Blockchain in Transport Operations

About Project Smarta Fabriker: Digitalization and its connection to sustainable production is identified as a key enabler for increasing the number of jobs in Swedish industry. The purpose of Project Smarta Fabriker is to increase the attractiveness of technology and careers in industrial companies, and to spread knowledge about industrial digitalization. During the spring of 2017 a state-of-the-art demonstrator of a smart factory was developed by 80 students in collaboration with over 50 companies. The demonstrator is currently used for training students as well as employees of industrial companies. For 2019 this demonstrator is to be further developed implementing a variety of digital manufacturing concepts. To learn more about the project and previous theses, visit www.smartafabriker.se (in Swedish).

Scope:
Blockchain technology has the potential to transform the supply chain because the distributed ledger could unify previously fragmented flows of money, goods, information and digital assets. The scope of this thesis includes, but is not limited to, the design and development of a demonstrator of blockchain applications in a simplified transport scenario using an autonomous mini-truck. As an example, the scenario could include following events: placing an order at a “supplier” at point A. Wirelessly track when a shipment is moved from the supplier to the truck. Transport the shipment from point A to point B. Wirelessly track when the shipment is moved of the truck at the “goods reception” and the order is confirmed.

Tasks:
- Evaluate and identify a suitable blockchain technologies and platforms based on the scenario and demonstrator requirements.
- Develop a mobile demonstrator solution where the event recording on the blockchain are visualized in real-time while the transport scenario is being executed.

Means and location:
This thesis is performed in collaboration with Volvo Group Trucks Operations (GTO) and Cybercom’s Innovation Zone which will provide industrial support and supervision. The demonstrator will be used in
the context of Smarta Fabriker as well as internal and external expos at Volvo GTO. Thesis students will have access to workplaces at Cybercom Lindholmen and a dedicated mentor specialized in blockchain technologies. The students will also benefit from the results and experiences of ongoing blockchain initiatives at Volvo GTO.

**Conduction and requirements:**
This thesis work needs to be conducted by two students. Preferably, we are looking for students with background in Computer Science, Software Engineering, Information Technology, or Automation and Mechatronics.

**Contact**
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Interviews are held continuously. To apply, send your CV and a cover letter to David Lindgren David.Lindgren@cybercom.com as soon as possible, but no later than November 30th, 2019.

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