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Geneva, 5-7 March 2008



Project Overview

- 10.5M Integrated Project co-funded by DG Enterprise & Industry (6th FP)
- 3 years project, started in Nov. 2006
- It promotes the integration of satellite and terrestrial communications with GALILEO to enable mass-market take-up by road transport applications.

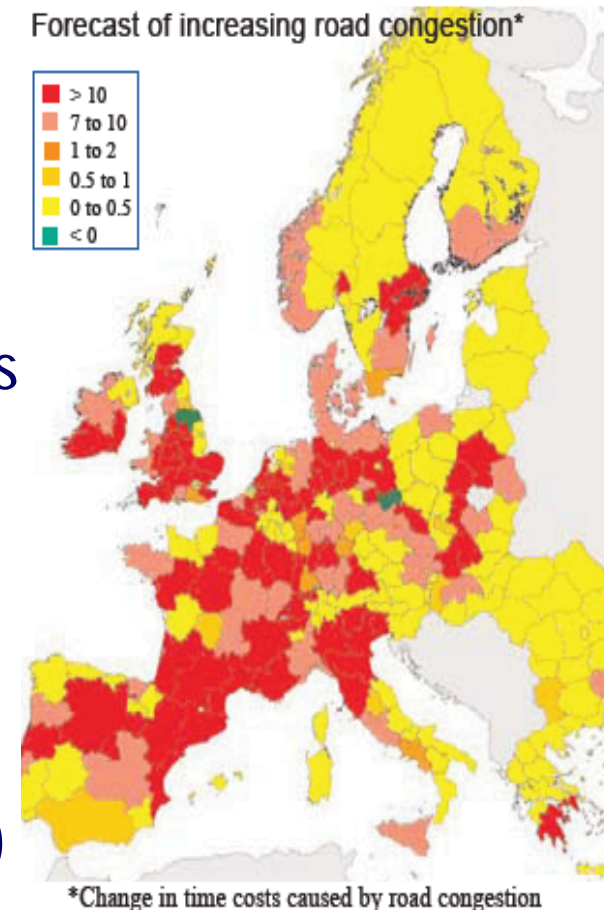
Project Consortium



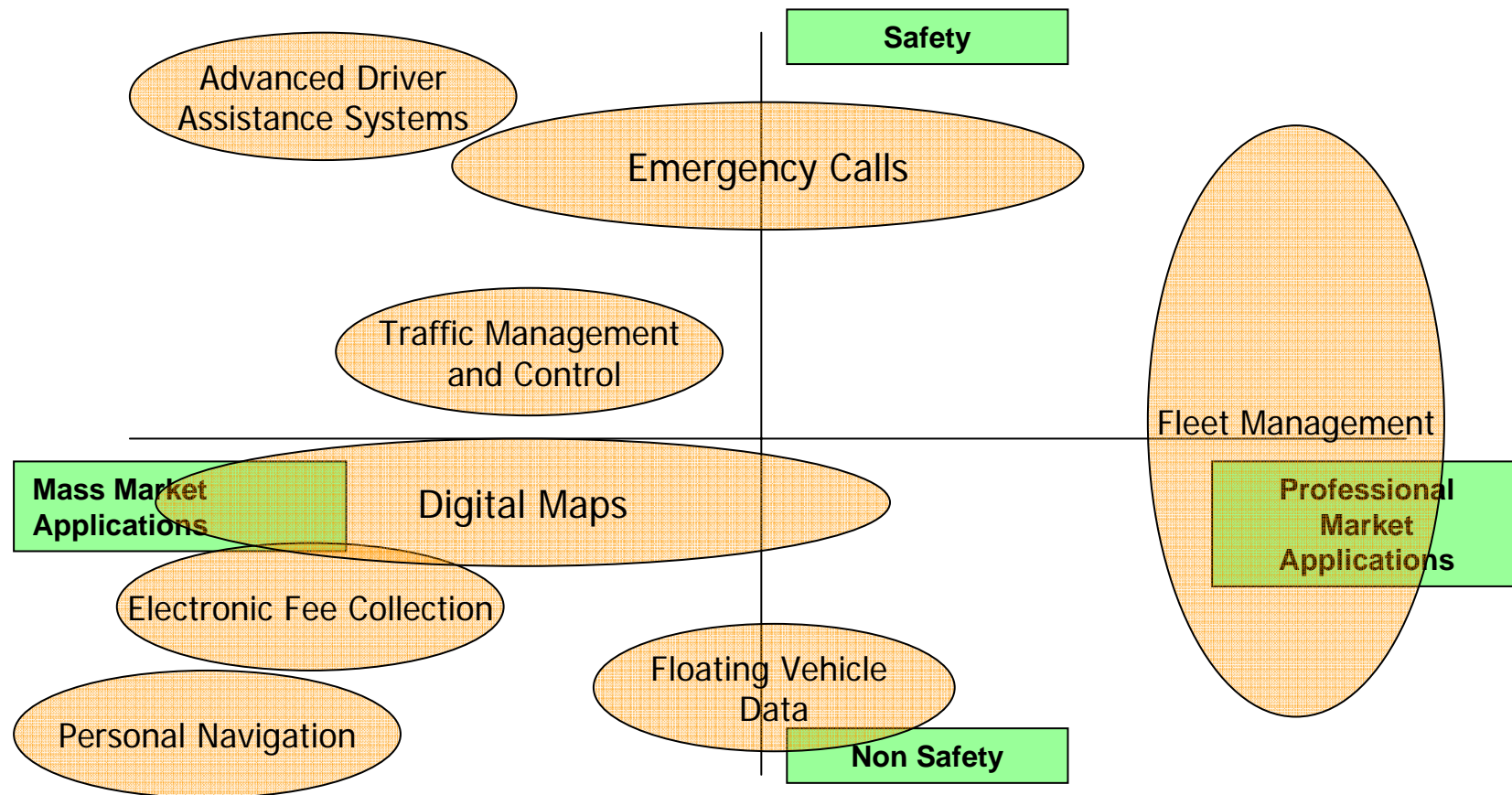
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Road Transport Facts

