KROMBERG & SCHUBERT

Centre Technologique

De l'obscurité

Vers de vertes prairies

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CATALOGUE DES STAGES

2023

STAGES & PFE

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KROMBERG & SCHUBERT

Successful product development through unique commitment

Kromberg & Schubert look back on a story of success spanning more than 110 years.

Pioneering spirit and innovative entrepreneurship with a flat hierarchy has enabled the continuous expansion and globalisation of the company. With over 50.000 employees in over 40 locations.

Kromberg & Schubert is today one of the global leaders in the supply of electrical systems, cables and plastic components.

The key to success is the company culture: Enthusias-m and motivation to provide creative product solutions are the engines of the interdisciplinary teams, who focus their energies on recognizing trends in the market at an early stage and also on addressing the individual requirements of our customers.

De l'obscurité

Vers de vertes prairies

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Est un groupe industriel international dont l'histoire à succès a commencé il y a plus de 110 ans.
Grâce à notre engagement, notre flexibilité et notre capacité permanente d'innover, nous sommes devenus des spécialistes des systèmes électriques complexes pour l'industrie automobile.

La clé de notre succès ? Plus de 50.000 employés répartis sur plus de 40 sites à travers le monde tous unis par l'optimisme, l'amusement au travail et la volonté de toujours s'améliorer.

Vous êtes intéressés par un stage dans le domaine du Développement et validation des faisceaux de câbles automobile et ses accessoires mécatroniques ?

Le Centre Technologique de Kromberg & Schubert (Technopole El Gazela/Ariana) vous ouvre ses portes et vous permet de découvrir le milieu de l'entreprise tout en développant et valorisant vos connaissances acquises au cours de l'année!

Du stage d'initiation au stage PFE, que vous soyez Ingénieurs ou Techniciens Supérieurs, nous vous proposons différents sujets s'inscrivant dans le cadre de nos projets.
Vous serez ainsi amenés à effectuer des travaux de recherche et de développement avec des résultats concrets.

N'hésitez pas à consulter la liste des stages / sujets disponibles pour cette année figurant en pages suivantes.

Si un sujet vous intéresse, merci de nous adresser votre demande précisant le ou les références des sujets choisis ainsi que votre CV à :

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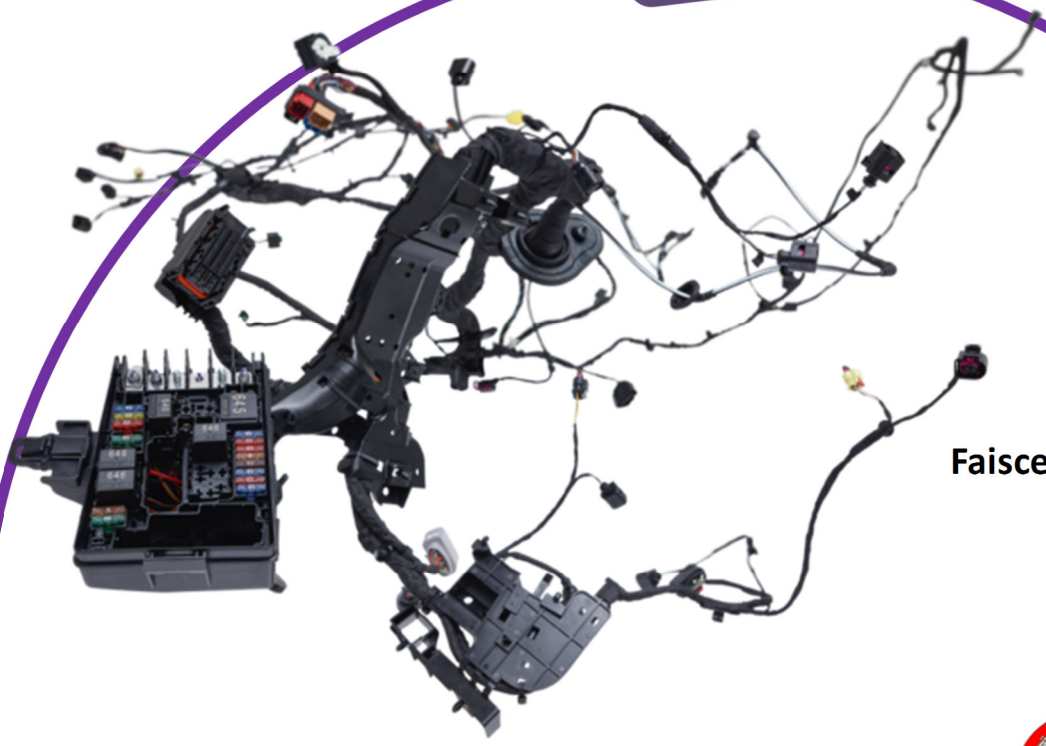
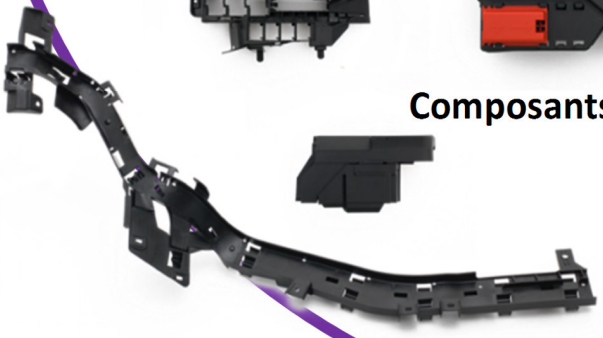
Nos Produits



