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Cooperative Systems applications to improve traffic & transport efficiency

Paul Kompfner
ERTICO ITS Europe



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Slide No 1



Towards cooperative mobility

1. What's wrong today
2. Today's transport & mobility system
3. Cooperative systems: closing the loop
4. Information: the “electricity” of tomorrow's transport
5. Case studies: mobility, traffic system management, freight transport
6. Cooperative systems: win-win for everyone

What's wrong today...

London 1960



London 2000



What's wrong today...

- ✓ Personal mobility doubled from 1970 to 1998
- ✗ Traffic jams every day on 10% of Europe's highway network
- ✗ Delays cost 1.9 billion litres of fuel (6% of annual consumption)
- ✗ Congestion costs €50 billion per year (0.5% of EU GDP)
- ✗ Road transport takes 26% of total EU energy consumption
- ✗ The 1.4 million road accidents cost €200 billion each year...

Today's transport & mobility system

The traveller

- pre-trip: little to no information
- on-trip: signs, radio, TMC (major roads only), some have route guidance (static in cities)

The vehicle

- few have connection (limited) for basic telematics
- no messages to or from the roadside

The manager

- traffic: few monitoring sites, overall view based on estimates
- fleet: can track - but not direct - vehicles



Cooperation: closing the loop

Better data

Instant,
integrated total
coverage



Less delay,
smoother
driving, best
route

Better journeys

Lower costs

Reduced
detection
infrastructure

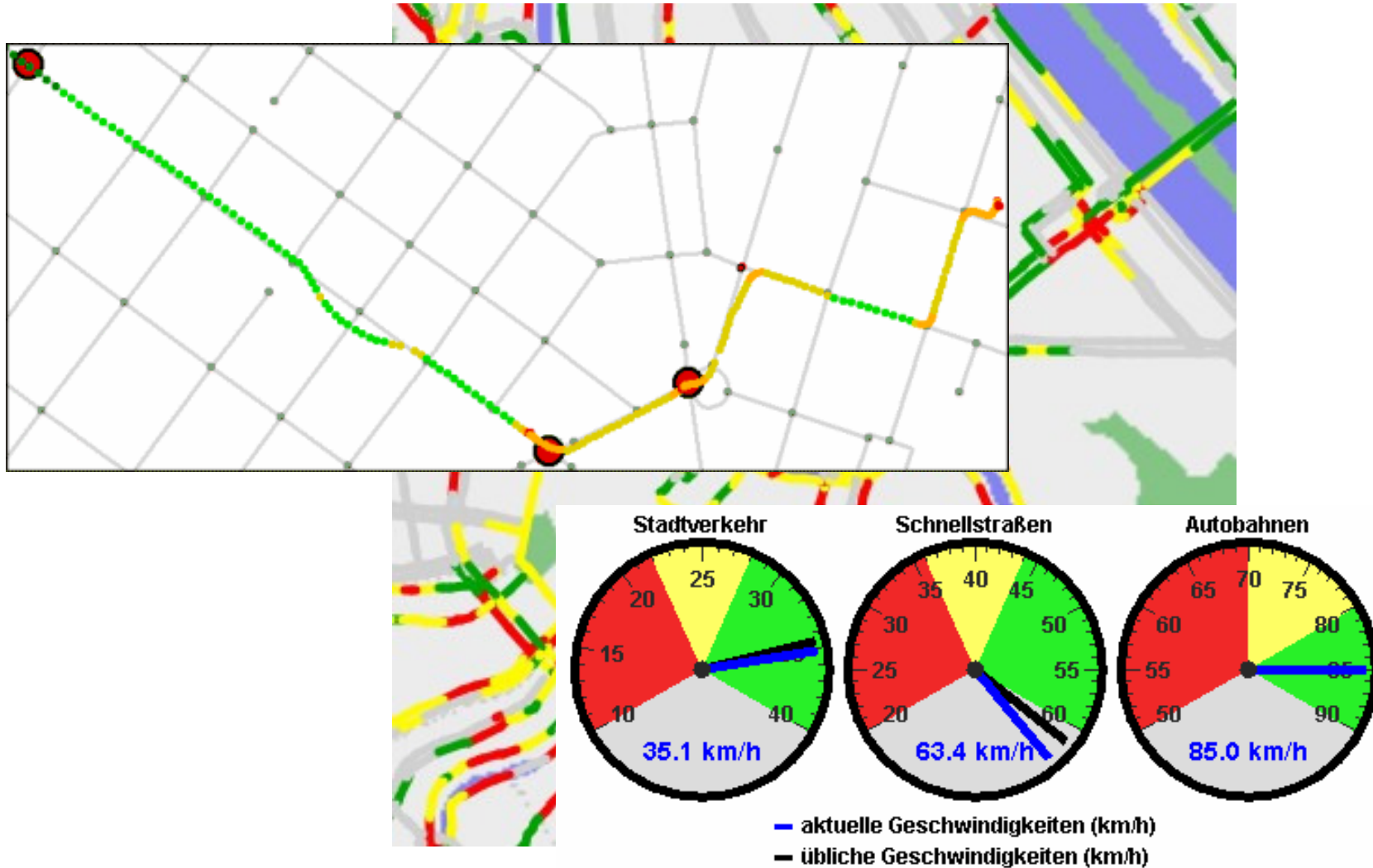


Full coverage &
instantaneous

Better info service



Information: the “electricity”





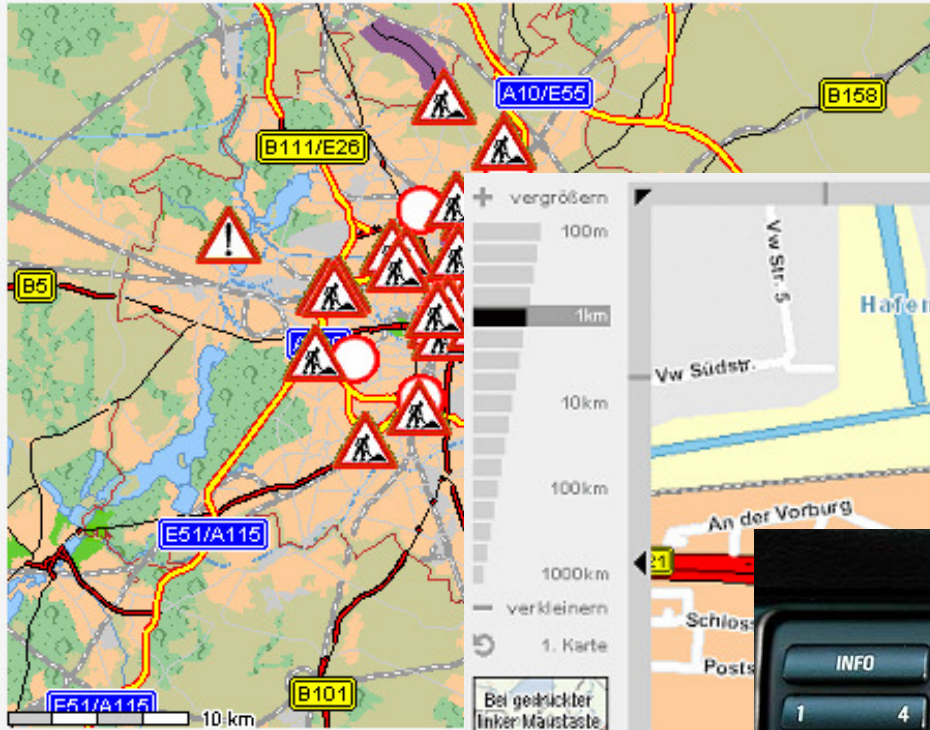
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CVIS: creating & using information

