
Continental
The Future in Motion
SUMMER PRACTICE
PROJECTS 2022
TIMIȘOARA
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SELECTION PROCESS FOR SUMMER PRACTICE

1. APPLICATION:
Apply with your CV and a motivation letter, and mention the desired project.

2. ONLINE TECHNICAL TESTS

3. INTERVIEW SESSION (TECHNICAL AND HR)
Technical interview and/or personality tests. You can choose one or more from the different technical knowledge required: ANSI C, microcontrollers, Java, C++, LAbView, Matlab/Simulink, Python, hardware, mechanics, 3D design, Unreal Engine or IT.

TIMELINE

February	The projects are posted on Continental website
February - March	CV selection
February - April	Online Technical Tests
April - May	Technical interview sessions
May - June	HR Interview sessions
June	Final results are communicated to the candidates
July - September	Summer Practice stages


PROJECTS

Contents

SOFTWARE

HARDWARE

MECHANICS

TESTING

SYSTEM ENGINEERING

IT

PRODUCTION

OPTICAL


SOFTWARE

SW ALGORITHM DYNAMIC MODULE TEST

PROJECT DESCRIPTION

Dynamic Testing is defined as a software testing type, which checks the dynamic behavior of the code which is analyzed. The main aim of the Dynamic tests is to ensure that software works properly during and after the installation of the software ensuring a stable application without any major flaws.

The main purpose of the dynamic test is to ensure consistency to the software. Dynamic testing involves testing the software for the input values and output values are analyzed.

Dynamic Module/ Unit Test is an important step regarding ADAS development process. Dynamic Module/ Unit Test requires the execution of the software units. The software shall be executed in test environment: Cantata/ Courage (). Dynamic tests are performed with the knowledge of the module internals (written in C/ C++). This means that the branches and paths in functions and modules must be considered (code coverage).

SPECIFIC TECHNICAL KNOWLEDGE REQUIRED

- ANSI
- C
- C++

NR. OF STUDENTS

20

COACH

Sergiu Deteșan
Viorel Pop-Hotăran
Mihai Zilahi
Marcel Vuia

DEMO APPLICATION FOR AN EMBEDDED LINUX PLATFORM

PROJECT DESCRIPTION

Our group is responsible with creating a modern eLinux platform that offers various services for our application developers such as:
- Bluetooth
- Wi-fi
- GPS
- GSM/4G/5G
- Touchscreen
- USB Connection

We want to develop a demo application to showcase the various functionalities that our platform has to offer. During your summer practice, you will learn to use the APIs to use the technologies mentioned above and you will be part of the development effort for this brand new demo app.

TECHNICAL KNOWLEDGE

- Experience with an OOP language (C++ or Java)
- Some embedded experience would be a plus
- Some Linux experience would be a plus

SPECIFIC TECHNICAL KNOWLEDGE REQUIRED

- C++
- Java.

NR. OF STUDENTS

3

COACH

Dragoș Mureșan

MOBILE APP FOR RIDE SHARING SERVICES (CROSS-PLATFORM)

PROJECT DESCRIPTION
We develop an innovative Ride Sharing Mobile App used by people on their day-to-day travel, that could reduce traffic, pollution, needed parking space and could become a future smart-mobility service offered by Continental.

We're looking for summer practice students who will develop / test / implement new features needed for this App and doing also bug fixing for existing features.

SPECIFIC TECHNICAL KNOWLEDGE REQUIRED
- ANSI C
- Microcontrollers
- C++
- C#
- Java
- Matlab
- Labview
- IT
- Hardware and Mechanics
- React Native/Flutter/Ionic/ReactJS/VueJS/Angular 10+

NR. OF STUDENTS
2

COACH
Alin Raicu

TEST AUTOMATION FOR INSTRUMENT CLUSTERS

PROJECT DESCRIPTION
A solution is needed to have automated functional tests for instrument clusters, covering data on the TFT. Partial solutions exists to ensure this with cheaper equipment but these partial solutions need to be integrated into a complete solution.

This is where we will need support from a new colleague.

TECHNICAL KNOWLEDGE
- Basic scripting
- ANSI C

NR. OF STUDENTS
1

COACH
Marius Juncan

SYNC BETWEEN TEST SPECIFICATION RESULTS AND TEST REPORTS TOOL

PROJECT DESCRIPTION
For software testing area several test cases have automated test reports generated after the test execution is done. What is usually missing is the synchronization between the test reports results and the tests specification results which need to be usually introduced by hand.

