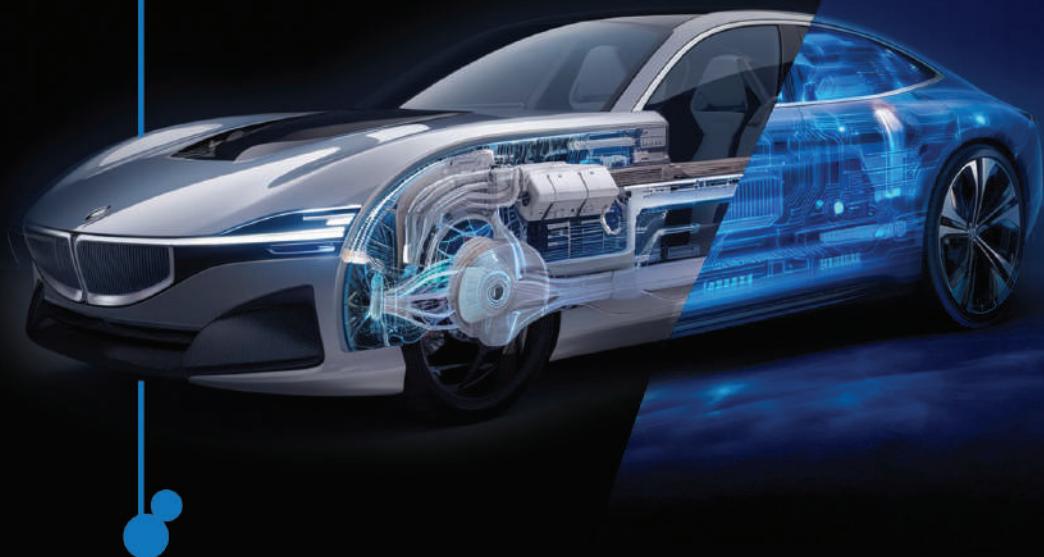


PFE BOOK



2024
2025

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COMPANY OVERVIEW

ABOUT US

At Primatec, we have skilled, dynamic engineers united by a common vision to shape the future. Our passion is in delivering cutting-edge, cost-effective, and reliable hardware and software solutions tailored to revolutionize ECU testing and development standards in the automotive industry.

