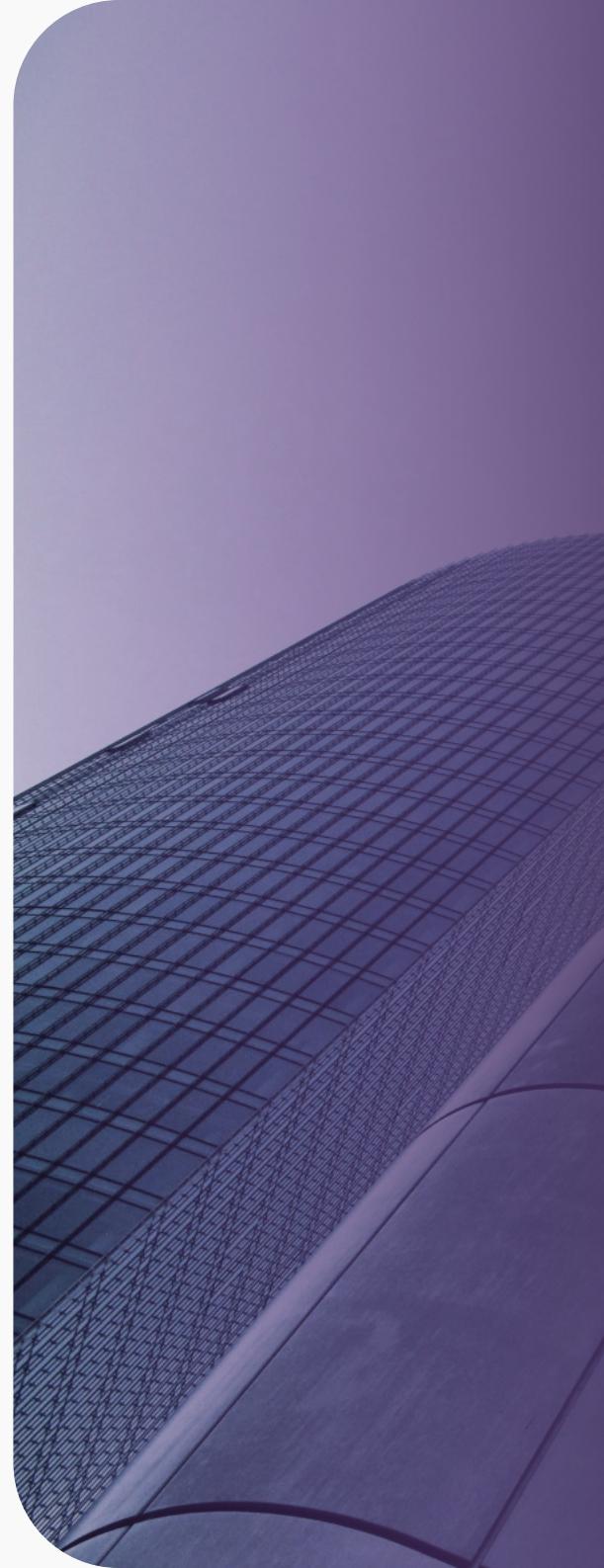




CED Tunisia PFE Book

2024 - 2025 Edition

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About us

CED is the leading european
tech claim management and
expertise company

That which is of value, must remain of value

What do we do ?

We provide expert services & tech enabled solutions to help our clients manage claims or large calamities by delivering innovative combinations of people and technology

Who are our clients ?

Insurers & bankinsurers, Insurance distributors, Public authorities/ Bodies, Mobility Co's (e.g. leasing), Property Co's (e.g. housing corporations), Vitality Co's (e. g. hospitals)

Where do we operate ?

We operate in 4 core countries: Netherlands (45%), France (35%), Belgium (8%), Spain (7%), Rest of Europe (5%)

Why Join CED Tunisia?



Opportunities for Growth

At CED Tunisia, we prioritize career development and offer our collaborateurs the chance to grow within the company. With a focus on training and skill-building, we provide a supportive environment where you can expand your expertise and advance in your career.



Innovative Projects

Joining CED Tunisia means being part of exciting and cutting-edge projects. We work on a wide range of innovative technology solutions, offering you the chance to engage with the latest industry trends and make a real impact on the business.



