

# Mobile Information Systems Overview

## The End to End Solution

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# Access to any information anytime, anywhere



# Buzzwords

## Wireless

2,5 G cellular  
3 G cellular  
DAB / DVB  
SDARS  
LAN 802.11  
Ku/Ka satellite  
Bluetooth  
WAP/WML

## PC/Internet

Microprocessors  
Memory (Flash/RAM)  
Disk Drives  
Voice Recognition  
Text To Speech  
High Speed  
Internet Access  
Routers

## MultiMedia

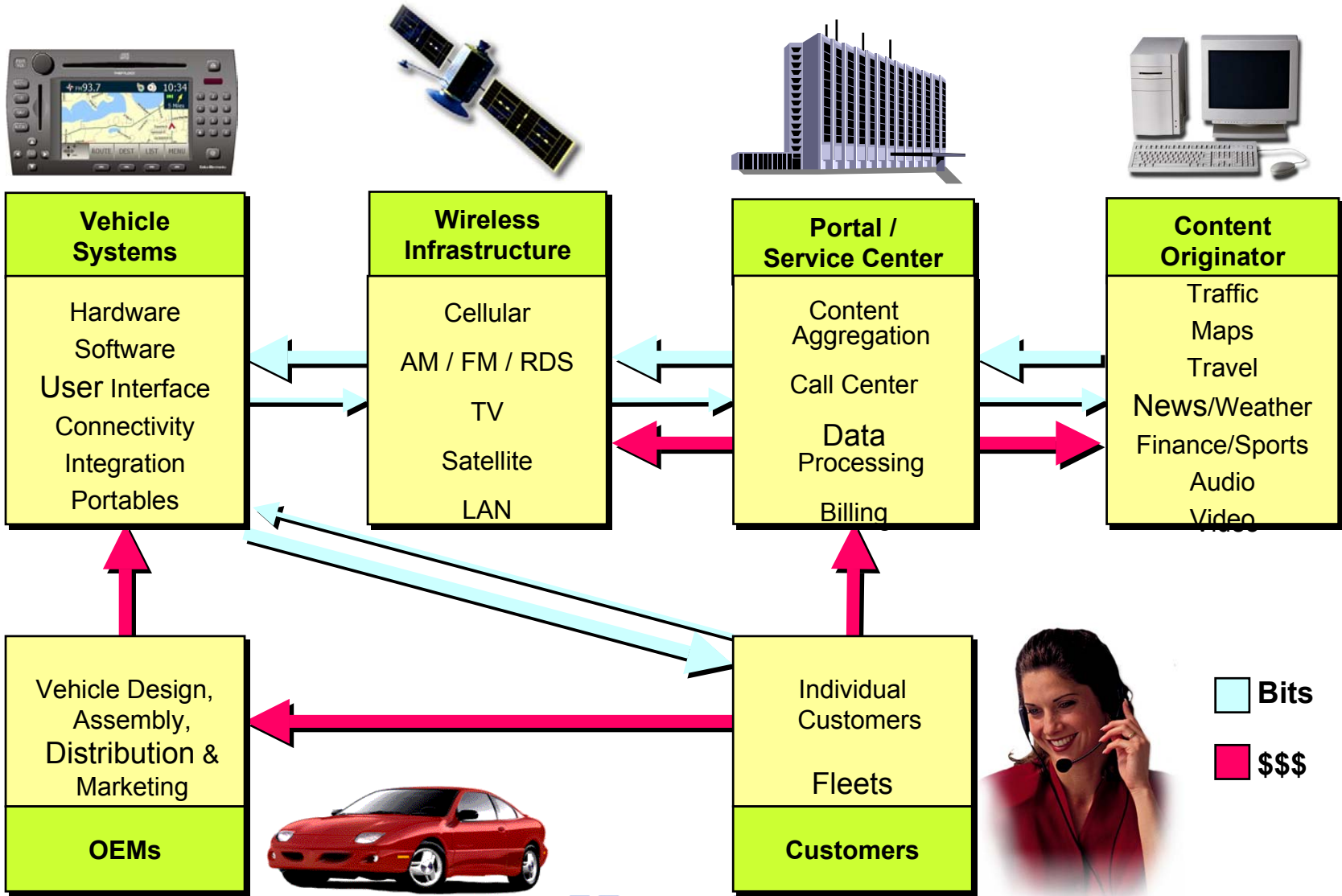
Digital Compression  
(MPEG, MS Audio)  
DSP  
3D Acoustics  
Displays  
High Speed Bus  
Conditional Access  
Encryption  
Smart Cards  
Playbacks (DVD)

