UDS standard is a plus
- Know how of any communication protocol is a plus (CAN, Ethernet, Flexray ..)

Summer Internship Program 2014
Continental Automotive Systems Sibiu – B&S Group

Activities:

4. **Project support** - implementation of scripts in CAPL(C like) for various functionalities according to project needs

Themes for summer:

- Implementation of scripts for various functionalities in CAPL (C like)
- Execution and debug of CAPL scripts
- Analysis and interpretation of system requirements

Knowledge needed:

- ANSI C
- Electronics or Data Acquisition System know how are a plus
- Microcontroller general architecture know how is a plus
- Know how of any communication protocol is a plus (CAN, Ethernet, Flexray ..)

Summer Internship Program 2014
Continental Automotive Systems Sibiu – B&S Group

Activities:

5. **Report generator** - upgrade existing tools used for generating log and report files

Themes for summer:
- Update scripts to extract data from text files
- Update HTML files parser
- Implement script for transferring data to DOORS server.
- Integration and redesign of User Interface for script

Knowledge needed:
- ANSI C
- C# and/or jscript is a plus
- HTML and or XML know how is a plus

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Summer Internship Program 2014
Continental Automotive Systems Sibiu – TR Group

Activities:

1. **Electronics Support 1** - support team for EMC, Electronics Standard Components, ASIC's, Sensor Integration, FSM/FMEA
2. **Electronics Support 2** - layout support Team
3. **Electronics Support ECU Test** - test design, Monitor SW

Themes for summer:

Electronic Standard Components:

-Characterization of bipolar and MOS FET transistors in order to define Safety Operating Area

Test Design:

- Functional Test Automation for TCU's

Knowledge needed:

- Analog Electronics
- Digital Electronics
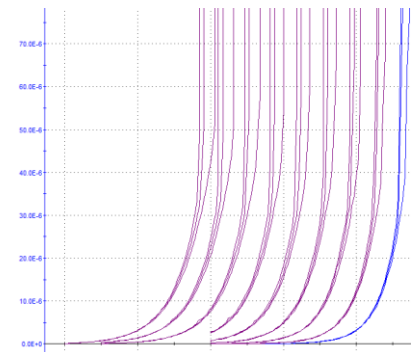
Summer Internship Program 2014

Continental Automotive Systems Sibiu – VED SW CE Group

➤ C programming and basic electronic knowledge are required
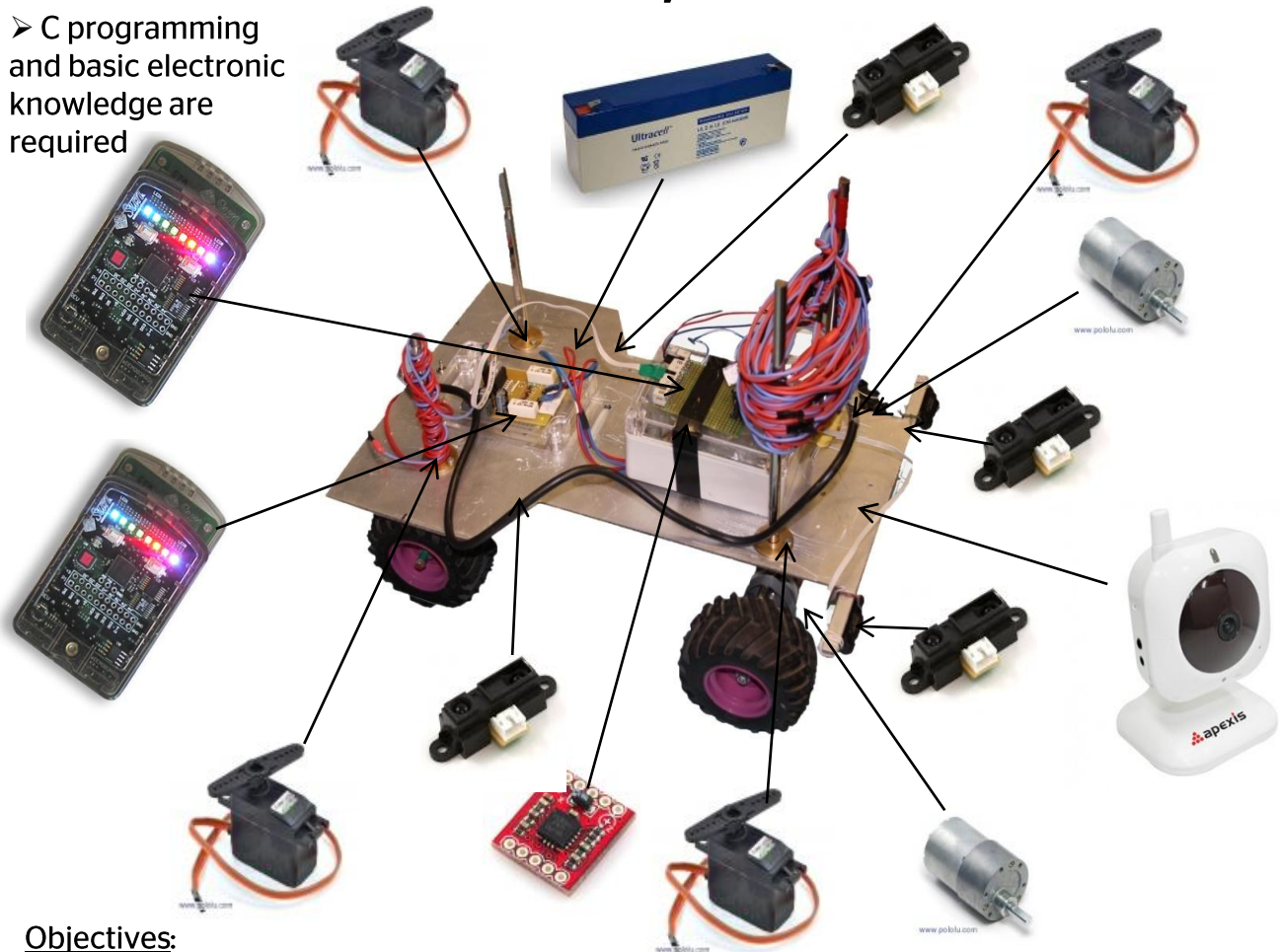
Java SUNSPOT Controller/ Freescale 32 bit microcontroller