Collaborative Culture

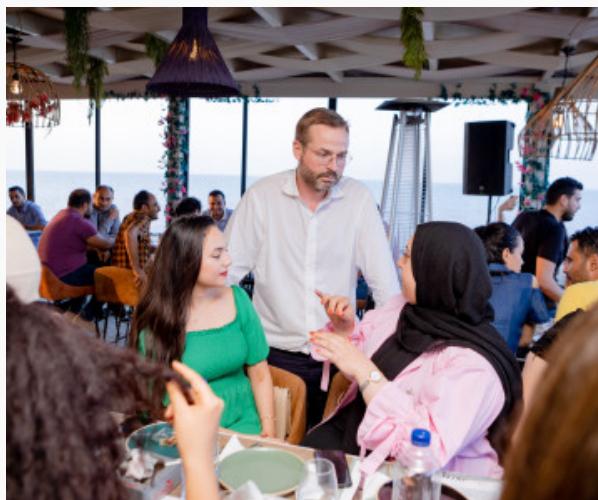
We believe in the power of teamwork and foster a collaborative work culture. You'll work alongside talented professionals, where sharing ideas and innovations is encouraged, and everyone has the opportunity to contribute and learn.



Competitive Benefits

Joining CED Tunisia means receiving a competitive package and attractive benefits. We are committed to rewarding hard work and providing employees with the resources they need to succeed in their roles.