The tool would make the connection between an online server that stores all test results and automatically generate and populate the test specification with the same information. This would make the projects gain a lot of time and effort for each test exection.

SPECIFIC TECHNICAL KNOWLEDGE REQUIRED
- Good Python or Java
- Knowledge of GUI (QT or similar) would be a plus;

NR. OF STUDENTS
1

COACH
Mădălina Buzner

INTERFACE FOR LAZY SENSOR DATA EVALUATION IN ROAD MODEL FUSION

PROJECT DESCRIPTION
The Road Model Fusion has polynomial and polyline inputs (from camera, radar, vehicle dynamics component and navigation system). Each input is sampled into a polyline, which is then passed to different functions/objects of the Road Model component.

This proposal is to introduce a sensor interface (abstract class) with a series of methods that provide on demand needed aspects from the sensor data, delaying the polyline sampling until needed, in order to improve the overall runtime and memory usage.

Note: The scope of the Road Model Fusion is to take all available sensor input and provide a comprehensive model of the lanes, road boundaries and, more generally, road course in the surrounding environment.

TECHNICAL KNOWLEDGE
- C++ knowledge of abstract classes
- Basic algorithmic skills (e.g. read a complex algorithm, make minor changes)

NR. OF STUDENTS
1

COACH
Flavius Gligor

LINE TO LINE ASSOCIATION METHODS FOR ROAD MODEL FUSION

PROJECT DESCRIPTION

Sensor data, as well as internal and output data, are represented as polylines in the Road Model Fusion. The scope of the project is to investigate (that is find and evaluate) association methods for polylines starting from a given literature.

Note: The scope of the Road Model Fusion is to take all available sensor input and provide a comprehensive model of the lanes, road boundaries and, more generally, road course in the surrounding environment. The fusion algorithm contains of:

1. a prediction step, where the road model output from the previous step is predicted to the current execution time,
2. an association step, where measured input data is associated to existing features (e.g. a camera lane marker is associated to a lane boundary from the previous step)
3. an update step, where the output from step 1 is updated with the current sensor input according to step 2.

SPECIFIC TECHNICAL KNOWLEDGE REQUIRED

- C++
- Matlab
- Basic algorithmic skills (e.g. read a complex algorithm, make minor changes)

NR. OF STUDENTS

1

COACH

Flavius Gligor

SECURE SOFTWARE UPDATE EMULATION ON WINDOWS

PROJECT DESCRIPTION

In the current connected trucks, the Secure Software Update is a key feature which help customers depoy the new software into the ECUs.

The purpose of the Secure Software Update Emulation on Windows is to create an environment that can be used to create prototypes for different customers in an fast and easy manner.

Main Features:
1. Create the software modules that handle the Secure Software Update.
2. Using an Windows based environment test the software modules.
3. Create module specification and integration hints for the developed software.

SPECIFIC TECHNICAL KNOWLEDGE REQUIRED

- C
- microcontrollers
- flash memory
- CAN bus
- symmetric and asymmetric cryptographic algorithms .

NR. OF STUDENTS

1

COACH

Florin Posorovaschi

MFST (MULTI - FUNCTIONAL SMARTPHONE TERMINAL) AND NFC (NEAR FIELD COMMUNICATION) FUNCTIONS DEMONSTRATOR

PROJECT DESCRIPTION

The purpose of this project is to define and implement together with the engineering team a prototype which can be used to demonstrate MFST/NFC functions possible inside a vehicle:

- Secure Access and Start of the car using a smartphone. Communication channel between car and smartphone is NFC and this should be secure.
- Bluetooth and WiFi pairing via NFC
- Android Beam functions (transmission of multimedia content from phone to car via NFC)
- Use cases for wireless charging

The phases of the summer practice project are:
- Definition of the concept (use case scenarios, data flow, communication channels).
- Implementation of Car simulator on a PC
- Implementation of a smartphone application
- Implementation of the software on embedded hardware.

TECHNICAL KNOWLEDGE

- C
- microcontrollers

Optional: Java, C#
- Android development is a plus
- web application servers (eg.: Apache Tomcat) is a plus

NR. OF STUDENTS

1

COACH

Stani Gabriel

DEVELOPMENT OF ROBUST TESTING ENVIRONMENT FOR INSTRUMENT CLUSTERS

PROJECT DESCRIPTION

In Heat CE, the testing of instrument clusters can be done via EOL (end of line) production test routines in development phase, prototyping phase and production phase.