Faisceaux de câbles

Câbles spéciaux

Composants plastiques



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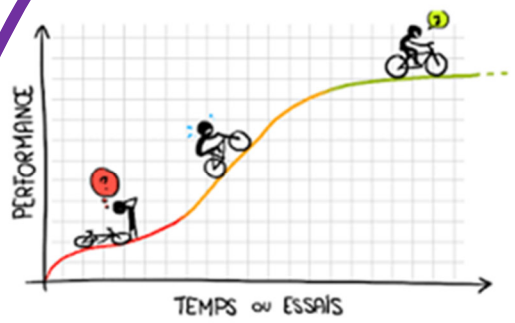
Quels Avantages



Apprentissage et montée en compétences

Stage rémunéré

Possibilité d'embauche

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Les Stages

CATALOGUE DES STAGES

2023

Stage Initial

N°	Sujets	Mots clé	Durée	Période	Binôme Monôme
SI 1	**Découverte du secteur du câblage automobile en général - Initiation CAO**	CAO, CATIA V5, EbCable, Dessin technique	1 mois	Jan - Fév 2023 Juillet- Aout 2023	M
SI 2	**Découverte du secteur du câblage automobile en général - Initiation Industrialisation**	Excel, VBA, Appel d'offres, Chiffrage, Dessin technique	1 mois	Jan - Fév 2023 Juillet- Aout 2023	M
SI 3	**Découverte du secteur du câblage automobile en général - Initiation Validation**	Test Laboratoire, Métrologie, Dessin technique	1 mois	Jan - Fév 2023 Juillet- Aout 2023	M
SI 4	**Découverte du secteur du câblage automobile en général - Initiation Qualité Fournisseur**	Qualité, PPAP, Dessin technique	1 mois	Jan - Fév 2023 Juillet- Aout 2023	M

Stage Technicien, Mastère & Ingénieur

N°	Sujets	Mots clé	Durée	Période	Binôme Monôme
ST 1	**Conception Assistée par ordinateur d'un faisceau de câble automobile spécifique, partie électrique et mécanique (Projet AUDI)**	CAO, CATIA V5, Ebcable	2 mois	Janv - Fév 2023 Juillet- Aout 2023	B
ST 2	**Conception Assistée par ordinateur d'un faisceau de câble automobile spécifique, partie électrique et mécanique (Projet SKODA)**	CAO, CATIA V5, Ebcable	2 mois	Janv - Fév 2023 Juillet- Aout 2023	B
ST 3	**Contrôle et optimisation d'un faisceau de câble automobile spécifique et intégration des modifications avec CATIA V5 (Projet AUDI)**	CAO, CATIA V5	2 mois	Janv - Fév 2023 Juillet- Aout 2023	M
ST 4	**Contrôle et optimisation d'un faisceau de câble automobile spécifique et intégration des modifications avec CATIA V5 (Projet SKODA)**	CAO, CATIA V5	2 mois	Janv - Fév 2023 Juillet- Aout 2023	M
ST 5	**Création du dessin Technique 2D d'un faisceau de câble automobile spécifique (Projet DAIMLER)**	CAO, LDORADO	2 mois	Janv - Fév 2023 Juillet- Aout 2023	M
ST 6	**Optimisation d'un boitier fusible et intégration des changements avec CATIA V5**	CAO, CATIA V5, Part-design	2 mois	Janv - Fév 2023 Juillet- Aout 2023	M
ST 7	**Initiation à la technologie Haute tension dans le secteur automobile et son impact sur les composants utilisés**	High-Voltage, Composants automobiles	1 mois	Janv- Fév 2023 Juillet- Aout 2023	B
ST 8	**Conception d'un poste de travail " photographie" des composants automobiles**	AUTOCAD, Solidworks	1 mois	Janv - Fév 2023 Juillet- Aout 2023	M
ST 9	**Initiation au process de calcul des coûts de fabrication d'un faisceau de câble automobile et création d' un fichier de chiffrage fiable en utilisant VBA**	Excel, Macro VBA	2 mois	Janv - Fév 2023 Juillet- Aout 2023	M

