GSMA Summit

The Safety Connected Car – Ricardo Takahira – Magneti Marelli

Challenges and Opportunities on Automotive Industry.
The Safety Connected Car
GSM SUMMIT June 27 2012

Desafios e Oportunidades na Indústria Automotiva.
O Carro Conectado com Segurança.

Ricardo Takahira Gerente de Novos Negócios Div. Eletronica da Magneti Marelli

Local e data: Vivo–Telefonica – Brazil, 27 Junho 2012

Topics

- Infotainment
- Telematics
- M2M Automotive Aplication x Consumer Electronics
- Automotive Embeedded Electronics: Actual Examples (3)
- Business Models: Added Value & Economical Sustainability
- Terminal Mode (Mirror Link)
- Augmented Reality
- Hybrid and Electric Vehicles
- Automotive Smart Grid
- V2I, V2V,V2G
- IoT (Internet of Things)
- Mesh Network

- **Comites ABNT, AEA, SAE**
  - **Comites Brasileiros: CB05, CB03, CB15**
  - **SIMEA 2012**
  - **Congresso SAE 2012**
  - **ETSI**
  - **ITS, E-call, E-toll, SINIAV e SINRAV, RDS TMC - RTTI (Viajeo), TPEG**

INFOTAINMENT

- INFORMATION
- ENTERTAINMENT

TELEMATICS

- TELECOMMUNICATION
- INFORMATICS

Imagem: http://www.quattroworld.com/a5/vorsprung-durch-technik-research-for-the-future/

M2M

Consumer Electronics

versus

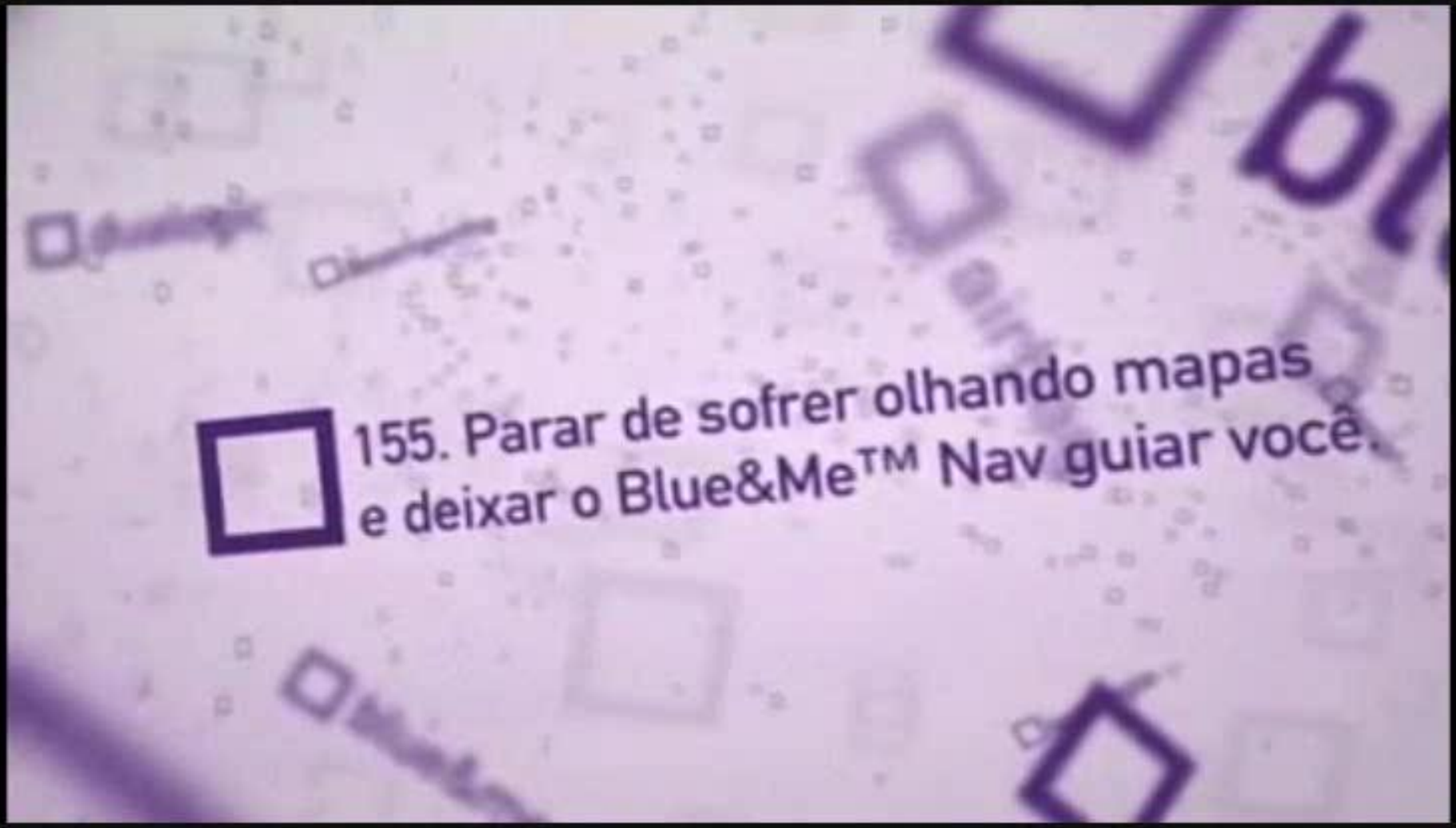
Automotive Application

Local Demo Car 2010

Be conservative... Always Think about the Risk...
Be innovative... And Use Technology to Help not to Distract...

- Video Blue & Me... Smart Phone and Car integration

Blue & Me Fiat


155. Parar de sofrer olhando mapas
e deixar o Blue&Me™ Nav guiar você.

Blue & Me Fiat + GPS Tom Tom

Services Allowed... With Value Added

You may can do everything on back seat... But in the front...

For the Driver?

INTRODUCING
MINI CONNECTED

Business Models: Added Value and Economical Sustainability

Models

Telematics in Society

- INCREASED AFTERMARKET BUSINESS
- INCREASED CUSTOMER LOYALTY
- DYNAMIC SERVICE PLANNING
- SECOND OWNER RELATIONSHIP
- PREVENTING RECALLS
- REDUCED WARRANTY COSTS
- DATA COLLECTION

Video:Youtube WirelessCar

- INCREASED AFTER SALES
- LOYAL CUSTOMERS
- DYNAMIC SERVICE PLANNING
- SECOND OWNER RELATIONSHIP
- CONNECTED CRM
- PREVENT RECALL PROCESS
- DATA COLLECTION
- SOFTWARE MANAGEMENT
- WARRANTY MANAGEMENT
- LOGISTICS

Video:Youtube WirelessCar

http://www.youtube.com/watch?v=MDiSc9mQbwI

Future ?

System approach

On Board Battery Charger UL 2202. Conductive and inductive charging system equipment for recharging the storage batteries of electric vehicles

J2929 EV and PHEV propulsion Battery System Safety Standard (Safety Performance Criteria)

Charging inlet UL 2251. Plugs, receptacles, vehicle inlets, and connectors intended for conductive connection systems, for use with electric vehicles

Charging plug SAE J1772™

National Electrical Code
Article 625 – Electric Vehicle Charging System
I – General
II – Wiring Methods
III – Equipment Construction
IV – Control & Protection
V – EV Supply Equipment Locations