The main advantage of testing via an EOL solution is the possibility to create reusable content for the users of the system.

The topic of the project is creating a test management system that is capable of autonomously running tests on multiple instrument clusters, interact with the devices, save test reports and create statistics.

TECHNICAL KNOWLEDGE

- C
- Advanced microcontrollers

NR. OF STUDENTS

1

COACH

Stefan Sanatescu

PRODUCTION TEST SOFTWARE - MICROCONTROLLER MANAGEMENT STACK

PROJECT DESCRIPTION

In VNI CE, the testing of instrument clusters can be done via EOL (end of line) production test routines in development phase, prototyping phase and production phase.

The main advantage of testing via an EOL solution is the possibility to create reusable content for the users of the system.

The topic of the project is developing a software component that manages the host microcontroller:
- Clocks and timing
- Controller variants and information
- Peripheral lists
- Customized peripheral information
- RAM and NvM
- Registers

SPECIFIC TECHNICAL KNOWLEDGE REQUIRED

- C
- Advanced microcontrollers

NR. OF STUDENTS

1

COACH

Stefan Sanatescu

TOOL FOR AUTOMATIC TEST GENERATION

PROJECT DESCRIPTION

The tool will be used in the new Electric Mobility Platform of VW cars

It shall facilitate the automatic tests creation by generating the test using the inputs/outputs values described in the customer requirements.
This will help increasing of the automatic test coverage that will lead to a better quality of the product.

TECHNICAL KNOWLEDGE

- C++ knowledge of abstract classes
- Basic algorithmic skills (e.g. read a complex algorithm, make minor changes)

SPECIFIC TECHNICAL KNOWLEDGE REQUIRED

- Visual C++ or Java
- ANSI C
- Python

NR. OF STUDENTS

1

COACH

George Onea

TOOL FOR OEM DELIVERY REPORTS GENERATION

PROJECT DESCRIPTION
The tool will be used in the new Electric Mobility Platform of VW cars

The customer needs reports regarding the actual status and the content of the software products.
The tool needs to collect data from tools and excel files and automatic generates reports used by the SW Product Manager.

TECHNICAL KNOWLEDGE
- Visual basic or Python / ANSI C
- C++
- C#
- Java

NR. OF STUDENTS
1

COACH
George Onea

MODEL BASED DEVELOPMENT - MATLAB

PROJECT DESCRIPTION
Matlab model integration in Autosar project:

- Integrate the model
- Perform tests
- Perform analysis on the failed tests

TECHNICAL KNOWLEDGE
- ANSI C - advanced
- Matlab – basic

NR. OF STUDENTS
1

COACH
Dorin Ogner

CANOE COMMUNICATIONS CONFIGURATION

PROJECT DESCRIPTION

Develop CANoe configuration for BCM Integration purposes with the following goals:

- All signals can be changed by panel
- Integrate Diag Status information in a CANoe based status panel
- Maintain and adapt configuration according to immediate needs

TECHNICAL KNOWLEDGE

-ANSI C - advanced
- CAN knowledge – basic
- LIN knowledge – basic

NR. OF STUDENTS

1

COACH

Dorin Ogner

AUTOMATED HIL ENVIRONMENT FOR ACCESS FUNCTION SW

PROJECT DESCRIPTION

The target of the project is to develop test scripts for HIL (Hardware In the Loop) test environment for embedded systems, specific to Passive Start and Entry functionality and Remote Keyless Entry functionality.

The following steps shall be followed:

- Learning the script language
- Learning car access software
- Learning test techniques

Implementation of various automated tests for car access generic SW components.

TECHNICAL KNOWLEDGE

- C
- Optional: Microcontrollers

NR. OF STUDENTS

2

COACH

Simona Trif

PROCESS AUTOMATION USING POWER AUTOMATE

PROJECT DESCRIPTION
Define and implement automated processes in Systems Discipline, by connecting different popular Microsoft apps and services, to improve the efficiency and time of reactions.

You will work with SW robots (e.g. Office Power Automate) to implement automated actions based on different triggers.
For example, we would like to automate the onboarding process of new employees:

- Guide the new employee thru onboarding process
- Assign trainings
- Monitor trainings progress

TECHNICAL KNOWLEDGE
- Algorithmic thinking
- basic knowledge in C/C++, Java.
- We look for passioned student to automate everything.