N°	Sujets	Mots clé	Durée	Période	Binôme Monôme
ST 10	**Initiation au process de calcul des coûts de fabrication d'un faisceau de câble automobile et création d'un fichier de calcul fiable des coûts des changements techniques sur un câblage existant en utilisant VBA**	Excel, Macro VBA	2 mois	Janv - Fév 2023 Juillet- Aout 2023	M
ST 11	**Optimisation du fichier Excel utilisé pour la vérification des cahiers de charges des appels d'offres avec VBA**	Excel, Macro VBA	1 mois	Janv - Fév 2023 Juillet- Aout 2023	M
ST 12	**Création d'une base de données de la documentation utilisée pour la formation interne**	Excel, Macro VBA	1 mois	Jan - Fév 2023 Juillet- Aout 2023	M
ST 13	**Création d'une base de données des tests existants pour la validation des prototypes de câblage**	Excel, Macro VBA	1 mois	Janv - Fév 2023 Juillet- Aout 2023	M
ST 14	**Création d'une base dynamique de données des composants de remplacement en vue d'optimiser les coûts du câblage**	Excel, Macro VBA	1 mois	Janv - Fév 2023 Juillet- Aout 2023	M
ST 15	**Création d'une base dynamique de données des enseignements tirés des projets précédents**	Excel, Macro VBA	2 mois	Janv - Fév 2023 Juillet- Aout 2023	M
ST 16	**Développement et création d'une application pour permettre le suivi des réclamations clients**	Excel, Macro VBA	1 mois	Janv - Fév 2023 Juillet- Aout 2023	M
ST 17	**Développement et création d'une interface de validation et classification des composants**	EXCEL, VBA, C , SQL	1 mois	Janv - Fév 2023 Juillet- Aout 2023	M
ST 18	**Développement d'une interface de création d'une Newsletter interne**	HTML, CSS, VBA, programmation	2 mois	Janv - Fév 2023 Juillet- Aout 2023	M
ST 19	**Développement d'une interface pédagogique permettant de cartographier les éléments composants le câblage automobile**	HTML, CSS, JSS, Dessin technique	2 mois	Janv - Fév 2023 Juillet- Aout 2023	M
ST 20	**Développement d'une interface pour réaliser les enquêtes de satisfaction des employés**	HTML, CSS, JSS	1 mois	Janv - Fév 2023 Juillet- Aout 2023	M
ST 21	**Réalisation d'un prototype de faisceau de câbles d'éclairage automobile et définition du catalogue des composants et de leurs fonctionnalités**	Prototype, câblage, composants	1 mois	Janv - Fév 2023 Juillet- Aout 2023	M

N°	Sujets	Mots clé	Durée	Période	Binôme Monôme
ST 22	**Etude comparative de deux projets en vue de dégager les avantages & inconvénients des technologies utilisées**	Câblage, composants, Technologies	1 mois	Janv - Fév 2023 Juillet- Aout 2023	M
ST 23	**Modélisation d'un process de CAO pour les projets Equipementiers de 1er rang**	BPMN, Activiti, Modelling	2 mois	Janv - Fév 2023 Juillet- Aout 2023	M
ST 24	**Conception & Création d'un site intranet avec Alfresco**	HTML, Java, Alfresco	1 mois	Janv - Fév 2023 Juillet- Aout 2023	M
ST 25	**Indentification & classification de composants**	Plasturgie, composants, dessin technique, qualité	1 mois	Janv - Fév 2023 Juillet- Aout 2023	M