UL 2231-1
Personnel Protection Systems for EV Supply Circuits

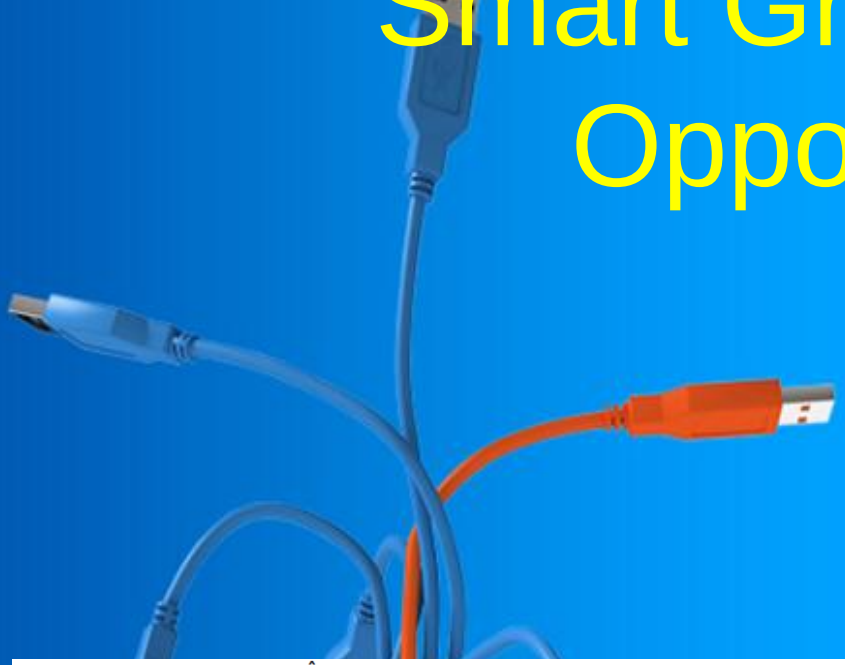
UL 2231-2
Protection Devices for Use in Charging Systems

UL2594
Outline for Investigation for EV Supply Equipment

Fonte:Electromobility 2011 Alemanha

SAE International

Smart Grid: Metering Opportunities



A IMPORTÂNCIA DA INTERNET DAS COISAS PARA O BRASIL

SUMÁRIO

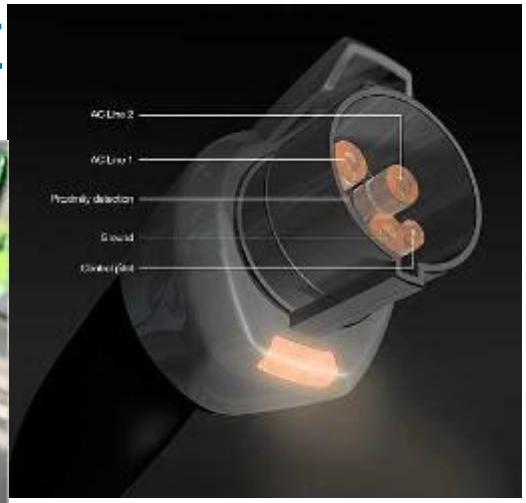
Com a presença de 150 especialistas da área de Tecnologia de Informação e Microeletrônica discutiu-se em São Paulo, em julho de 2011, a evolução do uso da tecnologia de identificação por rádio frequência (RFID) para automação de processos de diferentes áreas da atividade humana. Internet das Coisas, *Internet of Things* (IoT) na sigla em inglês, é o nome que está se consolidando como representativo do uso de sistemas de comunicação entre objetos, não sendo necessária a intervenção humana para que a comunicação e decisões possam ocorrer. A Internet de hoje é a navegação pelo mundo virtual. A IoT é a extensão da Internet ao mundo físico e real, propiciando o interfaceamento e a interação com objetos, animais e seres humanos.

Hoje se considera que a expansão do uso da Internet passa obrigatoriamente pela IoT. É por meio dela que virão inovações ainda nem sequer imaginadas e novos avanços em ganhos de produtividade.

A Internet das Coisas estende a Internet de nossos dias, permitindo o desenvolvimento de aplicações e serviços que proporcionarão grandes benefícios sociais, benefícios estes de difícil implementação nos dias de hoje, por conta de restrições tecnológicas que passam a ser superadas dentro do novo conceito de IoT. Por exemplo, vários países estão desenvolvendo projetos de “Smart Cities”, que oferecem experiências inovadoras em

SMART GRID

- The Electric Vehicle and the
- Network
- Battery Recharging
  - Fast, Slow, Swap
- Electropoint



Eletromobility - Evolution

Eletrification

Prototypes

Small Series

Local Componentes

Imported vehicles

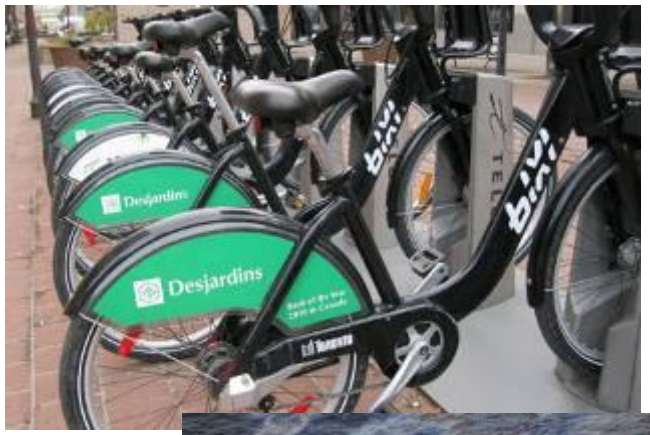
CKD

Local Production

Text & Image from:

THINKING HIGHWAYS Vol 5 No 3

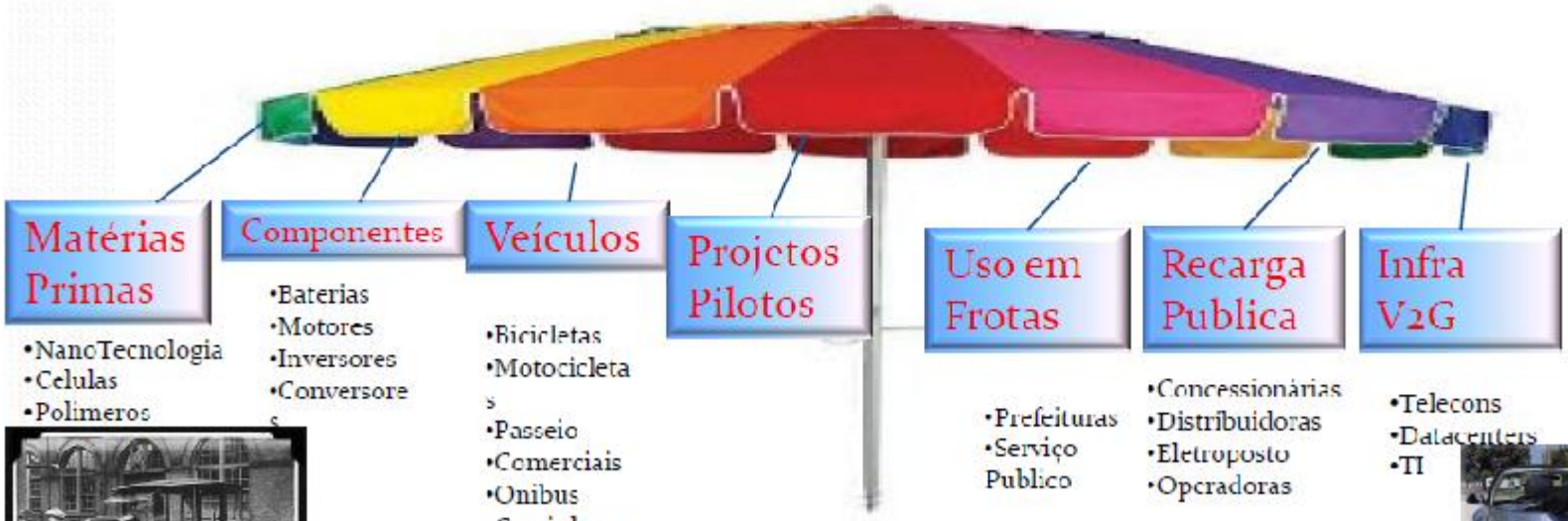
ELECTROMOBILITY



- Electric Vehicles
- Urban Mobility
- Emissions
- Energy Eficiency
- Shared Consumption
- Electric Bicycles, Motorcycles
- Scooters, cars, Buses and Trucks