# The Infotronics Cockpit



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# The End to End Solution



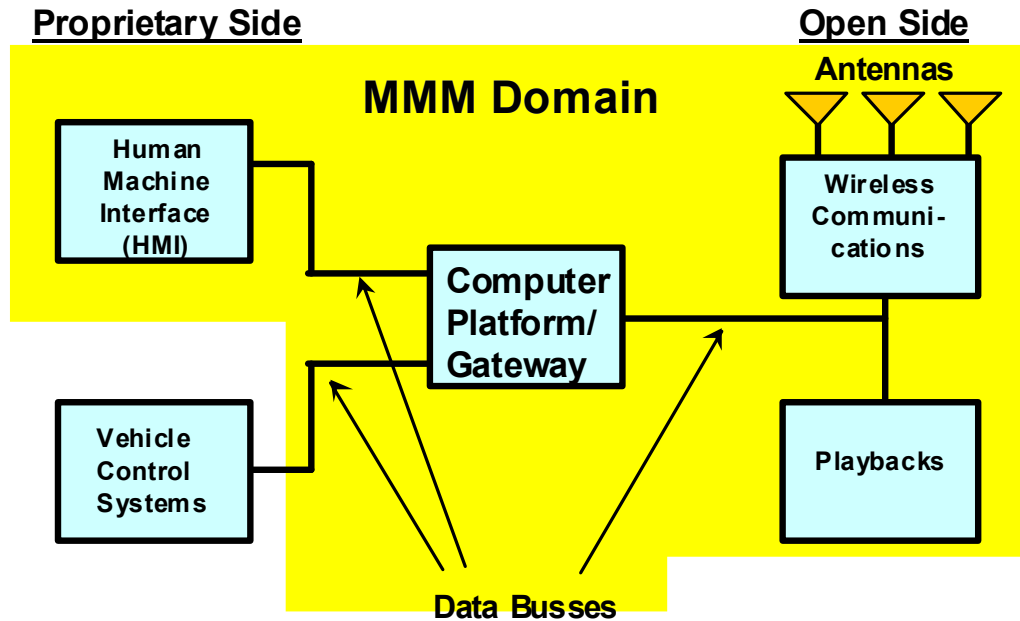
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# Vehicle Systems and Software

- ◆ Provide upgrade path for functional growth over the lifetime of the vehicle
- ◆ Openness but with controlled access
- ◆ Wireless communication systems
- ◆ Reception systems
- ◆ Playback devices
- ◆ HMI technologies

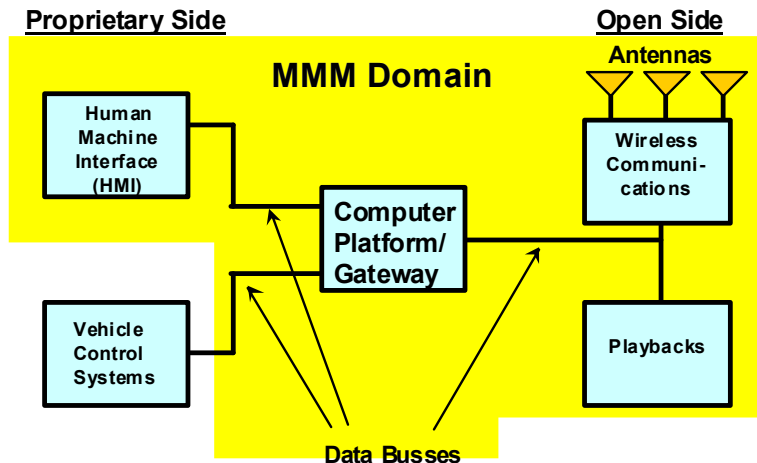


# Vehicle System Architecture



# Open Standards

- ◆ API's
- ◆ Communication bus interfaces



- ◆ Browser for off-board services
- ◆ Bluetooth



# Security

- ◆ Mechanism for secure access
- ◆ Vehicle-related services
- ◆ Use available standards