NR. OF STUDENTS
1

COACH
Ciprian Chedves

VISUAL TOOL TO CREATE AUTOMATED JIRA TASKS FROM CONFLUENCE STORED DATA

PROJECT DESCRIPTION
Visual tool to create automated JIRA tasks from Confluence table.

Jira is a tool used for issue tracking and project management.
Confluence is a team workspace where knowledge and collaboration meet.

TECHNICAL KNOWLEDGE
- C#,
- Java
- Flexible to work with different technologies.

NR. OF STUDENTS
1

COACH
Ciprian Chedves

MIGRATE ME

PROJECT DESCRIPTION

The main scope of this project is to support migration of CVS projects from IMS Integrity & Source to the new toolchain (Jira&Git).

Main requirements:

- Keep as much data as possible from the old system
- Keep important history and change author
- Keep traceability between changes and versions
- Keep system baselines and their traceability with other tools

Update traceability with other tools (e.g. DOORS)

TECHNICAL KNOWLEDGE

- Java development
- Scripting languages (e.g. pearl, batch scripting, etc.) – phyton is a plus,
- Object Oriented Programming

NR. OF STUDENTS

4

COACH

Monica Grigore


HARDWARE

ANTENNA DESIGN FOR 4G/5G ANTENNAS IN TELECOM-MUNICATION CONTROL UNITS

PROJECT DESCRIPTION
Design and measurements of RF stages used in our automotive wireless products, including transmitters, receivers and transceivers using UHF and Bluetooth technologies. Design broadcast antennas with very good decoupling for FM and DAB services using metal printing technologies (FR4 or plastic substrates).

Design of 4G and 5G antennas for wireless telecommunication control units using 3D printing technology in order to obtain a cost-effective design.

TECHNICAL KNOWLEDGE
- Matlab, hardware, Ansys HFSS (if possible) or other RF simulation tools
- RF measurement equipment (Vector Network Analyzer, Spectrum Analyzer, Signal Generator)
- Radio Frequency theory, antenna theory
- Good understanding and experience with wireless designs including antennas. - Good understanding and experience with wireless measurements.
- Some experience in RF/antenna design and simulation would be a plus.

NR. OF STUDENTS
2

COACH
Bejinaru Razvan
Maritescu-Lungocea Manuel

SUPPORT VW/BMW TESTING ACTIVITIES

PROJECT DESCRIPTION
Support various activities (HW Tests, FEA) in HW Team for different projects (VW, BMW, etc.).

TECHNICAL KNOWLEDGE
- Laser radiation
- Optical lenses
- Basic geometrical optics

SPECIFIC TECHNICAL KNOWLEDGE REQUIRED
- Basic knowledge of electronics
- Basic knowledge of embedded systems. Microcontrollers, hardware

NR. OF STUDENTS
1

COACH
Ion Enasel

USB IMAGE SENSOR CONTROL AND ACQUISITION MODULE (USB ISCAM)

PROJECT DESCRIPTION

The project aims to develop a solution for enabling the side by side evaluation of the image sensors available on the market.

The solution consists of a PCB for acquiring images from the image sensor and sends it to the PC via USB.

The project is split in two sections: HW and SW.
HW development will be consisting of selecting the electronic parts, schematic and layout design, manufacturing and testing of the final product.
SW is split in embedded coding of the video processor and GUI design.

TECHNICAL KNOWLEDGE

- HW (student 1):
    - hardware
    - microcontrollers
    - power converters
    - electronic packaging
    - high speed design

- SW (student 2):
    - -ANSI C
    - microcontrollers
    - C++,
    - drivers
    - USB video class

NR. OF STUDENTS

2

COACH

Gabriel Avram


MECHANICS

FIXING OF LARGE DISPLAY WITH ADHESIVE TAPES

PROJECT DESCRIPTION

The scope of this project is to develop a concept, to design and produce the necessary parts and equipment, for testing a large display fixed with the help of adhesive tapes. The student will have the opportunity to learn the clusters basics, to make CAD design, to get in contact and to see how the sample shop/machines are working.

As well the student need to get in contact with adhesive tape supplier and together to choose the best tape for the application.
At the end the student can take part at the acquirement testing, and result analysis.