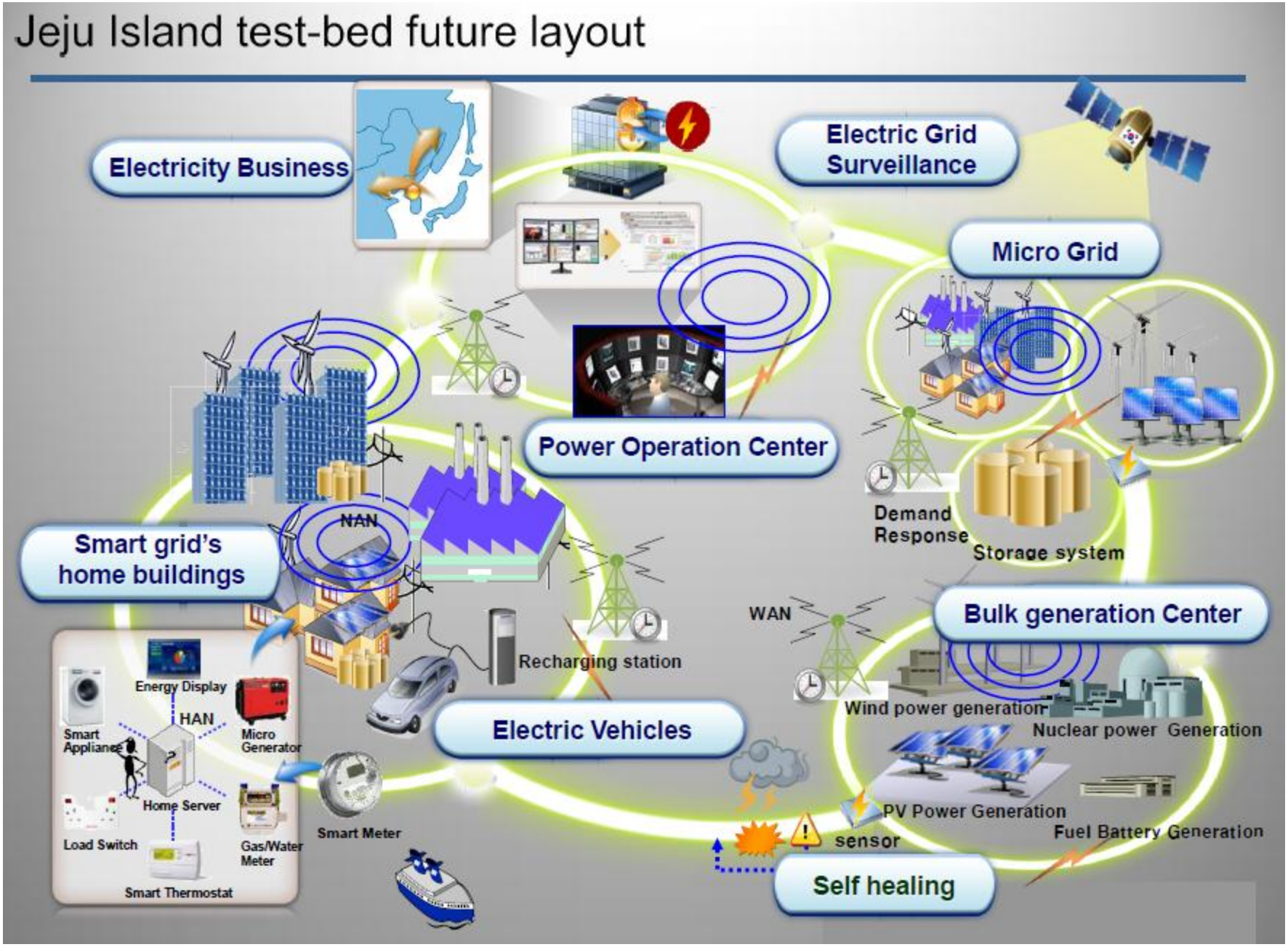
Dividir para conquistar

Aplicação Transversal desde Bicicletas elétricas a transporte comercial (ônibus e caminhões)




The Smart Grid
V2I=Vehicle to Infrastructure
V2G=Vehicle to Grid
V2V=Vehicle to Vehicle

Jeju Island test-bed future layout



Regional differences

220-240V/50Hz
220-240V/60Hz
100-127V/60Hz
100-127V/50Hz

- Not every country has the same electrical system
- Charging needs differ for vehicle type (PEV/PHEV)
- Charging needs differ for charging locations

Japan charge power:
- AC single phase - low to moderate
- DC for high power fast charge

Japan connector:
- AC J1772™
- DC ChaDeMo system and coupler

EU charge power:
- AC single phase - low
- AC 3 phase - moderate and high power fast charge
- DC charge strategy - unclear

EU connector:
- AC single phase IEC 62196-2 "Type 1" (J1772™)
- AC single/3 phase IEC 62196-2 "Type 2"
- AC single/3 phase IEC 62196-2 "Type 3"
- DC - IEC 62196-3

China charge power:
- AC single phase - low & moderate
- DC for high power fast charge

China connector:
- AC - Chinese unique version
- DC - Chinese unique version

US charge power:
- AC single phase - low & moderate
- DC for high power fast charge

US connector:
- AC J1772™ for Lev1 and Lev2
- DC J1772™ (new revision)

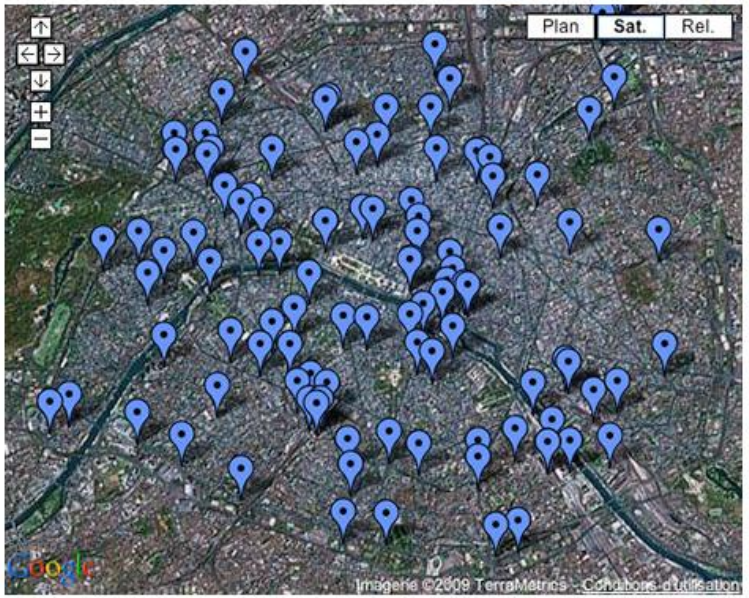
Not to scale

SAE International

Recarga, Troca e Bilhetgem

Paris Puts Map of Electric Vehicle Charging Stations Online

20, março, 2009 Ir para os comentários Deixar um comentário



Uma das maiores preocupações de quem tem carro e caminhões elétricos(fora do Brasil) é como recarregar a bateria. Para resolver o problema a prefeitura de Paris colocou, online, um mapa com todos os postos e está espalhando estações de recarga pela cidade.

Sonho com o dia em que em São Paulo circularão carros elétricos ou movidos a outro tipo de combustível que não alcool, diesel e gasolina.

Sonho com a possibilidade de uma cidade menos poluída.