Our team



Our location

+10

Locations

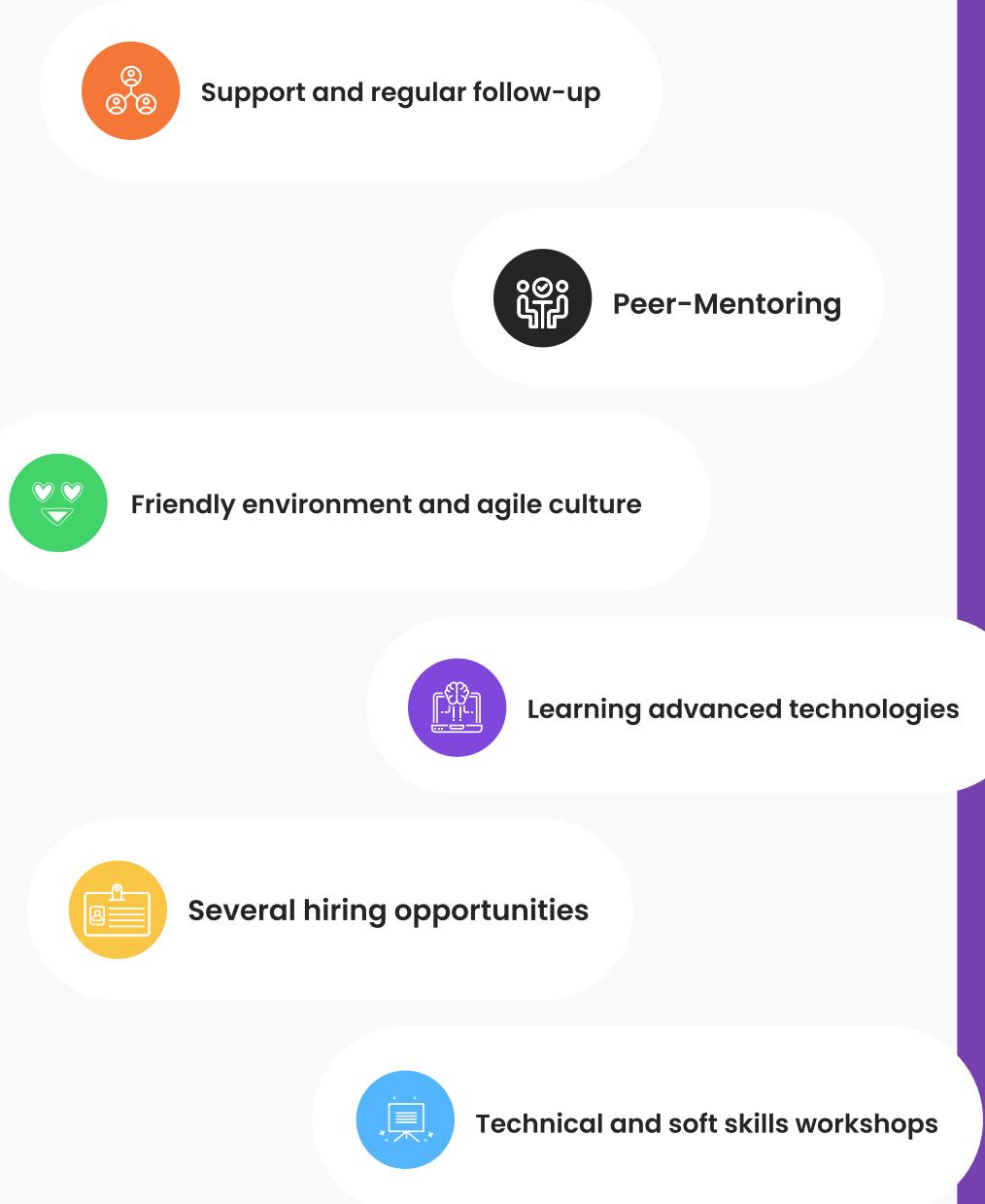
+800

Collaborators

Our Partners



+100 more



What opportunities are offered to our PFE interns?

What do our previous interns say ?



Nourhene Jebali

Full stack engineer - [ENICarthage](#)

At CED, working on the KPI Generic Dashboard project gave me valuable experience in data visualization and reporting technologies, enhancing my technical and professional skills. I'm grateful to the Coreteam for their support and shared expertise in such a collaborative environment. Thank you for this meaningful experience—it's been a pleasure to be part of the team.



Oumaima Horry

Full stack engineer - [ENICarthage](#)

My internship at CED TN was a rewarding experience that strengthened my technical skills and broadened my professional perspective. Working on impactful projects and receiving continuous support from the team fostered my growth in a collaborative, dynamic environment. I highly recommend CED TN's program for future interns seeking valuable industry experience.



Cyrine Lounissi

Full stack engineer - [ENIT](#)

My CED internship provided hands-on experience with .NET, Angular, and Azure DevOps, boosting my technical skills. Working with the Q&A team improved my troubleshooting and quality assurance abilities, while the collaborative environment enhanced my confidence and knowledge. I'm grateful for this invaluable experience.

Selection process

We are looking for talented and ambitious students.

To apply, please follow the following steps

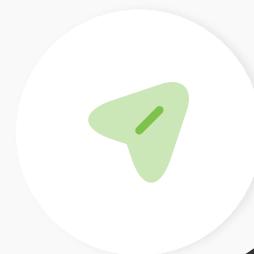
Send an email

Email subject

First and last name - #Ref

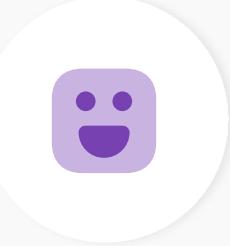
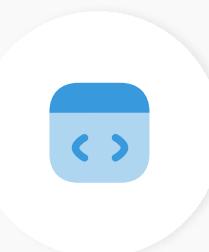
Email body

Motivation letter and don't forget to join your CV pdf



HR interview

Technical interview



**Validation. Welcome
to CED Adventure !**

PFE subjects

01

Development

10 - 16

02

DevOps

17-18

03

Quality Insurance

19-21

04

Security

22-23

05

Business intelligence

24-26

01

Development

10-16

SOS Legacy Services Migration 11-12

External portal for duped parties 13

Scan plugin for mobile applications 14

Design and implement application for configuration of chart of accounts 15

Design and implement an automated workflow for processing blocked accounting documents 16

Subject 01

SOS Legacy Services Migration

Number of interns**02****Duration of the internship****Between 4 to 6 Months****Skills / Knowledge**

#Application insights

#Azure

#.Net

#Azure monitor

#Azure functions

#Logic apps

#OData

#GraphQL

#RestApis

Description

Our key users currently rely on legacy services within the SOS system, which are essential for their daily operations. However, these services, built on outdated technology, have become difficult to maintain and no longer meet the evolving demands of the business. As they age, the ability to ensure stability, performance, and support has diminished, leaving the system vulnerable to potential risks and inefficiencies.