Proximity sensor

Servomotor

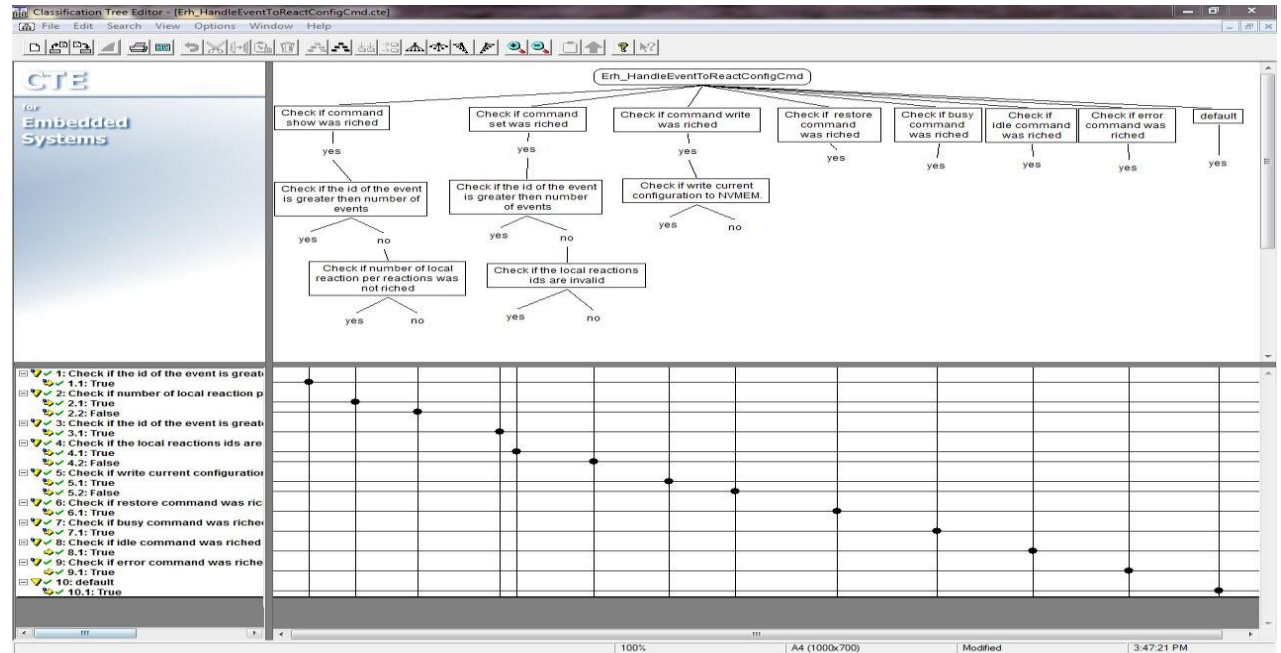Gyroscope

Wireless camera

Metal gearmotor

12V Battery

Objectives:

➤ Control wireless the car, using a driving wheel and acceleration&brake pedals connected to a computer – program the car microcontroller for this purpose

Continental

Summer Internship Program 2014
Continental Automotive Systems Sibiu – VED SW CE Group

SW Module Test

Job description:
- Test SW modules from damping and acceleration force feedback pedal projects
Needed skills:
- Basic programming skills in C and basic English knowledge

Summer Internship Program 2014
Continental Automotive Systems Sibiu – VED SW CE Group

Develop Test platform
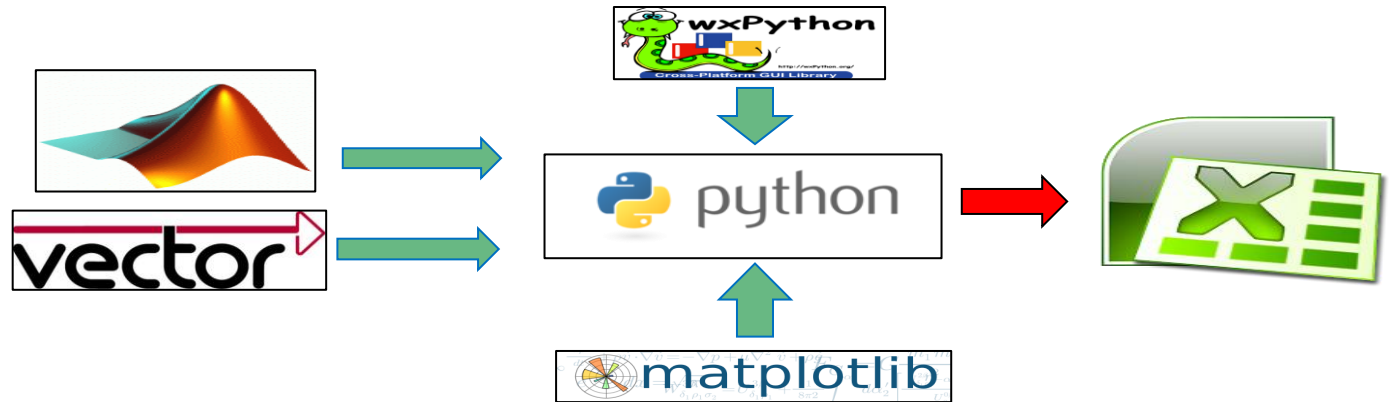
Job description :

- Create an application that can analyses data and generates test reports

Needed skills:

- Object oriented programming

Summer Internship Program 2014
Continental Automotive Systems Sibiu – VED SW CE Group

Test automation

Job description :

- Create python scripts for automation of the test process
- Control of external hw and applications is necessary in order to perform automatic tests

Needed skills:

- Medium level of C programming
- Basic electronic knowledge
- CAN and Diagnostics protocols knowledge is considered a plus

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Summer Internship Program 2014

Continental Automotive Systems Sibiu – VED SW CE Group

Requirements:

→Data acquisition knowledge
→Programming servo motor and design (Catia V5) is considered a plus