PRIMATEC AT A GLANCE

+10 years

Experience of Engineering

+40 000 k

Covred customer requirements

+500

Employing Engineers

+100 000 k

Automated test scenarios

AREA OF EXPERTISE



Vehicule Body and Comfort Electronics Testing

Confort functions
Energy managment
Interior and exterior Light

Car Access
Entertainment
Car sharing



In-Vehicle Networks Testing

Gateways
Automotive Ethernet
CAN/CAN FD

FlexRay
LIN



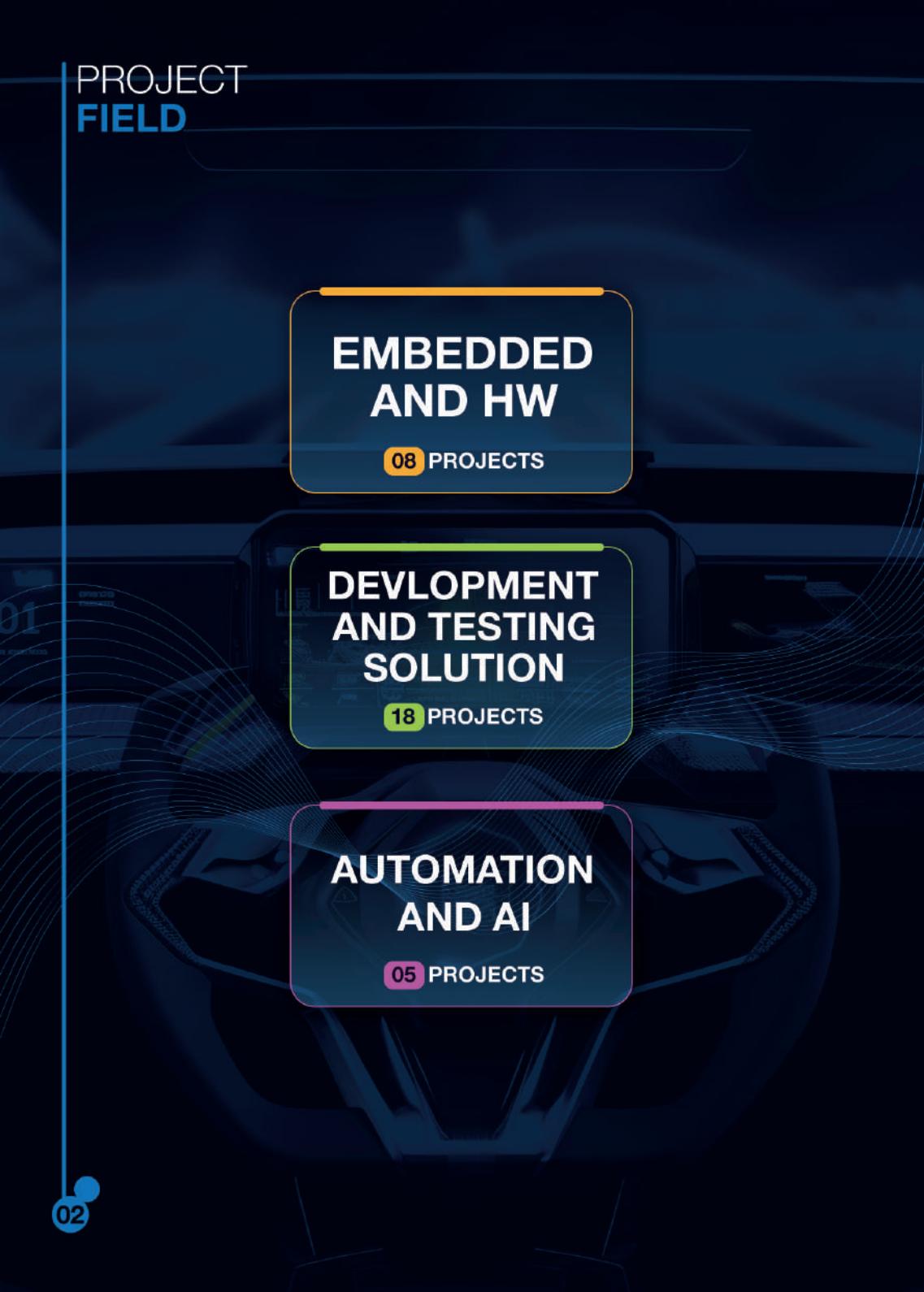
Functional Safety and Security Testing

Hazard analysis and risk assessment
ASILratings

Technical Safety Requirement analysis
and testing

Safety processes and documentation
management in compliance with
ISO-26262 standard

PROJECT
FIELD



EMBEDDED AND HW

08 PROJECTS

DEVELOPMENT AND TESTING SOLUTION

18 PROJECTS

AUTOMATION AND AI

05 PROJECTS

02

PROJECT LIST

EMBEDDED AND HW

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EMBEDDED AND HW

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EMBEDDED AND HW

PROJECT 01

EMBEDDED
AND HW

Development of Custom Tiny Linux to Host Android OS

OBJECTIVES

Develop a custom Tiny Linux distribution optimized for hosting the Android OS on top of a hypervisor. The goal is to design a minimal Linux environment that efficiently runs the Android OS, ensuring compatibility, performance, and smooth operation while minimizing resource overhead.

TECHNOLOGY



KEYWORDS

Rust, C++, Embedded Linux build tools, Android VM, Hypervisor, Virtualization, Shell Scripting

REQUIRED TASKS

- Design and build a minimal custom Tiny Linux distribution for Android OS hosting
- Integrate and optimize hypervisor support for efficient hosted OS management
- Test and validate performance, compatibility, and stability with Android OS
- Document the process, optimizations, and configuration for future use and development

 Analytical and Problem Solving skills, good programming skills, familiar with Linux

 Computer Science Engineering , Embedded Systems Engineering

 4 - 6 Months

02 CANDIDATS

Development of Custom Debugging Feature for AOSP Projects

OBJECTIVES

Develop custom debugging features to enhance the tracking of execution flows for specific modules and functions within AOSP projects. The internship involves leveraging reverse engineering techniques to better understand and debug Android systems.

TECHNOLOGY



GDB

KEYWORDS

Debugging Tools, GDB, AOSP, C++, GDB, Reverse Engineering, Android, Linux, Shell Scripting

REQUIRED TASKS

- Implement debugging tools to track execution flows in specific AOSP modules
- Apply reverse engineering techniques for understanding module and function behavior
- Develop advanced debugging features such as conditional breakpoints and trace points
- Test and document the developed debugging features for integration into AOSP environments

 Analytical and Problem Solving skills, good programming skills, familiar with Linux

 Computer Science Engineering , Embedded Systems Engineering

 4 - 6 Months

02 CANDIDATS

Android Virtual Machine (VM) Handling and Monitoring Dashboard

OBJECTIVES

Design and implement a comprehensive dashboard to handle and monitor Android Virtual Machines (VMs). The dashboard will provide run time information about the VMs and expose an API for future integration and enhancements in Android-based VM environments.