- 215 million cars in the EU25
 - 38% growth from 1990 - 2004
 - Growth by one third over next 5 years
- 5 million HGVs, 23 million LGVs
- 28% of EU25 CO₂ emissions
- Growing congestion across Europe
 - Variety of road tolling initiatives
- 42,000 road deaths per year (2005)
 - Target to reduce by 50% by 2010

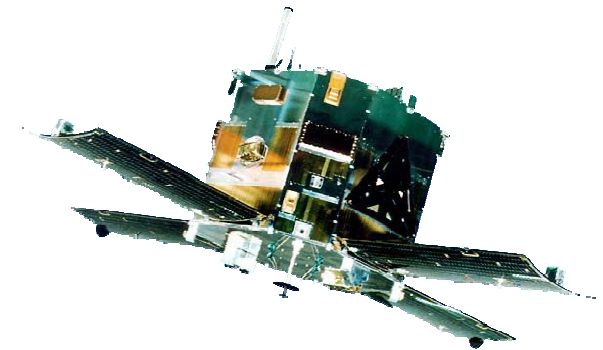


Intelligent Transport Systems Applications

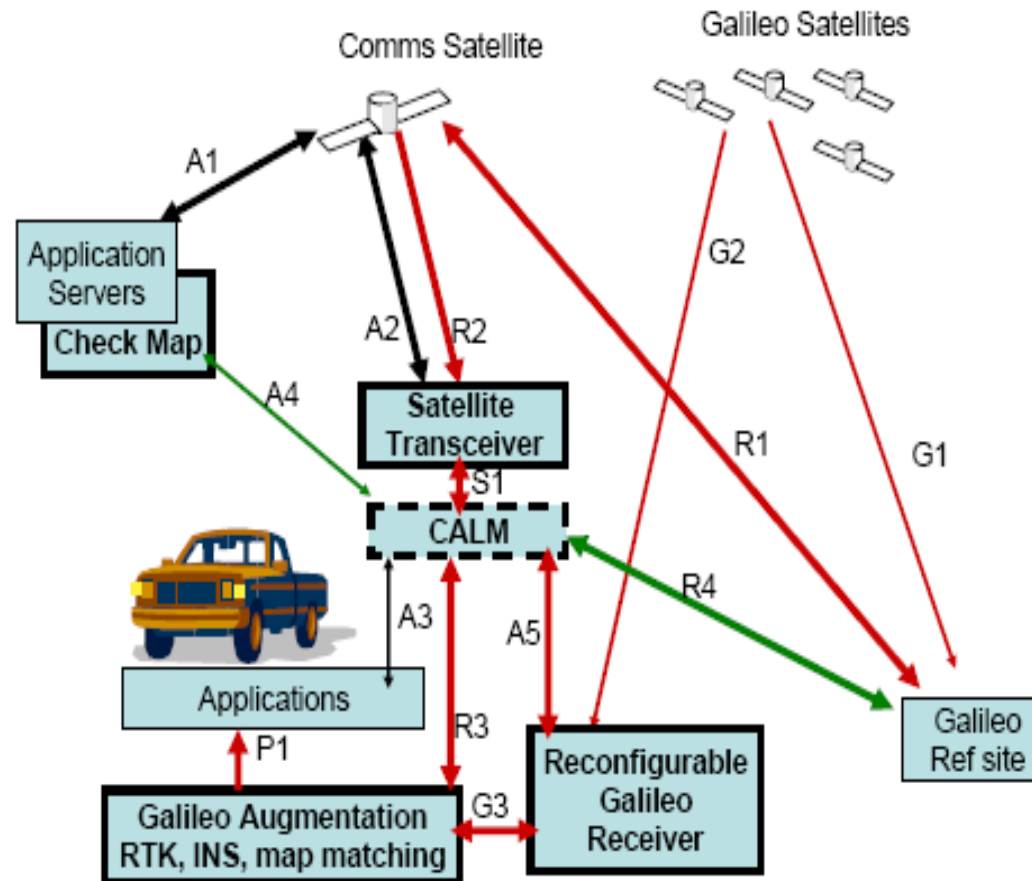


Why Satellite ?

- o Provides back-up communications capability, closing the coverage gaps of terrestrial network
- o Very efficient broadcast mode
- o Satellite technology & performance improving, with cost reducing



SISTER High Level Architecture



High Level Project Structure

Analysis

A comprehensive assessment of the full range of GALILEO applications and their communications requirements from both technical and business operations perspectives. Requirements for satellite communications services or new satellite systems will be developed.

Practical

It will produce a prototype integrated satellite / terrestrial / GALILEO transceiver and will perform demonstrations of applications to prove and measure the effectiveness of satellite communications, building upon previous research and development projects.

Standard

It will work to add a satellite component to the ISO's CALM (Continuous Air Interface for Long and Medium Distance) standard and other relevant standards identified during the course of the project.

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SISTER Analytical Stream

Satellite Data Broadcasting (SDB)

Vehicle Navigation Service

- ✓ Digital Maps Update
- ✓ Traffic and weather information
- ✓ POI information update
- ✓ RTK data
- ✓ GPS signal authentication

Satellite Narrowband bidirectional data transmission (SND)