[www.OSGi.org](http://www.OSGi.org)

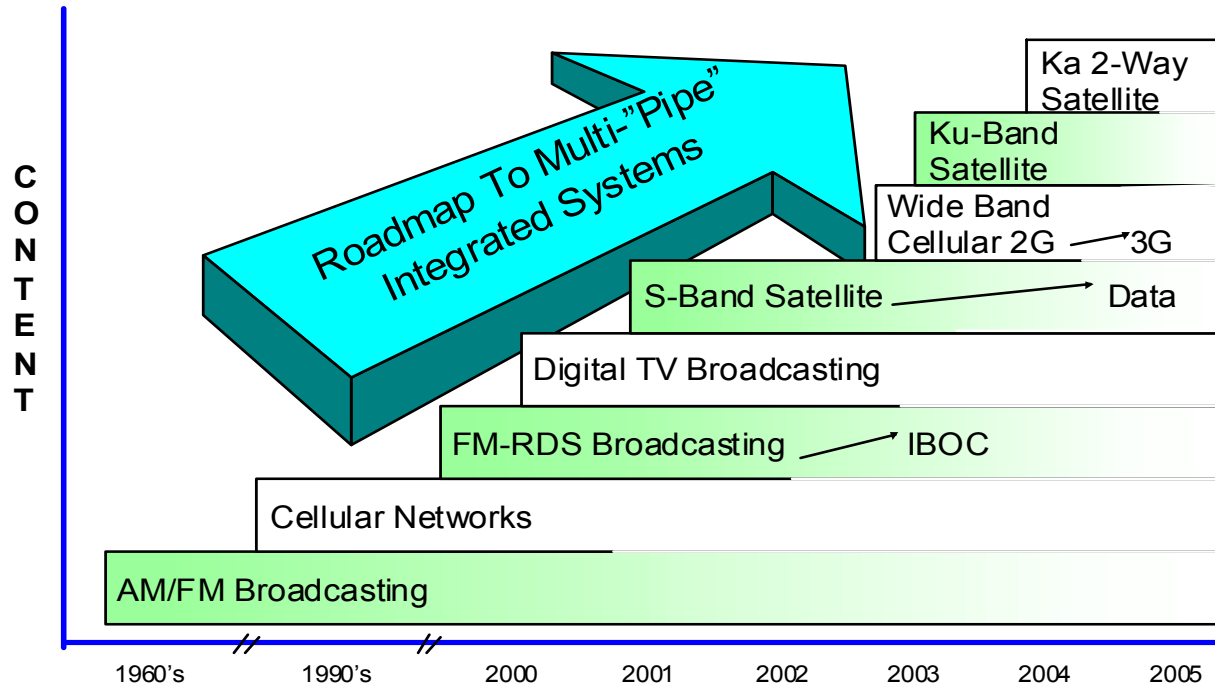


# HMI

- ◆ SAFETY !
- ◆ Hands-on-the-wheel, Eyes-on-the-road
- ◆ Additional HMI technologies
- ◆ HMI management s/w
- ◆ Rear Seat Audio/Video
- ◆ Secure identification of users



# Wireless Pipes



# New Network Services

- ◆ More data traffic
- ◆ Higher speeds
- ◆ Asymmetric channels
- ◆ Packet switching (always connected)

