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

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

Sources of Distraction

External – billboard advertisements, scenery, accidents

In-vehicle

   Conventional – interacting with passengers, eating, drinking.

Original equipment – multifunction information systems, navigation systems, displays and controls

Aftermarket devices – navigation systems

Nomadic devices – loose or connected smartphones

Control systems – automation may allow more distraction.

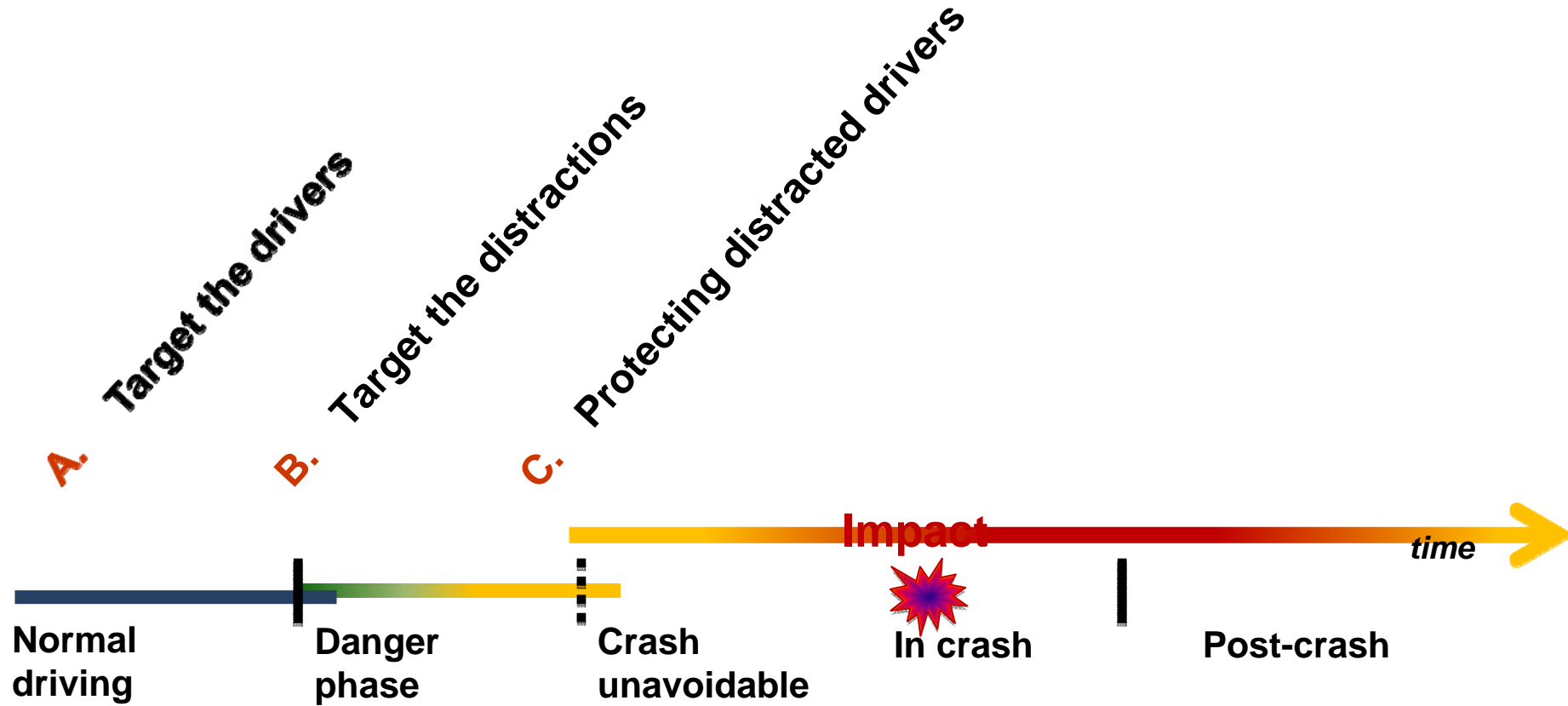# Distraction Countermeasures

A. Target the drivers

  ▪ Awareness and Education

  ▪ Deterrence

B. Target the distractions

  ▪ Design (e.g., display legibility, no moving images)

  ▪ Intelligent adaptive interfaces

  ▪ Performance (e.g., level of safe driving)

  ▪ Human factors design procedures

C. Protecting distracted drivers

IHRA ITS

A. Target the drivers

B. Target the distractions

C. Protecting distracted drivers

Impact

time

Normal driving

Danger phase

Crash unavoidable

In crash

Post-crash

US Navigation Sales: 1996 – 2011 (Navteq)