TECHNOLOGY



KEYWORDS

Virtualization, Android, Virtual Machines, Monitoring, Dashboard, API, CrosVM, KVM, AOSP, GUI, Linux

REQUIRED TASKS

- Design and implement a user-friendly dashboard for VM monitoring
- Develop APIs for future integrations and handling of VMs
- Analyze and configure network setups in Android VMs
- Display run time data such as resource utilization and status of Android VMs etc.
- Document the dashboard and its functionalities for future developments

Analytical and Problem Solving skills, good programming skills, familiar with Linux

Computer Science Engineering , Embedded Systems Engineering

4 - 6 Months

02 CANDIDATS

Design and Implementation of Virtual SOME/IP communication application

OBJECTIVES

This Project consists of the design and implementation of Virtual "SOME/IP communication simulator" for Linux targets.

This tool should offer the user the ability to control and manage locally the traffic through a "GUI application (using C++ and QT interface) and/or remotely via a standard web navigator.

This application should be implemented using vsomeip library which is an open-source stack and take as input the required configuration to establish the required network configuration and ensure Client / Server SOMEIP communication.

TECHNOLOGY



OOP

KEYWORDS

C++, shell script

REQUIRED TASKS

- Topic Familiarization: Study the SOME/IP protocol and its use in automotive communication and Vsomeip library exploration and familiarization
- Implement a module to parse configuration files and extract necessary configuration data (e.g., interfaces, methods, events).
- Map the extracted data to configure the SOME/IP communication.
- SOME/IP Communication Module: Design the client-server architecture using SOME/IP Design a simple Graphical User Interface to configure and display communication results report



OOP, C++, Network,
Linux OS



Computer Science
Engineering



4 - 6 Months

02

CANDIDATS

PROJECT 05

EMBEDDED
AND HW

Design and Implementation of a Full Virtualization Application for CAN Communication

OBJECTIVES

The project consists of developing a C++ application that implements the full CAN stack according to ISO standards. To enhance the user experience, a Qt GUI will be developed to simulate nodes, visualize CAN message traffic, and manage protocol settings. Additionally, Wireshark will be integrated into the project for packet capture and analysis, allowing for real-time monitoring of the CAN communication.

TECHNOLOGY



OOP

KEYWORDS

C++, shell script

REQUIRED TASKS

- Research and Planning :** Study the CAN protocol and its advanced version, the virtual CAN, the configuration files and AUTOSAR standards.
- Design and Implementation :** Develop and implement an application that fully simulates the CAN protocol across all its layers.
- Configuration :** Create a flexible JSON-based configuration system to define node properties.
- Testing and Validation :** Test the application with various configurations and implement unit tests.
- Graphical User Interface :** Create a Qt-based GUI to simulate CAN nodes, visualize communication, and configure the system.

Analytical and Problem-Solving , Programming , Familiar with Linux

Computer Science Engineering , Embedded Systems Engineering

4 - 6 Months

02 CANDIDATS

Automated Application Deployment with CI/CD and Kubernetes

OBJECTIVES

Build a CI/CD pipeline that automates testing, building, and deploying an application on a Kubernetes cluster. Changes in the code trigger the pipeline, ensuring continuous integration and deployment.

TECHNOLOGY



KEYWORDS

DevOps, CI/CD, Kubernetes Cluster, Pipeline, Continuous Integration

REQUIRED TASKS

- Design and develop a diagnostic application using C++ programming language.
- Use GitLab CI, or GitHub Actions to automate the process.
- Deploy to Minikube for local Kubernetes testing.
- Docker for containerization.
- Prometheus and Grafana for monitoring.
- Implement rollback for failed deployments.
- Comparison of the Proposed Solution with Existing Solutions



OOP, Linux OS, Automotive, DevOps



Computer Science Engineering



4 - 6 Months

01 CANDIDAT

Automated Application Deployment With GitOps and Kubernetes

OBJECTIVES

Create a GitOps pipeline that automates application deployment on a Kubernetes cluster using Git as the source of truth. Any changes in Git trigger automatic updates in Kubernetes, enabling continuous delivery.