TECHNICAL KNOWLEDGE

- The student should have finished second year of Technical University

SPECIFIC TECHNICAL KNOWLEDGE REQUIRED

- Catia or Creo

NR. OF STUDENTS

1

COACH

Daniel Stefanut

MOUNTING AND ROTATING UNIT FOR AUTOMOTIVE RADAR MEASUREMENTS

PROJECT DESCRIPTION

In order to perform several measurements and test trials with the Continental automotive radars a complete specific setup is needed.

The complete setup itself is composed of several hardware, mechanical and software components.

One of the most important hardware/mechanical components is the radar mounting and rotating setup unit (further called RU).

The RU must perform the following main tasks:
- at least 2 axis planar movements (X and Y axis – azimuth and elevation);
- automated remote control of the movements;
- feedback of the positioning on the 2 axis;
- possibility for fine adjustment of the radar bracket;
- HMI for the RU control

TECHNICAL KNOWLEDGE

- Catia V5
- manufacturing of mechanical parts (diecast, sheetmetal and plastic parts)
- tooling for manufacturing processes (would be an advantage)
- English – medium level

NR. OF STUDENTS

3

COACH

Teofil Aioanei
Adrian Cotuna
Alex Popa

DATA PROCESSING AND MATHEMATICAL MODELLING FOR HAPTIC SYSTEMS

PROJECT DESCRIPTION
Haptics can be found in several human-machine interfaces, such as touchpads and control panels. Their purpose is to give the driver a force-feedback reaction to his finger, so the driver is informed that the car system got his command, without tacking the eyes from the road.

First such a haptic system needs to be modelled mathematically to reduce the number of sample steps that is build. Then when samples are built, they are characterized by measuring certain outputs. Measured data are then processed and evaluated by scripts that need to be developed.

TECHNICAL KNOWLEDGE
- mathematics
- statistics
- mechatronics
- Matlab (required), Creo (optional)

NR. OF STUDENTS
1

COACH
Zanzinger Raluca Elena

USB IMAGE SENSOR CONTROL UNIT (USB ISCAM)

PROJECT DESCRIPTION
The project aim is to develop mold injected parts for a USB Control unit in collaboration with HW colleagues.

The newly created parts must ensure the necessary protection of the electrical components and provide a good heat dissipation solution.

TECHNICAL KNOWLEDGE
- Mechatronics or Fine mechanics student with average knowledge of CAD programs (Creo, CATIA).
- Average knowledge of tolerance calculations and design of plastic injected parts is required.
- Good knowledge of English is mandatory

NR. OF STUDENTS
1

COACH
Octavian Lescu


TESTING

AUTOMATIC TESTING OF AN AIRBAG CONTROL UNIT

PROJECT DESCRIPTION

As a student in Passive Safety Test Group you will learn about Airbag Control Unit, get in contact with the latest test equipment on the market, use SW functions to control complex/Real Time measuring equipment. Inside our team we have several exciting projects open for you:

- develop HW & SW tools that enable automatic test activities for the Airbag Control Unit.
- develop automatic tests using C# and the preexisting CFramework.
- maintain & develop Excel macros for test result evaluation

TECHNICAL KNOWLEDGE

- ANSI C
- C#
- hardware
- Good programming skills

= Basic electronics & uController know-how

SPECIFIC TECHNICAL KNOWLEDGE REQUIRED

- C++
- C#
- IT
- Hardware and mechanics

NR. OF STUDENTS

2

COACH

Murgulescu Antonie

BUZZ, SQUEACK AND RATTLE TESTING OF CONTINENTAL AUTOMOTIVE – USER EXPERIENCE PRODUCTS

PROJECT DESCRIPTION

In vehicle components must emit low noises for a high quality driving experience. Even when car runs on the highway or you just want to listen a good song on your Hi-Def sound system in the car, the experience need to be at highest standard. And for this Continental tests its products for so called BSR (Buzz, Squeack and Rattle).

Project's objective is testing for BSR Continental Automotive User Experience products into a hich class acoustic environment and help Continental sound engineer with client test reporting.

BK Connect tutorials

TECHNICAL KNOWLEDGE

- basic knowledge in mechanics and acoustic
- IT
- hardware and mechanics

NR. OF STUDENTS

1

COACH

Florian Homeag

VIBRATION TESTING – ALL CONTINENTAL AUTOMOTIVE PRODUCTS

PROJECT DESCRIPTION

All electronic components must ensure their functionality for the whole lifetime of a car.

