

# Project Outline

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# **1 Research area and working title**

## **1.1 Research Area**

### **1.1.1 Blockchain**

## **1.2 Working Title**

### **1.2.1 Connecting Blockchain of Blockchains to centralised systems and decentralised ledger systems (also known as blockchain technology)**

# **2 Abstract**

(Belchior et al. 2021) state that "blockchains of blockchains are frameworks that provide reusable data, network consensus, incentive, and contract layers for creating application-specific blockchains (customised blockchains) that interoperate between each other." They further outline the current gap in the research regarding connecting existing centralised systems such as traditional banking systems and decentralised ledger systems such as blockchains to other blockchains. Interoperability between blockchains has been an emerging field of research for some time. It has gained significant traction since the whitepaper by Gavin Wood was released in 2016 that introduced Polkadot, a multi-chain development environment allowing for Interoperability between blockchains using a mechanism known as a parachain or bridge (Wood 2016).

### **3 Proposed Research Problem and Research Question**

#### **3.0.1 Research Problem**

#### **3.0.2 Research Questions**

**RQ1** Do the current cross-chain solutions provide mechanisms to connect to centralised and decentralised ledger systems?

**RQ2** Does the proposed Visa universal payment channels solution support bridging solutions?

**RQ3** Are off-chain solutions problematic for the paradigm under which blockchains operate?

### **4 Proposed Aims and Objectives**

### **5 Proposed Research Design**

#### **Action research**

I want to use action research.

## 6 Artefact/s that can be created

### References

- Belchior, Rafael et al. (Oct. 4, 2021). “A Survey on Blockchain Interoperability: Past, Present, and Future Trends”. In: *ACM Computing Surveys* 54.8, 168:1–168:41. ISSN: 0360-0300. DOI: 10.1145/3471140. URL: <http://doi.org/10.1145/3471140> (visited on 03/18/2022).
- Wood, Dr Gavin (2016). “POLKADOT: VISION FOR A HETEROGENEOUS MULTI-CHAIN FRAMEWORK”. In: p. 21.