Compartilhe:

Redes Mesh

EXTREMETECH

Computing / Mobile / Internet / Gaming / Electronics / Extreme / D

TRENDING TOPICS: 3D · Automobiles · Slideshow · Windows 8 · Featured · Software

EXTREME › FORD WORKING ON CAR-TO-CAR WIRELESS MESH NETWORK FOR REAL-TIME TELEMETRY, GOVERNMENT USE

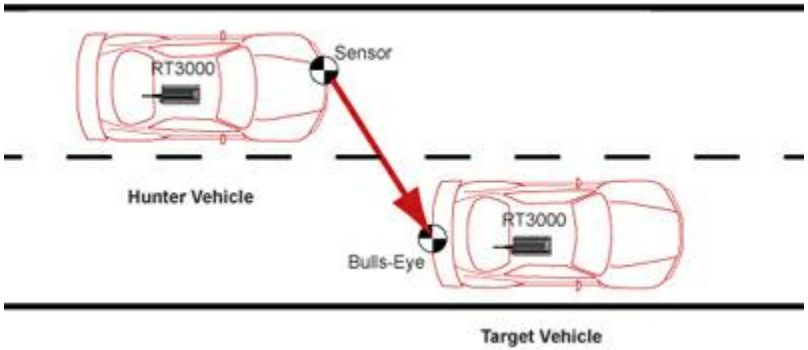
Ford working on car-to-car wireless mesh network for real-time telemetry, government use

By Sebastian Anthony on August 11, 2011 at 7:25 am | 4 Comments

By now you have almost certainly heard of Fords and Hyundais and BMWs that use on-board telematics to communicate with the mothership via GSM and CDMA networks to call for help or receive turn-by-turn directions. These systems, such as Sync and OnStar and Blue Link, are useful, but rather one-dimensional: they all revolve around sending a query to a

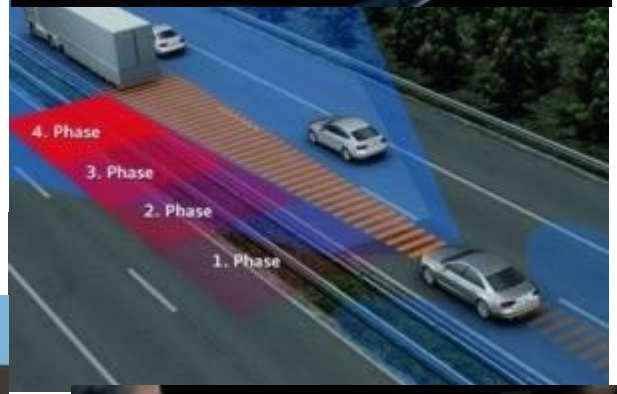
Distracted Driving

Car to Car Communication (colisionn Avoidance)



http://www.oxts.com/default.asp?pageRef=103

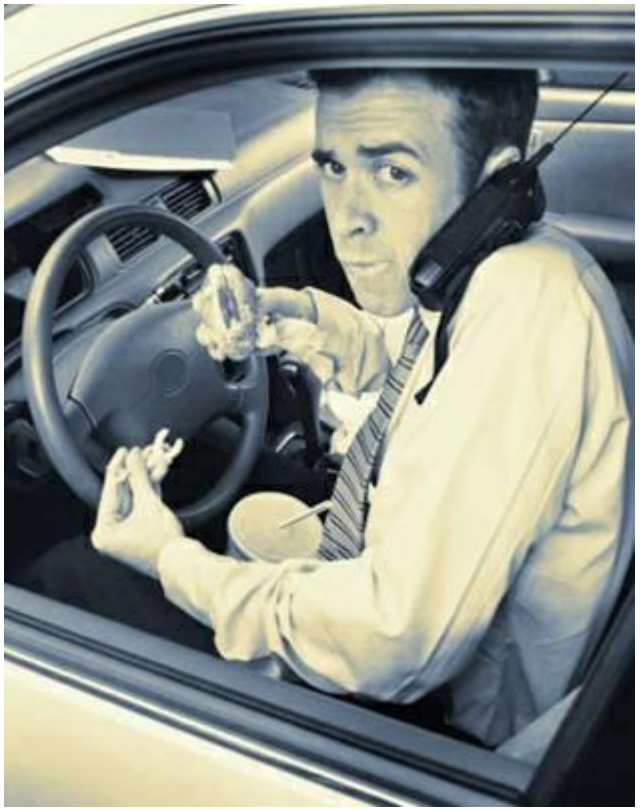
Automotive OEM is focused on Driver safety



Telematics Technology Proves Driver Safety and Fleet Savings Go Hand-in-Hand

http://lynxtelematics.wordpress.com/2012/04/16/telematics-technology-proves-driver-safety-and-fleet-savings-go-hand-in-hand

Truck and passenger car Drivers from a long time...



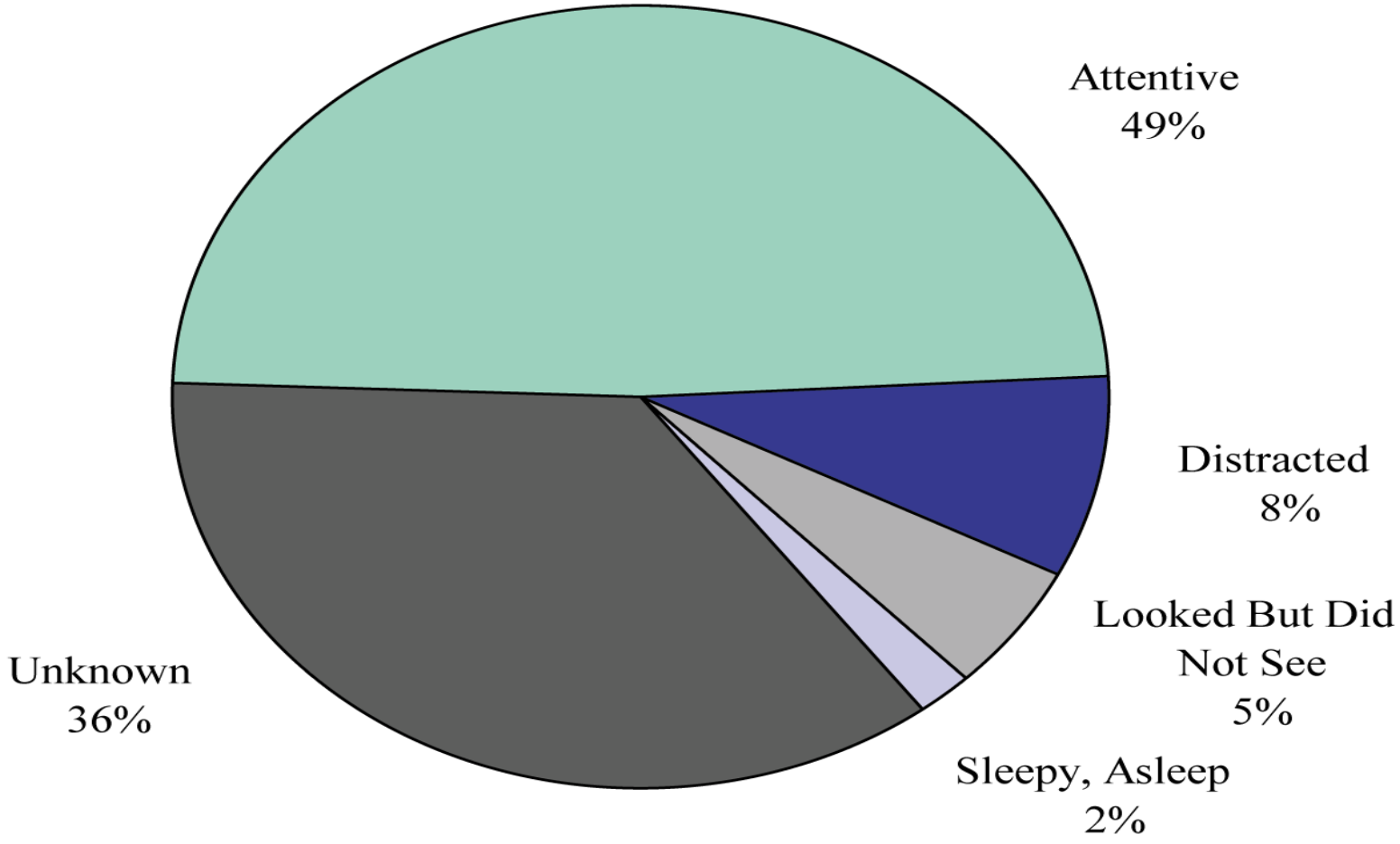
http://www.passenlaw.com/blog/brain-injury-law/commercial-drivers-prohibited-cell-phones-driving

