Rijkswaterstaat

Ministry of Transport, Public Works and Water Management

ENTERPRISE Project

Results Feasibility Study Intelligent Highways

(by use of embedded Minature, Low Cost, Maintenace free Sensor Networks)

25 november 2009

Summarized Project SCOPE

The project is looking at the concept of Intelligent or Thinking Highways using miniature, low cost and maintenance free sensors in the road surface.

The aim of the project is to review and research the implications of such a new state-of-the-art data collection system for effective operational traffic management only and to perform a technological feasibility study.

This was done by looking at two topics, namely applications and technology.

Project Approache

The aforementioned feasibility study consisted of 3 phases:

1. Literature study after the State of the Art of know how and technology;
2. Identification of possible application areas;
3. Analyses of expectations and maturity of technology aimed at deployment;

Stakeholder Perspectives & Application Area's

Figure 3: stakeholders and application classes for cooperative systems (source: Rijkswaterstaat)

Growing to Cooperative IVS

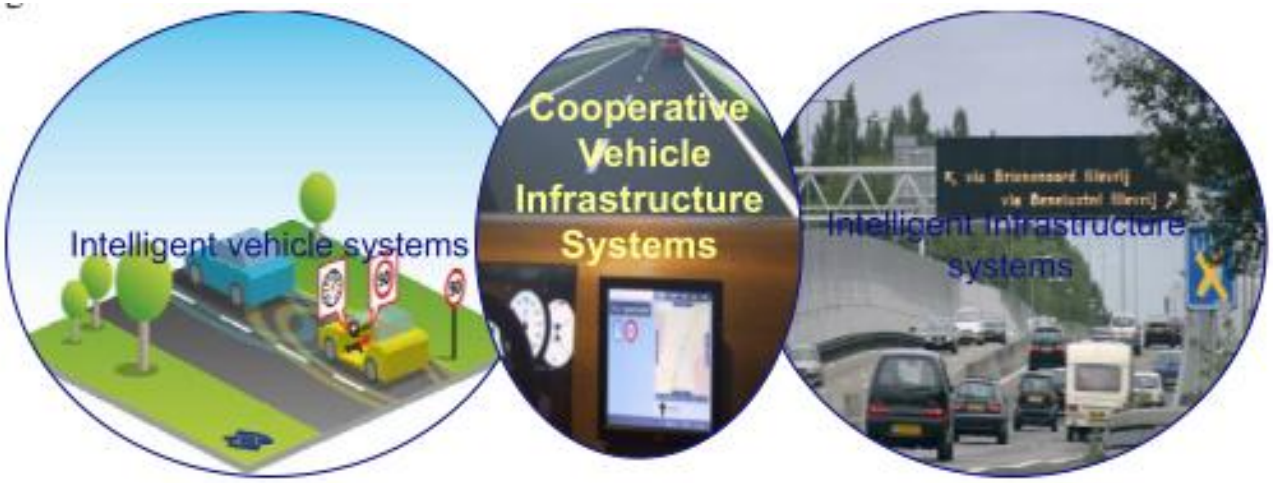


Figure 2: developments towards cooperative systems (© TNO)