Given the importance of these services in our core operations and their lack of maintainability, we have identified the need to migrate them to a modern, sustainable platform. This migration will not only address the technical limitations but also improve service reliability, security, architecture and scalability. By modernizing the SOS system, we can provide our key users with enhanced functionality, better user experience, and a future-proof solution that aligns with the long-term goals of the organization.

Key Features of the SOS Legacy Services Migration Project:

- Modernized Infrastructure: Transitioning from outdated, difficult-to-maintain systems to a modern platform that is designed for better scalability, security, and performance.
- Enhanced User Experience: Upgrading the user interface and system interactions to provide a more intuitive, responsive, and user-friendly experience for key users.
- Improved Performance and Reliability: Ensuring faster processing times, reduced downtime, and more consistent system performance, which will improve day-to-day operations for key users.
- Scalability for Future Growth: Building a system that can easily scale to meet the increasing demands of the business, ensuring that the system can grow alongside the organization.

Key Features of the SOS Legacy Services Migration Project:

- Advanced Security Features: Implementing modern security protocols and technologies to protect sensitive data and ensure compliance with the latest industry standards.
 - Seamless Integration: Enabling better integration with other business applications and platforms, improving data flow and collaboration across departments.
 - Cost Efficiency: Reducing the high maintenance costs associated with legacy systems by moving to a more efficient, cost-effective solution.
-

Benefits of Migrating SOS Legacy Services:

- Increased System Efficiency: With a modernized platform, our key users will experience faster processing times and reduced downtime, leading to higher operational efficiency and productivity.
- Reduced Maintenance Costs: Migrating from an outdated and unmaintainable system will significantly lower the costs of upkeep, freeing up resources for other critical initiatives.
- Improved User Satisfaction: A more responsive, user-friendly interface will enhance overall experience for key users, reducing frustration and improving task execution speed.
- Enhanced Security: Migration will ensure the system is updated with the latest security protocols, protecting sensitive data and minimizing the risk of breaches and compliance issues.
- Scalability for Business Growth: The new platform will allow the system to scale seamlessly, accommodating future business growth and additional users without performance degradation.
- Better Integration with Modern Tools: The migrated services will be better positioned to integrate with current business applications and platforms, improving collaboration and data sharing across departments.
- Regulatory Compliance: Ensuring adherence to up-to-date industry standards and regulatory requirements, reducing the risk of legal issues and penalties due to non-compliance.
- Support for Innovation and Future Enhancements: The new system will provide a foundation for leveraging emerging technologies, such as AI and advanced analytics, enabling the organization to innovate and stay competitive.
- Improved Reliability: The modern platform will offer increased system stability, ensuring that critical services are available when needed, with fewer technical disruptions.
- Long-Term Sustainability: By moving to a maintainable, future-ready system, we will ensure long-term viability of the services, avoiding the pitfalls of relying on outdated technologies

Subject 02

External portal for duped parties

Number of interns

01

Duration of the internship

Between 4 to 6 Months

Skills / Knowledge

#Microsoft Power Platform

#Azure

#.Net

#Power Virtual Agents

#Python

#Angular

Description

The property expertise handling in CED is processed with the application "ProsPecT".

The handling of cases is based on dossiers and assignments which contain all involved parties, insurance objects, damage information, etc.

The goal of this project is to provide the duped parties with an external platform where they can manage their expertise dossiers.

This platform will allow them to:

- Create new accounts via user interface
- Qualify their dossiers via PVA conversational bots
- Follow the progress on the processing of their dossiers
- Upload and view documents

Subject 03

Scan plugin for mobile applications

Number of interns

01

Duration of the internship

Between 4 to 6 Months

Skills / Knowledge

#Azure

#.Net

#Python

#Flutter

Description

The property expertise handling in CED is processed with the application "ProsPecT".

The handling of cases is based on dossiers and assignments which contain all involved parties, insurance objects, damage information, etc.

The handlers, during visits, manage their dossiers using a mobile app that allows them to take and upload pictures.

The goal of this project is to provide our experts with a new feature allowing them to scan documents and upload them in the dossiers.

This plugin must be compatible with most common mobile development frameworks and will allow to:

- Create a document from one or more pictures, with automatic detection of outlines
- Enhance the document quality (resolution, contrast ...)