Job description
→Analyze data aquired during tests
→Visual inspection of the product before and after different tests
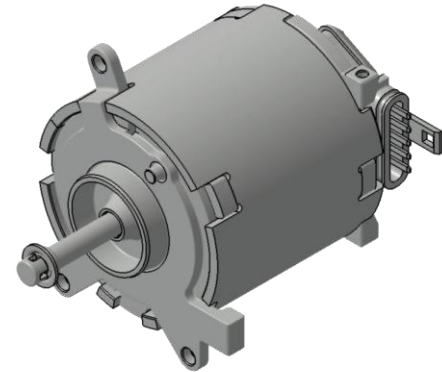→Test monitoring

HW & Test CE System Test

Summer Internship Program 2014

Continental Automotive Systems Sibiu – VED SW CE Group

Requirements:
→ Mechanical skills
→ CAD knowledge
→ English language
→ Team player
→ Basic electronics

MD AFFP / ASU

Main responsibilities:
→AFFP / ASU Introduction
→MD methodology
→CAD conversion, CAD support
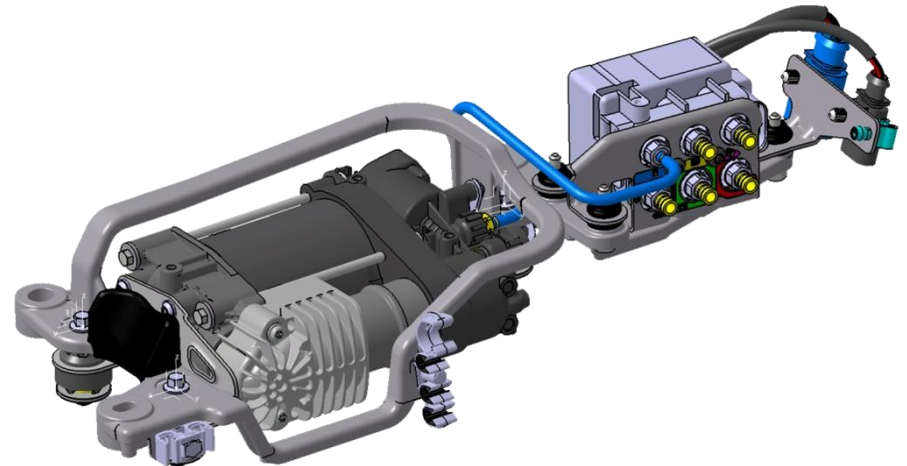
Continental

Summer Internship Program 2014

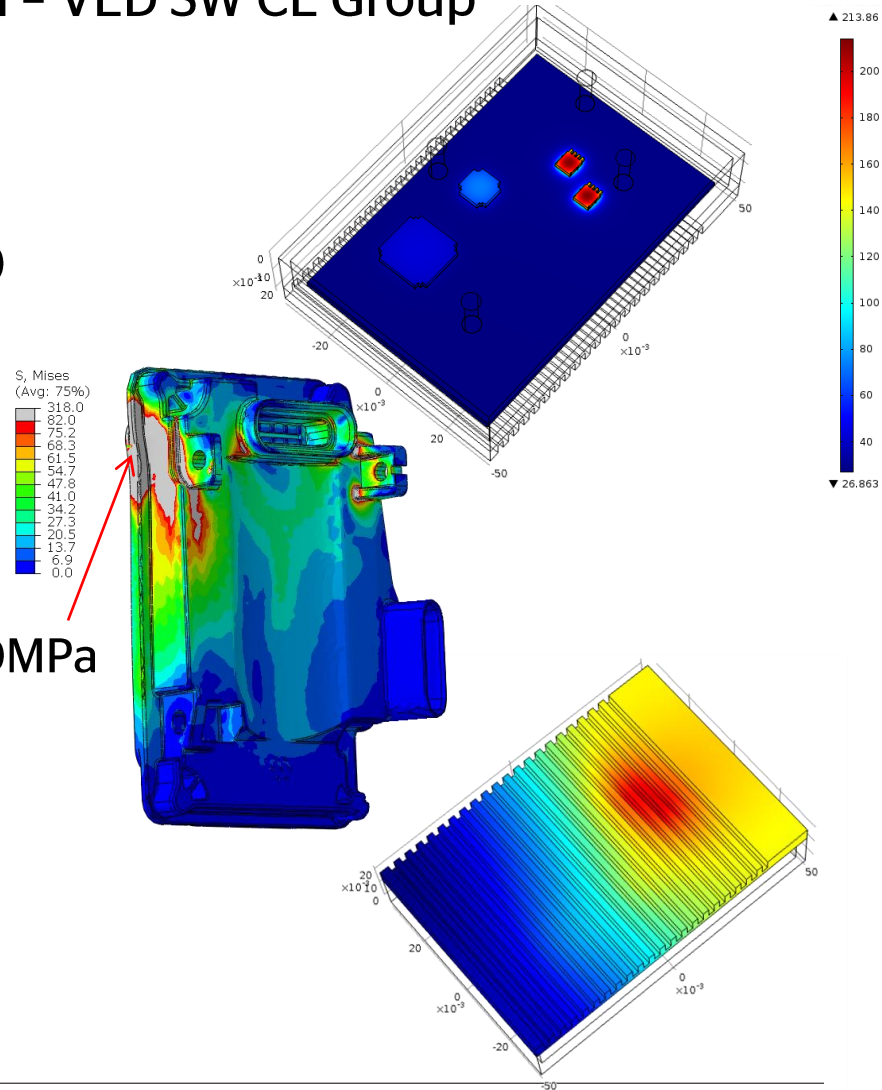## Continental Automotive Systems Sibiu – VED SW CE Group

Requirements:
→Material Strength knowledge
→Electro-mechanical skills
→CAE knowledge (ABAQUS, ANSYS-Icepack)
→English language

VED MS AFFP / CE

Job Description:
→Solve Basic Development tasks
(results validation, develop a model for
thermal simulation of ECU's)
→Small tasks with report preparation
→Improve material database

110MPa

S, Mises
(Avg: 75%)
318.0
82.0
75.2
68.3
61.5
54.7
47.8
41.0
34.2
27.3
20.5
13.7
6.9
0.0

