Overview of International Activities to Limit Distraction

IHRA-ITS

UN-ECE WP.29 ITS Informal Group

Geneva, March, 2013

Distraction

Distraction is when drivers divert their attention away from the driving task to focus on another activity instead.

Types: Visual – eyes off the road

Manual – hands off the wheel

Cognitive – mind off the road

Sources: devices like navigation systems and smartphones, or more conventional distractions such as interacting with passengers and eating.

Risk: exposure and longer glances away from the road at the wrong time (inopportune glances - Victor and Dozza, 2011).

Distraction Countermeasures

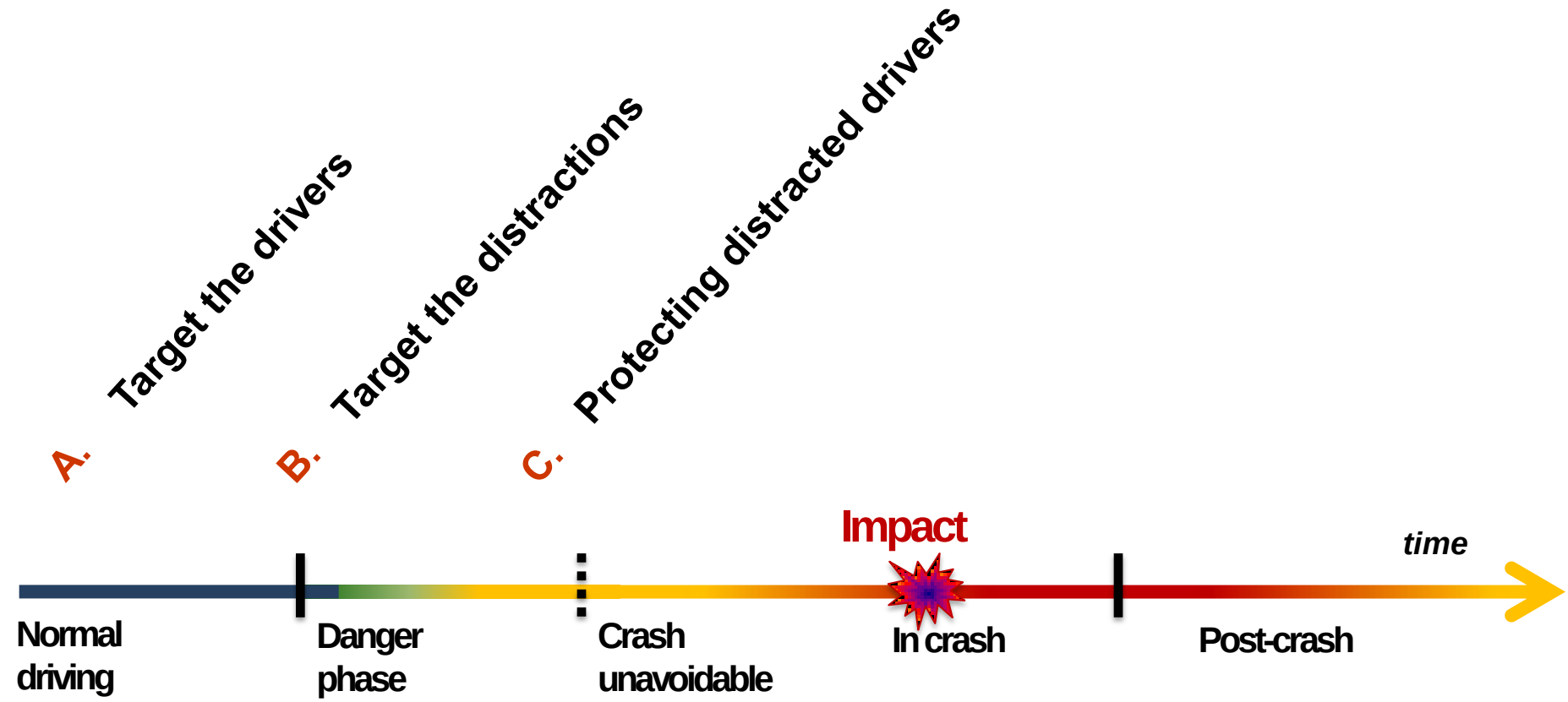
A. **Target the drivers**

- **Awareness and Education**
- **Deterrence**

B. **Target the distractions**

- **Design (e.g., display legibility, no moving images, adaptive interfaces)**
- **Performance (e.g., level of safe driving)**
- **Human factors design procedures**