http://11thr.com/blog/?p=380

Telematics and Infotainment cannot cause Distraction

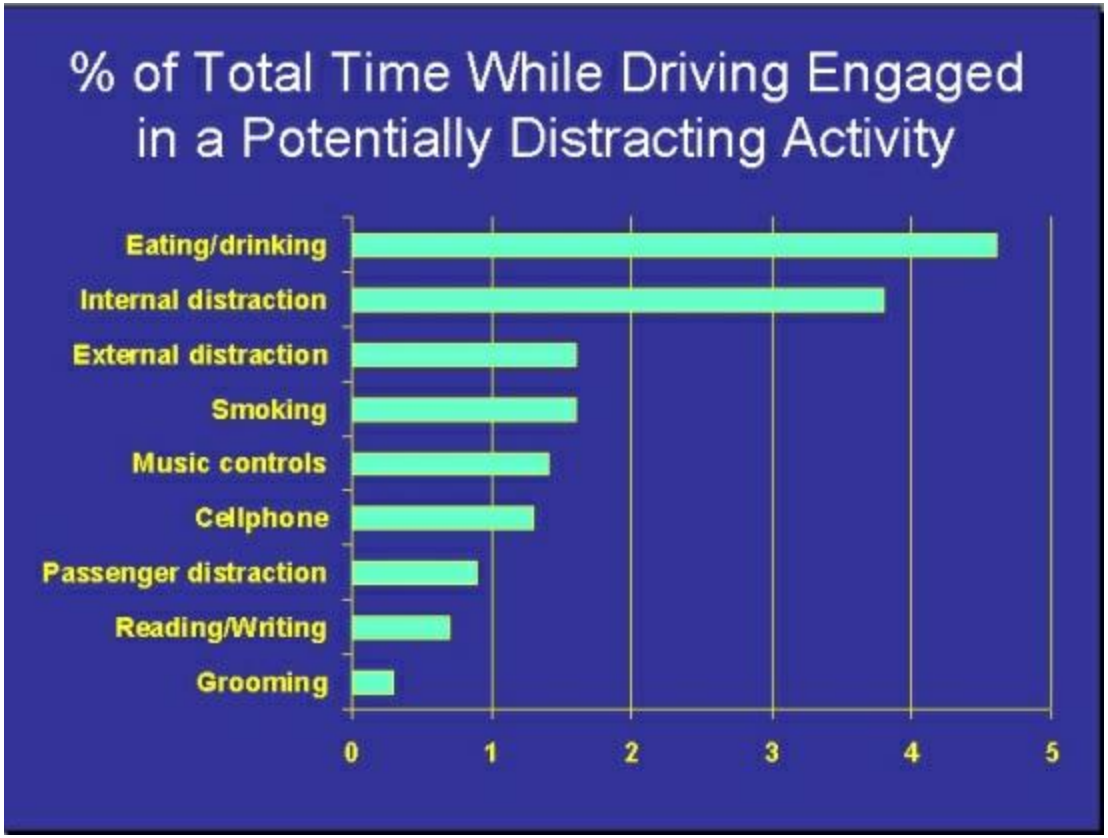
http://www.adslogistics.com/blog/bid/53021/Avoid-the-Three-Types-of-Distracted-Driving

Attention status of drivers in crashes



http://www.hsrc.unc.edu/news_room/distraction_images.cfm

http://blog.cargurus.com/2011/04/25/driver-distraction-one-more-time



Top Distractions for the drive...

http://autos.aol.com/gallery/driver-distractions/

The life itself can be a source of distractions

http://www.driveandstayalive.com/articles%20and%20topics/driver_distractions/aa_driver-distractions-index.htm

Have being involved in injuries...

http://blog.cargurus.com/2010/09/17/driving-distractions-to-eliminate-and-one-to-keep-around

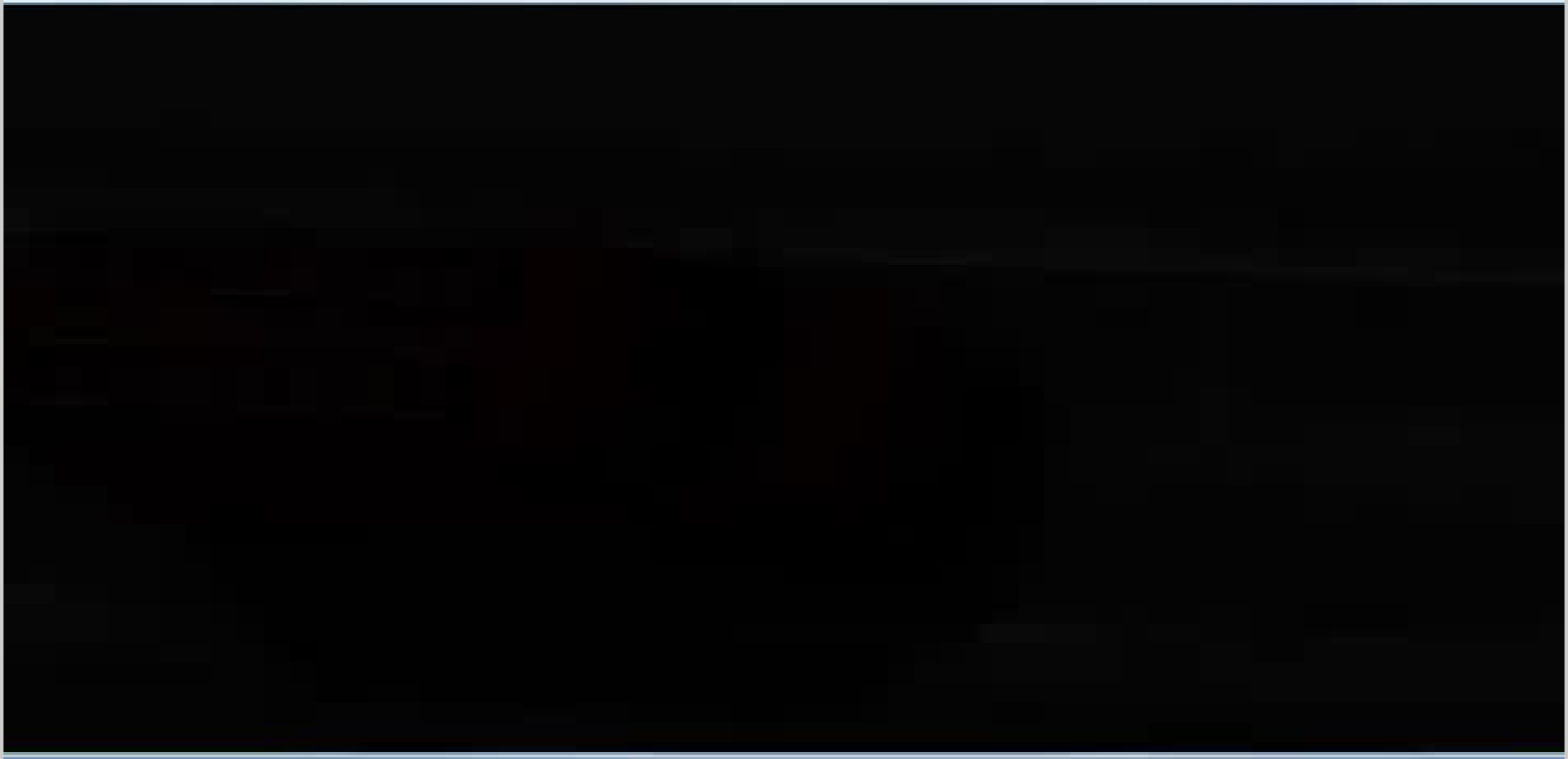
So new Laws are coming... If today you can tommorrow maybe not...

http://injurylaw.labovick.com/2009/09/articles/car-accidents/driver-distractions-caused-nearly-6000-deaths-in-2008

So what are the good uses of technology on Connected vehicles?

http://www.its.dot.gov/safety_pilot/index.htm

V2V



Driving a car is not a Game.. Can be a game Over...

http://easternmichiganpost.com/2011/statistics-to-know-distractions-while-driving

http://pictureisunrelated.memebase.com/2011/08/25/wtf-photos-videos-need-a-driving-distraction/

It not means you cannot use your phone as you safelly uses the “radio”... If you “still” can say radio

http://www.northcarolinapersonalinjurylawyersblog.com/2011/01/distracted-driving-a-primary-c.html

MIRROR LINK

- Infotainment
- Open Source
  - Microsoft
  - Linux
  - Android
  - HTML5

http://www.youtube.com/watch?v=633Kn4XkmJA

OEM x Aftermarketing

Terminal Mode (Mirror Link)