Summer Internship Program 2014

Continental Automotive Systems Sibiu – VED ESS Group

Further development of Electronic Suspension System (ESS) Demo Car Application

Requirements:
→ Good C programming skills
→ Any Matlab/Simulink/Target Link experience – is an advantage

Job Description:
→ Attend and finish with success internal Matlab/Simulink/TargetLink training
→ Get familiar with actual functionalities of Demo Car
→ Develop new Human Machine Interface (real Mercedes dashboard display)
→ Implement in Target Link new functionalities for the Demo Car

Continental

Summer Internship Program 2014
Continental Automotive Systems Sibiu – VED ESS Group

**Electronic Suspension System (ESS) Demo Car Diagnostic tool development**
Human Machine Interface development for ESS prototype cars

Requirements:
→ Programming: C and C#, Java languages
→ Basic knowledge of CAN protocol and UDS (Unified Diagnostics Services) it is an advantage
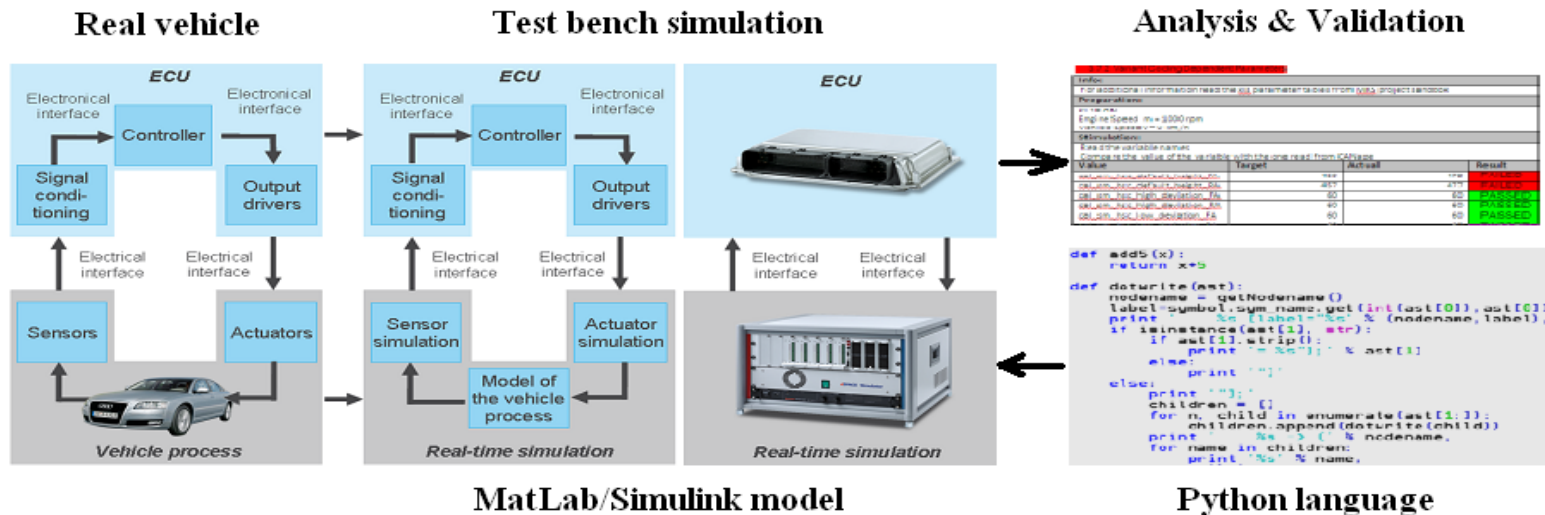
Job Description:
→ Attend and finish with success: "Vehicle Diagnostic System – Embedded Software Development"
→ Analyze a real diagnostic tool used in Electronic Suspension System projects
→ Analyze the functionalities of ESS Demo Car – identify necessary service and diagnostic functions, actual HMI
→ Implement service and diagnostic functions in LLSW (C programming)
→ Develop the diagnostic tool using C# language
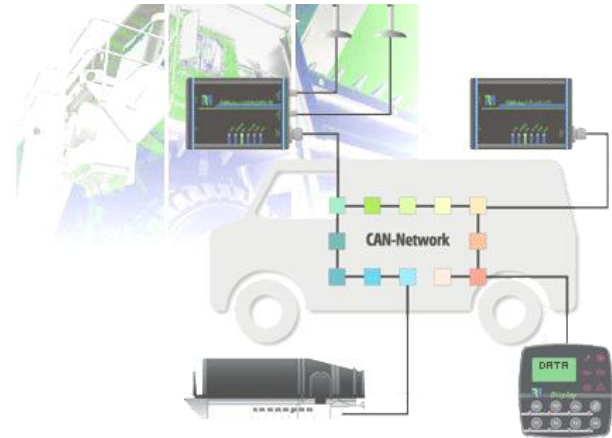
Summer Internship Program 2014

Continental Automotive Systems Sibiu – VED ESS Group

ESS Simulation model updates / Python test scripts development

→ **Requirements:**
✓ Good C programming skills; Any Matlab/Simulink, Python experience – is an advantage

➢ **Job Description:**
✓ Attend and finish with success internal Matlab/Simulink and Python trainings
✓ Adapt the Simulink model for an electronic suspension system on 2 axle
✓ Implement using Python language a test scenario for simulated system

Summer Internship Program 2014

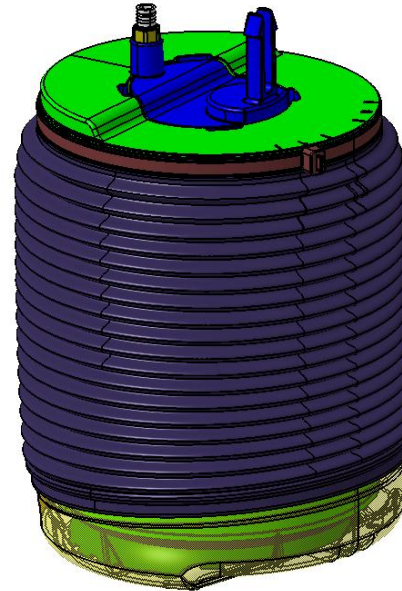## Continental Automotive Systems Sibiu – VED ESS Group

Mechanical development of Electronic Suspension System (ESS)