Safety & Security Services

- ✓ eCall
- ✓ Theft detection
- ✓ Remote Vehicle Diagnostic
- ✓ PAYD insurance

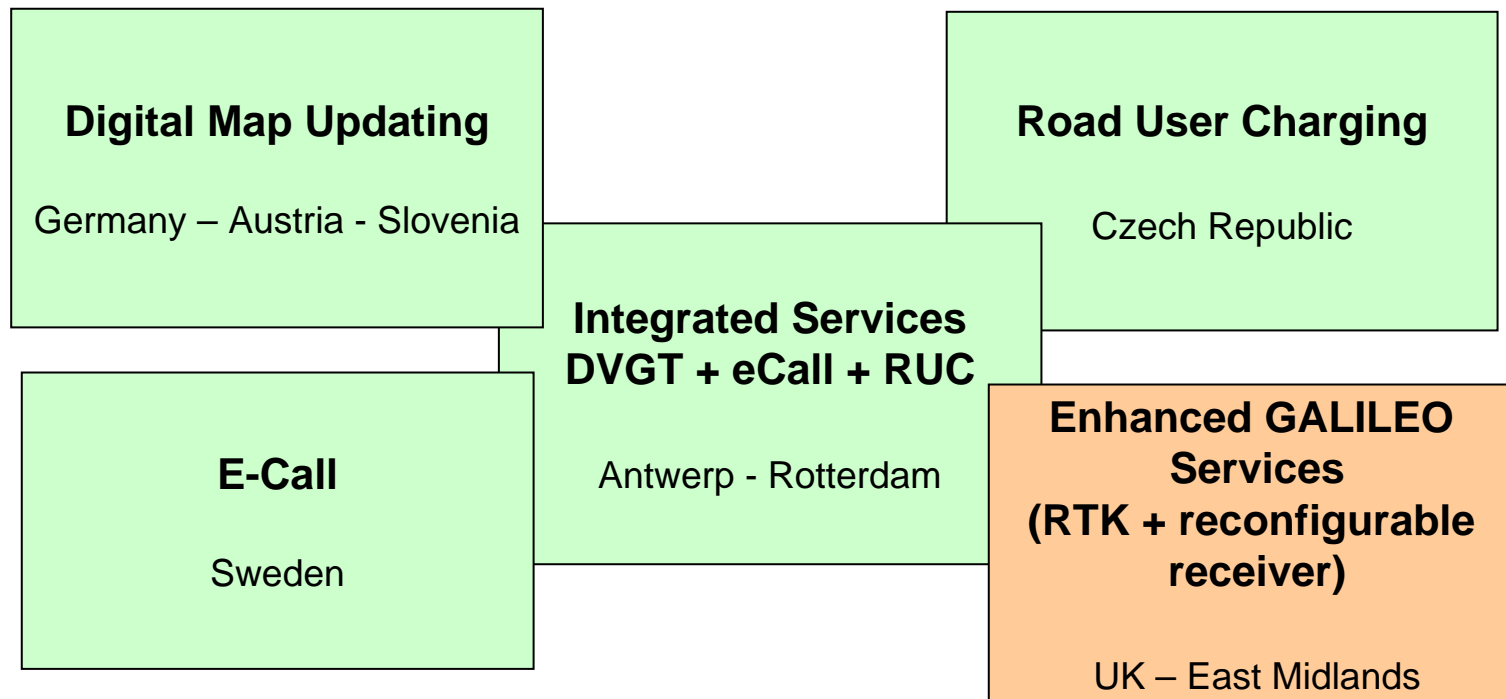
Road User Charging

Commercial Vehicles Services

- ✓ Fleet Management systems

SISTER Practical Stream

Applications Proof Of Concept



SISTER Practical Stream

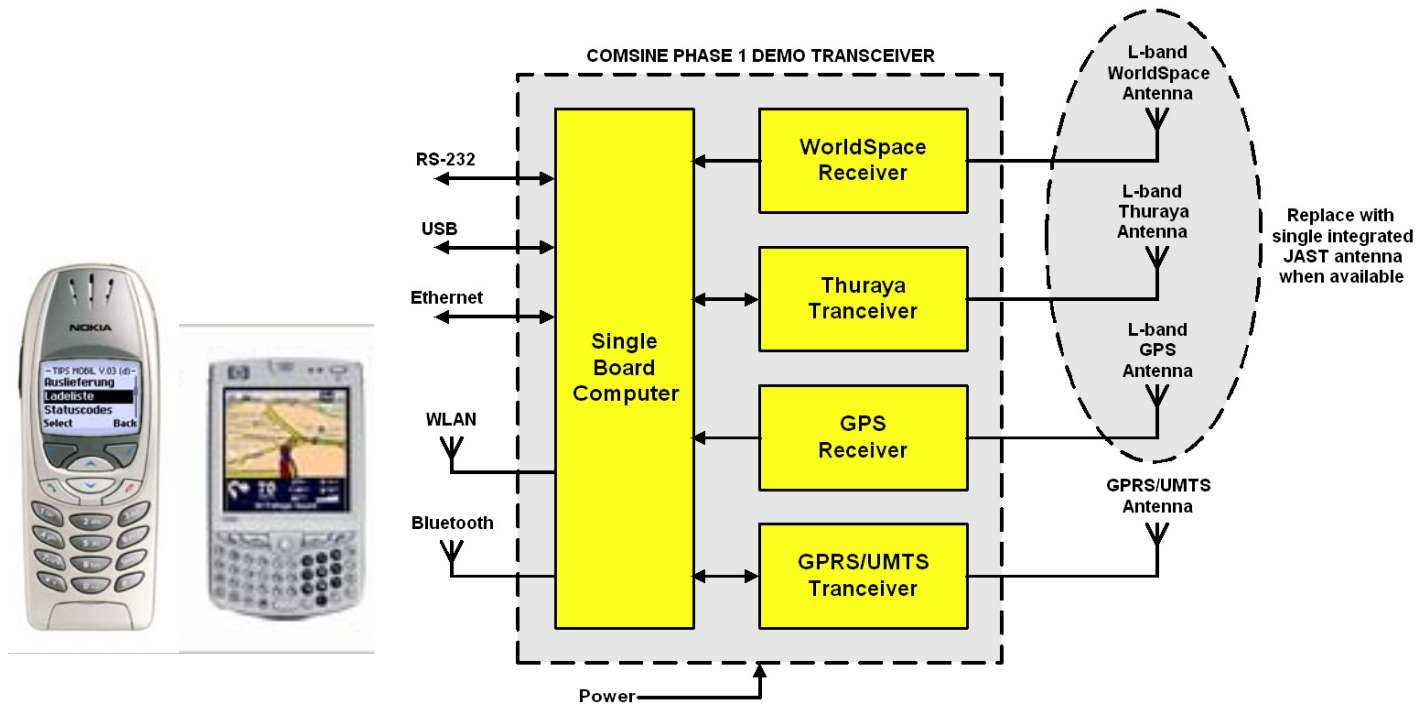
Selected communication networks

Application	Broadcast FWD	Bi-directional FWD and RTN
RUC	WorldSpace (tariffs updates, meta data*, polling, OBU software update)	GPRS, Iridium, Thuraya (polling request&reply, billing)
eCall	-----	GPRS, Iridium, Thuraya
Remote Map Updating	WorldSpace (Map updates, traffic&weather conditions, Points of Interest)	-----
Enhanced Galileo Service	WorldSpace (Enhanced GPS streaming, authentication, GPS receiver Firmware updat)	-----
Dangerous and Valuable Goods Transport	WorldSpace	GPRS, Iridium, Thuraya,

*data associated with maps (like virtual gantries, POI, etc.)