TECHNOLOGY



KEYWORDS

GitOps, CI/CD, Kubernetes Cluster, Pipeline, Continuous Integration

REQUIRED TASKS

- Create a diagnostic tool using C++ for system analysis and troubleshooting.
- Set up Git repository with Kubernetes YAML configuration files.
- Deploy application manually on Minikube as a first step.
- Install GitOps tool (FluxCD or ArgoCD) and configure it to monitor Git for changes.
- Automate deployments and test the workflow by pushing updates to Git.
- Monitor application using Prometheus/Grafana, and set up alerting
- Comparison of the Proposed Solution with Existing Solutions

OOP, Linux OS, Automotive, DevOps

Computer Science Engineering

4 - 6 Months

01 CANDIDAT

PROJECT 08

EMBEDDED
AND HW

Development of Virtual Testing and Validation Tool for AUTOSAR Applications

OBJECTIVES

The objective of this project is to develop a dynamic and configurable virtual validation tool for testing and validating AUTOSAR applications. The tool will simulate key automotive communication protocols (SOME/IP, CAN, LIN) and provide a user-friendly interface for testers to define custom test scenarios.

TECHNOLOGY



KEYWORDS

C++, Python, Linux,
Automotive Protocols,
Virtualization, Git

REQUIRED TASKS

- Understanding the AUTOSAR Architecture and Communication Protocols.
- Propose and Design the Architecture of the Validation Tool.
- Develop and Implement Core Components of the tool.
- Test and validate the developed tool.

Analytical and Problem-Solving , Programming , Familiar with Linux

Computer Science Engineering

4 - 6 Months

01 CANDIDAT

DEVELOPMEN AND
TESTING SOLUTION



**DEVELOPMENT
AND TESTING
SOLUTION**

PROJECT 01

DEVELOPMENT
AND TESTING
SOLUTION

Ethernet Traffic Generator

OBJECTIVES

An Ethernet traffic generator is used to test network devices, evaluate network performance, and validate network infrastructure by generating and analyzing Ethernet traffic. It's essential for validating how network equipment (like switches, routers, and firewalls) handles different levels and types of traffic.

TECHNOLOGY



KEYWORDS

Network Performance Testing ,Traffic Simulation , High-Speed Ethernet (10G) , Packet Loss

REQUIRED TASKS

1. Research and Planning:
 - Research on existing Tools and Equipment (Hardware Setup, Configure network devices).
 - Define Key Metrics: Establish the metrics to measure the Performance.
2. Developing a skeleton NDIS filter Compiling and Installing.
3. Testing results and compare with existing tools.
4. Improve and reporting the result.

Telecommunications, Network Engineering

Computer Science Engineer

4 - 6 Months

01 CANDIDAT

PROJECT 02

DEVELOPMENT
AND TESTING
SOLUTION

Ethernet Switch Traffic Analyzer

OBJECTIVES

Understand network behavior, detect anomalies, and improve overall network performance

TECHNOLOGY



KEYWORDS

Ethernet Switch
Traffic Analysis

REQUIRED TASKS

- Store collected data in a database for analysis.
- Analyze collected metrics to identify trends and patterns.
- Generate reports summarizing network Traffic.



Network Engineering



Computer Science
Engineer



4 - 6 Months

01 CANDIDAT

PROJECT 03

DEVELOPMENT
AND TESTING
SOLUTION

Automotive Diagnostic Decoder Toolbox

OBJECTIVES

The main idea of this project is to implement a toolbox that allows users to easily manipulate DTC/DIAGNOSTIC specification (Technical excel file used as reference) and generate specific information that guarantees the monitoring of coverage status in the whole project.

TECHNOLOGY



Object Oriented
Programming

KEYWORDS

Automotive Diagnostic,
DTC, Toolbox, Coverage,
Python, Excel, Database

REQUIRED TASKS

1. Automate and simplify the data management related to Diagnostic specification.
2. Show More important information for Coverage, Coverage status.
3. DTC/DIAGNOSTIC Report : monitor the reporting progress during each Full Validation.
4. DTC/DIAGNOSTIC Comparator : determine added, updated and deleted information between several version.
5. Integrate existing solution related to Test Case Generation from Diagnostic specification.



Software Engineering



Computer Science
Engineer



4 - 6 Months

01 CANDIDAT

PROJECT 04

DEVELOPMENT
AND TESTING
SOLUTION

Automotive AUTOSAR Application for Light Functions

OBJECTIVES

The aim of this project is to implement an Automotive AUTOSAR application to support Light functions of a car. This application will be integrated in the central ECU of the car.