Requirements:
→ Good Catia V5 skills
→ Mechanical skills
→ Team player
→ English and/or German language

Job Description:
→ ESS Introduction and Basic Development
→ Update Overviews
→ Small tasks working as replacements during holiday
→ Projects support (3D, drawings, documentation, etc.)
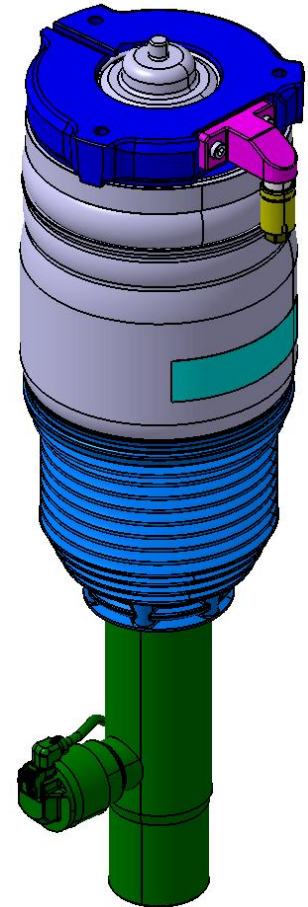
Summer Internship Program 2014

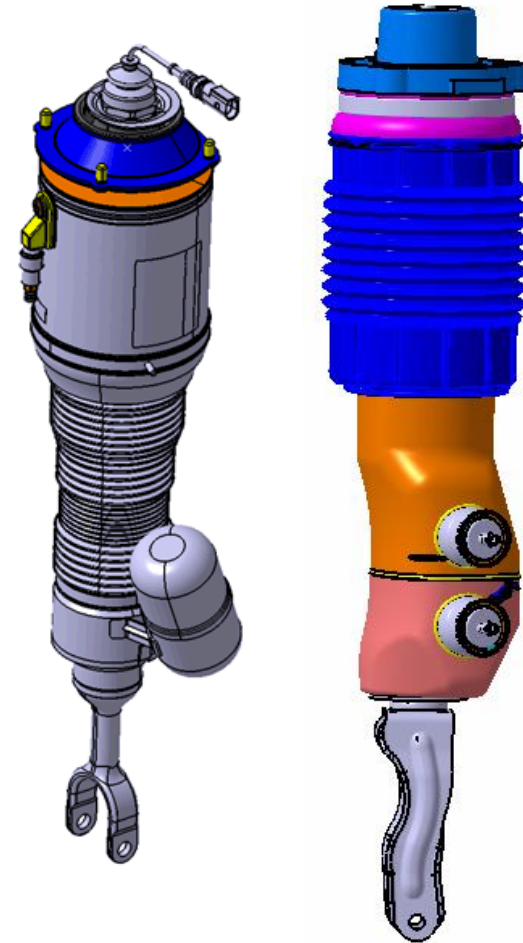## Continental Automotive Systems Sibiu – VED ESS Group

Mechanical development of Electronic Suspension System (ESS)

Requirements:
- → Catia V5 skills
- → Mechanical skills
- → Team player
- → English and/ or German language

Job Description:
- → ESS Introduction and Basic Development
- → Update Overviews
- → Small tasks regarding projects
- → Projects support (3D, drawings)
- → Support for preparation of technical documentation

Summer Internship Program 2014
Continental Automotive Systems Sibiu – VED ESS Group

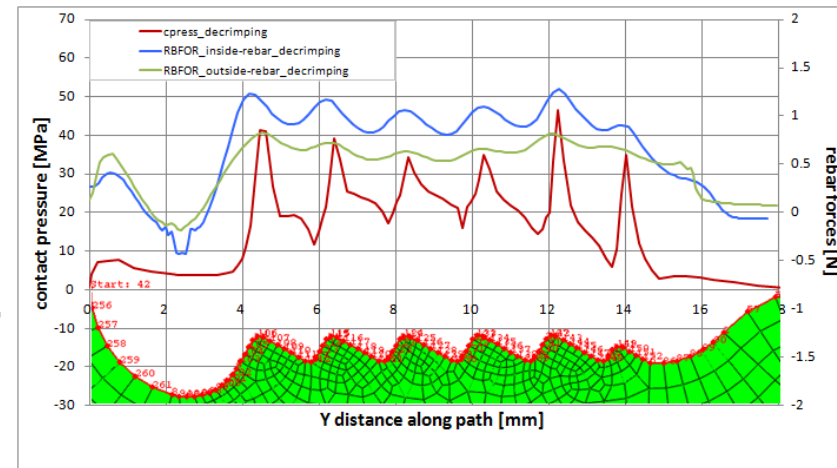**Strength simulations in ABAQUS of Electronic Suspension System (ESS)**
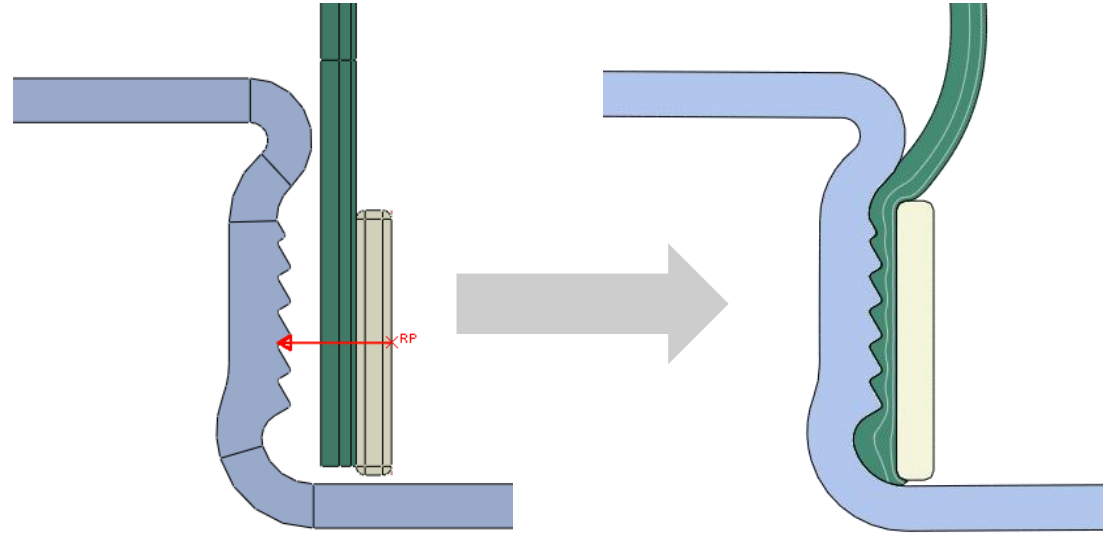
Requirements:
→ Material Strength knowledge
→ CAE knowledge (ABAQUS)
→ Mechanical skills
→ English language

