

## **Abstract**

A problem in autonomous transport systems is the uncertainty of measurements. Especially uncertainty in position estimation needs to be minimized in order for a transport system to function fully autonomous. If a transport system does not know where it is, it cannot determine its next action to get closer to its goal. In this report an overview is made of autonomous transport systems for internal transport in companies. Transport systems are discussed both for indoor and outdoor use, for the transport of parcels, containers and general cargo. The sources of noise, uncertainty and disturbances are identified, both for indoor and outdoor systems. An overview of sensors used for position estimation is made and the distinction is made between relative and absolute position measurements. The link between these sensors and the sources of noise, uncertainty and disturbances is made. Each sensor has its own uncertainty, it is shown that certain combinations of sensors can decrease the uncertainty of the system as a whole. Therefore methods for combining information from multiple sensors in transport systems are discussed, called fusion methods. Kalman Filters, and its varieties used in transport applications as well as other fusion methods are discussed. An overview is made of literature with the fusion methods and their applications in transport systems.