TECHNOLOGY



KEYWORDS

ECU, AUTOSAR,
Automotive, LIN, CAN

REQUIRED TASKS

- Implementation of AUTOSAR application to enable Lights functions in the car. This application will be integrated into a central ECU of the car named BCE25.
- Setup of CI environments to perform Continuous Integration testing of the application in the central ECU.
- SIL testing of the application using Robot Framework.

POO, C++, UML,
Python

Computer Science
Engineer

4 - 6 Months

02CANDIDATS

PROJECT 05

DEVELOPMENT
AND TESTING
SOLUTION

Automotive AUTOSAR application for Car Access Functions

OBJECTIVES

The aim of this project is to implement an Automotive AUTOSAR application to support CAR ACCESS functions. This application will be integrated in the central ECU of the car.

TECHNOLOGY



KEYWORDS

ECU , AUTOSAR ,
Automotive , LIN , CAN

REQUIRED TASKS

- Implementation of AUTOSAR application to enable Car Access functions in the car. This application will be integrated into a central ECU of the car named BCE25.
- Setup of CI environments to perform Continuous Integration testing of the application in the central ECU.
- SIL testing of the application using Robot Framework.

POO , C++ , UML ,
Python

Computer Science
Engineer

4 - 6 Months

02 CANDIDATS

Automotive AUTOSAR Application for Body Comfort Functions

OBJECTIVES

The aim of this project is to implement an Automotive AUTOSAR application to support Body Comfort functions. This application will be integrated in the central ECU of the car.

TECHNOLOGY

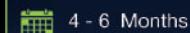


KEYWORDS

ECU , AUTOSAR ,
Automotive , LIN , CAN

REQUIRED TASKS

- Implementation of AUTOSAR application to enable body comfort functions in the car like Windows and wiper . This application will be integrated into a central ECU of the car named BCE25.
- Setup of CI environments to perform Continuous Integration testing of the application in the central ECU.
- SIL testing of the application using Robot Framework



02 CANDIDATS

Automotive AUTOSAR Application For Safety Light Functions

OBJECTIVES

The aim of this project is to implement an Automotive AUTOSAR application to support Safety Light functions. This application will be integrated in the central ECU of the car.

TECHNOLOGY



KEYWORDS

ECU, AUTOSAR,
Automotive, LIN, CAN

REQUIRED TASKS

- Implementation of AUTOSAR application to enable safety light functions. This application will be integrated into a central ECU of the car named BCE25.
- Setup of CI environments to perform Continuous Integration testing of the application in the central ECU.
- SIL testing of the application using Robot Framework.



POO, C++, UML,
Python



Computer Science
Engineer



4 - 6 Months

01 CANDIDAT

PROJECT 08

DEVELOPMENT
AND TESTING
SOLUTION

3D Simulation of Comfort Access and Central Locking Functionalities in a Vehicle

OBJECTIVES

This project involves creating a comprehensive 3D simulation in Unreal Engine that demonstrates the functionality and user experience of comfort access and central locking systems in modern vehicles.

The simulation will allow users to interact with a virtual car, showcasing how these systems operate in various scenarios.

TECHNOLOGY



KEYWORDS

3D Simulation, Comfort Access, Climate Function, Robot TC

REQUIRED TASKS

- Understand Car Acesses and Central locking specification.
- Implement Robot Test case scenarios based on the provided requirements.
- Implement Generator of 3D simulation from Robot TC.
- Implement Generator of Robot TC from 3D simulation.
- Implement Generator of 3D simulation from TC result.



BluePrint , Unreal Engine , C++



Computer Science Engineer



4 - 6 Months

02CANDIDATS

PROJECT 09

DEVELOPMENT
AND TESTING
SOLUTION

3D Simulation of Climate Functionalities in a Vehicle

OBJECTIVES

This project focuses on developing a 3D simulation in Unreal Engine that accurately models the climatization system in a vehicle, including heating, cooling, and air circulation. The simulation will enable users to understand how various settings impact the internal climate of the car, providing insights into user comfort and system efficiency.

TECHNOLOGY



KEYWORDS

3D Simulation, Car Access, Robot TC

REQUIRED TASKS

- Understand Climate specification.
- Implement Robot Test case scenarios based on the provided requirements.
- Implement Generator of 3D simulation from Robot TC.
- Implement Generator of Robot TC from 3D simulation.
- Implement Generator of 3D simulation from TC result.

BluePrint, Unreal Engine, C++

Computer Science Engineer

4 - 6 Months

02 CANDIDATS

Virtual ECU Simulation for Testing AUTOSAR Software Stack (BSW, RTE, Application)

OBJECTIVES

This project focuses on developing and testing a complete AUTOSAR-based software stack, including the Basic Software (BSW), Runtime Environment (RTE), and Application Layer (App), using Virtual ECU (vECU) simulation. The goal is to implement, simulate, and validate the software stack without any physical hardware by leveraging industry-standard simulation tools.