Job Description:
→ Basic Development tasks (crimping optimization)
→ Small 2D tasks with report preparation

Summer Internship Program 2014
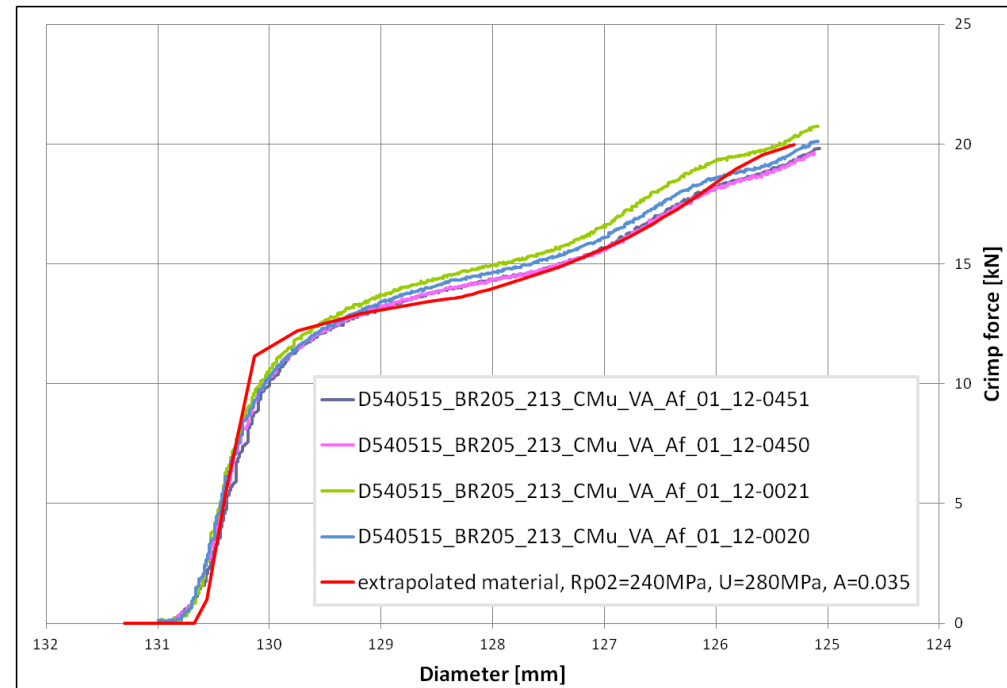## Continental Automotive Systems Sibiu – VED ESS Group

Automatic report generation in ABAQUS

Requirements:
→ Good C programming skills
→ Any Matlab/Simulink, Python experience – is an advantage
→ Mechanical skills is a plus

Job Description:
→ Create an application/scripts that can analyses data and generates simulation reports
→ Basic Development tasks

Summer Internship Program 2014
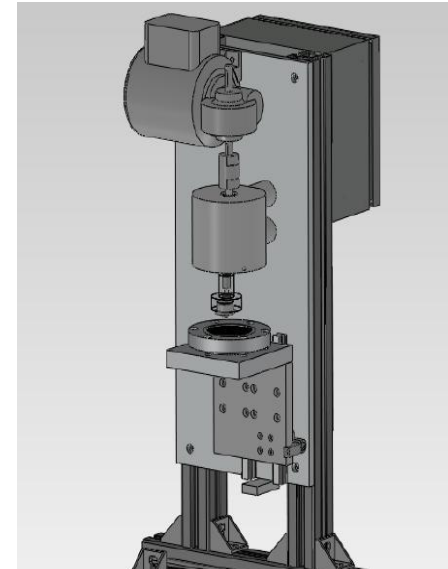## Continental Automotive Systems Sibiu – VED ESS Group

Test rigs development of Electronic Suspension System (ESS)

Requirements:
→ Basic CAD skills
→ Basic DAS Skills
→ Basic knowledge electrics / electronics

Job Description:
→ Configure, measure and analyze a Ball testing unit as a modular component of the Ball Testing Device
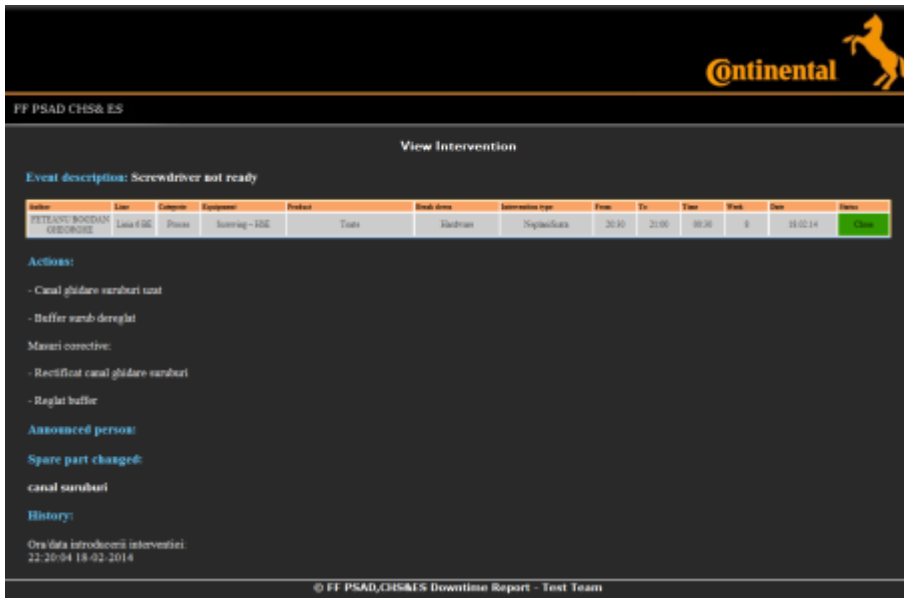
 Continental