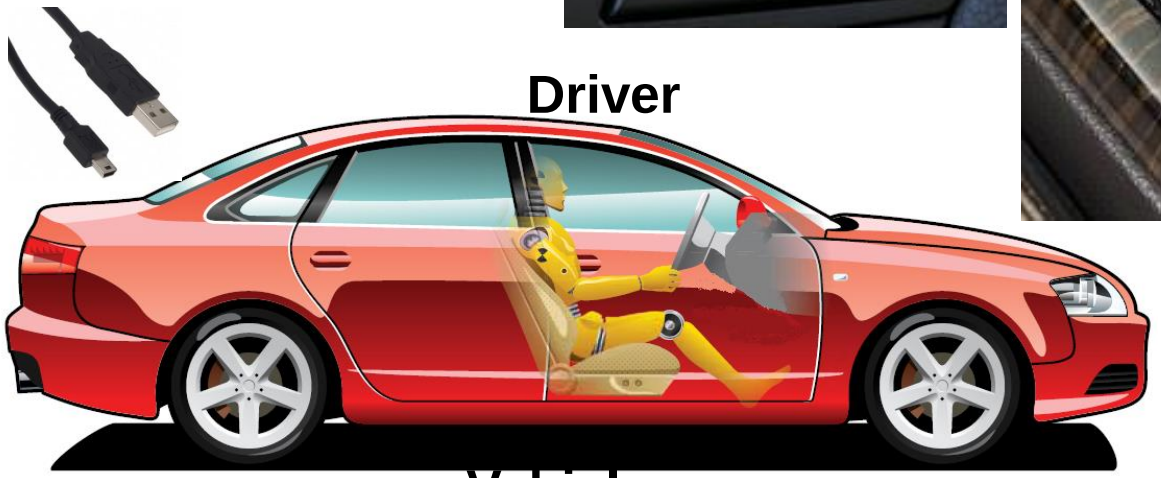
C. **Protecting distracted drivers**


A.
Target the drivers
B.
Target the distractions
C.
Protecting distracted drivers
Impact
time
Normal driving
Danger phase
Crash unavoidable
In crash
Post-crash

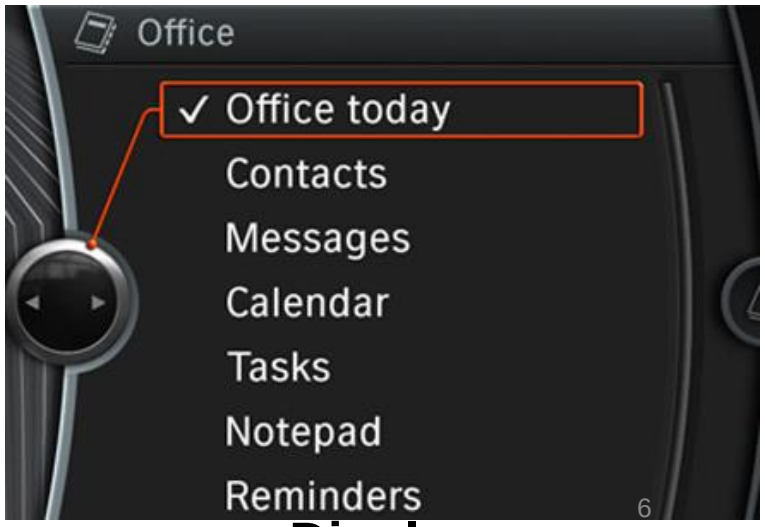

Add a phone
11:18 70 °F
MENU
Dest
E Pacifica Pl
AM / FM
SIRIUS
CD
USB
BT Stereo
106.5 MHz
106.5 MHz
106.5 MHz
106.5 MHz
106.5 MHz
106.5 MHz
Browse
FM HD Radio
Direct Tune
Scan
Options
FM 1 2 AST
Climate
OFF
SONY
TUNE +
SOURCE
SOUND