Fonte: Youtube VW

Mirror Link Toyota by Nokia

Video 17: Youtube Nokia Toyota

VOLANTE COM VIBRACALL
Para não interromper as músicas a cada mensagem, o volante foi ligado a um sistema que o faz tremer quando chega um SMS

SOM ILIMITADO
Com a conexão 3G melhorada, é possível usar apps de música por streaming, como o GrooveShark. O som é distribuído num conjunto de cinco alto-falantes e um subwoofer

MAPAS ACELERADOS
O C4 ganhou um receptor externo ligado a uma antena especial. A precisão dos mapas do GPS melhorou cinco vezes

ANDROID NO PAINEL
Comandos como Home, Back e Option foram substituídos por botões customizados. O tablet fica mais integrado ao painel

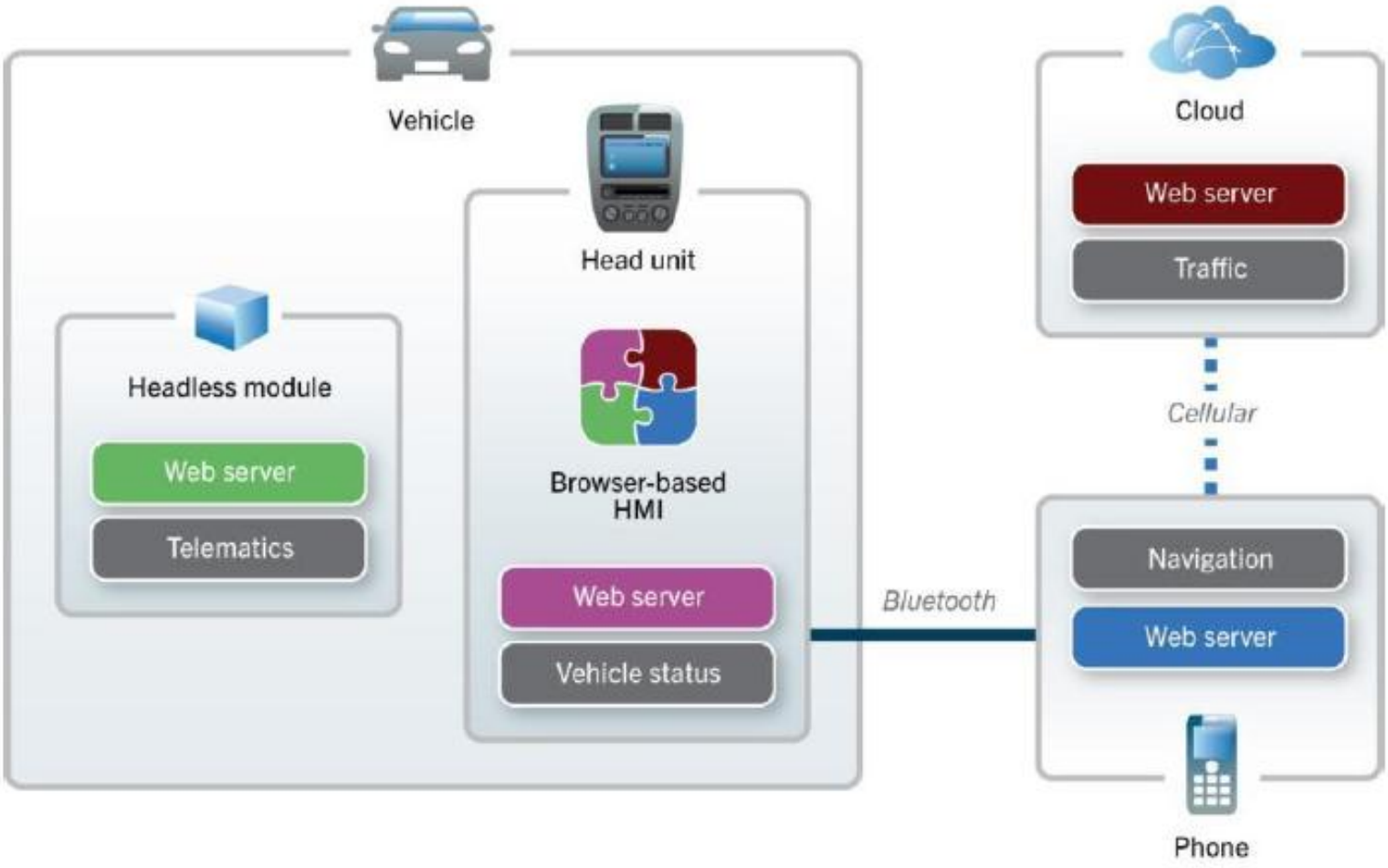
SEM BAGAGEM
Parte da interação entre carro e tablet é feita por um micro com 750 GB de HD e Wi-Fi montado no porta-malas

HMI x VR x TTS x HAPTICS

- Aftermarket (acessórios) x OEM (Fábrica)
- Nem tudo que pode é recomendado
- Se não está escrito que não pode, talvez possa agora, pode ser proibido mais tarde... Ex. tweeter de Blitz (“lei seca”)

- Como viabilizar este conteúdo com segurança nos carros de série?

ANDROID x HTML5



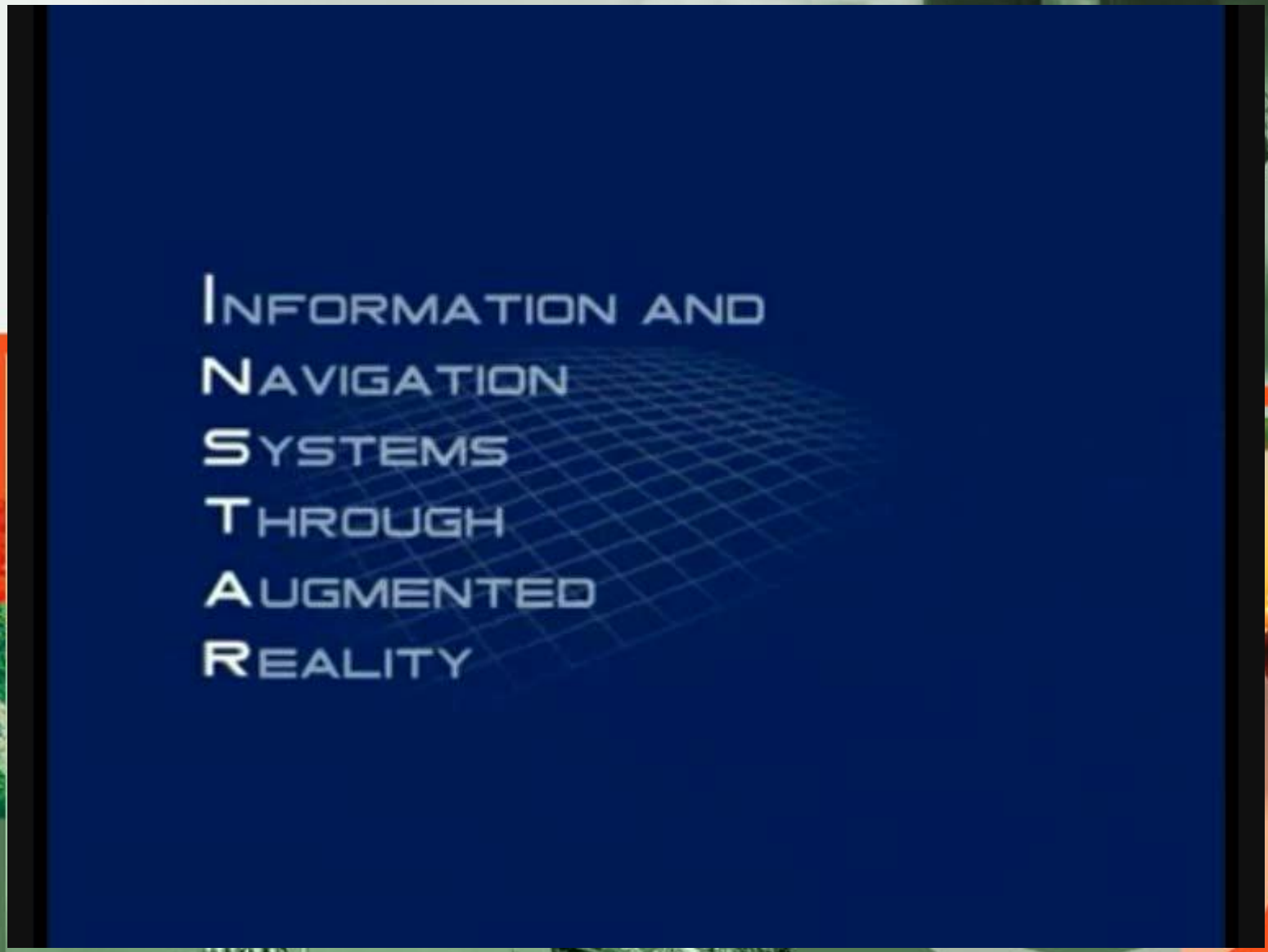
http://www.youtube.com/watch?v=38gH8Bs0uMQ

Future?


