Short Proposal form (Ai Ned)

1. Details of intended secretary Intended secretary

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| --- | --- |
| Name: |  |
| E-mail address: |  |
| Organization: |  |
| Address: |  |
| Phone number: |  |
|  |  |

Possibly extra contact

|  |  |
| --- | --- |
| Name: |  |
| E-mail address: |  |
| Organization: |  |
| Address: |  |
| Phone number: |  |
|  |  |
| Contact via which AI hub, NLAIC working group or building block? |  |

1. Content description (max 500 words per entry field of this section)

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| --- | --- |
| Title |  |
| Key question of the proposed first trajectory(s) and solution direction(s) |  |
| Which area of application? |  |
| Intended outcome and impact |  |
| Intended consortium |  |
| The intended collaboration with the AI hub(s) and other stakeholders |  |

1. Participants to be registered for co-creation workshops

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| --- | --- |
| Participant 1: |  |
| Name: |  |
| Phone number: |  |
| E-mail address: |  |
| Organization: |  |
| Participant 2: |  |
| Name: |  |
| Phone number: |  |
| E-mail address: |  |
| Organization: |  |
| Participant 3: |  |
| Name: |  |
| Phone number: |  |
| E-mail address: |  |
| Organization: |  |
| Participant 4: |  |
| Name: |  |
| Phone number: |  |
| E-mail address: |  |
| Organization: |  |

**Key question of the proposed first trajectory(s) and solution direction(s)**

A brief look at the daily news demonstrates the increase in disasters around the world due to natural and man-made causes. The main thread that connects these disasters and their impacts around the world is their associated supply chains. These disasters result in supply chain disruptions, as has been noted most recently with the COVID-19 pandemic. The increasing magnitude and frequency of these disruptions make it alarming and it is imperative to find a way to deal with these disruptions when they present themselves. The move towards sustainable and circular supply chains also requires a deep inspection of currently existing structures within supply chains, so that a transition can be made. To identify problems that exist and reduce risks that are associated with a lack of understanding, more visibility is needed within the supply chain. This begs the question of what tool can be developed using AI to identify challenges and ensure better visibility into the supply chain.

We propose that this could be achieved by combining the use of Large Language Models (LLMs) with the AI system to create a tool that works as a value chain map generator. This means that using the LLM, the AI tool will scan through documents to look for the most likely stakeholders within the supply chain. This should ideally be based around a specific product or service, making it easier to connect the players in the supply chain, by tracing the various components used in the product. Previous attempts at mapping the supply chain have shown that the complexity of the map due to the global length of supply chains and the involvement of various players sometimes multiple times, is counterproductive to identifying issues within the chain. A way to streamline the direction of the chain to focus only on a particular subject would be the use of a critical lens. A critical lense can be any subject through which the map of the supply chain is viewed. This lense will focus the direction of problem identification within the value chain. Different types of maps of the same city, give us a different outcome. E.g. A geographical map of the Netherlands will show landmarks, roads, population etc, while an electric map of the Netherlands will show the electric grid. Here the map covers the same area (the Netherlands) but the focus of each map is different due to the lens used (geography, electricity). Similarly, a supply chain drawn using the sustainability lens will yield a clearer picture of sustainability issues, giving a supply chain map that is focused on sustainability and all the involved stakeholders. To streamline the direction of the map it will be important to accommodate variables that will superimpose this lens (like sustainability, criticality, carbon tax, etc) over this map. This could be done by adding certain conditions to the functions that will create the map. The addition of these critical lenses will help to develop insights into the stakeholders, operations, and processes involved in the prospective supply chain and identify points for improvement.

Finally, as with most well-developed AI tools, the aim is also to create a self-learning component within the tool, so it analyses the data and learns from itself.

**Intended outcome and impact:**

The aim of the AI tool is to identify the various stakeholders within a value chain associated to a certain product or service. After the stakeholders are identified, the interconnections between stakeholders, and the movement of goods, and financing can be understood for that particular supply chain. Furthermore, the problem points and possible risks associated with disruption or other challenges within the supply chain can within chain can be identified.

Due to the globalization of most supply chains and the incredible complexity involved within the supply chain of even a single product, the tool will be designed to streamline the data further to target only the necessary players required to act to solve that particular challenge

This will be done, by using a certain lens depending on the problem identified, taking in mind the necessary variables.

Finally, this will be developed to be self-learning, so that the tool keeps improving itself.

Impact:

It has been envisioned that the creating of the tool will lead to a faster and quicker way to identify risks and increase visibility within the supply chain. This will not only lower the risk of disruptions but could also be used further to pinpoint areas within the supply chain where changes could be made towards sustainability and circularity.

It will also help to find different players within the supply chain at different stages, that can communicate and develop strategies keeping in mind the entire supply chain.

It will also help supply chain experts zoom into challenges within their supply chain with the intended lens in mind so that the focus on a particular problem can be maintained.

**Intended consortium**

The intended consortium will consist of two industry experts within the space of linguistics and AI respectively. This will be in collaboration with the university of….

Besides this, two companies that work with supply chain will also be part of this consortium

**The intended collaboration with the AI hub(s) and other stakeholders**