Even the car runs on smooths highways or you're drinving off road, the driving experience must be at highest class.

And for this Continental tests its products for vibration exposure.
Project's objective is testing for vibration all Continental Automotive products into a hich class laboratory and help Continental vibration engineer with client test reporting.

Vibration Research webinars

TECHNICAL KNOWLEDGE

- basic knowledge in hardware and mechanics
- IT

NR. OF STUDENTS

2

COACH

Florian Homeag

IMPLEMENTATION OF 3D DIGITAL IMAGE CORRELATION TEHNICS FOR MATERIAL TESTING IN QL TIMISOARA

PROJECT DESCRIPTION

DIC (Digital Image correlation) is a non-contact optical method to measure object's deformation.

Project's objective is to perform various material test methods (tensile, shear, 3point bending) on a tensile/ compression machine and measure the part's deformations with a GOM Aramis system and to determine the optimal system parameters for each test type.

More info about the system:
Webinar – ARAMIS for Materials Testing - YouTube

TECHNICAL KNOWLEDGE

- basic knowledge in hardware/mechanics and Strength of materials
- IT

NR. OF STUDENTS

2

COACH

Ailinei Ionut

RELIABILITY TESTING – ALL CONTINENTAL AUTOMOTIVE PRODUCTS

PROJECT DESCRIPTION

We simulate the real-life conditions that each component must endure through extreme weather conditions, corrosion environments, etc. Our job is to make sure the tests are performed according to international standards, reported correctly, and following well rounded processes and timings.

You will be handling the laboratory equipment and conduct tests reporting findings to a laboratory engineer. The goal is to optimize lab procedures and succeed in producing reliable and important results that can be used to make a difference.

TECHNICAL KNOWLEDGE

- Basic knowledge in mechanics, electronics, experience in operating electrical and non-electrical laboratory equipment

NR. OF STUDENTS

4

COACH

Sorin Constantin
Alexandru Ciobanu

testing


SYSTEM ENGINEERING

LIGHT INTENSITY CONTROL

PROJECT DESCRIPTION

A system to control light intensity shall be developed.
The light intensity shall be read with a sensor in an area of interest.The user shall decide which light intensity is needed in the area of interest and request the change for light intensity.

The system shall change the light intensity by controlling light panels.

TECHNICAL KNOWLEDGE

- ANSI C
- microcontrollers
- C++
- C#
- Java
- Matlab
- Labview
- IT
- hardware and mechanics

NR. OF STUDENTS

2

COACH

Fodor Elena

YAW/PITCH/ROLL ANGLE ADJUSTER

PROJECT DESCRIPTION

A system to adjust yaw, pitch and roll angles of an alignment target shall be designed and implemented. The system shall control the target orientation with a resolution of 0.5 degrees on each axis.

The system shall be able to identify also the initial angles at system start-up.

TECHNICAL KNOWLEDGE

- ANSI C
- microcontrollers
- C++
- C#
- Java
- Matlab
- Labview
- IT
- hardware and mechanics

NR. OF STUDENTS

1

COACH

Fodor Elena

3D OBJECT DETECTION AND TRACKING USING MACHINE LEARNING

PROJECT DESCRIPTION
Modify, merge, implement neural networks to detect traffic participants (like pedestrians, cars, trucks, bikes) necessary for autonomous driving.

TECHNICAL KNOWLEDGE
- Python
- machine learning
- datasets
- Keras
- PyTorch
- IDE: PyCharm

NR. OF STUDENTS
2

COACH
Cristian Bacican

FUSION ALGORITHM CONTRIBUTIONS (UNIT TESTING, VISUALIZATION, ETC.) IN MATLAB

PROJECT DESCRIPTION
Contribution to our state of the art camera – radar fusion algorithm implemented in Matlab.

