

## EuroTeQ Collider 2024

Challenge

### Design a ‚Digital Product Passport‘ for Small and Medium-Sized Enterprises (SME)

Category

**Technology**

Focus

**Entrepreneurship**

The „digital product passport“ enables businesses within the manufacturing industry to increase the transparency of their products‘ characteristics and usages over the entire product life cycle. It contains and manages information along the entire value chain starting with mining, processing, production and usage phases in order to support a circular economy cycle, optimise the resource utilisation and processes and meet regulatory requirements. In the automotive industry, for example, Catena-X is taking the lead in impulsing this technology to realize a decarbonized and sustainable circular economy. Some large enterprises representing interest groups are already involved in the Catena-X project.

#### Problem definition

As of 2023, about 70% of Catena-X target customers were identified as „SME and companies with little data readiness or digital footprint“, and about 65% of all customers remained uncertain about exchanging their data with other companies because of „incompatible data sets, legal uncertainty, economical attractiveness“, among other reasons. Due to the complexity and increase in regulatory demands and industrial requirements as well as the lack of digitalisation within the SME, the integration and collaboration of these firms within a globalised industry and supply chains is more and more challenging.

#### Description

The challenge comprises the design and development of a simple, applicable solution, called the „digital product passport“, as means for the secure and regulatory conform documentation, exchange and analysis of the respective product lifecycle for SMEs within the manufacturing industry. Creating a better nexus between SMEs and the „digital product passport“ technology will allow them to contribute to a more sustainable and efficient value chain.

#### Key questions

- low complexity regarding applicability for SMEs (no IT specialised departments and in general a low level of digitalisation) - (user perspective) scaleable effortlessly for new G5/regions‘ regulations (rule engine), additional products and (global) partner linkaged of the SME’s supply and value chain. - (architecture/technology) manage and store large amounts of data, (explanation of „large amount“ = 1 SME in one market (EU) with one product of medium complexity = 100.000 products in customers hands x 200 materials x 60 digital product passports to managed during usage per annum = 1.2 Billion Digital Product Passports per annum) - (architecture/technology) provide high level of data integrity and change logging. - consider latest technological advances regarding both cloudification, analytics (AI) and security. - usage of open exchange formats and standards for ease of use and data exchange (i.e. GAIA-X)

#### Links

Example of initial implementations for large cooperations focussing on the „battery passport“

<https://www.globalbattery.org/battery-passport/>

Example of initial implementations for large cooperations focussing on the „battery“ within the automotive industry.

<https://catena-x.net/de/angebote-standards/hmi-2023/circular-economy>

#### Skills

Targeted to Master and PhD students. Relevant technical, professional or personal skills include:

business management and/or business law | understanding of the structure and functioning of data ecosystems | understanding of the legal challenges / implications of working with international data (data sovereignty, data spaces, etc.) | understanding of circular economies | communication, analytic thinking, and project management | experience with programming and cloud solutions

#### Partner

BECONEX is a technology company with a focus on digitization, cloud-based services, and artificial intelligence for document management. Our mission is to help organizations boost the efficiency of business processes and increase collaboration, by making digitization and document management solutions more approachable and user-friendly. For this challenge, we count with the support and expertise of Dr. Alexander Bakosch Ph.D., senior consultant and project manager with over 10 years of experience in the automotive industry and digital transformation.