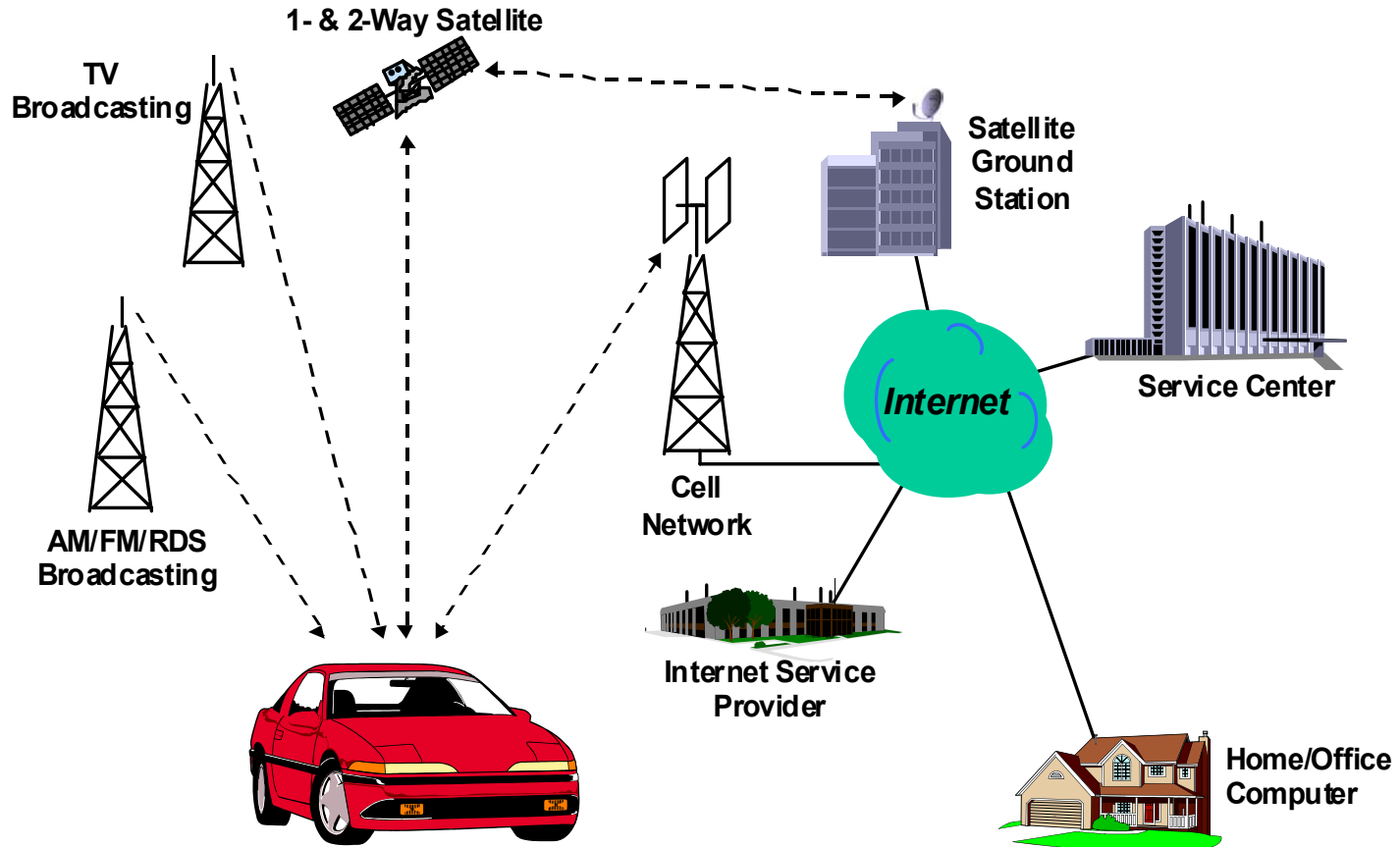


# New Protocols

- ◆ WAP - designed for mobility
  - bandwidth
  - screen size
  - keyboard
  - computing power



# The Off-board Architecture



# Driver Related Services



Button Press

“Ready”

To Do List

- Request and listen to “To Do List” entries

Memo Pad

- Request and listen to “Memo Pad” entries

Date Book

- Request and listen to any day’s appointments

Web Content

- Request and listen to news, weather, sports, stocks, etc.