Summer Internship Program 2014

Continental Automotive Systems Sibiu – B&S BE Process Group

Activities – B&S & PSS Backend process engineers
- Modification of Web based application that monitors downtime on production floor
- Update maintenance manuals

Summer Internship Program 2014
Continental Automotive Systems Sibiu – B&S BE Process Group

- Update process sheets

- Help engineers with development of new machines

S-list Id. 2596754; Decision date: 10/14/2013 2:30:35 PM; Page 1/22

Continental

Process sheet - front page
Instructiune de lucru - foaie de capat

Linia:	-
Modul:	M2
Operatia:	Celula combinata Baumann(verificare inchidere carcasa, inserare sigurante, testare finala, lipire eticheta pe carcasa, verificarea codului de bare)
Produsul:	USM X95
Echipament:	Celula combinata Baumann
Data actualizarii:	30.09.2013
Revizia curenta:	6
Nume responsabil document:	Anechitei Razvan
Functia:	PE
Nume responsabil avizare FF:	Stoia Daniel
Nume responsabil avizare calitate:	Virgil Mesaros
Cod document:	P_IL_USM X95_105
E-sign no:	2596754

FP_015_4

Summer Internship Program 2014
Continental Automotive Systems Sibiu – B&S BE Process Group

Themes for summer:

- Develop an application that can make the relation between an SAP part   number and the technical characteristics of that part

Fluid Regulator

2.

In stock:1   History   Edit   Delete

CODE: 333825
TYPE: REGULATOR
COMPANY: ASSY
LOCATION: D3 LACQUERING

Knowledge needed:

-Word, Xls, PP,
- Java, PHP, HTML
- Electro-mechanics, PLC programming

Summer Internship Program 2014
Continental Automotive Systems Sibiu – FF PT & ADAS Group

Activities – MES Team

- Tracking and documentation of each single unit through the whole production processes from supplier to the customer based on existing standards (ISO / VDA / TS)

- Active control of production lines and products

- Tracking of all used components

- Archiving of all histories including test protocols and components longer 15 years

- Provides KPIs

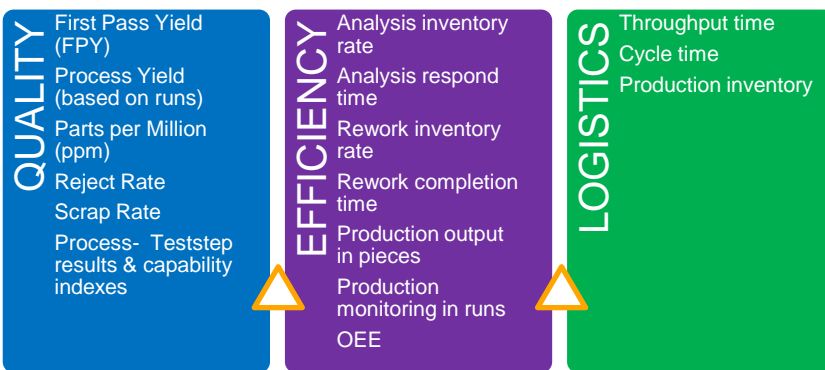| QUALITY	EFFICIENCY	LOGISTICS
First Pass Yield (FPY)	Analysis inventory rate	Throughput time
Process Yield (based on runs)	Analysis respond time	Cycle time
Parts per Million (ppm)	Rework inventory rate	Production inventory
Reject Rate	Rework completion time	
Scrap Rate	Production output in pieces	
Process- Teststep results & capability indexes	Production monitoring in runs	
	OEE	

MES = "Manufacturing Execution System"

MES

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Summer Internship Program 2014
Continental Automotive Systems Sibiu – FF PT & ADAS Group

Theme for summer

- Collect data for DKG250 raw materials for material traceability

- Implement needed application in order to save supplier information's on produced parts

Knowledge needed:

- C++ / CVI programming

DKG250 product

BOM Material List

	Line	Material Part no.	Type	Name / Description
1	DKG 250	A2C3020320000	RAW	pan head screw SF-M4 x 25
2	DKG 250	A2C3074330000	RAW	spacer bushing FIP 4,5x 10x 10mm
3	DKG 250	A2C3119150000	RAW	pcb panel 2-up (F.P.)
4	DKG 250	A2C3119200000	RAW	pcb panel multiple 2-up (R.P.)
5	DKG 250	A2C3154440000	RAW	motor assy
6	DKG 250	A2C5312361500	RAW	adhesive Dow Corning 866
7	DKG 250	A2C5318296200	RAW	diaphragm
8	DKG 250	A2C5321700500	RAW	THERM TRANSFER COMPOUNT GENEVA GF1500
9	DKG 250	A2C5321700500	RAW	THERM TRANSFER COMPOUNT GENEVA GF1500
10	DKG 250	A2C5325409400	RAW	spring
11	DKG 250	A2C5332396000	RAW	pin connector 29P V 3R
12	DKG 250	A2C5332396200	RAW	pin connector 30P V 3R
13	DKG 250	A2C5333112700	RAW	multipoint connector 86P H 2SYS BK
14	DKG 250	A2C5333797700	RAW	pan head screw SF-M4 x 18,00 1297
15	DKG 250	A2C5333838100	RAW	guide pin 3,9000x 23,00 PA 66
16	DKG 250	A2C5335149900	RAW	pcb panel multiple 3-up (R.C.)
17	DKG 250	A2C5337495200	RAW	pcb panel multiple 3-up (F.C.)
18	DKG 250	A2C5344060700	RAW	cover RAP SR
19	DKG 250	A2C5344060800	RAW	electronic assy DIV ZZDIV
	DKG 250	A2C7321120400	RAW	pcb DKG250 Gen2
	DKG 250	A2C8352740000	RAW	pcb 4-lay multiple 3-up (Q.)