TECHNOLOGY



KEYWORDS

AUTOSAR , Virtual ECU ,
Software in-the-Loop (SIL)
Automotive Software
Testing , Simulation,
Test Case Generation,
CI , Automotive Protocols

REQUIRED TASKS

- . **Design and Implementation :** Develop the AUTOSAR software stack.
- . **Virtual ECU Simulation :** Create a virtual ECU to simulate the execution of the AUTOSAR stack, mimicking real hardware behavior, by using tools like dSPACE VEOS, Vector CANoe, or ETAS ISOLAR-EVE.
- . **Testing & Validation :** Simulate various automotive scenarios using Software-in-the-Loop (SIL) testing and sniffing the output from the BSW layer (e.g., monitoring CAN messages, DIO pin states). Implement and execute test cases to ensure the correct functioning of the stack and adherence to AUTOSAR standards.



C , C++ , python



Computer Science
Engineer



4 - 6 Months

04 CANDIDATS

Unified Feedback and Change Tracking System

OBJECTIVES

This system will streamline task allocation, improve feedback collection, and monitor changes to Jira tickets in real-time. Key benefits include :

- . **Automated Task Management** : Integration with Jira to assign and prioritize testing tasks based on ticket attributes.
- . **Timely Feedback Collection** : Daily reminders for testers to submit feedback, ensuring we gather insights before 10 AM.
- . **Real-Time Change Tracking** : Notifications for any modifications, helping the team stay informed.
- . **Comprehensive Dashboard** : A unified dashboard that displays task statuses, aggregated feedback, and a history of Jira ticket changes.
- . **Proactive Improvement Proposals** : The system will flag tasks that have been pending for too long or those consistently delayed, offering suggestions for improvement and optimization.

This system will improve collaboration, ensure accountability, and optimize the efficiency of our testing activities.

TECHNOLOGY



KEYWORDS

Task Automation,
Jira Integration,
Feedback Collection,
Real-time Tracking,
Dashboard,
Proactive Optimization

REQUIRED TASKS

- . Integrate Jira with the system to automate task assignment and prioritization based on ticket details.
- . Set up daily automated reminders for testers to submit feedback by 10 AM.
- . Implement real-time notifications for changes to Jira tickets to keep the team updated.
- . Design and develop a unified dashboard that displays task statuses, feedback summaries.



Programming Skills,
Data Analysis and
Visualization Tools,
Problem-Solving



Computer Science
Engineer



5 Months

02CANDIDATS

PROJECT 12

DEVELOPMENT
AND TESTING
SOLUTION

Tasks Management Tool

OBJECTIVES

This system will connect to all Jira systems and will extract the assigned tasks for a tester. It shall organize them according to priorities and due dates and show the progress in all tasks in real time.

TECHNOLOGY



KEYWORDS

Organization,
Priority, Tasks,
Management

REQUIRED TASKS

- Trainee should known all tester activities during the day
- Priority of tasks should be adjusted by team leader
- Everytaskfulfilled will be deleted
- Foremergecycases prioritycan be changed

Patience
Beautiful design

Computer Science
Engineer

5 Months

01 CANDIDAT

Testbench Monitoring and Management Dashboard

OBJECTIVES

This project involves developing a dashboard to monitor testbench status in real time.

It will track hardware configurations, software versions, testbench usage, and send alerts for errors or maintenance to the designated support team. Additionally, it will support configuration management, helping ensure smooth operation and reduce downtime.

TECHNOLOGY



KEYWORDS

Dashboard Development
Testbench Status , Alerting
System , Automated
Ticketing , DevOps,
Real-time Monitoring
Support Team
Notifications , Hardware
and Software Tracking

REQUIRED TASKS

- Requirement Analysis and Planning
- Dashboard Design and Development
- Real-Time Monitoring System Implementation
- Alerting and Notification System
- Jira Integration and Automated Ticketing
- Logging and Reporting
- Testing and Quality Assurance
- Maintenance and Optimization

Programming Skills ,
Database , Monitoring
Tools , Debugging
Skills , Linux Basics.

Computer Science
Engineer

5 Months

01 CANDIDAT

Automatization of TB Status With Standard or Generic Automatization Functions

OBJECTIVES

Standard or generic automatization functions are used by every member of the company to create new automated scripts without redundancy. Create automatic solution to have fast and reliable service for TB status and data manipulation service for TB status and data manipulation.