TECHNICAL KNOWLEDGE
- Matlab
- general programming
- Simulink is a plus

NR. OF STUDENTS
2

COACH
Mihai Miklos

PRODUCT INTEGRATOR BASICS

PROJECT DESCRIPTION
Basic knowhow for a product integrator:

- HUD – structure and functionality
- Basic knowledge for HUD: software, hardware, mechanics, optics, system
- HUD assembly and verification
- Tools: Canoe11 and UTAS 5

TECHNICAL KNOWLEDGE
- Basic understanding of Software, Hardware and Mechanics
- microcontrollers

NR. OF STUDENTS
2

COACH
Delia Toader

INCABINRADAR COVERAGE INVESTIGATION SYSTEM

PROJECT DESCRIPTION
InCabinRadars will be used in future to monitor the passengers and trigger alarms in case a child was left unattended in the car and/or seat belt reminder. Because of the closed environment present inside a car the radar waves are going to reflect multiple times making it nearly impossible to predict the coverage via simulations (with actual GPUs and solvers/models). Therefore, there is a need to evaluate experimentally the coverage of a given radar. This can be achieved if a known moving object (child simulator) is placed inside the car to generate micro dopplers and a radar is configured to acquire data with the aim to detect those micro-dopplers. The level of how well the micro-dopplers can be "detected" will indicate the level of coverage.

The project consists of the following building blocks:
1. Configure the radar with the right settings
2. Interface the raw data interface of the radar from PC. This can be either over CAN-FD or UART depending on the radar used for data acquisition. This interface will be either in C/C++ using DLLs or in MATLAB.
3. Post process acquired data in MATLAB
4. Develop a GUI for results visualization

TECHNICAL KNOWLEDGE
- ANSI C
- microcontrollers
- C++
- C#
- Java
- Matlab
- Labview
- IT
- hardware and mechanics

NR. OF STUDENTS
1

COACH
Zoltan Szabo

TEMPERATURE CONTROLLED HEATER FOR IMAGE SENSOR CHARACTERIZATION

PROJECT DESCRIPTION
Design of a temperature controlled closed-loop system for the characterization a CMOS image sensor noise vs. temperature.

TECHNICAL KNOWLEDGE
- MATLAB programming
- UI design
- closed-loop control theory
- measurement equipment electrical design
- thermal measurements
- semiconductor characterizatio
- hardware and mechanics

NR. OF STUDENTS
1

COACH
Botau Aurelian

IDENTITY AND ACCESS MANAGEMENT

PROJECT DESCRIPTION
IAM Documentation Review
Reporting using LDAP Browsers/ Reporting Servers
Monitoring Drivers in IManager
Testing workflows

TECHNICAL KNOWLEDGE
- English

NR. OF STUDENTS
1

COACH
Juratu Raluca

ASSET MANAGEMENT

PROJECT DESCRIPTION
Cleanup, asset management migration to new tool

TECHNICAL KNOWLEDGE
-English
- ANSI C
- microcontrollers
- C++
- C#
- Java
- Matlab
- Labview
- IT
- hardware and mechanics

NR. OF STUDENTS
1

COACH
Lidia Ciurel


PRODUCTION

PROCESSING PROVE OF DELIVERIES RELATED TO SHIPMENTS

PROJECT DESCRIPTION

Prepare and process all the documents related to shipments - EXW/FCA/DAP delivery terms, according with legislation in force.

TECHNICAL KNOWLEDGE

- ANSI C
- microcontrollers
- C++
- C#
- Java
- Matlab
- Labview
- IT
- hardware and mechanics.
- Commercial and customs legislations will be an advantage.

NR. OF STUDENTS

1

COACH

Ovidiu Varga


OPTICAL

OPTICS AND METROLOGY LABORATORY SUPPORT

PROJECT DESCRIPTION
Tracking and defining system for incoming and outgoing measured devices in the optical laboratory. Support for measurement setups (standardize fixtures and improve the setups of the optical stands). Assist and perform optical measurements.

TECHNICAL KNOWLEDGE
- good skills in Office 365, Excel
- good technical and practical skills

NR. OF STUDENTS
1

COACH
Rus Robert

HUD OPTICAL MEASUREMENT SPECIALIST

PROJECT DESCRIPTION
Basics in HUD optical measurements:
- HUD structure and functionality
- HUD optical performance
- HUD optical measurements
- Tools: use LMK,
- practice in optical Lab

TECHNICAL KNOWLEDGE
- Basic technical knowhow
- hardware and mechanics

NR. OF STUDENTS
1

COACH
Vasile Saracut

HUD OPTICAL DESIGNER SPECIALIST

PROJECT DESCRIPTION

Basics in HUD optics:
- HUD structure and functionality
- HUD optical performance
- HUD optical design - basic
- Tools: use Speos or Zemax

TECHNICAL KNOWLEDGE

- hardware and mechanics basics
- optical knowhow

NR. OF STUDENTS

1

COACH

Vasile Saracut

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Continental
The Future in Motion

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