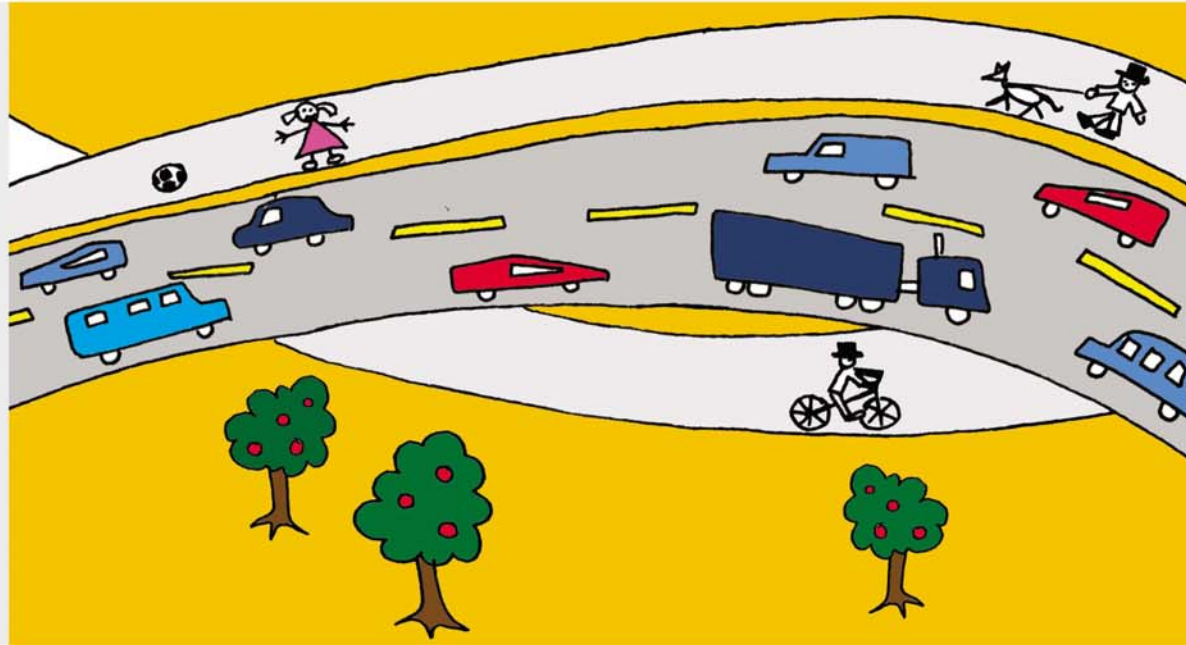


# National Road Data Bank – The road at your desktop



**Statens vegvesen**

Norwegian Public  
Roads Administration



Mr. Trond Hovland

Principal manager National Road database

Norwegian Public Roads Administration



# ViaNordica 2008

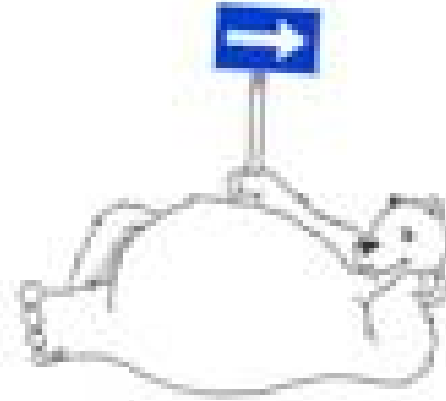
## Tunnel innovation; Location-based Services and Robotics

Helsinki



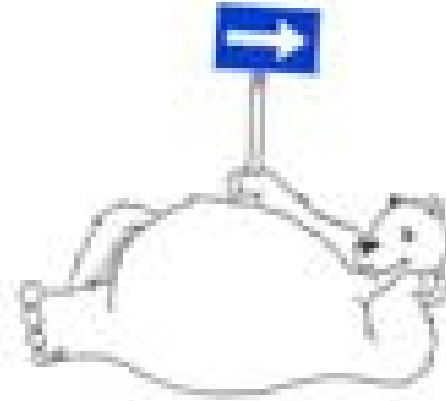
# Agenda

- Location-based services in tunnels
- Robotics in tunnels



# Agenda

- Location-based services in tunnels
- Robotics in tunnels



# Location-based services in tunnels

More than 1 000 tunnels  
Many of them sub sea



Old and new - tunnels  
changes too!

Not only due to comfort,  
safety and security is  
even more important!