Stage PFE

Ref	Subject	Keywords	Duration	Period	Team
PFE 01	**Optimization and Sizing of Automotive Wiring Harness**	Mechanic, Elecric	6 months	January 2023	1
PFE 02	**Study of thermal loads effect on power distribution box and proposal of safe operating solution**	Electro-thermal-mechanical response , ABAQUS, CATIA V5	4/6 months	January 2023	1
PFE 03	**Design of power distribution box and development of injection mold**	Mecatronic, Plastic, CATIA V5, molding	4/6 months	January 2023	1
PFE 04	**Development of tracking tool using VBA**	Excel VBA, Components	4/6 months	January 2023	1
PFE 05	**Study of an automotive book of requirement of a project from the offer phase to the prototype & assembly phase.**	Industrial Engineering	4 months	February 2023	2
PFE 06	**Modelling of Sample Ordering Process for System Customer (SYSK)**	BPMN, JAVA, Modelling, Industrial Engineering	4 months	February 2023	1
PFE 07	**Search for a new material for overmolding EPB grommet**	Industrial Engineering	4 months	February 2023	1
PFE 08	**Start of an APQP process for a new part (high voltage)**	Technical specification, APQP, Quality Supply, IATF 16949	4 months	February 2023	2
PFE 09	**Develop a supplier digital Dashboard**	Material/PLastic and IT (web development) , Web design	6 months	January 2023	2
PFE 10	**CAN simulation & optimization on automotive wiring harness with LTspice**	LTspice, MS Excel, VBA,CAN,CAN FD	4/6 months	January 2023	2
PFE 11	**Creation of Learning Management System (LMS)**	data analyses, JavaScript, host, html	4 months	February 2023	2
PFE 12	**RFQ Process Tracking Tool**	SQL, VBA, programing (Java, HTML, C#...)	4/6 months	January 2023	2

Ref	Subject	Keywords	Duration	Period	Team
PFE 13	**Design and numerical simulation of metal holder for wiring harness system**	Design Software (Catia, NX) / ABAQUS / Fatigue Analysis / mechanical vibrations	4/6 months	January 2023	2
PFE 14	**Graduation internship: Development and realization of News sharing platform.**	Automotive, wiring harness, HTML, CSS, VBA, programming….	4 months	February 2023	2
PFE 15	**Development of Result Visualization and Analyze tool using VBA**	VBA, programming	4 months	February 2023	2

Optimization and Sizing of Automotive Wiring Harness

Issue:

Since the birth of the of automotive wiring construction field, harness optimization and weight reduction are still the two main areas for improvement. Nowadays many solutions and tests are established with different degree of success.

One of those Solutions is using Aluminum wiring and reducing of wires cross-section.

Objectives:

The main project target can be divided into two parts:

- Establish a complete study on the possibility of using aluminum cables and also the possibility of reducing wires cross-section in the motor part.
- Propose a technical solution.

Required work:

1. Benchmarking and identification of the used solutions in the Market.
2. Analyze of the actual and existing Harness.
3. Make a study about the integration of Aluminum wires in automotive filed.
4. Study the possibility of integration of Aluminum wire in the actual harness.
5. Prepare proposal for the first solution.
6. Study the possibility of reducing of cross-section.
7. Prepare proposal for the second solution.
8. Prepare a final technical solution.

Technical knowledge:

Mechanic, Electric

Duration/Period:

6 months
January till June 2023

Reference #PFE01

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Study of thermal loads effect on power distribution box and proposal of safe operating solution

Issue:

Kromberg & Schubert is developing power distribution fuse boxes and many other embedded systems, their main role is providing or switching the electrical energy in the car, theses products contain powerful electronic devices and their heat dissipation may cause thermal troubles, therefore there is a strong need to fulfil thermal analyses for the developed system.

Objectives:

The project aims to model the electro-thermal-mechanical response of the fuse box using finite element method; It consists to estimate the temperature rise in different parts of the product and to analyze the influence on the mechanical behavior of the box, which ensures reliable solution for the design and prevents from any risk of break before laboratory tests.

Required work:

1. Analysis of the electronic system, its components and its functioning.
2. Master the Finite Element Software in the coupled electrical-thermal-mechanical field
3. Definition of heat sources and thermal cycles
4. Extraction of temperature distribution in different elements of the box
5. Simulation of mechanical breaks and damages due to thermal effects
6. Validation of the box's design and suggestion of solutions for improvement if needed

Technical knowledge:

Mechanic, Mechatronic

Duration/Period:

4-6 months
January till June 2023

Reference #PFE02

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Design of power distribution box and development of injection mold

Issue:

Kromberg & Schubert is developing power distribution fuse boxes and many other embedded systems, their main role is providing or switching the electrical energy in the car, these products are composed mainly of plastic injected parts that require a deep knowledge of the melted material (plastic behavior) and need an expertise in the design of plastics.