SISTER Practical Stream

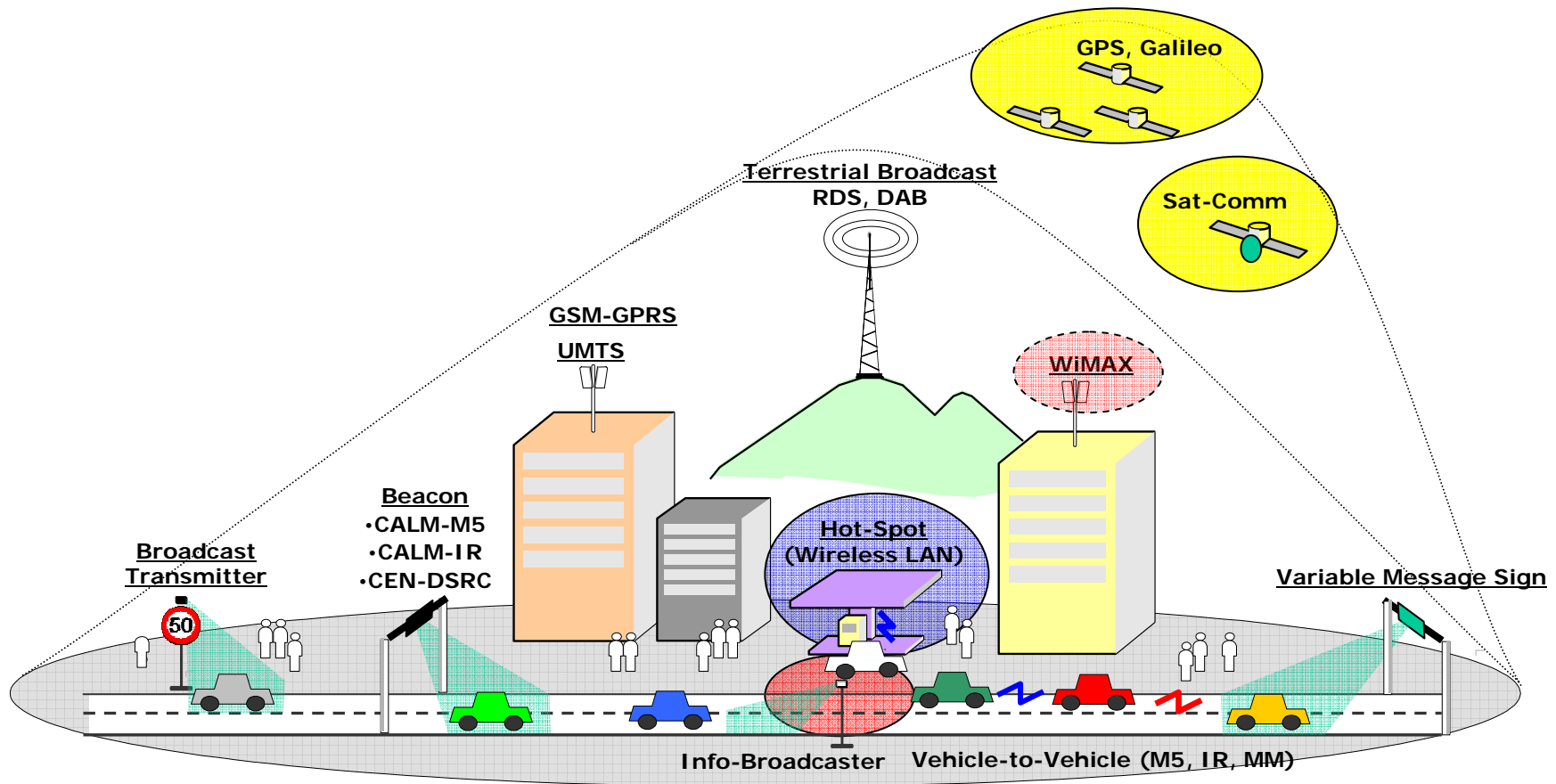
SISTER User Terminal



SISTER Standardisation stream

ISO	<i>TC204WG16 (Communications).</i>
CEN	<i>TC278 (Applications, e-Call)</i>
ETSI	New founded <i>TC-ITS</i>
ITU	<i>Frequency allocation</i>
IEEE	<i>802 Group of Communication Standards</i>

SISTER Standardisation stream



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SISTER Standardisation stream

CALM-Satellite Draft Standard ISO/WD29282

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ISO/TC 204/N¹
Date: 2007-06-01

ISO/WD 29282
ISO/TC 204/SC 1/WG 1

Secretariat: ANS

Intelligent transport systems²—Communications access for land-mobiles (CALM)—CALM using satellite communications³

Élément introductif⁴—Élément central⁵—Élément complémentaire⁶

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ISO

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ISO

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Contents

	Page ⁹
1 → Scope	11
2 → Conformance	11
3 → Normative reference	11
4 → Terms and definitions	21
6 → Symbols and abbreviated terms	21
8 → Requirements	21
8.1 → Adoption of other standards and internationally adopted practices	21
8.2 → CALM Architecture	21
8.3 → CALM Networking protocols	31
8.4 → CALM interface manager	31
8.5 → CALM interface manager	31
8.6 → CALM using public wireless networks	31
8.7 → Establishment of a medium specific session	31
8.7.1 → User Controlled session	31
8.7.2 → Establishment and termination of a 'Continuous' session	31
8.7.3 → Establishment and termination of a 'Time Controlled' session	31
8.7.4 → Establishment and termination of a 'User Controlled' session	31
8.8 → Interface medium management	31
7 → Medium access control (MAC)	41
7.1 → CALM satellite communications MMSE service primitives	41
7.1.1 → CALM session connection	41
7.1.2 → Successful CALM session establishment	41
7.1.3 → CALM session disconnection	41
7.1.4 → Change of satellite communications connection state	41
7.1.5 → Retrieval of the medium status	41
7.1.6 → Satellite communications specific connection setup	41
7.1.7 → Satellite communications session disconnection	41
8 → Test and conformance requirements	41
9 → Marking, labelling and packaging	41
10 → Declaration of patents and intellectual property	71

ISO

ISO/TC 204/N¹

SISTER Standardisation stream

Special one-day session on satellite communications at the ISO TC204 WG16 "CALM" meeting

Paris, week from 09th to 13th of June

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Thank You!

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Back-up Slides

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Satellite Standards Issue

Do we need two standards in CALM?

Peer-peer data

- eCall, Road Toll payment, service booking
- Does this include voice? (circuit switched & VOIP ?)