Application Classes

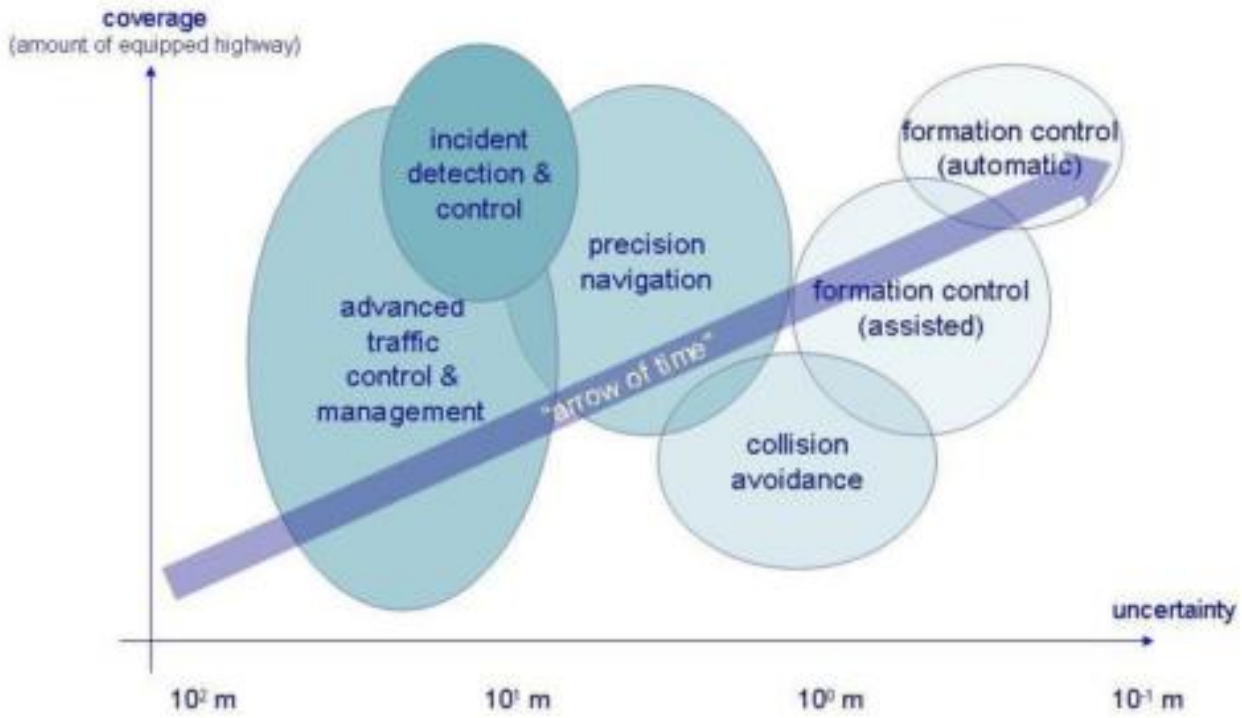
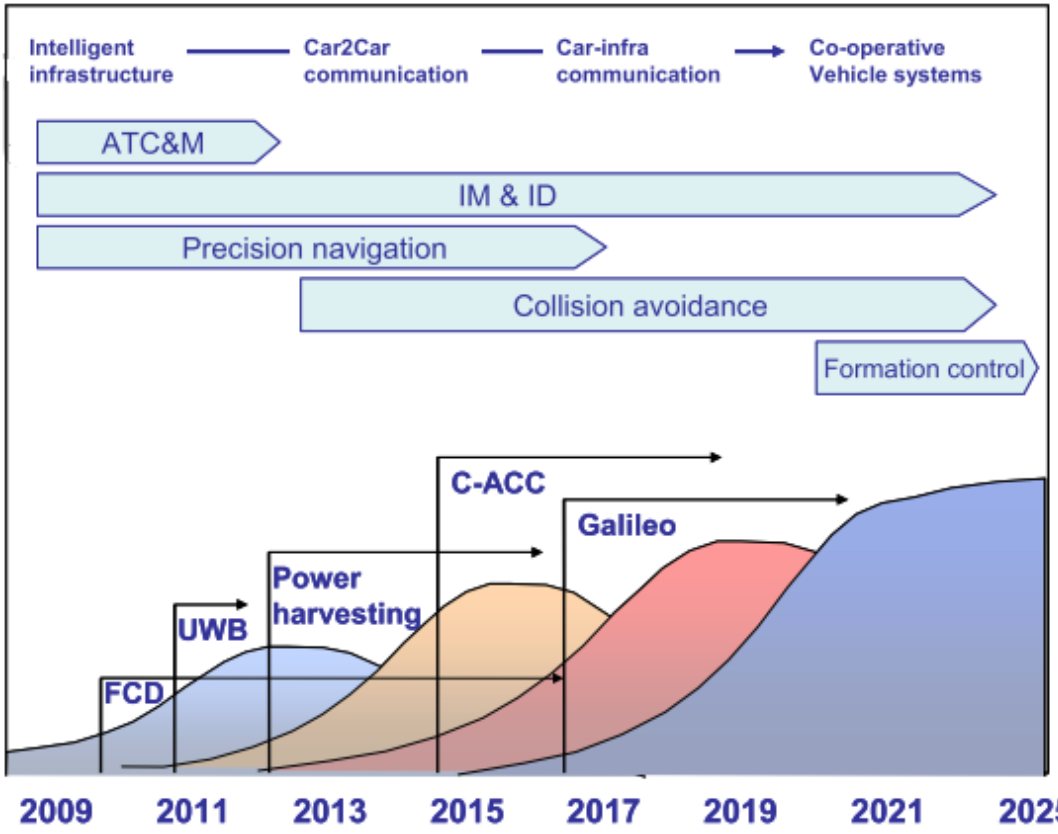


Figure 4: Application classes of TISNET with respect to sensing uncertainty, coverage of the sensing system and time.

Project Summary

Summarized we can visualize the relationship between state-of-the art, technological maturity and the potential application classes as follows:



ATC&M	Advanced Traffic Control & Management
IM&ID	Incident Detection & Incident Management
FCD	Floating Car Data
UWB	Ultra Wie Band communication
C-ACC	Controlled Adaptive Cruise Control