Objectives:

The objective of this project is the 3D design of a power distribution box respecting all conditions of customer specifications and environment data.

Required work:

1. Master of plastic injection rules and process
2. Analysis of the customer specification and environment data
3. Arrangement of electronic components inside the fuse box
4. Creation and assembly of 3D plastic parts
5. Validation of the design
6. Preparation of 2D Drawing
7. Design of injection mold

Technical knowledge:

Mechanic, Mechatronic

Duration/Period:

4-6 months
January till June 2023

Reference #PFE03

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Development of tracking tool using VBA

Issue:

Since the release of our new classification process "four-eyes-principle" as a solution to reduce the frequency of errors and to improve the quality of our database tool "Item Master3", Kromberg & Schubert seeks to develop a tracking tool, in order to improve the workflow in the department Data Management

Objectives:

The main project target can be divided into two parts:

- Study of the actual classification process of purchased parts and analyze the database from ItemMaster3 tool.
- Propose an improved process and develop a tracking tool using a Visual Basic Application VBA to track the idents in their different status.

Required work:

1- Analyze of the classification and drawing administration process and its different parameters
2- Identify the problems that occurred in the current process.
3- Define the possible improvement that can be implemented.
4- Develop a tracking application using VBA.
5- Evaluate the efficiency of the application and measure how effective the solution was.
6- Document the tracking steps and provide a guideline.
7- Validation of the solution.

Technical knowledge:

Industrial Engineering

Duration/Period:

4-6 months
January till June 2023

Reference #PFE04

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Study of an automotive book of requirement of a project from the offer phase to the prototype & assembly phase.

Issue:

The main request of our customers is to define the technical details of the project's book of requirements during the development phase which would lead to the harness built, testing and validation for the industrialization phase.

Objectives:

The main project target can be divided into two parts:

- Study and analysis the book of requirement of the wire harness and figure out the needed requirements for the production & the testing.
- Proposal of a process/product optimization

Required work:

1- Define technical content and details from the book of requirements
2- Verify compliance with customer/legal requirements (specification, norms, …)
3- Define the bill of material for the harness production
4- Define the required time & investment for the harness production
5- Create 2-D drawings of the harness.
6- Prepare the validation plan of the harness (required tests for the design validation)
7- Identify the possibility of optimization
8- Build a prototype based of the study case
9- Perform the assembly of the harness on the environment
10- Perform the defined tests in cooperation with the laboratory
11- Validation of the wire harness.
12- Review of the process & the possibility of optimization

Technical knowledge:

Industrial Engineering

Duration/Period:

4 months
February till May 2023

Reference #PFE05

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Modelling of Sample Ordering Process for System Customer (SYSK)

Issue:

In a competitive business environment, it is highly required to implement an automated, standard and flexible change management process, to meet customers' demands (costs, due date, status ...) momentarily and reliably. As part of a complete automated business process, the Sample Ordering Process needs to be modelled and deployed in Kroschu System.

Objectives:

The main project target can be divided into three parts:

- Recording of Sample Ordering Process.
- Modelling and testing of Sample Ordering Process.
- Validation of the modelled process by owners.

Required work:

1- Learn BPMN language.
2- Learn Business process modeling in Activiti.
3- Recording of the process in Visio format.
4- Creation of the process model in Activiti.
5- Testing of the process in Kroschu System (link to CMT).
6- Validation of running process with involved departments.
7- Creation of process documentation.

Technical knowledge:

Industrial Engineering, JAVA, Modelling

Duration/Period:

4 months
February till May 2023

Reference #PFE06

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Search for a new material for over molding EPB grommet

Issue:

In the ABS projects, the current used material for the overmolded grommet is Elastollan 1175 A 10 W. But with this material the grommet can be moved during the electrical test and this issue can affect the tightness.

Objectives:

The main project target can be divided into three parts:

- Search for new material to perform good adhesion with PUR & PBT materials.
- Ensure the 100% tightness test.
- Avoid the leakage of material through the connector cavities (damage of the single wire seal).