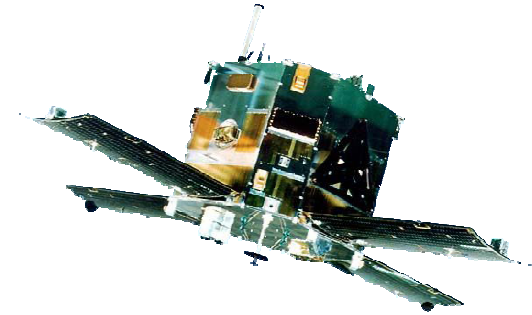
Broadcast data

- Map updates, traffic & weather conditions, road use charge data, Galileo Assistance (possibly augmentation)
- Same standard should cover terrestrial broadcast eg DAB

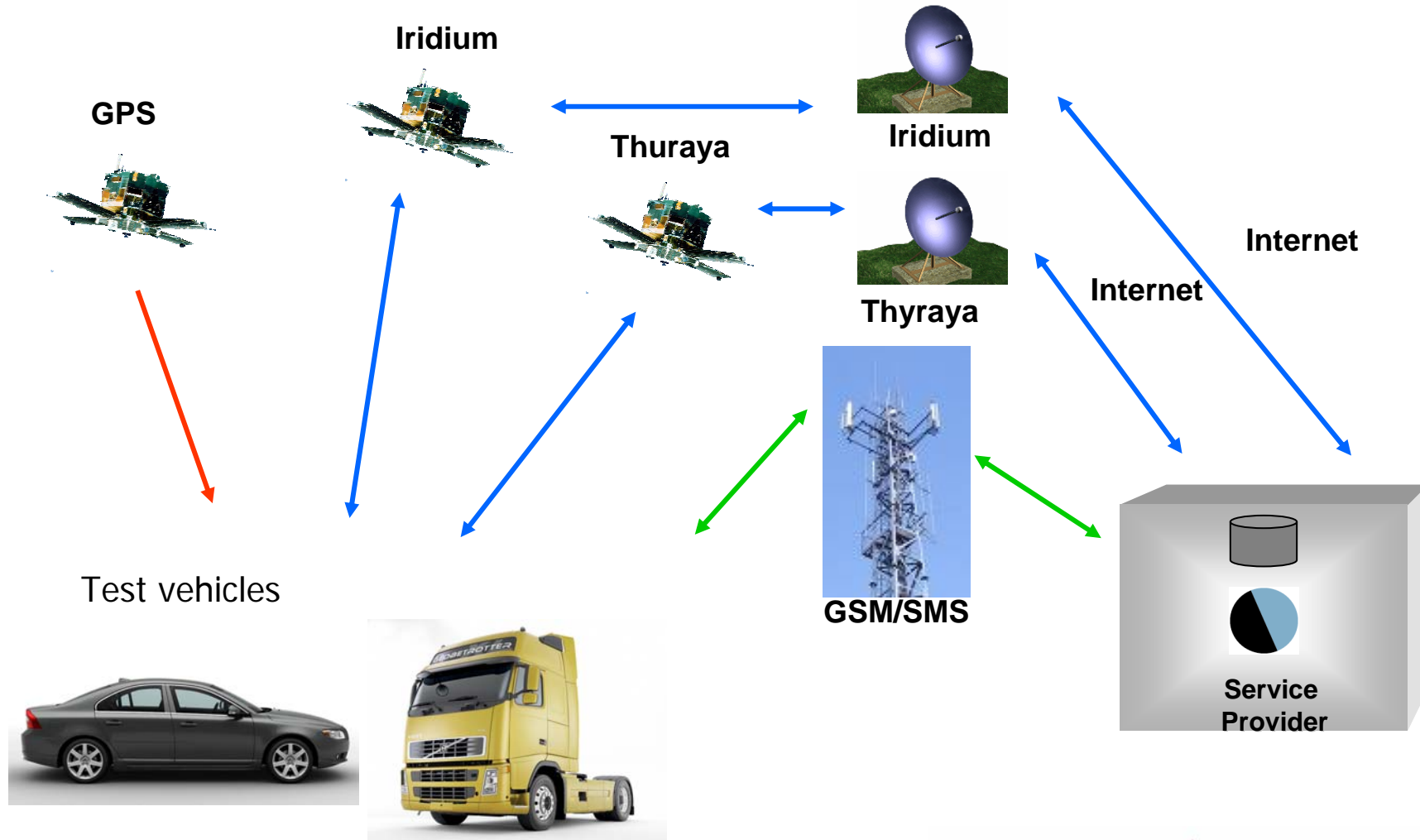
Unacknowledged Data Architecture

Lack of confirmation means that information is repeated for a long period (carousel) . This is needed because static vehicles are likely to have their receivers powered down, or parked out of coverage.

Ideas to make this more efficient



SISTER eCall Service



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