# 1 Background, objective and goal

Background

Large quantities of paper are produced and shipped every day at a paper mill. Several trucks are involved to handle all these materials.
The situation is explained subsequently:

1. Paper reels are produced and coming out on a conveyor belt.
2. From conveyor belt they are transported to intermediate storage or to immediate shipping area.
3. From intermediate storage they are later transported to shipping area(container, train, lorry).

Objective

To develop a presenting and simulation environment to test techniques that can be used optimize the material handling.

Goal

To convey information from the database, in order to do the further optimization.

Limitation

1. Possible optimization approach will not be proposed or simulated.
2. The NEWWHLOCCODE or OLDWHLOCCODE of data have to be among the 180 places, otherwise we will not process them.
3. The reel damaging reason is not presented.
4. The factory map will not be exactly presented, for we are just trying to convey the tracks of trucks. How the factory is constructed is not the point. Therefore, we will simplify the process by plotting each cell as one cell.
5. The distance will be presented with center meter precision.

## 2 Requirement

Product requirement

- The situation expressed in the form of database is presented in the form that is easily understandable for human.

Project requirement

- The simulation environment must have the ability to present the user with the total distance based on each truck and all trucks.
- The simulation environment must have the information based on each reel, such as the total transported distance, the number of movement before it is shipped out, the period of time it spends inside factory.
- The simulation environment must have the information concerning the usage of all cells with the passage of time.
- The simulation environment must have the ability to illustrate the trucks' path.
- The simulation environment must have a graphic interface to illustrate the above information.
- The simulation environment must keep track of the damaging of reels, such as when the reel was damaged.
- As for the WHLOCCODE is one capital letter, the simulation software could have the ability to seek the really location by referencing other reels, that share the same order code as this one.
- The simulation environment could have the ability to present the statistic information of the above variables, such as total transported distance, the number of movement, etc.
- More is coming.

Prerequisites

- The information about StoraEnso production system database, such as how the data is gathered, and the platform this database is using.
- Periodic reference must be provided during the execution of this project.

## 3 Milestones

- Specify requirement and management triangle(triple constraint).
- Compose the project plan.
- Extract relevant data.

- Validate extracted data.
- Specify needed statistics.
- Sketch presentation and simulation environment.
- Determine to what tools to use in this project.
- Present result to StoraEnso.
- Final presentation to StoraEnso.