

**ALEX**

**Automatic  
Level Crossing  
System**

**UNECE  
May 2014**



**TRAFIKVERKET**  
SWEDISH TRANSPORT ADMINISTRATION

# About the Swedish Transport Administration

- A government administration responsible for the long-term planning of the transport system
- In charge of the national road and railway networks
  - 100 000 km road (including 2 000 km motorway)
  - 12 000 km railway

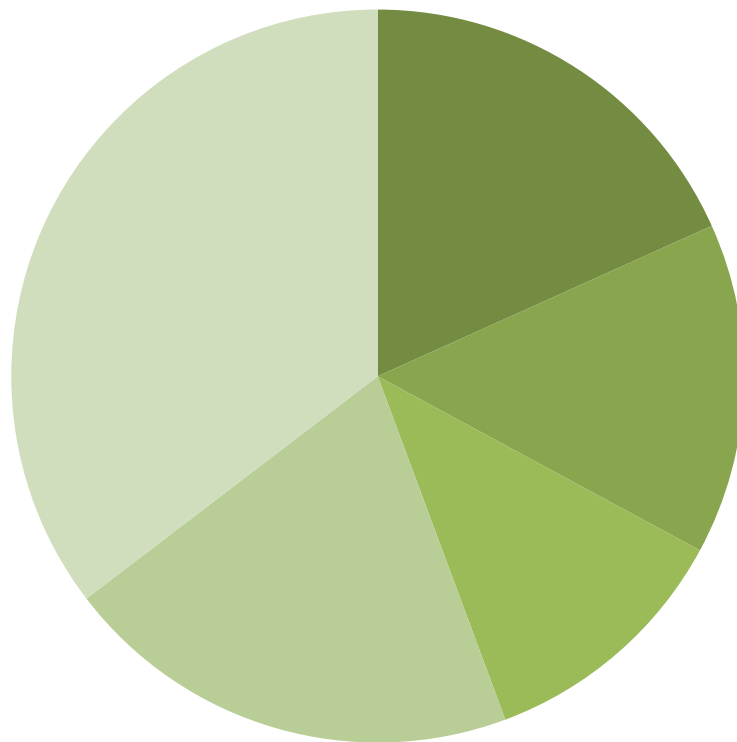
# Vision Zero (zero fatalities)

**System designers** are responsible for the design, operation and the use of the transport system

**Users** are responsible for following the rules for using the transport system

If the users fail to comply with these rules the system designers are required to improve the system

# Trafikverket has ~6500 level crossings



## Protection

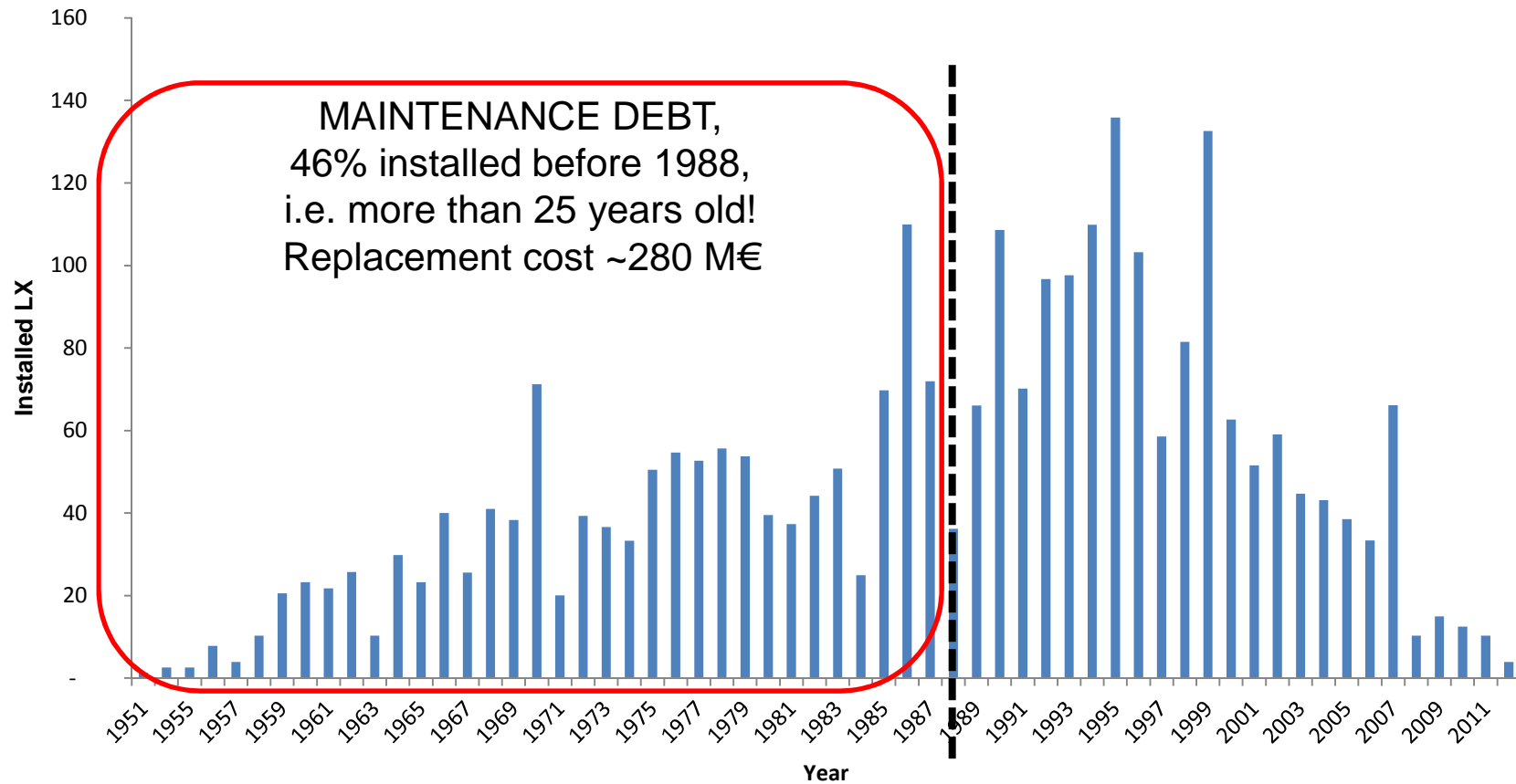
- Full barrier 18%
- Half barrier 15%
- Light and sound 12%
- Passive protection 20%
- Without protection 35%