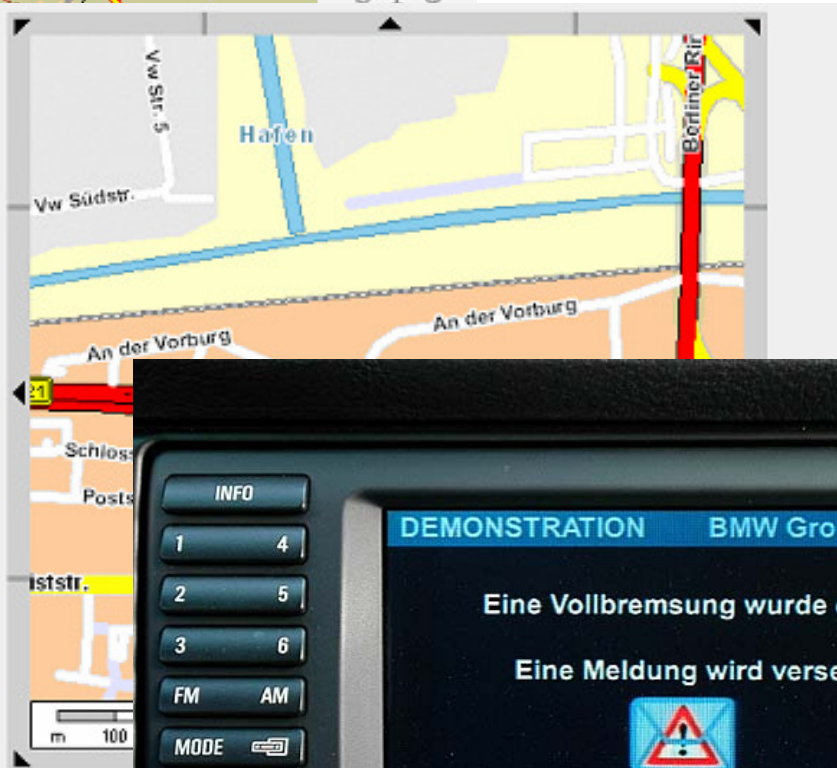


Case study: helping drivers on their way

Die Verkehrslagekarte steht nur für den Großraum Berlin zur Verfügung.



avoid traffic jams



vergrößern
100m
1km
10km
100km
1000km
verkleinern
1. Karte
Bei gedrückter linker Maustaste durch Ziehen die gewünschte Zone markieren.

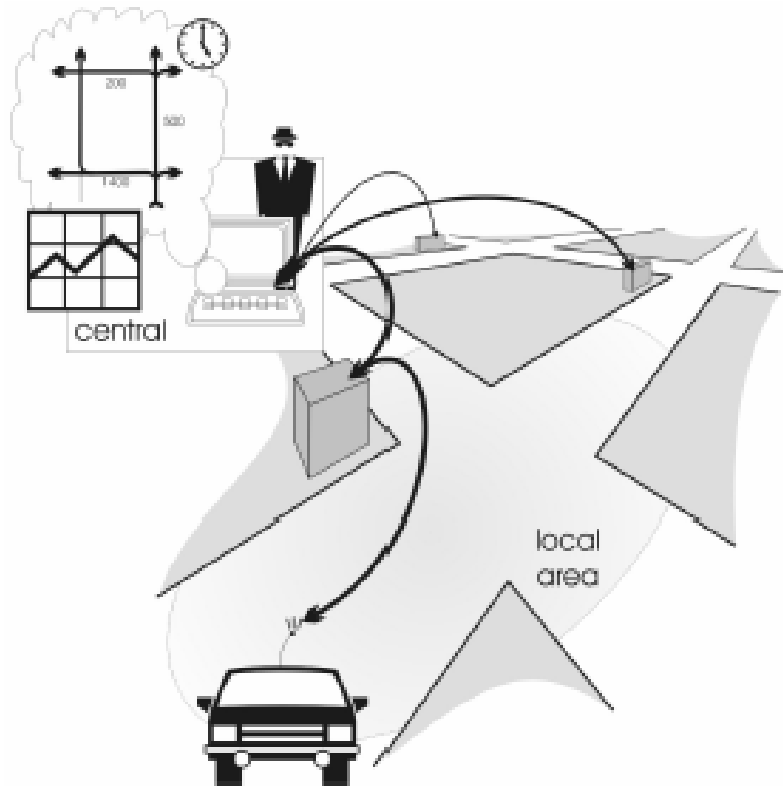
- less delay, more
- more comfortable
- less traffic congestion



