Consumer Technologies
Lessening Driver Distraction

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Distraction – Tech Solution Categories

**Manual**

**Eyes on Road**
- **Hardware**
  - Pre-install (designed/integrated by automaker)
  - After market (different OEM – Garmin, TomTom, Samsung, Apple)
- **Software (Input v Output)** – Nuance, S Vox, Microsoft
  - Speaker Dependent
  - Speaker Independent

**Hands on Wheel**
- **Hardware** – ear buds, bluetooth, dial, roller balls, steer wheel mounted, microphones/speakers, button
- **Software** – voice recognition, STT, TTS, etc.

**Cognitive**

**Mind on Vehicle Operation**
Distraction – Some Consistent Challenges

Initiation
Activity Entry
Corrections
Activity Confirmation
Activity Launch
Activity Refinement
Activity Conclusion

Case Studies
Call – locate, initiate, id caller, answer, hang up
Text – initiate, read, respond
Infotainment – initiate, select, calibrate, end
Directions – initiate, input, confirm, launch, edit
Other Systems – initiate, modulate, end
Manual Distraction – How is Technology Helping?

**Manual Distraction**

**Eyes on Road**

**Hardware**

**Software**

- Faster Touch
- Less Touch
- No Touch

**Hands on the Wheel**

**Hardware**

**Software**

- Gate Commands
- Natural Language Entry, Careful Scripting
- Seamless Commands – confirmed intent and action started
- No Touch

**Cognitive Distraction**

**Mind on Vehicle Operation**
Manual Distraction – What’s Out There Now?

Manual Distraction
Keeping Eyes on Road AND Hands on Wheel
- Faster Touch – Predictive Text, Next Word Prediction, Logic Algorithms
- Less Touch – Hybrid Text and Speech Entry (On Star and Ford Sync)
- No Touch (hands free) – Speech Command and Control
- Gate Commands – Voice Recognition esp. Voice Activation
- Seamless Commands – Pictured
- Natural Language Entry
- Other

Cognitive Distraction
Mind on Vehicle Operation

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Manual Distraction – What’s Next?

Manual Distraction

Eyes on Road AND Hands on Wheel

- Faster Touch – Context Aware Text
- Less Touch – More ways to say any command
- No Touch – Speech Recognition Accuracy and Deeper integration

Cognitive Distraction

Mind on Vehicle Operation