Smartphones with navigation
Dedicated portable navigation devices
Factory fitted in-car systems
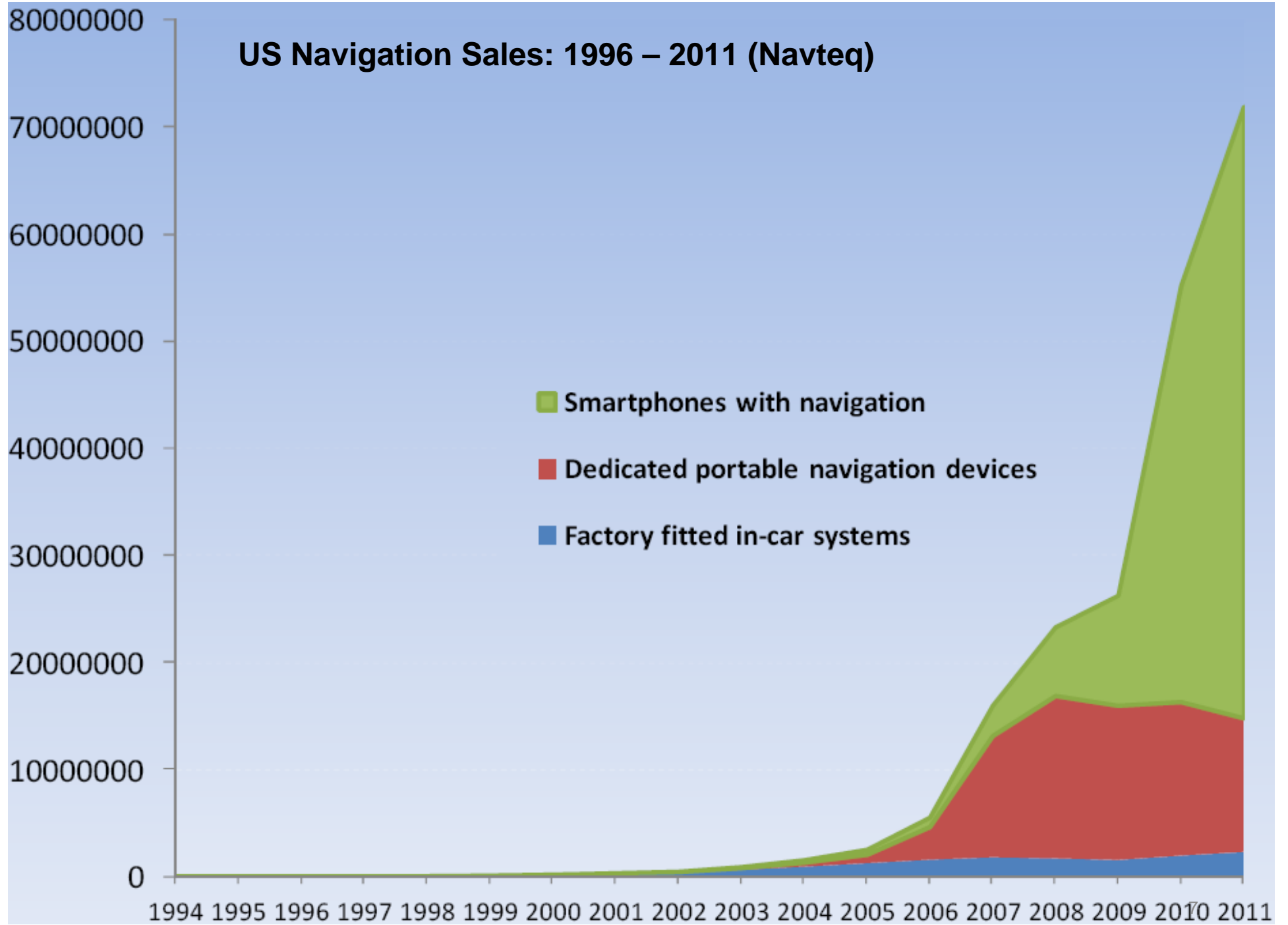
Portable device
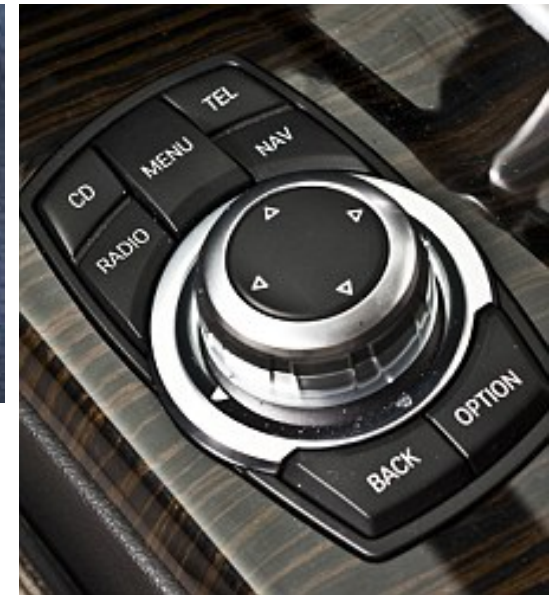
Driver

