

## Motivation

Distributed algorithms with local knowledge and centralized algorithms with global knowledge are well understood individually. Centralized algorithms can provide optimal solutions to various problems, but cause a significant overhead. On the other hand, local algorithms usually cannot provide performance guarantees, but introduce only insignificant overhead. How can this trade-off be controlled?

## Goals

This thesis aims at providing a compromise between local distributed and global centralized solution. We will cluster the network in individual parts. Then, we will configure the clusters independently based on the requirements. For example, one cluster might rely on a cluster-central algorithm, while other clusters may be completely self-organized. By adjusting the cluster size, we can efficiently adjust the trade-off.

### Typ

Analyse	■ ■ ■ ■ □
Design	■ ■ □ □ □
Implementierung	■ ■ ■ ■ □
Literaturrecherche	■ ■ ■ □ □

## Vision

This thesis investigates different possible approaches to tackle the trade-off between local and global knowledge. By implementing different mechanisms in the network simulator PeerfactSim.KOM, a comprehensive evaluation is possible.