Required work:

1- Search for different material for over molding.
2- Define the best material to perform a good adhesion with PUR & PBT materials.
3- Search for the root cause of bubble inside the grommet
4- Define a solution to avoid / minimize the bubble as max as possible.
5- Define the max torsion force that can be applied during the electrical test.
6- Define possible solutions to avoid leakage of material through the connector cavities.
7- Create prototypes and ensure the tightness test, torsion force and make the polish section view.

Technical knowledge:

Industrial Engineering

Duration/Period:

4 months
February till May 2023

Reference #PFE07

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Start of an APQP process for a new part (High Voltage)

Issue:

Nowadays, the automotive world is moving to a new era of the electrical car. From 2008, a renaissance in electric vehicle manufacturing occurred due to advances in batteries, illnesses, and deaths from air pollution, and the desire to reduce greenhouse gas emissions. Therefore we would align the new technologies and be well prepared for the new challenge by mastering the process Part release linked to this new concept.

Objectives:

The main project target is to:

- Follow the release of the specific part from the definition, testing validation and release agreed for use.
- Establish a complete study on the part following the automotive standard APQP.
- Release of the part after validation of all the APQP steps.

Required work:

1- Defining the needed steps of the APQP.
2- Make a study about the high voltage part.
3- Analyze the selected high voltage part.
4- Define the eventual risk.
5- Start the process release of the selected part.
6- Collect the result of the process release.

Technical knowledge:

Industrial Engineering (Quality)

Duration/Period:

4 months
February till May 2023

Reference #PFE08

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Develop a supplier digital Dashboard

Issue:

Since the world is moving towards electrical vehicles. Competition in automotive industry is rapidly increasing. Within the framework of the digitalization of supplier quality management system and in order to manage the supply chain. KROSCHU proposes to create a platform in which the communication with the suppliers will be smarter and more practical.

Objectives:

The main project target can be divided into two fields:

- Establish a complete overview about suppliers activities.
- Provide a visual overview about suppliers and components :description , composition, classification and criteria .
- Create a digital solution " supplier digital platform"

Required work:

1. Analyze of the current components databases.
2. Benchmarking and identification of the used solutions in the Market.
3. Create a suppliers Panel according to type of components.
4. Import required data from several databases
5. Define suppliers KPI (key performance indicators)
6. Create a dynamic digital solution and dashboards.
7. Notify concerned person by email

Key words: Material/PLastic and IT (web development)

Good English skills is highly required

Duration:

6 months
January till June 2023

Reference #PFE09

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CAN simulation & optimization on automotive wiring harness with LTspice

Issue:

The CAN bus (Controller Area Networking) was defined for use in automotive applications where any system in the car can receive and send commands to.

To analyze the signal quality and the performance of the vehicle electronic circuits, LTtspice provides a safe environment in which you can design the CAN domain then put it to the test.

Objectives:

The main project target can be divided into two parts:

- Create a model of CAN domain using LTspice
- Propose optimizations for the topology

Required work:

- Define the input variables
- Set the design rules of the bus domain
- Implement the bus topology on LTspice
- Create a VBA macro to calculate the results
- Analyze the results of CAN simulation
- Optimize and update of the topology

Key words:

LTspice, MS Excel, VBA,CAN,CAN FD

Technical knowledge:

Electric

Duration/Period:

4-6 months
January till June 2023

Reference #PFE10

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Creation of Learning Management System (LMS)

Issue:

In order to ensure the knowhow sharing between our employees and in line with the new E-learning implementation strategy, the establishment of a new platform is required. This platform will be used to collect the training support and monitor its progress.

Objectives:

The main project target can be divided into two parts:

- Creation & implementation of platform for E-learning allowing the access for the users inside the company to the training supports (Ispring apps, Catalogue, guideline, presentation,…)
- Enabling the data collecting, editing and analyses (dashboard) in order to allow the management monitoring the progress and tracking the E-learning contents.

Required work:

1- Collection of the inputs for the LMS and all the needed data
2- Creation of the database for the LMS
3- Validate the platform concept with the owner
4- Design of the platform
5- Test the functionality of the platform
6- Validate the platform by the users

Key words: LMS, E-Learning, Ispring, documentation, web creation, python, database, dashboard, big data, data analyses, JavaScript, host, html.

