



## Beamways PRT system

Bengt Gustafsson, 2008-09-02



# Beamways – Applicable in the city



## Guideway properties

- Suspended system, higher beam position.
- Excellent weather proofing thanks to downward facing guideway slot.
- Minimal visual intrusion thanks to slim beam.
- 25 m (80 ft) spans handles most road intersections.
- Dual-direction for high capacity and speed
- Curve radii down to 3 m (10 ft) gives layout flexibility.
- Climbing ability of 40% allows for ground level stations.

# Beamways – Travel quickly and comfortably



## Vehicle properties

- Four comfortable seats and folding table
- Generous floor and door size for wheelchair etc
- Onboard entertainment system
- Communication to vehicle hosts
- The cabin leans to the sides in curves.
- The cabin leans forwards and back – level floor even in steep grades.

# Beamways – Lean Travel

## **Low resource consumption with smart solutions**

The Beamways vehicle is propelled by regular electric motors with advanced power electronics. The power is delivered through a power rail inside the beam. This combination gives a superior drive train efficiency.

The even travel speed, aerodynamic shape and regenerative braking, alongside with an advantageous wheel carriage design provides a minimum of energy consumption.

The lightweight beam design made from steel provides for a low consumption of non-renewable resources. As steel is one of the most easily recycled raw materials this holds true even for the guideway if the entire life cycle is considered.

# Beamways – Safe and Reliable

## Safety and redundancy built in

All safety critical systems will fulfil the requirements of the Swedish railroad authority and the corresponding agencies in other countries. Many of the critical functions are doubled, including emergency brakes, drive motors and power pick ups.

Multiple independent data communication channels are available to ensure uninterrupted communication with other vehicles and the central computer system.

The power rail is complemented by a small battery which allows uninterrupted travel to the nearest station even in case of a power out. No one will be stranded on line.

Movement detectors are used to keep track of other vehicles and foreign objects in the path of the vehicle.

# The Beamways system – Economically attractive

## Focus on infrastructure cost

A main philosophy of the Beamways system is to minimize the guideway installation cost. By moving advanced functions like switching to the vehicle the basic guideway system cost can be minimized. The excellent cornering and grade capacity also allows more efficient guideway design including shorter on and off ramps at stations.

This focus has the great benefit that the operator's initial investment is minimized, improving the operating margins for the smaller systems which are likely to be the first to be deployed.

While Beamways vehicles are somewhat more complex due to this design focus vehicle cost is less of an issue as the need for additional vehicles is proportional to more system revenue!

# Beamways AB – Wide experience

## **Newly formed company with a firm knowledge base**

Beamways AB was formed in January 2008 by Bengt Gustafsson and Syntrans AB.

Bengt Gustafsson is the primary inventor of the unique technical solutions forming the basis of the Beamways system. Bengt Gustafsson's earlier experience includes being CTO for different products within the fields of software, electronics, optics and mechanics, with customers in the military-, vehicle- and entertainment industries. Customers include DoD, Chrysler, NASA.

Syntrans AB is the mother company of several high tech companies in the Linköping area and has extensive management experience with fast growing high tech companies.

Linköping has a strong tradition in high tech including one of the most renowned technical universities in Sweden and the Saab fighter jet manufacturer. The Swedish traffic research institute is also located in Linköping.

# Beamways – a concept on its way to realization

## Studies, analysis and calculations

During the spring a number of studies have been initiated. The aim of these studies is to verify that the design goals of the Beamways system are attainable. This is especially true of the beam system which is essential for both the cost and the visual intrusion aspects of the system.

Recently an industrial designer has been engaged to do a study on the cabin design, with focus on usability and comfort.