Case study: managing city traffic

Traffic manager knows every
vehicle's destination

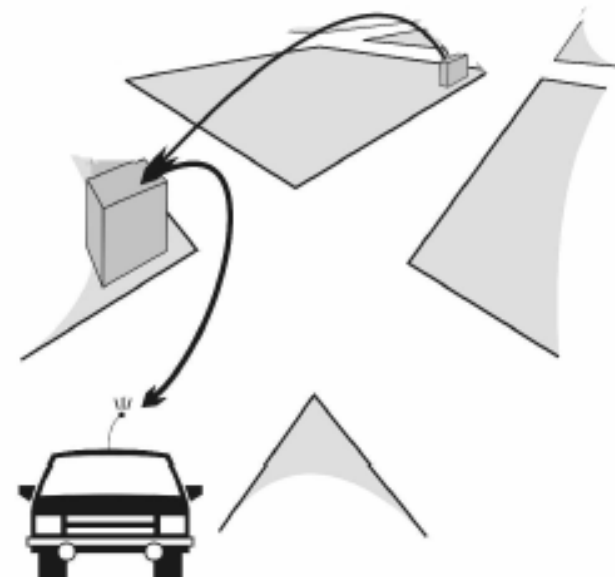
Minimise total network delay



Local junctions communicate
with each vehicle

Vehicle "clusters" synchronised
through local green wave

Reduce waiting time & costs



Case study: helping motorway drivers

Detecting & reporting incidents
Recommending alternative routes

Displaying messages & warnings inside the vehicle
Detecting wrong-way drivers



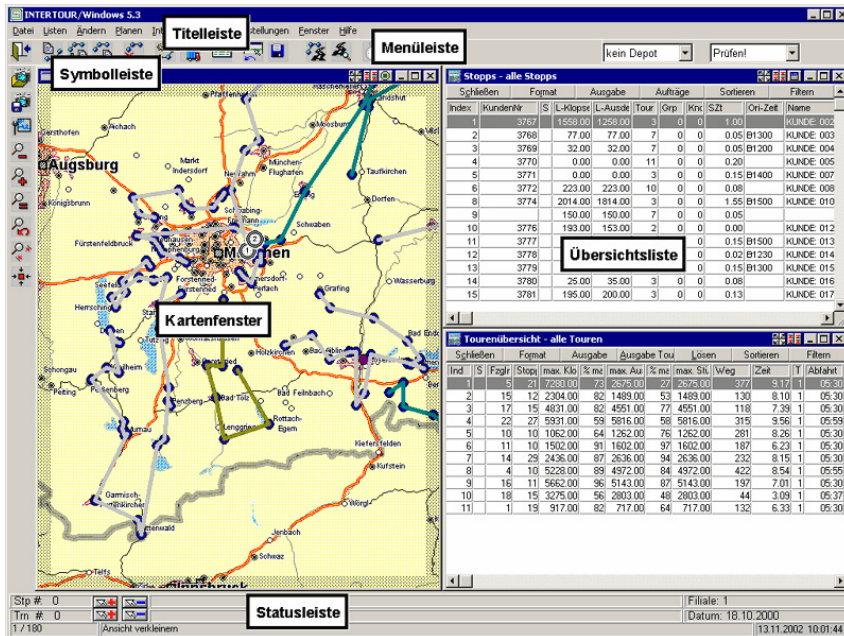
Case study: fleet & freight management

Access control to sensitive areas

- track vehicle continuously
- permit use of tunnel/bridge when there is a “slot” free
- warn driver

Hazardous goods monitoring

- report accidents automatically
- monitor load condition
- organise diversion, recovery