Project Ref

CED-FC-001

Subject 04

Design and implement application for configuration of chart of accounts

Number of interns

01

Duration of the internship

Between 4 to 6 Months

Required Profile

Bac + 5

Specialty: fintech engineer

Skills / Knowledge

#Azure Power Apps

#Azure Power Automate

#Programming languages

#Collaboration

#Financial literacy

#Databases and infrastructures

#Effective communication

Description

- Configuration of tax rate by countries, services and tax rate group.
- Configuration of journals and accounting.
- Documentation of VAT calculation process and chart of accounting.
- Create automated extraction mapping by journals type. (Update the attributes value extracted of each journal through UI).
- Create notification to inform the accounting team about the exporting status.
- Automated the failed journals exporting.

Project Ref

CED-CBC-001

Subject 05

Smart-Insigh UI – Feature tour

Number of interns

02

Duration of the internship

Between 4 to 6 Months

Skills / Knowledge

#Azure AI

#SQL Server

#Angular

#.NET

#EF

#Azure DevOps

Description

This project aims to create a smart feature tour in the form of a description panel that captures specific comments embedded in the code of Angular components. These comments, which describe screen functionalities, will be automatically reformulated and translated into the user's preferred language using AI and Natural Language Processing (NLP). The text panel will display the translated feature descriptions, helping claim handlers understand new or updated functionalities within the application. Additionally, the feature tour will notify users whenever there are updates to the system, providing an easy-to-read description of the latest changes in functionality. This approach will significantly improve the onboarding process and ensure that users are always informed of updates in the language they understand.

Key Features

- AI-Powered Comment Extraction: Automatically captures specific comments in the Angular code that describe screen functionalities.
- Reformulation & Translation: Uses AI and NLP to reformulate and translate the comments into the user's language for better understanding.
- Text Panel Display: Presents the translated feature descriptions in a non-interactive text panel for easy reading.
- Update Notifications: The system notifies claim handlers of new updates, providing them with a text-based description of updated feature

02

DevOps

17-18

Migrating Azure web apps to AKS and implementation
of a Grafana monitoring for azure services

18

Subject 06

Migrating Azure web apps to AKS and implementation of a Grafana monitoring for azure services

Number of interns

02

Duration of the internship

Between 4 to 6 Months

Required Profile

Bac + 3 , Bac + 5

Specialty: · Software engineer

Skills / Knowledge

#Azure Kubernetes Service (AKS)

#Docker

#Azure Key Vault & Kubernetes Secrets

#IAC: Terraform/Bicep

#Grafana/Azure Monitor

#CI/CD: Azure Devops

#RBAC

Description

- **Environment Setup:** Deploy AKS in a test environment and configure it to reflect current services and workloads.
 - **Performance Benchmarking:** Measure response times, resource allocation, and performance under different load conditions in both environments.
 - **Cost-Benefit Analysis:** Conduct a comparative analysis of operational costs, considering factors like resource scaling and administrative overhead.
 - **Security and Policy Assessment:** Verify AKS's compatibility with existing security policies and management requirements, including Azure RBAC integration.
-
- **Monitoring:**
 - Install Grafana
 - Create custom dashboards to monitor azure services.
 - Configure alerting rules.
 - Set up alert notifications in Grafana

03

Quality insurance

19-21

Automating API Testing with CI/CD Integration using Azure
DevOps

20

End-to-End Performance Testing Framework for CED
Applications

21

Project Ref

CED-QA-001

Subject 07

Automating API Testing with CI/CD Integration using Azure DevOps

Number of interns

01

Duration of the internship

Between 4 to 6 Months

Skills / Knowledge

#Karate DSL

#Git

#Extent Reports

#Azure DevOps

#Maven

#Java (with frameworks like RestAssured or Cypress for API testing)

Description

The project aims to automate API testing and integrate it within a CI/CD pipeline, ensuring that API functionality is validated with every new development build. The project will focus on creating automated test scripts for various API endpoints, setting up a CI/CD pipeline to trigger the tests automatically upon each build deployment, and generating reports of the test results. These reports will be automatically emailed to stakeholders, ensuring continuous visibility into the API's quality and stability. This project will enhance the overall development process by providing faster feedback loops and improving product reliability.

This project will provide hands-on experience with API testing, automation frameworks, and DevOps practices.