Portable device

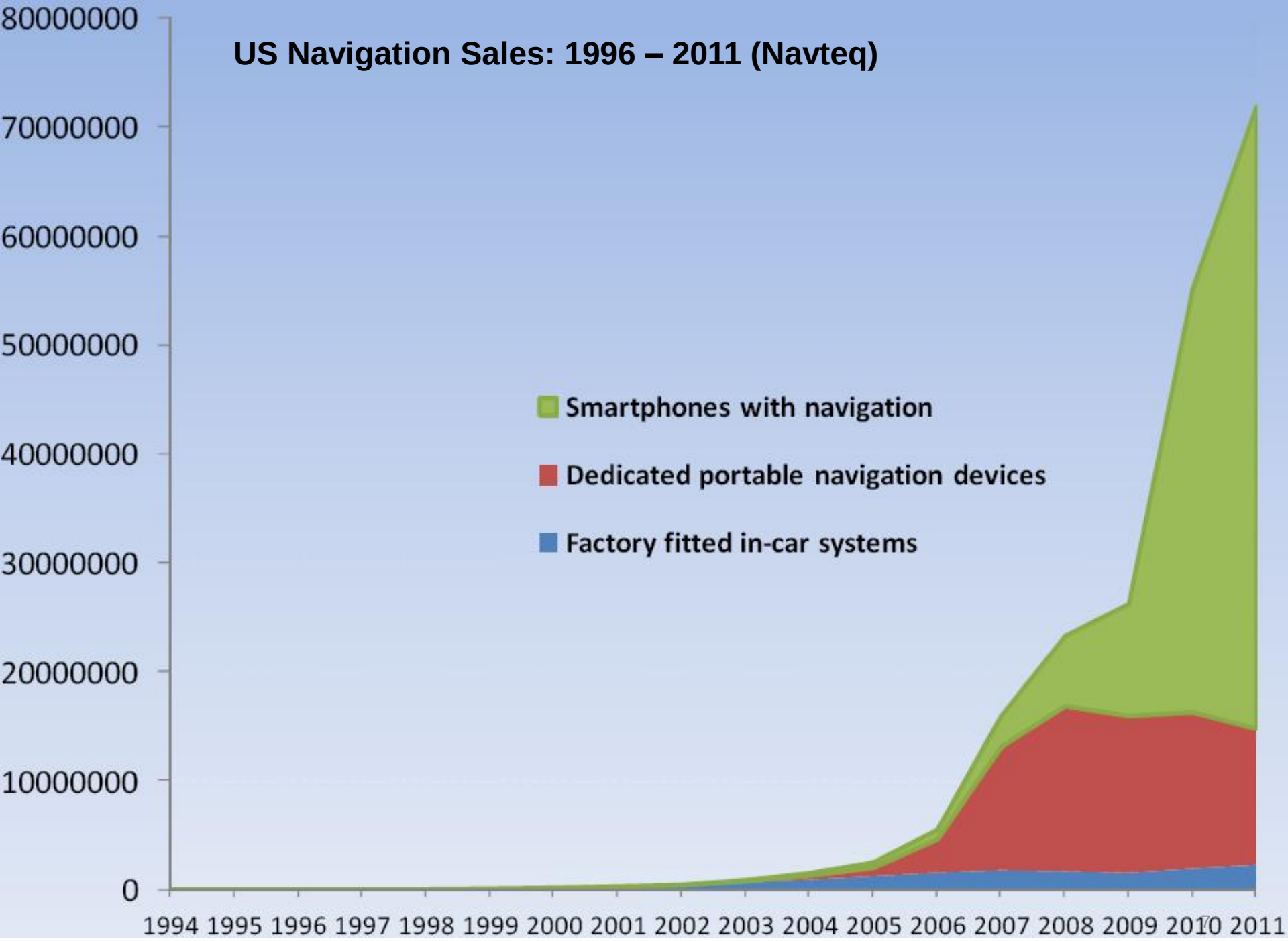
Controls



Vehicle



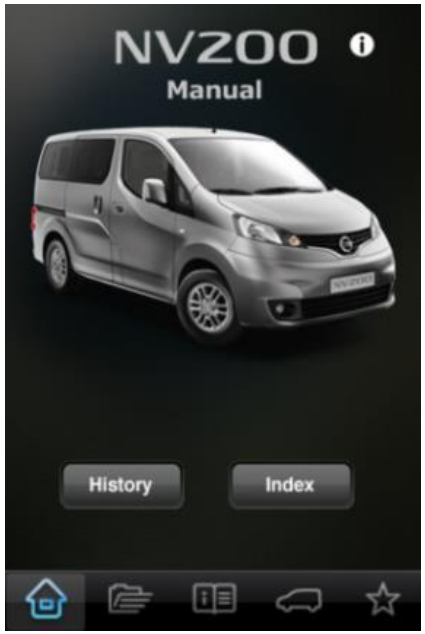
Displays

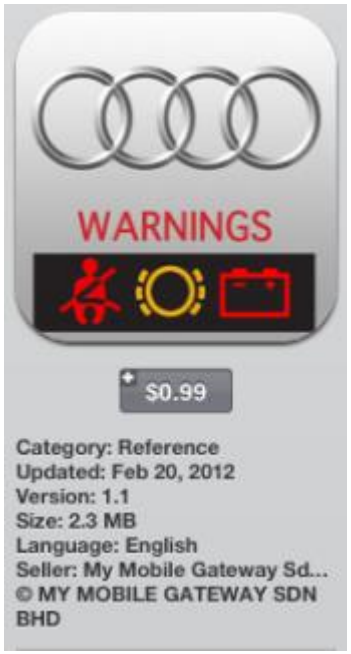

US Navigation Sales: 1996 – 2011 (Navteq)
80000000
70000000
60000000
50000000
40000000
30000000
20000000
10000000
0
Smartphones with navigation
Dedicated portable navigation devices
Factory fitted in-car systems
1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011