Vehicle

Controls

Displays

New Opportunities for Distraction

- Smartphone applications (Apps)

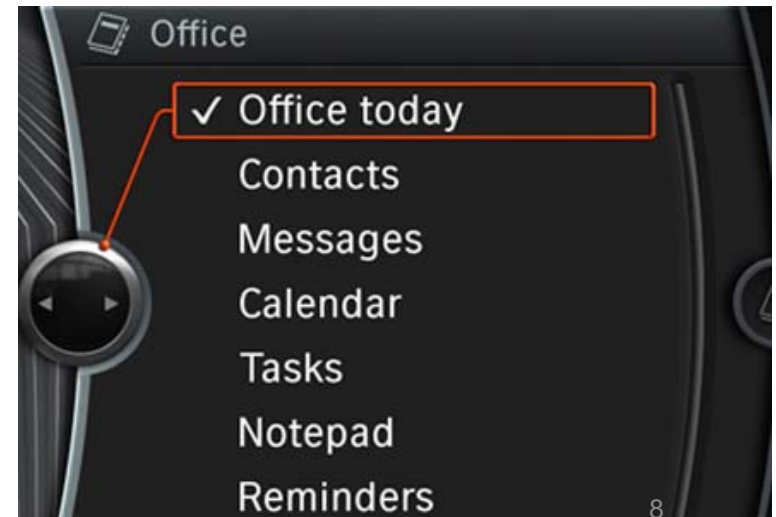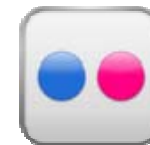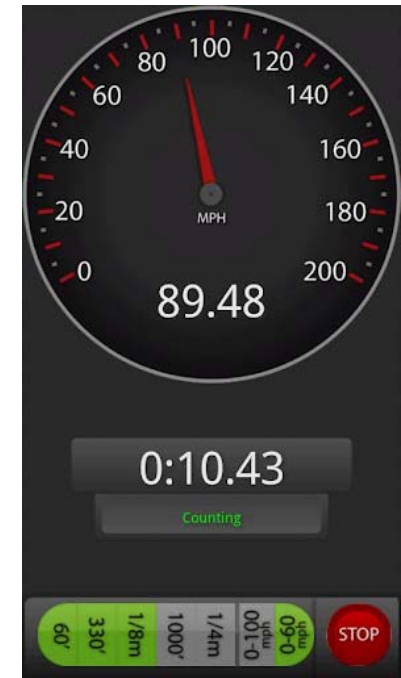- Over 1 million different Apps are available

- 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

80 100 120
60   140
40   160
20   180
0   MPH   200
89.48
0:10.43
Counting
60' 1/8m 1000' 1/4m 100-0 60-0
330'   mph mph
STOP

1:36 PM
Police Radar
and Parking alert

Police trap
Speedcamera
Accident
Parking warden

Click to continue

O2-UK 13:51
58
Journey Score
(%)
Mazda 6 2.0 4/5
Door
58
Journey Score (%)
27.5
Economy (MPG)
Basic
iPod Reset Upgrade More

0:03h 50
NASCHMARKT WIEN Volksgarten
Zirkusgasse
Therese-Krones-Park
Real-Time Traffic to
know what lies ahead.
09:45 30 km/h
1.4 km 700
metres

12:25 PM
Primo Spot
street garages bike racks
Google

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, 2004

- **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

European Statement of Principles (ESOP)

Scope - the principles apply primarily to in-vehicle information and communication systems intended for use by the driver while the vehicle is in motion.

Apply to systems and functionalities in OEM-, aftermarket-, and nomadic (portable) systems.

Principles

1. Installation

2. Information presentation

3. Interface with displays and controls

4. System behaviour

5. Information about the system

ESOP Design Goals

1. The system supports the driver and does not give rise to potentially hazardous behaviour by the driver or other road users.

2. The allocation of driver attention while interacting with system displays and controls remains compatible with the attentional demand of the driving situation.

3. The system does not distract or visually entertain the driver.

4. The system does not present information to the driver which results in potentially hazardous behaviour by the driver or other road users.

5. Interfaces and interface with systems intended to be used in combination by the driver while the vehicle is in motion are consistent and compatible.

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.

- Numerous challenges – e.g., scope

Thank you