# Key figures for level crossings

- LCC, Life Cycle Cost (25 years) 2440 M€
  - Included costs for accidents 550 M€
- Number of fatalities (25 years) 250
  - Included suicides 125
- LX replacement value 800 M€



# 2770 LX have active protection



# Baseline 2014

Compared to modern solutions available on the market our old LX control system design from 1970 is characterized by

- at least 50% higher investment cost
- at least 60% higher maintenance cost
- at least 400% higher energy cost
- difficulty to introduce new solutions to prevent fatalities

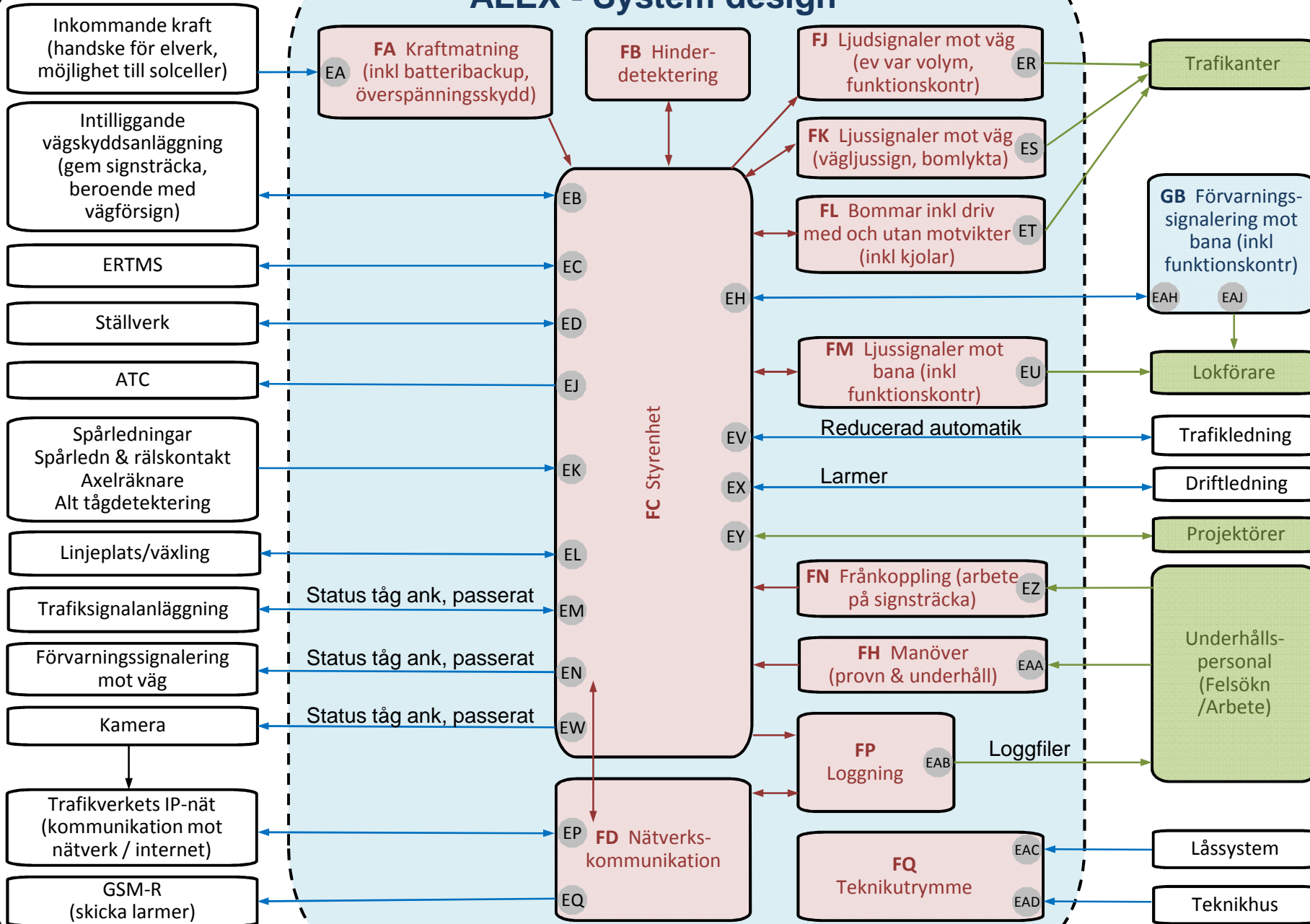


# Project ALEX

- ALEX – Automatic Level Crossing system)
  - Procurement of modern techniques for level crossings
  - Framework agreements with 2-3 suppliers according to the Public Procurement Act
- Outsourcing policy
  - Purchase of maintenance, systems etc. from suppliers
  - Suppliers must take responsibility for the supply of components and safety cases during the economic lifetime, for about 25 years
  - Suppliers can introduce new technologies in their systems when it is beneficial to both parties – Win-win!
  - Safety case according to EN 50126 (RAMS)



# ALEX - System design



Thank you for your attention  
Olle Mornell

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