TECHNOLOGY



KEYWORDS

Zuul , Jfrog , Test Guide
Excel , Git

REQUIRED TASKS

- Create generic or standardFunctions repository
- CreateTest Bunchesstatussolution for staging
- Create solution for Pipeline checks (from Jfrog to TG)



Engineer , Python
C# , Angular



Computer Science
Engineer



5 Months

01 CANDIDAT

Implementing New Testcases for Time Sync Domain Using MTF Framework

OBJECTIVES

The goal of this project is to design, develop, and implement new test cases for the TimeSync domain in automotive field using the **MTF (Modular Test Framework-python)**. The project will focus on validating the synchronization of time-sensitive data across networked systems, ensuring that time-related operations such as timestamps, scheduling, and event triggers are executed with precision and reliability.

TECHNOLOGY



KEYWORDS

Python, Embedded Systems, Networking, CAN, Ethernet

REQUIRED TASKS

- . In-depth knowledge of the Python unittest framework.
- . Develop and enhance test automation scripts using Python.
- . Generate detailed reports of test results from the executed scripts.

Strong Problem Solving , Deep Networking Knowledge

Computer Science Engineer , Telecommunication , Embedded Engineer

5 Months

02 CANDIDATS

PROJECT 16

DEVELOPMENT
AND TESTING
SOLUTION

BUGS QA BOT

OBJECTIVES

This AI-powered Python bot will automatically assess the quality of newly created bug reports, ensuring they meet the standards set by the Problem Management Team. The bot will verify templates, check labels for accuracy, and assist testers in following best practices.

Tools : Python, TensorFlow for AI features, NLTK for Natural Language Processing, MS Teams, Email APIs, Jira API for bug management integration.

TECHNOLOGY



KEYWORDS

AI, BOT, AUTOMATION
QA, TES

REQUIRED TASKS

- Bot Design and Architecture.
- Integration with Jira API.
- AI for Bug Quality Assessment.
- Notifications and Reminders.
- Duplication Detection and Root Cause Support
- Performance Monitoring.
- Testing and Validation.

Artificial Intelligence & Machine Learning, Testing & Debugging

Computer Science Engineer

5 Months

01 CANDIDAT

Automotive AUTOSAR Application For Safety Light Functions

OBJECTIVES

The tool's concept is to assist testers in entering their results into a Jira ticket used for reporting. However, Jira natively allows only one modification or input at a time, which means that only one tester can submit their results simultaneously. This limitation can become problematic, especially when the update window is brief and multiple changes are needed at once. To address this issue, the tool will need the following features:

- An account system that provides each tester with unique access to permitted features.
- A dashboard that allows testers to view all available and supported tickets within the tool.
- A tracking system to ensure that each change is registered and can be reverted.
- A conflict resolution mechanism to minimize the need for reverts.
- Real-time feedback and visualization of what is being added and what already exists in the ticket.
- A notification system for when new changes are committed to Jira and when a ticket is resolved.
- A basic check system to verify that the added changes comply with common reporting guidelines.

The final product must undergo a certain level of testing and quality assurance before being deemed usable, which

TECHNOLOGY

Any web framework
Compatible DB

KEYWORDS

Jira, Test Guide,
Github, Web

REQUIRED TASKS

- Create multiple systems to achieve a function platform:
 - Account system.
 - Dashboard.
 - Tracking system.
 - Conflict resolution mechanism.
 - Real time feedback and visualization.
 - Notification system.
 - Basic checks system.



Web Development
(front-end and back-end)
DB Management



Computer Science
Engineer



5 Months

02 CANDIDATS

PROJECT 18

DEVELOPMENT
AND TESTING
SOLUTION

Analysis and Detection of Bugs in Automotive Protocols

OBJECTIVES

This project focuses on understanding the requirements related to automotive protocols in different platforms and identifying all bugs in vehicle traces. The next step is to automate the detection of known bugs and to identify potential new ones.

TECHNOLOGY



KEYWORDS

Bugs

REQUIRED TASKS

- Understand the requirements of automotive protocols.
- Detect bugs and defects in traces.
- Automate the detection of known bugs.



Python, Networks,
Wireshark



Computer Science
Licence, Engineer



5 Months

20 CANDIDATS

AUTOMATION AND AI

AUTOMATION AND AI



Develop a Web Application To Compare Two ARXML/XML Files

OBJECTIVES

An ARXML file is a configuration file saved in AUTOSAR XML (ARXML) format. It is used by AUTOSAR, an initiative of automotive manufacturers and suppliers to establish software architecture for automotive electronic control units (ECUs). ARXML files contain configuration and specification information for an ECU, which is used to control components of an engine to make sure an engine achieves optimal performance. Also, it contains information about services, frames, signals.