Special Edition
Using HTML 4
Fifth Edition
CD-ROM
que
Tools
Setup
New
Phone
Connect
Truck
Home
Audio
Voice
Cancel
PHONE
SETUP
MUSIC
RADIO
MODE
MENU
MEDIA
RADIO
RESET

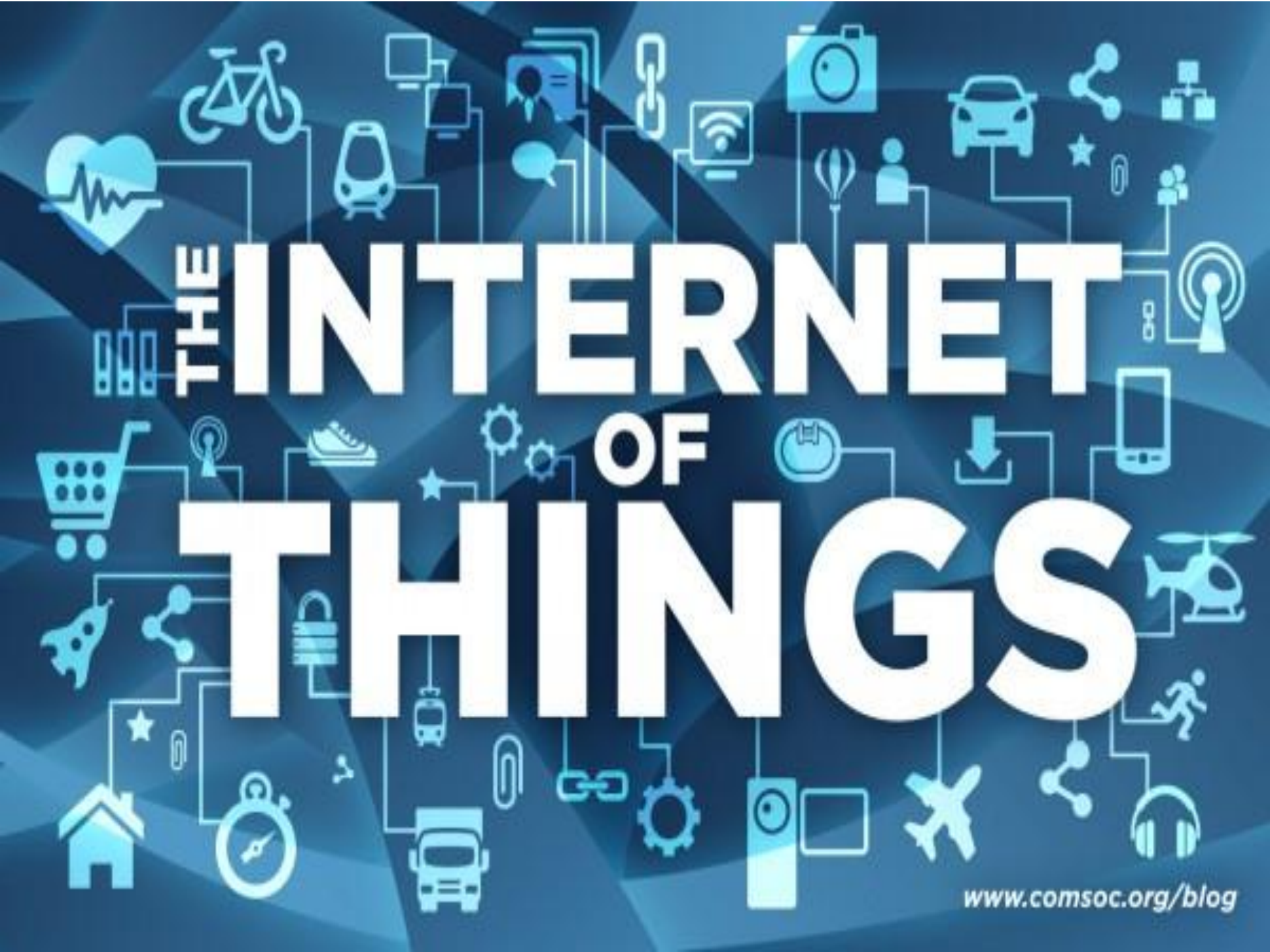
Future?