Mail

- Request and listen to e-mail
- Respond via voice tag

Address Book

- Request and listen to address book entries, dial phone, send e-mail

Phone

- Dial phone hands-free



# Passenger Related Services

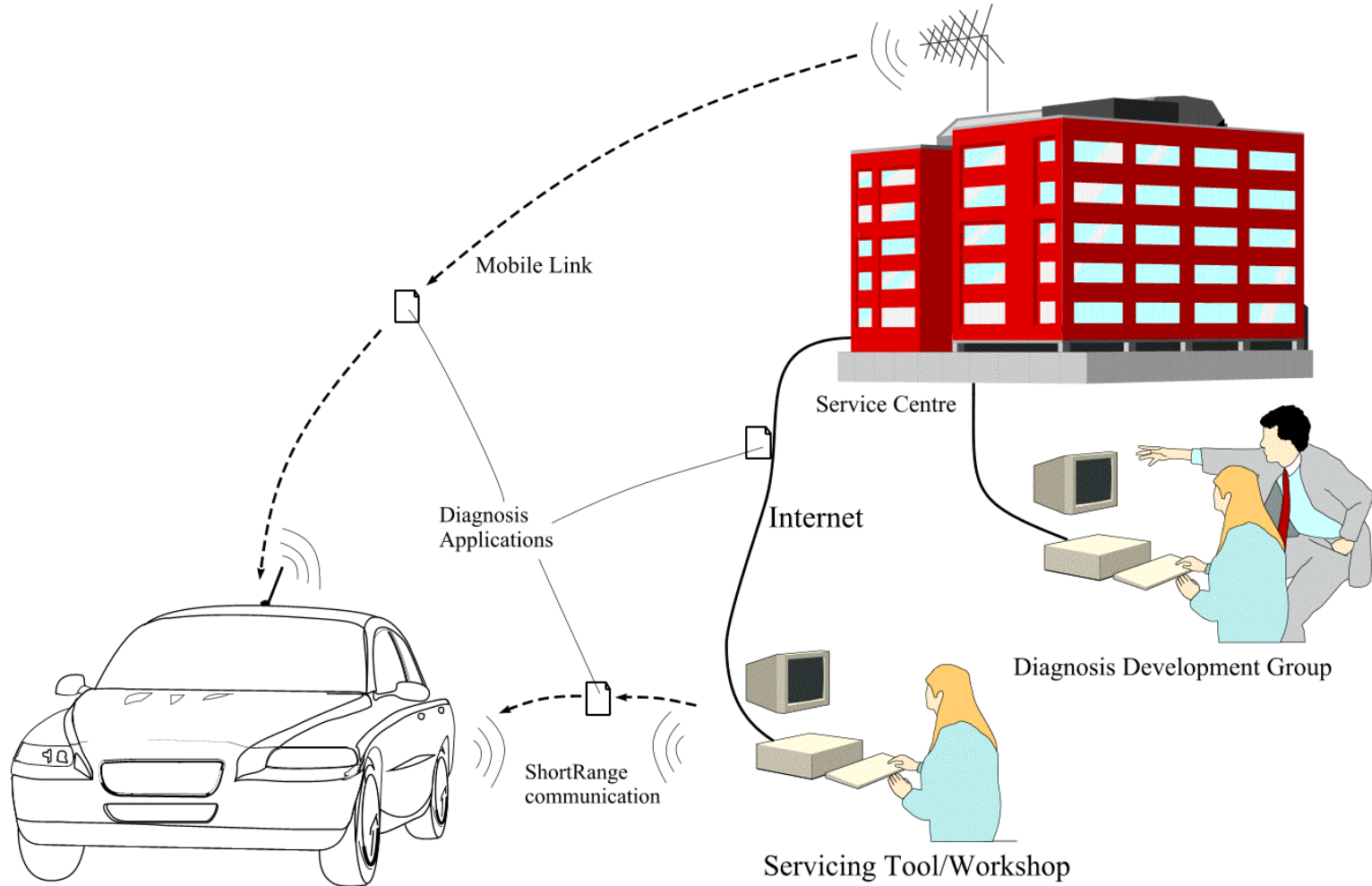


Convergence 2000  
October 17, 2000

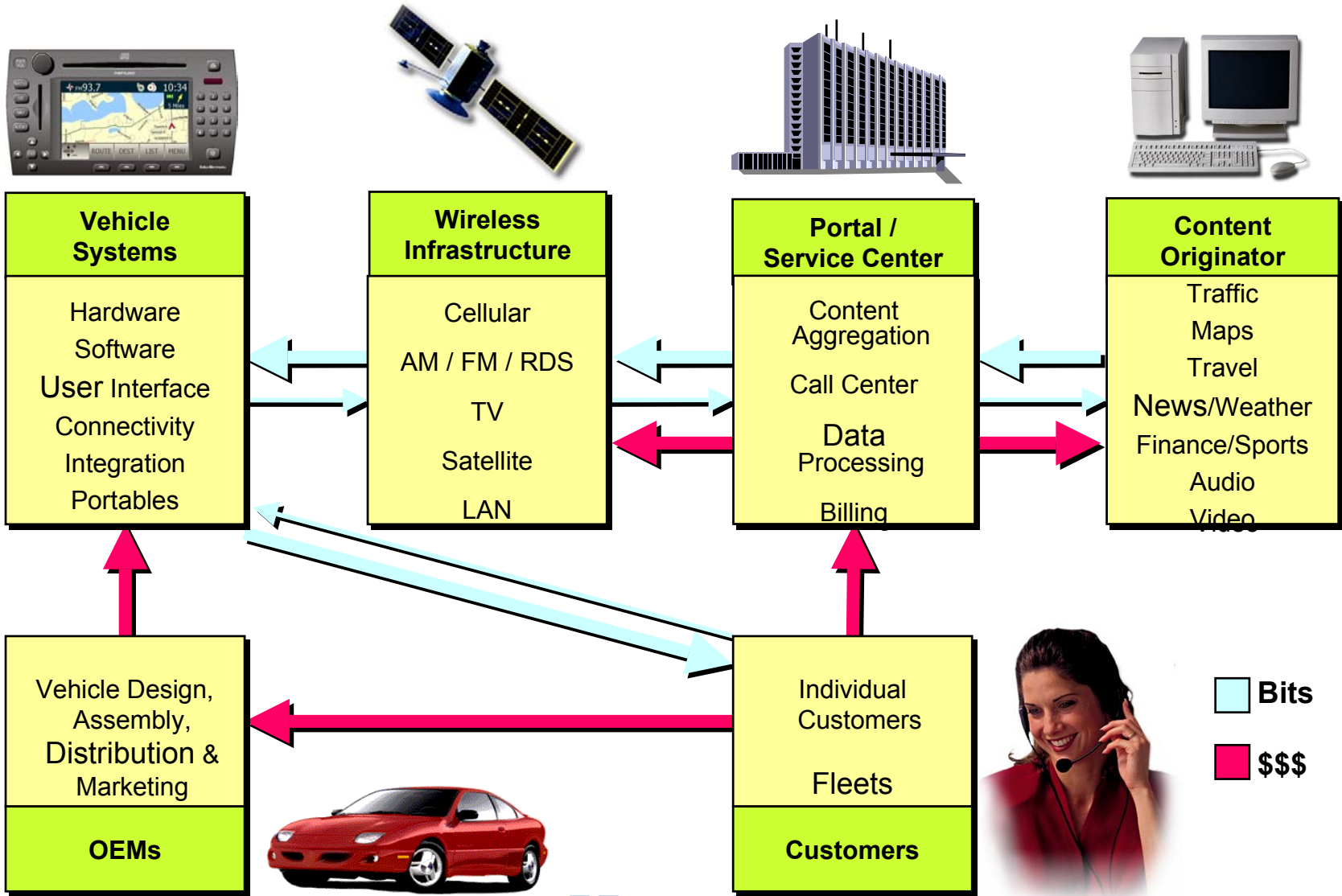
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# Vehicle Related Services



# The End to End Solution



# Conclusions

- ◆ Technology is not the problem
- ◆ Proper integration to ensure safety and customer acceptance
- ◆ Important to “own the customer”
- ◆ A Mobile Information Platform in every vehicle
- ◆ Reasonably priced end-to-end services

**Thank You for Your Attention !**