Summer Internship Program 2014
Continental Automotive Systems Sibiu – FF PT & ADAS Group
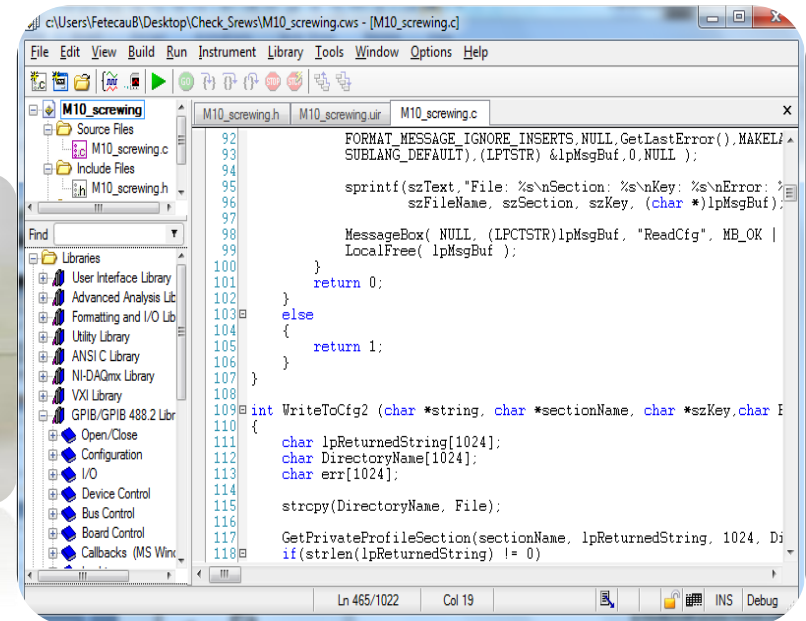
Implementation for Leak Test system "Stand Alone"

Request :

→Drawing
→Mechanical
→Pneumatics
→Electronic
→Programming C

Responsibility :

→ Concept, User interface, NI CVI implementation, testing and validation
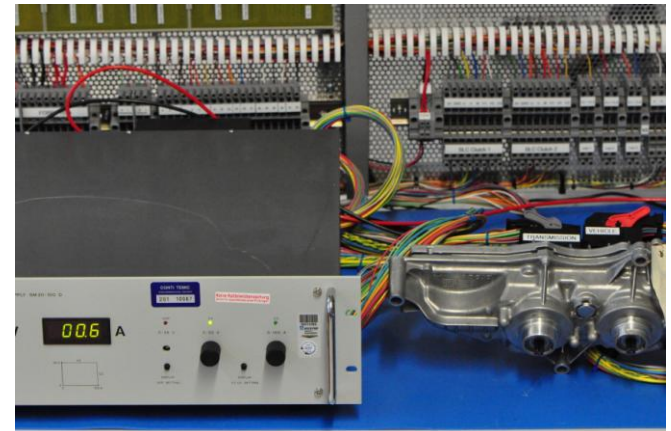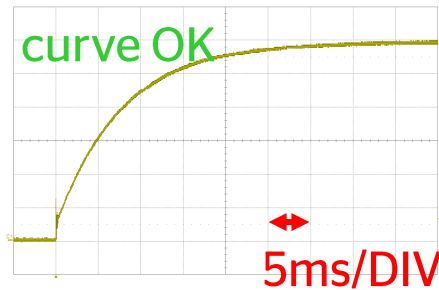→ Calculation of Volume
→Project documentation

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Summer Internship Program 2014
Continental Automotive Systems Sibiu – FF PT & ADAS Group

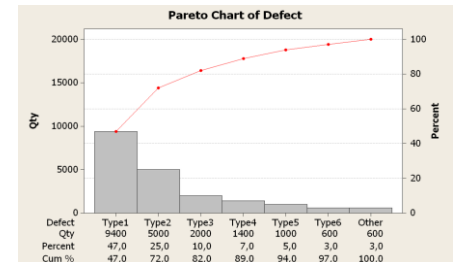### Implementation for Analyze Station for DKG250 Gen2

Request :
→ Analog electronics
→ Digital electronics
→ C programming
→ Statistics
→ Detailed analysis

Principalele responsabilitati:

→ Electronic and software
→ Analyze all parts from production line
→ Change existing station to second generation product HW and SW

curve OK

5ms/DIV

Summer Internship Program 2014
Continental Automotive Systems Sibiu – FF PT & ADAS Group

Activities:

- communicates with the customers in order to meet their demands

- prepare the daily production plan, in the right quality, right time, and right volume

- checks material availability for the production line

- assures the correctness of the stocks

- booking of the customers deliveries, and informing the shipping colleagues

- prepares and follows up the logistics KPIs

- supports the new product launches with planning of all logistics aspects of the new production line, respecting lean manufacturing principles.

- responsible for considering the technical changes in the production plan, and to define the right time for these changes

Fin products

VW, Skoda, Getrag, Scania

Summer Internship Program 2014

Continental Automotive Systems Sibiu – FF PT & ADAS Group

Themes

- Booking of scrap units declared by quality colleagues for all projects

- Creates the deliveries in SAP for all projects

- Checks once a week, if there are discrepancies between SAP stocks and physical inventory performed by the colleagues from production

- Offer support for planning tasks, during absence of one team member, due to holiday

- Support Heijunka project

Knowledge needed:

- Basic MS Office

- English fluent

- Analytical thinking

- Organized person

- Proactive thinking

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Summer Internship Program 2014
Continental Automotive Systems Sibiu – FF PT & ADAS Group

Process DKG250 & Scania

Activities:

• ensures the process capability of processes

• technical trouble shooting process regarding processes

• keep updated all process and quality documentations related to processes

• responsible for the spare part availability for equipments

• production statistics and analysis

• TPM, maintenance of the equipments (preventive, corrective, predictive)

• corrective and preventive actions for technical trouble shooting

Summer Internship Program 2014

Continental Automotive Systems Sibiu – FF PT & ADAS Group

- **Activities for summer**:

- TPM – Total productive maintenance

- Equipment / processes documentation update

- Spare parts inventories

- Technical troubleshooting update / analysis

Requirements:

- Mechanical

- Pneumatics

- Electronics

- Good knowledge of English

- Good knowledge of MSOffice

Thank you
for your attention!