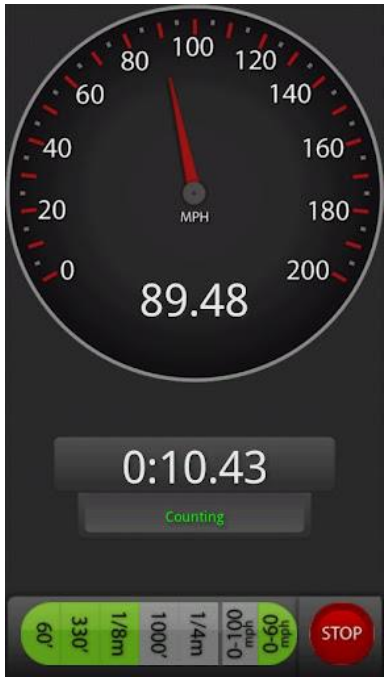
New Opportunities for Distraction

- Smartphone applications (Apps)
- Over 1 million different Apps are available
- Games, education, social media, productivity, entertainment…
- Many different driving related applications for smartphones and the number is increasing rapidly


Test Drive Assistant


NV200
Manual
History
Index


WARNINGS
$0.99
Category: Reference
Updated: Feb 20, 2012
Version: 1.1
Size: 2.3 MB
Language: English
Seller: My Mobile Gateway Sd...
© MY MOBILE GATEWAY SDN BHD


MPH
89.48
0:10.43
Counting
STOP


1:36 PM
Police Radar
and Parking alert
Police trap
Speedcamera
Accident
Parking warden
Click to continue


58
Journey Score (%)
Mazda 6 2.0 4/5 Door
58
Journey Score (%)
27.5
Economy (MPG)
Basic
iPod
Reset
Upgrade
More


50
NASCHMARKT
WIEN
Volksgarten
Zirkusgasse
Therese-Krones-Park
Real-Time Traffic to know what lies ahead.
09:45
1.4km
700
metres
30km/h


12:25 PM
Primo Spot
Court St
State St
Tremont St
Congress St
School St
Devonshire St
Bromfield St
Milk St
Franklin St
Federal St
Summer St
Arch St
Google
street
garages
bike racks

Existing Guidelines

- **ESOP** - Commission of the European Communities (2007) Commission Recommendation on Safe and Efficient In-Vehicle Information and Communication Systems; Update of the European Statement of Principles on Human Machine Interface
- **JAMA** - Japan Automobile Manufacturers Association Guidelines for In-Vehicle Display Systems, Version 3.0
- **Alliance** of Automobile Manufacturers (AAM) Statement of Principles, Criteria and Verification Procedures on Driver Interactions with Advanced In-Vehicle Information and Communication Systems, June 26, 2006

Related Activities

International Standards Organization (ISO) TC 22 SC 13 WG 8 – Vehicle Ergonomics

- Distraction metrics (measurement of distracting tasks) and design guidelines (e.g., prioritization)

Society of Automotive Engineers (SAE) Safety & Human Factors Committee

Car Connectivity Consortium - Driver Workload Guidelines for MirrorLink™ Mobile Applications

- “drive-ready” certification to MirrorLink™ apps. that are deemed not to adversely affect driving.
- Guidelines for developers are based on existing distraction guidelines (i.e., ESOP, JAMA and Alliance).

International Telecommunications Union ITU-T FG Distraction Recommendations

- P.UIA—ITU-T Recommendation on automotive user interface requirements.
- G.SAM—ITU-T Mechanisms for managing the situational awareness of drivers.
- G.V2A—ITU-T Recommendation on an automotive interface for applications external to the vehicle gateway.

US NHTSA Distraction Guidelines

- Minimize driver distraction from electronic devices by encouraging better driver-device interfaces
- Conformance is voluntary; these are not a FMVSS
- Guidelines implementation in three phases:

  Phase 1 –Visual-manual interfaces for devices installed by vehicle manufacturers (soon)

  Phase 2 –Portable and aftermarket Devices (proposal in 2013)

  Phase 3 –Voice-based auditory interfaces (proposal in 2014)

(Garett et al., 2013)

Summary

- Driver distraction continues to be a concern as opportunities for distraction increase.
- There are some regional and industry codes of practice that help to limit distraction.
- There are no international guidelines for limiting distraction in vehicles.
- Efforts to develop new requirements for limiting distraction are ongoing.

Thank you