Project Ref

CED-QA-004

Subject 08

End-to-End Performance Testing Framework for CED Applications

Number of interns

01

Duration of the internship

Between 4 to 6 Months

Skills / Knowledge

#JMeter , Gatling

#Grafana, Kibana

#Jenkins or Azure DevOps

#Java, Groovy, or Python

Description

The goal is to develop an end-to-end performance testing framework for monitoring and testing our applications' response times, reliability, and scalability. The project will involve creating scripts that simulate heavy user loads, identifying performance bottlenecks, and integrating the framework into a CI/CD pipeline to ensure ongoing performance monitoring.

04

Security

22-23

Automated Security Training Program Using Defender

23

Project Ref

CED-SC-001

Subject 09

Automated Security Training Program Using Defender

Number of interns

01

Duration of the internship

Between 4 to 6 Months

Required Profile

Bac + 5

Specialty: Cybersecurity engineer

Skills / Knowledge

#Microsoft Defender for Office 365

#Coding

#Power Automate

#Power BI

#Power Apps

Description

Develop an automated security training program that integrates with Microsoft Defender to send notifications and distributes monthly training modules for all employees in CED GROUP, while also incorporating a dashboard for tracking participation and completion rates.

04

Business intelligence

24-26

Implementing a Business Intelligence (BI) Solution in Microsoft
Fabric

25-26

Subject 10

Implementing a Business Intelligence (BI) Solution in Microsoft Fabric

Number of interns

01

Duration of the internship

Between 4 to 6 Months

Skills / Knowledge

#Microsoft Fabric & Power BI

#XMLA and DAX

#PowerShell

#T-SQL & Python

Description

This project aims to design, develop, and implement a comprehensive Business Intelligence (BI) solution using Microsoft Fabric. The solution will involve data extraction, transformation, and loading (ETL), semantic modeling, report/dashboard creation, and the application of identity management processes to ensure secure and optimal BI operations. An AI chatbot will enhance user experience by processing natural language queries for data insights.

Objectives:

1. Develop a Data Pipeline

- Extract data using ODATA feeds.
- Apply transformation and loading techniques to integrate and clean data in the Fabric environment.

2. Build a Semantic Model

- Define and organize data relationships, hierarchies, and structures to create a coherent model that underpins the BI solution.

3. Create Reports and Dashboards

- Develop and design insightful reports and dashboards to visualize key data metrics.
- Provide stakeholders with real-time, data-driven insights to facilitate decision-making.

4. Monitor and Optimize BI Operations

- Establish tracking and monitoring capabilities for data pipelines, semantic models, and data refreshes.
- Ensure the BI environment operates efficiently with minimal downtime and accurate data refreshes.

5. Identity Management

- Establish and enforce policies and procedures for identity management, access controls, and data security to protect the integrity and confidentiality of data within the Fabric BI environment.

6. AI-Enhanced Data Analysis:

- Leverage AI to simplify data analysis. Users can ask questions in plain language, and the system(chatbot) will process the query, extract relevant data, and present the findings in an easy-to-understand format.

Methodology:

1. Data Extraction, Transformation, and Loading (ETL)

- Leverage ODATA feeds for data extraction.
- Use Fabric's ETL capabilities to transform and load data into the BI solution.

2. Semantic Model Development

- Use DAX and XMLA to organize data, define relationships, and build a scalable model.

3. Report and Dashboard Development

- Design reports and dashboards using Microsoft Fabric's BI tools and PowerShell scripting for customizations.

4. Performance Tracking and Monitoring

- Implement monitoring tools within Fabric to track data pipelines, model performance, and refresh operations.

5. Identity Management

- Implement an identity and access management solution to ensure data security within the BI solution.

6. AI-Enhanced Data Analysis:

- Build an AI-driven system(chatbot) that can understand and process user requests in natural language. The system will then generate DAX queries and submit them to XMLA endpoints for processing and insight generation.

Expected Outcomes:

- A fully functional BI solution within Microsoft Fabric.
- An organized, scalable data model for efficient reporting.
- Comprehensive dashboards and reports for real-time data insights.
- Optimized data pipeline and model refresh processes.
- IA system (chatbot) for natural language processing

That which is of **value**, must remain of **value**

Thank you !

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nadine.tajouri@ced.group

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