Duration:
6 months
January till June 2023

Reference #PFE11

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RFQ Process Tracking Tool

Issue:

The internal work flow in central offering department is handled with basic Tools such as outlook , excel and printed checklists which cause an additional effort to roadway the project progress and documents archiving

Objectives:

- Establish a complete study and develop an advanced tool that help to track the different phase of offer calculation process and to document all the used documents in systematic way instead of having standard archive

Required work:

1- Analyze and understand the actual RFQ process work flow.
2- Define a suitable concept to be applied in the tracking tool development
3- Choose the adequate programing software to be used
4- Develop the tracking Tool and insure that all the requirements are applied

Technical knowledge:

Algorithm, SQL, VBA, programing (Java, HTML, C#...)

Duration/Period:

4-6 months
January till June 2023

Reference #PFE12

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Design and numerical simulation of metal holder for wiring harness system

Issue:

Other than the development of power distribution fuse boxes and many other embedded systems, Kromberg & Schubert dedicates a big focus within its research and development departments to the development of the metal holders because they represent important elements in their wiring harnesses systems; the metal holder's main role is to guide and protect the cable harnesses inside the car environment and will be fixed in the car body (engine compartment or interior area). The mechanical engineering construction of these products needs first a deep knowledge of the sheet metal design according to customer specifications; second a numerical validation of the part has to be fulfilled by conducting a finite element analysis to prevent any risk of break caused by the environments conditions during fatigue life time.

Objectives:

The objectives of this project are:

Elaboration of design handbook for metal holders

3D design of the real study case metal holder respecting all conditions of customer specifications and environment data

Validation of sinusoidal and random vibration responses using finite element method; It consists to estimate the mechanical stress state on the part, which ensures reliable evaluation for the designer to prevent any risk of break before laboratory tests.

Required work:

1- Bibliographic research to master the sheet metal design rules and process
2- Creation of design handbook for design engineers
3- Master of design Software (NX or Catia, will be fixed later)
4- Analysis of the customer specification and environment data for the real case
5- 3D design and assembly of the metal part within its wiring harness system
6- Master of the Finite Element Software in mechanical and vibration analysis
7- Make suggestion of solutions for improvement if needed
8- Implementation of changes and numerical validation of the final design
9- Preparation of 2D Drawings applied

Technical knowledge:

Design Software (Catia, NX) / ABAQUS / Fatigue Analysis / mechanical vibrations

Duration/Period:

4-6 months
January till June 2023

Reference #PFE13

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Graduation internship: Development and realization of News sharing platform

Issue:

The main subject of this internship is to concept and configure a local newsletter (Local Web Application) for the department. Indeed, this platform is going to be a gate to new technologies and internal and external actualities of the automotive industry.

The challenge is figuring out a set of solutions in order to respond to our informatics infrastructure security restrictions in one hand and in the other to insure a minimum dynamicity for the platform guaranteeing an efficient internal communication and a good information sharing.

Objectives:

The main targets are:

Bibliographical research and definition of the principal axis.

Study of feasibility and methodology definition.

Developing a static Web application (No SQL protocols).

Developing insertion and validation platforms (User and admin interfaces).

Developing an e-mail based newsletter routine.

Required work:

1- Study of feasibility of the main targets.
2- Time and effort management.
3- Validation of one of the proposed solutions, tools and programming languages.
4- Methodology definition.
5- Use of HTML, CSS and VBA as well as PowerShell if needed.
6- Getting creative.

Technical knowledge: Automotive, wiring harness, HTML, CSS, VBA, programming….

Duration/Period:

4 months
February till May 2023

Reference #PFE14

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Development of Result Visualization and Analyze tool using VBA

Issue:

In order to improve the workflow of CAN/CAN-FD domains Simulation and to reduce the manual results evaluation, Kromberg & Schubert seeks to develop a tracking tool using VBA that takes the results generated by the software of simulation (txt file) as inputs and highlights the unstable domains according to predefined rules.

Objectives:

The main project target:

- Study of the actual process for results analysis and evaluation.
- Propose an improved process and develop a Result Visualization and Analyze tool using a Visual Basic Application VBA.

Required work:

1- Study the general concept of CAN and CAN-FD domains and simulation.
2- Analyze the actual process for results analysis and evaluation.
3- Develop a tracking tool using VBA that uses the .txt file (result of the simulation) and convert this file into the desired visualization of the results.
4- Highlights the unstable domains according to predefined rules.
5- Validation of the solution.

Technical knowledge: Automotive, VBA, programming….

Duration/Period:

4 months
February till May 2023

Reference #PFE15

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