We need a web application contains a clear comparison between all elements in the arxml file.

TECHNOLOGY



ARXML/XML
WEB

KEYWORDS

CAN, LIN, FleXray,
ARXML/XML File

REQUIRED TASKS

- Understand the content of the arxml/xml file.
- create a tool to compare all components in the arxml/xml file.



Computer Science
Engineer



Computer Science
Engineer



4 - 6 Months

01 CANDIDAT

Develop a Web Application To Visualize Ethernet Topology

OBJECTIVES

An ARXML file is a configuration file saved in AUTOSAR XML (ARXML) format. It is used by AUTOSAR. The ARXML files contain configuration and specification information for an ECU, which is used to control components of an engine to make sure an engine achieves optimal performance. Also, it contains information about services, frames, signals. We generate a db file from this ARXML file. This db is a sql file containing all information of the xml file. We need a web application contains the communication between all elements: ecus, provided services, consumed services, methods, events...

TECHNOLOGY



**ARXML/XML
WEB**

KEYWORDS

DB File, Ethernet,
ARXML File

REQUIRED TASKS

- . Understand the content of the arxml/xml file and the db file
- . Create a web application contains a diagram describing the relation between: ecus, provided services, consumed services, methods, events...
- . Create another diagram describing the relation between: ecus, Coupling Elements, Coupling ports, valns...



Computer Science
Engineer



Computer Science
Engineer



4 - 6 Months

01 CANDIDAT

Develop a Web Application To Visualize CAN Topology

OBJECTIVES

An ARXML file is a configuration file saved in AUTOSAR XML (ARXML) format. It is used by AUTOSAR. The ARXML files contain configuration and specification information for an ECU, which is used to control components of an engine to make sure an engine achieves optimal performance. Also, it contains information about services, frames, signals. We generate a db file from this ARXML file. This db is a sql file containing all information of the xml file. We need a web application contains the communication between all elements: ecus, transmitted frames, receiver frames, signals, cluster, channels...

TECHNOLOGY



ARXML/XML
WEB

KEYWORDS

DB File, CAN,LIN
Flexray, ARXML File

REQUIRED TASKS

- . Understand the content of the arxml/xml file and the db file
- . Create a web application containing a diagram describing the relation between: ecus, transmitted frames, receiver frames, signals...
- . Create another diagram describing the relation between: ecus, Clusters, Channels...



Computer Science
Engineer



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Engineer



4 - 6 Months

01 CANDIDAT

Convert Eclipse Plugins To VS Plugins

OBJECTIVES

TE-TDE is a robot framework editor which is used to implement and execute robot test cases. In addition, it contains views to manipulate data such as buses view, A2L view, keyword library view ... These views are provided to facilitate test case implementation. It provides other features such as review process, jira management... TE-TDE is implemented with java using Eclipse.

We need to switch from eclipse to vs. So, we want all plugins implemented in eclipse switched to be implemented in vs code.

TECHNOLOGY



KEYWORDS

TDE project, vs, understand features exist in the TE-TDE

REQUIRED TASKS

- Understand all features implemented in Eclipse
- Create a vs solution contains all features implemented in Eclipse



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4 - 6 Months

01 CANDIDAT

RAG-powered SupportBot: Intelligent Customer Assistance

OBJECTIVES

To develop an intelligent chatbot capable of providing real-time assistance to customers by answering common questions and resolving basic issues. The bot will aim to reduce response times, enhance customer satisfaction, and allow support teams to focus on high-value tasks.

TECHNOLOGY



KEYWORDS

React, Spring, Postgres
SQL, Pinecone, RAG

REQUIRED TASKS

Natural Language Understanding: The bot should be able to understand customer queries in natural language.

- Company Document Analyse: Analyse the company product documentation and provide the good response to user.
- Escalation to Human Agents: When a query is too complex or outside the bot's scope, it should seamlessly transfer the conversation to a human agent.
- User Feedback Loop: Include a feedback mechanism where users can rate their interaction.
- Managing the company document list.
- Monitoring and managing the application's health and performance.



Computer Science
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4 - 6 Months

01 CANDIDAT

HOW TO APPLY

SCAN THE
QR CODE



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YOUR CHOICE



SEND
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(+216) 39 152 300

EMAIL

info@primatec.tn

LOCATION

Sfax Technopark
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