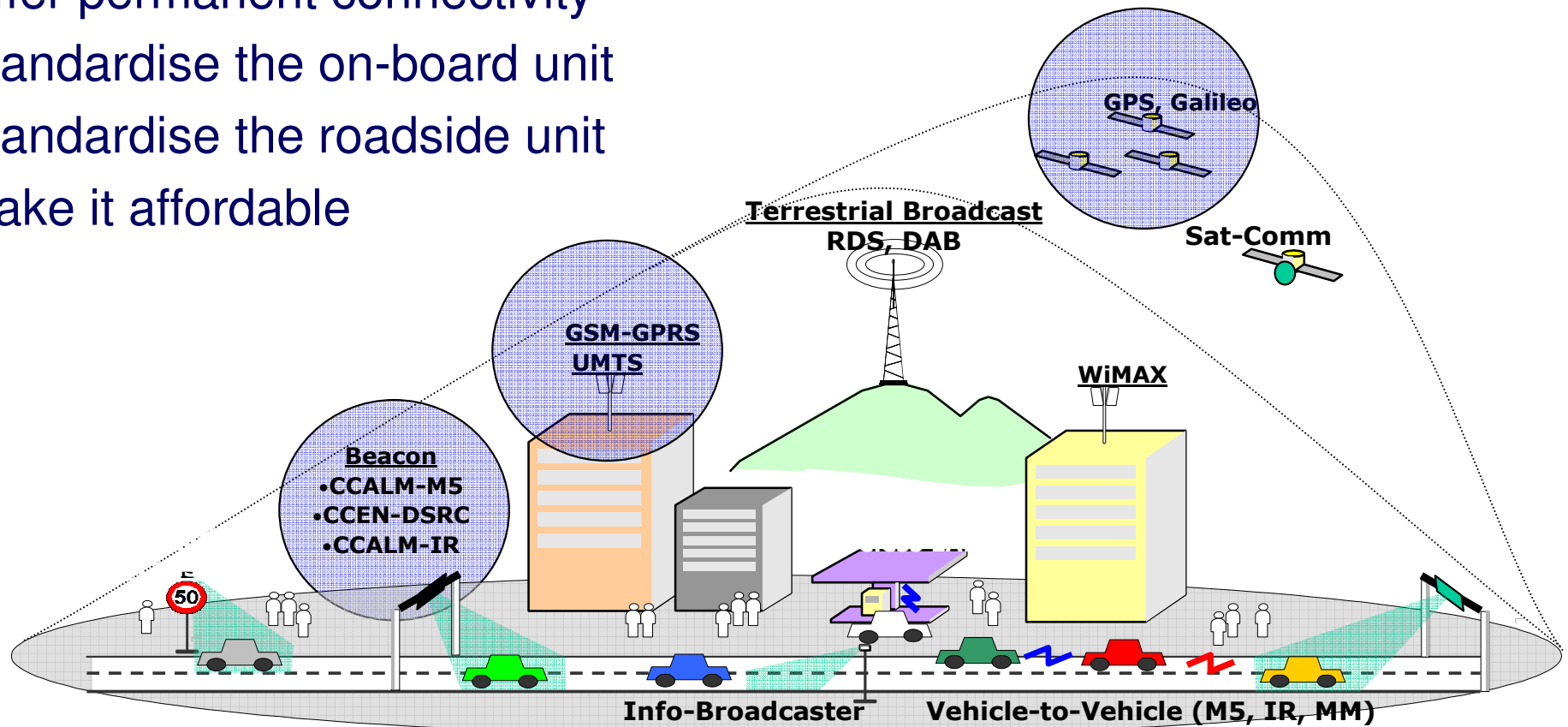
Index	Kundennr	S	L-Klopp	L-Ausde	Tour	Grp	Knc	Szt	Ori-Zeit	Name
1	3767		1559.00	1258.00	3	0	0	0	1.00	KUNDE 002
2	3768		77.00	77.00	7	0	0	0	0.05	KUNDE 003
3	3769		32.00	32.00	7	0	0	0	0.05	KUNDE 004
4	3770		0.00	0.00	11	0	0	0	0.20	KUNDE 005
5	3771		0.00	0.00	3	0	0	0	0.15	B1400 KUNDE 007
6	3772		223.00	223.00	10	0	0	0	0.08	KUNDE 008
8	3774		2014.00	1814.00	3	0	0	0	1.55	B1500 KUNDE 010
9	3775		150.00	150.00	7	0	0	0	0.05	KUNDE 012
10	3776		153.00	153.00	2	0	0	0	0.00	KUNDE 013
11	3777				0	0	0	0	0.15	B1500 KUNDE 013
12	3778				0	0	0	0	0.02	B1230 KUNDE 014
13	3779				0	0	0	0	0.15	B1300 KUNDE 015
14	3780		25.00	35.00	3	0	0	0	0.08	KUNDE 016
15	3781		195.00	200.00	3	0	0	0	0.13	KUNDE 017

Ind	S	Fzgl	Stopp	max. Kilo	% ml	max. Alt	% ml	max. SL	% Weg	Zeit	Abfahrt
1	5	21	7280.00	73	2675.00	27	2675.00	377	9.17	1	05.30
2	15	12	2304.00	82	1489.00	53	1489.00	130	8.10	1	05.30
3	17	15	4831.00	82	4951.00	77	4951.00	118	7.39	1	05.30
4	22	27	5301.00	59	5816.00	58	5816.00	315	9.56	1	05.59
5	10	10	1062.00	64	1262.00	76	1262.00	281	8.26	1	05.30
6	11	10	1502.00	91	1602.00	97	1602.00	187	6.23	1	05.30
7	14	29	2436.00	87	2636.00	94	2636.00	232	8.15	1	05.30
8	4	10	5228.00	89	4972.00	84	4972.00	422	8.54	1	05.55
9	16	11	5662.00	86	5143.00	87	5143.00	157	7.01	1	05.30
10	18	15	3275.00	56	2803.00	48	2803.00	44	3.09	1	05.37
11	1	19	917.00	82	717.00	64	717.00	132	6.33	1	05.30



Communications: key to Cooperative Systems

- Use all kinds of local & area communications
- Offer permanent connectivity
- Standardise the on-board unit
- Standardise the roadside unit
- Make it affordable



A win-win case for everyone

Traveller

- can choose optimum balance of means of travel

Driver

- with full knowledge of traffic, will have easier & quicker journeys

Traffic manager

- reduce total network delay, increase network capacity

Policy maker

- new tools for demand management & traffic safety

Vehicle manufacturer

- new products & associated services

Fleet manager

- keep in contact with vehicle & freight load, integrate with logistics

Communication network operator & service provider

- increased customer base, new services & content



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Help shape the future world of Cooperative Systems

Join us at the CVIS requirements workshop
18 - 19 October 2006, Brussels



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Thank you...

Contact

Paul Kompfner
CVIS IP Manager
ERTICO – ITS Europe

cvis@mail.ertico.com

www.cvisproject.org