Automotive Augmented reality

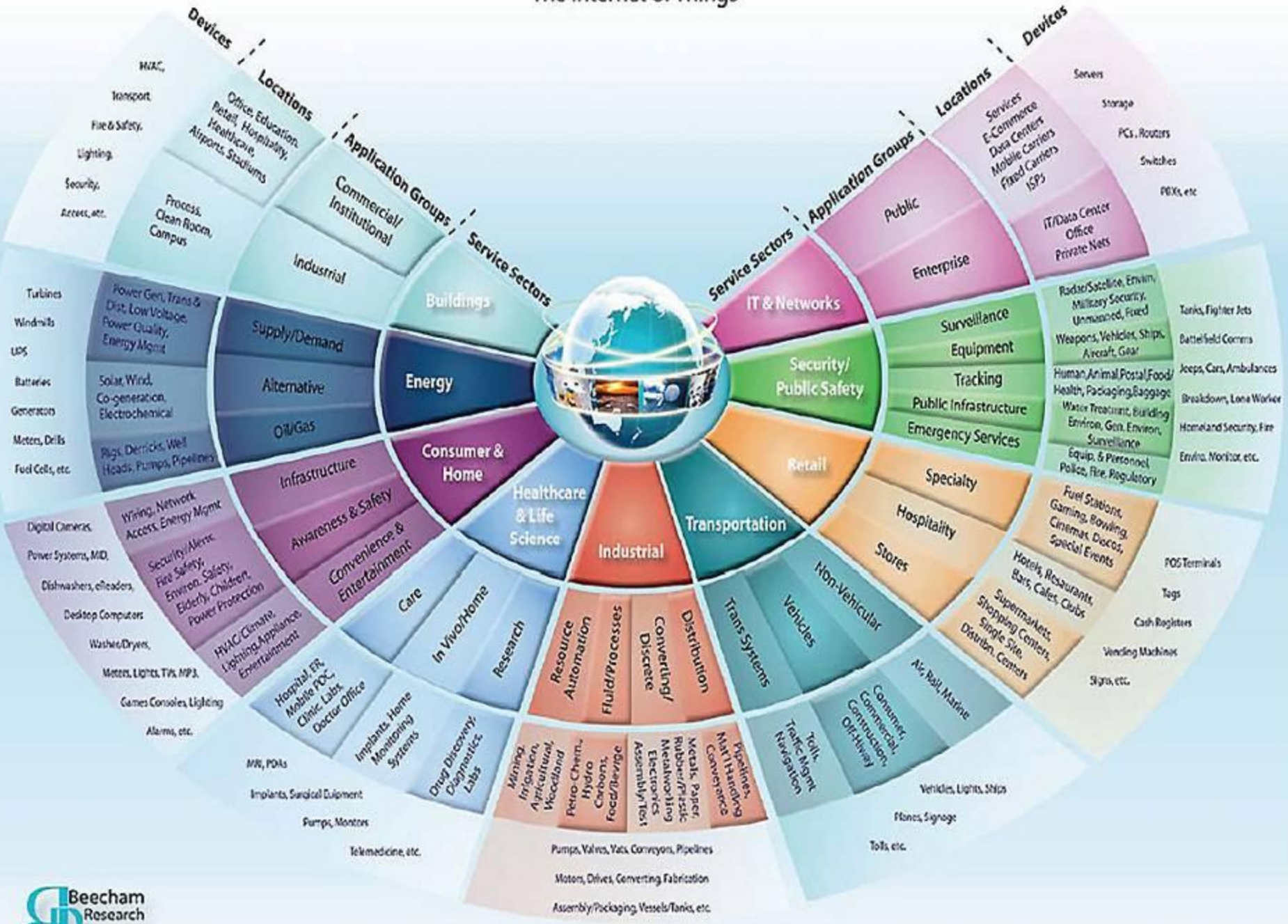



42
KM/H

EXS-HUD


THE INTERNET OF THINGS
www.comsoc.org/blog

The Internet of Things

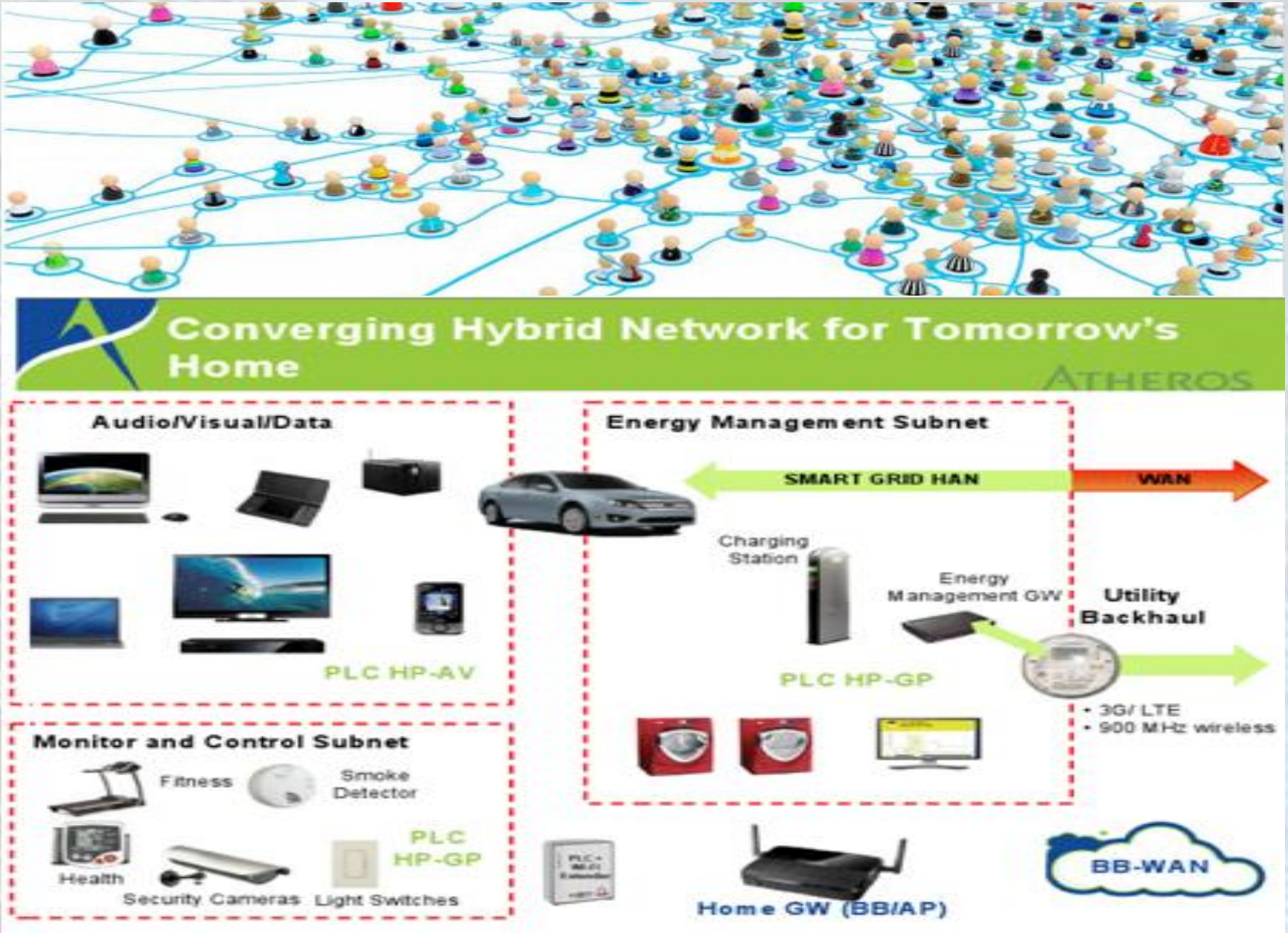


Beecham Research

THE INTERNET OF THINGS

"The next logical step in the technological revolution connecting people anytime, anywhere is to connect inanimate objects. This is the vision underlying the **Internet of things: anytime, anywhere, by anyone and anything**" – ITU, November 2005

Redes Mesh, Social, das Coisas




Q3-Elmjack.Park.nyc
Q3-3775S.LightPost.nyc
Q3.35-75-SE.Trafficlight.nyc
Q3.35-75-NW.Trafficlight.nyc
Q3-126.FireAlarm.nyc
Q3-35-75-SE-B.DropCurb.nyc
Q3-35-75-SE-A.DropCurb.nyc
Q3-37-75-ConEd.utility.nyc
RICKY'S CAFE
YORK


N302TF
www.MarkProffit.com

- Autonomous Taxi in Berlim

Video:Youtube Google Car

Video:Youtube Google Car

Conclusões

Inovação

Funções intuitivas e sempre disponíveis (ex. Cobertura e Performance 3G, LTE)

Tecnologia

Busca pelo preço justo e valor agregado aos usários e cadeia

Segurança

Uso da Tecnologia não para distração mas para Supervisão (Visão -> Wireless, Passivo -> Ativo)

Eficiência

Eletrificação, Novos combustíveis, Emissões na Cadeia

Conectividade

Trend Inevitável, fator de decisão

Sustentabilidade

Compartilhamento, Reuso, Consumo consciente,

Obrigado, Thank You, Merci, Viele Danke, Doumo

Arigatou, Xei Xei, Grazie Mille

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SAE Congress 2011
Membro do Comite Técnico de Veiculos Hibrido e Eletrico
Conselheiro Técnico do Formula Electric SAE 2012

Videos (youtube) & references

Produtos Comerciais (Youtube)

M2M Ericsson
Democar Marelli Bibendum 2010
Blue & Me Fiat
Connected car
Mini Connected
GM Windows
WirelessCar
China SuperCap Bus
Siemens Smart Grid
Chrysler Infotainment
Driving distraction Michigan Law
Mirror Link
Terminal Mode
Flying Car
Autonomous Taxi
Google car

Material Prévio:
Info GPS
BNDES – 1 Oficina de veículos elétricos
VER2010 - Veículos elétricos e a rede
Campus Party
Simea 2011
Pagina sustentável – Semana de engenharia da UNESP 2011
Congresso SAE 2011 –
Formula Elétrico SAE 2012
Mini curso Veículos elétricos Facens

Fórum M2M

Machine to Machine

29 e 30 de Maio de 2012

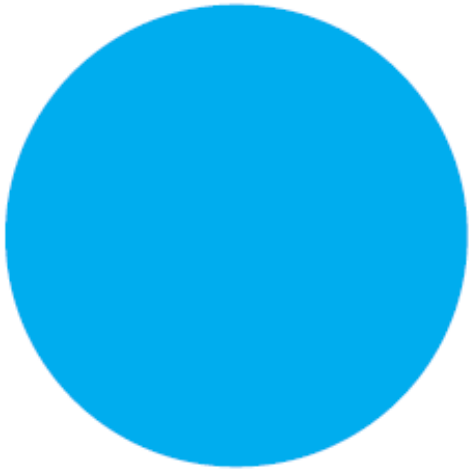
São Paulo – Brasil

www.informagroup.com.br/m2m

Tecnologias M2M na Área Automotiva

Realização

informa
telecoms & media



Campus Party™

2012

Inovação
Cultura Digital
Entretenimento
Digital Ciência
#cpbr5

Mesa Redonda:

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