# Location-based services in tunnels



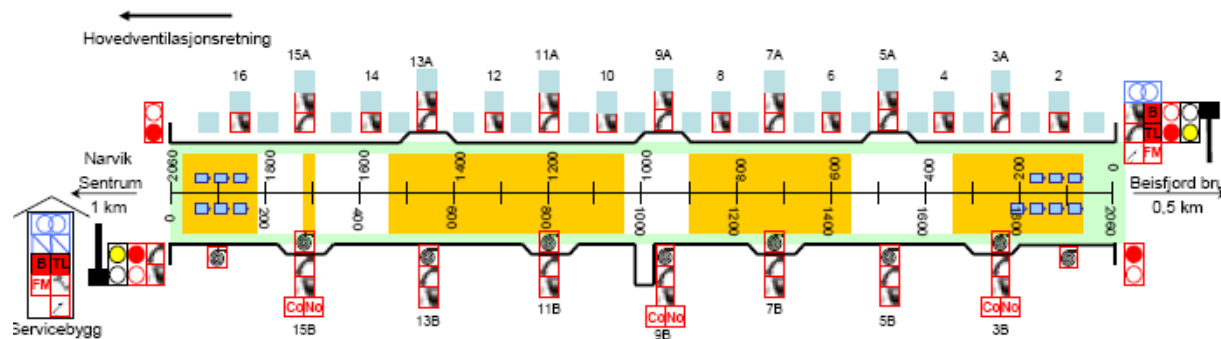
**Entrance of the Mont Blanc tunnel**



# Location-based services in tunnels



## E6 FAGERNESTUNNELEN Narvik kommune



TEGNFORKLARING	TUNNELUTFORMING	SAMBAND	OMKJØRINGSRUT	VARSLINGSPLAN	
<ul style="list-style-type: none"> <li> - Trafikkfordelinger</li> <li> - Stoppsigna</li> <li> - Arbeidsvarsling</li> <li> - Bom</li> <li> - Branntablå</li> <li> - Telefon</li> <li> - Nødtelefon</li> <li> - Brannslukker</li> </ul>	<ul style="list-style-type: none"> <li> - NøkkelSAFE</li> <li> - SlukkeVANN</li> <li> - Brann-utrustningsutstyr</li> <li> - A-symmetrisk ventilator</li> <li> - Betong hvelv</li> <li> - BE-skum, brannsikret</li> <li> - No-måler</li> <li> - Radioutstyr</li> <li> - Ledelys</li> </ul>	<p>VERTIKALKURVATU</p> <p>R</p> <p>1,5% 2,4%</p> <p>HORISONTALKURVAT</p> <p>UR</p> <p>R= 700 R= 1200 R= 500</p>	<p>Telefon montert i Branntablå</p> <p>Nødtelefon koplet til Vegtrafikksentralen</p> <p>Mosjøen</p>	<p>E</p> <p>Omkjøring via gamle E6 langs Narvik havn</p>	<p>Vegtrafikksentralen</p>

Drift og vedlikehold av venter og

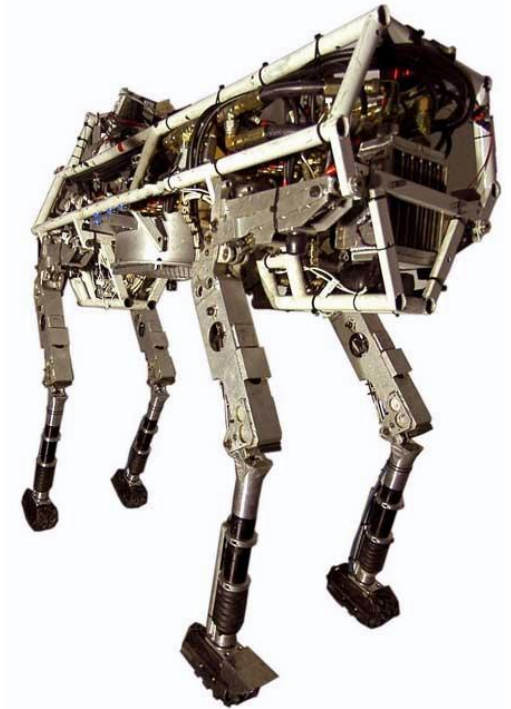


## Advanced equipment in modern tunnels

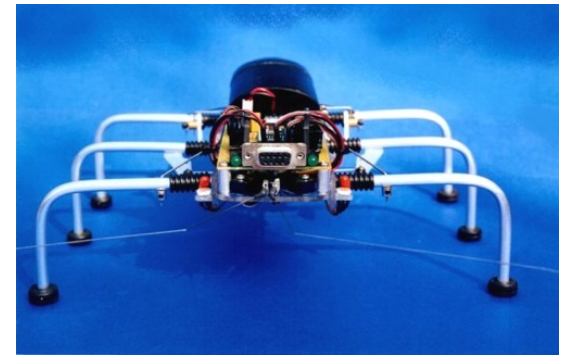




# Robotics in tunnels



The great future of  
robotics!





# Robotics in tunnels

SINTEF:

A SnakeFighter system permanently installed in a road tunnel can be mobilized if a fire develops inside the tunnel.



# Robotics in tunnels

Anna Conda in action:

